EFFECTS OF COUNTERVAILING DUTIES ON NATURAL RESOURCE INPUT SUBSIDIES

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The report analyzes the economic effects of legislation (H.R. 2451 and S. 1292) that would apply countervailing duties on goods receiving natural resource input subsidies. It was requested by Congressman John J. Duncan, Ranking Minority Member of the House Committee on Ways and Means, and Congressman Bill Frenzel, also of that Committee.

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INTRODUCTION AND SUMMARY

The Congress is now considering legislation (H.R. 2451 and S. 1292) that would broaden the list of foreign government policies that are subject to countervailing duties to include the use of natural resource inputs at less than free market prices. This legislation comes in response to concerns that many foreign governments are subsidizing their manufacturers through the prices the governments charge them for natural resources, putting corresponding U.S. industries at a competitive disadvantage. This report analyzes the potential economic consequences of bills to counteract these subsidies. 1/

This legislation raises three issues. First, what is the basis for concern over natural resources priced below a "fair" price? Second, what constitutes such a "fair" price? Third, what would be the economic consequences of the import duties suggested by this legislation?

This report finds that this legislation could result in small increases in the price of many goods, but would not have substantial aggregate economic effects. The largest resulting price increases would occur in lumber and, depending on the scope of the bill, fertilizer markets. These results, however, are sensitive to assumptions regarding the definition of fair market price.

The report emphasizes the imports of manufactured goods that are produced using natural gas, petroleum, and timber. Several different cases

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1. The report does not address the question of the effect of such legislation on the General Agreement on Tariffs and Trade (GATT). The Administration has testified that this legislation in its current form would violate the GATT. See Testimony of Michael Smith, Deputy United States Trade Representative, before the Subcommittee on Trade of the House Ways and Means Committee (June 6, 1985).

may be distinguished. In the case of many goods derived from petroleum and natural gas (fertilizer, petrochemicals, and carbon black), imports often comprise a low proportion of total sales; there are several major foreign suppliers; U.S. exports are significant; and excess domestic capacity exists. Where this is the case, legislation would result in only small price increases because additional U.S. production and other imports would substitute for dutied goods. The lack of significant price effects in such industries would mean, however, that the legislation would not alleviate the depressed conditions in many of them.

In the case of cement, a duty would have a significant impact in some areas because of cement's low value-to-weight ratio, which makes transportation very costly. Some landlocked southern markets lack sufficient spare capacity to compensate for increased prices for Mexican cement imports.

In the case of softwood lumber, the United States has only one major foreign supplier (Canada provides 95 percent of U.S. imports) and the domestic industry lacks sufficient spare capacity to compensate. Given the special treatment accorded timber removal right sales in the proposals, the resulting tariffs averaging 14 percent should increase the price of all lumber sold in the United States. Even in this case, however, the overall effects would probably not be large; the maximum price increase would increase the cost of the average new house by $300.

NATURAL RESOURCE INPUT PRICING

When foreign governments charge low prices for the resources used in their manufactured goods that are exported to the United States, this is in effect a subsidy to U.S. consumers--it is as if foreign governments paid U.S. consumers to use their resources. On the other hand, competing U.S. producers and their employees stand to lose income from such imports. There is no simple way to compare a small benefit to many consumers and a larger harm done to a few producers and their employees.

The issue may be approached from another perspective: that of the overall well-being of the world trading system. The world's natural resources will be used most efficiently to the extent that they are traded at economically rational prices. This section, therefore, addresses the issue of identifying such prices.

H.R. 2451 and S. 1292 would expand the definition of a dutiable subsidy to include cases in which natural resources such as natural gas or petro-

leum (or their removal right, in the case of timber) are sold by a foreign government or one of its agencies to its domestic manufacturers at a lower price than the "fair market value" of the resource and are unavailable for direct export to U.S. producers at the same price.[2] The difference between the fair market value and the price users pay is then defined as a subsidy. (Government regulation of private sale prices below world levels is also considered a subsidy under this legislation.) If it were determined that a foreign government was providing a natural resource subsidy to its industries, then an offsetting or "countervailing" import duty equal to the subsidy would be placed on the good in question. In essence, the bill attempts to ensure that foreign governments charge their domestic users of government-owned resources the same price as foreign users would have to pay.

Fair market value is sometimes difficult to determine, and one of the central decisions the Congress must make in this case is how broadly or narrowly to define it. The broader the definition of fair market value, the more countries will be affected by the legislation. This section discusses the economic implications of alternative standards of fair market value.

Alternative Standards of Fair Market Value

H.R. 2451 and S. 1292 define fair market value as "the price that . . . a willing buyer would pay a willing seller for that product from the exporting country in an arms-length transaction . . . ." This definition as it stands suggests that the appropriate standard of fair market value is the input's "opportunity cost" (defined below). However, the legislation also directs the administering authority to consider the export price, the world price, and the price in other countries, including the United States, in its determination. Each could produce a very different estimate of subsidy. In general, defining fair market value in terms of economic opportunity cost will yield the most narrow definition of subsidy. On the other hand, using export, world, or U.S. prices as measures of fair market value will yield broader definitions of subsidy. This section discusses the implications of each of these standards.

Opportunity Cost. One interpretation of fair market value is based on the economic concept of opportunity cost. Opportunity cost is the highest price commanded by a scarce resource (in this case, natural resources) in an alternative use. By this definition, the subsidy is the revenue forgone by a

2. In order to be dutiable, an import also has to cause injury to the domestic industry.

government in selling a natural resource to anyone but the party willing to pay the most for it. For example, if a country can export all the natural gas it wants to sell at $4.65 per thousand cubic feet (mcf), then the opportunity cost of any other use of that gas is $4.65 per mcf. If it sells the natural gas to its domestic industry at $2.20 per mcf, it has forgone $2.45, ignoring any transportation or transaction costs. The government in this case would be subsidizing its industry by $2.45.

To apply the concept correctly, however, opportunity cost has to measure actual opportunities. For instance, in the above example, if the country's gas export capacity is fully utilized, then $4.65 may not represent actual opportunity cost. The actual opportunity may be the next highest valued use, which might, in this example, be $2.20 per mcf. Thus, a country could be exporting natural gas at $4.65 and charging its domestic industry $2.20 without subsidizing it in an economic sense.

Thus, while the concept of opportunity cost is straightforward, its measurement is not. Approximating opportunity cost requires the administrating authority to construct a counterfactual world and determine what prices would be in that world. Frequently, observed market transactions provide the relevant price and opportunity cost information. However, as suggested above and described in detail below, constraints on international transactions, productive capacity, and the like add ambiguities. Further, transportation costs often become more significant in international transactions, particularly for goods with large volume relative to value. Finally, with the volatile foreign exchange rates of the last few years, it is difficult to make meaningful international price comparisons at specific points in time.

Export Prices. Export prices are a straightforward measure of fair market value. There are, however, limitations to their use. First, if export prices are to represent fair market value, they must not be official prices but selling prices.[3] In the case of Mexican natural gas, the last export price was roughly $4.50 per mcf. Because that price was not supported by market conditions in the United States, and no gas has been exported from Mexico to the United States in almost a year, it does not reflect actual transactions. Similarly, in many oil exporting nations wide disparity exists between official prices and prices in actual transactions.

