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The Global Economic Consequences of the Uruguay Round

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Abstract

This paper examines the provisions of the recently completed Uruguay Round and evaluates the qualitative and quantitative effects of the Round on major countries and regions of the world. The implications of the Uruguay Round are measured using the G-cubed multicountry model. This model captures macroeconomic and sectoral linkages within the global economy. This study differs from other studies in that it considers the dynamic adjustment path, the impact of expectations formation, and the sectoral as well as macroeconomic consequences of the Round. The results are compared with other studies of the Uruguay Round. Ignoring major changes in productivity induced by the Round, it is found that the gains to the world economy are likely to be around $200 billion (1990) per year by the year 2000. The distribution of the gains across regions from the Round differ from other studies because of the adjustment of international capital flows. Private capital flows to regions that undertake the most extensive liberalization initially worsen their trade positions. In regions that liberalize less and experience a capital outflow, the production gains tends to be less than conventional studies find. The adjustment of private capital has important implications for exchange rates, and therefore for the adjustment of the international trading system over the decade of the implementation of the Round.

Introduction

On December 15, 1993, the Uruguay Round, the eighth and most ambitious round of multilateral trade negotiations in history, in which 117 countries participated, was completed after seven years of tortuous negotiations. The Round had started in Punta del Este in Uruguay in September 1986 and had been scheduled to be completed by December 1990, but disagreements between the United States and the European Union (EU), especially France, on reducing agricultural subsidies delayed its conclusion for three years.

The aim of the Uruguay Round was: to establish rules for checking the proliferation of the new protectionism and reverse its trend; bring services, agriculture, and foreign investment into the negotiations; negotiate international rules for the protection of intellectual property rights; and improve the dispute settlement mechanism

by ensuring more timely decisions and compliance with GATT rulings. The agreement was signed by the United States and most other countries on April 15, 1994 and is to take effect on July 1, 1995. The agreement sets rules for international trade for decades to come and, by some estimates, is expected to stimulate some $5 trillion in new trade by the year 2005. The U.S. Congress ratified the agreement in late 1994, even though, in today's tight budget situation, the United States found it difficult to pay for (i.e., recover the $13.9 billion lost in tariff revenue collection).

The size of the gains from the Round for the world as a whole and the distribution among participating countries are subject to some debate. Relatively few studies have been undertaken to assess these gains.[1] In this paper we present some new measures of the likely magnitude and distribution of gains of the Uruguay Round and compare these results to a number of other studies. We find that the gains are significant for the world as a whole with the largest proportional gains accruing to the countries that are undertaking the largest adjustments. Although all countries eventually gain, we find GDP gains for the United States to be marginally less than found in other studies because of the adjustment in global capital markets that imply a reallocation of capital away from the United States to the developing economies that are expected to realize the largest gains from the Round. Gains for the United States measured in terms of GNP are higher than gains in terms of GDP, because the former includes the income to owners of U.S. capital that is invested abroad and earns a higher rate of return than in the United States. This capital flow story is important during the decade following the Round because of the consequences of a weaker U.S. dollar, which itself affects the adjustment of trade flows to the changes in policies resulting from the Uruguay Round. Countries not directly participating in the Round, such as China, are also found to gain significantly from the increase in world income and world trade.

In addition to our base case we consider the consequences of greater productivity gains resulting from the Round. When the rate of total factor productivity in the liberalizing sectors, relative to baseline, is 0.5% per year, and then the same as baseline after 2000 (so that the level of total factor productivity is 3% higher by the year 2000), we find GDP gains to be on average six times higher per year than the baseline Uruguay Round assumptions. The impact of the Round on productivity is unclear, yet these results show that plausible assumptions about productivity improvements can dramatically change the scale of the gains from the Round.

1. The provisions of the Uruguay Round

The details of the Uruguay Round agreement are contained in 22,000 pages of text. The major provisions of the agreement are the following:

1. *Tariffs:* Tariffs on industrial products are to be reduced from an average of 4.7% to 3%, and the share of goods with zero tariffs is to increase from 20–22% to 40–45%; tariffs were removed altogether on pharmaceuticals, construction equipment, medical equipment, paper products, and steel.

