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## RESEARCH SEMINAR IN INTERNATIONAL ECONOMICS

Department of Economics  
The University of Michigan  
Ann Arbor, Michigan 48109-1220

SEMINAR DISCUSSION PAPER NO. 223

### IMPACT OF THE TOKYO ROUND AND U.S. MACROECONOMIC ADJUSTMENTS ON NORTH AMERICAN TRADE\*

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Presented at University of Toronto Conference on Dynamics of North American Trade and Economic Relations, Trinity College, June 12-14, 1988.

\*Financial assistance for this paper was provided in part by a grant from the Ford Foundation in support of a program of research on trade policy in the Institute of Public Policy Studies at The University of Michigan. We would like to thank John Alfaro for computational assistance and Judith Jackson for editorial and typing assistance.

Revised  
October 3, 1988

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**I. Introduction**

The world economy has experienced disturbances of unprecedented magnitudes in the past fifteen years as the result of the oil shocks of 1973–74 and 1979–80 and the macroeconomic and trade imbalances arising from the combination of U.S. monetary contraction and fiscal expansion in the first half of the 1980s. What is quite remarkable, during this period of economic turmoil, is that the major industrialized countries were able in 1973 to enter into and conclude in 1979 the seventh (Tokyo) round of multilateral trade negotiations under the auspices of the General Agreement on Tariffs and Trade (GATT).

The Tokyo Round negotiations resulted in the reduction of existing tariffs by as much as one-third, with exceptions for certain sensitive sectors, and agreement on a series of codes relating to a variety of nontariff measures — antidumping procedures, subsidies and countervailing duties, standards, government procurement, customs valuation, and import licensing — designed to bring about greater transparency and harmonization in the use of these measures among the major industrialized countries. The Tokyo Round tariff reductions were phased in between 1980 and 1987, while the implementation and operation of the nontariff codes have become an integral part of the GATT process.

Given that the GATT member countries are currently engaged in the eighth (Uruguay) round of multilateral trade negotiations, it may be instructive to look back to assess the effects of the Tokyo Round negotiations. For this purpose, we have adapted the Michigan Model of World Production and Trade — see Deardorff and Stern (1986) — in

order to determine how sectoral trade and employment in the United States and Canada especially may have been affected by their own and each other's tariff reductions as well as by the tariff reductions implemented by the other industrialized countries as the result of the Tokyo Round negotiations.

Because tariffs had been reduced significantly in previous GATT negotiations, the Tokyo Round reductions, as we shall see, were bound to have a comparatively small impact. This is all the more the case when the effects induced by the U.S. macroeconomic imbalances of the 1980s are taken into consideration. To illustrate this, we have used the Michigan model to calculate the sectoral trade and employment effects of two different types of macro scenarios. The first scenario involves an assumed autonomous change in U.S. capital inflows equal to 1 percent of U.S. gross domestic product (GDP). This is designed to mimic the effects of a U.S. policy of monetary contraction, which by increasing the U.S. rate of interest relative to foreign rates, would lead to a capital inflow, a matching trade deficit, and an appreciation of the dollar. The second scenario involves an assumed exogenous increase in U.S. aggregate expenditure equal to 1 percent of GDP, accompanied by an equal capital inflow. This is intended to reflect a U.S. fiscal expansion, which by increasing demand for all tradable and nontradable goods, requires a shift towards foreign tradable goods in order to equilibrate markets especially for nontradable goods. The resulting increase in U.S. imports and the trade deficit will necessitate an appreciation of the dollar.

These two scenarios cannot by any means capture the full complexity of the international financial effects and dynamic processes involved. They may nonetheless provide some insight into the magnitudes and composition of the sectoral adjustments that may have been necessitated by the changes in U.S. macroeconomic policies that occurred especially in the first half of the 1980s.

Our paper proceeds as follows. In Section II, we present a brief overview of some salient economic developments that have taken place in the North American economies

since the 1970s. The results of our computational experiments are presented in Sections III and IV, and we make some concluding remarks in Section V.

## **II. An Overview of Economic Developments in the North American Economies Since the 1970s**

Some selected economic data covering 1973 to early 1988 for the United States, Canada, and Mexico are presented in Table 1.

The nominal effective exchange rate of the U.S. dollar can be seen to have appreciated by 50 percent between 1980 and 1985, and by the second quarter of 1988 to have returned to its 1980 level. Since U.S. domestic prices did not diverge materially from those in the other industrialized countries during the period, the index provides a reasonable guide to the real exchange-rate movement of the dollar. The nominal trade deficit of the United States (measured on a balance-of-payments basis) rose from \$25.5 billion in 1980 to \$122.2 billion in 1985, and increased to \$160.3 billion between 1985 and 1987. Preliminary indications are that the nominal trade deficit will decline in 1988. The U.S. current account showed a small surplus in 1980 and 1981, and thereafter moved into a deficit of roughly the same size as the trade deficit in 1984-87. The U.S. trade and current account deficits exceeded 3 percent of GNP in 1985-87. The nominal U.S. government deficit increased markedly after 1981. It averaged around 5 percent of GNP in 1983-86 and declined to 3.5 percent of GNP in 1987, which was about the same size as the trade and current account deficits.

Canada's nominal effective exchange rate appreciated by less than 10 percent between 1980 and 1983, depreciated from 1983-87, and has appreciated to a small extent thereafter. Canada had a nominal trade surplus in each of the years indicated, ranging from 2 to 5 percent of GNP, whereas it had a current account deficit in 1980-81 and 1985-87. Canada had a nominal government deficit in all the years shown. It was around 6 percent or more of GNP in 1982-85 and declined to about 4 percent of GNP in 1986. It is interesting to note that despite the relative importance of Canada's

government deficit, it has not experienced the sizable trade and current account deficits that have been recorded for the United States. Canadian domestic savings have thus been the primary source for financing Canada's government budget deficit whereas the U.S. government budget deficit has been financed in large measure by foreign savings and capital inflows.

The very sizable and accelerating depreciation of the Mexican peso is evident in Table 1. Mexico had a nominal trade deficit in 1980-81 and a surplus thereafter. Its current account, which was in deficit in 1980-82, moved into surplus in 1983-85, and recorded a small deficit in 1986. Mexico's nominal government budget deficit exceeded 16 percent of GNP in 1982 and thereafter has been in the 7-9 percent range. The Mexican data for 1988, which were incomplete at the time of writing, would reflect the impact of the domestic stabilization measures introduced in late 1987 and designed to reduce inflationary pressures and reverse the depreciation of the peso.

The data in Table 1 thus document the wide swing in the U.S. dollar exchange rate that has occurred in the 1980s, together with the coincidence of the historically unprecedented increases in the U.S. nominal government deficit and the deficits on trade and current account. The U.S. record is not necessarily typical, however, as the Canadian experience suggests. In contrast to its North American neighbors, Mexico has been trying to deal with inflation, a rapidly depreciating currency, a sizable government budget deficit, and at the same time generate trade and current account surpluses so as to be able to handle the servicing of its foreign debts.

### **Changes in Bilateral and Global Trade, 1973-1986**

Let us now look in more detail at the changes that have occurred in U.S. and Canadian bilateral and global merchandise exports, imports, and trade balances. It can be seen in Table 2 that more than 20 percent of total U.S. exports went to Canada, and Canada supplied about 17 percent of total U.S. imports in 1986, which was down from its 24 percent share in 1973. The United States had a \$23.9 billion merchandise trade deficit

with Canada in 1986 and a \$176.7 trade deficit globally. The comparable deficits in 1973 were both around \$3 billion. The bilateral trade deficit with Canada was comprised chiefly of raw materials, fuels, semi-manufactures, practically all varieties of engineering products, and consumer manufactures.

The United States accounted for 77 percent of Canada's exports in 1986 as compared to 68 percent in 1973. The United States supplied 68 percent of Canada's imports in 1986 as compared to 71 percent in 1973.<sup>1</sup> While Canada's global net trade roughly mirrors its bilateral net trade with the United States, it had larger global net imports of engineering products and consumer manufactures.

Comparable information on U.S.-Canadian bilateral trade with Mexico was not readily available at the time of writing. If we combine the global data in Table 2 with data reported in the Economist Intelligence Unit Ltd. (1987), U.S. exports to Mexico were around 6 percent of total U.S. exports in 1986, and its imports from Mexico were 4.5 percent of total U.S. imports in that year. According to the Economist Intelligence Unit Ltd. (1973), the United States accounted for 63 percent of Mexico's total exports and supplied 59 percent of Mexico's total imports in 1972. This compares to 67 percent and 65 percent for the U.S. shares of Mexico's total exports and imports in 1986. Nearly half of U.S. imports from Mexico in 1972 consisted of primary products while machinery and related products accounted for about an additional 20 percent. In 1986, U.S. imports of raw materials were 37 percent and U.S. imports of machinery and related products were 31 percent of total imports from Mexico. U.S. imports of petroleum and related products were about 1 percent of total imports from Mexico in 1972 as compared to 22 percent in 1986. U.S. exports of chemicals and capital goods to Mexico were about 60 percent of the total in 1972 as compared to 66 percent in 1986.

