

Cato Institute Policy Analysis No. 145: What Now for U.S. Energy Policy? A Free-Market Perspective

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Executive Summary

The United States, through United Nations Security Council Resolution 660, has militarily taken 4.5 million barrels per day of crude oil and refined product off the market. The sudden removal of Iraqi and Kuwaiti petroleum from the world oil market is comparable to the "supply shocks" of the Arab embargo of 1973 and the Iranian revolution of 1979--events that highlighted the "energy-crisis" era. The major irony of the latest interruption in the supply of oil is that it is self-inflicted by buyers, not the result of unilateral action on the part of the seller. In 1973 the Arab OPEC countries refused to sell oil to the United States; in 1990 the United States is spending billions of dollars and risking war to deprive itself and other consumers of Iraqi and Kuwaiti oil.

How have market forces responded to the supply interruption? And how has "emergency" government energy policy fared in its first prolonged test since the energy-crisis era? The answers to those interrelated questions lead to the central question of U.S. energy policy: should Americans rely more on government activism or on market processes to weather the present storm and to prepare for the proverbial "next time"?

The Market Has Worked

Without pervasive regulation, gasoline prices have rationed demand to supply and averted systematic tank topping and the dreaded gasoline lines of the 1970s. There have been no shortages and no panic, just complaints of oil-company "price gouging" by disgruntled motorists and industry critics. When Iraq invaded Kuwait and the United States made its "mark in the sand," world oil inventories were high, production was slack in several major oil-producing countries, and market processes went to work in a new environment.

No Gasoline Lines

The absence of gasoline lines should not be taken for granted.(1) Gasoline is never more expensive than when it is unavailable or available only at great inconvenience. The loss of supplies from two of the world's leading exporters, and the even greater loss should war break out in the Persian Gulf region, is one of the major supply dislocations in the history of the petroleum industry. Net crude production loss in the first full month of the embargo, August 1990, was 3.3 million barrels per day (mmbd), or 5 percent of world output (Figure 1). In comparison, the Arab embargo from October 1973 to March 1974 reduced world supply 1.6 mmbd, or approximately 3 percent. The Iranian revolution from November 1978 to April 1979 reduced world crude supplies by 3.7 mmbd, or 6 percent.(2) Despite the substitute production that has replaced virtually all of the embargoed oil since September, three factors have prevented a full

recovery: the replacement crudes are higher in sulfur and yield smaller quantities of light products; world refining capacity is strained by the loss of three Kuwaiti refineries; and the U.S.-led military operations in the Middle East are consuming more than 100,000 barrels of product a day.

Figure 1
OPEC Crude Oil Production, July-December 1990
Source: Cambridge Energy Research Associates
(Graph Omitted)

The difference between today and early 1974 and mid- 1979, when gasoline lines formed across the nation, is the absence of oil price and allocation controls. Some of the infamous regulatory devices responsible for the "energy crisis" were ceiling prices for crude oil and petroleum products that prevented coordination of supply and demand; the supplier-purchaser rule that froze distribution channels between the wellhead and the pump; the buy/sell program that redistributed crude oil from efficient to inefficient refiners; the interrefinery entitlement program that subsidized import prices; and set-asides of product for allocation by state governors, which effectively reduced supply. President Ronald Reagan's decontrol order in January 1981 put those regulatory schemes to rest and contributed to a buyers' market for oil for the rest of the decade.

In March 1982 Reagan vetoed a bill that would have created standby price and allocation control authority. Congress and many industry groups lobbied for it, but a stroke of the pen ended the Carter energy era. That veto was a highlight of Reagan's two-term energy policy.⁽³⁾ With President Richard M. Nixon, the case was different. Nixon unexpectedly imposed wage and price controls in August 1971 under the authority of the Economic Stabilization Act of 1970. As a consequence, he fathered the energy crisis that President Jimmy Carter's activist response only worsened. Clearly, the United States should avoid "emergency" standby price and allocation regulation that could turn into the real thing.

To his credit, after the Iraqi invasion President Bush dismissed the idea of formal petroleum price and allocation controls. Without standby authority and with domestic economic issues overshadowed by concern about the possibility of war, political conditions have not been ripe for such pervasive regulation. Bush and his advisers--as well as the energy intelligentsia and a surprisingly large number of the media--understood the primary lesson of the energy debacle of the 1970s. But Bush's informal request that oil firms restrain prices was a dangerous precedent and a notable failure of "emergency" government energy policy.

Price "Gouging" Reconsidered

Did prices go up too high or too quickly after the August 2 takeover of Kuwait by Iraq--particularly when world oil inventories were widely reported to be at or near record levels? Using every high-octane term in the anti-capitalist lexicon, industry critic Ed Rothschild, energy policy director of Citizen Action (formerly Citizens-Labor Energy Coalition) charged that the gasoline price hikes of between 5 and 15 cents per gallon just hours after the invasion represented "blatant acts of economic aggression carried out by a handful of large multi-national corporations intent on profiteering at a time of international tension."⁽⁴⁾ When a \$4 per barrel drop in crude prices on August 28 failed to immediately lower prices at the pump, complaints intensified that price adjustments were upwardly asymmetrical. Public complaints were followed by antitrust investigations by the Department of Justice and state attorneys general. In Houston, Texas, the petroleum capital of the world, nearly 90 percent of the participants in a call-in opinion poll answered yes to the question, "Do you think the oil companies are taking advantage of the Mideast situation by raising gasoline prices?"⁽⁵⁾ President Bush read the polls right when he asked the oil companies "to do their fair share . . . and not abuse today's uncertainties to raise prices."⁽⁶⁾

Strong evidence suggests that the new market psychology created by the invasion and the U.S. response unleashed pent-up product price increases that were already working their way through the system. In the six weeks before the invasion, spot crude prices rose nearly 30 percent from 37 to 48 cents per gallon. Yet spot gasoline prices rose only 3 percent, from 65 to 67 cents per gallon.⁽⁷⁾ Marketplace pressures had prevented a cost pass through. With expectations radically changed, however, higher prices would now "stick."

Are prices "unconscionable"? Gasoline prices during the first two months of the embargo were not out of line with past prices, as shown in Table 1.

Nearly four months into the embargo, prices (adjusted for inflation and net of motor fuel taxes) were 42 percent lower than they were in peak-year 1981 and 14 percent lower than in 1985. In contrast, state and federal motor fuel taxes had increased in real terms. That suggests that, like those of other products, petroleum prices are symmetrical. They go down when supply rises or demand falls, or both (e.g., from 1981 through 1988), and go up when demand increases or supply falls, or both (e.g., 1980-81, 1989-90). One might ask where the price critics were when crude prices fell from \$28 per barrel in November 1985 to under \$10 per barrel in March 1986 and gasoline prices followed suit.(8) Were consumers "gouging" the U.S. petroleum industry during OPEC's price war?

Another instance of price fluctuations occurred last winter. When the coldest December in 60 years gave way to the warmest January in 57 years, spot home heating oil prices, in the words of the Department of Energy, "fell nearly as rapidly as they had risen."(9)

Table 1					
Pump Price of Regular Unleaded Gasoline, 1980-90					
Year	Total Price (\$/Gal.) ^a	State Taxes (\$/Gal.) ^b	Federal Taxes (\$/Gal.) ^c	Consumer Price Index ^(d)	Real Price Net of Taxes (\$/Gal.)
1980	1.245	0.089	0.040	63.2	1.766
1981	1.378	0.097	0.040	69.5	1.786
1982	1.296	0.101	0.040	73.8	1.565
1983	1.241	0.113	0.078	76.2	1.378
1984	1.212	0.119	0.090	79.5	1.262
1985	1.202	0.124	0.090	82.3	1.200
1986	0.927	0.128	0.090	83.9	0.845
1987	0.948	0.141	0.091	86.9	0.824
1988	0.946	0.147	0.091	90.5	0.782
1989	1.021	0.154	0.091	94.9	0.818
Dec. 1990 ^(e)	1.341	0.165	0.141	100.0	1.035

Note: Calculations are the author's.

a Energy Information Administration, U.S. Department of Energy.

b Arithmetic average tax rate of 50 states and District of Columbia. Highway Users Federation, except for December 3, 1990, which is reported by the American Petroleum Institute.

c The federal tax per gallon was 4 cents until April 1, 1983, 9 cents until January 1, 1987, and 9.1 cents until December 1, 1990, when it increased to 14.1 cents.

d The CPI is restated in current dollars (November 1990 = 100). Bureau of Labor Statistics, U.S. Department of Labor.

e As of December 3.

