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The World Trading System and Implications of External Opening¹

Jeffrey A. Frankel

Introduction

The chapter begins by pointing out that external opening, which here means reductions in barriers to international trade, still has a long way to go. It reviews the evidence on the economic benefits from integration. It reports an econometric attempt to address a major concern regarding simultaneous causality between growth and trade: does openness lead to growth, or does growth lead to openness? We remove the complication of simultaneous causality by isolating variation in trade patterns that could be clearly attributed to geographical influences. The result indicates that the observed effect of trade on growth—an estimated 0.3 percent increase in income over 20 years for each .01 increase in the ratio of trade to GDP—is not attributable to simultaneity.

Next the chapter considers non-economic effects, taking the case of the environment. The evidence suggests that for some pollutants (such as SO₂) trade can be on net beneficial, while for other environmental criteria (such as CO₂) the reverse is true. A ready explanation is that when externalities arise primarily at the national level as with local air and water pollution, an adequate level of income and effective national governance are sufficient to enact regulation to protect the environment, but that in the increasingly important case of global externalities such as emissions of greenhouse gases, the free-rider problem prevents individual countries from acting on their own, in the absence of an effective international agreement.

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What should be the priority areas for trade negotiations? A section of the chapter considers the form of negotiations (unilateral vs. reciprocal, regional vs. multilateral, the new role of developing countries, the new role of NGOs). It then considers priority sectors (textiles, other manufactures, agriculture, services), and other issues (anti-dumping abuse). The chapter suggests that admonitions to either rich countries or poor to liberalize unilaterally are not usually effective politically, and that economists ought instead put their public voice in support of reciprocal multilateral negotiations. It concludes with a rough quantitative estimate of the economic benefits of a new WTO round. Other authors, using static models, have estimated that a new round might raise trade by about US \$300 billion, and that this might raise global welfare on the order of 1 per cent of world income. But the implied increase in global trade volumes may have further benefits. The author's 'back of the envelope' attempt to take into account also dynamic gains says that the increase in welfare might be on the order of twice as large, over the subsequent two decades.

The idea that it is more efficient for countries to engage in international trade than to produce everything they want domestically is virtually as old as the field of economics itself. During the first half of the twentieth century, governments turned back the hands on the historical clock of international integration. The resulting decline in trade was implicated in world depression, political upheaval, and war. During the second half of the twentieth century, the leadership of the Western alliance, in general, and at one time the United States, in particular, turned forward the hands of international integration. The resulting increase in trade has been accompanied by overall world prosperity and the spread of Western economic and political values to virtually all parts of the globe.

Nonetheless, critics are questioning the gains from further efforts to liberalize trade. Many are not convinced that historical correlation implies causation. Others might agree that the increase in trade has contributed to economic growth, but argue that concerns other than GDP—such as equality or the environment—point to a different judgment regarding the desirability of trade. Still others might agree with the characterization of the last half-century, but say that little more now remains to be done. After all, most tariffs are now close to zero, and international integration seems to be complete.

How Far Has External Opening Gone?

It is easy to get the impression that globalization is almost complete, that most trade barriers have already been dismantled, borders are irrelevant, nation states are inconsequential. It is easy to imagine that citizens of each country

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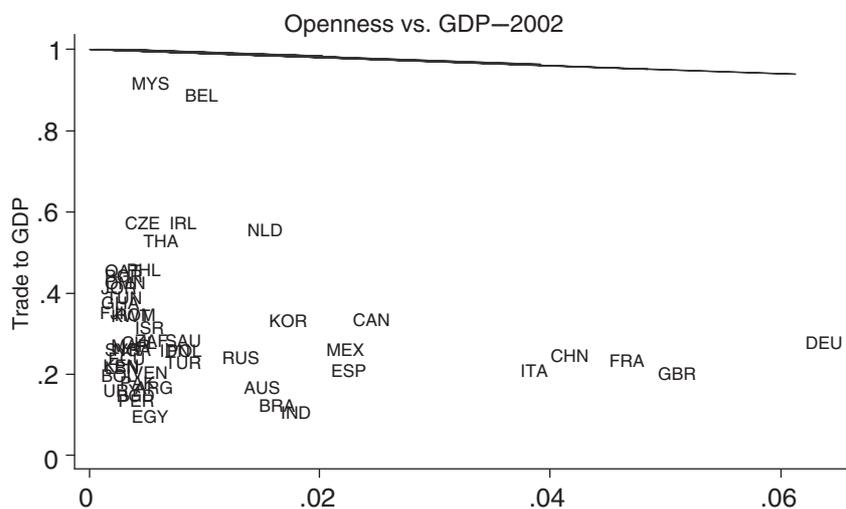


Figure 10.1. Countries' openness vs. their share of Gross World Product

Note: GDP as a share of gross world product; 1-share of GWP.

already trade with buyers or sellers on the other side of the globe as easily as the other side of town. But this is not the reality.

How Much Further do We have to Go?

Economic integration still has a lot further to go. Although trade as a share of the economy has increased virtually everywhere over the last half-century, the increase is less impressive viewed by the hypothetical standard of complete global integration. Figure 10.1 shows openness, measured as the average of exports and imports of goods and services as a fraction of GDP. Countries are arrayed along the horizontal axis according to their shares of world income. Large countries can be expected to have a lower ratio of trade to GDP; even in a perfectly integrated world, a typical US citizen would be probabilistically more likely to trade with another American than with the residents of a random country. Indeed smaller countries tend to be naturally more open, by this measure: notice that a regression line would slope downward. (Also relevant is that relatively remote countries like Australia tend to lie at the lower end of the openness range, and countries that are centrally located for trade, like Belgium, toward the top. Countries with a history of high trade barriers like India and Egypt tend to lie toward the bottom, whereas those that have followed more trade oriented policies such as Malaysia lie toward the top.) All countries have climbed upward in the openness graph over time, though usually with a big reversal in the first half of the twentieth century.

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But despite this progress, most remain far from complete global integration, defined as the hypothetical condition that would hold if residents of a given country were truly no more likely to buy from, and sell to, each other than to trade with residents of other economies: they lie far below the line that slopes down from the 100 percent point on the vertical axis, which shows when countries' patterns with trading partners correspond only to the size of the trading partners.² We are still far from the day when we buy from across the globe as easily as across the country.

At any point in history, there are many powerful forces working to drive countries apart, at the same time as there are other powerful forces working to shrink the world. It is true that the shrinking forces have dominated over the last 50 years, but there is nothing inevitable about that. From 1914 to 1944, the fragmenting forces dominated (isolationism, tariff retaliation, rival blocs, war, ideology), and it could happen again (since 2001 we have seen tightened visa requirements, reasons for laborious searches of containerized cargo, and nationalist brand identification).

What Are the Barriers?

It is not difficult to identify some of the impediments to international economic integration that remain. Geographical, social, and policy factors all play a role. Their effect can be quantified in many ways. The following discussion of effects on bilateral trade draws on statistical estimates from the so-called gravity model.³ Other approaches, such as inspection of the ability of cross-border arbitrage to narrow differentials in prices, give similar results.

Statistically, when two firms are located on opposite sides of a national border, operating for example under different legal systems, trade between them falls by an estimated two-third, that is, to one-third of what it would be if they were located in the same country. This estimate even allows that the two countries in question officially have free trade between them, speak the same language, and use the same currency. If the two countries use different currencies, trade again falls by a further two-third, even if they fix the exchange rate between them. That is, the two border effects together

² For example, in the case of the US, even though the trade/output ratio has already tripled over the post-war period, it would have to rise from its current 12 percent to 70 or 75 percent, before it fully reflected the share of non-US producers and consumers in the world economy. (Because of its size, the US appears off the chart, in the lower right corner.) Even this statistic of a six-fold gap is an understatement, because exports and imports are gross transactions, not net value-added. Singapore and Hong Kong, for example, export and import well over 100 percent of their GDPs (because of their extreme openness, they appear off the chart, in the upper left corner).

³ These estimates of the gravity model of bilateral trade are from Frankel 1997; Rose (2000); and Frankel and Rose (2002).

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reduce trade to one-nine of what it would be within the same country. In addition, when the exchange rate is as variable as it is for the average pair of currencies, currency risk and transactions costs may reduce trade by a further 13 percent. Such factors together explain why Canadians are ten times more likely to trade with other Canadians than with Americans, despite the physical and cultural proximity of the two countries,⁴ and why price arbitrage is stronger between Vancouver and Montreal than it is just across the US border.⁵ National borders still matter a great deal.

For most pairs of countries, the impediments to trade are much higher. If the two countries do not belong to a free trade area, but have tariffs and other trade barriers between them that are average in level, trade again falls by roughly two-thirds. It falls by even more if the trade barriers are at levels typically found in poor countries. If the two share no common historical or cultural links, the impediments are greater still. If they speak different languages, for example, trade falls by half.

Finally, notwithstanding the long term historical decline in physical shipping costs, geography still matters. If two countries are not adjacent to each other, trade falls by half. In addition, for every 1 percent increase in the distance between them, trade falls by another 1 percent.

The increase in trade as a share of the economy over the last 50 years can be attributed in large part to declining trade barriers and declining transport costs. But neither of these sources of friction is yet close to zero. Differences in currencies and languages and the other factors mentioned above have diminished little. Globalization, though not in its infancy, has not yet reached full maturity. Unless we do something to screw it up, trade barriers and transport costs are likely to continue to fall during the twenty-first century. It follows that there are still large gains to be reaped from further reductions in trade barriers. That is, it follows provided integration is viewed as beneficial—the question to which we now turn.

The Economic Benefits from Trade

Why do economists consider free trade so important? What exactly are the benefits?

The Theoretical Case for Trade

Classical economic theory tells us that there are national gains from trade, associated with the concept of comparative advantage. Over the last two decades, scholars have developed an alternative new trade theory. Though

⁴ For example, Helliwell (2000).

⁵ Engel and Rogers (1996).

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often misinterpreted, it suggests the existence of possible additional benefits from trade, which are termed dynamic. Let us review each of these theories, very briefly, in turn.

The classical theory of course goes back to Adam Smith and David Ricardo. Adam Smith argued that specialization—the division of labor—enhances productivity. David Ricardo extended this concept to trade between countries. The notion is that trade allows each country to specialize in what it does best, thus maximizing the value of its output. If a government restricts trade, resources are wasted in the production of goods that could be imported more cheaply than they can be produced domestically.

