

**THE EFFECTS OF AN IMPORT SURCHARGE ON NATIONAL WELFARE:
A QUALITATIVE ANALYSIS**

**Staff Working Paper
March 1985**

**The Congress of the United States
Congressional Budget Office**

SUMMARY

International trade allows countries to specialize in the production of those things in which they have a comparative cost advantage, trading them for things they are relatively poor at producing. This specialization and exchange is of benefit to each country and harms no country. Trade is a positive-sum activity.

A U.S. surcharge of 20 percent on the value of imported goods, while benefiting some sectors of the economy, would unambiguously result in a net overall loss of worldwide economic efficiency and welfare by moving away from specialization and trade. The only real question is how this loss would materialize and who would bear its burden. In general, the country that imposes a restriction on its trade is likely to be one of the major losers as resources shift away from its most efficient (exporting) industries to less efficient (import-competing) industries that will be partly protected by the trade restriction.

The distribution, and even the form, of the welfare losses among countries is less clear. A small country imposing a tariff might have little effect on world prices and trade, and thus might bear nearly all of the losses itself. A large country, like the United States, might be able to shift part of the tariff burden onto the rest of the world by forcing down the world price of its imports (that is, forcing foreign producers to pay part of the tariff by

lowering their prices). This could conceivably be enough to at least offset the internal loss of economic efficiency resulting from the reallocation of resources away from low-cost industries to high-cost industries. By imposing the right tariff on each good imported, a large country might, in theory, even gain from protection. But it is unlikely that an across-the-board surcharge would have such an effect. Moreover, retaliation would be likely, and if that was followed by counter-retaliation everyone would be almost certain to lose, and by large amounts.

CAPITAL FLOWS AND EMPLOYMENT EFFECTS: THE BASE CASE

The above analysis draws largely on the pure theory of international trade, assuming full employment and easy substitution of resources and goods for one another in response to price changes. While many of the conclusions derived from this analysis are directly applicable to other situations, the effects of a surcharge become more complex in the context of a modern economy open to international capital flows and subject to some unemployment of labor and capital. These complexities relate largely to the potential effects the surcharge might have on international prices through exchange rate movements induced by capital flows, and on aggregate demand and supply. None of these complexities, however, would fundamentally change the results of the previous analysis.

To simplify the task of analyzing highly interrelated phenomena, the following analysis focuses on a base case that can later be modified. The base case is constructed so as to allow examination of the efficiency costs and sectoral effects of the surcharge. It assumes the following: no retaliation, no imposition of capital controls, and the use of the surcharge revenue to reduce the government budget deficit. In addition, private markets believe the surcharge to be permanent, despite official protestations to the contrary. This last assumption is necessary if the private sector is to be willing to undergo the adjustment costs necessary to reallocate resources and if foreigners are to consider direct investment in the United States as an alternative to trade. Finally, aggregate demand and real GNP are assumed to be unchanged. This assumption is derived from the fact that the surcharge would raise the domestic price of imports, thus encouraging the substitution of domestic goods for imported ones. At the same time, it would produce a contractive fiscal-policy effect by removing purchasing power from the economy. The substitution of domestic goods for imported goods would tend to raise total domestic output, whereas the contractive fiscal policy would tend to lower it. As a simplifying assumption, it is convenient to postulate that these opposite effects would offset one another.

Under these assumptions, if the surcharge had no immediate effect on exchange rates, it would: reduce foreign real GNP, lower the federal deficit, and improve the U.S. trade balance. But it would in fact have an

effect on the exchange rate because the combined GNP of all other countries will fall relative to U.S. GNP, strengthening capital flows to the United States and putting upward pressure on the dollar. Even if capital flows were not responsive to the relative strengthening of the U.S. economy, but were instead solely reflective of trade financing needs, the foreign exchange value of the dollar would rise in response to the surcharge-induced decline in U.S. imports.

To the extent that the import surcharge was considered by some to be a remedy for an overvalued dollar, it would be partially self-defeating. Since the surcharge would lower foreign real GNP, import-competing industries might be helped but exporters would be worse off: the dollar would be stronger while foreign real incomes would be lower, thus reducing overseas demand for U.S. exports; and the U.S. price level would be higher, as a result of the surcharge itself and because of higher domestic prices of close substitutes. Indeed, the strength of the foreign feedback effect on U.S. exports might by itself lower U.S. real GNP, unless a stimulative monetary policy was used to achieve the base-case assumption of no change in aggregate demand and real GNP.

