WORKING

PAPERS

COSTS OF THE VOLUNTARY RESTRAINT AGREEMENTS ON STEEL: REPLY

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make the

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4 assumption that Cantor regards as critical to my calculations, and

domestic steel prices do not increase, the costs to the economy and consumers

of the steel quotas are still quite high, and the costs per job protected in steel remain excessive.

In addition to Cantor's criticism of our research, some have suggested

that we forecast steel prices to increase, and that this is a critical part of 5
our study

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steel prices will not rise as a result of the imposition of the quotas,

because of 6 the existence of excess capacity in the domestic steel industry.

Excess capacity in the domestic steel industry implies that "an indefinitely large amount of the product would be offered for sale at a fixed price." He infers from this "the import restrictions would not induce an increase in prices."
Cantor, however, overlooks a crucial distinction in his discussion. There
is a difference between domestic and imported steel prices, because these products are differentiated in a variety of ways. Jondrow et al. have observed

that foreign steel has to sell at a discount to be marketed in the US. 7 In

explaining this situation, they note that one must order foreign steel further in advance and await delivery. Thus, if one relies on foreign steel, a larger inventory must be held with higher associated warehousing and inventory costs. Moreover, they argue that domestic suppliers implicitly offer greater security of supply. Additionally, the econometric estimates of Robert Crandall argue

8 for the acceptance of a differentiated product model.

Let us accept, for the sake of argument, Cantor's contention that

6 I assumed that the domestic supply
Cantor believes it should be much larger,
the range of outputs under consideration.

curve has an elasticity of 3.5.
approximately

4

domestic prices will not rise as a consequence of the import restraints because domestic steel firms are willing ~o supply all the domestic steel we want without raising prices (i.e., the domestic supply curve for steel is perfectly elastic). Contrary to what is implicitly assumed by Cantor, however, import prices will rise as a consequence of the import restraints. Even if we assume (as we did) foreigners are willing to supply all we want of imported steel without raising prices (i.e., a perfectly elastic supply of imports), import prices will rise. The quota restrains the amount foreigners are allowed to sell, so competition among US buyers for the artificially scarce foreign steel will drive up the price. Thus, a weighted average of imported and

9 domestic steel prices will rise, even if domestic steel prices do not rise.

Impact Qf VRAs Under Cantor's Assumption

The object of our study was to assess the impact of the steel quotas on consumers and the economy. Cantor believes that a perfectly elastic domestic supply curve is crucial for producing reasonable results. To examine the effect of this assumption on estimates of losses to consumers and the economy

from the VRAs, I incorporated a perfectly elastic supply curve (Cantor's ,

assumption) into my model and recalculated the estimates. The results are listed in table 1. For

increases,
With

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10 but not perfectly responsive (a supply elasticity of 3.5).
11 Cantor's assumption, the domesti~ price does not rise. The import

price, however, rises by almost as much as in our original simulation. That is, the import price rises by 8 percent instead of 9 percent. Since most of the costs to the economy derive from higher quota rents given to foreigners and other losses associated with the import market, the overall costs to the economy do not change very much if domesti~ steel prices do not increase. The economy loses $732 million per year with Cantor's assumption, rather than $809 million per year.
In our original simulation, part of what consumers lose is captured by domestic producers through slightly higher domestic prices than without a quota. Consumer losses exceed the losses to the economy in my earlier calculation. The gains to domestic producers through higher prices are costs to consumers--but not losses to the economy. With Cantor's assumption (a

100ur original results are conservative because we assume the industry is perfectly competitive; that is, we ignore the effects of imperfect competition. After the imposition of quotas on imports, any increase in price by domestic producers will not bring forth additional imports. Domestic producers may reach an imperfectly competitive equilibrium in that portion of the market left over after the quota allotment. To the extent that this results in a restriction of output below the competitive level, there are additional inefficiency costs and costs to consumers imposed on the economy from the quotas that are ignored in our analysis.
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Cantor

are

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6

perfectly elastic domestic supply curve), domestic producers do not gain significantly from the quotas, because prices do not increase. Thus, under Cantor's assumption, annual losses to consumers are the same as annual losses to the economy, and are $732 million per year rather than $1210 million per year.