What if one country is better than others at producing *every* good? The argument in favor of free trade still works. All that is required is for a country to be *relatively* less skilled than another in the production of some good in order for it to benefit from trade. This is the doctrine of comparative advantage—the fundamental (if perhaps counterintuitive) principle that underlies the theory of international trade. It makes sense for Tiger Woods to pay someone else to mow his lawn, even if Woods could do it better himself, because he has a comparative advantage at golf over lawn mowing. Similarly, it makes sense for each country to pay to import certain goods that can be produced with relatively greater efficiency abroad, because it has a comparative advantage in other goods. This is the classical view of the benefits of free trade in a nutshell.

A popular critique is that classic trade theory assumes an idealized world where: (a) others are not intervening; (b) there are no market failures; and (c) competition is perfect. The first objection misunderstands elementary trade theory (as do the comic claims that the classic theory of comparative advantage never envisioned trade based on unskilled labor; claims regarding information technology or a world of mobile factors are not much better). The argument for accepting world prices is not necessarily changed just because those prices are affected by foreign subsidies or other interventions. The second argument is more important. Market failures such as environmental externalities, income inequality, and monopoly power, can indeed justify government intervention. The example of the environment will be considered below. But in the first place the optimal response to each is likely to be some intervention that is quite different from a trade barrier or subsidy, as Jagdish Bhagwati has long pointed out. In the second place, one must be as alert to government failures (rent seeking, ill-informed or ill-intention intervention, etc.) as to market failures. That leaves the third objection.

It is true that classical theory assumes perfect competition, constant returns to scale, and fixed technology, assumptions that are not very realistic. A second attribute of the classical theory worth highlighting is that the gains from trade are primarily static in nature—that is, they affect the *level* of real

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income. The elimination of trade barriers raises income, but this is essentially a one-time increase, rather than a permanent rise in the rate of growth. The 'new trade theory' associated with Elhanan Helpman and Paul Krugman is more realistic than the classical theory, in that it takes into account imperfect competition, increasing returns to scale, and changing technology. It ultimately provides equally strong, or stronger, support for the sort of free trade policies that most countries have followed throughout the post-war period, that is, multilateral and bi-lateral negotiations to reduce trade barriers, than did the classical theory.⁶

Much has been made of the result from these theories (called 'strategic trade theory') that, under certain very special conditions, one country can get ahead by interventions (e.g., public subsidies to strategic sectors). Among the necessary conditions are that the government gets the intervention exactly right, and that other countries do not retaliate or emulate. But these theories also suggest that a world in which everyone is subsidizing at once is a world in which everyone is worse off—a classic 'prisoner's dilemma'—and that we are all better off if we can agree to limit subsidies or other interventions. An example would be the agreement between the United States and Europe to limit subsidies to our respective aircraft manufacturers. Assume for the sake of argument that the US government is knowledgeable enough to use aircraft subsidies in such a way as to reap extra profits for the American producer (Boeing) at the expense of the EU producer (Airbus) if the Europeans do not retaliate. But how does that help? The Europeans would in fact retaliate.

Furthermore, even when a government does not fear retaliation from abroad for trade barriers, intervention in practice is usually based on inadequate knowledge and is corrupted by interest groups. Special interests waste money lobbying to get the government to raise the price of whatever they are selling or lower the price of whatever they are buying. Ruling out all sector-specific intervention is the most effective way of discouraging such 'rent seeking' behavior. External opening also increases the number of competitors operating in the economy. Not only does this work to reduce distortionary monopoly power in the marketplace (which corporations exercise by raising prices); it can also reduce distortionary corporate power in the political arena (which they exercise by lobbying).

Most importantly, new trade theory offers a possible reason to believe that trade can have a permanent effect on a country's rate of growth, not just on the level of real GDP. Openness allows firms to keep in touch with global markets. A high rate of economic interaction with the rest of the world speeds the absorption of frontier technologies and global management best practices,

⁶ The most important reference is probably Helpman and Krugman (1985).

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spurs innovation and cost cutting, and competes away monopoly.⁷ These arguments apply to imports as much as to exports.

The Empirical Case for Trade

Citing theory is not a complete answer to the question, 'How do we know that trade is good?' We need empirical evidence.

There are many studies of the static microeconomic costs of protection by tariffs, quotas, and other trade barriers, and the implied gains from liberalization. Economists have also undertaken macroeconomic statistical tests of the determinants of countries' growth rates. Investment in physical capital and education are the two factors that emerge the most strongly in these studies. But other determinants matter as well.

There has never been a shortage of empirical studies finding that trade is a significant determinant of growth across countries,⁸ and often that it is an important explanation for east Asian success in particular.⁹ A typical early specification began with the standard determinants of GDP suggested by neoclassical growth theory, and added a variable for exports as a share of GDP. For example, Feder (1982) regressed growth rates for 31 semi-industrialized countries over the period 1964–73 against three variables: investment share, labor force growth, and growth of exports. The coefficient on the last variable was highly significant statistically. Contrary to popular intuition as well as to short term Keynesian macroeconomics, theory suggests that imports can be as important as exports in stimulating long term growth.¹⁰ Thus the most standard measure of openness in growth studies is the sum of exports and imports as a share of GDP. Edwards (1993: 9–11) regressed the rate of growth of total factor productivity on total trade as a percent of GDP, along with some other variables, and found that 'in every regression the proxies for trade distortions and openness are highly significant.'

Addressing Simultaneity

Simultaneity is always a concern however. Rodrik (1994b: 2), for example, argued that the standard view is 'quite misleading on the importance it attaches to the role of export-orientation in the growth performance. It also

⁷ Important citations include Grossman and Helpman (1991a, b), Rivera-Batiz and Romer (1991), and Romer (1994).

⁸ Examples include Michaely (1977); Krueger (1978); Feder (1982); Kohli and Singh (1989); Quah and Rauch (1990); de Melo and Robinson (1991); DeLong and Summers (1991); Dollar (1992); Edwards (1993a); Romer (1994); Sachs and Warner (1995: 35–7); Harrison (1995); and Eusufzai (1996). Edwards (1993b), Rodrik (1993), and USITC (1997) survey the literature.

⁹ Four examples for Asia are Helliwell (1995), Page (1994), Pack and Page (1994), and Fukuda and Toya (1995). Bradford (1994) surveys the literature.

¹⁰ Empirical studies that emphasize imports include Lee (1995) and Wacziarg (2001).

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has backward the causal relationship between exports, on the one hand, and investment and growth on the other.' The mechanism of reverse causality that Rodrik has in mind runs as follows: an exogenous increase in investment in a developing country with a comparative disadvantage in producing capital goods, such as Korea, will necessitate an increase in imports of such goods (and in turn an increase in exports to pay for the imports).¹¹ Similarly, Helpman (1988: 6) asked, 'Does growth drive trade, or is there a reverse link from trade to growth?' Harrison (1995: 9.26) concluded that 'existing literature is still unresolved on the issue of causality.'

Quite a few stories of reverse causality are possible. When the equation features a regression of GDP against exports (or the rates of change thereof), the simultaneity problem is clear: a correlation may emerge simply because exports are a component of GDP, rather than because of any extra contribution that trade makes to growth. In the case of imports, trade might rise with income because foreign goods are superior goods in consumption.

Many studies have sought to identify some direct measures of trade *policy*, hoping that they are exogenous. Probably the most influential has been Sachs and Warner (1995). But these have been subjected to two critiques. First, designing an aggregate measure of trade policy is difficult, and the measures that have been adopted have not escaped criticism.¹² Second, a fundamental conceptual problem of simultaneity remains (e.g., Sala-i-Martin 1991). What if free market trade policies are no more important to growth than free-market domestic policies, but tend to be correlated with them? Then openness will be observed to be correlated with growth, even though trade does not cause growth. A final possible mechanism of reverse causality is a pattern whereby poor countries tend to depend fiscally on tariff revenue, and to reduce tariffs as they become more developed and income taxes or value-added taxes become administratively feasible.

A number of studies have tangled with the challenge posed by simultaneity.¹³ What is needed are good instrumental variables, which are truly exogenous, and yet are highly correlated with trade. This chapter offers tests with such instruments: trade shares as predicted by the gravity model. The gravity model of bilateral trade, in its most basic form, says that trade between country i and country j is proportional to the product of GDP_i and GDP_j , and inversely related to the distance between them, by analogy to Newton's theory of gravitational attraction between two masses. Other explanatory variables

¹¹ Levine and Renelt (1992) reach similar conclusions.

¹² For example, Rodriguez and Rodrik (2001) argue that the Sachs-Warner measure is driven overwhelmingly, not by tariffs or quotas, but by the black market premium for foreign exchange, and a measure of state export monopoly, and they argue that these largely reflect policies not related to trade.

¹³ Jung and Marshall (1985), Hutchison and Singh (1987, 1992), and Bradford and Chakwin (1993) apply Granger-causality tests to the problem. Esfahani (1991) attempts a simultaneous equation approach.

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often added include populations (or per capita GDPs), land areas, and dummy variables representing landlockedness, common borders, common languages, and common membership in regional trading arrangements. While the gravity model had long been an ugly duckling of international economics—obscure and allegedly lacking theoretical foundations—it has enjoyed a swan-like revival.¹⁴

Such variables as distances, populations, common borders, and common languages are as close to exogenous as we get in economics. From the viewpoint of a small individual country, the GDPs of trading partners are exogenous as well.¹⁵ Yet these variables are highly correlated with trade. Thus they make good instrumental variables. An intuitive way to implement the idea is to use the values predicted by the gravity model to instrument for the trade variable in the growth equation. If trade still appears to be a significant determinant of growth with this correction (taking care, of course, to use the right standard errors), then we have some reason to believe that the effect is causal and not spurious.

Romer and I (1999) looked at a cross-section of 100 countries during the period from 1960 to 1985.¹⁶ We found that the effect of openness on growth was even stronger when we correct for the simultaneity, as compared to standard estimates.