Under the base-case assumptions, the main impact of the surcharge would be on the composition of production and final demand. It would raise domestic prices of imports and import-competing goods, thereby increasing revenues of import-competing industries and the prices paid for resources used intensively in these industries. Conversely, industries that rely heavily

on foreign imports would experience higher production costs, leading to fewer sales and ultimately less income. On the consumption side, higher costs of both imported and domestic products would cause welfare losses. Although the base case assumes no foreign retaliation, which restricts but far from eliminates the negative effect of the surcharge on U.S. exports, some negative effects could nonetheless be expected, as exporting industries would have to contend with a higher-valued dollar. Moreover, the foreign feedback effect mentioned earlier would also lower demand for U.S. export goods as lower incomes abroad translated into reduced foreign consumption. And, finally, should there be foreign retaliation in kind, the domestic compositional effects would be even more pronounced.

OTHER SCENARIOS

Some of the above conclusions could change if the surcharge was viewed as being truly temporary. One possibility is that consumers would not switch into domestic substitutes but would dip into savings to absorb the impact of the surcharge. This would reduce the stimulative effect discussed earlier. At the same time, continued spending on imports would bring in greater revenue to reduce the federal deficit. Since the effects of reduced private saving and the reduced public deficit would cancel each other out, no significant effect would be likely on real interest rates.

Another possibility is that import buyers would simply postpone their purchases in expectation that the tariff would elapse in three years (quite likely under a declining rate surcharge). In the extreme case, where most import purchases were postponed but U.S. citizens did not switch to domestic substitutes: the U.S. trade balance would improve dramatically, there would be no stimulative expenditure-switching effect, there would be no contractive fiscal policy effect because of the lack of tariff revenue, but the relative increase in private savings (as a result of postponed consumption) could lower interest rates.

Under either extreme possibility, the potential effects on capital flows and exchange rates are unclear. If GNP rose, capital inflows might be stimulated. But if the surcharge was viewed as temporary, foreigners might lack the incentive to jump the tariff wall and invest in the United States.

Finally, there is the possibility (indeed, history suggests the probability) of retaliation. Since the surcharge would impose large losses on other countries, they would have a strong incentive to retaliate (either individually or collectively) to recoup some of their losses. It is unlikely, however, that they could recoup much, and the most probable outcome is that everyone would be worse off. The volume of world trade would almost certainly decline, leading to even greater losses in economic efficiency and welfare.

It is quite possible that retaliation would lead to capital controls, heightened financial risk, and a reduction in foreign capital available to the

United States. If so, U.S. interest rates could rise significantly, output and income would fall, and the federal debt would skyrocket.

INTRODUCTION

Economists have long extolled the gains from free international trade and decried the losses of economic efficiency that result from international barriers to trade. One of the purposes of this paper is to describe how a U.S. import surcharge would result in losses of economic efficiency, and consequently of welfare, for the world at large and for the United States in particular. Another purpose is to highlight the considerations that would be strategic in designing an analysis to evaluate the effects of a U.S. import surcharge.

The paper is divided into several sections. Section I considers the effects of an import surcharge from the viewpoint of the pure theory of international trade, which assumes a world without money and without the possibility of short-run underemployment of labor and capital; Section I also assumes that foreign countries do not retaliate against a U.S. import surcharge by raising their own tariff or nontariff barriers to trade. Section II completes the discussion from the viewpoint of the pure theory of trade by considering the effects of a surcharge in the presence of foreign retaliation against the United States.

Section III expands the analysis to consider the effects of a surcharge on international capital flows and on employment of labor and capital in a monetary economy, but without the possibility of foreign retaliation. It is assumed in this part of the paper that private markets expect the import surcharge to be permanent despite official protestations to the contrary.

Given the great complexity of the real world, this section focuses on a base case under simplifying assumptions, and suggests how conclusions might be altered by changing some of the assumptions. Particular attention is paid to the compositional effects of an import surcharge on specific U.S. industries.