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3. In the case where an export price is set so high that no one is willing to buy at that price, then it is not the price a "willing buyer would pay a willing seller"--that is, not the fair market value of the definition.

In cases where an export source represents or could represent a large portion of a market, the export price may not reflect the price of the next unit of resource sold, or the revenue forgone by selling the resource to domestic industry at less than export prices. For instance, the Soviet Union exports roughly 5 percent of its gas. In order to increase its exports substantially, it would have to drop its export price significantly. Thus while the historical export price reflects the sale of the 5 percent that the Soviet Union actually exported, it does not necessarily reflect the price needed to export any portion of the remaining 95 percent.

Thus if the bill is interpreted to mean that the highest export price currently obtained for a resource is the fair market value, one level of subsidy would be obtained. On the other hand, if it is interpreted to mean that the export price for the next unit to be sold is the fair market value, then another level of subsidy would be obtained. The first may not truly reflect the economic cost of the resource, while the latter can be calculated with only a limited degree of confidence.

World Market Prices. For easily transportable commodities of even and predictable quality, world prices exist; these often determine prices in local markets. Many natural resources, however, present transportation difficulties or are of such uneven quality that their value, while related to the world price, cannot simply be extrapolated from it. In other cases, the relevant markets are regional. To use the world price, therefore, makes an assumption about the nature of the market and the commodity.

Domestic prices could also vary from world prices because of exchange rate fluctuations. A government could set a domestic price level for its resources and, in an attempt to keep domestic prices steady, allow its exchange rate-adjusted level to vary. In this case, the price of the asset, measured in other currencies, could be alternatively above and below the "world price." Furthermore, if world prices were measured in U.S. dollars by the administrating authority, foreign governments would have to continually increase the prices of their natural resources just to keep constant U.S. dollars prices.

U. S. Price. Using U.S. prices to determine the fair market value of natural resources would present several problems. Generally, the United States enjoys different productive capabilities than other countries and has different patterns of supply and demand. This is in fact the basis for trade between the U.S. and other countries. Using U.S. prices would negate these very substantial differences and could lead to misallocation of resources to the detriment of both U.S. consumers and foreign nations.

In the case of some commodities, the use of U.S. prices to determine the "economic cost" of a resource would present special problems. Natural gas pricing is at the heart of several of the disputes over natural resource subsidies. In the United States, roughly one-half of natural gas is still under federal price control and will remain so unless the Congress changes the Natural Gas Policy Act. Prices to final consumers of natural gas are also regulated by state public utility commissions. In this regulated environment, natural gas prices are the result of interactions between market forces and many layers of regulation. In many other countries, moreover, natural gas is not used for residential heating. Since residential heating is the highest valued use of natural gas, U.S. prices can be expected to be higher than those in other countries.

The Price of Substitutes. In comparing domestic natural resource prices with export or world prices of the same commodity, the legislation ignores one major factor in the determination of the market value of these resources: substitution.[4] Natural gas and oil are to some extent substitutes. If a country cannot export the natural gas it produces, it can usually export oil and so the domestic value of its natural gas is the value of the oil it displaces. However, most countries that have both natural gas and oil recognize this substitutability and have made major efforts in their industrial policies to substitute natural gas for oil. By now, many if not most countries have exhausted the "inexpensive" substitutions and a true "oil-equivalent" price must also include the additional cost of converting the capital stock from the use of oil to the use of natural gas. Such calculations require detailed knowledge. The exporting country may also lack the financial resources for completing the conversion. For these reasons, arriving at an "oil-equivalent" price may be difficult--and perhaps administratively infeasible.

Applying These Concepts

Assuming that an adequate index of fair market value can be determined, the question remains of how to apply that index in specific situations. In some cases, it is not the resource itself that is sold but the right to remove the resource. In other cases, the accessibility of foreign markets is an

4. In a country with developed markets the price of a commodity reflects the price of its substitutes. However, in most of the countries discussed in connection with this legislation, the government, not the market, sets the price for the relevant commodities and the nearest substitutes, most often natural gas and oil.

important question. In yet others, the resource sales price is not readily identifiable. This section addresses these issues.

Removal Rights. In timber sales, transactions frequently involve the right to remove timber, as opposed to cut timber or lumber. The bill excludes from its calculation of domestic price and fair market value the cost of any activities that are undertaken as part of the contract for removal rights. It would not, for example, include the building of roads or reforestation mandated by timber cutting contracts; the comparison appears to be limited to cash payments. Canadian timber contracts, which are the main concern of the removal rights section of the bill, include road building and reforestation provisions more often than do contracts in the United States. Hence, simple comparisons of the cash price of removal rights would tend to understate the total costs to producers in Canada. To the extent that is is so, the bill does not provide for an economic comparison of U.S. and Canadian timber pricing: the economic subsidy, defined as any difference between the price and the opportunity cost, would be overstated.

Market Access. The legislation directs the administering authority to consider access to international markets when determining fair market value. Beyond netting out transportation and handling costs, which the legislation directs the administering agency to do, there is the question of how the transportation infrastructure fits into the national development strategy. For instance, in order to export its natural gas, Saudi Arabia would have to build expensive liquefaction plants. Having made this investment, it could then export only to countries with suitable receiving facilities to deliquify and pump the gas. Because relatively few countries have such facilities, Saudi Arabia might then face a glutted and chancy liquified natural gas (LNG) market. The bill does not offer guidelines for determining the level of investment and risk that would have to be made or assumed in order to export, and, in many cases, implies important decisions regarding a nation's industrial development strategies.

Identifying the Resource Input Price. In the case of some commodities, the government price of the resource input is not published so that determining the transfer price or implicit price is often difficult. This is especially so where there are joint products and/or products that have multiple uses. In petroleum refining, from four to six major products and many minor products are normally produced. The proportions in which these products are produced can be and are shifted within limits to meet market needs. While some, like gasoline, only have one use, others, like distillate oil, have several. In addition, the demand for different products shifts seasonally and in different cycles.

To determine the cost of crude oil from the prices of a refined product, a "net-back" calculation is usually made. For example, in the U.S. Gulf in the summer, the typical refinery run of Saudi Arabian "light" (34 degree) oil will produce 49.4 percent gasoline, 20.7 percent diesel or number 2 (distillate) fuel oil, 25.9 percent number 6 (residual) fuel oil, and a small percentage of other products.[5] Gross product worth is then calculated by multiplying these physical yields by the prevailing spot market prices for those products. Shipping costs and the estimated variable production costs of U.S. refiners are then deducted. What remains is the implicit worth of crude or "net-back" contained within those refined products.

Clearly the crude oil cost implicit in the price of one refined product depends on the prices and output levels of every other product that refinery produces. Since output varies from refinery to refinery, from season to season, and from crude oil to crude oil, precise estimates are impossible to obtain for specific refineries. Market analysts often use refinery averages, but the range of variation of individual refiners around the average can be 10 percent to 15 percent.