Table 10.1 reports a version of this equation on updated data.¹⁷

$$\ln(Y/Pop)_{90,i} = \beta_0 + \alpha([X + M]/Y)_{90,i} + \beta_1 \ln(Pop)_i + \gamma \ln(Y/Pop)_{70,i} \\ + \delta_1(I/Y)_i + \delta_2 n_i + \delta_3 (School_1)_i + \delta_4 (School_2)_i + u_i$$

The dependent variable is the natural logarithm of real GDP (Y) divided by total population (Pop), measured in real PPP-adjusted dollars for country i . Aggregate exports, aggregate imports, and gross investment are denoted ' X ', ' M ', and ' I ' respectively. The growth rate of population is denoted ' n '. ' $School_1$ '

¹⁴ Perhaps the best theoretical rationale for the idea that bilateral trade depends on the product of GDPs comes from the model of trade in imperfect substitutes, e.g., Helpman and Krugman (1985: section 1.5). Frankel (1997) elaborates, applies the gravity model to issues of trade blocs tests for trade blocs, and gives further references.

¹⁵ For a study that seeks to explain growth for a cross-section of countries, one does not wish to treat GDPs of trading partners as exogenous, even if the domestic country is small. But if the standard factor accumulation terms in a growth regression (labor force growth, investment, and education) can be treated as exogenous in the domestic country, then they can also be considered exogenous in trading partners, as discussed below. An alternative is to omit income from the exogenous variables, and use population alone to represent country size.

¹⁶ Estimates in Frankel and Rose (2002) contain updated data and a sample of 200 diverse countries, and added as variables in explaining bi-lateral trade: common languages, common borders, common colonizers, and FTA membership. Perhaps for this reason, the t -ratio on openness in the growth equation rose, from 2-3 in Frankel-Romer, to 3-5 in Frankel-Rose (and the correlation of the gravity-based instrument with actual trade/GDP rose from .62 to .72).

¹⁷ Taken from the working paper version of Frankel and Rose (2005).

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Table 10.1. Deep Determinants of Growth

	Determinant		
	1. Tropical conditions	2. Openness	3. Institutions
Measures commonly used	Malaria and other diseases; crop pests; length of growing season	Trade/GDP, Tariffs; FDI	Ratings regarding property rights, rule of law, corruption
Examples of endogeneity problems	Technological suppression of malaria or pests	Imported investment or luxury goods; tariffs for revenue in poor countries	Regulation systems develop with income; Ratings may be subjective
Exogenous instrumental variables	Distance from equator, tropical area; temperature, rainfall; frost days	Gravity model: including remoteness, landlockedness, linguistic & historical links	European settler mortality rates; extractive industries (plantation crops and mining)

Sources: Sachs and Warner (1995); Engerman and Sokoloff 1997, 2002; Gallup et al. 1998; Frankel and Romer 1999; Hall and Jones 1999; Acemoglu et al. 2001, 2002; Rodríguez and Rodrik 2001; Acemoglu et al. 2002; Easterly and Levine 2002; Bosworth and Collins 2003; Rodrik et al. 2002; Sachs 2003;

and ' $School_2$ ' are estimates of human capital investment based, respectively, on primary and secondary schooling enrollment rates. Greek letters denote coefficients, and ' u ' denotes the residual impact of other, hopefully orthogonal influences. Variables that derive from neoclassical growth theory appear on the second line of the equation: initial income, investment rate, human capital, and population growth.¹⁸ Variables other than GDP per capita and openness are computed as averages over the sample period.

The estimate of the effect of openness on income per capita is on the order of 0.3 over the span of 20 years, as it was in the earlier study, and is perhaps four-times that in the truly long run. That estimate means that when trade increases by one percentage point of GDP, income increases by about one-third of a percent over 20 years. By way of illustration, compare a stylized Burma (Myanmar), with a trade ratio close to zero, versus a stylized Singapore, with a ratio close to 200 percent. Our ballpark estimate, the coefficient of 0.3, implies that as a result of its openness Singapore's income is about 60 percent higher than Burma's over a 20-year period, or about 250 per cent higher in the very long run.

¹⁸ Frankel and Romer (1999) and Irwin and Terviö (2002) adopted a more stripped down specification by omitting these controls, following Hall and Jones (1999). They regress output per capita against distance from the equator and measures of country size, reasoning that the factor accumulation variables might be endogenous. Including the controls in the output equation might result in a downward biased estimate of α , if some of the effect of openness arrives via factor accumulation. But inappropriately excluding these variables would also produce biased results and could be expected improperly to attribute too *large* an effect to trade. My own preference is for the specification that includes the controls, in part because it is likely to avoid a possible upward bias in the openness coefficient.

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One possible response to these claims is that this approach demonstrates only the growth benefits from geographically induced trade, and need not necessarily extend to the effects of policy induced trade. But it is not obvious why the benefits of one impetus to trade should be so different from those of another. In any case, popular critics of globalization seem to think that increased international trade is the problem, regardless of whether it comes from technological progress or market opening negotiations. If the question is the broad brush phenomenon of globalization, the answer seems to be that the effect on incomes is clearly positive.

Needless to say, trade is far from the only important determinant of countries' economic performance. Other important factors are the accumulation of physical and human capital, increases in total factor productivity via technological and managerial innovation, a stable political and macroeconomic environment, and good institutional features such as the rule of law. Some of these factors are themselves favorably influenced by trade and other forms of international integration.

Institutions and Other Deep Determinants of Economic Performance

Perhaps the most interesting part of the current debate on growth is: *what are the deeper determinants?* Yes, policies regarding taxes, government spending, and tariffs help determine observed measures of investment, education, and trade. But what are the deeper determinants of those policies? A recent paper by Rodrik et al. (2002) poses the question well. The rendition that follows is very close to theirs. Three big theories of deep determinants seem to have emerged: tropical conditions, openness, and institutions. Each has been captured by some now standard measures. Although each may be more exogenous than macro policies, each has serious endogeneity problems of its own that must be addressed (Table 10.1 illustrates this.) Let us consider each in turn.

1. I would use the phrase *tropical conditions* for what some have taken to calling geography. By now 'geography' has (belatedly) made its way deep into the literatures on trade and growth in many different ways. So it is important to clarify here what sort of geography we mean. We are talking about the natural climate, biology, and geology—especially differences between the *tropics* and temperal zones, such as presence of malaria and other debilitating tropical diseases, agricultural pests, length of the growing season, and other climate effects.¹⁹
2. By *openness*, we mean international integration along several dimensions, but trade is the most important. A common measure is the simple ratio of trade to GDP.

¹⁹ Diamond (1997); Gallup et al. (1998); Hall and Jones (1999); and Sachs (2001).

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3. Finally, *Institutions*. Measures of institutional quality are usually indicators of the rule of law, protection of property rights, and the extent of constraints on the executive.

As noted, each of the three has serious endogeneity problems. Fortunately, reasonable instruments have been proposed and implemented for each.

The presence of malaria can be partly endogenous: it was stamped out in Panama and Singapore, despite their tropical locations, by superior technology and social organization. The instrumental variables to capture the exogenous component of the tropical geography theory started out fairly crude, and have been getting progressively better: moving from continental dummies to latitude, and from there to percent of land area in the tropics, to average temperature or number of frost days.²⁰ The state of the art must be Jeff Sachs' latest (2003) measure of ecological predisposition to malaria.

Trade and trade policies are both endogenous. We have already discussed the gravity-based instrumental variable.

Institutions can also be endogenous. Many institutions—such as the structure of financial markets, mechanisms of income redistribution and social safety nets, regulation and tax systems—tend to evolve in response to the level of income. But the problem is worse. Not only are institutions themselves likely to be endogenous, but the measures we are talking about are subjective evaluations of institutions. I submit that if you ask international businessmen to rate the quality of Switzerland's fire departments compared to Colombia's fire departments, the Swiss will come out on top even if they don't merit it, because of the halo effect of Switzerland's general reputation. The point, which Ricardo Hausmann has emphasized, is that reported evaluations of institutional quality are likely to be endogenous with respect to national economic performance.

What is a good instrumental variable for institutional quality? Acemoglu et al. (2001) proposed the mortality rate among European settlers (more precisely, among soldiers and clergymen) during the period of initial colonization. This is a better instrument than it sounds. In fact, it is probably the best we have. The theory is that, out of all the lands that Europeans colonized, only those where Europeans actually settled were given good European institutions. This theory is related to the idea of Engerman and Sokoloff (1997, 2002) that lands endowed with extractive industries and plantation crops (mining, sugar, cotton) developed institutions of slavery, inequality, dictatorship, and state control, whereas those climates suited to fishing and small farms developed institutions based on individualism, democracy, egalitarianism, and capitalism. Acemoglu et al. chose their instrument on the

²⁰ Bosworth and Collins (2003) use a composite of tropical area and frost days.

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reasoning that initial settler mortality rates determined whether Europeans subsequently settled in large numbers.

A string of authors have found that the institutions variable tends to drive out the significance of policies, even when the Acemoglu et al. instrument is used for institutions: Hall and Jones (1999); Acemoglu et al. (2002); Easterly and Levine (2002); Bosworth and Collins (2003).²¹ The conclusion has been phrased most aggressively by Rodrik et al. in their title as 'Institutions Rule.' Institutions trump everything else—the effects of both tropical geography and trade pale in the blinding light of institutions.

Sachs (2003), however, finds that tropical geography remains significant. Noguer and Siscart (2002), condition on country size, and implement the gravity instrument with a comprehensive set of bilateral trade data. They find that, yes, institutions have a statistically significant effect on income per capita, but openness and tropical location retain their significant effects as well. But they don't instrument for institutions. Alcalá and Ciccone (2002) instrument for both trade and institutions, and find that both significantly raise output per worker. Institutional quality works mainly via physical and human capital, while trade works through the efficiency of labor. Bosworth and Collins (2003), too, find that the geographically based trade variable is statistically significant, alongside the institutions and tropical geography variables.