Section IV then considers what might happen if an import surcharge was perceived by private markets to be truly temporary. Section V concludes by considering the effects of foreign retaliation under real-world circumstances.

SECTION I: THE PURE THEORY OF INTERNATIONAL TRADE WITH NO RETALIATION

The pure theory of international trade describes a barter world in which there is no money, although goods exchange at relative prices very much as they do in a monetary economy, and the pricing system plays a key role in the allocation of real resources among alternative uses. The main difference between the monetary and the barter worlds is that, in the latter, prices of commodities are quoted in terms of other commodities rather than in terms of monetary units. 1/

-
1. The price of a commodity I in terms of another commodity II indicates the amount of II that must be sacrificed or traded in order to obtain one unit of I; it is the ratio of the number of units of II per unit of I in a voluntary market exchange. The price of commodity II in terms of commodity I is simply a reciprocal of this ratio. The barter price of I in terms of II corresponds to what in a monetary world would be the ratio of the money price of I to the money price of II. Barter prices are relative prices.

In the general case, the barter or pure theory of international trade assumes that labor and capital can be substituted for one another in the production process in varying degree as their relative prices change, and that consumers shift their purchases from one good to another as their relative prices change. The pure theory of international trade is more suited to analyzing the long-run effects of a tariff than the short-run effects. It assumes that labor and capital are fully employed, which limits its applicability to the short-run situation. Even with such limitations, however, many of the important conclusions from the barter or pure theory of trade are directly applicable to analysis of underemployment situations in a monetary economy with international capital flows.

The imposition of import tariffs obviously reduces the volume of world trade. If countries do not trade with one another at all, relative prices of commodities in each country depend on such things as their supply of natural resources; their climate; the size, quality, and composition of their physical capital stocks; the size, education, and skill levels of their labor force; and consumer preferences. If countries trade freely with one another, relative prices tend to equalize in the world market. Consequently, for any country, the prices of commodities that were relatively high without international trade are lowered under free trade through imports of lower-cost goods. Similarly, the prices of commodities that were relatively low are bid up under free trade, and more resources are shifted into their production for export markets.

The welfare gains from free trade result, therefore, from enabling countries to specialize in the production of those goods in which each has a comparative cost advantage. According to the principle of comparative advantage, international specialization results in higher total world output of goods and services, and it is very unlikely that any country will be made worse off than it would have been without international trade.

Another consequence of specialization according to the principle of comparative advantage is that those factors of production that are relatively most important to the production of export goods earn higher incomes. If the production of export goods is capital intensive, the return to capital rises relative to the wage rate for labor; if production of export goods is labor intensive, the wage rate rises relative to the return to capital. In moving from the no-trade situation to the free-trade situation, then, there will generally be some winners and some losers within each country, and different geographical regions of the country can be affected quite differently.

Thus, the welfare gain from free trade is a potential gain in that everyone could have either more of all goods or, alternatively, the same amount of all goods with more leisure. Free trade for a particular country is better than no international trade, in the sense that there exists some pattern of domestic taxes and transfer payments that would allow everyone to be better off than without trade. Those who wanted free trade could reward those opposed to it for agreeing to move from the no-trade to

the free-trade situation, with the end result that everyone's welfare would be improved. Institutional restraints, however, often make it difficult to arrange such transfers in practice.

One relative price of particular importance to the barter theory is called "the terms of trade." It indicates the amount of import goods obtainable from one unit of exports, and can be thought of as reflecting the external purchasing power of exports. The introduction of tariffs on imports raises the domestic price to the consumer above the price charged on world markets—that is to say, above the price received by foreign producers.

In other words, the tariff causes the pattern of prices faced by consumers to move toward that which would exist without international trade, and consumers consequently shift their purchases toward import-competing goods. Because full employment is assumed, labor and capital must be drawn away from the export industries where they are used relatively efficiently and moved toward less efficient import-competing industries that have comparative cost disadvantages. As a result, there is an unambiguous loss of potential world welfare. In moving away from international specialization according to the principle of comparative advantage, potential world output of goods and services declines.