The sudden price increases in the wake of the Iraqi invasion were not the result of concerted monopolistic action. The U.S. petroleum industry was not party to the takeover of Kuwait, the embargo decision that followed, or the threat of war. The price adjustments were due to the rapid dissemination of knowledge about one of the most disruptive events in the history of the international oil market and uncertainty about the availability of oil in the near future. The institutions responsible for the immediate reaction were the oil futures market and the petroleum spot market. The price

surge signaled the market to husband inventory and prepare for higher crude and product costs. Service station dealers, with less than a week's inventory on hand, quickly understood that replacement costs would be significantly greater than historic cost. Historic cost was irrelevant anyway--prices are determined by supply and demand. Dealers also knew that unless the higher prices of rival dealers were matched, there would be a run on supply, which would put their regular customers at risk.

The price surge served the socially useful purpose of heading off a panic by motorists. Consumers were concerned about price, not supply. But critics have raised an ethical question: is it fair to exploit market advantage? The answer is yes. All U.S. industries should be expected to "make hay while the sun shines," just as they endure unfavorable conditions. Entrepreneurs who discover and exploit opportunities for profit make the free market more efficient than other forms of economic organization. Individuals do the same thing. Does a homeowner sell his house at historic cost or at whatever price the market will bear? If homeowners were forced to sell their houses at historic cost in a rising market, there would be excess demand for homes and a housing shortage--just as there were oil shortages in 1974 and 1979. Entrepreneurs, dependent on repeat business, must also consider goodwill in a sellers' market. There is little charity in underpricing and running short of supply.

Perhaps gasoline consumers have been spoiled. For nearly a decade prices have gone their way except for brief periods. In addition, the public's negative reaction to the recent price hikes illustrates the oil industry's continuing image problem, which built to a crescendo during the energy crisis and was reawakened by the oil spills of the last two years. Only the absence of gasoline lines has prevented a worse public backlash.

Inventory

Oil traders and other industry entrepreneurs seek to buy low and sell high, allocating supply to its most valuable uses. In times of uncertainty, precautionary inventories are increased. Such behavior was evident before and during the present supply dislocation. In anticipation of reduced production as a result of the OPEC accord of late July, demand strengthened and prices began to rise. Along with OPEC's overproduction in the preceding months, excess inventory estimated at between 100 million and 300 million barrels was accumulated, mainly in the United States and Western Europe.(10) Behind the accord, designed to stop overproduction by Kuwait and the United Arab Emirates, was Iraq's strong desire that her neighbors stay within their quotas.(11) Several days later Iraq took over the oil-rich kingdom of Kuwait. Although the invasion was unexpected, market signals before the event indicated that precautionary buying was occurring as if led by an "invisible hand."

The surge in the price of crude oil to nearly \$40 per barrel in late September resulted from a new inventory push. With war and the loss of additional Persian Gulf production becoming more likely, the demand for inventory peaked "as a hedge against future shortages."(12) Such inventory building is not anti-consumer. It creates the market's "strategic petroleum reserve," paid for by entrepreneurs who bet money that they are making the right assessment of future needs.

Slack Capacity

Increased use of slack, or underutilized, production capacity has increasingly cushioned the loss of Iraqi and Kuwaiti oil. In late August OPEC allowed its remaining 11 members to increase production "as needed." (Obviously, given the embargo, any increase in Iraqi or Kuwaiti production would not violate the total quota.)

Saudi Arabia is increasing production from approximately 5.3 mmbd to nearly 8 mmbd. The United Arab Emirates and Venezuela have each added an estimated 500,000 barrels per day. The eight other OPEC members who are not party to the invasion have added lesser amounts.(13) In fact, OPEC production had by September recouped three-fourths of August's lost crude output. It is estimated that December's production exceeded July's production of 23 mmbd (and OPEC's quota of 22.5 mmbd), as seen in Figure 1.

Conspicuously absent from the list of countries that have increased production is the world's leading oil producer. The Soviet oil sector, like the rest of the Soviet economy, has been victimized by central planning. It will take the USSR years to reach its full export capacity, even with infusions of Western technology and capital.

In the United States, increased output from the Prudhoe Bay field in Alaska is anticipated to be as much as 226,000 barrels per day later this year.(14) The Texas Railroad Commission has increased allowables by 20,000 barrels per day, mostly for horizontal wells that were capped artificially low to begin with.(15) The East Texas field, meanwhile, has been left at 86 percent of capacity by the commission to preserve reservoir pressure. As discussed in the subsection on drilling on public land, the Point Arguello field off the California coast could produce 25,000 barrels a day within several months and up to 90,000 barrels a day late in the year.

Market Adjustments

The virtue of the market is that it is self-adjusting. With prolonged higher prices, new production capacity can be expected to appear, and consumers will increasingly conserve oil and gasoline and, where possible, substitute alternative fuels. Electric powerplants across the country have left residual fuel oil for natural gas. Retrofitting of vehicles to run on alternative fuels, such as compressed natural gas that is selling for around 70 cents per gallon equivalent, is being stimulated by higher gasoline prices. Conversions from fuel oil to gas for space heating have doubled since the invasion.(16)

A number of independent producers have announced higher capital outlays triggered by higher prices. At least two major oil producers have hiked domestic spending by \$100 million or more; the Baker-Hughes rig count has risen more than 10 percent since the invasion; and workover activity has increased. Foreign drilling is expected to accelerate if crude prices remain above \$20 per barrel. Worldwide enhanced oil recovery could increase by 10 percent.(17) Downstream, refiners postponed maintenance to take advantage of what was expected to be a strong fourth quarter.

A recent Energy Information Administration report predicted that in the fourth quarter of 1990 and in 1991 prices above \$20 per barrel would lead to decreased consumption, decreased imports, and increased domestic drilling.(18) In fact, during the fourth quarter of 1990, product demand was 5.4 percent lower and the quantity of crude and product imported was 15 percent less than in the fourth quarter of 1989.(19) Such self-correcting adjustments are part of the market's transition to an era of increased scarcity. They do not require regulatory edicts or bureaucratic management and are better off without them.

Self-Help

Petroleum has become the world's largest cash commodity, thanks to futures trading on the New York Mercantile Exchange. By offering futures contracts for crude (since 1983), heating oil (1978), unleaded gasoline (1984), propane (1987), residual fuel oil (1989), and natural gas (1990), participants can hedge against future price movements or speculate in hopes of making a profit. Although "scores of corporations and other big fuel users have had to admit they were caught off guard by the run-up,"(20) some major fuel users such as Royal Caribbean Cruise Lines successfully hedged against the recent oil price surge. Even though consumer participation is not yet widespread, futures trading is a viable option for hedging, and its use can be expected to increase if oil price volatility continues.

Other examples of self-help in the current environment are fuel-oil-buying cooperatives that obtain lower prices because they buy in bulk (scale economies) and telephone hot lines that identify service stations selling gasoline at 10 percent over cost.(21) Private-sector sources are providing more and more conservation advice for motorists and others.