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<sup>1</sup>It will be noted that the bilateral U.S.-Canadian exports, imports, and trade balances recorded in Table 2 do not match because U.S. imports are valued at c.i.f. There may also be some differences in classifications of the bilateral trade flows and some underreporting of bilateral trade especially in road motor vehicles.

It is thus evident that the United States accounts currently for about two-thirds of Mexico's total exports and imports, and that Mexico accounts for about 5 percent of total U.S. exports and imports. While Mexico has relatively large exports of primary products to the United States, its exports to the United States of machinery and related products are important as well. Mexico's imports from the United States consist chiefly of chemicals and capital goods.

Having examined some aggregate data as well as some detailed trade data for the United States, Canada, and Mexico, let us turn now to our computational analyses of the effects of the Tokyo Round tariff reductions and changes in U.S. macroeconomic policies.

### **III. Computational Analysis of Tokyo Round Tariff Reductions**

As already mentioned, the Tokyo Round negotiations, which were concluded in 1979, resulted in tariff reductions by as much as one-third. An indication of the average percentage reductions for the major industrialized countries is given in Table 3. The weighted average reduction for the United States was 34.1 percent and for Canada, 29.1 percent. The lower percentage for Canada reflects some unilateral reductions made prior to 1979, which are not included in the rates used to calculate the average reduction noted in the table. There are no developing countries listed in Table 3 since none of them opted to reduce their tariffs or other barriers in the Tokyo Round.

We have had occasion previously — see Deardorff and Stern (1986, pp. 52–61) — to analyze the economic effects of the Tokyo Round negotiations. For this purpose, we used the Michigan Model of World Production and Trade, which is a general equilibrium computational model that includes the 18 major industrialized countries, the 16 major developing countries, and the rest of the world in the aggregate. There are 22 tradable and 7 nontradable sectors in each country. Since the model is described in detail in the aforementioned source, we shall not elaborate on its features here.

The question that we have chosen to investigate for the present paper is how trade and employment for the United States and Canada especially may have been

affected by their own and each other's tariff reductions as well as by the tariff reductions of the remaining industrialized countries. It should be noted in this connection that the actual tariff reductions negotiated in the Tokyo Round were phased in annually beginning in January 1980 and concluding in January 1987. However, since our model deals with comparative statics, we assumed that the negotiated tariff reductions were implemented all at one time.<sup>2</sup> The model was then solved for percentage changes in the endogenous variables, and absolute changes were found by multiplying the percentage changes by initial 1976 levels that serve as the benchmark for all calculations based on the model. In this experiment, aggregate expenditure in each of the industrialized countries was permitted to vary so as to keep the level of employment unchanged. The results thus permit us to analyze the intersectoral adjustments of a given labor force to the changes in tariffs.

Our model yields information on changes in a variety of endogenous variables, including exports, imports, employment, output, value added, exchange rates, and prices. We have chosen to focus here on the net percentage changes in employment in Canada and the United States that may be attributed to the Tokyo Round multilateral tariff reductions.<sup>3</sup> The results are given in Tables 4 and 5 for Canada and the United States respectively. The first column in each table indicates the net percentage changes in employment by sector in the country due to the tariff reductions of all the industrialized

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<sup>2</sup>The detailed sectoral tariff reductions used for computational purposes are given in Deardorff and Stern (1986, pp. 50-51). Certain minor modifications in agricultural nontariff barriers (NTBs) were negotiated in the Tokyo Round as well as the various NTB codes mentioned above. While some of the NTB codes may have resulted in greater transparency and harmonization of national procedures and policies and reductions in the costs of international trade, their effects are not readily measurable in quantitative terms and are therefore not included in our calculations. For an assessment of the Tokyo Round codes, see Stern, Jackson, and Hoekman (1988).

<sup>3</sup>In interpreting the employment results, it should be noted that they reflect the multilateral adjustments involved rather than the bilateral effects. In our model, we assume that goods are perfect substitutes in world markets, but that there is imperfect substitution between imports and home goods. If, instead, it were assumed that goods could be distinguished by country of origin, as in Whalley (1984) and Brown (1988), bilateral effects could be analyzed directly.



countries in the Tokyo Round taken together. The next four columns decompose these changes according to the tariff reductions implemented by all other industrialized countries excluding the United States and Canada, the United States and Canada combined, and the United States and Canada individually.

The last four columns of the tables provide some indication of the relative importance of the own-country and cross-country tariff reductions. Each reports a ratio of two of the earlier columns, converted to a percentage, in order to indicate the fraction of the effect on the country that can be attributed to particular tariff reductions. For example, the column headed "U.S. + Can/All Dev" reports column 3 as a fraction of column 1, and thus the fraction of the employment effect due to all countries' tariff reductions together that can be attributed to the tariff reductions of the United States and Canada alone. In the first row of Table 4, therefore, we find that while all countries' tariff reductions together increase Canadian agricultural employment by 0.49%, more than half of that increase—0.26%, which is 52% of 0.49—is due to the tariff reductions of the United States and Canada alone. Similarly, the last column in Table 4 compares column 5 with column 3, and thus reports the share of this latter number that is due to Canadian tariff reductions alone.

With this interpretation, the signs of the entries in these columns are indicative of whether own and cross effects of tariff reductions are reinforcing or offsetting. Looking again at the first row of Table 4, for example, the negative sign in the next to last column indicates that entries in columns 3 and 4 are of different sign, and thus that U.S. tariff reductions have the opposite effect on Canadian agricultural employment as compared to the effects of Canada's own tariff reductions. Similarly, negative signs in the third to last columns in both tables indicate sectors in which tariff reductions outside the United States and Canada have tended to offset the employment effects of the tariff reductions in the two countries themselves.

The principal results, then, are as follows.<sup>4</sup> First, the employment effects are comparatively small in all sectors of the United States and in almost all sectors of Canada. This is to be expected since the tariff changes themselves are small and since a variety of general equilibrium interactions also serves to dampen the effects of individual tariff reductions, as we have discussed in Deardorff and Stern (1986).

Second, the own-country results show both negative and positive effects across sectors, as is necessary since total employment is being held constant. The negative effects occur in the sectors with the deepest tariff cuts. For Canada, these include rubber products, electric machinery, metal products, printing and publishing, and glass and glass products. For the United States, the negative effects occur in miscellaneous manufactures, nonmetallic mineral products, wearing apparel, wood products, glass and glass products, rubber products, and furniture and fixtures. Most of the nontradable sectors in both countries also have negative effects, which reflect the substitution in favor of tradables and against nontradables resulting from the tariff reductions.

Third, the own-country effects are much larger than the cross-country effects. This would be expected in any case, since tariffs here are multilateral rather than bilateral. However, the weakening of cross-country effects may be enhanced in our model, where one country's tariffs affect another's trade only indirectly through world prices.

Fourth, the cross-country effects tend, more often than not, to be opposite in sign to, and thus to some extent to offset the own-country effects. The apparent reason for this offsetting is that the patterns of tariff reductions by the industrialized countries were fairly similar. Thus, sectors with the deepest tariff reductions in a given country will experience the largest increases in imports, and thus decreases in employment. If these same sectors

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<sup>4</sup>The calculated effects of the tariff reductions on Mexico and the other major developing countries turn out to be very small and therefore are not reported here. The main reasons for the small results stem from the fact that existing NTBs, which affect many of these countries, remain in place, together with the fact that the trade of these countries affected by the tariff reductions is of minor importance compared to the trade of the industrialized countries. The detailed results are reported in Deardorff and Stern (1986, pp. 53-59).

have the deepest tariff reductions in other countries as well, however, then the foreign tariff reductions will stimulate the home country's exports and thus increase employment. Conversely, those sectors with the smallest tariff reductions both at home and abroad will have employment diverted toward them by the larger own country tariff reductions in other sectors, but away from them by the larger tariff reductions in other sectors abroad.

Our analysis of the Tokyo Round thus suggests that the multilateral tariff reductions may have served to dampen the possible dislocation effects resulting from a country's own tariff reductions. As just mentioned, this conclusion reflects the similarity of tariff reductions among the industrialized countries. It would be interesting in this light to investigate how individual countries would be affected in cases where there were important dissimilarities in sectoral levels and patterns of reductions in tariffs.<sup>5</sup>

#### **IV. Computational Analysis of Changes in U.S. Macroeconomic Policies**

While the Michigan model has been designed mainly to analyze the sectoral effects of changes in trade and related policies, we have on occasion used it to analyze the effects of changes in exchange rates and macroeconomic policies. The model is not particularly well suited for macro analysis, however, since it does not include interest rates and other financial influences. It treats the capital account as exogenous.