My subjective ratings for the three sets of instruments in use for the three big categories of fundamental growth factors (tropical diseases and pests, trade, and institutions) are as follows: I still believe that the trade predictions of the gravity model are a relatively good instrument for a country's openness to trade. The instruments available for tropical diseases and pests are even better. The big challenge is institutions. I don't wish by any means to denigrate the importance of institutions. And, as I said, the settler mortality instrument is probably the best we have. But I am not convinced it is as good as the instruments for trade and tropics. For one thing, it is only available for former colonies. And there is another problem that I regard as more important. What are the big questions we are trying to answer? We already knew, long ago, that Australia, Canada, New Zealand, and the United States, belonged with Europe in the list of countries that had industrialized. The big question is why they did and the Third World countries didn't.²² Is it policies, institutions, culture...? In that light, to be told that the areas where Europeans settled

²¹ Easterly and Levine just group openness together with other policies. Hall and Jones consider latitude a proxy for European institutions, and thus don't distinguish the independent effect of tropical conditions.

²² There were exceptions to the rule: the failure of Argentina during the twentieth century and the success of Japan, the failure of Eastern Europe during the last third of the century and the success of the east Asian NICs. But there is little agreement over what lessons to draw from these cases.

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did well is not exactly news. It just repeats the big data point we already had. It doesn't help us all that much to choose among human capital, policies, institutions, and cultures to get our explanation.

In any case, external opening has more support in most countries now than it did thirty years ago. Trade has been a major component of the growth that has visibly lifted East Asia out of poverty over the last 40 years. The rest of the world now wants the same. Poor countries don't want to be protected from 'exploitation'—the exploitation of having the opportunity to sell their products abroad to willing buyers and thereby to raise their incomes.

The Non-economic Benefits or Costs of Trade

Many critics of globalization today do not dispute the claim that international trade has positive effects on GDP. Rather, they have other concerns in mind—non-economic goals such as the promotion of labor rights, equality of income, and protection of the environment. The most important lesson from the Seattle demonstrations of November 1999 was that these issues will increasingly dominate public debate regarding globalization and multilateral institutions. They cannot simply be shunted off to the side, with pure trade issues occupying alone the center stage of international negotiations.²³

International trade and investment have implications, in such areas as income distribution or environmental quality, that are sometimes favorable and are in some cases unfavorable. Facile generalizations are likely to be wrong.

*The Case of the Environment*²⁴

There is no question that the early stages of industrialization bring environmental damage. On the other hand, a clean environment is a 'superior good'—something that societies wish to purchase more of, even at some cost to income, as they grow rich enough to be able to afford to do so. If this effect is strong enough, then trade might be expected eventually to improve the environment, once the country gets past a certain level of per capita income. There is some empirical support for this pattern. Grossman and Kruger (1995) popularized what is called the environmental Kuznets curve: growth is bad for air and water pollution at the initial stages of industrialization, but later on

²³ Two references in this rapidly growing field are: Jagdish Bhagwati and Robert Hudec (1996) and Dani Rodrik (1997). Maskus (2002) argues that labor issues lack the international externalities of competition policy or cross-border environmental problems.

²⁴ Frankel (2004) surveys the effects of international trade and the WTO on the environment.

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reduces some forms of pollution, as countries become rich enough to pay to clean up their environments.²⁵ A substantial literature has followed.

The idea that trade can be good for environment is surprising to many. The pollution-haven hypothesis instead holds that trade and investment encourage firms to locate production of highly polluting sectors in low-regulation countries, and export their products to high-regulation countries. The race-to-the-bottom hypothesis holds that trade puts downward pressure on regulatory standards in *all* open countries, each seeking to 'stay competitive'. But research suggests that environmental regulation is not a major determinant of firms' decision where to locate internationally.²⁶ In a model that combines various effects of trade, including via the scale and composition of output, Antweiler et al. (1998) estimate that if openness raises GDP by 1 percent, then it reduces sulphur dioxide concentrations by 1 percent. The implication is that, because trade is good for growth, it is also generally good for the environment. Frankel and Rose (2005) find that for even for a given level of income, countries that are more open to trade suffer lower concentrations of SO₂ and some other air pollutants.

It is important to note that government intervention is the most evident channel whereby people enact their desire for a cleaner environment as they grow richer. There is little reason to think that the market can take care of it by itself.

Most of the econometric studies of effects of trade and growth on the environment are limited, in that they examine only a few specific measures of pollution. There is a need to look at other environmental criteria as well. It is difficult to imagine, for example, that trade is anything but bad for the survival of tropical hardwood forests, absent substantial international efforts by governments to protect them.

The argument that richer countries will take steps to clean up their environments is likely to hold only for issues where the primary effects are felt domestically—where the primary 'bads,' such as smog or water pollution, though they may be external to the firm or household, are largely internal to the country. Two important environmental externalities are global, however: greenhouse gas emissions and depletion of stratospheric ozone. A ton of carbon dioxide has the same global warming effect regardless where in the world it is emitted. In these cases, individual nations can do little to improve the environment on their own, no matter how concerned are their populations or how effective their governments. International cooperation is required, which inherently means a trade-off at the margin against national sovereignty. The same is true about those environmental concerns over

²⁵ An earlier reference is IBRD (1992). Frankel and Rose (2005) put the peak in concentrations at an income of about US\$6,800 per capita, for the case of SO₂.

²⁶ Adam Jaffe et al. (1995).

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so-called non-use values that are increasingly cross-border, such as the value placed on endangered species. Governments have negotiated international treaties in an attempt to deal with each of the three problems mentioned—ozone depletion, greenhouse gases, and biodiversity. Of the three, however, only the attempt to save the ozone layer, the Montreal Protocol, can be said as yet to have met with much success. The Kyoto Protocol on Global Climate Change faces hurdles that approach the insurmountable. Desire by countries to protect their national sovereignty is one of the most important hurdles.

Is the popular impression then correct, that international trade exacerbates global environmental externalities? Perhaps, but only in the sense that trade promotes economic growth. Clearly if mankind were still a population of a few million people living in pre-industrial poverty, greenhouse gas emissions would not be a big issue. Industrialization initially leads to environmental degradation, and trade is part of industrialization. But virtually everyone wants industrialization, at least for themselves. Deliberate self-impoverishment is not a promising option.²⁷ Once this point is recognized, there is nothing special about trade, as compared to the other sources of economic growth, such as capital accumulation, rural–urban migration, and technological progress.

The popular impression is that trade is somehow different. There are fears of pollution havens, a race to the bottom in regulation, and a powerful WTO trampling over countries' sovereign attempts to raise environmental standards. Some think there is a fundamental incompatibility among the three desiderata of international integration, regulation, and national sovereignty; this is the 'impossible trinity of global governance.'

Among the many misconceptions in this area is that countries could effectively address environmental problems if it were not for interference with their sovereignty. In fact, environmental problems are increasingly global, and therefore increasingly difficult to address without multilateral institutions. For example, individual countries would have little effect on aggregate global emissions over the coming decades, even if they were willing to achieve the emission targets of the Kyoto Protocol and to bear the moderately high costs involved in gradually restructuring their domestic energy economies. This point has nothing to do with trade. It would be the same in a world where industrialization took place without external opening. International trade, whether in goods or in emission permits, actually offers a way of bringing down the economic cost of attaining any given reduction in global emissions, or a way of obtaining deeper cuts in emissions for any given economic cost. For example, elimination of such distortions as subsidies to

²⁷ In any case, indoor air pollution (particulate matter from cooking and heating fires) and lack of cleaning drinking water are larger environmental threats in poor countries, each claiming millions of premature deaths per year. Economic development is the best way to address them.

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agriculture, logging, fishing, and coal mining, would be pro-environment and pro-free-trade at the same time. To make a concrete proposal, the G8 could lead a campaign, with help from the World Bank, to ban fossil fuel subsidies.

'Efficiency' as the Achievement of Objectives

Efficiency means maximizing one's objective, whatever it may be, subject to the constraints of nature and man. The objective is not limited to GDP, but includes such non-economic goals as the equality of income distribution and the quality of the environment. The principle remains that countries can better achieve their goals through free international exchange—subject to rules mutually agreed in international fora such as the WTO, IMF, ILO, and UNFCCC—then they could if they hid behind barriers to trade and investment. Where global externalities are involved, as in global climate change and some other environmental problem, an international agreement of some sort is necessary, due to the free rider problem. If members of a multilateral institution like the UNFCCC or ILO are sufficiently committed to particular environmental or labor standards, then they should be prepared to sign on the appropriate international agreement. If they are serious about enforcement and willing to give up some sovereignty, then enforcement by means of trade penalties should not be ruled out. They should not be ruled out even if the penalties involve others' processes and production methods, where these are intrinsic to the problem at hand (e.g., coal-generated electric power, in the case of the Kyoto Climate Change convention). But if the members decline to negotiate such penalties multilaterally, individual countries should not be able on their own to adopt unilateral import barriers under the name of labor or the environment.

How Should Global Trade Liberalization Proceed?

Now that most tariffs have been reduced substantially, the remaining non-tariff barriers are more important, and merit more attention, even though they are inherently more complicated to negotiate over. This was said at the time of each of the GATT rounds of the last 40 years. But it has been true each time.

The challenge in proposing multilateral negotiations is not to identify sectors that remain to be liberalized. There are lots of those. Rather, it is to identify a set of liberalizations that is perceived by each major participant as a package that on net offers it major benefits. Furthermore, under a well-known principle of political economy, which might be called reciprocal mercantilism, the benefits had better accrue to important producer interests in each country.

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The economist's argument that liberalization is beneficial to *consumers* in the importing country does not carry much weight in the political sphere.

There have been some exceptions to this rule of political economy in recent years. One type of exception is unilateral liberalizations in some countries that had become disenchanted with old import substitution policies. Another was a few post-Uruguay Round multilateral liberalizations in single sectors such as information technology, financial services, or telecommunications, in the late 1990s. These single sector negotiations succeeded despite the absence of scope for trading concessions across producers, because they involve sectors that firms in many countries see as *inputs* important to industrial development.²⁸ But it is unlikely that those single-sector negotiations can be repeated for many other industries.

The Form of Negotiations: Where and Who?

Should attempts at further liberalization be unilateral, regional, or multilateral? One possible, short answer is that we should take liberalization wherever we can get it. But this question is worth addressing at greater length, with an eye toward the political economy of what is possible.

