
Conclusion

This study has examined the potential for global trade liberalization to contribute to the reduction of world poverty. This chapter first recapitulates the principal findings and then considers the implications for multi-lateral trade negotiations in the Doha Round.

Principal Findings

The findings of this study are of two types. First, in chapters 1 through 3, empirical profiles are drawn of the location and tendencies of global poverty, the past experience of regimes for preferential market access, and the extent of remaining industrial-country protection against imports from developing countries. Second, in chapters 4 and 5, simulation experiments are conducted using a computable general equilibrium (CGE) model to evaluate the potential for future trade liberalization to reduce global poverty. Overall, the results suggest that this potential is large. Throughout, the existing literature is critically surveyed to provide a base on which the new diagnoses and estimates seek to build.

Trends in Global Poverty

It is difficult to imagine surviving in the United States today on \$2 per day, which amounts to only one-sixth of the income level for the official US poverty line. Yet half of the world's population lives at this level of real income or below, even after taking account of the lower cost of living in

developing countries.¹ Half of these in turn have incomes of only \$1 per day or less. One-fourth of the world's population thus lives on less than one-tenth of what would be considered the minimum acceptable in the United States and other rich countries.

Much of public discourse and a considerable body of expert literature lament, moreover, that globally the rich are getting richer while the poor are getting poorer, and that there is a "divergence" instead of "convergence" of income levels in rich and poor countries. Fortunately this perception is inaccurate with respect to populations, as opposed to "countries." In the past four decades, the per capita income of countries that accounted for the world's poorest 60 percent in 1960 *doubled* relative to the per capita income of countries that accounted for the world's richest 20 percent at that time (appendix 1C). Countries that started out in the poor group but have grown more rapidly than the rich countries include China and South Korea (about 6 percent annual per capita growth vs. 2.2 percent for rich countries); Thailand and Pakistan (about 4½ percent); Indonesia and Egypt (3 percent); and, although just barely, India and Sri Lanka (2½ percent).

The frequent contrary diagnosis that there has been an income divergence is an optical illusion based on the statistical treatment of each country as equally important regardless of its population size. Growth records have indeed been dismal in a sizable number of smaller countries, especially in sub-Saharan Africa (SSA). This means, however, that there is a hard core of countries that have experienced prolonged stagnation or decline, even though most of the world's poor live in countries that have been growing faster than industrial countries.

This diagnosis fits well with the two-track strategy for global trade policy developed in this study: immediately intensified special-access regimes for the at-risk countries, coupled with the phase-in of general liberalization of markets for goods from the other developing countries. Using the designation as heavily indebted poor country (HIPC), least developed country (LDC), or location in sub-Saharan Africa as the definition, at-risk countries account for 1 billion people (one-sixth of global population) and 715 million living in poverty at the \$2 threshold (one-fourth of the global poor). These countries account for only 6.9 percent of total US, EU, and Japanese imports from all developing countries, so it should be feasible to intensify their special market access with minimal adjustment cost in industrial countries and minimal trade diversion from other developing countries.

The two-track strategy tends to be reinforced by the concept of the "poverty intensity of trade," which was developed in chapter 1. In this

1. The threshold is in purchasing power parity dollars. At market exchange rates, this threshold would be considerably less than \$2 per day.

measure, imports from trading partners are weighted by the poverty incidence in the country in question. Imports from a country where everyone is poor would have a poverty intensity of 100 percent; imports from a rich country with no poverty, zero percent. The weighting can be by headcount poverty incidence or by share of the poor in national income.

It turns out that US imports from all developing countries have a weighted poverty intensity of 38 percent on the headcount basis and 8 percent on the income-share basis. The measures are approximately the same for Canada and Japan, though slightly lower for the European Union (26 and 7 percent, respectively). When the poverty intensity is calculated for imports from the at-risk countries, however, the result is much higher. For the United States, the poverty intensity of imports from least developed countries, highly indebted poor countries, and sub-Saharan Africa is an average of 68 percent on the headcount basis and 46 percent on the income-share basis, far higher than for US imports from all developing countries.

If we assume that the benefits conveyed by trade are roughly proportional to existing shares in income, these estimates suggest that whereas less than one-tenth of benefits of US trade with developing countries overall will tend to reach the poor, almost half of such benefits will reach the poor in the at-risk countries. This way of looking at the question leads quickly to the view that deepening the existing special-access arrangements for these countries may be one important way in which trade policy can be used as an instrument to address global poverty.

The poverty-intensity concept can also be applied by sector rather than by country. In this case, the shares of imports for each sector coming from each developing country are weighted by that country's poverty incidence. For US imports in 2001, the resulting poverty intensity weighted by the income share of the poor is the highest for pearls and precious stones (21 percent), followed by petroleum and cocoa (both 17 percent), textiles and apparel (both 12 percent), and footwear and toys (both 10 percent). When the measurement is made on the basis of principal developing-country exports to the world (rather than just the US market), the poverty intensities are about the same, and additional detail shows a high poverty intensity of cotton textile fibers (23 percent) and jute textile fibers (36 percent).

This way of looking at the issue sheds additional light on the priorities for market access if poverty reduction is a goal. For example, some agricultural goods turn out to have a lower poverty intensity (wheat, at about 2 percent, maize at 6 percent, and sugar at 7 percent) than others (rice at 13 percent, coffee at 15 percent, in addition to even higher rates for cocoa, cotton, and jute). For example, the high poverty intensity of cotton exports is consistent with the surprisingly high profile of this product at the World Trade Organization's (WTO's) ministerial negotiations in Cancún in September 2003.

Returning to the broader profile of global poverty, the country concentration of the global poor means that the prospects for poverty alleviation will depend critically on the growth performance in a handful of large countries. India accounts for about 860 million poor people at the \$2 level and China for about 670 million, using the official figures. A simple statistical regression based on real per capita income and income concentration (appendix 1A) suggests that by international patterns the expected number of poor people would only be about 485 million in each country.² Even at the lower numbers, however, India and China alone would account for two-fifths of the world's poor. So continuation of growth near the rapid rates experienced by both countries in the past decade (9.2 percent annually per capita in the period 1990–2000 for China, 4.2 percent for India [World Bank 2002d]) would make a major contribution toward reducing global poverty.

Four other countries also account for poverty populations of 100 million or more each: Bangladesh, Indonesia, Nigeria, and Pakistan. Another 25 countries have poverty populations of at least 10 million each, either because they are high-population countries with intermediate poverty rates (e.g., Brazil, Mexico, and Russia) or intermediate-population countries with high poverty rates (e.g., Nepal and Uganda).

The fundamental source of poverty reduction is economic growth. The World Bank (2001) estimates that on average, international experience suggests that the “poverty elasticity” of growth is about 2. That is, a rise in per capita income by 1 percent reduces the number of people in poverty by about 2 percent. Appendix 1B shows that in a prominent mathematical function used to describe income distribution (the lognormal distribution), there is a positive relationship of the poverty elasticity to the ratio of average per capita income to the poverty threshold income; and a negative relationship to the degree of concentration of income. As a result, the expected poverty elasticity can be in the range of 3 or higher for a country with an intermediate per capita income (e.g., \$3,000) and intermediate income concentration (e.g., a Gini coefficient of 0.45). Conversely, it will tend to be lower at about 1 to 1.5 for a country with either a low per capita income (e.g., \$900) or a high degree of income concentration (e.g., a Gini of 0.6).

There is a paradox, however, between the slow pace of measured global poverty reduction in recent years and the faster reduction that might have been expected in applying poverty elasticity to per capita income growth.³

2. This calculation is consistent with the view that in India especially, the usual measure overstates the incidence of poverty (Bhalla 2002).

3. In addition to this paradox over time, there is a “cross-section” paradox. For countries with a per capita income above about \$1,000, the incidence of poverty that would be predicted using the lognormal distribution is much lower than the poverty actually observed (except for countries with very high income inequality). This suggests that as per capita income rises, poverty is more persistent than this standard distributional form would anticipate.

At a \$1 per day threshold, the World Bank (2001) estimates that global poverty fell from 28.3 percent in 1987 to 24 percent in 1998. Yet the real per capita income of developing countries rose at an average 2 percent in this period, and applying a poverty elasticity of 2, global poverty should have fallen from 28.4 to 18.4 percent.