Identifying the Subsidy. Even if the input price is published, identifying the value of the subsidy is not straightforward. There is no reason to assume that manufacturing technology is constant across countries or to assume that firms choose to use inputs in the same proportion everywhere. Not only does the state of the art vary across countries, but countries have different wage and other input prices and might easily produce the same output using different amounts of natural resource input. Since the subsidy (and, should the legislation pass, the countervailing duty) is the difference between the government price and the fair market value times the amount of natural resource input used, specific knowledge about the production quantities is needed. However, obtaining good information about production in foreign countries is difficult. While there is a sense that U.S. plants are often among the most efficient and so any subsidy estimate based on U.S. plants will be the lower bound, this need not always be the case.

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5. *Petroleum Intelligence Weekly*, April 22, 1985, Supplement Page 9. These calculations were made before the new regulations on leaded gasoline came into effect. Those regulations will make calculation of the netbacks even more difficult because it may further exacerbate the difference in demand for gasoline and other products by country.

FAIR MARKET VALUE OF SELECTED COMMODITIES

In theory, imports of all resource-intensive goods from any country may be open to legal challenge by domestic producers under this legislation. This report emphasizes the areas where foreign producers are most likely to be challenged. Using the criteria established in the previous section, this section analyzes the fair market value of natural resources most commonly discussed: natural gas, oil, and timber. The processed commodities most widely discussed include petrochemicals and/or fertilizers produced from natural gas in Canada, Mexico, Trinidad and Tobago, Saudi Arabia, and the USSR; carbon black and cement produced from Mexican natural gas and fuel oil; imported refined oil products in general; and lumber from Canadian timber. Manufactures that might also be held dutiable under this legislation include pulpwood, newsprint, plywood, lime, ceramic tiles, float glass, and some primary metals.

The Markets for Natural Gas

Because of its physical characteristics, the price of natural gas is often much lower than its energy content would suggest. While natural gas is a highly valued fuel from the point of view of the end user, its high transportation costs and infrastructure requirements make the markets for natural gas very regional. In addition, natural gas often is a by-product of petroleum production, and must be used, reinjected (a costly procedure), or flared. Adding further downward pressure to the price of natural gas is the fact that it can only rarely be used for transportation, which is the highest valued use of petroleum. Rather, it often finds itself in competition with residual fuel oil, the lowest valued use of petroleum, or with coal.

Mexico. The market for natural gas in the U.S. southwest is so depressed that, until recently, Petroleos Mexicanos (PEMEX), the Mexican national oil and natural gas company, would not have received much more for its natural gas abroad than it did for selling to its domestic industry. 6/ The industrial price for natural gas within Mexico was $1.71 per thousand cubic

6. While domestic Mexican natural gas and oil prices have traditionally been low, the Mexican government has recently attempted to bring domestic prices in line with international prices, although the process is not yet complete.

feet (mcf) in December of 1984. 7/ In June of 1985, the price was $2.12 per mcf. The spot price for natural gas currently in Southern Texas is in the $2.40 to $2.50 per mcf range and has been falling. 8/ Deducting the cost of transportation from the Mexican border (10 cents to 15 cents per mcf), this leaves $2.30 to $2.40 as the current spot price at which Mexico might be able to sell its gas at the U.S. border. But if Mexico attempted to export much gas into Texas now, the spot price would probably fall further. Thus while the fair market value for Mexican natural gas may be above the recent industrial price, it is not as far above as in 1984 when Mexican natural gas exports were selling for $4.50 per mcf.

Fluctuating exchange rates might also present a significant problem in calculating Mexican resource prices. Because of the depreciating peso, some Mexican domestic energy prices have fallen relative to U.S. prices, rather than increased. Moreover, exchange rates can be volatile. In the absence of complete natural gas and oil price decontrol in Mexico, keeping Mexican resource prices in perfect alignment with U.S. natural resource prices is a difficult task.

Due in large part to the declining value of the peso, goods produced with natural gas in Mexico might be subject to a countervailing duty under this legislation. Mexican natural gas prices are rising at a rate of 0.52 pesos per month. 9/ Despite this rise, the fall in the value of the peso from 227 pesos to the U.S. dollar in June to 330 pesos to the U.S. dollar in late August results in a decline in Mexican natural gas prices in U.S. terms from $2.12 mcf in June to approximately $1.54 in late August. 10/ Assuming

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7. International Trade Commission. *Potential Effects of Foreign Governments' Policies of Pricing Natural Resources* (May 1985), hereafter referred to as *Foreign Pricing Policies*, p. 35. For later prices, see Economic Consulting Services, "Proposed Legislation Concerning Foreign Natural Resource Subsidies: An Analysis of Possible Subsidy and Offsetting Duty Levels" (June 1985).

8. The Tenngasco Exchange posted the $2.40 price for Tivoli, Texas. For a complete listing of prices, see *Foster Report* No. 1525. See also *Inside F.E.R.C.'s Gas Market Report* (July 12, 1985).

9. See Petroleos Mexicans, "Comments Submitted to the International Trade Commission: Potential Effects of Foreign Governments' Policies on Pricing Natural Resources," February 13, 1985, Appendix 1, p. 8.

10. Assumes that Mexican natural gas prices continued to rise at their previous rate from June to August.

Mexico could sell all it wanted at the current spot price ($2.30), the subsidy--using this export-barrel opportunity cost as the criterion of fair market value--would be $0.76 per mcf. In contrast, if the official, but unsupported, export price ($4.50 per mcf) were used as the basis for the fair market value, the subsidy would be $2.96.

Canada. Natural gas prices in Canada are in the process of being made market-sensitive. The target date for a natural gas pricing plan is November 1, 1985, although some slippage in that date is to be expected. Should Canadian natural gas authorities fail to agree, or if decontrol is partial and lengthy, as it has been in the United States on a decontrol plan, then Canadian natural gas-intensive exports to the United States might be subject to countervailing duties under this law. 11/

Responsibility for pricing natural gas within Canada and for export is divided between the federal government and the provincial authorities. Currently, natural gas exported from Canada cannot be sold for less than the wholesale price in Toronto (Toronto City Gate) on the theory that foreigners should not pay less for Canadian resources than do Canadians. 12/ Toronto City Gate is set at 65 percent of average refiner acquisition cost of crude oil, roughly $3.00 per mcf (in U.S. dollars). Gas that stays within the province of origin (most often Alberta) is priced by provincial authorities. Currently the price within Alberta (the Alberta Border price) is $2.20 per mcf. The difference between the Toronto City Gate and the Alberta Border price is principally transportation costs. There are points in the United States, however, closer to Alberta than is Toronto, which is close to 2,000 miles distant. In this case, the requirement that Canadian export prices be above Toronto City Gate precludes additional exports at prices above the Alberta Border price, but, because of lower transportation costs, lower than Toronto City Gate.

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11. Even if the Canadian federal government decontrols natural gas prices, provincial governments are likely to continue to set prices, as state public utility commissions do in the United States. Depending on the actions of the these provincial governments, Canadian imports might be held dutiable under this bill even after decontrol.

12. The Canadian National Energy Board has to approve all export sales. There are criteria besides the Toronto City Gate price. And recent exports have often been at prices substantially above Toronto City Gate.