Although the costs per job per year numbers decline under Cantor's perfectly elastic supply curve assumption,- the costs per job per year remain quite high. For each job protected in steel by the quotas, the costs to consumers and the economy is about $58 thousand per year. These costs are in addition to the private costs of providing employment. They do not include wages and other costs necessary to employ a steelworker. Moreover, as we emphasized in our 1984 study, protection does not provide employment to the

overall economy. Jobs gained in steel are lost elsewhere in the 12

economy.
Thus, even when

13 would regard as excessive.

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The Merits Qf Cantor's Assumption and Evidence

In 1984, most of the big US stee1makers, including US Steel Corporation,

Bethlehem Steel Corporation, Inland Steel Company and Armco, petitioned the

International Trade Commission for steel quotas. The major economic experts

who testified on behalf of the US steelmakers adopted a supply elasticity

13 Some may argue that the protection will lead the domestic steel
industry to modernize and become more efficient, and that these dynamic efficiencies will lead to a lower cost structure and supply curve. Studies by International Trade Commission staff and by Hufbauer and Rosen reveal, however, that rarely does an industry modernize as a result of protection. (See The Effectiveness of Escape Clause Relief in Promoting Adjustment to Import Competition, USITC publication 1229, March 1982; and Gary Hufbauer and Howard Rosen, Trade Policy for Troubled Industries, Institute for International Economics, March 1986.) Since the protection is intended to be temporary, and the investment lasts for possibly decades, an investor must heavily weigh the price picture after the termination of

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On the other hand, Cantor cites no econometric estimates of the supply

elasticity in 17

support of his assumption. Nor does he cite studies by other
authors who have utilized his assumption. Given that his criticism rests so fundamentally on a perfectly elastic supply curve, one would have expected his assumption to be based on something more than casual empiricism.

Forecastins Steel Prices

Cantor cites evidence that domestic steel prices have fallen since the imposition of the VRAs. Although Cantor did not make this point, others have claimed that we forecast an increase in steel prices in our 1984 analysis. This reflects a misunderstanding of what we have argued; we made no forecast of steel prices. Steel prices are affected by a variety of factors other than simply the VRAs. These factors include the overall level of industrial activity, the price of competitive products (such as aluminum, plastic and cement) and the price of inputs (such as labor, energy and other raw materials). Given any level of these other factors held constant, our model estimates the amount of price increase of imported and domestic steel. A change in the level of some other variable affecting steel prices, such as the price of fuel oil, steel
could

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scrap, iron ore pellets, or metallurgical coal

17 Cantor's assumption appears to be based entirely on his guess at what
the supply elasticity should be, based on capacity utilization rates.
18All of these cost factors have declined during the VRA period and would reduce steel prices. See Steel Industry; Quarterly Industry Review, Table 12, Indices of Steel Industry Prices and Cost Factors, Merrill Lynch, July 1987.

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have the effect of lowering domestic steel

TABLE 1

EFFECTS OF DIFFERENT ELASTICITIES OF DOMESTIC SUPPLY ON VARIOUS WELFARE MEASURES
AS A RESULT OF THE VRAs ON STEEL

(In millions of base year dollars) *

Annual Costs
Supply Elasticity From:

Consumers' Losses

Cantor **
732

Losses to the Economy 732

Gains to US Producers 0.0

Quota Rents to Foreigners 515

Tarr-Morkre
1,210

809

405

578

in Present Value
Five Years of Costs
Supply Elasticity From:
Cantor **
2,110

3,000

0.0

2,110

Tarr-Morkre
2,370

3,320

1,660

2,370

(in base year dollars)
Supply Elasticity Equals:
Cantor ** Tarr-Morkre
COSTS TO THE ECONOMY PER YEAR FOR EACH JOB PROTECTED: 57,863 81,906

COSTS TO CONSUMERS PER YEAR FOR EACH JOB PROTECTED: 57,863 122,913

* The base year is to i08I6.08.61 Tm bt.he