Granting these limitations, we thought it might nonetheless be of some interest to see what insights the model might offer with respect to the sectoral impacts that changes in U.S. macroeconomic policies may have had in the first half of the 1980s. For this purpose, we carried out two stylized experiments. The first involves an effort to mimic a policy of monetary contraction, such as occurred in 1981-82, by assuming an exogenous increase in U.S. capital inflows equal to 1 percent of U.S. GDP. A contractionary monetary policy would presumably increase the U.S. rate of interest relative to foreign

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<sup>5</sup>See Deardorff and Stern (1988) for a computational analysis of different negotiating options in the Uruguay Round, including the possible elimination of existing tariffs in the major industrialized and developing countries and the elimination of nontariff restrictions in agriculture, textiles and apparel, automobiles, and other sectors.

rates, thus leading to a capital inflow, appreciation of the U.S. dollar, and a corresponding trade deficit. The second experiment involves an assumed fiscal expansion, such as occurred after 1982, financed by a capital inflow. We assume here that U.S. aggregate expenditure increases by, again, 1 percent of U.S. GDP, and that there is an accompanying exogenous capital inflow of the same amount. The increase in expenditure would increase the demand for both tradables and nontradables. Greater expenditure on tradables would require a shift towards foreign goods induced by an appreciation of the dollar. There would be a capital inflow and a corresponding trade deficit.

The two experiments were run on the alternative assumptions of fixed money wages and flexible wages. In the case of fixed money wages, we allow unemployment to occur, whereas the labor market is permitted to clear when wages are assumed to be flexible.

The sectoral percentage trade and employment effects for each of the two cases of both experiments are shown for the United States in Tables 6 and 7. In addition, the calculated changes in the United States effective exchange rates are shown at the bottom of Table 7.

It is noticeable, first, that the sectoral effects on both trade and employment are not at all sensitive to which one of these four scenarios is being run. That is, there is very little variation across the rows in either of these tables, except for the final row reporting effective exchange rates. This can be understood as follows.

Consider the effects of a capital inflow itself, whether or not it is accompanied by an increase in expenditure. A capital inflow requires three kinds of adjustment in order to restore equilibrium. First, an overall trade deficit equal to the capital inflow must be induced, requiring that the country's nominal expenditure come to exceed its nominal income by the amount of the capital inflow. Second, relative prices of domestically produced versus imported goods must adjust to assure that overall demand for domestic goods not exceed their supply, as they otherwise would given the aforementioned rise in expenditure relative to income. And third, relative prices of the individual sectors must

adjust to equilibrium, to the extent that individual supplies and demands are affected differently by overall changes in expenditure, price levels, and exchange rates. Now the first two of these adjustments are accomplished in somewhat different ways depending on whether the capital inflow is accompanied by a rise in nominal expenditure, but these differences have little to do with the intersectoral effects. It is only in the third of these adjustments that sectors are affected, and here the different scenarios are pretty much the same.

To illustrate the different kinds of adjustment, we can note, for example, that a capital inflow by itself causes an appreciation of the currency, and this serves the dual purpose first of lowering domestic prices so as to decrease the nominal value of income relative to the given nominal expenditure, and second also of cheapening imported goods relative to domestic goods so as to divert this expenditure away from domestic goods. If on the other hand, the capital inflow is accompanied by an increase in nominal expenditure, then a portion of the expenditure adjustment is accomplished directly, domestic prices can rise, and a smaller appreciation is needed for both purposes. This is evident in the exchange rate results for the two sets of scenarios reported in Table 7. The difference between them is largely nominal, both the nominal exchange rate appreciating less and the overall level of prices (not reported in the table) rising more when nominal expenditure rises than when it does not. On the other hand, the relative prices across sectors are not very sensitive to these nominal differences, and thus the intersectoral adjustments that are required in both cases are largely the same.

There is also some difference in the exchange rate results depending on whether wages are fixed or flexible, but again the intersectoral results are not much affected by this distinction. If wages are flexible, then they can adjust along with nominal expenditure, prices, and exchange rates, and the effects just described occur unhindered. If wages are fixed, on the other hand, then changes in these other nominal variables cause some changes in real wages and hence in outputs. As a result, a portion of the drop in nominal

expenditure is brought about by a drop in outputs, and there is less need for adjustment of nominal variables. This shows up in Table 7 in that the changes in effective (nominal) exchange rates across the two experiments are somewhat more similar with fixed wages than with flexible wages.

On the other hand, while there is not much variation across scenarios in these sectoral effects, there is considerable variation within each scenario across the sectors themselves. As noted in Deardorff and Stern (1986, esp. pp. 139-151), the main determinants of the sectoral effects of a change in the exchange rate or a change in expenditure include: (1) the elasticity of supply of an industry and the share of exports in total production; (2) the share of imports in total demand and the elasticity of substitution between imports and home goods; (3) industry shares of world supply and demand; (4) industry shares of final demand and labor shares of value added; and (5) the size and direction of expenditure changes.

It is evident from Table 6 that there are sizable percentage increases in imports and even larger declines in exports. The larger changes in exports reflect the fact that export supplies tend to be substantially more price elastic than import demands. It can be seen in Table 7 that there are net percentage declines in employment across practically all the tradable industries. Employment increases in the nontradable sectors, except for mining and quarrying. It is noteworthy that these results do not differ a great deal between the two experiments or when wages are assumed to be fixed or flexible.

We noted in Table 1 that the dollar appreciated significantly after 1980. We show an appreciation of about 3-4 percent for the various experiments in the last line of Table 7, but the size of the appreciation is obviously very much smaller than what actually occurred. We may therefore be underestimating the sectoral impacts that may have taken place, although there is no clear way to establish this without a more complete model of exchange-rate determination.

The effects of the increase in the United States trade deficit on other countries occur primarily through world prices and real exchange rates. The appreciation of the dollar in Table 1 corresponds to a depreciation of other currencies that in general expands other countries' exports and contracts their imports. These changes, too, correspond to the tightening of world markets in individual sectors that occurs when United States imports expand and exports contract as reported in Table 6.

Thus, the trade and employment results for Canada due to the increased trade deficit of the United States are shown in Tables 8 and 9. The largest percentage increases in Canada's exports are in leather products, footwear, wearing apparel, rubber products, and nonferrous metals. There are declines in imports, in the 1 percent range or less, except in the cases of agricultural products, iron and steel, and nonferrous metals where imports rise. The employment effects largely mirror the trade effects, including a shift away from nontradables. The model results suggest a depreciation of the Canadian dollar in the 2-3 percent range.

The results for Mexico in Tables 10 and 11 show unusually large percentage increases in exports and employment in petroleum and leather products, which may reflect the relatively high supply elasticities assigned to these sectors. Aside from these outliers, the export increases are in the 1-3 percent range and the import declines are somewhat larger. The percentage employment effects are the highest in mining and quarrying, nonferrous metals, petroleum products, nonelectric machinery, and wood products. Finally, the model results suggest a depreciation of the peso of 3-4 percent.

As already noted, the United States has experienced trade and current account deficits ranging from 1 to 3.5 percent of GNP since 1980 coupled with a government deficit in excess of 5 percent of GNP in 1983 and 1986-87. The dollar appreciated very substantially between 1980 and 1985 and has since depreciated to about its 1980 level. We have tried to provide some estimates of the sectoral impact of the changes in U.S. policies that are reflected in the macroeconomic data both for the United States and its two

major North American trading partners, Canada and Mexico. While we have not attempted to take into account the full extent of the changes in exchange rates and associated changes in the U.S. trade and current accounts, the sectoral impacts that we have calculated are nonetheless substantial.

Since, as is clear from our earlier discussion, a very large proportion of the trade of both Canada and Mexico is carried on with the United States, it is reasonable to conclude that U.S. macroeconomic policies in the 1980s have had a major impact on the level and sectoral composition of bilateral trade flows in North America. It is also interesting to note how the nontradable sectors have been affected in each country.

The delayed impact of the more recent depreciation of the dollar has been widely noted and discussed. While we have not attempted here to calculate the effects of dollar depreciation, our analysis suggests that the sectoral impacts in the United States and in its major trading partners are bound again to be substantial. The dollar depreciation has already brought about a significant expansion in the production of tradables in the United States, as exports have increased and expenditure has shifted from imports to domestic substitutes. At the same time, a shift away from nontradables has also been occurring in the United States. Opposite effects can be expected in Canada and Mexico, with a shift away from tradables and towards nontradables. In view of the size and impact of the exchange-rate movements, it is possible that some significant dislocation effects may occur in particular sectors in the individual countries.

