
Protection for Petroleum Refiners?

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BARRING NEW LEGISLATION, the United States has moved into an era of unsubsidized, unprotected, and uncontrolled oil markets. With President Reagan's removal of price and allocation controls, the lone remaining government intrusion is the "windfall profits tax," in reality an excise tax on domestic crude oil production. Gone are the depletion allowance, the oil import quota and, with the latter, effective control over domestic production by state regulatory commissions.

But before anyone cries "free at last," there is one final battle to be fought. As in any regulatory drama, the cast of this one is replete with industry beneficiaries who do not easily give up their government subsidies. Some smaller refiners, favored by government programs for more than two decades, are now lobbying for assorted new protections and subsidies, foremost among them a form of allocation control that would operate in periods when imported crude was in short supply. For anyone who might believe that such controls would be temporary once installed, it should be

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pointed out that the allocation controls on crude oil that the President recently removed were first legislated by Congress in November 1973, in something called the Emergency Petroleum Allocation Act. In this business "emergencies" are long-lived.

Thus, the current debate within Congress over whether to establish government allocation of crude oil and refined products for "emergencies" or "supply shortfalls," however those are defined, could have more than a transitory effect on the petroleum market. Philosophically, the issue divides those who believe free markets always work best from those who believe they work poorly under conditions of supply shortfalls. At the more mundane level of self-interest, the issue divides the integrated refiners, who own or have firm contracts for foreign and domestic crude supplies, from the non-integrated refiners, who have opted to take their chances in the spot markets, winning when crude is abundant and losing when it is scarce. Non-integrated refiners want a program to allocate some of the cheaper crude to them when spot crude is scarce. Their proposals are based on what they believe are imperfections in the oil markets that result in unfair competi-

tion among refiners, shortages or high prices to consumers, and dependence on unreliable sources of petroleum products.

The General Case for Assisting Domestic Refiners

Supporters of allocation argue that, until recently, crude oil has always been available to the independent refiner, but that changes in the world market, in particular the use of direct sales to consuming nations and the reduction in arms-length sales by major oil companies, have left a much narrower market available to independent refiners. Since no refiner can operate successfully at less than a high percentage of capacity, some independent refiners may find themselves disadvantaged by a lack of raw material. As a result, an efficient and otherwise economically viable refiner may find itself bypassed by the world crude oil distribution system, with competition and economy reduced as a result.

The second issue raised by supporters of allocation concerns the reliability and competitiveness of imported petroleum products. (Over the last two decades, U.S. refiners were protected from foreign competition, first by import quotas and then by entitlement subsidies under the subsequent price control programs.) It is said that having to import refined petroleum products carries with it a national security risk similar to that involved in having to import crude oil. Furthermore, foreign refineries allegedly possess certain artificial advantages, such as lower pollution control costs and freedom from the Jones Act requirement to use more costly U.S. tankers.

Finally, it is claimed that because of changes in the demand for refined products, domestic refining is becoming unprofitable at the very time that refiners should be making investments in new capacity to meet that changing demand. This seeming paradox could lead to product shortages unless government action is taken.

The proposals for government action put forward at congressional hearings follow these concerns closely, calling for: (1) a systematic program of redistributing access to crude oil supplies in order to equalize availability or price or both; (2) tariffs or import fees to shelter U.S. refiners from foreign competition; and

(3) assorted tax incentives to make new refinery investment in the United States attractive.

In my view, each of these proposals is anti-competitive and would be costly to the American consumer. What they would do is not equalize the relative positions of independent refiners and major refiners, or U.S. and foreign refiners, but subsidize independent and domestic refiners without economic or national security justification. The disadvantages faced by domestic independent refiners, alleged to be artificial in some sense, are in fact primarily real. In some cases the disadvantages are technical, deriving from the scale of operations; in other cases they are organizational or managerial, the result of past business decisions. In any event, they surface at this time because the regulations and subsidies that have hidden them for more than two decades are now gone and refiners are exposed to the bright light of free market competition.

The State of Refinery Economics

Before we can deal with policy questions, we must understand where we are and how we got there. In the past decade, rising crude oil prices have raised prices of refined products to the point where the volume of these products that consumers now wish to buy falls far short of existing refining capacity. In other words, there is a world-wide glut of refinery capacity. Table 1 indicates how low the levels of capacity utilization have been around the world in recent years. These low rates are the natural result of higher crude prices. In general, a rise in the price of any particular factor of production reduces the demand for, and hence the value of, all complementary factors. Thus, the rise in crude prices has created a glut of tankers, pipelines, and gasoline stations, as well as refineries. This is not to say that each specific

Table 1
UTILIZATION RATES OF REFINERY CAPACITY,
SIX COUNTRIES, 1979-80

| Country | Rate of Utilization | |
|----------------|---------------------|------|
| | 1979 | 1980 |
| Italy | 48% | 48% |
| Netherlands | 65 | 62 |
| W. Germany | 71 | 66 |
| United Kingdom | 77 | 63 |
| Japan | 80 | 73 |
| United States | 83 | 74 |

complementary asset faces a drop in demand. Within the overall trends there are always sub-currents running in the other direction. Demand for light products such as gasoline will remain strong and the need for conversion capacity to yield unleaded gasoline will actually grow. But the underlying condition is general overabundance of refinery capacity.