Consider three alternative guiding principle or frameworks for thinking about trade negotiations:

1. *Mercantilist logic* tells each country that its goal should be, 'increase net exports.' Even if this passed the tests of good economics, which it does not, it can't be achieved, since countries' trade balances have to add up. It is too stringent a criterion, in the sense that no global package of trade policies will satisfy it.
2. *Economists' logic* says the goal in international negotiations should be, 'leave each country better off economically in the aggregate.' But this principle is not necessarily strong enough to get a deal, politically. It is too easy a criterion, in the sense that lots of packages satisfy the economics but not the politics. If income gains in the aggregate were a sufficient criterion, then unilateral liberalization would be easy, and international bargaining would not be necessary. The economists' logic applies to a country's aggregate real income; but in any real world deal, some gain (including consumers) and some lose (especially producers in uncompetitive sectors). Typically, although the gainers from trade liberalization outnumber the losers, the losers have more concentrated losses and tend to speak loudly, and are thereby able to block deals where the gains are not large and easily identified. It is necessary to ask, 'Who are the key players who must agree to the agenda?'

²⁸ Hufbauer and Wada (1997); Council of Economic Advisers (1999).

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3. *Negotiators logic*—each major group of countries needs to decide what are some of the things it wants, and what are the things it is willing to give up, and there has to be enough of an overlap to get a deal. What should they want? Each country should want a package where the gains exceed the losses by a *sufficient* margin to make it through the domestic political process. Leaders, who understand the importance of the latter, know something that many economists do not.

Unilateral vs. Reciprocal

Bi-lateral or multilateral agreements where each country grants concessions in favor of its trading partners' products, in return for the concessions that its partners make, are the most common mechanism for achieving trade liberalization. Economists often urge countries to liberalize unilaterally. Although a few countries have pursued such a strategy (e.g., Chile, Mexico, Singapore), the typical country faces too much opposition from the import competing sectors that stand to lose from unilateral liberalization. Reciprocal liberalization is more workable politically. On top of the usual benefits of increased efficiency of production and gains to consumers from international trade, it adds a bonus, namely increased demand for the country's exports in the markets that are reciprocally liberalized. Adding the interests of specific identifiable exporters to the pro-liberalization side is more likely to make it possible to overcome the votes of those opposed:

'... how can I convince a Tanzanian dairy farmer, who keeps a few cows but cannot sell his milk because the market is flooded with subsidized imported milk, that an open market is better than a closed or regulated one? ... If I cannot convince these people, from where will I draw a mandate for further deregulation and liberalization in my country?' (Mkapa 2004: 134–5)

The question of unilateral versus reciprocal liberalization is 'live' in the rhetorical debate regarding developing countries. Many advocates of poor countries demand that the rich countries remove their barriers to imports such as agricultural products and labor-intensive manufactures and their subsidies to cotton and other agricultural products that could be exported by developing countries. (In the case of NGOs such as Oxfam, this new position represents a substantial improvement over the preceding heavy emphasis on transfers to the exclusion of trade.) On the one hand, these advocates point out, correctly, the hypocrisy of the United States and other Western countries who lecture others on the virtues of free markets and 'pulling themselves up by their own bootstrap,' while simultaneously closing off their markets to products, in cases like cotton and sugar, for the benefit of a very small coddled domestic interest group. On the other hand, some Americans respond that developing countries could do much to help themselves unilaterally, by

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removing their own import barriers, which tend to be high, and are often especially high against the exports of their fellow developing countries. They argue that rich country protectionism may become the latest excuse that poor countries adopt to explain why they can't develop (which would be ironic, since the preceding excuse was imperialist exploitation in the form of fostering among poor countries excessive dependence on exports such as agricultural products), obscuring that the main policy levers for growth are in the hands of the developing countries themselves.

Both sides of the argument make correct points analytically. But this debate is an example of the generalization that unilateral liberalization—whether by rich or poor—is often infeasible politically. Indeed, if it is not possible politically to use economic arguments regarding domestic self-interest (gains to consumers, etc.) to achieve unilateral liberalization in rich countries, it is even less likely to be possible to use arguments about the interests of poor countries in order to persuade the rich to open up unilaterally. Multilateral liberalization is both more feasible politically and more beneficial economically, by creating identifiable winners among exporters. In this context, developing countries should agree to give up much of their high trade barriers in return for major concessions on the other side.

Regional vs. Multilateral

Given the difficulty of reaching agreements at the multilateral level, the question arises whether more progress might be made at the regional level, where fewer players are involved, political goals might help, and the countries might in any case be natural trading partners.²⁹ From 1982 to 1994, regionalism had a lot of momentum, in part because progress at the multilateral level was so slow (blocked largely by failure of the EU to agree to US demands to liberalize agriculture). But regional arrangements no longer look like such a promising alternative, outside of Europe. On the one hand, the Uruguay Round was successfully concluded, while on the other hand regional clubs in the Western hemisphere have made no further progress, and in Asia have so far come to nothing. The current obstacles to liberalization (such as concerns about national sovereignty, the environment, inequality, and labor rights) exist as fully at the regional level as at the multilateral level. We might as well have the debate at the global level, where it really counts.

The general rule stands that packages must offer perceived benefits to producer interests in each major country. This means a package of market opening measures in a variety of well chosen areas. Even though progress in

²⁹ Frankel (1997) offers an analytical framework that evaluates whether regional trading arrangements are natural—more likely to be trade creating than trade diverting—and an extensive review of the literature, including the political economy of regional arrangements.

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the Millennium Round (also called the Doha Round or Development Round) has been slow, it remains the best bet.³⁰

The Developing Countries

Even though decisions in the GATT and WTO are technically made by consensus, with each country having an equal vote, it is inevitable that some players in practice count far more than others. The pattern in past GATT rounds has been that cut and thrust exchange between the United States and Europe has dominated the negotiations, and when those two powers had come to some agreement, the rest of the world generally fell into line. Other countries had little influence over the agenda. Little vote was given to the developing countries, largely because they had little in the way of lucrative concessions to offer the rich countries.

Increasingly, however, the developing countries are important players, at least collectively. Asia and Latin America now constitute major markets. Under the new rules agreed in the Uruguay Round, they like other WTO members are generally no longer able to opt out of aspects of an agreement,³¹ or to block decisions by panels under the dispute settlement mechanism. Furthermore, in the Uruguay Round developing countries were asked in the area of intellectual property rights to put energy into enforcement of a set of rules that, whatever their economic justification, benefit rich country corporations and not them. This time their interests will have to be taken into account. This means liberalization of trade in textiles, apparel and agriculture, as already noted. It also means protection against arbitrary anti-dumping measures. If a new round has nothing to offer the developing countries, they might this time try to block it. This was the message of the failed Cancun summit of September 2003.

Environment and Labor Standards

The other relevant set of players, who have gained a new seat at the table de facto if not de jure, are the NGOs in areas such as environmental and social policy. They are often confused and inconsistent about what they want. It was surprising at the time of the Seattle Ministerial to see demonstrators from the environmentalist and labor movements claim to share some beliefs about the proper role for multilateral institutions. (The former's complaint

³⁰ Progress is unlikely to accelerate after the 2004 US presidential election, because the new president will need to pass a farm bill and new fast-track authorization in 2006. A better bet for substantial progress in the Doha Round is 2007.

³¹ Bhagwati (1998). The requirement that WTO members must adhere to all negotiated obligations as a 'single undertaking' still has exceptions for the poorest developing countries. Also, two areas, government procurement and civil aviation, remain under 'plurilateral accords' of the WTO (see Schott 1998).

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about the WTO is, for example, that they see it as an obstacle to enforcing regulations like the Kyoto Protocol on Global Climate Change. The latter are the strongest opponents to the Kyoto Protocol.) It was even more surprising to see them claim to share some interest with the populations of poor countries. (The labor and environmental groups want Western countries to import less from poor countries, the latter want them to import more.)

Nevertheless, the day has passed when those working to advance free trade can respond to environmental and labor concerns by simply explaining that the WTO deals only with trade. It is possible that some discussion of these issues will have to take place under the auspices of the WTO,³² going beyond the step taken at the Singapore ministerial of 1997 of mentioning the words 'labor and environment' in the agreement. Even if the discussion remains outside the WTO, some acceleration of effort toward international agreements on environmental and labor standards is necessary.

The ultimate goal should be international agreements voluntarily entered into. There is no alternative in a world of sovereign countries. The logical locus for most international agreements is designated multilateral institutions, such as the ILO in the case of labor standards, the UN Framework Convention on Climate Change (UNFCCC) in the case of greenhouse gases, etc. In the meantime, one must recognize, as the NGOs point out, that the WTO is a more credible institution than the ILO or the UNFCCC, and that this is in part because withholding trade is one of the few powerful weapons that countries have, short of military action. The ILO, UNFCCC, and United Nations Environment Program (UNEP) have no teeth.

But the reason these institutions lack teeth is because the member countries, so far, want it that way. The failure to agree on binding international standards enforced by sanctions is attributable to the desire for retaining national sovereignty, to disagreements among countries, and to *internal* disagreements within each country on what priority to assign labor rights and the environment. It is the fault neither of globalization nor the international institutions themselves. Agreements should include sanctions if and only if members, acting through their chosen national governments, can agree that they want them to.

³² In the past, the immediate legal obstacle to including most environmental and labor issues, beyond the more fundamental political obstacles, has been the key distinction between internationally traded goods, which are the proper subject of internationally agreed rules, and the processes by which the goods are produced within each country, which have not been considered an appropriate subject for the WTO. It might be argued that the inclusion of intellectual property rights in the Uruguay Round and the shrimp-turtle case in which the WTO panel and appellate body affirmed the right of the United States to seek to influence the methods used by shrimp fishermen in the Indian Ocean, have now shattered the distinction regarding processes. But environmentalists have failed to notice this trend or to capitalize on the precedent.

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The anti-globalizers' choice of rhetoric is frequently perverse. They claim to want more decisions made more democratically in the WTO, even though a transfer of power from the United States to India, the world's largest democracy, would result in lower priority on labor and environmental standards, not more. They claim to want to assert national sovereignty against the trespasses of multilateral organizations like the WTO even though, again, national sovereignty is increasingly the obstacle to addressing environmental problems, not the means. Nevertheless, one can try to look past their choice of rhetoric, and to understand their frustration that they don't have an adequate vehicle for seeking to mobilize political support for international agreements with teeth.