## **V. Conclusion**

We have had occasion in this paper to use the Michigan Model of World Production and Trade to analyze changes in multilateral trade policies and U.S. macroeconomic policies, both of which have taken place in the 1980s and have had an important influence on North American economic relations.

Our analysis of the Tokyo Round tariff reductions, which were implemented in stages between 1980 and 1987, was focused on the own-country and cross-country sectoral



effects of the tariff reductions on Canada and the United States. It was shown that the effects were relatively small in view of the small size of the actual tariff reductions. Nonetheless, both negative and positive own-country effects were observed, which reflected the sectoral differences in the depth of the tariff reductions. When we decomposed the multilateral reductions, the own-country effects were dominant in relation to the overall effects. In addition, because of the similarities of the tariff reductions, the cross-country effects often tended to offset the own-country effects.

The changes in U.S. macroeconomic policies in the first half of the 1980s were seen to have had much larger impacts on trade and employment in the North American setting in comparison to the Tokyo Round tariff changes. The computational results suggested relatively large increases in U.S. imports and declines in U.S. exports together with a shift away from U.S. tradable industries towards nontradables. The net percentage reductions in employment were fairly sizable in a number of the U.S. tradable sectors. Opposite effects were observed in Canada and Mexico, though with somewhat smaller relative sectoral changes in their trade and employment. When the full effects of the post-1985 dollar depreciation are realized, we can expect to witness sizable sectoral impacts in a direction opposite to what occurred in the period of dollar appreciation.

It is interesting to view our Tokyo Round and macroeconomic experiments together. In the case of the Tokyo Round tariff reductions, the own-country effects brought about a shift towards tradables and away from nontradables in all the major industrialized countries. But because of the similarities of the tariff reductions, the cross-country effects tended to dampen the own-country effects. U.S. macroeconomic policies in the first half of the 1980s had effects opposite to the Tokyo Round tariff reductions insofar as there was a shift away from tradables towards nontradables in the United States. In Canada, the own-country effects of its tariff reductions were reinforced by the changes in U.S. macroeconomic policies. The same is true for Mexico, except that our calculations suggest that the Tokyo Round tariff reductions had a negligible impact on Mexico.

One final thing worth mentioning in conclusion is that our analysis of the own-country and cross-country effects of changes in policies can be extended to other countries and regions covered in the Michigan model. We would expect to find that the same points that we have made above would apply in these cases.

### References

- Brown, Drusilla K. "A Computational Analysis of the Effects of the Tokyo Round Negotiations on Preferential Trading Arrangements," *Journal of Economic Integration*, forthcoming 1988.
- Deardorff, Alan V. and Robert M. Stern. *The Michigan Model of World Production and Trade: Theory and Applications*. Cambridge: MIT Press, 1986.
- Deardorff, Alan V. and Robert M. Stern. "Alternative Scenarios for Trade Liberalization," Middlebury College Conference on the Internationalization of U.S. Markets, April 7-9, 1988, forthcoming in conference proceedings.
- Economist Intelligence Unit Ltd. *Quarterly Economic Review of Mexico*, 1973 and 1987.
- Stern, Robert M., John H. Jackson, and Bernard M. Hoekman. *An Assessment of the GATT Codes on Non-tariff Measures*, Thames Essay No. 55. London: Trade Policy Research Centre, 1988.
- Whalley, John. *Trade Liberalization Among Major World Trading Areas*. Cambridge: MIT Press, 1984.

**Table 1**  
**Selected Economic Data for the United States, Canada, and Mexico, 1973-1988.II**

United States							
Year	Effective Exchange Rate 1980=100	Trade Balance		Current Account Balance		Government Deficit	
		Bill. U.S. \$	% of GNP	Bill. U.S. \$	% of GNP	Bill. U.S. \$	% of GNP
1973	106.8	0.91	0.07	7.07	0.52	-16.23	1.19
1980	100.0	-25.50	1.02	1.84	0.06	-76.18	2.79
1981	112.7	-27.97	1.02	6.87	0.22	-78.74	2.58
1982	125.9	-36.45	1.15	-8.64	0.27	-125.69	3.97
1983	133.2	-67.08	1.97	-46.28	1.36	-202.52	5.95
1984	143.7	-112.51	2.99	-107.09	2.84	-178.26	4.73
1985	150.2	-122.15	3.05	-116.43	2.90	-212.10	5.29
1986	122.5	-144.54	3.41	-138.84	3.27	-212.60	5.02
1987	108.0	-160.28	3.57	-153.95	3.43	-156.00	3.48
1988. I	100.5	-130.12		-140.04			
1988. II	99.7						
Canada							
1973	120.3	2.99	2.42	0.11	0.09	-1.70	1.38
1980	100.0	8.00	3.14	-0.95	0.37	-8.72	3.42
1981	102.9	6.58	2.29	-5.11	1.78	-7.03	2.44
1982	104.9	14.99	5.11	2.23	0.76	-16.87	5.75
1983	108.3	14.97	4.68	2.49	0.78	-20.42	6.38
1984	106.3	16.56	4.96	2.57	0.77	-22.29	6.68
1985	102.7	13.17	3.87	-0.88	0.26	-21.00	6.17
1986	92.6	8.08	2.28	-6.66	1.88	-14.76	4.16
1987	92.3	8.76	2.16	-7.24	1.79		
1988. I	94.1						
1988. II	96.8						
Mexico							
1973	181.8	-1.52	2.79	-1.42	2.61	-2.19	4.02
1980	100.0	-2.83	1.56	-8.16	4.49	-5.84	3.22
1981	93.2	-4.10	1.77	-13.90	6.00	-16.01	6.91
1982	40.9	6.80	4.30	-6.22	3.94	-25.77	16.32
1983	18.9	13.76	10.26	5.42	4.04	-11.35	8.47
1984	13.6	12.94	8.03	4.24	2.63	-12.48	7.75
1985	8.9	8.45	5.10	1.24	0.75	-15.49	9.34
1986	3.6	4.60		-1.67			
1987	1.6	8.43		3.89			

Notes: All data are taken from the International Monetary Fund, *International Financial Statistics*: lines am x for the U.S. and Canadian effective exchange rates measured in terms of U.S. dollars per unit of national currency, line wf for Mexico's exchange rate (U.S. dollars per peso), lines 77 ac d and 77 az d for the trade and current account balances measured on an annualized balance-of-payments basis, and line 80 for the (central) government deficit. Data for the government deficit and GNP for Canada and Mexico were converted into U.S. dollars. The data for recent years were estimated in part for Canada and Mexico. An increase in the exchange-rate index signifies an appreciation of the currency and a decrease signifies a depreciation.

**Table 2**  
**U.S. and Canadian Bilateral and Global Merchandise**  
**Exports, Imports, and Trade Balances, 1973 and 1986**  
**(Billions of U.S. Dollars)**