Government Failures

In contrast to the market, government energy policy has performed poorly during the current supply dislocation. As Philip Verleger complained:

The United States' well-publicized oil shortage programs received their first test in the current crisis. They failed. Officials from the Department of Energy were repeatedly unable to demonstrate that they understood the workings of the petroleum market. Consequently, an aroused public and Congress were left with the feeling that, once again, the oil industry was sticking it to the public. More significantly, the agency refused to test the proposition that an announcement of a forthcoming release of oil from the Strategic Petroleum Reserve would calm a justifiably panicked oil market. The department's inability to comprehend the extent to which the crisis was of its own making is its most

appalling failure. The imposition of an embargo on exports of oil from Kuwait and Iraq created an apparent shortage of 5 million barrels a day.(22)

The Embargo Tax and War Premium

The market's early reaction to the invasion was exacerbated when U.S. customs officials impounded Iraqi cargoes bound for U.S. refiners. The scramble to find alternative supplies contributed to higher prices in the first week after the invasion. Although the impoundment order was rescinded by the Treasury for cargoes loaded before the morning of August 2 and arriving before October 1, damage had been done.(23)

The embargo was responsible for most of the price increase in the first months after the invasion. While a price increase of approximately 10 cents per gallon for gasoline and heating oil could be attributable to the prior (Iraqi-led) OPEC accord and the invasion itself, another 10 to 15 cents per gallon or more was due to the U.S.-led embargo's effectiveness in removing from the market oil that it would take time to replace. Based on product consumption of 17 mmbd during the first half of 1990, the "embargo tax" cost U.S. consumers approximately \$70 million to \$100 million per day. The possibility of a wider conflict engulfing the region gave rise to a "war premium" as a third component of the difference between the preinvasion and the post-invasion price. When the U.S.-led operation took on an offensive rather than a purely defensive character--while new production was increasing--the war premium began to replace the embargo tax as the major component of the post-invasion price rise. By November it had done so.

It is important to emphasize that the U.S. military response, not the invasion itself, has been responsible for the lion's share of price increases since August 2. The economic consequences of the embargo and the threat of war have been great. The Wall Street Journal claimed that higher oil prices have "probably pushed the Western world over the brink of recession."(24) The Dow-Jones Big Board composite, which was 2,899 points the day before the invasion, stood at 2,545 points by November 15, a 12 percent drop. The inverse relationship between Big Board stock prices and crude oil futures prices for next-month delivery was evident on 79 of the 99 business days in that period (Figure 2).

Figure 2
Stock Market Prices vs. Oil Prices after the Invasion
Source: New York Mercantile Exchange and NYSE
(Graph Omitted)

Price Interference

The worst energy policy mistake was made by President Bush on August 8 when he asked oil companies to "show restraint" and "not take advantage of the Middle East situation" by increasing gasoline prices. That intervention in the market process set a dangerous precedent. Bush failed to consider that government threats to free-market pricing can per se trigger shortages. As the spot shortages of gasoline and fuel oil in 1946-47 showed, tacit price ceilings can do the same damage as formal price edicts.(25) The policy implication is clear. Firms should be given full rein to price according to market conditions, up or down. Economists defend scarcity pricing because consumers and producers are, respectively, "told" how much to conserve and to augment supply. Government influence to keep prices artificially low creates the misinformation that oil is not as scarce as it really is and discourages conservation, substitution, and greater supply. It also encourages exports to other countries that do not have similar price constraints. During supply disruptions, higher prices are the right signal.

Within hours ARCO responded to Bush's request by freezing prices.(26) The frozen prices, which were as much as 20 cents per gallon below the market, caused an estimated 160 stations to run out of gasoline each day. The freeze was consequently lifted by ARCO on August 30.(27)

A variety of governmental entities have joined the anti-market pricing crusade. The National Association of Attorneys General met to discuss "surging gasoline prices and the re-emergence of energy crisis related scams."(28) Attorneys general in Connecticut, California, Maine, Massachusetts, New Hampshire, Pennsylvania, and Vermont requested a federal investigation of gasoline pricing. North Carolina's attorney general filed suit against Exxon. The governor of Connecticut signed into law a measure prohibiting "unconscionably excessive" fuel prices during disruptions.(29)

On the federal level, the Department of Justice began an investigation of higher gasoline prices on August 6. Major oil companies, independent refiners, and marketers have been subpoenaed. The Department of Energy and the Federal Trade Commission are cooperating in that probe.

Bush's price restraint request had three major unintended consequences. It placed independent gasoline dealers in an even more difficult competitive position vis-à-vis their integrated rivals than they had been in before. Integrated majors could afford to underprice yet remain profitable because of their wellhead-to-pump efficiencies and ability to internalize prices. Independents, forced to buy supply on the spot market, paid full market prices. Consequently, majors underpriced the independents they competed against and to whom they sold gasoline wholesale. "Patriotism," complained the Society of Independent Gasoline Marketers of America, "is not a license to drive competitors out of business."⁽³⁰⁾ The political fallout tied to the issue led to the first public call by an industry trade association for reimposition of 1970s-style price and allocation regulation.⁽³¹⁾ The Petroleum Marketers Association of America, "in a fighting mood over alleged product price discrimination by major oil companies," filed a complaint of unfair competition with the FTC and passed a resolution favoring retail divorcement for integrated competitors.⁽³²⁾ In response to the divorcement stance, ARCO, one of the targets of the resolution, withdrew from the independent-dominated organization.

The second unintended consequence of the price restraint plea was increased exports of gasoline. A 17 cent per gallon price differential in favor of European markets triggered the largest gasoline exports from the United States in history--77,000 barrels per day. That was nearly a 90 percent increase from the previous month. Canada and Mexico were the primary beneficiaries, and Europe picked up the residual.⁽³³⁾

The third unintended consequence was profit taking on less visible petroleum products. The Air Transport Association complained that while the price of gasoline had risen only 28 percent since the invasion (from \$1.08 to \$1.38 per gallon), the price of aviation fuel had increased 137 percent (from \$0.59 to \$1.40 per gallon).⁽³⁴⁾ Although the disparity might be explained by the military mobilization, opportunistic recouping of crude oil price hikes through aviation fuel prices rather than through those of motor fuels (and heating oil, which was out of season) is also a plausible explanation.

Government officials should tell the public that oil prices can be expected to increase in response to present or prospective loss of supply--or better yet stay completely out of the debate. The government's foreign policy decision to cut off oil exports from Iraq and Kuwait guaranteed higher prices. Talk of a "military option" should the sanctions not have their desired result, which would put neighboring oil production at risk, drove crude prices to a new peak of \$40.42 per barrel on October 11. The truly "greedy" parties have been federal officials who want to have their cake and eat it too.

Inventory Interference

President Bush's decision to withdraw oil from the Strategic Petroleum Reserve for a test sale was accompanied by the statement, "There is no justification for intensive and unwarranted speculation in oil futures." He even went so far as to compare oil speculators with Middle Eastern merchants who defy the embargo. Spokesman Martin Fitzwater added, "Futures speculation just based on rumors or based on anticipation of war [is] not valid."⁽³⁵⁾ Although the administration backed off from that position the next day, the jawboning had been done. The free market had once again been criticized for doing its job. The price surge represented a renewed market push to expand inventory in anticipation of an offensive U.S. military action in the gulf. Oil was being stockpiled in anticipation of greater supply dislocations in the future.

The Strategic Petroleum Reserve

The 590 million barrel Strategic Petroleum Reserve has provided no relief. The predictable bureaucratic inertia-- "Let's not draw down now, the emergency might get worse"-- has prevented any drawdown except a token test sale of 5 million barrels to quell the political unrest.⁽³⁶⁾ Yet oil prices that neared and then exceeded \$40 per barrel presented a rare opportunity to recoup taxpayer funds by drawing down the SPR.