One approach is to facilitate the desired ability of individuals to use their purchasing power as a signal to express their values and beliefs, and as a weapon to pressure corporations and countries to behave in particular ways. Such signals and weapons should help pressure the system to move in the direction of international agreements of the sort noted above. Multilateral institutions can play a major constructive role in the areas of:

- certification—monitoring multinational corporations that commit to particular codes of conduct, along the lines of the UN Global Compact;
- labeling—so that consumers can, if they choose to, exercise their right not to consume products that they view as environmentally or socially harmful or objectionable—for example, dolphin-unfriendly tuna or turtle-unfriendly shrimp.

But we should establish from the outset that countries must not make up their own rules for international trade, imposing trade penalties on other democratic countries in an attempt to bully them into changing their environmental or social policies, in violation of WTO rules. Without this assurance, developing countries will refuse altogether to discuss the whole subject of environmental and labor standards in the context of the WTO.

Priority Sectors for Negotiation

In what sectors are the prospects of efficiency gains from liberalization promising?

TEXTILES AND OTHER MANUFACTURES

The WTO has not finished lowering tariffs and quotas on manufactured products. This is especially true of manufactured imports into developing countries.

We have already mentioned textiles and apparel, the first rung of manufacturing exports for poor countries seeking to climb the ladder of development.

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Rich countries agreed in 1995, under the Uruguay Round, to phase out over the subsequent ten years the quotas that under the Multi Fiber Agreement (MFA) had long kept the textile sector highly protected. The ten years are now up, and little liberalization has occurred. The difficult time the administration had convincing the US Congress to support the elimination of barriers to apparel exports even from Africa and the Caribbean is revealing. China's accession to the WTO alarms some with the prospect of a huge increase in the global supply of inexpensive textiles and apparel. There are grounds for skepticism, given domestic politics in the United States and other rich countries, regarding whether the MFA phase out that was promised in 1995 will actually happen at the end of 2004, or whether the importers will find other ways to keep Chinese textiles and apparel out. If rich countries fail fully to deliver on this promise, it is hard to see what incentive developing countries have to go along with a new round, or even to carry out their Uruguay round commitments in the area of intellectual property rights.³³

BUILT-IN AGENDA: AGRICULTURE AND SERVICES

Agriculture and services were both exempted from the original GATT rules. Both were formally brought under the WTO in the Uruguay Round that was completed in 1994. But in both cases, serious liberalization was postponed. Agriculture and services constitute the 'built-in agenda' of negotiations that was left for the future. Distortions in agriculture remain as high as ever—import barriers, export subsidies, and producer subsidies—especially in industrialized countries.³⁴ The Uruguay Round only got as far as expressing these distortions in terms of tariffs, with an eye toward facilitating future negotiated reductions. Anderson et al. (1999) estimate that one-third of the total worldwide gain from rich countries eliminating distortions in their goods markets is to be had in agriculture.³⁵ It is important in such discussions to disaggregate agriculture. If rich countries liberalized their markets in cotton, sugar, dairy, meat, peanuts, and tropical products, it would benefit developing countries that produce these products. But if they eliminated subsidies on some other major agricultural products, such as grains, it would actually be likely to hurt the developing countries that import these products.

Services constitute a diverse category of sectors, most of which have historically been less affected by trade than goods sectors, but many of which (e.g., business services) engage increasingly in trade, in part due to the Internet and other advances in telecommunications and computer technology.

³³ Wang and Winters (2000), Arvind Subramanian (1999).

³⁴ Less developed countries tend to tax agriculture rather than subsidizing it. In OECD countries, agricultural protection, measured as the rate of assistance, has risen to about 60 percent in 1998, from about 30 percent 30 years earlier, a period during which tariffs on industrial goods have fallen sharply (Hertel 1999; and Roberts et al. 1999).

³⁵ Anderson et al. (1999).

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Within the large and diverse category of services, perhaps the greatest efficiency gains are to be had by liberalizing transportation services. Protection levels tend to be higher for transport services than for construction and business services.³⁶ The airline industry is heavily regulated internationally—passengers, air cargo, and express—with an overabundance of national champions and a lack of competition. The shipping industry is even more highly regulated and cartelized, and unevenly so around the globe. ‘Liner conferences’ operate as cartels. Thus the airline, shipping and trucking sectors are prime candidates for liberalization. Their role as inputs into international trade makes them doubly important candidates: not only would liberalization reduce costs in the transport sector, but the enhanced ease of international trade would confer additional gains throughout the global economy.

Other Issues for Negotiation

An increasing number of issues cut across sectors of the economy.

ANTI-DUMPING

While trade distortions have been reduced in many areas, and are roughly unchanged in others, there is one kind of distortion that is on the upswing. That is anti-dumping (AD) measures. The name ‘anti-dumping’ sounds like it has something to do with anti-trust enforcement against predatory pricing; thus it gives the press and public the impression that these measures are a tool to combat trade distortions and increase competition. But they have nothing to do with predatory pricing, they suppress competition rather than defend it, and they are among the costliest of trade barriers.³⁷

The use of AD measures has increased rapidly in the United States over the last two decades, because firms hit by increased imports have found it much easier to gain protection under the anti-dumping laws than under the safeguard laws. Their use has subsequently increased rapidly in other countries as they emulate and retaliate against the United States.³⁸ An attempt to rein in the indiscriminate use of anti-dumping would rank near the top of the economist’s wish list of priorities for the next round of multilateral negotiations. (It could be coupled with some steps toward a multilateral competition policy, to reassure those who are under the illusion that the AD laws have some pro-competition value.) Unfortunately, the United States is reluctant to make concessions on this issue.

³⁶ Hoekman ([1995]; 1999).

³⁷ The enactment of anti-dumping duties means import quantities on average fall by almost 70 percent and import prices rise by more than 30 percent (Thomas Prusa 2000).

³⁸ E.g., China initiated 22 AD investigations in 2003, compared to six in 2000 (*FT*, 7 June 2004).

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COMPETITION POLICY AND INVESTMENT

The Uruguay Round already included an agreement on trade related investment measures, but its effects were minimal. Some hoped to generalize provisions in the NAFTA to the multilateral level. But opposition from suspicious developing countries led to an attempt to begin by using the OECD as a venue for negotiating a multilateral agreement on investment (MAI) among industrial countries alone. Notwithstanding the inadequacy of the MAI, NGOs rallied opposition in a surprising first display of successful electronic populism that presaged Seattle. Some combination of that opposition and French intransigence killed the MAI in 1998. Investment may not now be the most promising issue with which to make progress in multilateral negotiations. If it is to be pursued, which would require more thought regarding environmental and labor standards, it should probably be moved back to the WTO.³⁹ But along with two other of the 'Singapore issues,' competition policy and procurement, only the EU wanted to pursue investment in the Doha Round that was launched in November 2001, and it has now agreed to drop it.

The world is probably even less ready for a comprehensive multilateral agreement in the related area of competition policy.⁴⁰ Countries vary widely in their conception of what sort of competition policy is desirable, even at the domestic level. History suggests that formation of a consensus world-view on an issue, even before horse-trading begins, is a prerequisite for international cooperation.⁴¹

GOVERNMENT PROCUREMENT

Potential gains to an agreement for enhanced market access in public procurement would be substantial, particularly covering such services as construction, maintenance, and repair services.⁴² But this is yet another area where developing countries are in effect being asked to make larger concessions than industrialized countries, and that the EU has recently agreed to drop.

ENFORCEMENT OF DSM RULINGS

The Uruguay Round created in the WTO a dispute settlement mechanism (DSM) purged of the crippling limitation that the losing country could block a panel ruling. On the whole, it has worked well. But a mechanism to compel enforcement is still lacking. The EU has been very slow to comply with adverse panel rulings in the cases of bananas and hormone treated beef.⁴³ The US has been very slow to comply with adverse panel rulings in the cases of the US foreign sales corporations, ruled a subsidy to exports in violation of WTO rules. The dispute settlement procedure could be strengthened in new

³⁹ Bhagwati (1998) and Graham (1998). ⁴⁰ Richardson (1998).

⁴¹ Cooper (1986). ⁴² Francois et al. (1996). ⁴³ Jackson (2000).

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negotiations, perhaps by adopting monetary penalties for non-compliance as Robert Lawrence has suggested, in place of the current system of approving retaliation in unrelated sectors.

Estimates of Welfare Gains from Further Multilateral Liberalization

Statistical estimates of the association between trade and growth, of the sort discussed earlier, cannot be used by themselves to put a number on the benefits of specific negotiations to liberalize trade. Too many other factors have contributed to the observed increase in trade in addition to past liberalization, such as technological reductions in the costs of transportation and communication. To assess the gains from multilateral negotiations aimed at further liberalization, we must turn to microeconomic models. Of the various possible econometric approaches to modeling trade, the computable general equilibrium (CGE) models are the most popular for evaluating multilateral negotiations, because they attempt to take into account interactions across sectors. An evaluation of the effects of lifting steel quotas, for example, would include not just the savings to firms that buy steel, but also the impact via the prices and sales of products made from steel, the impact on industries that produce other materials that might compete with steel, the diversion of resources out of the steel industry in steel importing countries and into other industries, the reverse movement within steel exporting countries, and so forth.

A number of researchers used versions of a global CGE model called the Global Trade Analysis Project, in advance of the Doha Ministerial, to evaluate the possible effects from a new WTO Round. Hertel (1999: 17, 30) estimated that the gains from reducing trade barriers in manufacturing, services, and agriculture, to take effect in 2005, would be a global welfare gain of nearly US\$350 billion. Other estimates were similar, depending particularly on the experiment in question.⁴⁴ Overall, the static gains were estimated on the order of 1 percent of world income. Welfare gains on this order are often described

⁴⁴ Nagarajan (1999) includes in his experiment a modest reduction in trade costs from a WTO agreement on trade facilitation, coupled together with a 50 percent across the board cut in worldwide protection in all agricultural, industrial, and services sectors. He estimates resulting annual welfare gains of around US\$400 billion for the world economy, or about 1.4 percent of global income. In addition, a WTO agreement on competition is said to generate an annual welfare gain of approximately US\$85 billion. Dee and Hanslow (2000) use a version of the model that has been modified to include the effects of foreign direct investment, so as to be able better to get at liberalization in services. They project an increase in world real income of more than US\$260 billion in current dollars as a result of eliminating all post-Uruguay trade barriers (pp. 17–18). About US\$50 billion of this would come from agricultural liberalization, US\$80 billion from liberalization of manufactures, and US\$130 billion from liberalizing services trade.