Commodity Group	Year	U.S./Canada			U.S./World			Canada/U.S.			Canada/World		
		Exports	Imports	Balance	Exports	Imports	Balance	Exports	Imports	Balance	Exports	Imports	Balance
<b>Primary products, total</b>	1973	2.08	6.91	(4.83)	24.73	27.21	(2.48)	7.10	2.26	4.84	13.10	4.78	8.32
	1986	4.60	18.08	(13.48)	48.11	85.65	(37.54)	18.01	6.76	11.25	30.73	12.33	18.40
Food	1973	.94	.99	(.05)	16.58	10.28	6.30	1.02	1.08	(.06)	3.57	2.08	1.49
	1986	1.48	3.20	(1.72)	25.78	27.25	(1.47)	3.15	2.56	.59	7.79	4.92	2.87
Raw materials	1973	.38	2.21	(1.83)	3.95	3.45	.50	2.10	.43	1.67	3.00	.58	2.42
	1986	.70	4.91	(4.21)	8.76	7.75	1.01	4.91	1.07	3.84	7.70	1.40	6.30
Ores & other minerals	1973	.19	.77	(.58)	1.47	1.84	(.37)	.76	.25	.51	2.40	.43	1.97
	1986	.52	.94	(.42)	3.60	2.91	.69	1.02	1.09	(.07)	3.89	1.44	2.45
Fuels	1973	.36	2.07	(1.71)	1.67	9.15	(7.48)	2.29	.26	2.03	2.47	1.32	1.15
	1986	1.39	6.53	5.14	8.13	39.77	31.64	6.70	1.43	5.27	8.12	3.76	4.36
Nonferrous metals	1973	.21	.87	(.66)	1.06	2.49	(1.43)	.93	.24	.69	1.66	.37	1.29
	1986	.51	2.50	(1.99)	1.84	7.97	(6.13)	2.23	.61	1.62	3.23	.81	2.42
<b>Semi-manufactures, total</b>	1973	1.98	2.54	(.56)	9.88	10.73	(.85)	2.41	2.01	.40	3.26	2.89	.37
	1986	4.58	10.69	(6.11)	31.43	46.16	(14.73)	10.66	6.10	4.56	13.27	9.50	3.77
Iron & steel	1973	.44	.26	.18	1.30	3.34	(2.04)	.37	.37	--	.49	.67	(.18)
	1986	.32	1.28	(.96)	1.08	9.56	(8.48)	1.54	.59	.95	1.74	1.39	.35
Chemicals	1973	.89	.58	.31	6.20	2.74	3.46	.52	1.01	(.49)	.78	1.34	(.56)
	1986	2.73	2.92	(.19)	23.82	17.35	6.47	2.89	3.79	(.90)	4.24	5.46	(1.22)
Other semi-manufactures	1973	.65	1.70	(1.05)	2.38	4.65	(2.27)	1.52	.63	.89	1.99	.88	1.11
	1986	1.53	6.49	(4.96)	6.53	19.25	(12.72)	6.23	1.72	4.51	7.29	2.65	4.64
<b>Engineering products, total</b>	1973	9.44	7.45	1.99	30.39	25.39	5.00	7.17	10.86	(3.69)	8.21	13.03	(4.82)
	1986	27.28	31.67	(4.39)	105.40	182.29	(76.89)	33.80	37.46	(3.66)	37.35	48.82	(11.47)
Machinery, specialized	1973	2.00	.75	1.25	7.78	3.16	4.62	.71	2.17	(1.46)	.88	2.68	(1.80)
	1986	3.73	2.33	1.40	17.63	22.99	(5.36)	2.34	5.28	(2.94)	3.03	7.84	(4.81)
Office & telecom. equipment	1973	.54	.22	.32	3.99	2.45	1.54	.32	.72	(.40)	.53	.93	(.40)
	1986	2.76	1.78	.98	23.93	28.16	(4.23)	1.89	4.07	(2.18)	2.44	4.97	(2.53)
Road motor vehicles	1973	4.12	4.92	(.80)	6.03	10.59	(4.56)	4.65	4.82	(.17)	4.81	5.35	(.54)
	1986	13.86	20.88	(7.02)	18.51	69.42	(50.91)	23.38	18.28	5.10	23.94	21.82	2.12
Other mach. & transp. equipment	1973	2.45	1.48	.97	11.52	5.85	5.67	1.43	2.76	(1.33)	1.90	3.34	(1.44)
	1986	6.32	6.36	(.04)	42.78	40.16	2.62	5.30	8.70	(3.40)	6.80	11.32	(4.52)
Household appliances	1973	.33	.08	.25	1.07	3.34	(2.27)	.06	.39	(.33)	.09	.73	(.64)
	1986	.61	.32	.29	2.55	21.56	(19.01)	.89	1.13	(.24)	1.14	2.87	(1.73)

Table 2 (continued)

Commodity Group	Year	U.S./Canada			U.S./World			Canada/U.S.			Canada/World		
		Exports	Imports	Balance	Exports	Imports	Balance	Exports	Imports	Balance	Exports	Imports	Balance
<b>Consumer manuf., total</b>	1973	.89	.45	.44	3.42	8.70	(5.28)	.38	1.16	(.78)	.58	2.35	(1.77)
	1986	2.12	2.87	(.75)	10.48	58.02	(47.54)	2.11	3.08	(.97)	2.49	7.65	(5.16)
Textiles	1973	.30	.04	.26	1.22	1.70	(.48)	.06	.36	(.30)	.15	.78	(.63)
	1986	.50	.24	.26	2.56	5.83	(3.27)	.25	.76	(.51)	.40	1.78	(1.38)
Clothing	1973	.03	.06	(.03)	.29	2.31	(2.02)	.09	.06	.03	.12	.33	(.21)
	1986	.04	.23	(.19)	.88	18.70	(17.82)	.25	.09	.16	.30	1.53	(1.23)
Other consumer goods	1973	.56	.35	.21	1.91	4.69	(2.78)	.23	.74	(.51)	.31	1.24	(.93)
	1986	1.58	2.40	(.82)	7.04	33.49	(26.45)	1.61	2.23	(.62)	1.79	4.34	(2.55)
<b>Total manufactures</b>	1973	12.31	10.44	1.87	43.69	44.82	(1.13)	9.96	14.03	(4.07)	12.05	18.27	(6.22)
	1986	33.98	45.23	(11.25)	147.31	286.47	(139.16)	46.57	46.64	(.07)	53.11	65.97	(12.86)
<b>Total</b>	1973	14.83	17.97	(3.14)	70.25	73.60	(3.35)	17.12	16.51	.61	25.21	23.32	1.89
	1986	42.35	66.22	(23.87)	204.65	381.86	(176.71)	64.92	54.58	10.34	84.25	79.84	4.41

Note: United States: exports, f.o.b., and imports, c.i.f.; Canada: exports and imports, f.o.b. Total exports and imports include commodities not classified according to kind.

Source: GATT, *International Trade*, 1986-87 and 1981-82.

Table 3

Average Post-Kennedy Round base rate tariffs on industrial products, Tokyo Round offer rate tariffs, and percentage depth of cut for the major industrialized countries in the Tokyo Round (weighted by own-country total imports)

Country	(1) Average post-Kennedy Round base rate (%)	(2) Tokyo Round offer rate (%)	(3) Average cut (%)
Australia <sup>a</sup>	17.0	16.5	2.8
Austria	15.4	12.1	21.5
Canada <sup>a</sup>	7.3	5.2	29.1
European Economic Community			
Belgium-Luxembourg	8.2	5.9	28.3
Denmark	9.0	6.6	25.8
France	8.3	6.0	27.8
German Federal Republic	8.7	6.3	27.1
Ireland	9.4	6.9	26.7
Italy	7.3	5.4	27.0
Netherlands	9.2	6.8	26.7
United Kingdom	7.3	5.2	27.7
Finland	9.6	7.1	25.2
Japan <sup>a</sup>	3.9	2.9	25.3
New Zealand	18.9	16.7	11.8
Norway	6.9	5.2	24.8
Sweden	6.4	5.0	23.0
Switzerland	3.9	3.1	21.2
United States	6.5	4.3	34.1
All countries	7.8	5.8	26.4

a. Based on prevailing rates, which include unilateral reductions in the Post-Kennedy round tariffs.

Source: Based on data supplied by Office of US Trade Representative.

Table 4

Net Percentage Changes in Employment in  
Canada  
Due to Tariff Reductions in the U.S.,  
Canada and Other Developed Countries

	Percentage Employment Change Due to Tariff Cut in					Percentage Shares of Employment Effects			
	All Developed	Other Developed	U.S. & Canada	U.S.	Canada	U.S.+Can /All Dev	Other / All Dev	U.S./ U.S.+Can	Canada/ U.S.+Can
<b>Traded Goods</b>									
Agr., For., & Fishing ( 1)	0.49	0.23	0.26	-0.02	0.28	52	47	-8	108
Food, Bev., & Tobacco (310)	0.11	-0.07	0.18	-0.02	0.20	169	-69	-11	111
Textiles (321)	-0.09	-0.09	-0.00	0.00	-0.00	4	96	-39	142
Wearing Apparel (322)	0.19	0.02	0.17	0.04	0.13	89	11	23	77
Leather Products (323)	3.70	-1.83	5.63	-1.89	7.67	152	-50	-34	136
Footwear (324)	0.60	-0.52	1.12	-0.03	1.15	187	-86	-2	102
Wood Products (351)	0.97	-0.05	1.02	0.02	1.00	105	-5	2	98
Furniture & Fixtures (332)	0.34	0.16	0.18	0.20	-0.02	53	47	113	-13
Paper & Paper Products (341)	0.76	-0.30	1.07	-0.24	1.31	140	-40	-23	123
Printing & Publishing (342)	-1.32	-0.07	-1.26	-0.02	-1.24	95	5	2	98
Chemicals (35A)	0.90	0.35	0.55	0.15	0.39	61	39	28	72
Petrol. & Rel. Prod. (35B)	-0.12	0.46	-0.57	-0.65	0.08	489	-391	114	-15
Rubber Products (355)	-3.31	0.07	-3.37	0.27	-3.63	102	-2	-8	108
Nonmetallic Min. Prod. (36A)	-0.21	-0.13	-0.08	0.28	-0.36	39	61	-335	434
Glass & Glass Products (362)	-1.16	-0.13	-1.03	0.16	-1.19	89	11	-15	115
Iron & Steel (371)	0.81	-0.74	1.56	0.21	1.35	194	-92	14	86
Nonferrous Metals (372)	4.30	-1.12	5.48	-0.86	6.40	127	-26	-16	117
Metal Products (381)	-1.53	0.25	-1.77	0.16	-1.93	116	-16	-9	109
Nonelectric Machinery (382)	1.82	-0.25	2.08	-0.05	2.13	114	-14	-2	102
Electric Machinery (383)	-2.01	0.04	-2.05	0.08	-2.13	102	-2	-4	104
Transportation Equip. (384)	1.38	0.15	1.23	0.16	1.07	89	11	13	87
Miscellaneous Manufac. (38A)	3.08	0.29	2.77	1.23	1.53	90	10	44	55
<b>Total Traded</b>	<b>0.37</b>	<b>0.01</b>	<b>0.37</b>	<b>0.04</b>	<b>0.33</b>	<b>99</b>	<b>2</b>	<b>10</b>	<b>90</b>
<b>Nontraded Goods</b>									
Mining & Quarrying ( 2)	0.46	0.06	0.40	-0.50	0.90	87	13	-123	224
Electric, Gas & Water ( 4)	-0.07	-0.04	-0.04	0.00	-0.04	51	49	-6	106
Construction ( 5)	0.14	-0.00	0.14	-0.01	0.15	102	-2	-6	106
Wholesale & Ret. Trade ( 6)	-0.14	-0.01	-0.13	0.00	-0.13	93	7	-0	100
Transp., Stor., & Com. ( 7)	-0.02	-0.01	-0.01	-0.00	-0.01	60	40	10	90
Fin., Ins. & Real Est. ( 8)	-0.12	0.01	-0.13	-0.00	-0.13	105	-5	0	100
Comm., Soc. & Pers. Serv. ( 9)	-0.23	0.00	-0.23	-0.00	-0.23	100	-0	2	98
<b>Total Nontraded</b>	<b>-0.13</b>	<b>-0.00</b>	<b>-0.13</b>	<b>-0.01</b>	<b>-0.11</b>	<b>99</b>	<b>2</b>	<b>10</b>	<b>90</b>
<b>Total, All Industries</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>				