The natural economic consequence of this is retrenchment. Some refineries will close as their profit margins fail to cover operating or variable costs. Which refineries these will be depends upon a host of factors, including the technical efficiency of the plant, its location, its product mix and required crude inputs, and, not least of all, the entrepreneurial abilities of its owners or managers. The process of retrenchment to a new equilibrium has been going on among foreign refiners, but not here, ever since the Arab embargo of 1973. It did not occur here because domestic refining capacity was sheltered from foreign competition, mainly through the entitlements subsidy, which gave all domestic refiners crude oil at prices below the world market. Note in Table 1 the relatively high levels of capacity utilization that U.S. refiners enjoyed in 1979-80. Even as late as January 1, 1981, in fact, they were operating at more than 77 percent of capacity. But this fell sharply with decontrol, reaching 67 percent for the week of July 17, 1981.

More than this, a specific class of refiners has been sheltered from even domestic competition—primarily by means of the “small refiner bias” that existed under both the entitlements program and the earlier Mandatory Oil Import Program. Because small refiners have been doubly sheltered, the adjustment to decontrol required of them is doubly severe.

Non-integrated refiners argue now that they are technically efficient firms with low or moderate operating costs, as long as they can obtain raw material on equal terms with integrated refiners. This is a specious argument. The economic measure of a firm is not its technical or engineering efficiency, but its ability to convert the least costly inputs into the most valued outputs. To succeed, entrepreneurs must be good at buying inputs and selling outputs. Otherwise, they should be employed as engineers, not as entrepreneurs. Refinery capacity that is efficient and well-located will in fact be utilized because it will,

through employment policy, sale, or merger, come under the control of better managers. In the end, the market will give us those combinations of equipment and managers that yield the lowest overall costs.

Equal Access

It is of course true that non-integrated refiners have more trouble keeping their refineries operating at high levels of utilization than integrated refiners, especially when crude oil is temporarily scarce. This is said to be a disadvantage to non-integrated refiners, which it certainly is, and thus a justification for government intervention to compensate for the disadvantage, lest efficient capacity lie idle and competition diminish.

But all business decisions have advantages and disadvantages. If they did not, making business decisions would be easy and decision makers would not be as well paid as they are. The advantage of buying crude in spot markets is that it has generally been cheaper there because those markets give refiners unlimited flexibility in their search for the best deal available at any particular moment. The disadvantage is that, in tight spot markets, crude may be more expensive and certainly is harder to come by than crude that is assured by long-term contract.

If the present disadvantages of past business decisions were an acceptable rationale for special assistance, however, integrated refiners would have to be subsidized in periods of crude abundance when spot prices fall below long-term contract prices. A symmetrical buy-sell program would have to be instituted that required non-integrated refiners to share the benefits of low spot prices with integrated refiners. More generally, all business decisions would have to be subsidized by government programs that distributed the advantages of “correct” decisions (at any point in time) to all competing businesses that had made “incorrect” decisions. It is easy to see what the outcome of that approach would be: there would be no incentive for any firm to make the correct decision, since any benefits would be distributed among all competitors.

A high quality of access to crude oil costs more than a low quality of access. Refiners who complain that they cannot conclude long-

term deals with foreign producing governments, because those governments require capital investments or tie-ins of various sorts, are merely recognizing the high price of access. It is understandable why they would prefer to acquire this access by having our government seize it from those who have already chosen to pay for it; it is not understandable why anyone would regard this as equitable.

But regardless of equity, such a program is clearly inefficient. Who would buy a high quality of access to foreign crude if the government could redistribute part of that crude without compensation? The proposal for a systematic program to redistribute high-quality access is a prescription for collective non-access. Such a program would run directly counter to one of the few unanimously held positions on national energy policy: the need for security of crude oil supplies.

The point is that to purchase or not to purchase quality access to crude oil is a business decision. Refiners do not come into the world integrated or non-integrated. They choose to become one or the other, and they will make the right choice only if they bear the costs and benefits of that choice.