Only with perfect foresight can optimal decisions about when to inject and withdraw SPR oil be reached. The future is

uncertain, however, and political constraints worsen the problem. As discussed in more detail below, there will be a multiweek delay between the time the initial decision to draw down is made and the time the crude leaves the caverns. From the 1979 Iranian crisis to the 1990 Iraqi invasion, not a thimbleful of oil, except test drawdowns, strategically entered the market. That failure to perform has masked other problems that will be fully known only when a "crisis" drawdown occurs.

The Department of Energy

The DOE's contribution in the current "crisis" has been informational--and misinformational. Since the invasion, the department's public policy pronouncements have ranged from counterproductive to trivial.

Shortly after the invasion, the DOE stated that since oil stocks were high, "uncertainties in the Middle East [do not] . . . necessitate increases in prices for American consumers."(37) Deputy Secretary W. Henson Moore of the DOE joined with the Justice and Transportation departments to "express concern with the recent increases in the price of gasoline and the hardships they may be causing."(38) Three days later, DOE secretary James Watkins "praised the major oil companies who [had] quickly responded to President Bush's call for 'restraint' in raising gasoline prices."(39) Thus, the agency was actively party to Bush's price interference. Several weeks later, John Easton, the DOE's assistant secretary for international affairs and energy emergencies, testified before a House subcommittee that "shortages" could be expected in the fourth quarter of 1990 if the interruption continued.(40) While he hinted at an SPR activation, his prediction entirely overlooked the fact that shortages will not occur unless U.S. energy policy reverts to 1970s-style price and allocation regulation. Higher prices are one thing; shortages are quite another.

After the DOE held emergency meetings on ways to combat the oil shortfall, its major recommendation was to properly inflate tires, which would save an estimated 100,000 barrels of oil per day. Other recommendations were to van and car pool (90,000 barrels per day), observe speed limits (50,000 barrels per day), and use the most fuel efficient vehicle available (40,000 barrels per day).(41) Those recommendations are preferable to mandatory conservation, but the savings that following them would produce are trivial in comparison with those that would be spurred naturally by the price system. Stated a Wall Street Journal editorial, "The Energy Department's response to Saddam Hussein last week amounted to a seasonally adjusted version of Jimmy Carter in his green cardigan making his famous pleas for conservation."(42)

The DOE has announced oil-saving measures for its own operations, including switching to blended fuels where economical, checking tire pressure on departmental vehicles, observing speed limits, encouraging car and van pooling, and educating employees about conservation.(43) President Bush could save far more energy--and money too--by abolishing the Department of Energy.

The DOE missed another opportunity when it failed to oppose state set-aside programs at a meeting of the National Association of State Energy Officials in early October. Some 30 states have the authority to force oil companies to set aside between 1 and 5 percent of their oil supplies for state distribution. Instead of joining the American Petroleum Institute in opposing such programs, the DOE Office of Emergency Operations is developing a model to facilitate the states' efforts.(44)

The only promising departmental action is behind-the-scenes lobbying of other government agencies to reduce regulation. Agency officials have offered to mediate a dispute between Santa Barbara officials and Chevron so that oil can be pumped from the Point Arguello field off the southern California coast. The DOE is also working to resolve permitting problems with the Point McIntyre and Niakuk oil fields in Alaska. Energy secretary James Watkins has urged Federal Energy Regulatory Commission chairman Martin Allday to expedite certification of new natural gas pipeline capacity that would make it possible to use more natural gas in powerplants and reduce leasehold crude burning in enhanced oil recovery operations.(45) Regulatory reform to increase the ability of natural gas to substitute for petroleum is discussed below.

Policy Implications

The latest oil supply dislocation has inspired a variety of critics to sound the death knell for oil. Peter Nulty entitled a Fortune article "The Beginning of the End for Oil."(46) A Washington Post editorial reduced the energy question to

who would capture the revenue from higher prices--oil producers or the government?(47) Other editorials have rhetorically asked how America can break the oil habit.(48) The nuclear lobby, the U.S. Council for Energy Independence, has stepped up its campaign to revive the nuclear option.(49) The natural gas industry has touted the environmental and energy-security advantages of its product. Industry and nonindustry critics of imported oil have crowed, "I told you so."(50)

The anti-oil and anti-import lobbies are far wide of the mark. The present supply and price situation is the exception, not the rule, in what has been a buyers' market for oil for almost the entire 20th century. It has been nearly a decade since the last major supply interruption, and the present predicament occurred only because President Bush gambled that an embargo and threats of war could restore the former government in Kuwait.

There is little doubt that a return to normalcy in the Middle East would severely deflate the price of oil. Current prices reflect not only the embargo but a premium imposed by the threat of war. At the end of the embargo tax and the war premium, a buyers' market for oil awaits. There is a huge petroleum resource base in the world--over 1 trillion barrels of proven reserves--that, at present consumption levels, represents a 50-year supply. Sustained higher prices or technological breakthroughs will make possible much more secondary and tertiary production. OPEC's over-production problems will not go away as long as production capacity exceeds assigned quotas and prices remain above lifting costs. Saudi Arabia, Venezuela, and the United Arab Emirates have excess capacity that they plan to exploit in the future. Saudi Arabia is racing to restore production to around 10 mmbd. Venezuela, which recently reported a Prudhoe Bay-sized discovery of light crude, is gearing up to increase production from around 2 to 4.2 mmbd by 1996.(51) Iraq with Kuwait, or an independent Kuwait, may find that overproduction is profit maximizing. Concluded one oil and gas consulting firm:

It is difficult to see how OPEC will function effectively in the future, or if there will be a cartel at all. The lack of an effective cartel would be ideal for oil-consuming nations, but not U.S. oil producers. Lack of OPEC production discipline in the Middle East, coupled with extraordinarily low finding and lifting costs, could result in extremely low oil prices after the crisis.(52)

Non-OPEC producers will also produce and deliver more oil in response to higher prices.

The return to normal prices should not be allowed to mask major imperfections in U.S. energy policy. A number of market-oriented reforms should be implemented immediately. They would build on the following free-market reforms that contributed to increased supplies of and falling prices for oil and natural gas:

- * price and allocation deregulation in February 1981 and rejection of standby price and allocation controls in March 1982;
- * deregulation of natural gas imports in February 1984, repeal of the Powerplant and Industrial Fuel Use Act in May 1987, and enactment of the Natural Gas Wellhead Decontrol Act in July 1989;
- * abolition of the Synthetic Fuels Corporation in December 1985;
- * rejection of higher oil tariffs for budget reduction in 1985 and "energy security" in 1986 and 1988; and
- * repeal of the Windfall Profits Tax in August 1988.

What Not to Do: Increase Government Activism

Shortsighted calls for expanded government intervention in energy markets should be rejected. The current supply dislocation has brought Carter-era skeletons out of the energy policy closet: reimposition of price and allocation controls, enlargement of the Strategic Petroleum Reserve, regulation of oil futures trading, increased industry taxes, and stricter mandatory conservation.

Price and Allocation Regulation

The only thing that could turn the present supply dislocation into a full-blown energy crisis is price and allocation control. The Society of Independent Gasoline Marketers of America and the California Independent Oil Marketers Association have called for formal controls on the industry, but interest has been lacking among state and federal legislators. Their reluctance is well founded in both theory and the regulatory experience of the 1970s.

Bush's informal price interference should not be repeated. Full scarcity pricing is needed to prevent a reduction of supply that would inconvenience motorists and homeowners. With a profit-maximizing wellhead price variously estimated at between \$21 and \$25 per barrel, Saddam Hussein cannot inflict nearly as much damage as can pervasive 1970s- style regulation. One economist estimated that Iraqi-inflicted price increases in a worst-case scenario would lower GNP by less than one-half of 1 percent.(53) The government's only energy conservation and production policy should be to leave prices alone and give market incentives free rein.