Union of Soviet Socialist Republics (USSR). Soviet exports of natural gas are limited by politics and Western European demand. Currently about 5 percent of the 16.6 trillion cubic feet (tcf) produced in the USSR is exported to Western Europe. Given these limitations, the opportunity cost of Soviet natural gas is well below the $3.30 to $3.70 per mcf the USSR is believed to receive currently from its exports. 13/ Their domestic prices reflect this differential: the International Trade Commission (ITC) reported that estimates of industrial prices for natural gas ranged between $0.50 and $2.85 per mcf. 14/ Since the legislation requires the administering authority to take into account "availability to the exporting country of (export) markets...," the lack of opportunity for the USSR to increase its exports could be interpreted to mean that much Soviet natural gas is correctly priced. Assuming Soviet export prices and domestic prices are $3.30 and $1.30 per mcf, respectively, then the subsidy under a broader interpretation of the legislation would be $2.00 per mcf. 15/

Attempting to enforce a higher domestic price in the USSR would present a dilemma for U.S. authorities. In order to argue that Soviet industries be charged more, U.S. authorities would have to at least concede the potential for increased Soviet natural gas exports to Europe. On the other hand, the policy of the Administration is to limit such Soviet exports for security reasons.

Saudi Arabia. Saudi Arabia currently lacks the capacity to export even a significant fraction of its natural gas, most of which is associated with oil. Until and unless the Saudis build liquefaction facilities, any price that recovers the cost of the natural gas collection system will exceed the opportunity cost. Currently, Saudi industry reportedly pays $0.50 per mcf to

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13. These prices are net of transportation. See also *Foreign Pricing Policies*, p. 93. For higher estimates, see Economic Consulting Services, "Proposed Legislation Concerning Foreign Natural Resource Subsidies: An Analysis of Possible Subsidy and Offsetting Duty Levels" (June 1985), p. III-8.

14. Ibid. The ITC notes that these estimates are subject to considerable uncertainty because they are constructed from export prices of finished and semifinished goods. See Appendixes I and K of *Foreign Pricing Policies* for examples.

15. Obviously, using different ends of the domestic and export price ranges would result in either much larger subsidy estimates or much smaller subsidy estimates. This wide variability of subsidy estimate illustrates one of the administrative problems this bill would create when being applied to economies without fully developed markets.

recover its gas.[16] The Saudi government has little reason to consider the LNG market, the immediate alternative use for its natural gas. Only in the Japanese market is there even the potential for profit and that market is already served by Indonesia, Malaysia, and the United States. Thus, under a narrow interpretation of the bill, Saudi Arabia might not be considered as subsidizing its natural gas consumers. Under the broader interpretation of the bill, however, the highest price Saudi Arabia could conceivably get, if it made successfully the requisite investments in liquefication and transportation, might be used as the fair market value. LNG sold in Japan for roughly $5.11 per mcf in 1984. Assuming 10 percent material loss, $1.44 per mcf transportation cost, and $1.38 per mcf liquefaction costs, and ignoring any depressing effect Saudi LNG would have in the Japanese market, in order to sell in Japan at $5.11 per mcf the net price for Saudi natural gas exports to Japan would have been $1.25 per mcf.[17] Given a domestic price of $0.50 per mcf, the subsidy would be roughly $0.75 per mcf.

Trinidad and Tobago. In order to export its natural gas, Trinidad and Tobago would have to develop facilities to produce LNG. Given that the U.S. LNG market is small and U.S. domestic natural gas prices are low, the export market for such LNG would be poor. As noted above, European prices for Soviet natural gas are also low. Consequently, the fair market value of natural gas there may be its cost of production.

Crude Oil

Unlike natural gas, crude oil is easily transported and sold on world markets. Thus at first glance it would seem that the fair market value of oil for domestic producers would be the world oil price. Because of recent softness in the world oil markets, however, many producers have a great deal of production capacity sitting idle. This is especially true of members of the Organization of Petroleum Exporting Countries (OPEC), although other

16. *Foreign Pricing Policies*, p. 70.

17. Robert DiNapoli, "Economics of LNG Projects," *Oil and Gas Journal*, February 20, 1984, p. 48. See also Economic Consulting Services, "Proposed Legislation Concerning Foreign Natural Resource Subsidies: An Analysis of Possible Subsidy and Offsetting Duty Levels," June 1985, p. III-11.

nations are also laboring with excess capacity. In their attempts to increase their crude output, OPEC members often cheat on the cartel and sell their refined products at discounts. The official export price of each country's crude oil is higher than the price of the crude implicit in the discounted refined products. These discounts, however, help put pressure on OPEC to reduce its prices. By reducing the benefits of selling discounted refined products, this legislation could reinforce OPEC price discipline. Federal agencies might find themselves both condemning cartel pricing and administering it.

Conversely, if OPEC nations restrict exports in order to support world oil prices, yet sell out to domestic users at lower prices, they are subsidizing their industries. In fact, because refined oil products are priced below the world market in many countries, including OPEC and Mexico, many manufactured goods produced in those countries would be subject to countervailing duties under this proposal.

Canada. As of June 1, 1985, petroleum prices in Canada have been decontrolled.

Mexico. Mexican domestic oil prices have been rising recently toward world price levels, but the differential remains large: in June, Mexican residual fuel oil prices were $8.19 per barrel. Because of exchange rate fluctuations, by August they had fallen to approximately $5.90 per barrel. 18/ By contrast, the New York spot price for heavy fuel oil during this period was $22.00 per barrel. 19/ Assuming $1.00 transportation costs, the subsidy under this legislation would be estimated at $15.10 per barrel, or 256 percent of the Mexican selling price.

OPEC. This legislation would affect OPEC members in two ways: in their oil-intensive manufactured exports and in their refined product exports. In most OPEC countries, domestic refined oil product prices are set below world and/or export prices for similar products. 20/ Manufactured products that use a significant amount of these low-priced refined products, such as cement from Venezuela, may be subject to duties under this legislation.

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18. Assumes Mexican fuel oil prices continued their previous rate of increase between June and August.

19. Ibid.

20. *Foreign Pricing Policies*, p. 72.

While OPEC attempts to enforce a uniform level of export prices for crude oil and products among its members, the needs of each government result in cheating and discounts, often in the refined products market. Furthermore, many OPEC countries have built and are building modern refining facilities. Currently, OPEC refining capacity-utilization levels are above world levels, suggesting that OPEC is directing incremental oil production to these refineries and may be increasing their output through reduced crude prices. 21/ Such reductions might be dutiable.

Timber

Canada may face significant countervailing duties on timber products as a result of the proposed legislation. Approximately 90 percent of Canadian timber land is owned by the provincial governments. The price of stumpage (standing timber) in Canada is therefore mostly determined by government policies.

The provinces of British Columbia (B.C.) and Quebec provide the bulk of Canadian lumber imported to the United States, and their pricing policies are indicative of how stumpage prices are determined in Canada. 22/ Stumpage prices in British Columbia are set using the residual value method. The residual value method takes as its base the selling price of the end product and makes deductions for transportation and operating costs and for profit and risk to arrive at the stumpage price. The residual value method is also used in the United States to determine stumpage prices. In the United States, however, residual valuation only provides the base price used in the competitive bidding process whereby the final selling price is determined. In 1983, the different appraisal systems led to stumpage prices for fir, for example, of U.S. $10.08 per thousand board feet (mbf) in the Canadian B.C.

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21. Petroleum Industry Research Foundation, "Outlook for Light Product Imports into the United States" (New York: June 1985), p. II-4.