Bhalla (2002) has argued that the paradox is explained by bad data. He uses national accounts data to correct the estimates of average income from sample surveys, and he applies the distribution from the surveys. His result is a much more rapid reduction in global poverty than usually measured. Although it is true that there seems to be a general pattern of a falling ratio of sample income averages to national accounts average incomes, a plausible alternative interpretation is that underreporting of income is mainly in the higher income brackets, so it will be misleading to apply the sample distribution of income. If so, the pace of poverty reduction is likely slower than suggested by Bhalla, although probably faster than recorded in the World Bank estimates.

Part of the explanation of the paradox seems to be that in the 1990s within-country income distributions started to become more concentrated, in contrast to previous long periods of little if any change (Cornia and Kiiski 2001). New tests in chapter 1 tend to confirm a shift from no trend in the first three decades after 1950 to a trend toward increased concentration in the period 1980–2000, and this shift is especially pronounced if country observations are weighted by population. Large countries with rising concentrations in the past decade include Brazil, China, Indonesia, Mexico, and Nigeria (figure 1.1).

Even after taking account of the qualifications (differing poverty elasticities, muted effects because of rising income concentration), growth remains central to the reduction of poverty. The role of trade in reducing poverty then turns primarily on the role of trade in achieving sustained economic growth. There is a clear positive relationship between the growth of exports and the growth rate achieved in the overall economy (figure 1.3), and a simple regression shows a highly significant coefficient of 0.15 (each additional percentage point of export growth is associated with 0.15 percent additional GDP growth). Even acknowledging the question of the direction of causality, the strong suggestion is that global trade liberalization can help spur growth in developing countries and hence poverty reduction by boosting exports. It is within this broad framework that the more specific analyses of chapters 2 through 5 are set.

Preferential Regimes

Chapter 2 reviews international experience with preferential market access for developing countries. It broadly finds that whereas the Generalized System of Preferences (GSP) has had meager results, the deeper special-

access regimes oriented toward low-income countries have tended to achieve more significant results. The GSP systems differ in approach. The United States treats countries and/or sectors as either eligible or ineligible for zero-duty access, whereas the European Union uses graduated margins of preference that are deeper for poorer countries. In both cases, the overall effect is to provide relatively limited preferential benefits under the GSP.

There is a gauntlet of hurdles that must be run to obtain meaningful tariff relief through the GSP in most programs. The first is country eligibility. GSP-eligible economies account for only one-fourth of US imports from all developing countries, primarily because China, Hong Kong, Singapore, and Taiwan are not eligible and Mexico has access through the North American Free Trade Agreement (NAFTA). For the European Union, eligible countries account for only two-thirds of imports from developing countries. The second hurdle is whether the product is dutiable on a most-favored-nation (MFN) basis (the preference is meaningless for zero-duty items). The third is product eligibility. The US system in particular removes the product from eligibility for a country that has passed certain competitiveness thresholds (e.g., a \$100 million ceiling), and moreover tends to exclude sensitive product categories, leaving less than 40 percent of dutiable goods from GSP-eligible countries qualified for GSP treatment. Even among qualified products from qualified countries, such factors as the uncertainty associated with periodic GSP expirations have narrowed GSP use below the total potential.

The resulting value of imports granted GSP benefits in 1997 was only 15 percent of total imports from developing countries for the European Union, only 3.6 percent for the United States, and only 9 percent for Japan (table 2.1). Revenue forgone amounted to 2.5 percent of the value of GSP-benefited imports for the European Union, 1.6 percent for the United States, and 2.1 percent for Japan. These savings on tariffs were a near-vanishing 0.4 percent of the value of total imports from developing countries for the European Union, 0.06 percent for the United States, and 0.2 percent for Japan. For the small base of ultimately eligible and preference-using goods, there was a nontrivial cut in the average tariff applicable in the European Union from 6 to 3.4 percent, and only 0.2 percent for the least developed countries. The cuts were smaller for the United States and Japan, especially for LDC suppliers.

In contrast to the broad GSP systems, the special programs instituted in favor of developing countries with special cultural ties, or for geopolitical or antidrug purposes or, more recently, for the poorest countries, have tended to have greater potential impact. These include the EU's Lomé, Cotonou, and Everything But Arms (EBA) initiatives, and the US Caribbean Basin Initiative (CBI), Andean Trade Preference Act (ATPA), and African Growth and Opportunity Act (AGOA) arrangements.

Studies of the effects of these more intense special-access regimes have arrived at mixed conclusions. Grilli (1994) judged that the Lomé Conven-

tion begun in 1975 had shown minimal impact. He noted that the share of Lomé countries in EU trade had fallen by half rather than rising, and that potential gains were limited because the majority of trade was already duty free and rules of origin constrained effective use. In contrast, Nilsson (2002), using a gravity model, calculated that Lomé country exports to the European Union by 1992 were about 40 percent higher than their baseline would have indicated without the preferential arrangement. As for EBA, Bora, Cernat, and Turrini (2002) use a CGE model to estimate sizable LDC gains (about \$400 million annually) that come however at the expense of the European Union (from terms-of-trade loss) and non-LDC developing countries. Page and Hewitt (2002) worry about EBA trade diversion from such non-LDC countries as India and Kenya.

The Caribbean Basin Initiative has been associated with accelerated export growth (nonoil exports from the region rose more than fourfold from 1984 to 2000) and a strong rise in foreign direct investment (from 1 to 5 percent of GDP for Caribbean countries, and from 0.8 to 1.7 percent for Central America). Production-sharing agreements have had a strong impact on both growth and investment (USITC 2001). In the Andean Trade Preference Act, there has been rapid export growth in benefiting products such as flowers and tuna, and a gravity model estimated by Hufbauer and Kotschwar (1998) shows strong positive export effects from the arrangement.

Evaluating the impact of these special regimes is difficult, in part because these at-risk countries tend to have lower export and growth performance than developing countries on average for numerous reasons having to do with income levels, governance, and economic policies. Relatively weak performance can then give the misleading impression that the special-access arrangement provides little help. In an attempt to control for some of these influences, chapter 2 includes a regression analysis relating real export growth rates to a series of economic variables as well as the special-regime variable. The estimate finds that after removing the influences of growth in the world market, lagged income growth, lagged level of per capita income, share of manufactures in exports, lagged real exchange rate, and a regional adverse effect for sub-Saharan Africa, there were relatively strong positive export effects from the special regimes. The Lomé arrangement boosted export growth by about 9 percent above rates otherwise expected, and the Caribbean Basin Initiative about 7 percent. Although the size and significance of these effects falls if the highest and lowest 1 percent of observations are removed, the results are nonetheless suggestive of a substantial positive impact.

As for the African Growth and Opportunity Act, there are also early signs of impact. US imports of textiles and apparel from AGOA rose about 80 percent from 1999 to 2002, and vehicles and parts imports rose 370 percent. Overall nonoil imports rose 25 percent from 1998–99 to 2001–02. In 2001, 43 percent of US imports from AGOA-beneficiary countries re-

ceived AGOA duty-free treatment. Another 29 percent entered duty free in zero-MFN-tariff categories, and a further 3 percent entered free under the GSP. Altogether, three-fourths of imports from these countries entered duty free.

AGOA nonetheless provides a good illustration of how there remains considerable deepening that can be done in the special-access regimes. Duty-free treatment could be extended to all goods currently not covered. To improve certainty, AGOA eligibility could be shifted from annual to 5-year review; AGOA's life span could be extended from 2008 to 2013 and made automatically renewable for 10 years in the absence of new legislation to the contrary. The 2004 expiration date for duty-free access for apparel made in the 30 poorer countries from non-US fabric could similarly be extended until 2013. The African Growth and Opportunity Act (and the other special-access regimes) could achieve investment and trade synergy by being granted a 10-year home-country tax holiday on earnings from direct investment, and access to political risk insurance could be expanded (through the Overseas Private Investment Corporation in the case of the United States).

In short, there is some evidence that although the wider GSP regimes have had minimal influence, the deeper special-access regimes have had a greater impact. Moreover, there are dimensions in which these regimes could be substantially enhanced. There is thus meaningful room for action on this track of international trade policy oriented toward reducing poverty: the deepening of special-access regimes for at-risk countries. Such action could be helpful, as discussed below, to provide a carrot to these countries that can allay their fears that multilateral liberalization will adversely affect them by eroding the size of their preferences. Without such reassurance, many of them could be tempted to seek to block broader progress in the Doha Round.