Strategic Petroleum Reserve

Despite unprecedented criticism that the Strategic Petroleum Reserve has been poorly utilized in the current crisis, there have been calls to enlarge the stockpile from its present target of 750 million barrels to 1 billion barrels. The proposed 10-year, \$6 billion expansion is unwarranted.(54) Private entrepreneurship should be the first and last line of defense in an energy "emergency," given the real and theoretical problems of the reserve.

The SPR, hitherto unused when the opportunity seemed to beckon, has attracted media scrutiny that has uncovered a series of problems with the stockpile. A front-page Wall Street Journal evaluation pointed out the following problems: a distribution system untested in a true emergency, high-sulfur crude that cannot be distilled by many U.S. refineries, corrosion problems, the loss of a \$90 million facility when its oil is withdrawn, a requirement that only U.S.-flag tankers carry released oil between domestic ports, and a 10 percent DOE set-aside for political distribution.(55)

Are critics of the SPR just complaining after the fact about the costs of an insurance policy that has not been used? Or are there fundamental problems--retrospective and prospective--that suggest that the reserve has been and will continue to be a mistake?

Looking back, it is clear that the SPR has not been a success. It was authorized in 1975, but it was nowhere to be seen when the energy crisis hit in the summer of 1979. There were some 80 million barrels in the ground but no drawdown plan or drawdown capability. The SPR was solely an injection, not a withdrawal, program. All President Carter could do was to suspend purchases because of higher prices. With President Reagan's reserve build-up in 1981 and 1982, which reversed Carter's fiscal prudence, the average cost of a barrel of SPR oil shot up. Today some 590 million barrels of oil that have cost approximately \$20 billion are held in five caverns in Texas and Louisiana. Simple division gives an average cost of over \$30 per barrel. In 1990 dollars, the per barrel cost is more than \$40. The SPR has not only been expensive insurance, it has been prohibitively expensive insurance. And it is growing more expensive each day. Each year adds another dollar per barrel to the cost of the reserve.(56) In any case, the SPR will not "pay back its cost many times over" as one of its early government architects recently stated.(57)

How long will it take to effect an SPR drawdown, and will it be too late when the crude leaves the caverns? The procedure is for the Department of Energy to recommend a drawdown to the president. Then the serious politicking will start. For example, military interests will argue against a drawdown to preserve their stake vis-Ö-vis civilian supply. Assuming the president agrees to a drawdown, the DOE is to publish a notice of bidding, solicit bids, pick the winners, and physically draw down the oil. How long would it all take? The DOE estimates that it could all be done in 20 days, but that is just a "best guess."(58) Indecision could add weeks or longer. In the recent test sale of 5 million barrels, the time between Bush's withdrawal announcement (September 27) and the physical flow (late October/early November) was four weeks or more. More than 20 percent of the oil (1.1 million of 5 million barrels) attracted no bids because of quality problems. In addition to its prohibitive cost, the reserve has uncertain redemption value.

Even the belief that the reserve would "work" by damping a market panic and lowering prices has been deservedly criticized. For the petroleum industry, the prospect of a drawdown discourages precautionary ("speculative") stockpiling since government oil would be available and prices would fall when the SPR "flooded" the market. The National Petroleum Council has complained that "excessive reliance on early drawdown of SPR stocks in a disruption could . . . undermine efforts to encourage producer stockpiling and consumer conservation."(59) President Bush's

reluctance to begin a major drawdown has reflected those disincentives as well as concern about indirect federal price manipulation.

Recent pronouncements about when the SPR would be activated demonstrate that the incentives created by the reserve are a double-edged sword. The American Petroleum Institute has deviated from its free-market position to support the reserve as an alternative to price and allocation regulation. But the official line from the DOE and the International Energy Agency is that strategic stockpiles should not be activated until "physical shortages" appear.(60) What would trigger physical shortages? Federal price and allocation controls. The API should reconsider its pragmatic support; the Strategic Petroleum Reserve does not pass muster even as "second best."

Increased Regulation of the Oil Futures Market

In a classic case of "killing the messenger," ire over rising oil prices has been directed at the petroleum futures market. Critics believe that prices would not have increased as much or gone as high so quickly without that market institution.

The Commodity Futures Trading Commission, a federal oversight agency, recently exonerated the New York Mercantile Exchange before a congressional subcommittee. The CFTC found that

- * oil prices had risen less in the U.S. market than in foreign markets;
- * there had not been concentrated or manipulated buying and selling;
- * there had not been inordinate speculation but "a highly volatile component--the potential for war in the Persian Gulf";
- * futures prices had been in line with cash prices for immediate-month delivery at NYMEX delivery points;
- * traditional industry segments had dominated the futures market with less than 15 percent of open interest coming from noncommercial (speculative) players; and
- * Noncommercial participation had dropped since the invasion, and betting had largely been on falling rather than rising oil prices.(61)

The commission correctly concluded that price ceilings or more restrictive position limits on oil futures trading were unwarranted.

Industry Tax Increases

The price spike since the invasion has reawakened interest in some quarters in reimposing the Windfall Profits Tax.(62) Such a levy would eliminate the up side for the industry and stymie industry responses that would, in time, increase oil supplies. A reimposed tax would also create a paperwork burden similar to the one that existed before the tax was repealed. Millions of dollars were spent on compliance even though no revenue was collected.(63)

The 5 cent per gallon motor fuel tax recently enacted in the Budget Reconciliation Act of 1990 is yet another example of the government's indifference to high energy prices. Effective December 1, the federal gasoline tax now stands at 14.1 cents per gallon. It was 4 cents per gallon in 1983. That 250 percent increase in less than eight years is ironic given the admissions by Secretary of State James A. Baker III and National Security Advisor Brent Scowcroft that the case for war intimately involves ensuring reasonable oil prices for the U.S. economy.(64)

Mandatory Conservation

Mandatory conservation has wide support within the government and in academia. Obligatory conservation has many facets, from building-efficiency standards to automobile mileage standards. Unlike many other Carter-era regulations, mandatory conservation regulations survived the market-oriented policy reforms of the 1980s.

Soon after the Iraqi invasion, Sen. Richard Bryan (D- Nev.) sponsored a bill that would have increased the corporate average fuel economy standards for automobiles from the current fleetwide average of 27.5 miles per gallon to 34 MPG in 1995 and 40 MPG in 2001 to save an estimated 450,000 barrels per day beginning in 1995. The Bryan bill was rejected because Congress preferred a higher gasoline tax and the Bush administration, the Department of Transportation, the Department of Energy, and the Environmental Protection Agency opposed higher CAFE standards.(65) CAFE standards, critics argued, significantly increase the up-front costs of automobile ownership and encourage construction and sale of lighter vehicles, whose occupants are more likely to be injured or killed in traffic accidents.(66)

Approximately 123 million automobiles are currently operated in the United States, a 17 percent increase in the last decade. More than 2 trillion miles were traveled in 1989, a 36 percent increase from 10 years before.(67) Economic growth has allowed more Americans to own cars and to purchase larger, more comfortable, and safer vehicles that necessarily use more fuel per mile traveled. Those consumer choices are not per se grounds for condemnation. Motorists, as do other fuel users, balance the quality of consumption with the cost.(68) Higher fuel prices, to the extent they persist, will naturally encourage conservation. Forced fuel economy is anti-automobile industry, anti-oil industry, and, most important, anti-consumer.

What to Do: Increase Reliance on the Market

The argument against energy policy activism is not an argument for the status quo. The present crisis offers an opportunity to replace existing government intervention with free-market entrepreneurship. We could privatize the Strategic Petroleum Reserve, withdraw from the International Energy Agency, reduce energy taxation and government energy expenditures, increase drilling on public land, and deregulate natural gas.

Privatize the SPR

Expanding the Strategic Petroleum Reserve would be throwing good money after bad. Instead of remaining a valuable asset mired in the political swamp, the SPR can be turned into an entrepreneurial asset. The reserve can be privatized by selling off either the entire operation or its individual parts. The new owner or owners should have full rein to buy and sell SPR crude as they desire. Foreign ownership (by Saudi Arabia, for example) should not be prohibited. Even a decision by the new owners to liquidate the crude and mothball the reserve must be respected. After all, the private market would not have constructed the reserve in the first place.