2. *Quotas:* Nations are to replace quotas on agricultural imports and imports of textiles and apparel (under the Multifiber Agreement) with less restrictive tariffs over a 10-year period; tariffs on agricultural products are to be reduced by 24% in developing nations and by 36% in industrial nations, and tariffs on textiles are to be cut by 25%.
3. *Antidumping:* The agreement provides for tougher and quicker action to resolve disputes resulting from the use of antidumping laws, but does not ban their use.
4. *Subsidies:* The volume of subsidized agricultural exports are to be reduced by 21% over a six-year period; government subsidies for industrial research are limited to 50% of applied research costs and to 75% of basic research costs.
5. *Safeguards:* Nations may temporarily raise tariffs or other restrictions against an import surge that severely harms a domestic industry, but bars countries from administering health and safety standards unless based on scientific evidence and not simply to restrict trade. For example, a nation can only keep out beef imports from cattle raised with growth hormones by showing that the beef so produced is unsafe for human consumption.
6. *Intellectual property:* The agreement provides for 20-year protection of patents, trademarks and copyrights, but it allows a 10-year phase-in period for patent protection in pharmaceuticals for developing countries.
7. *Services:* The United States failed to secure access to the markets of Japan, Korea, and many developing nations for its banks and security firms, and did not succeed in having France and the European Community lift restrictions on the showing of American films and TV programs in Europe. At present the EU requires 50% (and France 60%) minimum European-made programming.
8. *Other industry provisions:* The United States and Europe agreed to continue talking about further limiting government subsidies to civil aricraft makers, opening up the long-distance telephone market, and limiting European subsidies to steelmakers; the United States also indicated that it intends to continue negotiating the further opening of the Japanese memory-chip market.
9. *Trade-related investment measures:* The agreement phases out the requirement that foreign investors, such as automakers, buy supplies locally or export as much as they import.
10. *Dispute settlement mechanism:* Trade disputes are to be settled by a vote of two-thirds or three-quarters of the nations rather than unanimously, as under GATT (which meant that the guilty nation could block any action against it). The United States pushed for this provision even though it entails some loss of sovereignty.
11. *World Trade Organization:* The agreement also calls for the replacement of the General Agreement on Tariffs and Trade (GATT) secretariat with the World Trade Organization (WTO) in Geneva, with authority not only in trade in industrial products but also in agricultural products and services. Thus, the WTO will take its rightful place and join the International Monetary Fund and the World Bank as the main watchdogs of the global economy.

Although the completion of the Uruguay Round was a great achievement, only some of its aims were met and many trade problems remain. Various estimates exist on the consequences of the Round. The studies surveyed in Deardorff (1994), as well as additional studies cited above and the results of this paper, imply that full implementation of the Uruguay Round may increase world GDP by $140–$270 billion per year by the year 2002 and increase standards of living throughout the world as a result of the more efficient use of the labor, capital, and other resources. These figures will be about 0.6% to 1.4% of world GDP by 2002. This is a gain in income per year that, when measured as a cumulative gain forever, is nontrivial, especially when considered relative to other government policies that may be feasible. In addition, the comparison should perhaps be made not between a business as usual scenario but relative to a scenario in which the collapse of the Uruguay Round would have been psychologically disastrous, and could have led to the unrestrained proliferation of nontariff trade barriers, and possibly to destructive trade wars.

We find that a conservative estimate of the increase in world GDP resulting from the Round is about $200 billion per year, and when allowing for significant induced productivity gains through the difficult-to-measure impact of the range of items listed above, these gains may be much larger.

2. Outstanding trade problems

Despite the great benefit resulting from the successful completion of the Uruguay Round, many serious trade problems remain. The first and most important is that many sectors were not included in the agreement. For example, services such as banking, insurance, and movies and TV programs were excluded from the agreement; agricultural subsidies remain high; patent protection for pharmaceuticals is disappointing; and trade in memory chips is still subject to a 7% (down from 14%) tariff.

The second problem is that, although tightened, antidumping action and safeguards are still possible, and so the potential for serious trade disputes remains high. While invariably justified as protection against unfair foreign competition, antidumping statutes have increasingly become one of the major protectionist weapons used by a growing number of nations in recent years (Salvatore 1989). More than 40 nations had such laws in 1994 (up from 12 in 1990) and their number is growing.

The third problem is that many of the trade problems of developing countries have either not been addressed or liberalization is long delayed. This is the case for trade in agricultural products and textile products, which are of great importance to most developing countries. It is important to realize, however, that developing countries are likely to receive major and increasing benefits over time from the reduction in tariffs on a large number of manufactured products, such as steel, paper, and furniture. These products are increasingly exported by developing countries as industrial production shifts from developed to developing countries, especially to the most dynamic Asian ones, as part of the dramatic global restructuring occurring today.

A fourth trade problem is that the agreement does not make any special provisions to help the formerly centrally planned economies of Eastern Europe and the former Soviet Union establish market economies and integrate them into the world trading system since the collapse of communism in the late 1980s and early 1990s. These countries need huge amounts of foreign capital and technology to restructure their economies and establish market economies. They also need liberal access to Western markets in view of the collapse of traditional trading ties among themselves. While these countries need all sorts of products, including food, from the West, they have very little with which to pay because of the economic disruptions resulting from the collapse of communism and because of the low quality of their products. Despite considerable progress in restructuring their economies, there is still the danger of reversals and economic collapse, especially in some of the former Soviet Republics, particularly Russia.

Finally, there is the tendency of the world to break into three major trading blocs: the European Union (EU); the North America Free Trade Area (NAFTA); and the block consisting of Japan, Southeast Asian countries, and possibly Australia. The EU removed all remaining barriers to the internal flow of goods and resources at the end of 1992, thus becoming a single unified market. The United States negotiated a free trade agreement with Canada in 1988 and with Mexico at the end of 1993, which will phase out most barriers to trade within North America in a decade. As a result, Japan is increasingly concerned about being excluded from these two trading blocs and may be induced to explore the possibility of setting up a free trade area with some other Asian countries of the Pacific and Australia. Although the formation of these trading blocs can be considered building blocks of a freer multilateral trading system, they can also lead to more bilateral deals, more protectionism, and more dangerous interbloc trade conflicts.

3. Estimates of the benefits of the Uruguay Round

Quantifying the results of the Uruguay Round is extremely difficult because the Round reduced protection not only in trade in goods but also in trade in services, and it also liberalized investment, strengthened protection on intellectual property, streamlined the rules for resolving trade disputes, and tightened antidumping and safeguard rules. It is even more difficult to adequately capture the even larger dynamic productivity gains from trade liberalization that result from scale economies, specialization, and increased confidence in the world trading system.