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as disappointingly low. But an annual gain of US\$300 billion is in fact a huge number, especially when one takes the (present discounted) sum over time. Perhaps it would sound more impressive as the numerator of a benefit/cost ratio, where the denominator is the budget of the WTO (a mere US\$76 million per annum) and of national trade negotiators.

More recent estimates of the comparative static gains in economic welfare from a hypothetical full global liberalization of goods and services trade, surveyed by Anderson (2004), are similar. The more conservative estimates are: US\$254 billion (1995 dollar, taking 2005 as the baseline year) according to ADFHHM (2002), US\$355 billion (1997 dollar, on 2005 baseline year) according to WBGEF (2003), and US\$367 billion (1997 dollar, on 1997 baseline year) according to FMT (2003).⁴⁵ In round numbers, again 1 percent of gross world product. Approximately half the gains accrue to OECD countries and half to poor countries. More specifically, according to the Anderson (2004: table 2) estimates of welfare gains to be had from removing all post-Uruguay Round barriers to goods trade, 57 percent of the gains accrue to developed countries and 43 percent to developing.

The more relevant policy question is what sorts of liberalization are most important. Liberalization by high-income countries is credited with 55 percent of world gains. The most important sector for liberalization is agriculture and food (responsible for 65 percent of global gains). Here the view that the emphasis should be on barriers in rich countries is true in that three times as much of the benefits of agricultural liberalization come from rich country liberalization as poor; on the other hand three times as much of the benefits go to rich countries as well. Liberalization in manufactures also matters, and here it is the removal of the barriers kept by developing countries that is most important, responsible for three-quarters of the total. If one is choosing among priorities for liberalization by developing countries, in their own interests, the estimated returns to the agriculture and food sector are exactly the same as the return to manufactures (including textiles and clothing): each is equal to 12.3 percent of the aggregate global gains from removal of all remaining barriers to goods trade.

As estimates from the potential gains from the Doha Round, these CGE estimates are very optimistic in that trade negotiations usually in fact fall far short of goals such as cutting barriers in half, let alone eliminating them completely, as the authors know. On the other hand, they are conservative in two respects.

1. They build into the baseline full liberalization with respect to China, Taiwan, and textiles and apparel, because it has already been agreed, though it might not be realistic to think it will be fully implemented.

⁴⁵ Anderson et al. (2002); Brown et al. (2003); Francois et al. (2003).

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2. More importantly, they only attempt to capture static gains. The estimates of the CGE models are not generally designed to take into account the possible long term effects on the growth rate, as opposed to a one-shot effect on the level of real income—the dynamic benefits mentioned earlier in this chapter.

As already noted, these potential dynamic gains include the benefits of technological improvements through increased contact with foreigners and their alternative production styles. Such interactions can come, for example, from direct investment by foreign firms with proprietary knowledge, or by the exposure to imported goods that embody technologies developed abroad. For a back of the envelope calculation that includes all growth effects, one approach is to return to the macro estimates of the effect of openness on growth. One of the CGE estimates entails a 20 percent increase in global trade volumes,⁴⁶ raising the global levels of merchandise exports plus imports as a share of income from a ratio of about 37 percent to 45 percent. Combining it with the .3 Frankel-Romer coefficient implies that global liberalization might raise global income per capita by 2 percent over a two decade period (and four times that in the truly long run). In other words, the dynamic gains over 20 years are roughly double the static estimates. Needless to say, such a calculation merits many qualifications. And some will say these effects are small. But to me they seem large. If trade can have long term effects of this nature, it makes the case for further integration even more compelling.

References

- Acemoglu, D., Johnson, S., and Robinson, J. (2001). 'Colonial Origins of Comparative Development: An Empirical Investigation'. *American Economic Review*, 91: 1369–401.
- _____. (2002). 'Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution', *Quarterly Journal of Economics*.
- _____. Thaicharoen, Y. (2002). 'Institutional Causes, Macroeconomic Symptoms: Volatility, Crises and Growth'. NBER Working Paper, No. 9124 (August).
- Alcalá, F. and Ciccone, A. (2002). 'Trade and Productivity'. Working Paper (July) Universitat Pompeu Fabra.
- Anderson, K. (2004). 'Subsidies and Trade Barriers'. Centre for International Economic Studies, University of Adelaide, Australia. (One of ten Challenge Papers prepared for the Copenhagen Consensus, roundtable May 24–8, 2004).
- _____. Hoekman, B., and Strutt, A. (1999). 'Agriculture and the WTO: Next Steps'. CEPR Workshop on New Issues in the World Trading System, London, February 19–20.
- _____. Dimaranan, B., Francois, J., Hertel, T., and Martin, W. (2002). 'The Burden of Rich (and Poor) Country Protectionism on Developing Countries'. *Journal of African Economies*, 10/3: 227–57 (September).

⁴⁶ Hertel (1999: 15–16).

Jeffrey A. Frankel

- Antweiler, W., Copeland, B., and Taylor, M. S. (1998). 'Is Free Trade Good for the Environment?' NBER Working Paper, No. 6707 (August).
- Bhagwati, J. (1988). 'Export Promoting Trade Strategy: Issues and Evidence'. *World Bank Research Observer*, 3/1: 27–57 (January).
- ____ (1998). 'Fifty Years: Looking Back, Looking Forward'. Paper given at the Symposium on the World Trading System, WTO and Graduate Institute of International Studies, Geneva.
- ____ Hudec, R. (eds.), (1996). *Fair Trade and Harmonization—Vol. 1: Economic Analysis*. Cambridge, MA: MIT Press.
- Bosworth, B. and Collins, S. (2003). 'The Empirics of Growth: An Update'. *Brookings Papers on Economic Activity*, 2: 113–206.
- Bradford, C., Jr., (1994). *From Trade-Driven Growth to Growth-Driven Trade: Reappraising the East Asian Development Experience*. Paris: Organisation for Economic Cooperation and Development.
- ____ Chakwin, N. (1993). 'Alternative Explanation at the Trade-Output Correlation in the East Asian Economics'. OECD Development Centre Technical Papers, No. 87, Paris (August).
- Brown, D., Deardorff, A., and Stern, R. (2003). 'Multilateral, Regional and Bilateral Trade-Policy Options for the United States and Japan'. *The World Economy*, 26/6: 803–28 (June).
- Coe, D. and Helpman, E. (1993). 'International R&D Spillovers'. National Bureau of Economic Research Working Paper, No. 4444 (August).
- Cooper, R. (1986). 'International Cooperation in Public Health as a Prologue to Macroeconomic Cooperation'. *Brookings Discussion Papers in International Economics*, No. 44, Brookings (March).
- Council of Economic Advisers (1999). *Economic Report of the President*, February, 224–6.
- de Melo, J. and Robinson, S. (1991). 'Productivity and Externalities: Models of Export-Led Growth'. PRE Working Papers, No. PS 387. Washington, DC: World Bank.
- Dee, P. and Hanslow, K. (2000). 'Multilateral Liberalisation of Services Trade'. *Productivity Commission Staff Research Paper*. Canberra: Ausinfo, 17–18.
- DeLong, B. and Summers, L. (1991). 'Equipment Investment and Economic Growth'. *Quarterly Journal of Economics*, 56/2: 445–502.
- Diamond, J. (1997). *Guns, Germs and Steel*. New York: W. W. Norton and Co.
- Dollar, D. (1992). 'Outward-oriented Developing Economies Really Do Grow More Rapidly: Evidence from 95 LDCs: 1976–1985'. *Economic Development and Cultural Change*, 40: 523–44.
- Easterly, W. and Levine, R. (2002). 'Tropics, Germs, and Endowments'. NBER Working Paper, No. 9106, Carnegie-Rochester Conference Series on Public Policy.
- Edwards, S. (1992). 'Trade Orientation, Distortions, and Growth in Developing Countries'. *Journal of Development Economics*, 39/1: 31–57 (June).
- ____ (1993a). 'Openness, Trade Liberalization, and Growth in Developing Countries'. *Journal of Economic Literature* XXXI, 1358–93 (September).
- ____ (1993b). 'Trade Policy, Exchange Rates and Growth'. National Bureau of Economic Research Working Paper, No. 4511 (October).

The World Trading System and Implications of External Opening

- Engel, C. and Rogers, J. (1996). 'How Wide is the Border?' *American Economic Review*.
- Engerman, S., and Sokoloff (1997). 'Factor Endowments, Institutions, and Differential Paths of Growth among New World Economies: A View From Economic Historians of the United States'. in S. Haber (ed.) *How Latin America Fell Behind*. Stanford, CA: Stanford University Press, 260–304.
- (2002). 'Factor Endowments, Inequality, and Paths of Development Among New World Economies'. Working Paper, No. 9259 (October).
- Esfahani, H. (1991). 'Exports, Imports, and Economic Growth in Semi-Industrialized Countries'. *Journal of Development Economics*, 35/1: 93–116 (January).
- Eusufzai, Z. (1996). 'Openness, Economic Growth, and Development: Some Further Results'. *Economic Development and Cultural Change*, 44/2: 333–50 (January).
- Feder, G. (1982). 'On Exports and Economic Growth'. *Journal of Development Economics*, 12/1: 59–73 (Feb.–April).
- Francois, J., Nelson, D., and Palmeter, N. D. (1996). 'Public Procurement: A Post-Uruguay Round Perspective'. CEPR Discussion Paper, No. 1412 (June).
- Francois, J. F., Hertel, T., and van Tongeren, F. (2003). 'Trade Liberalization and Developing Countries Under the Doha Round'. CEPR Discussion Paper, No. 4032 (August).
- Frankel, J. (1997). *Regional Trading Blocs*. Washington, DC: Institute for International Economics.
- (2004). 'Globalization and the Environment'. in M. Weinstein (ed.), *Globalization: What's New*. New York: Columbia University Press.
- Romer, D. (1999). 'Does Trade Cause Growth?' *American Economic Review*, 89/3: 379–99 (June).
- Rose, A. (2002). 'An Estimate of the Effect of Currency Unions on Trade and Income'. *Quarterly Journal of Economics*, CXVII/2: 437–66 (May).
- (2005). 'Is Trade Good or Bad for Pollution?' *Review of Economics and Statistics*, 87/1.
- Fukuda, S. and Toya, H. (1995). 'Conditional Convergence in East Asian Countries: The Role of Exports for Economic Growth'. In T. Ito and A. Krueger (eds.), *Growth Theories in Light of the East Asian Experience*. Chicago: University of Chicago Press.
- Gallup, J., Sachs, J., and Messenger, A. (1998). 'Geography and Economic Development'. NBER Working Paper, No. 6849 (December).
- Graham, E. (1998). 'Trade and Investment at the WTO: Just Do It'. in J. Schott (ed.), *Launching New Global Trade Talks: An Action Agenda*. Washington, DC: Institute for International Economics.
- Grossman, G. and Helpman, E. (1991a). *Innovation and Growth in the Global Economy*. Cambridge, MA: MIT Press.
- (1991b). 'Trade, Knowledge Spillovers, and Growth'. *European Economic Review*, 35/2–3: 517–26 (April).
- Krueger, A. (1995). 'Economic Growth and the Environment'. *Quarterly Journal of Economics*, 353–77.
- Hall, R. and Jones, C. (1999). 'Why do Some Countries Produce so Much More Output per Worker than Others?' *Quarterly Journal of Economics*, 114/1: 83–116 (February).
- Harrison, A. (1995). 'Openness and Growth: A Time-Series, Cross-Country Analysis for Developing Countries'. NBER Working Paper, No. 5221 (August).