Withdraw from the IEA

One of the two drawdown triggers for the reserve, in addition to a "severe energy supply disruption," is the energy-sharing program of the International Energy Agency. The IEA was founded in 1974 as a consuming-nation counterweight to OPEC. The United States joined in 1976. If any of the 21 member countries loses 7 percent or more of its crude, better situated countries, in theory at least, are obligated to share their supplies. (Tariff advocates emphasize that point to deprecate the contribution of the SPR in a future "emergency," since U.S. consumers would not receive the oil.) The IEA's major goals are to gather energy statistics to improve market information, promote conservation and international cooperation, and formulate plans for sharing supplies to mitigate price spikes in the event of a disruption and supply dislocation.(69) Whether intended or not, the SPR, which is greater than the combined stockpiles of the other 20 member nations, has become the linchpin of the contingency sharing plan.

The IEA is a problem waiting to happen. The major plank of the organization is a sharing plan under which member "surplus" nations would share supply with member "deficit" nations. Given the size of the SPR compared with that of other national stockpiles (14 nations do not have strategic reserves), it is more likely that the SPR will go to foreign markets than that stockpiles of foreign oil will be depleted to benefit the United States. Under the IEA guidelines, not only is the United States obligated to distribute SPR oil to any member country that loses 7 percent or more of its supply, the IEA secretariat decides at what price the oil will be sold.

The prospect of multinational price and allocation planning by an international energy czar is not enticing. Price and allocation planning in the United States in the 1970s was a disaster. Expanding regulation to the 21-nation "consumer cartel" will only compound the knowledge problem inherent in central planning. Regulators, no matter how well

intended, cannot be nearly as efficient as entrepreneurs and the market process.

The egalitarian world energy plan has a number of other problems. It rewards shortsightedness and penalizes foresight. The United States is the most likely supplier with the taxpayer on the hook for the difference between the selling price and the replacement cost. Like the SPR, the IEA crowds out private-sector entrepreneurship by flooding the market with crude and driving down prices. Private precautionary stocks--which can easily swing by several hundred million barrels in anticipation of oil disruptions or higher prices--are discouraged.

In a wide-ranging critique of the IEA, economist Rodney Smith concluded:

IEA policies--the consumption cutback scheme, import ceilings, stock management, informal sharing, sponsorship of joint R&D projects--have a poor performance record. The IEA has been a minor actor in the international energy situation. Rather than playing the role of director in the energy drama, the agency has been relegated to photographing market responses, tempered by independent national energy policies. This state of affairs may well have been fortunate for the energy security of the Western world, as well as for Western oil consumers.(70)

Clearly, the United States--whether the Strategic Petroleum Reserve is privatized or not--should withdraw from the IEA.

Reduce Energy Taxation and Expenditures

New energy taxes add insult to injury for consumers. Petroleum prices are already high thanks to domestic taxation and the recent foreign policy activism. State and federal motor fuel taxes account for more than \$0.30 of the \$1.34 per gallon price of mid-grade unleaded gasoline. The embargo tax and war premium of 25 cents per gallon bring the amount motorists are paying in direct and indirect government fees to approximately 55 cents per gallon, or 41 percent of the total price.

Motor fuel taxes, like other energy taxes, are regressive and discriminatory. The Department of Energy has estimated that families with incomes below \$5,000 per year spend \$770 a year on fuel compared with families with incomes above \$25,000, which spend \$1,440 a year.(71) That proportional discrepancy exists because a base amount of motor fuel is used by all motorists, regardless of wealth, and less affluent people often drive older and less well maintained vehicles. The tax also has an unequal incidence because the transportation needs of motorists vary. Motorists in the District of Columbia drive less than a third of the miles driven by Kentucky motorists, and drivers in the western United States drive much more than northeasters do.(72) Thus an equal cents-per-gallon levy affects some households much more than others.

Energy taxes should be reduced. Reduced taxes at the pump would directly lower prices for consumers; tax incentives at the wellhead would increase domestic production, which would also benefit consumers. The most recent example of the latter is the approximately 80 cent per million Btu tax break for coal-seam gas that in recent years has spawned proven reserve additions of as much as 100 trillion cubic feet, a 5-year supply of natural gas at the present rate of consumption.

The oil industry should call for a reduction in the tax burden and couple its request with specific spending cuts so that the public and the government no longer see tax relief as a "free lunch" for the industry. The industry does not have to look far for offsetting items. The Department of Energy's budget contains billions of dollars for energy-related projects that should be eliminated. All research and development expenditures, conservation programs, emergency energy management, power-marketing activities, and data collection and dissemination should be eliminated. Pet DOE projects such as the \$8 billion Super Collider should be targets for fiscal reform.

Abolition of the Department of Energy should be a priority issue. It will require courage and philosophical conviction on the part of the oil industry to lead the repeal of the major statutes responsible for DOE's mandates. The privatization of the department's five power-marketing agencies and four naval petroleum reserves, in addition to the Strategic Petroleum Reserve, would raise billions of dollars to support tax reduction and improve energy output by substituting private-sector entrepreneurship for bureaucratic mismanagement.

Increase Drilling on Public Land

Drilling on government land--offshore and in Alaska in particular--should be put back into political orbit. The irony of the recent federal offshore drilling bans, given the dangerous military operation in Saudi Arabia, was noted by one energy journalist. "Why . . . are U.S. leaders more willing to risk spilling American blood on the sands of Saudi Arabia than oil on the beaches of California and Florida?"(73)

Aggressive leasing of federal onshore and offshore properties should be pursued. Charles DiBona, president of the American Petroleum Institute, has identified the oil and gas production potential of some areas that are now off limits and estimated when their output could come on the market:

- * Point Arguello--80,000 barrels per day, six months;

hs;

- * outer continental shelf--750,000 or more barrels per day, 10-15 years;

- * Arctic National Wildlife Refuge--485,000 to 1,900,000 barrels per day, year 2005;

- * other Alaskan--666,000 barrels per day, after 2000; and

- * other lower 48--115,000 to 1,067,000 barrels per day, after 1995.(74

)

Total output would peak at between 2 and 5 mmbd of oil--a significant supplement to existing crude production of around 7.2 mmbd.

Offshore drilling would be much less political than it is today if federal and state lands, both onshore and offshore, were privatized. As long as oil-bearing lands remain in the public domain, politics will control. Applying homestead (first-user) principles to assign first title and, alternatively, simply auctioning property titles are two ways of privatizing government property.

Complete the Deregulation of Natural Gas

Natural gas has attracted increased interest in the wake of the Iraqi invasion as America's ace in the energy hole. Natural gas has a number of attractive properties. When burned, it releases smaller quantities of reactive hydrocarbons, carbon monoxide, carbon dioxide, particulates, and air toxics than do petroleum and coal. It is domestically produced; imports average less than 10 percent of national consumption. It is abundant, as evidenced by a 10- year gas "bubble." A 1.2 million mile pipeline infrastructure is in place, serving every major metropolitan area in the United States. Natural gas is potentially a perfect substitute for oil--usable in the home-heating, electric powerplant, and even vehicular (liquified or compressed natural gas) markets. The American Gas Association has estimated that natural gas has displaced around 160,000 barrels of oil consumption per day since the invasion and can displace as much as a million barrels of oil per day within a year.(75)

Unfortunately, the market share of natural gas has been limited by regulatory impediments. Although wellhead regulation has been largely removed, regulation of interstate transmission and distribution continues unabated. Creation of new pipeline capacity to gas-hungry markets such as Florida, California, and the Northeast has encountered multiyear delays. Those markets have been forced to rely on fuel oil, which has been much more expensive than gas. Repeal of the certification requirements of the Natural Gas Act is imperative.(76) Short of repeal, expedited certification would benefit new entrants and consumers.