Golden et al. (1993) conducted one influential study for OECD that tried to quantify the benefits of the Uruguay Round. The study used a computable general equilibrium model with four commodities (manufactures, agriculture, other imported goods, and nontraded goods) in seven trading countries or regions (United States, EU, Canada, Australia and New Zealand, EFTA, Japan, and the rest of the world). As is well known, the main advantage of computable general equilibrium models is that they allow the calculation of the effects resulting from the simultaneous reduction of many trade distortions (tariffs, quotas, and subsidies) without double

counting. To reflect real world conditions and avoid overstating the effects of trade liberalization, product groups from different countries or regions were assumed to be imperfect substitutes. The model also assumed constant returns to scale in production and perfect competition within each nation or region. In the OECD study, protection creates a wedge between domestic and world prices, tariff revenues are assumed to be redistributed to consumers, the market for nontraded goods in each nation or region clear, and global demand equals global supply for each traded good, with demand, supply, and price determined simultaneously for each group.

To make quantification more tractable, the model estimated only the effect of cuts in tariffs and nontariff barriers on goods. Not considered are the benefits resulting from the reduction in protection in services and investment activities, and from strengthening rules protecting intellectual property and governing antidumping and safeguards. Other benefits not considered are those resulting from economies of scale and other dynamic forces that lead to productivity increases. The study also does not consider the significant benefits from the unilateral liberalization that occurs in developing countries as a condition of their access to the GATT (OECD 1993). Thus, the OECD study is likely to grossly underestimate the overall benefits resulting from the Uruguay Round.

The quantitative estimates were obtained as follows. The model was first used to calculate the situation of "baseline solution" in the year 2002 with no change in trade policies, and then with a 36% reduction in tariffs and nontariff trade barriers for industrial and agricultural products, along the lines of the Draft Final Act or DFA (1991), which is a close approximation of the final outcome of the Uruguay Round. The difference between the baseline solution and the solution with trade liberalization provides an estimate of the net welfare gain that we can expect in the year 2002 from the trade liberalization in goods achieved under the Uruguay Round. Two scenarios were considered: one in which trade liberalization occurs only in the OECD countries and a second in which trade liberalization takes place in all countries and regions. The actual and projected macroeconomic variables used in the simulations were obtained from OECD and the World Bank. These two scenarios are shown in Table 1.

Table 1 shows that, with trade liberalization only in OECD countries (the first scenario), the net welfare gain from the Uruguay Round, in 1991 prices, is estimated to be $212 billion, with 86% accruing to OECD countries and the remaining 14% going to the rest of the world. The largest estimated absolute increase in net welfare goes to the EU, Japan, the EFTA, and the United States, in that order. With global trade liberalization under the second scenario, the overall net welfare gain rises by $62 billion to $274 billion, with most of the increase going to non-OECD countries. The total net welfare gain of $274 billion represents 0.9% of the world GDP of about $30 trillion in 2002.

This compares with the net increase in world welfare of 4.5% of world GDP estimated by DRI/McGraw-Hill (1993). The much larger increase in net welfare gain resulting from the Uruguay Round calculated by DRI/McGraw-Hill as compared with net welfare gain estimated by OECD results almost exclusively from the inclusion

Table 1. Long-run trade impact of trade liberalization under the Uruguay Round: OECD Study.

Country/Region	OECD	World
	(Million US $)	
Australia and New Zealand	1,587	1,896
Canada	5,916	6,649
EU	78,317	71,271
EFTA	34,238	38,384
Japan	35,490	41,968
Unites States	26,298	27,558
Total OECD	181,846	187,726
Rest of the World	29,942	86,362
Total World	211,788	274,088
	(Percent of GDP)	
Australia and New Zealand	0.5	0.6
Canada	1.1	1.2
EU	1.9	1.7
EFTA	5.4	6.0
Japan	1.5	1.8
United States	0.4	0.4

Source: OECD (1993), p. 35.

of an exogenous increase in productivity in the former study but not in the latter. Estimating exogenous productivity increases, however, presents a major problem, and it often turns out to be an assumption rather than an actual measurement. In short, productivity increases can result in dramatic changes in the results but are difficult to actually measure. Another study with large gains is an earlier study by Stoeckel et al. (1990), which projected a global gain of around 5% of GDP for a 50% reduction in trade barriers. Allowing for the likely outcome of a 30% reduction of barriers, this result should be scaled down to closer to 3.5% of global GDP. An exception to the results above is found by Dee et al. (1992) using the Salter Model. In that model the gains are closer to 0.5% of GDP, with the United States and Japan actually losing in terms of GDP but gaining slightly in terms of GNP.

The major problem with these studies (apart from DRI/McGraw-Hill (1993), which has its own set of problems) is their reliance on computable general equilibrium models that ignore the time profile of the gains as well as the adjustment of capital flows and the dynamics of capital accumulation. Some attempts have been made to arbitrarily adjust these estimates by applying the Baldwin (1993) adjustment of 1.5, but this is completely arbitrary and especially so when considered across sectors within an economy. Indeed, a key aspect of the Uruguay Round is that it has differential sectoral impacts within economies. The results presented below deal with this issue by using a model that captures the sectoral aspects of the Round as well as the time profile of the adjustment path. We also explore the impact of the total factor productivity growth assumptions.