22. British Columbia accounts for approximately 58 percent of exports to the U.S. and Quebec accounts for about 14 percent.

region compared to a U.S. price of $50.35 (in U.S. dollars per mbf) in national forest lands in Washington and Oregon. 23/

In addition to cash payments for stumpage in Canada, the holders of removal rights face significant costs for activities, such as road construction and reforestation, that are delegated to them under the cutting agreements. Basing Canadian stumpage prices on cash payments only, as the bill proposes to do, does not reflect the full cost of stumpage in Canada.

Under the bill's definition of fair market value, it is most likely that the administering authority would determine that areas of the United States are comparable regions, and U.S. stumpage prices would most likely serve as the fair market value. Most U.S. cutting agreements, however, do not delegate activities such as reforestation to the holder of the contract. Agreements for cutting on government-owned land, for example, never delegate such responsibilities in addition to cash payments for stumpage. 24/

The additional costs borne by the holders of cutting agreements in Canada, differences in transportation and operating costs, and differences in the end-product prices based on the species and quality of the timber, necessarily translate into differences in stumpage prices. 25/ Assuming that the administering authority used U.S. stumpage prices to represent fair market value, price comparisons based on cash payments only for stumpage

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23. In its report *Conditions Relating to the Importation of Softwood Lumber in the U.S.*, p. 51, the International Trade Commission explains that although Douglas-fir occurs in British Columbia and the Washington and Oregon regions, in British Columbia it reaches its northern range limitation and yields a lower quality wood. This observation is indicative of a significant problem in making stumpage price comparisons. Stumpage prices are affected not only by significant differences in logging conditions, and transportation and mill costs, but also by differences in timber species and quality. Stumpage price differences are noted not only in comparing areas of Canada and the United States, but also in comparisons of different regions within the United States.

24. In the United States, 30 percent to 40 percent of forest land is government owned.

25. Subsidy findings under the bill would be very sensitive, then, to which regions were specified for comparison and what adjustments, if any, were made to take account of significant differences.

would not provide an economic comparison of timber pricing. An economic comparison would be based on a comparison of total costs to total costs. Crossborder comparisons between the Mt. Baker working circle in Washington and the Vancouver region in British Columbia for 1984 indicate total delivered log costs of $166.05 (in U.S. dollars per mbf) in Mt. Baker as against $172.93 (in U.S. dollars per mbf) in the Vancouver region. 26/

Under the method proposed in the bill, however, an appropriate comparison, based on location and product mix, would most likely compare stumpage prices in the British Columbia region and the Washington and Oregon regions. Calculations of the resulting countervailing duties are based on the assumption that the administering authority would select these areas for comparison. The U.S. and Canadian stumpage prices are based on 1983 price data and are expressed in U.S. dollars per thousand board feet (mbf). The price differences by species range from a minimum for lodgepole of $16.34 ($3.86 per mbf in B.C. and $20.20 per mbf in Washington/Oregon) to a maximum for cedar of $74.69 ($14.01 per mbf in B.C. and $88.70 per mbf in Washington/Oregon). When comparing U.S. and Canadian prices in this way, the resulting countervailing duty is a weighted average of 303 percent of 1983 Canadian stumpage prices (in U:S. dollars).

EFFECTS ON U.S. MARKETS

As noted in the introduction to the previous section, any import of resource-intensive commodities could come under challenge by domestic competitors. Consequently, it is impossible to make a comprehensive list of market effects. Instead, this report will discuss the effects the legislation could have on the markets for an illustrative list of the most commonly discussed commodities. These include fertilizers, petrochemicals, carbon black, cement, and softwood lumber.

In general, while some increase in U.S. resource-intensive industrial commodity prices could be expected, the presence of excess domestic capacity and undutiable foreign sources should keep price increases in most commodities to a minimum. This in turn would mean that domestic producers would not be protected. In the case of timber products, however, most notably lumber, the presence of only one import source, Canada, and lack of excess capacity in the United States, when combined with the special treat-

26. *Cross-Border Comparisons of Indicated Delivered Log Costs for 1983 and 1984*, p. 31.

ment accorded timber by this legislation, could result in substantial price increases to U.S. consumers. Under a broader interpretation of the law, Soviet fertilizers might also be held dutiable. When combined with duties on Mexican fertilizer, duties on Soviet fertilizer could put upward pressure on U.S. fertilizer prices.

Some isolated price increases might result from shifts in sources of supply. One clear example is that of the southern United States, which depends on Mexican cement imports and may lack excess internal capacity. Eliminating Mexican competition might relieve some pressure on U.S. cement producers, with a consequent increase in prices.

Fertilizer

The effects of this legislation on U.S. fertilizer markets would depend crucially on how broadly the Congress interpreted fair market value in the case of the Soviet Union. If fair market value was interpreted to mean opportunity cost, and Soviet fertilizers were held to be non-dutiable, the only major exporter of fertilizer to the United States affected would be Mexico, which represents only a small percentage of imports. If the bill was interpreted to mean that Soviet domestic natural gas prices must equal their export price (net of transportation), then the price of fertilizer in U.S. markets might rise. The two principal natural gas-derived fertilizers imported into the United States are anhydrous ammonia and urea. [27]

Anhydrous Ammonia. The United States imported 16 percent of its consumption in 1983 and 18 percent in 1984. Canada, the USSR, Trinidad and Tobago, and Mexico were the major exporters. [28] Under either interpretation of the legislation, Mexican fertilizer would be dutiable. Assuming Canada made its natural gas prices market-sensitive, and that imports from Trinidad and Tobago were nondutiable (see above), the effects would hinge on natural gas pricing in the Soviet Union. [29]

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27. Anhydrous ammonia is an industrial product that is the base for nitrogenous fertilizers. In the United States, 80 percent of ammonia is used for this purpose. Urea is produced from anhydrous ammonia.

28. *Foreign Pricing Policies*, pp. F-4 and F-5.

29. If Canadian fertilizer imports were held dutiable, sizable price increases would become almost inevitable. See below.

Between U.S. and Canadian spare capacity, the United States could probably replace Mexican ammonia imports without a price rise, although replacing Soviet imports without a price rise might be more difficult. Spare capacity in the United States is between 1.7 million tons and 2.2 million tons.[30] That in Canada is over 1 million tons.[31] In comparison, Mexican and Soviet exports to the United States total 300,000 and 1.0 million tons, respectively. Thus, if both Mexican and Soviet imports were held dutiable, there would be enough spare capacity, but not all of it necessarily as low-cost as is current capacity. In this event there might be some upward price pressure.

The countervailing duties would be potentially large. Using the $0.76 per mcf subsidy on Mexican natural gas calculated above, the duty on Mexican anhydrous ammonia would be $25.93 per ton, or 18 percent of the 1984 import price.[32] Under the narrow interpretation of the legislation, there would be no tariff on Soviet ammonia. Under the broader interpretation, however, the countervailing duty on Soviet ammonia would be $68.10 per ton, almost 50 percent of the 1984 average import price.[33]

In the case of ammonia (and urea as well) there is a clear trade-off between the narrow and broader interpretations of the bill. The narrow interpretation would be less likely to result in substantial price increases. It

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30. *Fertilizer Facts and Figures* (Washington, D.C.: Fertilizer Institute, 1984), pp. 1 and 2. In addition to nameplate capacity, which is the usual measure, there are unmeasured improvements to existing capacity that are thought to add as much as an additional 5 percent to 10 percent to potential. Moreover, U.S. exports of ammonia were larger than Mexican imports. See *Fertilizer Facts and Figures*, p. 13.