Table 5

Net Percentage Changes in Employment in  
United States  
Due to Tariff Reductions in the U.S.,  
Canada and Other Developed Countries

	Percentage Employment Change Due to Tariff Cut in					Percentage Shares of Employment Effects			
	All Developed	Other Developed	U.S. & Canada	U.S.	Canada	U.S.+Can /All Dev	Other / All Dev	U.S./ U.S.+Can	Canada/ U.S.+Can
<b>Traded Goods</b>									
Agr., For., & Fishing ( 1)	0.41	0.26	0.15	0.15	0.00	36	64	98	2
Food, Bev., & Tobacco (310)	-0.03	-0.07	0.04	0.05	-0.01	-166	265	114	-14
Textiles (321)	0.12	-0.41	0.53	0.51	0.02	459	-357	96	4
Wearing Apparel (322)	-0.18	-0.03	-0.15	-0.16	0.01	85	15	104	-4
Leather Products (323)	0.74	-1.64	2.43	2.51	-0.08	326	-221	103	-3
Footwear (324)	0.17	-0.15	0.32	0.32	0.00	191	-91	100	0
Wood Products (331)	-0.17	-0.06	-0.12	-0.07	-0.04	67	33	63	37
Furniture & Fixtures (332)	-0.12	0.03	-0.15	-0.16	0.01	123	-23	106	-6
Paper & Paper Products (341)	0.12	-0.12	0.24	0.28	-0.04	199	-98	118	-17
Printing & Publishing (342)	0.04	-0.01	0.06	0.03	0.03	134	-34	54	46
Chemicals (35A)	0.18	0.05	0.13	0.12	0.01	73	27	96	4
Petrol. & Rel. Prod. (35B)	0.34	-0.08	0.43	0.41	0.01	124	-24	97	3
Rubber Products (355)	-0.15	-0.04	-0.11	-0.21	0.10	72	28	189	-89
Nonmetallic Min. Prod. (36A)	-0.48	-0.05	-0.42	-0.43	0.01	89	11	102	-2
Glass & Glass Products (362)	-0.17	-0.09	-0.08	-0.10	0.02	46	54	125	-25
Iron & Steel (371)	0.02	-0.15	0.17	0.15	0.02	959	-857	91	9
Nonferrous Metals (372)	0.05	-0.21	0.26	0.34	-0.08	515	-414	132	-32
Metal Products (381)	0.02	0.07	-0.05	-0.10	0.05	-328	429	187	-87
Nonelectric Machinery (382)	0.21	-0.15	0.36	0.37	-0.01	171	-71	102	-2
Electric Machinery (383)	0.17	-0.00	0.18	0.11	0.07	102	-2	61	39
Transportation Equip. (384)	0.13	0.01	0.11	0.13	-0.02	88	12	116	-16
Miscellaneous Manufac. (38A)	-0.66	0.00	-0.66	-0.68	0.02	101	-1	102	-2
<b>Total Traded</b>	<b>0.07</b>	<b>-0.02</b>	<b>0.09</b>	<b>0.08</b>	<b>0.01</b>	<b>131</b>	<b>-31</b>	<b>90</b>	<b>10</b>
<b>Nontraded Goods</b>									
Mining & Quarrying ( 2)	0.25	-0.11	0.36	0.35	0.00	144	-44	99	1
Electric, Gas & Water ( 4)	-0.04	-0.01	-0.04	-0.03	-0.01	89	12	87	13
Construction ( 5)	0.03	0.01	0.01	0.02	-0.00	48	52	124	-24
Wholesale & Ret. Trade ( 6)	-0.03	0.01	-0.04	-0.03	-0.00	119	-19	91	9
Transp., Stor., & Com. ( 7)	-0.01	-0.01	-0.01	-0.00	-0.00	48	52	76	25
Fin., Ins. & Real Est. ( 8)	-0.03	0.01	-0.04	-0.04	-0.00	133	-33	92	8
Comm., Soc. & Pers. Serv. ( 9)	-0.03	0.01	-0.04	-0.04	-0.00	138	-38	93	7
<b>Total Nontraded</b>	<b>-0.02</b>	<b>0.01</b>	<b>-0.03</b>	<b>-0.03</b>	<b>-0.00</b>	<b>131</b>	<b>-31</b>	<b>90</b>	<b>10</b>
<b>Total, All Industries</b>	<b>0.00</b>	<b>0.0</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0</b>				

Table 6

Sectoral Percentage Trade Effects in the United States  
Due to an Increase in the U.S. Trade Deficit by One Percent of GDP  
Under Alternative Assumptions

	Exports				Imports				
	Capital Inflow Alone		Expenditure Increase with Capital Inflow		Capital Inflow Alone		Expenditure Increase with Capital Inflow		
	Flex. Wage	Fixed Wage	Flex. Wage	Fixed Wage	Flex. Wage	Fixed Wage	Flex. Wage	Fixed Wage	
Traded Goods									
Agr., For., & Fishing ( 1)	-1.28	-1.20	-1.26	-1.25	2.85	1.89	2.79	3.04	
Food, Bev., & Tobacco (310)	-12.01	-11.56	-12.10	-12.27	1.79	1.50	1.80	1.90	
Textiles (321)	-26.18	-26.94	-26.14	-25.97	0.53	0.21	0.52	0.63	
Wearing Apparel (322)	-43.91	-47.07	-44.56	-44.28	3.12	3.18	3.17	3.23	
Leather Products (323)	-34.44	-35.92	-35.05	-34.77	1.73	1.19	1.74	1.93	
Footwear (324)	-35.39	-38.78	-36.17	-35.94	3.05	3.05	3.12	3.21	
Wood Products (331)	-7.65	-7.71	-7.63	-7.58	3.05	2.36	3.04	3.26	
Furniture & Fixtures (332)	-21.94	-23.23	-22.05	-21.78	8.45	8.24	8.49	8.63	
Paper & Paper Products (341)	-19.55	-20.65	-19.49	-19.09	2.52	2.15	2.51	2.63	
Printing & Publishing (342)	-14.27	-15.15	-14.25	-13.95	2.95	2.85	2.95	2.98	
Chemicals (35A)	-8.02	-8.26	-7.91	-7.79	4.86	4.23	4.78	4.97	
Petrol. & Rel. Prod. (35B)	-36.98	-36.28	-36.95	-37.24	1.32	1.07	1.32	1.41	
Rubber Products (355)	-12.21	-13.04	-12.15	-11.89	12.15	12.04	12.09	12.14	
Nonmetallic Min. Prod. (36A)	-12.50	-13.25	-12.46	-12.21	7.29	6.92	7.26	7.39	
Glass & Glass Products (362)	-12.84	-13.86	-12.80	-12.49	3.74	3.50	3.73	3.83	
Iron & Steel (371)	-25.30	-26.48	-25.13	-24.71	1.81	1.46	1.80	1.92	
Nonferrous Metals (372)	-26.62	-27.48	-26.50	-26.00	0.44	-0.04	0.44	0.59	
Metal Products (381)	-13.11	-14.12	-13.09	-12.80	7.98	7.88	7.97	8.05	
Nonelectric Machinery (382)	-9.43	-10.03	-9.33	-9.14	2.33	1.86	2.31	2.47	
Electric Machinery (383)	-10.12	-10.75	-10.00	-9.79	4.22	3.81	4.17	4.31	
Transportation Equip. (384)	-4.77	-5.05	-4.74	-4.64	7.23	6.62	7.19	7.39	
Miscellaneous Manufac. (38A)	-4.94	-5.36	-4.94	-4.83	3.82	3.33	3.82	4.01	
Total Traded	-9.93	-10.28	-9.88	-9.77	3.24	2.83	3.23	3.37	