Price and Availability in the Spot Market

A serious misconception about the world oil market is the belief that in "supply crises"—that is, temporary reductions in crude oil imports—"hectic" or "frantic" competition for limited spot market supplies results from the fact that refiners with insecure supplies must buy in that market. If those refiners had more secure supplies, it is thought, spot prices would not be bid up so high and official export prices would be restrained.

The fact is that the spot market does not care who buys in it or what fractions of the buyers' supplies are secure or insecure. It is the total demand for crude less the supply of crude from non-spot markets that determines demand on the spot markets. The same price will be realized whether the particular purchasers in that market are integrated or non-integrated refiners, "majors" or "independents," small or large, Americans or Germans. The mere shifting around of secure supplies from one refiner to another, or one nation to another, does not change the demand for spot market

crude. That demand can be reduced only by policies such as tariffs, which act directly on consumer demand, or by providing temporary increments to supply from inventories and thus reducing the need to buy in the spot market.

Ultimately, the reason for this is that the demand for oil does not originate with refiners or nations, but with hundreds of millions of individuals. No matter who acts as their intermediary, they will demand the same quantity of oil at any given price. The notion that equal access can help reduce "frantic" buying and hold down spot prices implies that shuffling the identities of the agents who purchase oil for consumers can significantly affect the market price of oil. Indeed, it implies that "majors" can buy a given amount of oil on the spot market more cheaply than "independents" can. This does not augur well for the "independents," since that is the market in which they must be superior buyers if they choose to remain non-integrated.

There is a further mistake in this argument. It assumes that the spot market price *determines* the official contract price of crude set by exporting countries. While it is true that producing nations watch the Rotterdam spot market price closely and indeed have followed that price with a lag in setting their official prices, it is incorrect to infer that the Rotterdam price *causes* the official price to be what it is. The spot market price is a function of overall supply and demand. The major producing nations, in particular Saudi Arabia, determine the supply. The Rotterdam price tells them how their production decisions have translated into market prices. The spot price is, therefore, a barometer measuring the price implications of their production decisions. If the spot price does not suit them, they will change their production decision so that it does. Thus, the causation in a cartel situation—more properly, a dominant producer situation—such as this runs from the supply or production decision to price, not the other way around.

If someone says that holding down spot prices during the past crises would have held down official contract prices, he must tell us where production would be greater today. Lower long-term prices require greater long-term production. Where today would production be greater if spot prices had somehow been lower during the past crises? This ques-

tion is difficult if not impossible to answer. There is no reason, therefore, to believe that a buy-sell program would have any favorable effect on world or U.S. crude or product prices.

While the insecurity of crude oil supplies has grown over the last decade, pushing even non-integrated refiners to lock up secure supplies, reliance on the spot market for some purchases is inevitable. It is fortunate, therefore, that this market has grown considerably during the same period. Since the Arab embargo, volumes traded on the so-called Rotterdam market have increased considerably. Open market sales of crude by producing nations—in contrast to nation-to-nation sales and parent company sales to affiliates—have grown from 7.7 M b/d in 1973 to 11.2 M b/d in 1979, or from 25 percent to 37 percent of the world crude oil market. This calls attention to the fact that insecurity of supplies implies not so much inability to obtain crude as inability to obtain it at a desired price. The vulnerability of the non-integrated refiner after decontrol is primarily a vulnerability to highly variable prices.

The Paradox of Profit and Loss

For some observers, there is a paradox in the simultaneous existence of low profitability for refining in the post-control situation and the need for new investment. This contradiction suggests to them that special incentives are needed to upgrade U.S. refineries.

The paradox is, however, only apparent. The lack of profitability and the need for investment refer to two different things. Distillation capacity, which yields a product mix slanted toward fuel oil and other heavy products, is unprofitable; conversion capacity, which upgrades heavy products such as fuel oil into more valuable light products such as gasoline and jet fuel, is and will be profitable. In an unregulated and unsubsidized market, distillation capacity will be reduced and conversion capacity will be expanded in response to their relative demands and profitability.

Concentration and Competition after Decontrol

One of the arguments used to justify assistance to the "independent" refiners, either by guaranteeing them access to supplies or by providing some other subsidy, is that the existence of

a large "independent" segment of the market increases competition. Part of the folklore of the petroleum market is that "independent" refiners provide a degree of competition disproportionate to their size. The absence of systematic research demonstrating that the "independents" play that kind of special role leaves the idea at best a hypothesis, and not a working assumption.