Jeffrey A. Frankel

- Helliwell, J. (1995). 'Asian Economic Growth'. in W. Dobson and F. Flatters (eds.) *Pacific Trade and Investment: Options for the 90's*. Kingston, Ontario: International and Development Studies Institute, Queen's University.
- ____ (2000). *How Much Do National Borders Matter?* Washington, DC: Brookings Institution.
- Helpman, E. (1987). 'Imperfect Competition and International Trade: Evidence from Fourteen Industrial Countries'. *Journal of the Japanese and International Economies*, 1: 62–81.
- ____ (1988). 'Growth, Technological Progress, and Trade'. National Bureau of Economic Research Working Paper, No. 1145.
- ____ Krugman, P. (1985). *Market Structure and Foreign Trade*. Cambridge, MA: MIT Press.
- Hertel, T. (1999). 'Potential Gains from Reducing Trade Barriers in Manufacturing, Services and Agriculture'. 24th Annual Economic Policy Conference, Federal Reserve Bank of St. Louis, October 21–2.
- Hoekman, B. ([1995] 1999). 'Assessing the General Agreement on Trade in Services', in W. Martin and L. A. Winters (eds.), *The Uruguay Round and the Developing Economies*, Discussion Paper, No. 307. Washington, DC: World Bank.
- Hufbauer, G. and Elliott, K. (1994). *Measuring the Costs of Protection in the United States*. Washington, DC: Institute for International Economics (January).
- ____ and Wada, E. (1997). *Unfinished Business: Telecommunications After the Uruguay Round*. Washington, DC: Institute for International Economics.
- Hutchison, M. and Singh, N. (1987). 'Exports and Growth in Developing Economies: Identifying Externality Effects'. Working Paper, University of California: Santa Cruz.
- ____ (1992). 'Exports, Non-exports, and Externalities: A Granger Causality Approach'. *International Economic Journal*, 6/2: 79–94.
- IBRD (International Bank for Reconstruction and Development) (1992). *World Development Report 1992: Development and the Environment*. New York: Oxford University Press.
- Irwin, D. and Terviö, M. (2002). 'Does Trade Raise Income? Evidence from the Twentieth Century'. *Journal of International Economics*, 58: 1–18 (October).
- Jackson, J. (2000). 'The Role and Effectiveness of the WTO Dispute Settlement Mechanism', in S. Collins and D. Rodrik (eds.), *Brookings Trade Forum: Policy Challenges for the New Millennium* (April 27–8): 13.
- Jaffe, A. et al. (1995). 'Environmental Regulation and the Competitiveness of U.S. Manufacturing: What Does the Evidence Tell Us?' *Journal of Economic Literature*, 33: 132–63.
- Jung, W. and Marshall, P. (1985). 'Exports, Growth, and Causality in Developing Countries', *Journal of Development Economics*, 18: 1–12.
- Kim, J. and Lau, L. (1994). 'The Sources of Growth of the East Asian Newly-Industrialized Countries'. *Journal of the Japanese and International Economies*.
- Kohli, I., and Singh, N. (1989). 'Exports and Growth: Critical Minimum Effort and Diminishing Returns'. *Journal of Development Economics*, 30/2: 391–400 (April).
- Krueger, A. (1978). *Foreign Trade Regimes and Economic Development: Liberalization Attempts and Consequences*. Washington, DC: Ballinger for National Bureau of Economic Research.

The World Trading System and Implications of External Opening

- Krugman, P. (1994). 'The Myth of Asia's Miracle'. *Foreign Affairs*, 73/6: 62–78 (Nov.–Dec.).
- Lee, J. W. (1995). 'Capital Goods Imports and Long-Run Growth'. *Journal of Development Economics*, 48: 91–110 (Oct.).
- Levine, R. and Renelt, D. (1992). 'A Sensitivity Analysis of Cross-Country Growth Regressions'. *American Economic Review*, 82/4: 942–63.
- Maskus, K. (2002). 'Regulatory Standards in the WTO: Comparing Intellectual Property Rights with Competition Policy, Environmental Protection, and Core Labor Standards'. *World Trade Review*, 1/2: 135–52 (July).
- Michaelly, M. (1977). 'Exports and Growth: An Empirical Investigation'. *Journal of Development Economics*, 4/1: 49–53 (March).
- Mkapa, B. W. (2004). 'Cancun's False Promise: A View from the South'. *Foreign Affairs*, (May/June): 133–5.
- Nagarajan, N. (1999). 'The Millennium Round: An Economic Appraisal'. Economic Papers, No. 139, European Commission, DG for Economic and Financial Affairs (November).
- Noguer, M. and Siscart, M. (2002). *Trade Raises Income: A Precise and Robust Result*. New York: Department of Economics, New York University.
- Pack, H. and Page, J. (1994). 'Accumulation, Exports, and Growth in the High-Performing Asian Economies'. *Carnegie-Rochester Series on Public Policy*, 40: 199–236.
- Page, J. (1994). 'The East Asian Miracle: Four Lessons for Development Policy'. *NBER Macroeconomics Annual*. Cambridge, MA: MIT Press, 219–80.
- Prusa, T. (2000). 'On the Spread and Impact of Antidumping'. NBER Working Paper, No. 7404.
- Quah, D. and Rauch, J. (1990). 'Openness and the Rate of Economic Growth'. Working Paper. San Diego: University of California.
- Richardson, J. D. (1998). 'The Coming Competition Policy Agenda in the WTO', in J. Schott (ed.), *Launching New Global Trade Talks: An Action Agenda*. Washington, DC: Institute for International Economics, 179–88.
- Rivera-Batiz and Romer, P. (1991). 'International Integration and Endogenous Growth'. *QJE*, 106: 531–56.
- Roberts, I. et al. (1999). 'The Dynamics of Multilateral Agricultural Policy Reform'. 1999 Global Conference on Agriculture and the New Trade Agenda from a Development Perspective, World Bank and WTO, Geneva.
- Rodríguez, F. and Rodrik, D. (2001). 'Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence'. *NBER Macroeconomics Annual 2001*. Cambridge, MA: MIT Press.
- Rodrik, D. (1993). 'Trade and Industrial Policy Reform in Developing Countries: A Review of Recent Theory and Evidence'. National Bureau of Economic Research Working Paper, No. 4417 (August).
- (1994a). 'King Kong Meets Godzilla: The World Bank and *The East Asian Miracle*'. CEPR Discussion Paper, No. 944 (April).
- (1994b). 'Getting Interventions Right: How South Korea and Taiwan Grew Rich'. 20th Panel Meeting of Economic Policy, NBER Working Paper, No. 4964 (December).
- (1997). *Has Globalization Gone Too Far?* Washington, DC: Institute for International Economics.

Jeffrey A. Frankel

- Rodrik, D., Subramanian, A., and Trebbi, F. (2002). 'Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development'. CID Working Paper, No. 97 (October).
- Romer P. (1994). 'New Goods, Old Theory and The Welfare Costs of Trade Restrictions'. *Journal of Development Economics*, 43/1, 5–38.
- Rose, A. (2000). 'One Money, One Market? The Effect of Common Currencies on International Trade'. *Economic Policy*.
- Sachs, J. (2001). 'Tropical Underdevelopment'. NBER Working Paper, No. 8119 (February).
- (2003). 'Institutions Don't Rule: Direct Effects of Geography on Per Capita Income'. NBER Working Paper, No. 9490 (February).
- Warner, A. (1995). 'Economic Reform and the Process of Global Integration'. *Brookings Papers on Economic Activity*, 1: 1–95.
- Sala-i-Martin, X. (1991). 'Comment'. *NBER Macroeconomics Annual*, 6: 368–78.
- Schott, J. (1998). 'The World Trade Organization: Progress to Date and the Road Ahead'. in J. Schott (ed.), *Launching New Global Trade Talks: An Action Agenda*. Washington, DC: Institute for International Economics, 3.
- Subramanian, A. (1999). 'Intellectual Property Rights'. Proceedings from Conference on Developing Countries and the New Round of Multilateral Trade Negotiations, Harvard University, November 5–6.
- USITC (US International Trade Commission) (1997). *The Dynamic Effects of Trade Liberalization: An Empirical Analysis*, Investigation No. 332–75, Pub. 3069. Washington, DC: US International Trade Commission.
- Van den Berg, H. (1994). 'Foreign Trade and Economic Growth: Time Series Evidence from Latin American'. *Journal of International Trade and Economic Development*, 3/3: 249–68 (November).
- Wacziarg, R. (2001). 'Measuring the Dynamic Gains from Trade'. *World Bank Economic Review*, 15/3: 393–429 (October).
- Wang, Z. K. and Winters, A. L. (2000). 'Putting "Humpty" Together Again: Including Developing Countries in a Consensus for the WTO'. CEPR Policy Paper, No. 4.