Table 7

Sectoral Percentage Employment Effects in the United States  
and Change in Effective Exchange Rate  
Due to an Increase in the U.S. Trade Deficit by One Percent of GDP  
Under Alternative Assumptions

	Capital Inflow Alone		Expenditure Increase with Capital Inflow	
	Flex. Wage	Fixed Wage	Flex. Wage	Fixed Wage
<b>Traded Goods</b>				
Agr., For., & Fishing ( 1)	-1.22	-2.16	-1.20	-0.84
Food, Bev., & Tobacco (310)	0.43	-0.26	0.42	0.65
Textiles (321)	-4.53	-5.26	-4.53	-4.31
Wearing Apparel (322)	-0.77	-1.60	-0.81	-0.57
Leather Products (323)	-15.35	-16.48	-15.67	-15.41
Footwear (324)	0.17	-0.66	0.14	0.39
Wood Products (331)	-2.04	-2.73	-2.04	-1.79
Furniture & Fixtures (332)	-0.00	-0.70	-0.01	0.22
Paper & Paper Products (341)	-2.59	-3.34	-2.58	-2.32
Printing & Publishing (342)	-0.06	-0.70	-0.06	0.16
Chemicals (35A)	-3.01	-3.76	-2.98	-2.72
Petrol. & Rel. Prod. (35B)	-5.55	-6.49	-5.55	-5.24
Rubber Products (355)	-2.65	-3.49	-2.63	-2.35
Nonmetallic Min. Prod. (36A)	-0.94	-1.74	-0.94	-0.67
Glass & Glass Products (362)	-1.73	-2.43	-1.72	-1.48
Iron & Steel (371)	-2.80	-3.48	-2.77	-2.54
Nonferrous Metals (372)	-4.52	-5.24	-4.50	-4.22
Metal Products (381)	-1.26	-1.95	-1.26	-1.02
Nonelectric Machinery (382)	-2.53	-3.21	-2.50	-2.27
Electric Machinery (383)	-1.61	-2.25	-1.59	-1.37
Transportation Equip. (384)	-1.08	-1.63	-1.07	-0.89
Miscellaneous Manufac. (38A)	-2.75	-3.67	-2.75	-2.45
<b>Total Traded</b>	<b>-1.75</b>	<b>-2.50</b>	<b>-1.75</b>	<b>-1.49</b>
<b>Nontraded Goods</b>				
Mining & Quarrying ( 2)	-5.10	-6.37	-5.09	-4.66
Electric, Gas & Water ( 4)	0.50	-1.03	0.50	1.02
Construction ( 5)	0.87	0.20	0.86	1.09
Wholesale & Ret. Trade ( 6)	0.69	-0.20	0.69	0.99
Transp., Stor., & Com. ( 7)	0.09	-0.72	0.09	0.37
Fin., Ins. & Real Est. ( 8)	0.73	-0.53	0.73	1.17
Comm., Soc. & Pers. Serv. ( 9)	0.72	0.03	0.71	0.95
<b>Total Nontraded</b>	<b>0.61</b>	<b>-0.23</b>	<b>0.61</b>	<b>0.90</b>
<b>Total, All Industries</b>	<b>0.01</b>	<b>-0.81</b>	<b>0.01</b>	<b>0.29</b>
<b>Change in Effective Exchange Rate</b>	<b>4.31</b>	<b>3.63</b>	<b>2.78</b>	<b>2.97</b>

Table 8

Sectoral Percentage Trade Effects in Canada  
Due to an Increase in the U.S. Trade Deficit by One Percent of GDP  
Under Alternative Assumptions

	Exports				Imports				
	Capital Inflow Alone		Expenditure Increase with Capital Inflow		Capital Inflow Alone		Expenditure Increase with Capital Inflow		
	Flex. Wage	Fixed Wage	Flex. Wage	Fixed Wage	Flex. Wage	Fixed Wage	Flex. Wage	Fixed Wage	
<b>Traded Goods</b>									
Agr., For., & Fishing ( 1)	0.04	0.13	0.06	0.06	0.29	0.61	0.23	0.09	
Food, Bev., & Tobacco (310)	4.22	3.87	3.89	3.89	-0.72	-0.50	-0.69	-0.73	
Textiles (321)	4.20	4.73	4.09	3.86	-0.36	-0.14	-0.36	-0.41	
Wearing Apparel (322)	7.14	6.94	6.44	5.88	-1.27	-1.06	-1.18	-1.15	
Leather Products (323)	16.99	17.80	15.98	15.46	-0.22	0.07	-0.24	-0.34	
Footwear (324)	8.44	7.36	6.88	5.70	-0.96	-0.68	-0.86	-0.83	
Wood Products (331)	3.44	3.71	3.39	3.31	-0.33	-0.07	-0.32	-0.39	
Furniture & Fixtures (332)	3.48	3.89	3.19	2.86	-1.56	-1.28	-1.47	-1.47	
Paper & Paper Products (341)	3.93	4.13	3.87	3.80	-0.12	0.15	-0.12	-0.18	
Printing & Publishing (342)	2.20	2.55	2.15	2.04	-1.41	-1.20	-1.37	-1.41	
Chemicals (35A)	1.14	1.49	1.22	1.15	-0.04	0.17	-0.07	-0.13	
Petrol. & Rel. Prod. (35B)	1.19	0.98	1.15	1.16	-0.20	0.03	-0.20	-0.25	
Rubber Products (355)	5.84	6.38	5.76	5.53	-1.40	-1.24	-1.39	-1.41	
Nonmetallic Min. Prod. (36A)	0.57	0.76	0.55	0.49	-0.57	-0.28	-0.55	-0.61	
Glass & Glass Products (362)	1.23	1.39	1.19	1.11	-0.24	0.01	-0.23	-0.29	
Iron & Steel (371)	-2.15	-1.69	-2.02	-2.12	1.58	1.96	1.56	1.51	
Nonferrous Metals (372)	5.04	6.00	4.98	4.99	1.66	2.08	1.64	1.59	
Metal Products (381)	2.06	2.29	2.01	1.88	-1.26	-0.98	-1.23	-1.26	
Nonelectric Machinery (382)	2.36	2.73	2.40	2.26	-0.44	-0.19	-0.43	-0.49	
Electric Machinery (383)	1.29	1.46	1.33	1.27	-0.71	-0.46	-0.72	-0.77	
Transportation Equip. (384)	1.65	1.74	1.65	1.62	-0.68	-0.49	-0.68	-0.72	
Miscellaneous Manufac. (38A)	2.48	2.66	2.36	2.18	-0.55	-0.26	-0.53	-0.58	
<b>Total Traded</b>	<b>2.37</b>	<b>2.59</b>	<b>2.33</b>	<b>2.28</b>	<b>-0.43</b>	<b>-0.19</b>	<b>-0.43</b>	<b>-0.48</b>	

Table 9

Sectoral Percentage Employment Effects in Canada  
and Change in Effective Exchange Rate  
Due to an Increase in the U.S. Trade Deficit by One Percent of GDP  
Under Alternative Assumptions