31. Spare in the sense that it is neither used domestically or in the U.S. market. Canadian capacity is 3.8 million tons, domestic use totals 1.2 million tons, and exports to the United States total 1 million tons.

32. Assumes 34.06 mcf per ton of ammonia. Economic Consulting Services, "Proposed Legislation Concerning Foreign Natural Resource Subsidies: An Analysis of Possible Subsidy and Offsetting Duty Levels," June 1985, p. III-14. For import prices, see *Foreign Pricing Policies*, p. F-5.

33. Ibid. Assumes $2.00 per mcf subsidy calculated above.

would be more likely, however, to make U.S. farmers more dependent on Soviet fertilizer. The broader interpretation of the bill would reduce U.S. dependence on Soviet fertilizer, but would be much more likely to result in sizable fertilizer price increases and hence loss in farm income.

Urea. The situation with regard to urea seems more favorable than with anhydrous ammonia, although because urea is made from anhydrous ammonia any price increase in that commodity should be reflected in urea prices. Canada, the USSR, and Romania accounted for over three-quarters of urea imports into the United States last year. Mexican imports accounted for less than 5 percent of imports.[34] In addition, the U.S. industry has plenty of spare capacity and exports roughly one-fourth of total output.[35] Exports are also three times as large as imports from the USSR or Romania.

Under the broader interpretation of the bill, Soviet urea imports might prove dutiable. Using the $2.00 per mcf subsidy calculated above, the countervailing duty on Soviet imports would be $38.80 per ton, or 25 percent of the 1984 Soviet import price.[36]

Petrochemicals

Spare petrochemical capacity in the United States and large U.S. petrochemical net exports ensure that, in the main, this legislation should not have a major effect on petrochemical prices. Total imports of ethylene, the building block for most petrochemicals, account for less than 2 percent of domestic consumption, while net exports of ethylene-derived products account for close to 10 percent of domestic consumption.[37] Important individual products include polyethylene resins, ethelyne glycol, and methanol.

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34. Unpublished International Trade Commission data. Once again this analysis assumes that Canada will proceed toward market pricing of natural gas.

35. *Fertilizer Facts and Figures*, pp. 1, 2, and 13.

36. Assumes 19.4 mcf per ton of urea. See *Foreign Pricing Policies*, p. H-24. CBO did not investigate Rumanian natural gas pricing. While this issue has not been prominent, it could become so under this legislation and illustrates the potentially wide ramifications of the bill.

37. *Foreign Pricing Policies*, F-43 and F-44.

Polyethylene Resins. U.S. polyethylene resin exports are almost six times imports (by weight). Furthermore, Canadian exports to the United States account for two-thirds of all polyethylene resin imports.[38] Since the bulk of Canadian polyethylene is derived from natural gas, the forthcoming decontrol of Canadian natural gas prices should exempt these imports from duties under this legislation. In addition, there is significant excess U.S. capacity in this product.[39] Hence, there should be only minor price changes in this product market under the legislation.

Ethylene Glycol. U.S. exports of ethylene glycol are over five times imports (by weight) from all sources.[40] Moreover, in the recent past there has been a significant amount of excess capacity in this product.[41] U.S. imports of ethylene glycol also come from a wide variety of sources, so that the loss of any one of them should not have much effect on prices.

Methanol. Given that the U.S. methanol industry has 35 percent excess capacity and that 90 percent of U.S. imports come from Canada, price pressures resulting from this legislation would not likely be large. U.S. imports of methanol were 12 percent of domestic consumption in 1984, up significantly from 8 percent in 1983. U.S. production is still below its 1981 level and some facilities are closed. In addition, there is significant excess worldwide capacity, which would keep downward pressures on prices.[42] The U.S. methanol industry is contracting, and will continue to do so regardless of this legislation.

Cement

Because of the regional nature of cement markets, this legislation could have some effect on markets dependent on Mexican cement--in the South

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38. *Foreign Pricing Policies*, pp. F-45 and F-49.

39. *Modern Plastics*, January 1985, pp. 63 and 70.

40. *Foreign Pricing Policies*, pp. F-48 and F-52.

41. *Chemical Marketing Reporter*, February 13, 1984.

42. International Trade Administration, U.S. Department of Commerce, *A Competitive Assessment of the U.S. Methanol Industry* (Washington, D.C.: Government Printing Office, 1985), pp. 36-39. See also, *Foreign Pricing Policies*, p. F-36 and F-41.

and Gulf regions. 43/ Mexico exported 2 million tons of cement to the United States in 1984, or 2.2 percent of U.S. consumption. Since 95 percent of U.S. cement is consumed within 300 miles of its origin, Mexican cement is presumably shipped similar distances. Thus markets in the south and southwest United States depend on these imports. Landlocked markets might experience unit price increases, since alternative sources are unavailable. Most markets, however, even in the South, have either excess internal capacity or ports through which other foreign cement can be brought. Furthermore, Mexican cement exports are priced well below the U.S. product. 44/ Increasing Mexican domestic fuel oil prices to world levels (from $5.90 to $22.00 per barrel, respectively) would increase the average prices of Mexican cement exports to the United States by $10.32 per ton, or roughly 32 percent. 45/ This would still leave Mexican cement below the average U.S. price. Assuming that Venezuelan residual fuel oil is priced domestically at $2.40 per barrel, the duty under this legislation would be $12.72 per ton, roughly 50 percent of the 1984 average Venezuelan cement import price. 46/

Carbon Black

Carbon black is used primarily to strengthen the rubber in tires. Given the low market share of carbon black imports, the fact that half of U.S. imports come from Canada, and the significant amount of U.S. carbon black exports, prices would not be likely to rise significantly in response to this law. Total imports accounted for 5.4 percent of consumption in 1984, up from 2.4 percent in 1983. (Canada accounted for half the increase, more than doubling its exports to the United States.) While U.S. capacity was decreasing, it was

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43. Again this analysis assumes that the Canadians will decontrol all their domestic energy sources. Canadians ship a great deal of cement to the United States, some of which might be dutiable should natural gas decontrol not go forward.

44. Although Mexican cement has already had countervailing duties of up to 17 percent placed on it in the last few years.

45. Estimate averages both wet and dry process plant efficiencies (5.5 and 3.1, respectively) and uses the heat content of residual fuel oil (6.29 mmbtu per barrel). See Statement of Moor McCormack Cement Company before the International Trade Commission, no date, p. 9. See also *Foreign Pricing Policies*, pp. 44-45, and F-20.

46. Ibid.

still estimated to be above U.S. consumption by about 7 percent. 47/ On the other hand, Mexican carbon black accounts for one-third of imports and is the lowest priced import. Since carbon black has significant oil and natural gas components, there is the potential for a large countervailing duty on Mexican carbon black exports under any interpretation of this legislation. The difference between the Mexican price of carbon black feedstock (CBFS), a refined petroleum product, and the U.S. price is $20.00 to $22.00 per barrel. Assuming the administering authority found a $21.00 subsidy on CRFS and $0.76 per mcf of natural gas, the countervailing duty on Mexican carbon black would be $0.10 per pound. 48/ Mexican imports in 1984 cost $0.16 per pound, and the average 1984 value of carbon black imports was $0.27 per pound.