The distribution of the net loss of world welfare among countries is less clear. Even though an import surcharge almost certainly changes domestic prices, it may or may not change relative prices on world markets. If the country imposing the tariff is small compared with the rest of the

world--or if its trade volumes are small relative to trade volumes for the rest of the world--then the tariff has essentially no effect on world prices. In this case, the total effect of the tariff is absorbed by the relative price of the country's import-competing goods, which must rise by the full amount of the tariff. Taking all markets into consideration, when the country imposing the import tariff has no effect on world prices, the net loss of world welfare is largely borne by the country imposing the tariff.

If the country imposing the import tariff is large enough to have a substantial impact on world prices, there are very special circumstances in which the tariff can result in a net gain of national welfare. If the country imposing the tariff has enough market power so that a fall in its purchases of imports depresses their world price relative to the price of its exports, the gain in import goods obtainable per unit of export goods can more than offset the internal loss of economic efficiency resulting from reallocation of real resources away from low-cost industries to high-cost industries. Although there may or may not be a gain in welfare for the large country imposing the tariff, there is an unambiguous net loss of potential welfare for the rest of the world, and for the world as a whole, because other countries are certain to lose more than the tariff-raising country gains.

A big country may be able to devise an "optimal" tariff structure that raises its national welfare at the expense of the rest of the world--that is, if foreign countries do not retaliate by raising their own tariff or nontariff

barriers to trade. But in a world of many commodities and many factors of production, imposition of an optimal tariff structure would require an enormous amount of technical information relating to specific markets for internationally traded goods. Because market characteristics vary widely, an optimal tariff structure would generally consist of a complex system of subsidies as well as tariffs, of differing heights, imposed on export goods as well as on import goods. It is exceedingly unlikely that an across-the-board import surcharge would correspond to an optimal tariff structure for the United States.

Furthermore, regardless of whether the big country's economic welfare rises or declines on a net basis, an across-the-board surcharge results in substantial internal distributional effects under the assumption of full employment of capital and labor. In shifting resources from relatively low-cost industries to relatively high-cost industries, imposition of an import tariff raises the domestic prices of imports and import-competing goods, increases output of domestic import-competing industries, and raises the prices of factors of production that are relatively most important to the production of import-competing goods. At the same time, prices of export goods decline, fewer resources are devoted to export production, and the rewards of the factors of production that are relatively most important to those industries decline. On the consumption side, those domestic residents with a high propensity to consume imported and related goods lose, relatively speaking, because of the higher prices that they must pay for these goods.

SECTION II: THE PURE THEORY OF INTERNATIONAL TRADE WITH FOREIGN RETALIATION

If a small country imposes an import surcharge, the likelihood of foreign retaliation is relatively slim because the effect of the surcharge on the rest of the world will be small. But if the country imposing an import surcharge is large, it is almost certain that the surcharge will result in a significant loss of economic welfare for the rest of the world. When the big country succeeds in reducing the world price of its imports relative to its exports, it automatically lowers the amount of import goods that other countries can obtain per unit of their export goods. Moreover, the change in prices faced by the rest of the world shifts resources from their low-cost export industries into their high-cost import-competing industries, thereby creating efficiency losses abroad.

Since the major trading partners of a large, tariff-raising country unambiguously suffer losses in economic welfare, they have every motivation to band together to raise their own tariff or nontariff barriers to trade vis-a-vis the large country. The precise effects of this retaliation depend on the height and the type of the trade barriers that are raised, which are almost impossible to predict. It is possible that the retaliating countries may be able to improve their economic welfare somewhat relative to what they had experienced in the presence of the surcharge alone. It is much less likely, however, that they will be able to raise their welfare back to its initial level before the surcharge was imposed. As for the large

country, it may have been able to improve its economic welfare somewhat by imposing the import surcharge, but, after foreign retaliation, it is almost certain to suffer a net loss in economic welfare relative to the initial, pre-surcharge situation. Hence, even though there is a possibility that the one or the other may enjoy a net gain in economic welfare after retaliation, the most likely outcome is that everybody will be worse off than initially.