4. The G-cubed model: A dynamic multisector general equilibrium model of the global economy

The G-cubed multicountry model is developed in McKibbin and Wilcoxen (1992, 1994). It combines the approach taken in the MSG2 model developed in McKibbin and Sachs (1991) with the disaggregated, econometrically estimated, intertemporal general equilibrium model of the U.S. economy by Jorgenson and Wilcoxen (1990). The Jorgenson-Wilcoxen model breaks down the economy into 35 separate industries, each of which is represented by an econometrically estimated cost function.

G-cubed has been constructed to contribute to the current policy debate on global warming, but it has many features that will make it useful for answering a range of issues in environmental regulation, microeconomic, trade, and macroeconomic policy questions. It is a world model with substantial regional disaggregation and sectoral detail. In addition, countries and regions are linked both temporally and intertemporally through trade and financial markets. Like MSG2, G-cubed contains a strong foundation for analyzing the short-run implications of changes in macroeconomic policy, as well as considering the long-run growth implications of these policies. Intertemporal budget constraints on households, governments, and nations (the latter through accumulations of foreign debt) are imposed. To accommodate these constraints, forward-looking behavior is incorporated in consumption and investment decisions. Unlike MSG2, G-cubed also contains substantial sectoral detail. This permits analysis of trade and environmental policies, which tend to have their largest effects on small segments of the economy. By integrating sectoral detail with the macroeconomic features of MSG2, G-cubed can be used to consider the long-run costs and benefits of alternative trade liberalization exercises, yet at the same time consider the macroeconomic implications of these policies over time. The response of monetary and fiscal authorities in different countries can have important effects in the short to medium run which, given the long lags in physical capital and other asset accumulation, can be a substantial period of time. Overall, the model is designed to provide a bridge between computable general equilibrium models and macroeconomic models by integrating the more desirable features of both.

G-cubed is still in the process of development, but it is already a large model. In its current form, including the new extensions of considerable sectoral detail in developing country regions, it contains 6,000 equations and over 110 intertemporal costate variables. Nonetheless, it can be solved using software developed for a personal computer. This paper uses a new version of the model that has considerably expanded coverage of developing countries compared to the version reported in McKibbin and Wilcoxen (1992). It is fully documented in McKibbin and Wilcoxen (1994).

The key features of the version of the G-cubed model used in this paper are summarized in Table 2. The country and sectoral breakdown of the model version used in this paper are summarized in Table 3.

The version of the G-cubed model used here consists of eight economic regions with twelve sectors in each region.[2] There are five energy sectors and seven

Table 2. Summary of main features of G-cubed.

- Specification of the demand and supply sides of industrial and developing economies
- Integration of real and financial markets of these economies
- Intertemporal accounting of stocks and flows of real resources and financial assets
- Imposition of intertemporal budget constraints so that agents and countries cannot forever borrow or lend without undertaking the required resource transfers necessary to service outstanding liabilities
- Short-run behavior is a weighted average of neoclassical optimizing behavior and ad-hoc "liquidity constrained" behavior
- The real side of the model is disaggregated to allow for production and trade of multiple goods and services within and across economies
- Sector-specific dynamics with cost of adjustment in moving physical capital between sectors
- Full short-run and long-run macroeconomic closure with macro and sectoral dynamics at an annual frequency around a long-run Solow/Swan neoclassical growth model

Table 3. Overview of the version of the G-cubed model used in this paper.

Regions
Full internal structure:
United States
Japan
Australia
Rest of OECD
China
Eastern Europe and former Soviet Union
Non-oil-exporting developing countries
External linkages only:
Oil-exporting developing countries
Sectors
Energy:
Electric utilities
Gas utilities
Petroleum refining
Coal mining
Crude oil and gas extraction
Nonenergy:
Mining
Agriculture, fishing, and hunting
Forestry, wood products
Durable manufacturing
Nondurable manufacturing
Transportation
Services

nonenergy sectors. This disaggregation enables us to capture the sectoral differences in the impact of alternative environmental policies. It is less detailed than desirable for trade policy evaluation, but nonetheless captures the different impacts on agriculture, manufacturing, and service industries. In fact a wide range

of disaggregations are possible given the extensive database underlying the model and the flexibility of the computer software.

A key aspect of G-cubed is its integration of data from input-output tables with conventional macroeconomic data. In addition, the elasticities of substitution in production and consumption are estimated from U.S. times series/cross sectional data from 1947 through 1987. The production technology is more disaggregated than in the MSG2 model, and the functional form of this technology is more general than in the MSG2 model.

Each industrial economy or region in the model consists of several economic agents: households, the government, the financial sector and the 12 production sectors listed in Table 3. Within each of the 12 sectors is a single firm in each sector which chooses its inputs and its level of investment to maximize its stock market value subject to a multiple-input production function and a vector of prices it takes to be exogenous. For each sector h, output (Q_h) is produced with inputs of capital (K_h), labor (L_h), energy (E_h), materials (M_h), and a sector-specific resource (R_h). The nature of the sector specific resource varies across sectors. For example, in the coal industry it is reserves of coal, while in agriculture and forestry/wood products it is land; land is substitutable between these two sectors.

