

Sharing Shortages (Book Review)

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Responding to International Oil Crises, edited by George Horwich and David Leo Weimer (American Enterprise Institute, 1987), 313 pages.

In 1974, shortly after the Organization of Arab Petroleum Exporting Countries (OAPEC) imposed an embargo on the United States and on Holland, Secretary of State Henry Kissinger created the International Energy Agency, recruiting virtually all of the Western industrialized countries as members. One of the IEA's main purposes was to ensure that an embargo like OAPEC's could not happen again.

This was ironic, since the OAPEC oil embargo, like all selective embargoes of fungible commodities, was ineffective. If Saudi Arabia and Iran refuse to sell to the United States but still maintain production, then they have to sell more oil to, say, West Germany. But then buyers in West Germany will buy less oil from Venezuela and sellers in Venezuela will sell more to the United States. Suppliers and demanders are simply reshuffled. The net result is that everyone pays a slightly higher price reflecting higher transport costs, but no differential cost is imposed on the target of the embargo. The only way a selective embargo can hurt badly is if production is cut. But then all consuming countries pay more for oil. Again, the targeted country is not differentially harmed. The "oil weapon," selectively used, is a dud.

Whether Henry Kissinger understood this is not clear. What is clear is that the IEA members worked out a plan and even an explicit formula for sharing the oil in the event of a 7 percent or greater cut in world output, a so-called supply disruption. Under the Emergency Sharing System (ESS), countries with allocation obligations must offer to sell oil-at vaguely specified prices-to countries with allocation rights.

Meanwhile, the U.S. government unilaterally began to fill the Strategic Petroleum Reserve (SPR), a large reservoir of oil stored in salt mines in Texas and Louisiana to be used if world supplies fall by an unspecified magnitude for an unspecified

duration.

How should the US government respond to a large drop in oil supplies caused by a revitalized OPEC or by internal strife in Mideast oil-producing countries? Should it keep its commitment to the IEA's oil-sharing agreement? Should it draw down its stocks of oil in the SPR, either unilaterally or in concert with other nations that hold stocks? Should it try to act like a buyers' cartel, and if so should it do so by imposing import quotas? These and other questions are addressed in *Responding to International Oil Crises*, a collection of essays edited by George Horwich, professor of economics at Purdue University's Krannert School of Management, and David Leo Weimer, professor and deputy director of the University of Rochester's Public Policy and Analysis Program.

In his comprehensive analysis of IEA policy, one contributor, Rodney T. Smith, shows that the IEA's Emergency Sharing System would either be ineffective or harmful. Smith points out that if world oil supplies were suddenly cut, the world price would rise until markets cleared. The higher price would bring forth additional supplies from oil wells and from stockpiles, and would cause oil users to reduce their consumption. In his argument Smith assumes that the Emergency Sharing System is activated after the market has already adjusted to the disruption in supply. This assumption is controversial, and is disputed in a chapter in this book by Richard N. Cooper, former undersecretary of state for economic affairs under President Carter.

However, if the sharing is triggered by a recorded 7 percent or greater drop in oil supplies, then Smith's assumption has to be correct, because in order to share oil, you have to know how much is available. That is, you need data on current supply. But although the concept of supply in economics is well understood, supply itself can not be directly measured. What can be measured is consumption, which (assuming no change in stocks) will equal supply. This means that to know current supply, you have to know current consumption. I conclude that the sharing agreement can be triggered only after each country has already adjusted its consumption.

Smith, who shares this conclusion, proceeds to calculate the gains and losses from the ESS. He points out—as do Horwich, Hank Jenkins-Smith, and Weimer

—that buyers of oil in countries with allocation rights will not exercise these rights except at prices below the world price.

Therefore, for the ESS to have any effect, it must give buyers the right to purchase oil at below-market prices. But this presents a problem. For the IEA to get such supplies, a member government with an allocation obligation would have to buy oil from its residents. Such a purchase would drive the domestic price above the world price. Domestic oil users in a country with an allocation obligation would then buy more oil at the lower world oil price. The only way to stop them would be to restrict imports. Similarly oil prices in countries with purchase rights would be below world levels, causing residents of those countries to sell oil to users in other countries. The only way to stop them would be with export controls. The net result is inefficiency, because oil would be prevented from going where it is valued more and would instead be used where it is valued less. For a 7 percent reduction in supply, Smith estimates the aggregate loss in efficiency for the IEA members to be about \$1.1 billion annually.

This estimate is surprisingly small. On the other hand, the estimate by Horwich, Jenkins-Smith, and Weimer—\$ 116 billion—is surprisingly large. No attempt is made in the book to reconcile the two. The difference could be due to differences in the models. But then surely we should be skeptical about at least one of the models. Another possible reason for the difference is that in the model of Horwich, et al., oil-sharing (mysteriously) increases consumption by IEA countries and drives up the world price. Yet the increase in consumption is slight—0.8 percent. Would this drive up the price enough to cause an extra \$ 100-plus billion in losses?