The volume of world trade, already depressed by the imposition of a surcharge, will decline further as a consequence of retaliation. Moreover, even though relative prices on world markets may not change much, prices within countries will be changed significantly by higher tariffs. Hence, throughout the world, prices of export goods will be lower and prices of import-competing goods will be higher. As a result, the distributional effects within countries are likely to be more severe, as even more resources within each country are devoted to production of its relatively high-cost goods.

Of course, the possibility exists that retaliation may lead to counter-retaliation, and so on. An outcome of such a trade war will generally be that both the large country and the rest of the world will suffer losses in economic welfare. In fact, if retaliation escalates, the volume of trade between the large country and the rest of the world could dwindle to almost nothing, and the end result could be disastrous for world welfare.

SECTION III: CAPITAL FLOWS AND EMPLOYMENT EFFECTS CONSIDERED

The effects of an import surcharge become very much more complex and difficult to analyze for a modern monetary economy that is subject to international capital flows and underemployment of capital and labor. In this world, effective exchange rates are determined by the forces of demand and supply for national currencies used in international trade, and also for currencies used to conduct international capital transactions. As a result, imposition of an import surcharge may alter the relative prices of internationally traded goods indirectly through exchange-rate movements that are generated by induced capital flows. Moreover, underemployment of labor and physical capital allows for multiplier effects that magnify a policy shock, such as an import surcharge, into higher or lower levels of aggregate real output and disposable income. Thus, imposition of an import surcharge affects international trade not only through changes in relative prices but through changes in the economy's total output.

Given the great complexity of the situation, the following analysis focuses on a base case under a number of simplifying assumptions that allow unhindered examination of the efficiency costs of an import surcharge. It assumes that the major trading partners of the United States do not band together to retaliate against an import surcharge by raising their own tariff or nontariff barriers to trade. It further assumes that no country undertakes to control international capital flows or to tax international flows of investment income, and that nobody expects such developments.

In addition, the base case assumes that private markets expect a U.S. import surcharge to be permanent, despite official disclaimers to that effect. Consequently, the domestic private sector is willing to undergo adjustment costs associated with the reallocation of real resources among domestic industries. Similarly, foreigners who might engage in direct investment in the United States expect the tariff wall to protect U.S. markets permanently.

Imposition of a U.S. import surcharge raises the domestic price of imports, with two major direct effects on the domestic private economy. One is an expenditure-switching effect in response to change in relative prices, whereby domestic residents switch their spending from imports to domestic output. This would have an expansionary effect on the economy. The other is a contractionary fiscal-policy effect whereby the increase in tariff revenues immediately removes purchasing power from the domestic expenditure stream. In other words, the expansionary expenditure-switching effect is offset to some degree by a contractionary fiscal-policy effect.

If imports consisted entirely of goods that were very similar in all respects (except price) to domestically produced goods, it is quite possible that the expenditure-switching effect could overwhelm the contractionary fiscal-policy effect, and domestic output could rise substantially. At an opposite extreme, in a developing country where the range of possibilities

for substitution between domestic output and imports is very limited or nil, the outcome would be very different. In fact, if imports provided necessary inputs to the domestic production process, domestic output would not only fall in response to a surcharge but could fall by more than the amount indicated by the contractionary fiscal-policy effect.

The truth for the United States undoubtedly lies somewhere between these two extremes. This particular question is an empirical one, left for the quantitative analysis. A study by Data Resources, Inc., suggests that the impact would be contractionary on balance. The next phase of this study will provide a detailed analysis and critique of the DRI study. The present qualitative analysis assumes that, before foreign feedback effects are taken into account, domestic expenditure switching would just offset the contractionary fiscal-policy effect, leaving domestic aggregate demand and real GNP unchanged. These assumptions are adopted solely for analytical convenience in isolating the direct efficiency costs created by an import surcharge. Alternatively, it could be assumed that monetary policy precisely offsets any net expansionary or contractionary effect that occurs. This might be appropriate if the monetary authorities pursue explicit goals for aggregate economic activity. In practice, however, such fine tuning is very difficult, and economic goals are constantly shifting in response to exogenous events and to changes in the structure of the economy.