Compared to other industries in the United States, the degree of concentration in petroleum refining has always been moderate. In 1978, the four-firm concentration ratio for U.S. refiners was 32 percent (that is, the largest four firms accounted for 32 percent of all crude oil run through industry refineries), and the eight-firm ratio was 56 percent. With decontrol placing the industry squarely in the world refining market, the degree of effective concentration will be reduced even further. In 1978, the four-firm concentration ratio for world refining was about 22–23 percent, the eight-firm ratio about 33–35 percent. Transportation costs are relatively low in world petroleum trade and products flow quickly whenever price discrepancies open up. The domestic industry will be exposed to a huge export refinery capacity built in recent decades in the Caribbean, Mediterranean, and northern Europe. In the one refined product where free trade has been allowed in this country, residual fuel oil imports into the East Coast, U.S. prices are totally determined by the sum of foreign export prices and transportation costs. And while import volumes of lighter products are not apt to be as large as those of residual fuel oil, the vast capacity abroad will exert enormous competitive pressure on the U.S. market. The size of the domestic "independent" sector would seem to be an exceedingly minor factor in the context of this world market. Complete disappearance of the U.S. "independents"—something that is never going to happen—would raise the low world concentration ratios by at most a percentage point or two.

A more fundamental question is raised, however, when a subsidy is considered to help one segment of an industry compete with another. The economic purpose of competition is to select the lowest-cost firms and force them to pass their low costs on to consumers. Competitors that require subsidies to compete are not in fact low-cost firms. Subsidizing them

supports inefficiency, not efficiency. For this reason, academic economists condemn proposals to induce competition by protecting or preserving certain competitors.

Competition from Foreign Refiners

Finally, several miscellaneous arguments have been put forward in favor of protecting the domestic refining industry as a whole. First, it is said that the Jones Act, which requires that goods moving between U.S. ports be carried in more expensive U.S. tankers, artificially increases transport costs for U.S. refiners. Thus Gulf Coast refiners must use U.S. tankers to ship to the East Coast, while Caribbean and European refiners may use foreign tankers. Second, it is claimed that, in general, the anti-pollution requirements U.S. refiners have to comply with are stiffer and more expensive than those of their foreign competitors. Finally, it is said that reliance on foreign refiners compounds the crude oil insecurity problem. These arguments have led some to recommend a tariff on imported petroleum products (but not on crude).

The Jones Act requirement is an artificial disadvantage. Table 2 shows the cost of shipping a barrel of refined petroleum to the U.S. East Coast from various points in the world. By using cheaper foreign tankers, foreign refiners are able to offset substantially, and sometimes completely, the longer distances over which they must ship. But this disadvantage occurs rarely, because only 8 percent of U.S. petroleum product shipments are affected by the Jones Act. Moreover, it is a disadvantage shared by all other U.S. water shipments, none of which would be protected by a tariff on petroleum products. There is only one thing to do with the Jones Act, and that is to repeal it.

The more severe anti-pollution requirements imposed on U.S. refiners do, however, constitute a real disadvantage. Environmental costs are greater for U.S. refiners because our political system has made the judgment that the costs of allowing pollution to continue unabated would exceed the costs of cleanup. Some other governments have placed a much smaller value on anti-pollution activities. While refiners in any country may legitimately argue about the level of environmental standards, the costs associated with anti-pollution activities

Table 2
TANKER RATES TO THE U.S. EAST COAST, 1980

| Point of Origin | Per Barrel Rates for Clean Cargoes | |
|-----------------|------------------------------------|--------------|
| | Year 1980 | October 1980 |
| U.S. Gulf Coast | \$2.32 | \$2.46 |
| Caribbean | 1.71 | 1.40 |
| Mediterranean | 2.60 | 1.79 |
| Rotterdam | 2.50 | 2.25 |

represent as real a social cost as payments for wages and capital.

The argument that foreign refinery capacity creates a security problem has been especially vague. To begin with, there is currently a glut of refinery capacity throughout the world. Moreover, this capacity, unlike crude production capacity, is not concentrated; it is scattered through the Caribbean, northern and southern Europe, South America, and elsewhere. Third, if the most plausible of the possible supply interruptions should occur—a curtailment of crude from the Persian Gulf—there would be an even greater glut of capacity, and especially of conversion capacity, since Persian Gulf crudes are of only average quality while the high quality, lighter North African and Indonesian crudes would be unaffected.

Thus, the case for a protective tariff on grounds of either artificial economic disadvantages or real security risks is thin. There are reasonable cases that can be made for a tariff on imported crude, either on a temporary basis during supply interruptions (the so-called disruption tariff) or as a long-term measure to reduce the demand for imports and the associated risks. But these proposals have nothing to do with a purely protective tariff on refined products.

THE ARGUMENTS for special assistance to domestic refiners, or just to domestic non-integrated refiners, are based primarily on economic misconceptions. Unfortunately, weak arguments have not been a serious hindrance to the cause of domestic refinery protectionism in the past, as the record of the last six administrations shows. But this administration is seeking to forestall protection. Can President Reagan persuade Congress to go along? ■