Capital is modeled as being costly to adjust along the lines of Lucas (1967) and Treadway (1969). This assumption implies that investment is determined by a Tobin's q model of investment, such as derived by Hayashi (1982a). The full structure of production is given in Figure 1.

Consumers in the model also decide on intertemporal consumption and the composition of the consumption basket at each point in time based on perceptions of wealth based on existing information and current income. This follows the work of Campbell and Mankiw (1987) and Hayashi (1982b). The nesting of consumption within a given period is similar to that for production.

The key macroeconomic features of the model are similar to the MSG2 model and the reader is referred to McKibbin and Wilcoxen (1992) for greater detail.

5. Estimates of the benefits of the Uruguay Round with the G-cubed model

5.1. Implementation

In this section we present two simulations of the possible impacts of the Uruguay Round using the G-cubed model. The first simulation assumes that tariffs and nontariff barriers on goods are reduced by 30% of their initial rates in line with the OECD study mentioned above. These reductions are phased in from 1995 to 2000 in equal installments. By the year 2000 all reductions are in place. The initial tariff and nontariff barriers are those built into the model using estimates from the Salter model kindly provided by Phillpa Dee. The rates of the initial tariff and tariff equivalent nontariff barriers are listed in Table 4. In addition to the reduction in tariff barriers we reduce subsidies to agriculture in each country by 30% over the same six-year period. In addition to capturing the effect on the trade in goods, we also

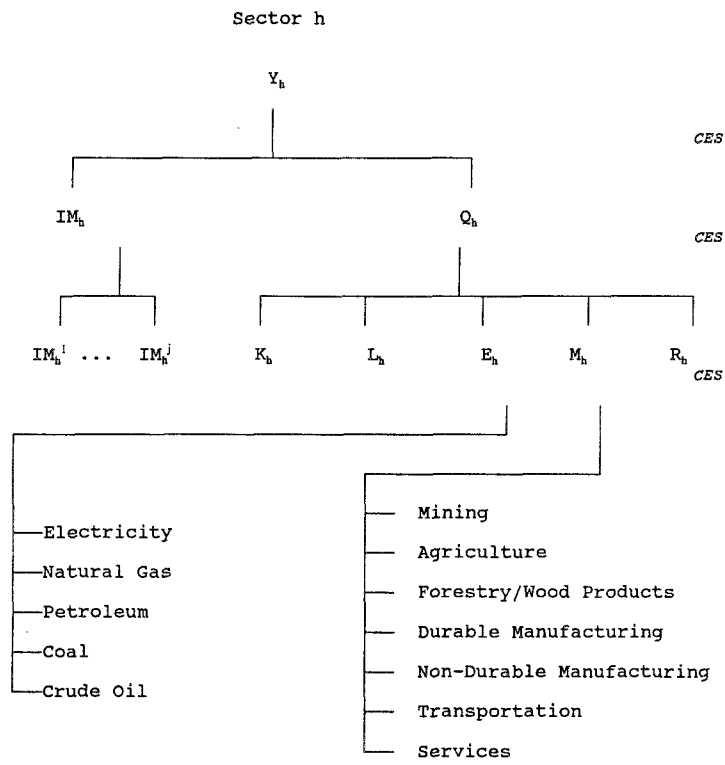


Figure 1.

Table 4. Tariff rates assumed in 1987.

Sector	USA	Japan	Australia	ROECD	China	LDC	EEB
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.12	0.00	2.00	0.00
3	0.60	20.10	0.00	0.25	0.00	2.20	2.40
4	0.00	158.00	0.00	5.30	35.00	8.40	15.50
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.30	0.00	0.00	0.30	0.00	3.00	3.20
7	2.89	180.00	0.40	7.40	56.00	28.40	28.60
8	4.40	4.10	14.30	7.00	40.00	13.70	14.80
9	4.60	4.00	20.10	8.30	41.20	13.30	15.70
10	10.45	18.30	19.70	16.60	65.30	16.70	20.70
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: G-cubed database from Salter tariff caculations.

attempt to capture the implication for trade in services. We do not have initial data for the extent of tariff and nontariff barriers to trade in services. Nonetheless we include these in the study by postulating the following absolute reduction in the

tariff/nontariff rates of the following magnitudes: Japan (30%); Australia (8%); ROECD (30%); developing countries (60%); EFSU (60%). These rates are absolute reductions in contrast to the percentage changes of 30% of the initial tariff rates.