Lumber

Comparing U.S. and Canadian stumpage prices by species for 1983 suggests a countervailing duty of 303 percent of 1983 prices. Stumpage costs are 4.45 percent of the (weighted) average unit value of lumber (in dollars per thousand board feet). 49/ The average countervailing duty on Canadian softwood lumber imported to the U.S. would, therefore, be 13.5 percent of the average unit value of such imports. Data for the first four months of 1985 indicate that Canadian imports have approximately a 32.6 percent share of the U.S. softwood lumber market. 50/ In 1984, Canadian imports

47. *Foreign Pricing Policies*, p. F-10 and F-11.

48. Assumes 11.04 mcf of natural gas and 9.36 barrels of CBFS per ton of carbon black. See *Foreign Pricing Policies*, p. 39, for Mexican and U.S. CBFS prices. Conversion factors from Economic Consulting Services, "Proposed Legislation Concerning Foreign Natural Resource Subsidies: An Analysis of Possible Subsidy and Offsetting Duty Levels," June 1985, p. III-17.

49. Calculation derived from volume and price data in *Production, Prices Employment, and Trade in Northwest Forest Industries, Second Quarter 1984*. U.S. Forest Service, December 1984.

50. See Dewey, Ballantine, Bushby, Palmer and Wood, "Prehearing Brief on Behalf of the Coalition for Fair Lumber Imports Concerning Canadian Softwood Lumber Imports," submission to the International Trade Commission, July 16, 1985.

accounted for approximately 95 percent of softwood lumber imported to the United States.

The effects on U.S. market prices of a 13.5 percent average duty would depend largely on U.S. production capacity and the elasticity of demand for lumber. U.S. mills operated at roughly 80 percent of capacity in 1984, insufficiently to satisfy fully the portion of U.S. demand met by Canadian imports. 51/ The countervailing duty and the price increases needed to activate an additional U.S. capacity would result in price increases for softwood lumber in the United States. The increases, however, would likely be less than the 13.5 percent average duty. In 1984, the average price of lumber was $0.20 per board foot. Hence, the average tariff would be 2.7 cents per board foot. Since the average U.S. new house has 11,000 board feet, the price increase if the tariff were completely absorbed by the consumer would be $297.

Refined Petroleum Products

Because of excess refining capacity in the United States and worldwide, this legislation would mainly result in shifting U.S. suppliers, although some local or transitory minor product-specific price increases might occur. U.S. gross imports of refined petroleum products constitute about 10 percent of domestic consumption. Residual fuel oil imports account for roughly a third to a quarter of this amount and represent about 40 percent of all the residual fuel oil supplied in the United States this year. 52/ Residual fuel oil is ordinarily not one of the high-valued fuels refined from crude oil and is rarely a profit maker for the refiner: even though its energy content is higher than either gasoline or distillate fuel oil, its price is between two-thirds and three-quarters their price. 53/ Residual fuel oil is likely to pre-

51. The U.S. Forest Service estimates U.S. mills are operating at roughly 90 percent of capacity. The method for calculating operating capacity, however (based on highest production per month for the past five years) does not adequately determine capacity as a result of high technology advances in recent years. Estimates indicate that such advances have increased capacity 10 percent to 15 percent. U.S. mills are assumed, therefore, to be operating at approximately 80 percent of capacity.

52. Energy Information Agency, *Weekly Petroleum Status Report* (August 1, 1985).

53. During the British coal strike, residual fuel oil prices rose significantly. With the end of that strike, however, these prices have gone back to their "normal" range.

sent significant problems in terms of deriving the implicit cost of crude as discussed in a previous section. Determining the crude costs from refined products prices is at best approximate and will, in a market as volatile as the residual fair market, be an especially difficult task. Despite the large fraction of residual oil that is imported, multiple sources are available. Given the non-premium nature of the market for residual fuel oil, replacing the few sources that are found to be dutiable would not be difficult.

EFFECTS ON THE U.S. ECONOMY

In general the effect of the legislation would be to cut off U.S. consumers from many of the lowest-priced suppliers of some goods and to shift sources of these products to higher-priced producers, both domestic and foreign. This effect would change U.S. employment and output in two ways. Duties might increase domestic production and employment in these and related industries. However, shifting U.S. consumption to more expensive sources of supply would reduce consumer income, which would, in turn, reduce the demand for both the good in question and many other goods. Hence, U.S. output and employment in other areas would decrease. The relative strengths of each of these effects would determine the net effects on the U.S. economy. Outside the lumber industry, however, CBO does not foresee large price increases and those that do occur are likely to be local or regional in nature. On the other hand, outside the lumber and possibly fertilizer industry, neither are there likely to be increases in output or employment in affected domestic industries of more than 1 percent or 2 percent at the national level. In industries where there is substantial world overcapacity, there may be little, if any, increase in domestic output and employment. (Some regional cement markets might experience a significant increase in domestic production. However, these markets would also be likely to see a significant price increase.) This judgment is based on an analysis of the commodities listed above under current conditions of capacity utilization. Given the very general nature of the legislation, changing conditions might give rise to new difficulties: commodities not widely viewed as "problems" might become such and/or spare capacity might disappear in the long run.

An economic analysis of this legislation was performed by Wharton Econometric Forecasting Associates.[54] It concluded that the legislation

54. "The Macroeconomic Impacts of Implementing Natural Resource Subsidy Legislation," testimony of Bruce Lippke and George Schink of Wharton Econometric Forecasting Associates before the Subcommittee on Trade of the House Ways and Means Committee, June 6, 1985.

would result in major losses of income and output in the farm sector, major losses in personal disposable income, and major declines in net employment. Wharton used two scenarios: one in which U.S. trading partners retaliated, and one in which they did not. In the non-retaliation scenario, Wharton concluded that total inflation-adjusted gross national product would be reduced by $80 billion during the period 1986 through 1994, or roughly $10 billion per year. Farm income would decline by $900 million per year, due primarily to higher fertilizer prices. Paralleling the reduction in farm income, consumers would experience a decline in personal disposable income of $40 billion over the period. Losses of employment would total 275,000, as against gains of no more than 9,000. The effects would be larger if other countries retaliated.

The Wharton analysis appears to overstate the likely price and income effects of the bill. Unlike the CBO analysis, the Wharton report *assumes* that this proposal would have substantial effects on the prices of several industrial commodities, notably nitrogenous fertilizer. (For instance, it sees prices of nitrogenous fertilizer rising by 27 percent, and of petrochemicals by an average of 14 percent.) Since macroeconomic models are largely driven by income flows, these large price increases translate into more income for producers of fertilizer and other industrial commodities and less for farmers and other consumers. Thus, the Wharton results depend on the assumption of large price increases.