Horwich, Jenkins-Smith, and Weimer, contrary to Smith, believe that the IEA could implement oil-sharing before the market has had time to adjust to an oil supply disruption. But the only way to do so, it would seem, is if the IEA bureaucrats are responding to an anticipated disruption, not to one that has already occurred. Otherwise, by the time the IEA gets together to implement oil-sharing, the world oil market already will have adjusted. How long after the Persian Gulf shutdown would oil traders in Tokyo be on their telex machines buying non-Persian Gulf oil? Not weeks, maybe not even days, but hours. That is what happened in 1979, when the Iranian revolution reduced production in Iran

and temporarily reduced supplies to Japan. According to Department of Energy veterans, the Japanese government contacted the US government for help in getting oil. The White House quickly held interagency meetings to discuss the situation. Forty-eight hours later, the White House contacted the Japanese, only to be told that there was no problem-the Japanese had already lined up alternate supplies.

Horwich, et al. do point out one potential offsetting benefit from the ESS. If each country's allowed consumption is treated only as an enforceable ceiling with no requirement that those with allocation rights exercise them-they call this "partial implementation"-then, they argue, IEA consumption will decline. The ESS will turn the IEA into a buyers' cartel and will drive the world price of oil down. The gains from cheaper oil, they find, can more than offset the loss from inefficient allocation of oil. The net result is a gain to the IEA members of about \$21 billion per year.

Interestingly, Horwich, et al. do not then conclude that the ESS should be partially implemented. Indeed they show that if the IEA begins with partial implementation, then pressure on member governments by special interests could quickly lead to full implementation with all its associated losses. Therefore Horwich and Weimer advocate that the United States withdraw from the ESS.

A better policy than partial implementation of the ESS, they argue, would be a "disruption tariff," that is, a tariff imposed on oil by all the IEA members during an oil supply disruption. Such a tariff, if imposed by all IEA members, would have the salutary effect of forcing down the world price without causing inefficient allocation of oil among IEA countries.

Not all of the book's authors are as confident as Smith or as Horwich, Jenkins-Smith, and Weimer that the world oil market would function so well during a disruption without mandatory oil-sharing. Dissenting from their view are authors Daniel B. Badger, Jr., a former IEA employee, and Richard N. Cooper. Badger claims that if the government did not intervene to allocate oil during a supply disruption, shortages and lineups would be inevitable. Oil companies would be "unwilling to assume the responsibility" of raising prices to eliminate shortages.

The truth is precisely the opposite. Shortages and lineups are inevitable when the government intervenes to control prices below market-clearing levels. That is the main energy lesson of the 1970s. When governments refrain from imposing price controls-as did the West German and Swiss governments during the 1970s, for example-oil companies are quite willing to "assume the responsibility" of raising prices to make millions of dollars in added profits.

Cooper's case for the ESS is more sophisticated. He argues not that prices will fail to clear the market quickly, but that the spot market will clear at an artificially high level. Why? Because most oil, according to Cooper, is purchased at contract prices rather than at spot prices. These prices, he claims, are "sticky"; they do not increase quickly when supplies fall. This stickiness, Cooper argues, puts a disproportionate burden of adjustment on spot prices. Invoking the ESS would allow oil users to avoid buying on the spot market and bidding the price so high.

Close scrutiny reveals two flaws in Cooper's argument. First, as Horwich and Weimer point out in their concluding chapter, contract prices are quite flexible: virtually all contracts provide for price changes every three months. Also, they point out, on 30 days' notice, sellers may terminate contracts or offer discounts. Second, and more important, even if contract prices were sticky, buyers who paid these low prices could simply turn around and sell the oil on the spot market, thus preventing spot prices from rising unreasonably.

Should governments stockpile oil for use during an oil supply disruption, not just for their own uses, but also for their residents'? Rodney Smith points out that if governments are expected to refrain from imposing price controls during a supply disruption-admittedly a big if- the anticipated high price is a strong incentive for companies and individuals to hold oil reserves.

Will they hold enough reserves? That depends, writes Smith, on two offsetting factors. On the one hand, when private storers sell off reserves during a disruption, they will benefit buyers by driving down the price. Because no individual storer will sell enough to have a perceptible effect on the price by himself, however, private storers will not take account of this beneficial effect (a positive externality) when storing oil in the first place. The result is an understocking of oil. On the other hand, notes Smith, neither will private

stockpilers take account of the increased price (a negative externality) caused when they add to their stockpiles. The result is an overstocking of oil. On net, as Smith concludes, one cannot say whether private stockpilers who do not fear price controls will build too few or too many stocks.

Given that governments have built large stocks, should they coordinate their draw downs? John Weyant believes they should. Coordination, writes Weyant, "may be required to ensure large aggregate draw downs" If this is so, might it not be because some governments want to maintain their stocks on the expectation that the disruption will last long and keep prices high? Surely this expectation could be correct. If so, are governments wise to risk exhausting all their stocks? A safer policy than Weyant's seems to be to let each storer, private or government, act on his expectations.

The authors, who address the issue of import quotas, unanimously agree on the perversity of import quotas. A whole chapter, written by Horwich and Bradley Miller, is devoted to showing the great harm that can be inflicted on the country that imposes quotas. Unlike a tariff, an import quota can cause a supplier with some monopoly power to raise the world price of oil. How? Imagine that the United States currently imports seven million barrels of oil per day and announces that henceforth it will limit imports to six million. OPEC can help accomplish this by raising the price until only six million barrels per day are demanded. Horwich and Miller show that such a price increase will occur even when OPEC is not a perfectly functioning monopoly.

In the final analysis, though some of the authors disagree, *Responding to International Oil Crises* makes a strong case against IEA-mandated oil-sharing during a supply disruption. The book is an important addition to the stock of knowledge available to policy makers.