Needed: A Free-Market Energy Policy

The central question in the current energy debate is whether the United States should have a national energy policy. A

coordinated program, proponents argue, would replace "today's structure . . . of incremental changes and decisions, [made] by a host of actors, many of which made some sense in their own context, but which no longer add up to a workable system, locally, nationally, or globally."(77)

There should not be a national energy policy implemented by the Department of Energy or a global energy policy directed by the International Energy Agency. Coordinated economic plans in the context in which they are proposed today smack of central planning--a discredited form of economic organization. The correct energy policy is a more modest but a far more dynamic and flexible one--thoroughgoing reliance on the free market, without help or hindrance from local, state, or federal authorities.

The Department of Energy has been devising a national energy strategy since the summer of 1989. The good news is that "a keystone of this strategy will be continuation of the successful policy of market reliance."(78) The bad news is that the NES promises to be status quo oriented--blessing the Strategic Petroleum Reserve, the International Energy Agency, mandatory conservation, government subsidies, the Natural Gas Act, and other government interventions. That leaves the free-market revolution unfinished. Yet the free market has never failed U.S. petroleum consumers in over a century of experience. Government intervention in energy markets has. The United States needs a free-market energy policy, not a nebulous national energy policy that invites government fine tuning with every new event in the world energy market. Only expanded reliance on the free market-- coupled with a more modest Middle Eastern foreign policy-- can make the 1990s another decade of increasing supply and falling prices for consumers.

Notes

- (1) The only gasoline lines were the result of promotional underpricing. At an Amoco station in Springfield, Missouri, where gasoline was sold at precrisis prices, a one-hour wait saved 34 cents per gallon. The voluntary queuing attracted persons with "more time than money." "Pre-crisis Gasoline Prices Draw Crowd," *Houston Post*, September 1, 1990, p. A21.
- (2) Daniel Yergin, Joseph Stanislaw, and Dennis Eklof, "The U.S. Strategic Petroleum Reserve: Margin of Security," Cambridge Energy Research Associates, Cambridge, Mass., 1990, p. 7. The largest decrease as a percentage of consumption occurred during the Suez War and reduced world supply by over 11 percent between November 1956 and March 1957.
- (3) For a review of Reagan's energy policies, see Robert L. Bradley, Jr., "Energy Policies: A Few Bright Spots," in *Assessing the Reagan Years*, ed. David Boaz (Washington: Cato Institute, 1988), pp. 305-19.
- (4) Ed Rothschild, in "Issue: Are Oil Companies Price Gouging Consumers?" *Oil Daily*, August 7, 1990, p. 5. Elsewhere Rothschild added, "They are cashing in on an opportunity, but this is nothing new." Quoted in "Consumer Groups Raise Charges of Profiteering," *Los Angeles Times*, August 5, 1990, p. A24.
- (5) Leslie Loddeke, "Oil Firms Gouging, Callers Say," *Houston Post*, August 13, 1990, p. A6.
- (6) Quoted in Caleb Solomon, "Oil Companies Bend in Wake of Public Outcry," *Wall Street Journal*, August 9, 1990, p. B1.
- (7) American Petroleum Institute, "Fact Sheet," Washington, August 28, 1990.
- (8) For an account of the crash of 1986, see Robert L. Bradley, Jr., *The Mirage of Oil Protection* (Lanham, Md.: University Press of America, 1989), pp. 8-9, 120-23.
- (9) Energy Information Administration, *An Analysis of Heating Fuel Market Behavior in 1989-90* (Washington: U.S. Department of Energy, June 1990), p. viii. See also John Lichtblau, "The Distillate Market Isn't Broken--So Why Fix It?" *Oil Daily*, July 30, 1990, p. 8.
- (10) James Tanner, "Supplies of Oil Start to Shrink, Firming Prices," *Wall Street Journal*, September 6, 1990, p. A3.

- (11) Anne Pearson, "OPEC Bows to Iraqis' Might," *Houston Chronicle*, July 29, 1990, p. 1F.
- (12) Matthew Wald, "U.S. to Sell Oil from Its Reserve to Ease Prices," *New York Times*, September 27, 1990, p. C8.
- (13) Cambridge Energy Research Associates, "OPEC Production," Cambridge, Mass., November 20, 1990.
- (14) Rose Gutfeld, "Increase in Production of Alaskan Oil Will Yield 226,000 More Barrels a Day," *Wall Street Journal*, September 4, 1990, p. A9.
- (15) Ken Herman, "State Gets OK to Boost Oil Production," *Houston Post*, August 1, 1990, p. C1.
- (16) "High Oil Prices Prompt Conversion Boom," *Gas Buyers' Guide*, October 29, 1990, pp. 1-2.
- (17) "U.S. Independents Respond to Market Prices," *Oil & Gas Journal*, August 27, 1990, pp. 16-17; American Petroleum Institute, "U.S. Oil Companies Respond to President's Call," Response no. 450, Washington, no date; "Iraq-Kuwait Crisis Likely to Hasten Increase in International Drilling," *Oil Daily*, August 8, 1990, p. 3; Susie Parks, "Enhanced Oil Recovery Projects Seen Increasing by 10%," *Oil Daily*, September 29, 1990, p. 1.
- (18) Energy Information Administration, EIA Reports (Washington: U.S. Department of Energy, September 21, 1990).
- (19) Personal communication from American Petroleum Institute, Statistics Department, January 11, 1991.
- (20) "Hedgers Enjoy an Edge As Oil Prices Swing," *Wall Street Journal*, August 29, 1990, p. B1.
- (21) "Join a Fuel Co-op and Beat the Price Gougers," *New York Times*, August 29, 1990, p. B1.
- (22) Philip Verleger, "U.S. Oil Crisis Management Falts," *Petroleum Intelligence Weekly*, August 13, 1990, p. 7.
- (23) Caleb Solomon, "Bush Allows Iraqi Oil to Unload," *Wall Street Journal*, August 6, 1990, p. A8; "Price Hikes, Fears of Oil Supply Crisis Trail Iraq Attack on Kuwait," *Oil & Gas Journal*, August 13, 1990, pp. 19-20.
- (24) "Aims in the Gulf," *Wall Street Journal*, November 7, 1990, p. A14.
- (25) The post-World War II spot gasoline shortages and near crisis in home heating oil resulted from heavy political pressure on the industry. The Truman administration's anti-inflation campaign led oil companies to hold the line on prices when they needed to increase them. For greater detail, see Robert L. Bradley, Jr., *Oil, Gas, and Government: The U.S. Experience* (Washington: Cato Institute, forthcoming), chap. 24.
- (26) Other oil companies that complied with the freeze request were Amoco, UNOCAL, Getty, Phillips, Chevron, and BP America.
- (27) OGI Newsletter, August 27, 1990; Marvin Murphy, "PMAA Gives Lopsided Verdict on Retail Divorcement," *Oil Daily*, October 10, 1990, p. 1.
- (28) Patrick Crow, "Outcry about Prices," *Oil & Gas Journal*, August 27, 1990, p. 23.
- (29) Bob Williams, "Price Gouging Controversy Plagues Industry," *Oil & Gas Journal*, August 20, 1990, p. 32.
- (30) Sam Fletcher, "Retailers Rap 'Irrational' Fuel Pricing," *Houston Post*, September 12, 1990, p. C-1.
- (31) Barbara Saunders, "Area Independent Marketers Want Government Controls Restored," *Oil Daily*, September 10, 1990, p. 5. The group was the California Independent Oil Marketers Association. Commented an attorney representing independent dealers, "Somehow it strikes me as strange that, at the moment the Russians are dismantling every last vestige of their failed Marxist-Leninist centrally planned economy, independent marketers are entertaining fond thoughts of federal price and allocation controls." Robert Bassman, "Divorcement, Divestiture and Recontrol?" *Journal of Petroleum Marketing*, October 1990, p. 10.