Industrial-Country Protection

Successive rounds of postwar multilateral trade negotiations have reduced tariffs in industrial countries to relatively low levels for most manufactures and nonagricultural raw materials. However, tariffs in agriculture remain high (including especially the ad valorem equivalent of specific tariffs as well as the influence of above-quota tariff-rate quota tariffs). Tariffs are also relatively high in textiles and apparel. As a result, considerable scope remains for increased export opportunities for developing countries through the further liberalization of industrial-country markets.

The profile of tariff protection is surprisingly similar for industrial and developing countries. Both groups apply the highest protection to agricultural goods. Using tariff data compiled in the Global Trade Analysis Project (GTAP) database, and weighting product sectors by their shares in

global output, agricultural tariffs range from a low of 4 to 6 percent in Australia and New Zealand to highs of 119 percent in Switzerland and 154 percent in Norway, among industrial countries. Weighting by GDP and trade turnover, the average agricultural tariff for industrial countries stands at 36 percent. The corresponding average for developing countries is not much lower, at 30 percent (table 4.4).

Similarly, textiles and apparel bear the highest protection among manufactures in both areas. For industrial countries, the average tariff is about 12 percent; for developing countries, 18 percent. In contrast, all other manufactures tend to have low tariffs in industrial countries, averaging 3 percent. Other manufactures still face relatively high tariffs in developing countries, however, at a weighted average of about 12 percent. Finally, both groups of countries grant practically duty-free entry to oil and other nonagricultural raw materials.

The high tariffs in agriculture in several industrial countries are in addition to the protective effect of subsidies. Chapter 3 develops a method for converting subsidies into a tariff equivalent that has the same effect in suppressing imports. It turns out that US and EU agricultural subsidies are both about equivalent to a 10 percent tariff in terms of dislocating demand away from imports. The size of the subsidies is higher in the European Union, but this is offset by the fact that there is a larger base of imports in the European Union so the proportional tariff-equivalent effect of discouraging imports ends up being about the same as that in the United States.

The combined effect of tariffs and subsidies in agriculture is an overall tariff equivalent of about 20 percent in the United States, 46 percent in the European Union, 52 percent in Canada, and 82 percent in Japan (table 3.9). There is an important message in the composition of these estimates. For the European Union and Japan, the bulk of agricultural protection stems from tariffs and tariff-rate quotas, not from subsidies. In particular, the tariff component of EU protection is a tariff equivalent of about 33 percent, while the subsidy component is a tariff equivalent of only 10 percent. The composition is even more skewed for Japan, where tariffs amount to a tariff equivalent of 76 percent and subsidies only 3 percent.⁴ This is an important finding, because it suggests that much of the rhetoric in the international debate has overemphasized agricultural subsidies and given insufficient attention to reducing agricultural tariffs and tariff-rate quotas.

In particular, the widely quoted figure of about \$300 billion or more in agricultural "subsidies" in industrial countries is a misnomer. This estimate is the Organization for Economic Cooperation and Development's (OECD's) Total Support Estimate, which includes the effect not only of

4. Note that the combined effect of the tariff and the subsidy tariff equivalent equals their chained effect, which is significantly more than their simple sum.

Table 6.1 Aggregate Measure of Protection (AMP) against developing countries (percent tariff equivalent)

Sector	European		
	United States	Union	Japan
Agriculture	19.9	46.4	82.1
Textiles, apparel	10.9	11.6	9.2
Other manufactures	2.1	3.2	1.5
Oil, other	0.9	0.6	0.3
All (AMP)	4.0	9.5	15.6

Source: Table 3.10.

both subsidies and tariffs but also of indirect services such as agricultural research. Even for the narrower Producer Support Estimate, amounting to \$235 billion annually, subsidies make up only about a third of the total. The greater weight of tariffs somehow seems to have been lost in the Doha negotiations as well as in most international calls for agricultural liberalization, which instead treat the \$300 billion figure loosely as if it were all subsidies appropriated by OECD legislatures (which, by implication in some pronouncements, could be spent on development assistance instead). The danger in this misperception is that developing countries will use up too much of their Doha Round negotiating capital calling for the elimination of industrial-country subsidies in agriculture rather than allocating more of it to the more important reduction of industrial countries' agricultural tariffs and increased in-quota market access to products with tariff-rate quotas.

When agricultural protection is averaged with protection in other sectors (including the tariff equivalent of quotas in textiles and apparel), weighting by "adjusted" imports from developing countries (using a measure that compensates for the possible bias toward low imports in products with high protection), the resulting Aggregate Measure of Protection (AMP) against developing countries amounts to a total tariff equivalent of 4 percent in the United States, 10 percent in the European Union, 16 percent in Japan, and 11 percent in Canada (table 6.1). This protection remains substantial, and the AMP gauge suggests that considerable scope remains for increased developing-country exports to industrial countries as a consequence of removing protection in industrial countries.

These protection measures are for MFN tariffs, and it is often argued that for the European Union, the incorporation of preferences for low-income countries substantially reduces the overall protection level against developing countries. This is not a convincing argument, because total EU imports from all at-risk countries in the HIPC, LDC, and SSA groupings amount to only 8.5 percent of EU imports from all developing countries (chapter 2). So even if all of these countries enjoyed free entry (and not all of them are Lomé countries, nor are all products eligible for free Lomé

entry), the effect would be to reduce the average protection rate by only about one-twelfth (e.g., from about 10 to 9 percent). Lomé and EBA imports are simply too small, compared with total EU imports from developing countries, to make a meaningful difference in the aggregate measure of EU protection against developing countries.

The telescoping of all protection into a single number for each of the four broad sectors, and further consolidation into a single overall number, helps sharpen an understanding of why agricultural liberalization features so heavily in the Doha Round trade negotiations as an objective of developing countries. Industrial countries' protection in agriculture is far higher than in the other sectors (including textiles and apparel). A Doha agreement that carves out agriculture would remove from the table the sector with the highest protection against developing countries, in a product sector in which most developing countries tend to have a comparative advantage.

Within manufactures, there has been considerable concern about the impact of tariff peaks on developing-country exports. An analysis of tariff peaks in chapter 3 finds, however, that only 2.1 percent of tariff categories for manufactures have tariffs of 15 percent or higher in the United States, only 0.5 percent in the European Union, and only 0.9 percent in Japan. This suggests that removal of protection in tariff peaks at the usual threshold of 15 percent may also have limited potential. The scope for liberalization is greater if the threshold considered is 10 percent, because an additional bloc of about 6 percent of categories is in this bracket for the United States, about 7 percent for the European Union, and about 3 percent in Japan. A back-of-the-envelope calculation suggests, moreover, that about one-half of total developing-country export gains to be expected from complete elimination of industrial-country tariffs on manufactures could be achieved solely through the elimination of tariffs of 10 percent and higher. This suggests considerable utility to setting a ceiling of 10 percent for all manufacturing tariffs in industrial-countries by an early date, as an important step toward free trade.

Because of the high protection in industrial-country agriculture, and because of special questions about the poverty impact of agricultural liberalization given the high share of food in low-income budgets, appendix 3C develops a simple model of the impact of completely liberalizing agriculture on global poverty. There are two basic influences in this calculation. The first is that free trade in agriculture would tend to boost world prices of agricultural goods. The reason is that removing industrial-country protection would boost demand from developing-country suppliers, and removing subsidies would reduce the amount produced in industrial countries. With greater demand and less supply, world agricultural prices would rise.

The second key influence is whether the global poor tend primarily to be producers or consumers of food. Here the critical condition for higher

world agricultural prices to reduce rather than increase global poverty is essentially that the share of the global poor located in the rural sector exceeds the share of food in the consumption basket of the poor. Because about three-fourths of the world's poor are in the rural sector while a plausible estimate for food share in consumption is only about 40 to 50 percent, on balance agricultural liberalization should be expected to reduce global poverty. On the basis of existing estimates that agricultural free trade would boost world agricultural prices by about 10 percent, chapter 3 estimates that about 200 million people would be lifted out of poverty globally as a consequence of removing protection from agriculture. There would be some increase in urban poverty, but this would be far outweighed by decreases in the number of rural poor people.

There have been concerns, nonetheless, that numerous poor countries in particular are net food importers, and that they would suffer an adverse effect from higher global food prices as a result of agricultural free trade globally. Chapter 3 uses the GTAP country data to examine this question and finds that at this level of aggregation, the food deficit problem should not be severe. It turns out that key countries with large poverty populations are net food exporters rather than importers, including China, India, Indonesia, and sub-Saharan Africa as a group (with the notable exception of Botswana). Although Bangladesh and Pakistan are net food importers, their imports are relatively small (about \$6 per capita annually). The principal cases of large net food imports are for the Middle East and North Africa.