Other effects of an import surcharge appear to be less ambiguous. Regardless of the direction of the effects on domestic aggregate demand and real GNP, an import surcharge reduces foreign real GNP, lowers the federal deficit, and improves the real U.S. trade balance. Since the surcharge lowers the world market price of imports, it also improves the nominal U.S. trade balance. Because the trade balance would improve at a constant exchange rate, then it follows that with no change in capital flows the dollar would appreciate.

It also appears that an import surcharge might improve the overall strength of the U.S. economy relative to the overall strength of the rest-of-the-world economy. If it lowered U.S. real GNP, moreover, the surcharge would be likely to lower foreign real GNP by more. 2/ It is quite possible, then, that an import surcharge could strengthen investment capital flows into the United States and thus lead to an even stronger dollar than the improvement in the trade balance alone would produce.

For the following analysis, however, a less extreme assumption is used: the total level of investment capital inflows into the United States is unaffected by the import surcharge and remains the same as in the absence of the surcharge. In this scenario, the effective exchange rate is

2. In this case, the outcome in relative terms is less clear; even though the drop in foreign real GNP is likely to be larger than the drop in U.S. real GNP, the percentage decline in U.S. real GNP could exceed the percentage decline in foreign real GNP.

determined by the strength of excess demand for dollars arising from investment considerations, relative to the strength of excess supply of dollars related to the current-account deficit. By assumption, excess demand for dollars arising from investment considerations is unchanged by the surcharge. Because the surcharge improves the trade balance at a constant exchange rate, excess supply of dollars related to the current-account deficit declines at the initial exchange rate. Thus, demand exceeds supply, and the dollar must appreciate in order to equilibrate the exchange markets.

One of the motivations underlying proposals for an import surcharge is to ameliorate the effects of what many observers consider to be an overvalued dollar. But if net capital inflows remain strong, it follows that such an import surcharge would be partially self-defeating. Although the relative position of U.S. import-competing industries would still probably improve, exporters would be in worse straits than before, because: (1) the dollar would be stronger; (2) foreign real incomes would be lower; and (3) the U.S. price level would be higher. In fact, a good deal of the favorable impact of a surcharge on the U.S. trade balance could be offset by ensuing dollar appreciation and lower foreign income.

It is very unlikely that this basic result would be altered by allowing autonomous capital flows to change in response to the import surcharge. It has already been noted that the deterioration of foreign incomes would

make the United States a relatively attractive place for investment. In addition, a tariff, thought to be permanent, would induce foreigners to establish U.S. plants in an effort to leap over the tariff barrier. While such investments could be financed in U.S. capital markets, it is more likely that some funds would be brought in from abroad. Thus, while it is possible to concoct circumstances in which the tariff might inspire U.S. capital outflow, 3/ an enhanced capital inflow seems much more likely. This would add to the appreciation of the dollar, causing the surcharge-induced improvement in the trade balance to be reduced further; indeed, it is possible to imagine cases in which the autonomous inflow of capital increases significantly and, at least temporarily, leaves the trade balance worse off than before the surcharge.

The strength of foreign feedback effects suggests that even though domestic expenditure switching might otherwise offset contractionary fiscal-policy effects on the domestic economy, an import surcharge could lower U.S. real GNP indirectly through its effects on the rest of the world. The base-case scenario might require stimulative monetary policy to achieve the outcome of no change in domestic aggregate demand and no change in U.S. real GNP. If so, it is additionally assumed that all domestic

3. Some U.S. producers who are highly dependent on imports as inputs might be inspired to move their facilities abroad in order to avoid the higher costs imposed by the tariff, but this impact would be unlikely to dominate.

prices increase proportionately in response to the monetary stimulus, so that relative price movements are dictated solely by the import surcharge.

U.S. imports tend to be capital intensive, whereas U.S. exports tend to be labor intensive. More specifically, U.S. exports tend to be skilled-labor intensive. In the base case, an import surcharge results in the transfer of real resources from U.S. industries characterized by comparative cost advantages to less-efficient import-competing U.S. industries characterized by comparative cost disadvantages. Thus, the wage rate of skilled labor falls relative to the wage rate of unskilled labor, and relative to the rental price of capital. The loss of economic efficiency resulting from a suboptimal allocation of domestic resources is mitigated to the extent that capital movements substitute for trade, because net capital inflows alleviate the relative domestic scarcity of capital. Nonetheless, capital inflows cannot eliminate the loss of economic efficiency as long as distortions exist between internal and external relative prices.

