

Openness, Growth, and Trade Policy

Executive Summary

1. Open international trade makes it possible for individuals to achieve higher living standards because it encourages (a) gains from specialization and trade, (b) innovation and efficient production, (c) a greater variety of goods, and (d) adoption of sound policies.
2. This report develops a Trade Openness Index (TOI) covering 1980-98 for 91 nations. Countries receive a higher TOI rating when they have low and relatively uniform tariffs, a fully convertible currency, few restrictions on the mobility of capital, and a large trade sector (given their size and location).
3. Hong Kong, Singapore, Belgium, Panama, Germany, United Kingdom, and Netherlands were the most open economies during 1980-98. The United States ranked tenth. At the other end of the spectrum, Myanmar, Bangladesh, Burundi, Iran, Sierra Leone, Syria and Algeria were the most closed economies.
4. Analysis using the TOI shows that persistently open economies have both higher GDP per person and faster growth than less open economies.
5. A one-unit increase in the TOI over a long period increases growth by 0.21 percentage points. This indicates that, for example, if India were as open as the United Kingdom, its economy would grow approximately one percentage point faster per year.
6. Openness is particularly important for developing economies and less populous nations.
7. Even though trade barriers are harmful to the economy, they are often politically popular because they can generate large gains for small but politically well-organized groups at the expense of consumers or taxpayers generally, who are not as well organized and for whom the cost per person from individual trade barriers is relatively small.
8. Protectionists often point to trade deficits as a reason to support their policies. However, U.S. trade deficits are primarily the result of capital inflows attracted by strong growth and sound policies. Like a rapidly growing business, a rapidly growing economy attracts external investment, creating a trade deficit. This is what has happened in the United States during the last two decades. It can continue without unfavorable consequences as long as we follow sound economic policies.

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The evidence is overwhelmingly persuasive that the massive increase in world competition—a consequence of broadening trade flows—has fostered markedly higher standards of living for almost all countries who have participated in cross-border trade. I include most especially the United States.

ALAN GREENSPAN
Speech on June 3, 1999

The world is getting smaller. Spurred by reductions in trade barriers and falling costs of transportation and communications, the volume of international trade has been growing rapidly. Approximately 21 percent of the world's total output is now sold in a different country than it was produced, double the figure of 1960.

There is near unanimity among economists that international trade exerts a positive impact on economic performance and helps people achieve higher income levels and living standards. Nonetheless, as indicated by demonstrations at the December 1999 meeting of the World Trade Organization in Seattle and other international gatherings since, openness to international trade continues to be controversial in many circles. Furthermore, many observers argue that the persistent trade deficits the United States has experienced in the last two decades endanger its future prosperity. Protectionists cite the trade deficit as a reason for imposing trade barriers. Does trade really promote prosperity and growth? How have open economies performed compared to those that are more closed? What accounts for the political popularity of trade restraints? Why has the United States experienced trade deficits in recent decades? Do they pose a danger to the U.S. economy? This report addresses those questions and related issues.

I. Trade, Income Levels, and Economic Growth

Trade is mutually advantageous: both trading partners expect to gain and they generally do. This expectation of gain provides the motivation for exchange. There are four major reasons why trade promotes growth and prosperity. First, trade permits individuals and nations alike to get more out of their resources. Trade makes it possible for individuals to specialize in the productive activities they do best and use the earnings from these activities to buy goods and services that they could produce only at a high cost. As a result, trading partners produce a larger joint output and achieve a higher standard of living together than they could separately. Economists refer to this as the *law of comparative advantage*.