There is nonetheless concern that the least developed countries in particular tend to be net food importers. For these countries, however, there is a conceptual problem in simply looking at the food trade balance. Because these countries tend to receive large foreign assistance relative to GDP, they tend to be large net importers of everything, not just food. Consider, however, whether they will be made better off or worse off by higher food prices as a consequence of global trade liberalization. The main point to recognize is that there will be reductions in prices of other goods that can more than offset increases in food prices. Otherwise global free trade would reduce global welfare rather than increase it. If the typical LDC has a comparative advantage in agriculture and food rather than in manufactures, then the terms-of-trade gains it enjoys from lower prices of manufactured imports should more than offset the higher prices it pays for food imports after global liberalization.

It turns out that most of the least developed countries do indeed have a comparative advantage in food and agriculture, even though almost all of them have food trade deficits and a majority have agricultural trade deficits (table 3A.4). The ratios of their exports to imports for food and agriculture are typically higher than the ratios of their exports of nonfood products (or nonagricultural products) to imports of nonfood products (nonagricultural products). By this test, fewer than half of least developed

countries have a comparative disadvantage in food, accounting for only 44 percent of the poor in least developed countries if Bangladesh is included and only 29 percent if it is excluded.⁵ The least developed countries as a group should thus favor global agricultural liberalization, even though special aid or other measures may be appropriate for the minority that do have a comparative disadvantage in food.

CGE Estimates of Trade Liberalization Effects

Chapter 4 develops the Poverty Effects version of the Harrison-Rutherford-Tarr model, or PEHRT model, and applies it to estimate the impact of trade liberalization on trade, real incomes or “welfare,” and global poverty. The underlying model (Harrison, Rutherford, and Tarr 1996, 1997a) is one of the leading computable general equilibrium models for analyzing trade. It is applied in this study to the GTAP5 trade and tariff database for 1997–98. The PEHRT version chooses the country aggregation to give special emphasis to countries relevant for global poverty.

The CGE approach takes into account both the direct and indirect effects of trade liberalization. In contrast to the simplest traditional “partial equilibrium” model—which calculates trade welfare gains as the rise in domestic “consumer surplus” net of loss of domestic “producer surplus” and government tariff revenue when imports are liberalized—the general equilibrium approach also calculates changes in terms of trade and hence benefits accruing from improved markets on the export side. It also calculates changes in factor prices and enforces consistency in such areas as unchanged trade and fiscal balances. The changes in factor prices are of special relevance in examining the impact on poverty, because the factor price estimates for unskilled labor provide a close approximation to incomes of poor households.

The structure of the HRT model involves limited substitutability between factors in production, between alternative foreign products in demand for imports, and between imports as a group and the home variety of the product in question.⁶ The basic strategy of the trade liberalization experiments is to shock the model by changing (or eliminating) tariffs and export subsidies (as in agriculture) or taxes (as in textiles), and then to allow the model to identify the new “equilibrium” levels of production, imports, exports, and factor allocation in each sector and country. There will be a corresponding new total level of “welfare” (roughly synonymous with real income), which will be higher than in the original pro-

5. The corresponding figures for agriculture are 48 and 34 percent, respectively.

6. A tiered nesting of constant elasticity of substitution functions is used for this purpose. On the export side, there is a corresponding constant elasticity of transformation specification relating domestic production to exports.

tected equilibrium because of the increased efficiency in resource allocation made possible by removing distortions from protection. The additional feature of the PEHRT model is the application of the relevant factor price changes to the base levels of poverty and the “poverty elasticity” of each country to arrive at an implied change in poverty resulting from the trade policy shock.

The trade and welfare results of the simulations are of interest in their own right. In the basic “static” version of the model, complete elimination of protection would raise global welfare by about \$230 billion annually, of which developing countries would obtain \$87 billion, or 1.35 percent of their GDP. Tests decomposing the sectoral contribution of these gains confirm that agricultural liberalization is the most important, accounting for 58 percent of gains for industrial countries and 50 percent of gains for developing countries. This is consistent with the analysis identifying agriculture as the most highly protected sector, and it is a testimony to the importance of this protection considering that the trade base of agriculture is considerably smaller. In the GTAP5 database, agriculture accounts for only 9.4 percent of world merchandise trade (Dimaranan and McDougall 2002, 3-4).

In essence, the ratio of protection in agriculture to that in all other sectors is about 10 to 1 or even higher, whereas the ratio of trade in agriculture to trade in all other goods is about 1 to 10, so agriculture and non-agriculture wind up being about equally important as sources for gains from global free trade.⁷ The sectoral share of textiles and apparel in welfare gains is also disproportionately large as a consequence of relatively high protection. The two products account for 11 percent of global gains, even though they represent only 6.6 percent of global trade.

The basic free trade simulation finds that all developing countries except Mexico experience positive welfare gains.⁸ Mexico’s loss is under-

7. It can be estimated from table 3.10 that average protection for all goods excluding agriculture is 3.3 percent for the United States, 4.0 percent for the European Union, and 2.0 percent for Japan. The corresponding ratios of the level of protection in agriculture to those in nonagricultural sectors are 6.0, 11.6, and 41.1, respectively. Note, however, that these are protection levels facing developing countries, which tend to be somewhat higher than those facing industrial-country trading partners. Note further that in a traditional partial equilibrium framework, the estimated share of agriculture in welfare gains would tend to be even higher, because in that framework the welfare gain rises with the square of the tariff. In contrast, the CGE models tend to show much closer to linear welfare effects, presumably because of terms-of-trade gains on the export side.

8. Malaysia, however, has a zero net welfare effect. Note that the general pattern of positive gains differs from the estimates for Uruguay Round effects in Harrison, Rutherford, and Tarr (1996). They found losses in sub-Saharan Africa, the Middle East and North Africa, Eastern Europe, and Hong Kong. They attributed the results to losses in terms of trade for food importers with reduction of industrial-country farm subsidies, and to losses of quota rents for textile and apparel exporters. In the subsequent GTAP5 database, however, the estimate of textile quota rents is much lower. The elimination of all protection in the free trade simulation here, moreover, provides larger welfare gains than the much more limited Uruguay Round cuts.

standable, because 82.5 percent of its trade turnover is with its free trade NAFTA partners, Canada and the United States, and global trade liberalization would mainly have the effect of eroding Mexico's preferential access to these markets (IMF 2002a). Because the protection database does not capture the influence of other preferences, a special test is run to approximate the influence of preference erosion: US and EU protection is frozen against the seven relevant poor regions in an otherwise free trade simulation. Even though this test should overstate preference erosion because this trade is not fully protection free in the US and EU markets, the inclusion of the preference erosion effect reduces gains of the seven poor regions from global free trade but does not turn them into losses.⁹

In an alternative "asymmetric" liberalization scenario, only the industrial countries remove their protection. This case generates considerably lower global welfare gains (\$125 billion). Annual welfare gains for the developing countries would also fall but would nonetheless still be relatively large, at \$57 billion, or 65 percent of the potential if they also eliminated their protection. These results bring new evidence to what seems to be an emerging debate on the extent to which the developing countries are or are not primarily responsible themselves for the present losses from global protection.

In contrast, the World Bank (2002a) estimates that 59 percent of the free trade potential welfare gains would come from the developing countries' own liberalization. As noted in chapter 4, *The Economist* (October 6, 2003, 60) has emphasized that in a subsequent World Bank study applying more plausible protection cuts than total free trade, the developing countries' own liberalization of agriculture generates 80 percent of welfare gains in that sector. The magazine's message was that the developing countries had shot themselves in the foot at Cancún, because it was not industrial countries' agricultural protection that mattered but their own.

The PEHRT results contradict this view of the world, because the results of this study suggest that more than half of potential developing countries' gains from global free trade come from liberalizing industrial countries' markets rather than their own.¹⁰ A recent CGE study by the

9. The test reduces free trade welfare gains for seven poor regions from \$8.6 billion to \$2.2 billion annually. Only Bangladesh experiences a loss (of about 0.4 percent of GDP), suggesting the need for special international assistance for Bangladesh to accompany global trade liberalization.