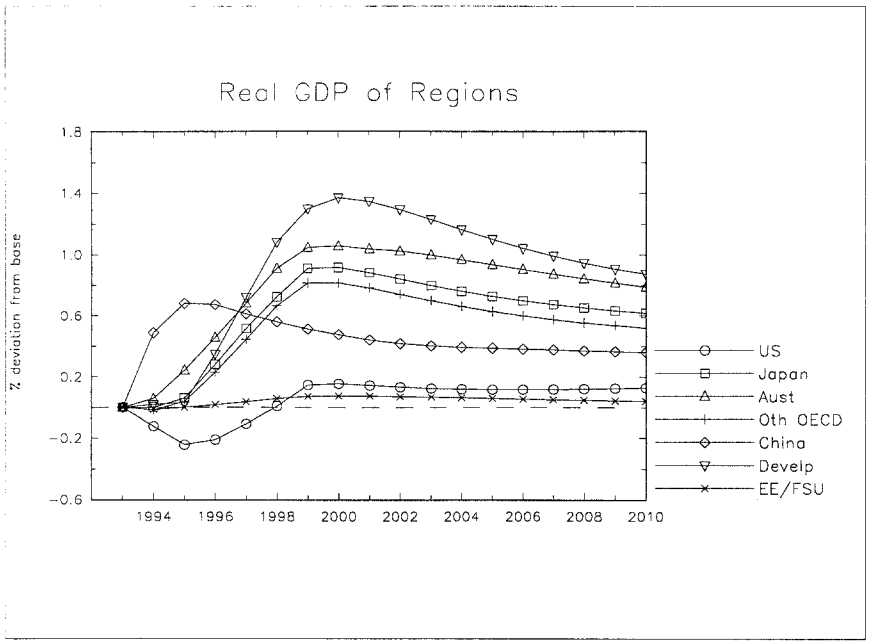
In addition to the changes discussed above, in the first Uruguay scenario we assume a small rise in the level of total factor productivity (TFP) in each sector where tariffs are reduced. This is a 0.05% rise in the growth rate of TFP from 1995 to 2000, which then returns to baseline. The level of TFP from 2000 onward is 0.25% of baseline TFP higher forever. Although arbitrary, our view is that the productivity implications of the Round in terms of the direct link to tariff reduction, as well as the impact of the entire package of measures, is likely to have productivity implications. Ignoring these may underestimate the quantitative implications. As a benchmark we also simulate larger increase in the growth rate of TFP of 0.5% per year from 1995 through the year 2000. Productivity growth then returns to baseline. This implies that the level of TFP is 3% higher forever by the year 2000. Note that these are not permanent rises in the growth rate but are permanent rises in the level of TFP relative to baseline.

Finally, we need to address the fiscal implications of the Round. We assume that in all countries the direct revenue loss from tariff reduction is offset by a lump sum tax on households.

5.2. Results

All results are presented relative to the baseline scenario generated by the model in which there was no Uruguay Round of policy changes. The results for GDP for each region in the base case Uruguay Round are contained in Figure 2. These results are the percentage deviation of GDP from the baseline. As the measures are phased in, GDP tends to rise in each country, although GDP falls initially in the United States. This fall in GDP reflects an outflow of financial capital from the United States to other regions that are expected to significantly benefit from the Round. Real investment rises in each region before the full extent of the measures are introduced in anticipation of future output gains. The results for GNP are shown in Figure 3. The gains for the United States are higher than suggested by the GDP outcomes because of the return to U.S. capital invested abroad.

Short-term real interest rates are shown in Figure 4. Interest rates fall throughout the world (except in developing countries), but by relatively less in the United States because of the outflow of capital. Changes in the real exchange rate of each region, shown in Figure 5, reflect the movements of international financial capital. Each region experiences a real appreciation relative to the U.S. dollar of between 12% and 24% as a result of the capital outflow from the United States. Figure 6 shows the consequences of this for the trade balance in each region, relative to GDP. The trade balances of the United States and OPEC improve, reflecting the outflow of private capital from these economies, whereas the trade balances of the other regions deteriorate to differing degrees, reflecting the inflow of private capital. The largest change relative to GDP occurs for developing countries.



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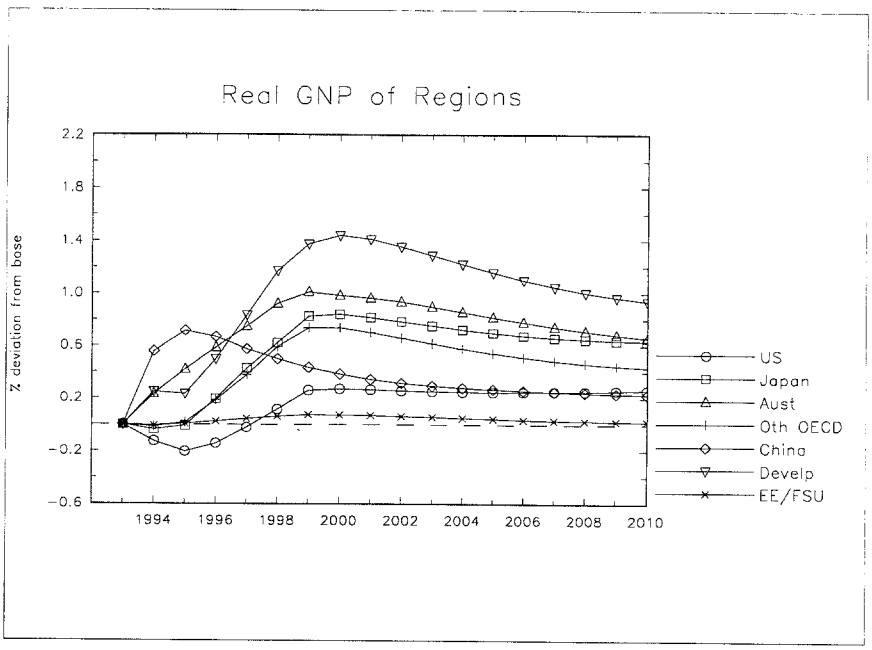