Most people recognize the validity of the law of comparative advantage as it applies to domestic trade. Each of the fifty U.S. states benefits from free domestic trade. It is easy to see that Michigan, for example, is better off specializing in the production of automobiles and using the revenues to purchase Florida oranges, Hollywood movies, Nebraska wheat, and Texas oil, rather than trying to be totally self-sufficient. The idea is equally valid for trade across national boundaries. The citizens of each nation can gain by spending more of their time and resources doing those things for which they have a relative advantage. If a good or service can be obtained more economically through trade, it makes

sense to trade for it rather than to produce it domestically. It is a mistake to focus on whether a good is produced domestically or abroad. This is of little importance. The central issue is how the available resources can be used to obtain each good at the lowest possible cost.

Modern production of goods, ranging from pencils to computers, involves the cooperation of literally tens of thousands of people. International trade facilitates this cooperative effort. Trade makes it possible for people in different nations, with vastly different skills and resources at their disposal, to specialize in producing what they make most efficiently, while trading for items that would be costly for them to produce.

Second, open international markets encourage innovation and efficiency. Increasingly, economic growth involves brainpower, innovation, and the application of technology. Observation of and interaction with individuals employing different technologies often induces others to emulate successful approaches. Trade across regions and nations also encourages modifications that improve the original technology or make it more suitable for the local area. International competition also helps keep domestic producers on their toes and provides them with a strong incentive to improve the quality of their products. The experience of the U.S. automobile industry illustrates this point. Faced with stiff competition from Japanese firms during the 1980s, U.S. automobile makers worked hard to improve the quality of their vehicles. As a result, the reliability of the automobiles and light trucks available to American consumers—including those produced by domestic manufacturers—is almost certainly higher than would have been the case in the absence of competition from abroad.

Low price increases in international markets are a reflection of their dynamism and competitiveness. Between 1985 and the first quarter of 1999, the general level of prices in the United States increased by 46.4 percent. During the same period, prices of imports rose only 4.2 percent, while prices of exports rose just 4.3 percent.

Third, international trade enhances living standards by making it possible for consumers to choose among a more diverse bundle of goods. When trade is stifled, the domestic market is often too small for firms to supply a broad set of goods at low cost. Increased openness helps producers expand the scale of their operations by competing in markets worldwide. That enables them to provide some goods that could not be profitably produced for a small domestic market. Measures of gross domestic product (GDP) ignore the welfare gains accompanying the availability of a broader selection of goods. Thus, GDP and its growth rate often understate the benefits from increased trade and a more open economy.

This process has been observable in Mexico, Argentina, China, and several Eastern European countries that liberalized trade during the last decade. As they liberalized, numerous goods that had previously been unavailable suddenly appeared in the marketplace. Most of them were commonplace in more open economies—items like pencil sharpeners, art supplies, transparent tape, video cameras, quality jeans, and personal computers. This expansion in the breadth of goods available improved the well-being of people over and above the changes embodied in GDP figures.

Fourth, openness encourages countries to adopt sound institutions and policies. If countries do not, labor and capital move where they receive better treatment. For example, investors do not wish to place large sums in countries characterized by hostility toward business, monetary instability, legal uncertainty, high taxes, low-quality public services, arbitrary political intervention, or onerous labor

regulations. When labor and capital are free to move elsewhere, it is costly to adopt policies that penalize success and exploit factors of production. Therefore, in addition to its direct effects, openness also provides political decision makers with a strong incentive to follow sensible policies. Even though this indirect effect is generally overlooked, it may well be one of the most beneficial attributes of an open economy.

II. Construction of a Trade Openness Index (TOI)

Economic theory indicates that more open economies derive more output from their domestic resources, are more innovative and dynamic, and have more incentive to choose policies consistent with investment and growth. Therefore, other things constant, open economies should be richer and grow faster than closed economies. To test this proposition, we developed a Trade Openness Index (TOI), which measures cross-country differences in the freedom of individuals to engage in international exchange. The index has four general components: (a) tariff rates, (b) the black-market exchange rate premium, (c) restrictions on capital movements, and (d) the actual size of the trade sector compared to the expected size. To earn a high score in the index, a country must have low and relatively uniform tariff rates, maintain a freely convertible currency, avoid restrictions that limit capital market transactions with foreigners, and avoid various types of nontariff restraints (quotas, import licensing fees, and domestic buying requirements) that reduce the volume of international trade. Let us consider each component.