10. As discussed in chapter 4, this "source attribution" question is ambiguous. One obtains one number in an experiment in which only industrial countries liberalize, and another number in an experiment in which only developing countries liberalize. The two extremes are that developing countries' own liberalization (including for imports from each other) accounts for between 35 percent of the total global free trade potential (the asymmetric case in chapter 4) and 48 percent (a variant in which only developing countries liberalize). In the former case, the developing-country gains include "free rider" terms-of-trade gains; in the latter case, there are terms-of-trade losses because it is the industrial countries that are the free riders.

OECD finds an even more extreme result in the same direction (OECD 2003c). That study estimates that 79 percent of potential developing-country welfare gains from global free trade come from the elimination of protection in industrial countries.

These three different results reflect differences in the CGE models. A principal influence is the extent of “terms-of-trade” effects. Although the OECD model may overstate these effects significantly, the World Bank model may understate them somewhat. More important for the World Bank’s results, its calculations refer to a world in 2015, when the relative size of the highly protected developing-country market for manufactures is much larger, and the relative size of the highly protected industrial-country market for agricultural goods is much smaller, than today. The World Bank estimates thus tend to understate the relative importance to developing countries of today’s liberalization by industrial countries.

In short, the tests in this study reinforce the view that the developing countries’ potential gains from global free trade stem heavily—at least one-half and perhaps two-thirds—from increased access to industrial-country markets, rather than primarily from liberalizing their own imports. These findings tend to suggest that the standoff at Cancún, in which a group of 21 developing countries essentially refused the industrial countries’ proposal for agricultural liberalization as insufficient, was strategically sound rather than a blunder as diagnosed by *The Economist*. There was simply too much at stake in liberalizing their access to industrial-country markets for the developing countries to accept a minimalist outcome, even if it meant risking no outcome at all.¹¹

The HRT model includes a version that seeks to capture the longer-term dynamic effects of trade liberalization in addition to the static effects. This is a traditional challenge in analysis of trade reform. Economists have well-established methods for estimating the “static” welfare effects of trade liberalization, but there is no corresponding consensus on how to estimate the dynamic effects, even though most economists would agree that the dynamic gains tend to be considerably more important than the static gains. Harrison, Rutherford, and Tarr (1996) propose the following approach for dynamic effects. In their CGE model, trade liberalization tends to boost the rate of return to investment, as new opportunities opened up by more open markets increase profitability and as the price of imported capital equipment tends to fall from reduced protection.¹² The

11. This line of analysis is further reinforced by a simulation in chapter 4, in which developing countries cut their protection by half except that they grant free entry to other developing countries’ goods, while industrial countries eliminate all protection. This outcome is actually slightly better than total free trade for the developing countries, because there is some degree of “optimum tariff” implied for even smaller developing countries in a model structure in which each country has a specialized variety of the product.

12. Chapter 4 discusses the relationship of this pattern to the Heckscher-Ohlin and Stolper-Samuelson models.

static version of the model reallocates factors but leaves their total availability unchanged. The long-term Steady State version of the model instead allows the stock of capital to rise until the rate of return on investment is driven back down to the preliberalization level. This provides one gauge of the longer-term dynamic effects from liberalization.

In the Steady State version of the PEHRT model in chapter 4, potential welfare gains (after deducting the cost of additional capital) are considerably larger than in the static version, reaching \$343 billion annually globally. The developing-country share in this total is larger than in the static case, amounting to \$162 billion, or 2.5 percent of their combined GDP.

Poverty Impact

The next step in arriving at poverty-impact estimates is to consider the changes in factor prices from trade liberalization. Global free trade is found to raise the median real wage for unskilled labor in developing countries by 5 percent. The most dramatic factor price changes are for land. The real price of land rises by more than 100 percent in Australia–New Zealand and Canada, but it falls by 50 to 70 percent in industrial Europe and Japan. These results are consistent with a strong comparative advantage in agriculture for the main agricultural exporters, and they are vivid illustrations of why strong opposition to agricultural liberalization can be expected in Europe and Japan.

The sparse data available for factor shares of income received by poverty-level households suggest that unskilled labor represents about 90 percent, and that transfers account for the remaining 10 percent. The model results provide the estimate for each country for the change in the real unskilled wage, and the overall percent increase in welfare for the country is used to estimate the rise in transfers. On this basis, there is an estimate for each country of the percent rise in real income of poverty-level households. This change is applied to the poverty elasticity estimated for each country to arrive at the percent reduction expected in the number of households in poverty. Application of this percent change to the base number of total population in poverty provides an estimate of the number of people who would be lifted out of poverty by global free trade, for each of the countries or regions in the model.

When this method is applied to the static PEHRT model, the resulting estimate is that the number of poor people globally would fall by about 93 million, of which about 22 million would be in China and another 20 million in India, and 15 million in sub-Saharan Africa.¹³ This estimate would appear to be on the low side, considering that the simple back-of-the-envelope model in chapter 3 arrives at an estimate of 200 million just

13. Base case. The estimates for China and India use the World Bank poverty estimates, not the potentially lower figures discussed above.

from agricultural liberalization. One possible explanation is that the simple agricultural model distinguishes between the rural and urban sectors, whereas the PEHRT model assumes a countrywide uniform impact on unskilled labor.

When the poverty-impact approach based on factor price increases is applied to the Steady State model, the result is a central estimate of 446 million for global poverty reduction. Although from some standpoints this may be an overestimate, as discussed in chapter 4, from others it is not, because it does not incorporate the dynamic total factor productivity gains from free trade.

The next step is to incorporate dynamic growth effects. Chapter 5 surveys the existing literature relating trade to growth. It first compiles the numerous statistical estimates showing that higher trade relative to GDP is associated with higher productivity. Economists since Adam Smith more than two centuries ago have generally considered that countries more integrated with the world economy are likely to achieve more rapid growth. The specific mechanisms include achieving economies of scale through specialization; stimulus to technological change as a consequence of the competitive prod of imports and from greater exposure to world-standard technologies; and higher production at more cost-efficient levels because of the breaking of domestic monopoly power through the influence of import competition. Numerous recent studies have used statistical methods that circumvent the problem of circular causation from trade to productivity and from productivity to trade, for example, by applying "gravity models" that first normalize by considering countries' geographical location relative to major markets.

The survey of these studies in chapter 5 arrives at the following overall relationship between trade and productivity (the trade-productivity elasticity): A 1 percent rise in the ratio of trade relative to GDP is associated with a 0.5 percent rise in GDP per capita over a period of one to two decades. For example, if exports plus imports were to rise from 50 percent of GDP to 55 percent (a 10 percent rise in the ratio), GDP would be expected to rise by 5 percent above the baseline over about 15 years.

Before applying this relationship, chapter 5 pauses to review the heated debate on the empirical relationship of trade policy to economic growth. Prominent studies finding a strong relationship between open trade policy and growth include Sachs and Warner (1995) and Edwards (1993, 1998). The most prominent critique of these and similar studies is that by Rodriguez and Rodrik (2000). The survey in chapter 5 suggests that the critique may have gone too far by discarding results through variations in specification that turn statistical findings less significant, whereas this approach may be biased toward rejecting most statistical results (Sala-i-Martin 1997). In any event, much of this particular debate turns on whether trade *policy* has accurately been measured and affects growth, whereas the broader set of statistical results states (less ambitiously) that

trade *levels* affect productivity (even if higher trade is the result of the good fortune of being located next to a big market).

Chapter 5 then proceeds with the dynamic calculation by applying the rise in trade relative to GDP from free trade, as predicted by the static PEHRT model, to a conservative estimate of the trade-productivity elasticity of 0.4. This somewhat lower number is used to avoid intermixing pure overall (total factor) productivity gains with gains from increased investment, which may be responsible for part of the measured effects in some of the studies surveyed. The PEHRT results for free trade predict a specific increase in trade for each country in the model, which tends to be in the range of 5 percent (the estimate is 5 percent for China and 6 percent for India), although there is relatively wide variability. The percent increases in trade are then applied to the trade-productivity elasticity of 0.4 to estimate the long-term rise in productivity as the dynamic effect of free trade. Thus, in the representative case of a 5 percent trade increase, and applying the parameter of 0.4, over a horizon of some 15 years real GDP per capita could be expected to rise to a level 2 percent higher (5 percent \times 0.4) than in the nonliberalization baseline. When this increase in income is applied to each country's poverty elasticity, and the resulting percent change is applied to the base level of poverty, there is a second, dynamic tranche of global poverty reduction that can be added to the initial static effect. This dynamic productivity effect amounts to 156 million people lifted out of poverty globally, over perhaps 15 years.