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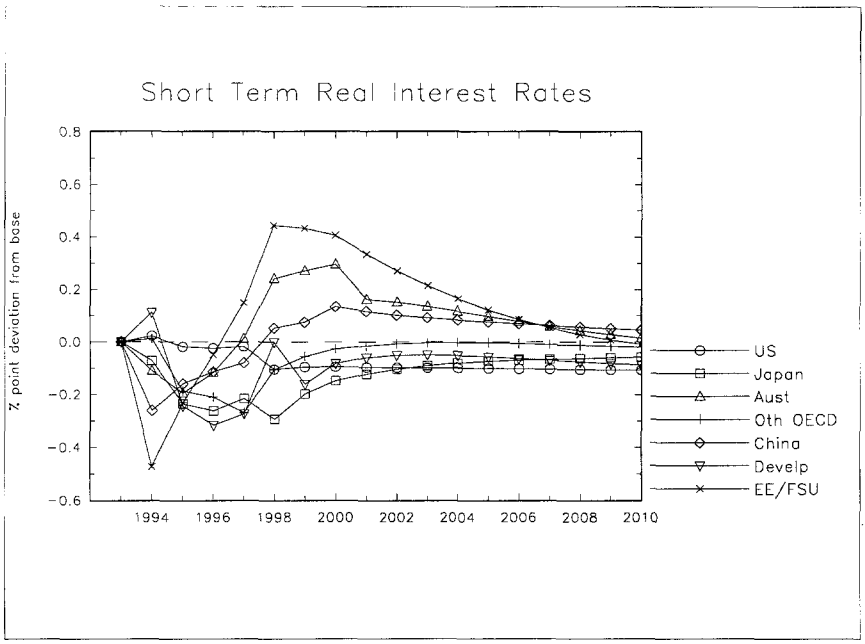

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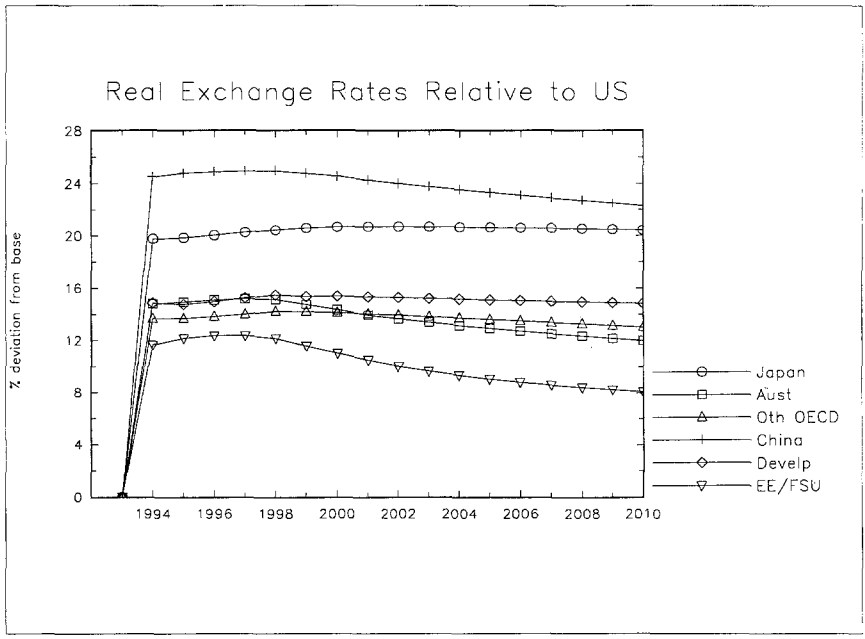

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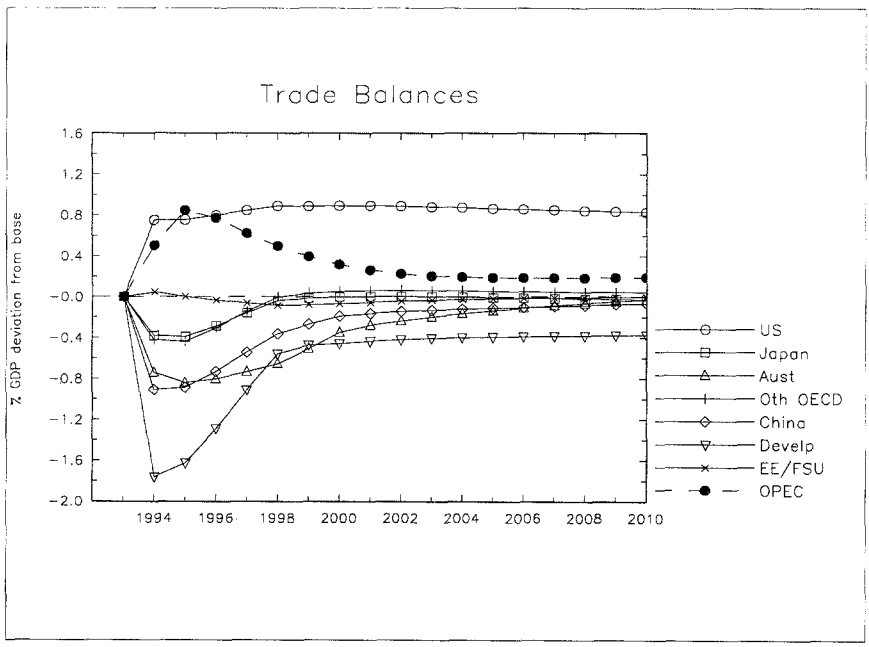

Figure 6.