These price increases result because the Wharton study has taken a more pessimistic view than CBO with regard to a number of issues. Wharton assumes that Canadian fertilizer derived from natural gas would be dutiable under this legislation. Since Canada's natural gas price decontrol program will not be announced until November at the earliest, there is no way of knowing whether or not the Canadian plan (and the subsequent provincial pricing decisions) will conform to the natural resource pricing policies implicit in this legislation. CBO has assumed that, given the relative ease with which the Canadian authorities managed oil price decontrol (taking only two months as against 18 months of gradual and complex decontrol in the United States), the Canadians will decontrol natural gas promptly. Although the Wharton assumptions are not unreasonable, they do not seem the most probable. If they are right, however, then the amount of anhydrous ammonia imports subject to duty would equal the maximum estimate of spare capacity. 55/ Under these circumstances substantial price rises could

55. Spare capacity of anhydrous ammonia in the United States is estimated at 1.7 million tons to 2.2 million tons plus an unknown amount of capacity increase through improvement above rated capacity. Canadian, Soviet, and Mexican imports totaled 2.3 million tons in 1984.

occur. A separate question from that of whether Canadian fertilizer would be dutiable is the question of passthrough. Wharton assumes that the duties would increase domestic prices proportionately. This is a strong assumption. If demand and supply were to show much responsiveness, then the level of passthrough might be substantially reduced. In addition, the existence and large size of spare capacity in the U.S. petrochemical industry is beyond dispute. Hence, the large petrochemical price increases Wharton envisions are an unlikely response to this legislation. Finally, the resource export prices underlying Wharton's calculations are very high. For example, countervailing duties on Mexican goods are assumed to be based on $4.50 export price, when Mexico has exported no gas at that price in almost a year.

The only area in which CBO foresees substantial price increases on a national scale is the lumber industry. In this case, the 13.5 percent tariffs would result in a consumer income loss of at most $1 billion. [56] If demand showed any responsiveness, this amount could be substantially less. Such an income loss is not large enough to have substantial macroeconomic effects.

RETALIATION

This legislation might invite retaliation on many fronts. Since the U.S. government prices a vast array of natural resources at less than their full market prices, parallel legislation in other countries could hurt U.S. exports. Whether this bill would provide sufficient incentive for other countries to retaliate depends on its interpretation. If the administering authority interpreted this legislation on the basis of economic opportunity cost, then only Mexican, Canadian, and Venezuelan exports would experience significant countervailing duties.

U.S. Natural Resource Pricing

The federal government and many state governments sell many natural resources to a wide variety of exporting industries at prices that would be considered subsidized in the terms of this legislation. The most obvious example is that of natural gas, where a sizable fraction of the domestic supply remains under price controls. Although the United States is a net exporter of petrochemicals, the U.S. industry is for the most part not vul-

56. Wharton assumed that softwood lumber prices would rise by 14.4 percent.

nerable to parallel legislation in other countries. Much, if not most, of the petrochemical capacity is located close to natural gas sources and is part of the intrastate gas market, the bulk of which may no longer be under price controls. 57/ Firms outside the old intrastate natural gas markets (Louisiana, Texas, and Oklahoma), however, will have a share of controlled gas and may be vulnerable.

Water is another resource federal agencies sell at reduced prices: federal charges on irrigation water recover less than 10 percent of associated federal costs. 58/ State irrigation water projects often confer similar benefits. Furthermore, the federal government does not sell this water at its opportunity cost (its highest valued use), which would mean that the water would be used mainly for industrial or municipal purposes, but rather sells the water for farm irrigation where prices are typically lower.

Low hydroelectrical power rates for federal projects provide an advantage to industry located in those areas. Federal agencies could obtain rates higher than those currently charged if they so desired. While electricity exports are limited, parallel legislation might affect industries located in those regions. For instance, the production of primary aluminum in the United States is centered there because of cheap power.

This list is not exhaustive. It is only illustrative of federal pricing policies that might affect U.S. exports under parallel legislation. Many other federal policies, including perhaps tax laws--such as the reforestation investment tax credit--might be judged to provide some natural resource input subsidy.

Mexico and Canada

Although this legislation might affect any country, Mexico and Canada would feel its effects disproportionately. Because they are neighbors, U.S. trade with them occurs in many industries and in many regions. The industries that might suffer most severely are the cement industry in Mexico and the lumber industry in Canada, both of which are experiencing excess capacity and have no alternative markets. In 1984, the U.S. market

57. Congressional Budget Office, *Understanding Natural Gas Price Decontrol* (April 1983), pp. 6 and 52.

58. Congressional Budget Office, *Charging for Federal Services* (December 1983), p. 85.

took about half of Mexican cement exports and about 13 percent of Mexican cement production. 59/ Other industries in Mexico that could be affected are the fertilizer and carbon black industries. The total value of Mexican exports of cement, carbon black, and ammonia to the United States in 1984 was $121 million. These industries might have no choice but to continue to export to the United States whatever duties might be imposed, but they would do so at a lower rate of profit.

REVENUE EFFECTS

The countervailing tariffs would not be likely to collect a large amount of revenue. Because of the potential for shifting import sources, the estimate on commodities other than lumber should be considered as illustrative of general magnitudes rather than an actual projection. The revenue from countervailing duties on Canadian softwood lumber calculated above is estimated at between $220 million and $280 million per year, while revenue from duties on other commodities calculated above might reach $40 million to $100 million. These estimates assume no major changes in gross national product; the duties are passed through to the consumers; and outside of lumber, they reflect no change in demand as a result of the duties.

Canadian Timber

Countervailing duties of 2.7 cents per board foot (calculated above) on Canadian softwood lumber imports would raise between $220 million and $280 million per year. In 1984, U.S. consumption of lumber was 43 billion board feet, of which Canadian imports amounted to 13.2 billion board feet. U.S. capacity utilization was 80 percent. Assuming demand remained constant and the U.S. industry's production rose to 90 percent of capacity as a result of the duty, 10.4 billion board feet would be left to Canadian exporters. At 2.7 cents each, the duties collected would total roughly $280 million. This figure assumes no demand response. If the tariff was completely passed through, and the elasticity of demand was minus 0.35, the need for Canadian imports would fall to 8.1 billion board feet. At 2.7 cents each, the duties collected would total roughly $220 million.

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59. *Foreign Pricing Policies*, p. 34.

Other Commodities

Because consumers can shift from one source of supply to another, no firm estimates can be derived for commodities other than timber. There would most certainly be significant import source shifting in the fertilizer and possibly also in the cement markets. If Soviet fertilizer was totally eliminated from the U.S. market, duties would total roughly $40 million under either a narrow or a broad interpretation of the law. Assuming that there was no shifting of foreign sources, the revenues collected from these duties would amount to roughly $110 million under the broadest interpretation of the law. A more narrow interpretation would provide at most roughly $40 million. Mexico exports roughly 2 million tons of cement to the United States each year. A countervailing duty of $10.32 per ton would collect roughly $20 million. Mexico also exports 300,000 tons of ammonia, which at $25.93 per ton duty would produce no more than $8 million in additional revenue. Mexican carbon black exports totaled 50 million pounds in 1984. At $0.10 per pound, the duties would increase revenues by $5 million. Venezuela exports roughly 1 million tons of cement; a $12.00 duty would raise roughly $12 million. The Soviet Union exported roughly 1 million tons of anhydrous ammonia to the United States in 1984; with a duty of $68.10 per ton, the most that would be collected is $68 million, while a narrow interpretation of the law would result in no tariff on Soviet exports.