Tariff rates. Tariff data were obtained for various years from 1980-98. Three factors were incorporated into the tariff rating: the level of taxes on international trade as a share of the trade sector, the mean tariff rate, and the standard deviation of tariff rates. Higher ratings were assigned to countries with smaller revenues from taxes on international trade as a share of the trade sector, lower mean tariff rates, and a smaller standard deviation of tariffs. The data for each of these three dimensions were transformed to a 0-10 scale that reflects the actual data.¹

Black-market exchange rate premium. Exchange controls (currency controls) deter trade because they hinder people from acquiring currencies desired by trading partners abroad. When countries impose exchange controls and thereby restrict the convertibility of the domestic currency, a black market for foreign exchange emerges. The size of the black-market exchange rate premium is an indication of the restrictiveness of the controls. The higher the premium, the more difficult it is for residents to obtain foreign exchange for international trade, and therefore the more trade is blocked by the controls. Thus, countries with higher black-market premiums are less open and received a lower rating.²

¹ In most cases, taxes on international trade were less than 15 percent of the trade sector (imports plus exports). Under our rating system, as the ratio rose from zero to 15 percent, the assigned rating declined from 10 (indicating no taxes on international trade) to zero (indicating taxes were equal to at least 15 percent of the trade sector). The mean tariff rate generally ranged from zero (no tariffs) to 50 percent (exceedingly high tariffs). As the mean tariff rate increased from zero to 50 percent or greater, the assigned rating fell proportionally from 10 to zero. As the standard deviation of tariff rates increased from zero (which indicates that a flat tariff rate applies to all imports) to 25 percent (or more), the rating declined proportionally from 10 to zero. For details, see James Gwartney and Robert Lawson, *Economic Freedom of the World, 2000* (Vancouver: Fraser Institute, 2000), Appendix 2.

² As the black market premium rose from zero to 50 percent (and above), the assigned rating for this component fell proportionally from 10 (indicating full convertibility without restrictions) to zero.

Restrictions on capital movements. Restrictions on capital movements (purchase and sale of foreign financial assets) also reduce the volume of international exchange. Descriptive information on capital markets from publications of the International Monetary Fund was used to place countries in various categories and assign ratings of 0-10. The greater the restrictions on capital movements into and out of the country, the lower the country's rating.³

Size of the trade sector. Factors other than trade policy influence the size of a country's trade sector. The larger and more populous a country, the greater the opportunity for economies of scale within the domestic market. Countries with long coastlines may have lower transport costs that enhance their volume of international trade. Location relative to concentrations of world demand may also influence the size of a country's trade sector. To account for the last factor, we developed a Distance Adjusted Demand Scalar (DADS), which measures the relative distance of each country from the distribution of world demand.⁴

The population, geographic size, miles of coastline and DADS variables were incorporated into a regression equation and used to derive the expected size of the trade sector for each country. The regression was run across time periods and dummy variables were used to adjust for general changes in trade as a share of GDP through time. The country's actual trade sector was then compared with the expected size. A large actual size of the trade sector relative to the expected size suggests trade barriers are small. Thus, the larger the actual size relative to the expected, the higher the rating for this component.

The overall index. The overall index is simply the unweighted average of the four components. Again, a country can be rated from 0-10, depending on its scores for the four components.

III. The Most Open and Least Open Economies: 1998 and 1980-98

Figures 1 and 2 (following pages) show TOI ratings for 1998 and for the whole period 1980-98. Data were available to construct a TOI for 109 countries for the year 1998, plus an average TOI for 91 countries for the period 1980-98.