These results suggest that a credible implementation of the Round will have significant effects on financial markets in advance of the major policy changes. Indeed, these results suggest that adjustments in global capital markets will tend to depreciate the U.S. dollar as financial capital is reallocated from established regions to regions that are expected to gain significantly from the Round. This adjustment in financial capital has important impacts on exchange rates and the overall patterns of trade. It is important that countries undertaking the largest reductions in barriers understand that the inflow of private capital that is important for realizing the future gains in real output is likely to lead to a significant deterioration in the trade balance of these economies. This will be offset to the extent that private or government saving can rise to provide the funds required to meet the demands of private investment.

In the results presented above, we have assumed modest gains in TFP. To give some indication of the sensitivity of these results to the productivity effects of the Round, we present results in Figure 7 for the same set of policies as above, except that the rise in the growth rate of TFP in each sector, in each country undertaking adjustment, rises by 0.5%. By the year 2000 the growth rate returns to baselines implying a level of productivity of 3% relative to baseline by the year 2000. The results are significantly more dramatic than those in the scenario already discussed. For the largest gainers, the developing countries, the level of GDP is almost 9% above what it would otherwise have been in the year 2000. China's gains are relatively unchanged as are the gains for EEFSU. These results show that in a model

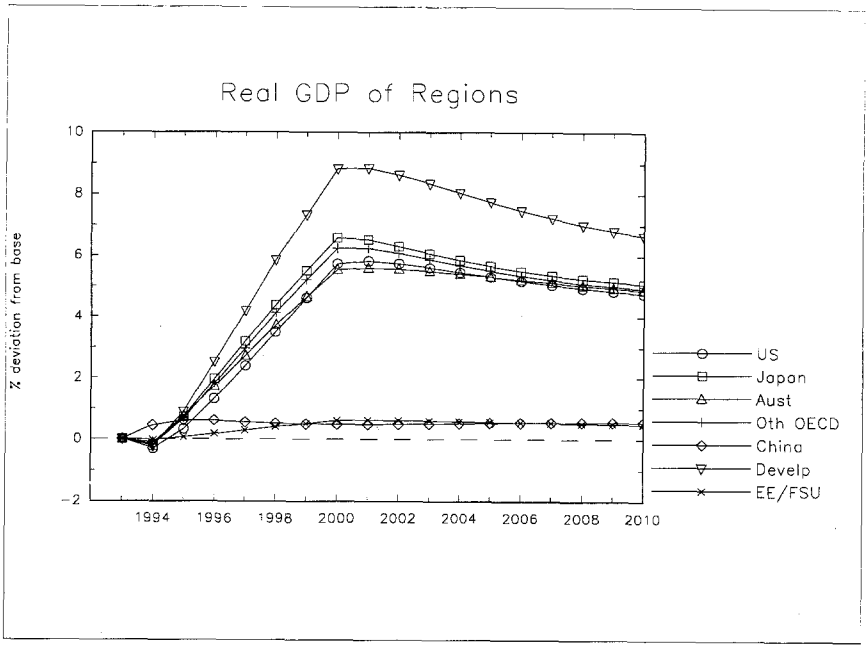

Figure 7.

that captures the dynamics of capital accumulation, the assumptions about productivity gains from the Uruguay Round are very important.

6. Future multilateral trade rounds?

With three years to devise, seven years to complete, and 10 years to implement, it is unlikely that another round of multilateral trade negotiations similar to the Uruguay Round will be started anytime soon. But with tariffs in newly covered sectors, such as agricultural products and textiles relatively high—and with unresolved questions of trade in services, lack of agreement on subsidies to aircraft makers and other industries, and antidumping and safeguard provisions that still leave ample room for their use for protectionist purposes—there is already scope for a new trade round. The results above suggest that significant gains could be experienced from further progress on agriculture, services, and textiles.

In addition, the agenda for a future round includes a daunting array of even more sensitive issues, such as social policies, workers' rights, minimum wages, and competition and environmental policies. These are all very sensitive issues because the lofty aims of their advocates can easily be perverted to serve deep protectionist purposes. Some of these issues, such as the advance of human rights in some third world countries such as China, are perhaps better handled at the diplomatic rather than at the trade level. And the call by some developed countries, such as

the United States and France, for a "leveling of working conditions" between developed and developing countries to avoid "social dumping" (i.e., for developing countries competing unfairly with developed countries by denying their workers basic rights, decent wages, and working conditions) can easily be captured by protectionism forces and can in fact become very dangerous instruments of protectionism in the future. It is simply impossible for working conditions and wages in developing countries to be made equal or nearly equal to those in developed countries today or in the near future. If that were possible, developing countries would already be developed rather than developing.

Notes

1. Some existing studies include Dee et al. (1992), DRI/McGraw-Hill (1993), Golden et al. (1993), Nguyen (1991), OECD (1993), Petersen (1992), Stoeckel et al. (1990).
2. The Asia Pacific G-cubed model with six sectors in each economy is being developed with country coverage of the United States, Japan, Australia, rest of OECD, Korea, Thailand, Indonesia, China, Malaysia, Singapore, Taiwan, Hong Kong, Philippines, Eastern Europe and former Soviet Union, oil-exporting developing countries, and other developing countries. See McKibbin and Bok (1993).

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