(32) Murphy

(33) "Price Imbalance Sparks August Gasoline Imports [sic]," Oil Daily, November 7, 1990, p. 8.

(34) "Oil Companies Gouging Airlines on Jet Fuel, Industry Group Says," Houston Post, October 25, 1990, p. D3.

(35) "Bush Taps U.S. Strategic Oil Stockpile," Houston Chronicle, September 27, 1990, p. 1A; Matthew Wald, "U.S. to Sell Oil from Its Reserve to Ease Prices," New York Times, September 27, 1990, p. C8.

(36) Public Law 101-383, 104 Stat. 727 (September 15, 1990).

(37) "Price Hikes, Fears of Oil Supply Crisis Trail Iraq Attack on Kuwait," p. 19.

(38) U.S. Department of Energy, "DOE News," August 6, 1990.

(39) U.S. Department of Energy, "DOE News," August 9, 1990.

(40) Tanner.

(41) Barbara Rosewicz, "Energy Department Unveils Strategy to Cut U.S. Dependence on Mideast Oil," Wall Street Journal, August 16, 1990, p. A16.

(42) "Oil Disarmament," Wall Street Journal, August 20, 1990, p. A8.

(43) U.S. Department of Energy, "DOE News," August 31, 1990.

(44) Lynn Garner, "State 'Set-Aside' Programs Eyed," Oil Daily, October 4, 1990, p. 1.

(45) "DOE Seeks Faster Action on Pipeline Projects," Natural Gas Intelligence, September 17, 1990, p. 5; "DOE Plans to Help Boost U.S. Oil Production," Oil & Gas Journal, September 24, 1990, p. 52.

(46) "Disorder in the Persian Gulf is looking more like the norm than the exception. . . . Even if this crisis goes no further . . . Iraq's invasion of Kuwait will be remembered as the beginning of the end of the age of oil." Peter Nulty, "The Beginning of the End for Oil," Fortune, September 10, 1990, p. 35.

(47) "Back to Energy Policy," Washington Post, September 18, 1990, p. A18.

(48) Barbara Rosewicz, "Crisis in Mideast Unlikely to Break Americans of Their Deep-Rooted Addiction to Imported Oil," Wall Street Journal, August 23, 1990, p. A16; Curtis Moore and S. David Freeman, "Kicking America's Oil Habit," Washington Post, September 16, 1990, p. B3.

(49) Robert Rosenblatt, "Nuclear Industry Tries to Make a Comeback," Los Angeles Times, September 9, 1990, p. D1.

(50) See, for example, Lee Iacocca, "We're Really over a Barrel Now," Houston Chronicle, August 20, 1990, p. 11A, and George Mitchell, "Blame Oil Shortsightedness, Not Price Gouging," Houston Chronicle, August 8, 1990, p. 29A.

(51) "Venezuela Planning to Boost Output by 2.2 Million Barrels," Houston Chronicle, November 25, 1990, p. 13F.

(52) "Can OPEC Survive the Crisis in the Persian Gulf?" JOFREE Letter, October 10, 1990, p. 2.

(53) David Henderson, "Sorry Saddam, Oil Embargoes Don't Hurt U.S.," Wall Street Journal, August 29, 1990, p. A10.

(54) Those estimates were made by the Department of Energy. See U.S. Department of Energy, The Secretary's

Annual Report to Congress: 1988-1989 (Washington: Government Printing Office, 1990), p. 125.

(55) Caleb Solomon and Rose Gutfeld, "Petroleum Reserve Has Lots of Oil, But Using It Could Be a Challenge," *Wall Street Journal*, September 5, 1990, pp. A1, A4.

(56) Assuming that the SPR has a market worth of over \$8 billion by valuing its oil at \$15 per barrel, the opportunity cost is around \$600 million annually using an interest rate of 7.5 percent. Dividing that amount by the 590 million barrels in the reserve gives a per barrel cost of 98 cents.

(57) Eric Zausner, "The Strategic Petroleum Reserve: Use It or Lose It," *Energy Daily*, August 23, 1990, p. 5.

(58) Conversation with Edward Badolato, deputy assistant secretary for energy emergencies, U.S. Department of Energy, January 18, 1989.

(59) Quoted in Mark Emond, "Strategic Petroleum Reserves: Boon or Boondoggle?" *National Petroleum News*, March 1988, p. 41.

(60) See, for example, *OGJ Newsletter*, August 13, 1990.

(61) Testimony of William Albrecht, commissioner, Commodity Futures Trading Commission, before the Committee on Governmental Affairs of the U.S. Senate, November 1, 1990.

(62) Other taxes, such as a general energy tax and a carbon tax, have been suggested since the invasion.

(63) "Trade Bill Signing Kills Windfall Tax," *Oil Daily*, August 24, 1988, p. 1.

(64) Stated Baker: "Perhaps most obviously, what is at stake economically is the dependence of the world on access to the energy resources of the Persian Gulf." Quoted in Walter Mossberg, "Bush Shouldn't Try to Hide Importance of Oil--the 'O' Word--in Gulf Policy," *Wall Street Journal*, October 29, 1990, p. A10. Stated Scowcroft: "Control of Kuwaiti production and reserves and either control or domination over Saudi production and reserves . . . [poses] a critical threat to the world economy. That gave this a vital dimension." Quoted in Gerald Seib, "Scowcroft, Once Obscured by Other Bush Aides, Emerges as Influential Player in Mideast Crisis," *Wall Street Journal*, October 17, 1990, p. A20.

(65) Rose Gutfeld, "Senate Supporters of Fuel Economy Bill Lose Vote, Dooming Measure This Year," *Wall Street Journal*, September 26, 1990, p. A2.

(66) "Back to the Past," *Wall Street Journal*, September 25, 1990, p. A14. See also Robert W. Crandall and John D. Graham, "The Effect of Fuel Economy Standards on Automobile Safety," *Journal of Law and Economics* 32 (April 1989).

(67) Motor Vehicle Manufacturers Association, *Motor Vehicle Facts and Figures--'90* (Detroit: MVMA, 1990), pp. 28, 50.

(68) "Energy is not an absolute value, but one that must be balanced against comfort, convenience and safety." Doug Bandow, "Fuel Economy Kills," *Wall Street Journal*, September 18, 1990, p. A24.

(69) See Daniel Badger, Jr., "International Cooperation during Oil Supply Disruptions: The Role of the International Energy Agency," in *Responding to International Oil Crises*, ed. George Horwich and David Weimer (Washington: American Enterprise Institute, 1988), pp. 1-6.

(70) Rodney Smith, "International Energy Cooperation: The Mismatch between IEA Policy Actions and Policy Goals," in *Responding to International Oil Crises*, p. 84.

(71) "IEA Gasoline Tax Report Illustrates Impact on U.S. Economy, Oil Industry," *Oil Daily*, February 24, 1989, p. 6.

- (72) For a comparison of motor fuel taxes by state, see Highway Users Federation, Highway Factbook (Washington: HUF, 1989).
- (73) Sam Fletcher, "U.S. Action Gives Hand to OPEC," Houston Post, August 12, 1990, p. D-4.
- (74) American Petroleum Institute, "Energy Policy Priorities," news release, Washington, May 10, 1990.
- (75) "Effect of Middle East Situation on the U.S. Natural Gas Industry," AGA News, August 9, 1990, p. 1.
- (76) See Robert L. Bradley, Jr., "The Natural Gas Act: A Case for Repeal" (Roswell, Georgia: Southern Regulatory Policy Institute, forthcoming).
- (77) Arjun Makhijani, "What World Needs Now Is Some Energy Sanity," Houston Chronicle, August 26, 1990, p. E1.
- (78) U.S. Department of Energy, The Secretary's Annual Report to Congress, p. 2.