Under the base-case assumptions that there is no retaliation and no change in aggregate demand, the main impact of an import surcharge would be on the composition of production and final demand. As stated earlier, some industries, particularly those that compete with imports, would gain as a result of the protective tariff. But others would lose because they rely on foreign inputs, and, therefore, would experience higher production costs. Consumers, of course, would also lose, from higher costs of both imported and domestic products.

Identifying those industries that would expand or contract in response to a surcharge is (under the base-case assumptions) essentially a matter of identifying the effects of higher import prices as the tariff is passed through, and as buyers rearrange their purchases. Higher import prices will generally induce domestic purchasers to substitute like domestic goods for imported ones, where they can, or to switch to other goods where possible. At the same time, where substitution is not possible, purchasers will simply have to pay the higher cost, either through drawing on savings (discussed in Section IV, below) or through eliminating other purchases.

Winning and losing industries can be identified with the aid of input-output analysis, which allows one to trace the effects of changes in the prices of imported goods and their domestic substitutes through the economy--both in terms of inputs to final products and of outputs of final products themselves. This type of analysis would show how the composition of domestic output and consumption is likely to be affected by the imposition of a surcharge. Without that analysis, it is not obvious which industries would be the winners and which the losers. Certainly, domestic mineral producers would benefit from the higher prices of foreign competitors, but users of those minerals would face higher costs and would thus be injured. The next phase of this study will attempt to identify the winning and losing sectors of the economy with more precision.

Although the base case assumes no foreign retaliation, which precludes any major direct negative effect on U.S. exports, some negative effects

could be expected as U.S. producers, including producers of export goods, faced higher production costs. Should other countries choose to retaliate against the United States in kind, domestic compositional effects could be even more pronounced as some key exporting industries, such as agriculture and aircraft, would have to bear the brunt of reduced foreign demand for their products.

SECTION IV: IMPLICATIONS OF MAKING THE TARIFF TRULY TEMPORARY

The foregoing analysis has assumed that private economic agents expect a U.S. import surcharge to be permanent. The rationale underlying this assumption has its roots in experience; protectionist measures that are instituted on a temporary basis often have a way of becoming rather long-lived, if not permanent. A number of conclusions could change considerably, however, if people making economic decisions believed that a U.S. import surcharge would be only temporary.

One possibility is that U.S. citizens might not change their consumption behavior at all, but would absorb the full impact of the temporary surcharge by dipping into their savings. If real expenditures on imports did not decline, there would be no expenditure-switching effect. There would be no direct contractionary fiscal-policy effect either, because the temporary decline in private savings would fully counteract the loss in

purchasing power from the withdrawal of tariff revenues from the domestic expenditure stream.

On the other hand, because temporary depletion of savings implies little or no change in spending on imports, a surcharge will reduce the federal deficit more since tariff revenues remain at a high level as long as the import surcharge stays in place. The greater reduction in the federal deficit, which is not expected to be permanent, is unlikely to have any significant effect on real interest rates, however, because it will be exactly offset by a fall in private saving. Prices will rise to the consumer by an amount equal to the surcharge. Moreover, given that there is no change in import spending behavior, the external deficit will not improve.

This is not the only possible outcome, of course, because not all U.S. citizens may be willing to sustain higher spending on imports. Although many may want to maintain their import spending in real terms on a temporary basis, including manufacturers who use imported inputs in their production processes, many others may simply postpone purchases from abroad.

To take an extreme example, if the majority of importers postpone their import purchases until the surcharge is lifted, and if simultaneously U.S. citizens conclude that American goods are unacceptable substitutes for import goods, a number of conclusions change dramatically. The U.S. trade balance and current account balance improve sharply. There is no expenditure-switching effect because of the unacceptability of American substitutes, but there is no direct contractionary fiscal-policy effect either

because postponed import spending yields no tariff revenues. Nonetheless, the rise in the private-saving ratio lowers domestic interest rates somewhat, and this indirectly raises U.S. real GNP. As a result, there is some improvement in the federal deficit.