The final step in calculating the poverty impact of trade liberalization is to incorporate the second major component of dynamic effects: induced investment. The Steady State version of the PEHRT model provides benchmark estimates of the change in real factor prices when the capital stock is allowed to increase by enough to drive the postliberalization return to investment back down to the preliberalization level.

A relatively conservative incorporation of this effect is, first, to consider only the net welfare effects after deducting for the cost of additional capital, and second, to allow only one-half of the potential induced-investment impact to be included in the summary poverty estimates. The resulting increase in capital could be accomplished by an increment of only 1 percent of GDP in developing-country investment rates over a 15-year horizon (e.g., from 20 to 21 percent of GDP). This amount is plausible, especially considering that a substantial portion of the increased capital could come from capital inflows from industrial countries, in a world with well-functioning international capital markets.

As discussed in chapter 4, it can be asked whether this tranche of dynamic effects should be considered a legitimate part of trade liberalization benefits and impact on poverty. It might be argued that countries are already at their ideal equilibrium between investment and consumption, and that incorporating an increased-investment effect fails to address the costs of the resulting reduction in consumption. However, the same argu-

ment could be made against attributing any welfare gain or poverty reduction effects to a technological breakthrough (e.g., the invention of the steam locomotive), because a new wave of technology also requires induced investment. The point is that, like a technological innovation, a move to global free trade provides a favorable shock to the previous investment-consumption equilibrium that increases the desired amount of investment. As long as the opportunity cost of the new investment is taken into account (and the 7 percent real interest rate used in chapter 4 is an ample allowance for this), it is surely appropriate to include the poverty reduction effects of major investment changes induced by trade policy changes. Even so, to be on the conservative side, only one-half of the incremental poverty reduction from the net steady state welfare estimates are included in the consolidated estimates of this study. This tranche yields a global impact of 184 million persons lifted out of poverty over a time horizon of 15 years as the consequence of free trade (table 5.3). This figure is additional to that portion of the total steady state effects included in the basic static gains estimates.

Table 6.2 shows the central (conservative) poverty-impact estimates of this study, showing detail for each of the developing countries and regions in the PEHRT model. The total including static, dynamic productivity, and dynamic induced-investment effects is a reduction by about 440 million in the number of poor people globally. This total represents about one-sixth of the global number of poor today (at the \$2 level) and about one-fifth of the number of poor projected by the World Bank in the baseline for 2015.

To recapitulate, the overall long-term estimate of about 440 million people potentially removed from poverty as a consequence of adoption of global free trade is composed of three roughly comparable parts. The static effects are a lower bound of 98 million and an upper bound of 252 million (table 5.3), with the higher figure based on an application of the simple rural-urban model for agricultural impacts (chapter 3) added to the PEHRT model estimates for nonagricultural sectors. The second component is the dynamic productivity effect, accounting for 156 million. The third component is (one-half of) the dynamic induced-investment effect, representing another 184 million people lifted out of poverty. The summary figure of 440 million applies the lower (“central”) static effect; the high estimate (applying the high static effect) is 590 million people lifted out of poverty (table 5.3). Figure 6.1 summarizes these effects, averaging the central and high estimates for the static effect.

The World Bank (2002a) has similarly estimated potential poverty reduction attainable by 2015 through global free trade. It places the figure at 320 million. More recently, the World Bank (2003) has estimated that a more plausible but still relatively deep liberalization of global trade in the Doha Round could reduce global poverty by 144 million by 2015.

The estimates of this study suggest that the World Bank estimates are on the conservative side. In terms of figure 6.1, the first two components

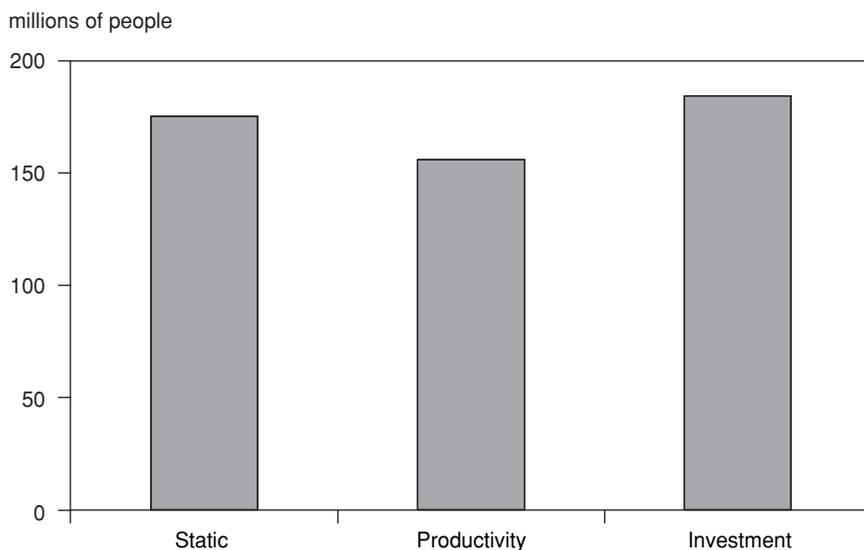
**Table 6.2 Long-term poverty reduction impact of global free trade:
Central estimate**

Region and economy	Millions of poor people	Poverty elasticity	Poverty reduction	
			Millions of people	Percent of base year
Asia				
Bangladesh	99.3	2.4	29.1	29.3
China	673.2	2.9	58.9	8.8
India	859.9	2.5	150.3	17.5
Indonesia	136.8	3.0	19.1	14.0
Korea	0.9	3.5	0.1	5.6
Malaysia	5.6	2.7	1.0	17.1
Pakistan	114.2	3.2	70.5	61.7
Philippines	29.2	2.2	5.0	17.2
Thailand	17.0	3.5	13.9	81.6
Hong Kong, Taiwan, Singapore	0.0	2.0	0.0	n.a.
Other	84.8	2.0	10.8	12.7
<i>Subtotal</i>	2,020.9		358.5	17.7
Latin America				
Argentina	5.4	2.9	0.8	15.7
Brazil	29.2	1.5	1.9	6.3
Central America and Caribbean	26.6	2.0	5.9	22.1
Mexico	41.1	2.1	0.8	1.9
Other	45.9	2.0	5.8	12.7
<i>Subtotal</i>	148.2		15.2	10.3
Europe				
Central and Eastern Europe	92.2	2.0	3.3	3.6
Middle East and North Africa				
Turkey	11.6	3.5	3.0	26.3
Other	76.4	2.0	12.3	16.1
<i>Subtotal</i>	88.0		15.4	17.4
Sub-Saharan Africa				
Mozambique	13.6	0.9	1.2	9.2
South Africa	15.1	1.7	0.9	6.1
Tanzania	19.7	1.0	1.9	9.9
Uganda	16.6	1.4	0.9	5.3
Other	328.4	2.0	41.0	12.5
<i>Subtotal</i>	393.2		46.0	11.7
Total	2,742.5		438.4	16.0

n.a. = not applicable

Source: Tables 5.2 and 5.3

Figure 6.1 Long-term impact of global free trade on poverty reduction



Source: Author's calculations.

(static effects and long-term productivity effects) are included in the World Bank model. The sum of these two effects in fact, using the lower-bound static estimate from the PEHRT model, yields an estimate relatively close to the World Bank estimate: 254 million in this study (table 5.3), compared with 320 million in the World Bank study.

The key difference in the estimates here is that the total includes a long-term induced-investment effect, whereas the World Bank estimates do not. In terms of figure 6.1, the World Bank estimates omit the third column. Inclusion of this effect raises by about two-thirds the central estimate of the total number of poor people lifted out of poverty globally as a consequence of global free trade.

There are important differences in the country distribution of estimated poverty reduction, however, and these differences are present even in the first two effects. A major reason for the differences is that the World Bank applies a standard poverty elasticity of 2, whereas this study applies country-specific poverty elasticities. Because these elasticities tend to be higher in Asia than in Latin America and Africa, a greater share of poverty reduction in the present study is found in Asia, and lesser shares in sub-Saharan Africa, than in the World Bank estimates. The poverty elasticities tend to be high in Asia because income concentration is moderate and the ratio of mean to poverty-level income is substantial. The elasticities are low in Latin America because income is highly concentrated, and they are

relatively low in Africa because the ratio of mean income to poverty income is considerably lower than in Asia (reflecting the lower overall per capita income).