	Capital Inflow Alone		Expenditure Increase with Capital Inflow	
	Flex. Wage	Fixed Wage	Flex. Wage	Fixed Wage
<b>Traded Goods</b>				
Agr., For., & Fishing ( 1)	0.41	1.01	0.41	0.29
Food, Bev., & Tobacco (310)	-0.21	0.08	-0.23	-0.31
Textiles (321)	0.41	0.82	0.40	0.28
Wearing Apparel (322)	-0.25	0.14	-0.28	-0.40
Leather Products (323)	17.78	18.69	16.71	16.15
Footwear (324)	-0.15	0.16	-0.25	-0.42
Wood Products (331)	2.16	2.51	2.13	2.03
Furniture & Fixtures (332)	0.23	0.65	0.18	0.04
Paper & Paper Products (341)	3.51	3.87	3.45	3.34
Printing & Publishing (342)	0.33	0.71	0.33	0.23
Chemicals (35A)	0.98	1.46	1.02	0.90
Petrol. & Rel. Prod. (35B)	2.08	1.83	2.01	2.01
Rubber Products (355)	2.04	2.45	2.02	1.88
Nonmetallic Min. Prod. (36A)	0.28	0.66	0.27	0.16
Glass & Glass Products (362)	0.50	0.83	0.48	0.38
Iron & Steel (371)	0.87	1.41	0.89	0.81
Nonferrous Metals (372)	6.56	7.83	6.49	6.50
Metal Products (381)	0.40	0.77	0.39	0.28
Nonelectric Machinery (382)	1.99	2.46	2.02	1.87
Electric Machinery (383)	0.38	0.78	0.39	0.29
Transportation Equip. (384)	1.26	1.49	1.25	1.20
Miscellaneous Manufac. (38A)	1.67	2.01	1.59	1.40
<b>Total Traded</b>	<b>1.01</b>	<b>1.44</b>	<b>0.99</b>	<b>0.88</b>
<b>Nontraded Goods</b>				
Mining & Quarrying ( 2)	2.63	3.05	2.57	2.44
Electric, Gas & Water ( 4)	-0.08	0.66	-0.08	-0.25
Construction ( 5)	-0.60	-0.17	-0.59	-0.68
Wholesale & Ret. Trade ( 6)	-0.36	0.10	-0.35	-0.46
Transp., Stor., & Com. ( 7)	-0.17	0.24	-0.17	-0.27
Fin., Ins. & Real Est. ( 8)	-0.49	0.16	-0.48	-0.64
Comm., Soc.&Pers.Serv. ( 9)	-0.46	-0.00	-0.45	-0.55
<b>Total Nontraded</b>	<b>-0.35</b>	<b>0.12</b>	<b>-0.34</b>	<b>-0.45</b>
<b>Total, All Industries</b>	<b>0.01</b>	<b>0.46</b>	<b>0.01</b>	<b>-0.10</b>
<b>Change in Effective Exchange Rate</b>	<b>-3.20</b>	<b>-2.67</b>	<b>-2.04</b>	<b>-2.19</b>

Table 10

Sectoral Percentage Trade Effects in Mexico  
Due to an Increase in the U.S. Trade Deficit by One Percent of GDP  
Under Alternative Assumptions

	Exports				Imports				
	Capital Inflow Alone		Expenditure Increase with Capital Inflow		Capital Inflow Alone		Expenditure Increase with Capital Inflow		
	Flex. Wage	Fixed Wage	Flex. Wage	Fixed Wage	Flex. Wage	Fixed Wage	Flex. Wage	Fixed Wage	
<b>Traded Goods</b>									
Agr., For., & Fishing ( 1)	0.33	0.40	0.35	0.35	-2.15	-2.13	-2.25	-2.34	
Food, Bev., & Tobacco (310)	3.47	3.59	3.49	3.45	-2.63	-2.53	-2.65	-2.69	
Textiles (321)	2.02	2.16	2.05	2.00	-2.23	-2.11	-2.28	-2.31	
Wearing Apparel (322)	2.99	3.05	2.97	2.87	-9.11	-8.74	-9.07	-8.99	
Leather Products (323)	11.58	11.65	11.51	11.40	-4.35	-4.18	-4.34	-4.37	
Footwear (324)	3.60	3.59	3.54	3.40	-6.17	-5.79	-6.10	-6.03	
Wood Products (331)	1.80	1.97	1.84	1.79	-2.19	-2.05	-2.23	-2.28	
Furniture & Fixtures (332)	5.65	5.70	5.67	5.54	-5.21	-5.02	-5.25	-5.24	
Paper & Paper Products (341)	3.45	3.70	3.51	3.43	-2.51	-2.41	-2.56	-2.59	
Printing & Publishing (342)	1.64	1.81	1.67	1.61	-6.53	-6.43	-6.63	-6.66	
Chemicals (35A)	0.70	0.79	0.73	0.70	-2.05	-1.92	-2.12	-2.18	
Petrol. & Rel. Prod. (35B)	36.70	38.21	37.36	36.78	-0.87	-0.71	-0.88	-0.93	
Rubber Products (355)	1.44	1.55	1.47	1.43	-4.84	-4.60	-4.94	-5.01	
Nonmetallic Min. Prod. (36A)	1.37	1.51	1.41	1.36	-4.17	-3.92	-4.26	-4.34	
Glass & Glass Products (362)	1.65	1.79	1.69	1.63	-2.52	-2.37	-2.57	-2.60	
Iron & Steel (371)	1.75	1.88	1.81	1.76	-1.25	-1.08	-1.28	-1.34	
Nonferrous Metals (372)	1.98	2.16	2.02	1.98	0.16	0.26	0.16	0.12	
Metal Products (381)	1.76	1.89	1.79	1.74	-4.76	-4.58	-4.85	-4.88	
Nonelectric Machinery (382)	1.37	1.51	1.40	1.35	-2.08	-1.95	-2.13	-2.17	
Electric Machinery (383)	0.80	0.89	0.82	0.79	-1.95	-1.83	-2.00	-2.04	
Transportation Equip. (384)	0.63	0.68	0.64	0.63	-4.28	-4.11	-4.37	-4.42	
Miscellaneous Manufac. (38A)	1.59	1.70	1.61	1.55	-3.03	-2.82	-3.08	-3.11	
<b>Total Traded</b>	<b>5.31</b>	<b>5.57</b>	<b>5.41</b>	<b>5.31</b>	<b>-2.56</b>	<b>-2.42</b>	<b>-2.62</b>	<b>-2.66</b>	

Table 11

Sectoral Percentage Employment Effects in Mexico  
and Change in Effective Exchange Rate  
Due to an Increase in the U.S. Trade Deficit by One Percent of GDP  
Under Alternative Assumptions

	Capital Inflow Alone		Expenditure Increase with Capital Inflow	
	Flex. Wage	Fixed Wage	Flex. Wage	Fixed Wage
<b>Traded Goods</b>				
Agr., For., & Fishing ( 1)	-0.11	0.25	-0.11	-0.22
Food, Bev., & Tobacco (310)	-0.20	0.29	-0.21	-0.38
Textiles (321)	2.48	2.87	2.52	2.37
Wearing Apparel (322)	0.11	0.50	0.08	-0.07
Leather Products (323)	0.77	1.15	0.73	0.58
Footwear (324)	-0.49	-0.08	-0.53	-0.68
Wood Products (331)	3.10	3.54	3.15	3.02
Furniture & Fixtures (332)	-1.72	-1.44	-1.76	-1.85
Paper & Paper Products (341)	0.95	1.46	0.96	0.79
Printing & Publishing (342)	-0.42	-0.05	-0.43	-0.55
Chemicals (35A)	1.94	2.42	2.01	1.86
Petrol. & Rel. Prod. (35B)	4.06	4.50	4.12	3.97
Rubber Products (355)	2.72	3.32	2.77	2.56
Nonmetallic Min. Prod. (36A)	0.73	1.24	0.75	0.58
Glass & Glass Products (362)	0.68	1.09	0.69	0.55
Iron & Steel (371)	1.18	1.75	1.22	1.04
Nonferrous Metals (372)	4.74	5.28	4.84	4.70
Metal Products (381)	1.21	1.58	1.23	1.09
Nonelectric Machinery (382)	3.27	3.63	3.36	3.23
Electric Machinery (383)	2.27	2.52	2.34	2.26
Transportation Equip. (384)	0.57	0.74	0.57	0.52
Miscellaneous Manufac. (38A)	0.86	1.31	0.86	0.69
<b>Total Traded</b>	<b>0.30</b>	<b>0.69</b>	<b>0.31</b>	<b>0.19</b>
<b>Nontraded Goods</b>				
Mining & Quarrying ( 2)	6.90	7.68	7.01	6.73
Electric, Gas & Water ( 4)	-0.53	0.16	-0.54	-0.76
Construction ( 5)	-1.05	-0.69	-1.07	-1.19
Wholesale & Ret. Trade ( 6)	-0.75	-0.08	-0.77	-0.99
Transp., Stor., & Com. ( 7)	-0.63	-0.18	-0.65	-0.79
Fin., Ins. & Real Est. ( 8)	-0.53	-0.04	-0.54	-0.70
Comm., Soc.&Pers.Serv. ( 9)	-0.77	-0.43	-0.79	-0.90
<b>Total Nontraded</b>	<b>-0.48</b>	<b>-0.03</b>	<b>-0.49</b>	<b>-0.64</b>
<b>Total, All Industries</b>	<b>0.01</b>	<b>0.42</b>	<b>0.01</b>	<b>-0.12</b>
<b>Change in Effective Exchange Rate</b>	<b>-4.34</b>	<b>-4.00</b>	<b>-3.33</b>	<b>-3.46</b>