In the latter case, the impact on U.S. real GNP is positive, though possibly not large. This suggests the possibility that U.S. net capital inflows might be stimulated. Other forces, however, work to further confuse the issue. If private markets expect a U.S. import surcharge to be truly temporary, foreigners who might engage in direct investment in the United States would know that there would be no permanent tariff wall to protect U.S. markets in the future. Thus, they would have no incentive to accelerate the pace of their investing in U.S. facilities. In this event, a surcharge-induced increase in capital inflows would be much less likely, and the dollar would appreciate less or possibly even decline.

SECTION V. IMPLICATIONS OF RETALIATION

If an import surcharge was perceived as being relatively permanent or if U.S. citizens were to postpone their import expenditures on a grand scale, qualitative analysis indicates that a U.S. import surcharge would reduce foreign real GNP significantly. In fact, even in cases where U.S. real GNP declines, the decline in foreign real GNP would likely be even greater. The major trading partners of the United States could respond with more

stimulative monetary and fiscal policies of their own, but a more direct and a more probable response would be to raise their own tariff or nontariff barriers to U.S. exports.

History demonstrates the plausibility of a retaliatory tariff scenario. When the United States passed the Smoot-Hawley Tariff Act of 1930, many foreign countries imposed substantial tariffs of their own. Smoot-Hawley raised tariff levels on dutiable imported goods to an average level of 53 percent in 1932, an increase of 33 percent over 1929 levels. Retaliation led to a downward spiral in international trade—U.S. exports fell from 5 percent of GNP in 1929 to 2.8 percent in 1932. In fact, collected duties fell by over 50 percent between 1929 and 1932, as both the volume and value of imports declined.

In the postwar period, a 10 percent ad valorem surcharge was imposed in 1971 as part of President Nixon's "New Economic Policy"—a multifaceted attempt to improve the foreign trade position of the United States. (It included, among other things, abandoning the fixed exchange-rate system and imposing wage and price controls.) The surcharge covered all dutiable imports and was used primarily as a bargaining chip to induce other countries to revalue their currencies. With some exceptions, the effective rate of the surcharge was about 4.8 percent. Foreign reaction to the surcharge was hostile, but the legal situation was ambiguous. A working party of the General Agreement on Tariffs and Trade (GATT) found that the

surcharge was in line with the magnitude of the U.S. trade deficit problem, but was inappropriate under the GATT. The working party urged the United States to remove the surcharge within "a short time," but stopped short of calling for sanctions. It was removed within four months of its promulgation, after the Smithsonian Agreement of 1971, and any threats of retaliation evaporated.

Although the likelihood of foreign retaliation against an import surcharge is high, experience shows that its type and extent are virtually impossible to predict. One may assume that the retaliating country or bloc of countries would raise its own trade barriers to U.S. exports by an amount that would result in a percentage reduction of U.S. exports equal to the percentage reduction in its own exports. Given this or other similarly arbitrary rules of behavior, the mechanics of a retaliatory commercial policy scenario would be relatively simple to handle—if one ignored the effects on capital flows.

If exchange rates are held constant, which is a reasonable approximation in this case, a qualitative analysis suggests that, at each step of the retaliatory process, a country or world region raising its trade barriers may either raise or lower its own real GNP somewhat, but the reduction in foreign real GNP is likely to be greater. Consequently, depending on how many retaliatory rounds are allowed, the reduction in world trade and world real GNP may be substantial. If retaliation accumulates and gets out of hand, there is a danger of serious worldwide economic decline.

Unfortunately, when capital flows are considered, the direction of exchange-rate movements in a retaliatory commercial policy scenario becomes extremely difficult to predict. Capital flows could go either way, depending on expectations of the final outcome of the retaliatory process. Moreover, in such a belligerent atmosphere, it is quite likely that capital flows would be made subject to punitive taxation.

It is possible, then, that a confluence of capital controls, taxes on international flows of investment income, and universally heightened risk could result in a substantial reduction in the volume of international capital flows. In this event, U.S. interest rates could rise significantly, output and incomes would fall, and the federal debt could explode. High dollar interest rates and a contraction of world trade could result in acute financial problems for Third World debtors and for their U.S. creditors, mostly banks unable to collect their loans.