The central finding of this study, however, is qualitatively similar to that of the earlier World Bank studies: There could be relatively large reductions in global poverty if all nations could agree to remove trade barriers. The global-poverty stakes in the Doha Round are thus high. Moreover, the broad estimate of approximately 500 million people (i.e., 440–590 million) lifted out of poverty over 15 years from global free trade is more likely to be understated than overstated, because it is based on estimates for goods only. Various estimates suggest that the additional gains (and by implication poverty reduction) from liberalizing trade in services could be large.

Chapter 5 also estimates the annual welfare gains from the combined static, dynamic productivity, and incremental dynamic induced-investment effects (with the latter again estimated conservatively at one-half the Steady State model estimates). The result is that overall long-term welfare gains to developing countries from global free trade would amount to an estimated \$203 billion annually (at 1997 prices and economic scale), or 3.2 percent of developing-country GDP. Considering that, as discussed above, at least half of these gains would stem from the removal of protection in industrial countries, the implication is that by eliminating protection in industrial countries could convey to developing countries benefits that are about twice as large as the \$50 billion currently provided by rich countries to poor countries in the form of concessional assistance. Moreover, the large benefit through open trade would carry with it a net welfare benefit to industrial-country consumers, rather than a cost to taxpayers as is borne in concessional assistance.

The Doha Round after Cancún

The overall policy implication of this study is that nations should seek through multilateral trade negotiations to eliminate protection, as a means of spurring global growth and reducing global poverty. This is the first and potentially most important track for trade policy insofar as it seeks to reduce poverty. In addition, as discussed above, in a second policy track negotiators should seek to extend free entry immediately to at-risk countries, broadly those in the LDC, HIPC, and SSA groupings. Because it will take a number of years for the trade liberalization agreed on in the Doha Round to be fully implemented, immediate free entry for at-risk countries would provide a major head start for these countries.

As for the protection imposed by developing countries themselves, the findings of this study suggest that this protection should also be removed if developing countries are to obtain the full benefits of global free trade. However, various scenarios examined in chapter 4 (and in particular the

differential free trade variant) suggest that there is scope for developing countries to obtain much of the total free trade benefits while applying intermediate liberalization of their own markets as industrial countries adopt full liberalization, such as a cut of all developing-country protection by half rather than complete removal. This finding tends to coincide with the political reality that many developing countries will seek an agreement calling for either lesser proportional cuts in protection for developing countries than for industrial countries, or a longer phase-in of cuts, or both.

This position broadly reflects a continued sense on the part of many developing-country policymakers (as well as what is probably a minority of economists) that it is desirable to retain at least the option to pursue some degree of infant-industry protection (presumably less extreme than in the 1970s), even though many of the more successful developing countries have unilaterally reduced protection in the past two decades. The best judgment is probably that it would be best for the developing countries to join with the industrial countries in fully removing protection, but that a relatively close second-best outcome (for the developing countries) would be achieved if they were to liberalize their own markets somewhat less than by a move to total free entry. For example, cuts in developing-country protection by perhaps two-thirds instead of 100 percent would probably generate benefits for them that would be close to the free trade total (because they would pick up some terms-of-trade gains as industrial countries fully liberalize). Even so, such a less than full liberalization scenario would likely jeopardize important developing-country gains unless the developing-countries completely removed protection against imports from other developing countries.¹⁴

In September 2003, the Cancún ministerial meeting of the WTO multilateral trade negotiations in the Doha Round broke down. The proximate trigger was that a group of 21 developing countries led by Brazil, India, and China rejected the demand by EU negotiators that the new “Singapore issues” (investment, competition, government procurement, and trade facilitation) be included in any agreement. Several African nations in particular were reluctant to include these issues, in part because of concerns about the administrative costs of dealing with these areas. In the face of this rejection, the Mexican official in charge of the negotiations declared them suspended.

The underlying cause of the breakdown was almost certainly disagreement over agriculture, however, and in particular discontent with a compromise US-EU agreement reached shortly before Cancún that seemed to remove the bulk of agricultural liberalization from the table. This accord in turn represented a major retreat by the United States on agricultural lib-

14. This is a critical feature of the surprisingly favorable “differential liberalization” scenario examined in chapter 4.

eralization. The United States, as an important agricultural exporter, had previously been in the vanguard calling for the liberalization of the sector, along with the Cairns Group composed mostly of developing-country exporters but also Australia and New Zealand, key agricultural exporting nations. Just why the US negotiators adopted a much less ambitious compromise with the European Union is unclear; the change may have been tactical and premised on a return to more ambitious goals in actual negotiations at Cancún, and/or it may have been driven by changing domestic US political considerations with an increase in the importance of maintaining farm subsidies.¹⁵

There are two competing interpretations of the overall effect of the Cancún breakdown. As discussed above, one popular interpretation (*The Economist*, October 6, 2003) is that the developing countries shot themselves in the foot. By being overly concerned that the Doha Round should be the “Development Round” it was declared to be at its launching in 2001, the developing countries mistakenly sought liberalization mainly by industrial countries while seeking to avoid liberalizing their own markets. As noted above, this view has been buttressed by press references to the World Bank study finding that as much as 80 percent of agricultural liberalization benefits for developing countries would come from their own liberalization rather than that of industrial countries.

The second interpretation, which is much more consistent with the findings of the present study, is that the Group of 21 (G-21) undertook an understandable strategic confrontation at Cancún, because otherwise the likelihood was extremely high that trade liberalization, especially in agriculture, would turn out to be a mouse, too small to warrant the name. The findings of this study in this regard are, first, that agriculture is by far the most important sector to liberalize, and second, that at least half the potential gains for developing countries from the global liberalization of overall trade, and possibly as much as two-thirds, comes from removing protection against their goods in industrial-country markets. In this framework, making a strategic forcing move meant that the G-21 was seeking to increase the probability of a meaningful overall liberalization, even if doing so reduced the probability of an early conclusion of negotiations.

There are nuances within these two polar views. For example, some Brazilian authorities complained after the breakdown that the agricultural negotiations had in fact begun to make some headway. Of particular importance, there are questions about why the Mexican official who was formally in charge of the Cancún meetings called a halt to the negotiations, and even logistical questions about why arrangements had not been

15. It cannot be ruled out that US officials considered solidarity with the European Union particularly important at the time, given upcoming United Nations deliberations on arrangements in postwar Iraq.

prepared for the negotiations to continue longer. Fundamentally, however, Cancún can be interpreted as a forceful move by the developing countries in a game in which they are seeking to achieve much more meaningful results than would otherwise have been available.

The structure of decision making in the WTO is an important underlying reason why the developing countries appear to be in a stronger position than in the past to influence the negotiations. Through much of the postwar period key decisions in the General Agreement on Tariffs and Trade (GATT) were typically first resolved by the Quad nations (United States, European Union, Japan, and Canada) and then presented to the rest of the GATT membership for endorsement largely as a *fait accompli*. Nonetheless, by the time of the Tokyo Round of the 1970s, there was an increasing sense among the Quad that the need for normal consensus approval was unduly limiting the scope of agreements, and there was a move toward “GATT-plus” side deals with obligations only for signatories but with benefits available on an MFN basis. The Tokyo Round codes on such nontariff barriers as discrimination in government procurement were major “plurilateral” agreements of this nature.

By the time of the Uruguay Round in the late 1980s and early 1990s, the major trading nations that had subscribed to the plurilateral codes were increasingly concerned that other countries, especially the larger middle-income economies, were free riding on these codes, enjoying their market-opening benefits but not undertaking their obligations in their own markets. The round thus sought a “single undertaking” package accepted by all members. The Uruguay Round adopted the more structured WTO, with its dispute settlement mechanisms, as successor to the looser GATT, so there was a strong incentive for each country to accept the overall package. Any country’s nonacceptance would have meant its exclusion from membership in the new WTO.

Yet the WTO’s continuation of the tradition of consensus decisions, coupled with its approach of negotiating a single undertaking, means that smaller members have the potential to exert blocking influence. Moreover, now that WTO membership is in place, any downside risk to a country seeking to block agreements is much lower. Although technically, certain “interpretations” and “waivers” can be passed by three-fourths majority vote (Jackson 1998, 44), in practice key negotiators would typically seek to obtain consensus rather than overrule a minority. A Doha Round agreement to grant immediate free entry to least developed countries, heavily indebted poor countries, and sub-Saharan Africa, as suggested in this study, might require a vote on the waiver of most-favored nation, although it also might be achieved without a waiver through the “enabling clause” adopted in the Tokyo Round to facilitate special access for developing countries. Similarly, major new extensions of WTO obligations into new issue areas such as antimonopoly (competition) rules might need amendment by two-thirds majority, but it also might be pos-

sible to achieve them on a “plurilateral” basis for those countries willing to liberalize in these areas.

A sufficiently numerous grouping of small countries could presumably block new interpretations, waivers, and amendments. However, it is likely that the Quad and other leading trading nations would seek to assemble a large enough coalition of countries supporting any major initiative that an outright opposing vote would be avoided in a consensus test. To do so, however, the Quad and other nations would likely need to take more fully into account than in the past the views of a sizable bloc such as the G-21 developing countries that played a key role at the Cancún ministerial meeting. The principal exception to the resulting blocking potential by smaller countries would appear to be in initiatives that clearly involve reduction in the initiating countries’ own protection, rather than extension of trading rules to countries other than those proposing the new initiative. There is a strong tradition from the GATT that any country seeking to liberalize its own market is allowed to do so. A coordinated initiative of “own-liberalization” by the Quad, for example, could probably not be blocked by even a fairly numerous group of other countries.¹⁶

Overall, the effect of the “single undertaking” structure of the WTO and the consensus decision-approval process is to strengthen the hand of the weaker parties by giving them a potential veto power. Arbitrary veto would be unlikely, because it would tend to shame the group of countries blocking progress by the rest. When such a veto can be exercised by invoking the moral high ground, however, nations will be more willing to make the veto. At Cancún, the moral high ground was indeed with the G-21 countries, because they were simply asking the industrial countries to make good on their pledges of liberalizing agriculture, and correspondingly to make good on their pledge that the Doha Round would in fact be a development round. There was even an icon encapsulating the moral high ground: The developing-country group sought some form of compensation for a handful of West African nations that had been adversely affected by US cotton subsidies. Some of the African countries more generally appear to have had mixed views about the new Singapore issues, but when they found that the industrial countries were unprepared to act even on such a small issue of interest to Africa, they rejected the European Union call for inclusion of the new issues.

The Doha Round can be revived. The operational deadline is in 2007, when US presidential authority to negotiate a “fast-track” trade deal expires. Progress is likely to be slow prior to the US presidential elections in 2004, but thereafter it should be possible to move ahead rapidly.

16. Thus, a 1949 GATT decision indicated that any country’s reduction of its tariffs below previously bound rates “does not require unanimous consent of the contracting parties” (Jackson 1998, 42).

The shape of a potential Doha deal could be along the following lines. Industrial countries would commit to a deep reduction in tariffs and tariff-rate quotas in agriculture. They would commit to decouple forcefully any domestic subsidies from exports and production. The developing countries for their part would accept the notion of decoupling rather than seeking to eliminate industrial-country farm subsidies entirely. The prime example of a decoupled subsidy is one that rewards the farmer for removing land from production, rather than for producing. Such “set-aside” conservation-oriented subsidies featured prominently in earlier periods of US farm support, and they could easily once again become the centerpiece of farm programs.

At the same time, industrial countries could commit to a systematic “sunshine” program of publishing annual statistical reports on the amounts of subsidies received by farm size group. For example, it could be reported that the top 10 percent of farms receiving subsidies obtain x percent of total subsidy amounts, at an average of y dollar amounts per farm. One nongovernmental organization compiling such statistics reports that in 2002, the top 10 percent of recipients received 65 percent of total farm subsidies (Environmental Working Group 2003). In 2001, the largest farm recipient of subsidies in California received \$1.8 million, and even the 100th largest recipient received \$430,000. Farm subsidies have tended to be justified on the grounds that they help sustain the small family farm, but the reality is that they are concentrated among larger farms. Sunshine laws would help reveal this reality and weaken the lobbying power of these groups. But again, if the United States electorate and its counterparts in Europe decide that they wish to make transfer payments of tens of billions of dollars annually to wealthy farmers, that is their business. They should do so in a way that does not impose a burden on the farmers in poor countries, however. They should decouple.

The second part of a Doha deal will have to be substantial liberalization by middle-income countries. As noted, the average tariff on textiles and apparel in developing countries is 18 percent, and on other manufactures, 12 percent. The developing countries could fruitfully agree to set a ceiling of 10 percent on all manufactured-goods tariffs, and to achieve an overall cut of 60 percent in their tariff protection (e.g., from an average 12 percent in nontextile manufactures to 4.8 percent). Without a commitment to such cuts, there will simply not be enough attraction in the potential gains from a WTO deal to mobilize support from business groups in industrial countries. Yet without pressure from such potential supporters, there will be a political vacuum that will be occupied by the vested interests seeking to maintain high protection in agriculture and in selected areas of manufactures. The timing of developing-country liberalization could be stretched out longer than the phase-in allowed for industrial-country liberalization, but developing countries will not be able simply to cut an attractive global liberalization deal without putting their own protection

on the table. This is especially so if the new Singapore issues are to be excluded.

The third component of a Doha deal involves the “second track” suggested above: immediate, meaningful free entry for the at-risk countries. These are the countries that will be most tempted to play the role of the spoiler in the Doha Round. Their negotiators are especially concerned that any multilateral liberalization will “erode preferences” they currently receive in the Lomé, EBA, AGOA, and other arrangements. Given the heightened potential for veto strategies in the new WTO single-undertaking approach, it should be clear that this group (e.g., the least developed countries) will have to see some positive benefit in an agreement for themselves if they are to exercise self-restraint and withhold their potential veto.

There is already some talk of a special facility within the IMF to provide lending for adjustment to LDC preference erosion resulting from the Doha Round. This carrot seems unlikely to be particularly appealing. IMF funds are loans, not grants. The two-track strategy suggested in this study would be a more persuasive carrot. Removing the obstacles (including excessively stringent rules-of-origin requirements) that currently keep the special-access regimes from providing truly free entry would be an important enhancement for the LDCs and other at-risk countries. While the preference involved in immediate fully free entry would eventually indeed be eroded by the phase-in of multilateral liberalization (especially in the ideal case of complete multilateral free trade), for a substantial time horizon on the order of a decade, this track would enhance rather than undermine existing preferential treatment. Complementing this free entry with an international initiative for a 10-year tax holiday on foreign direct investment going into these countries would be a further powerful enhancement. The parallel track of immediate free entry for at-risk countries could therefore hold the potential to avoid Doha Round blockage by LDCs that otherwise might find it attractive to exercise their new veto power, likely while invoking the moral argument that they will suffer preference erosion if a multilateral deal goes ahead. Perhaps more important, it would provide additional benefits to the countries where poverty is the most intense.

A final issue of negotiating strategy concerns the advent of bilateral and regional free trade agreements (FTAs). One consequence of the Cancún breakdown may be at least temporarily to cause US and perhaps EU negotiators to pursue such agreements.¹⁷ It can be argued that in the past, FTA negotiations have served as sources of “competitive liberalization” that contributed to pressure for multilateral liberalization. This was the case for NAFTA negotiations begun in the early 1980s, which placed pressure on the European Union to move sufficiently on agricultural protec-

17. Jeffrey Schott, “Unlocking the Benefits of World Trade,” *The Economist*, November 1, 2003, 65–67.

tion so that the Uruguay Round of multilateral liberalization could be mobilized. However, increasingly this strategy may be reaching diminishing returns. The growing list of small countries in the queue for US bilateral agreements, for example, suggests the risk of cluttering the negotiating agenda with agreements whose aggregate economic potential is meager at best. Moreover, a developing country's bargaining leverage is much less in a bilateral negotiation with the United States or the European Union than as part of a group of developing countries negotiating within the WTO.

More problematically, free trade agreements could follow a pattern of liberalizing only the sectors that are easy while exempting agriculture, textiles, and other sensitive sectors. If so, the result after a period of time would be to remove most sectors from what is left to be negotiated, making it difficult to arrive at a "big package" with enough appeal to exert leverage capable of breaking protectionist pressures in the sensitive sectors. Instead of competitive free trade agreements, it would seem that a revival of multilateral negotiations in the Doha Round holds the most promise for major trade liberalization.

In sum, it is crucial to reinvigorate the Doha Round, and to use it to pursue thoroughgoing trade liberalization. To do so will require a firm commitment by political leaders, however, especially in the United States and the European Union but also in the key middle-income countries. The analysis of this study suggests that the stakes of the global poor in the mobilization of this international political leadership are high indeed.