³ If domestic investments by foreigners and foreign investments by citizens were unrestricted, a country received a rating of 10. When investments were restricted only in a few industries (for example banking, defense, and telecommunications), a country received a rating of 8. When investments were permitted, but regulatory restrictions slowed the mobility of capital, a country received a rating of 5. When domestic investments by foreigners or foreign investments by citizens required approval from government authorities, a country received a rating of 2. A rating of 0 was assigned when domestic investments by foreigners *and* foreign investments by citizens required government approval. For details, see James Gwartney and Robert Lawson, *Economic Freedom of the World, 2000*, Appendix 2.

⁴ The DADS variable for each country was derived by using the great-circle algorithm to adjust real purchasing power parity GDP for distance from the potential trading partners. Countries that have more than 99 percent of the world's GDP were used to derive the variable. The DADS provides an estimate for how close each country is to the mass of the world's GDP. It is large for countries close to centers of world demand. Several European countries (Luxembourg, Belgium, the Netherlands, etc.) are located most favorably relative to the distribution of the world's GDP, whereas New Zealand, Australia, Fiji, and Argentina are located least favorably. With time, increasing trade in services and lower transport and communications cost may significantly reduce the importance of distance as a determinant of trade. However, regression analysis indicates that distance as measured by the DADS variable continued to exert a statistically significant impact on the size of the trade sector in the 1990s.

A. Ratings in 1998

Figure 1 presents the ratings for 1998 ordered from highest to lowest. Table 1A of the appendix presents the underlying data and ratings for each of the four components. The 12 highest-ranked countries were Hong Kong, Singapore, Estonia, Belgium, Ireland, the Netherlands, Germany, Luxembourg, the United Kingdom, the Czech Republic, Costa Rica, Italy, and South Korea. The United States ranked 32nd, while Canada was tied with Peru and Norway for 33rd. Most members of the European Union ranked in the upper quarter of the distribution. At the other end of the spectrum, Myanmar, Sierra Leone, Iran, Burundi, Algeria, Syria, Papua New Guinea, Bangladesh, Croatia, and Albania were the least open and therefore lowest-ranked countries.

The United States ranks higher (tenth) when the entire 1980-98 period is considered. Even though its openness *rating* changed very little between 1980 and 1998, its *ranking* fell because the ratings of several other countries rose substantially. The TOI indicates that the United States is a relatively open economy but it is not, as some have argued, an island of free trade in a protectionist world. The details are consistent with this view. Tariffs imposed by the United States are similar to those of other OECD countries. The United States imposes highly restrictive quotas on several products, including sugar and peanuts. Foreigners are not allowed to compete in the domestic air service market. The Jones Act limits competition in the water transport industry. The recently passed Byrd Amendment will limit competition by encouraging domestic producers to file charges of “dumping” against foreign rivals. The U.S. record is not without blemishes.

B. Ratings During 1980-98

Current trade policy may be a misleading indicator of openness over a long period. The structure of trade policy over time is important, because it takes time for markets to adjust to changes in the openness of an economy and for the changes to acquire credibility. Initially, decision makers may be unsure whether a policy change is temporary or permanent. Until credibility is achieved, the response of traders, entrepreneurs, investors, and other decision makers will be limited.

As policies of openness persist, however, decision makers eventually should become convinced that the more liberal policies will persist. As this happens, the adjustments stressed by economic theory should come into play. Trade should increase and resource should begin to move toward the production of goods and services that can be supplied domestically at low cost and away from those that can be supplied only at high cost. In addition, trade should stimulate innovation and adoption of ideas that have been successful elsewhere. These adjustments should promote output and growth in the more open economies.

To test the validity of this theory, we need an index of persistent openness, that is, openness over a lengthy period. To develop such an index, we assembled the data and derived the TOI for the periods 1980-82, 1985-87, 1990-92, and 1995-97. The three-year time intervals of these estimates reduce the likelihood that an unusual change or temporary aberration during a single year will distort a country's rating. The ratings for these four periods were used, along with the 1998 figure, to estimate the average TOI during 1980-98. (Because they cover a shorter period, 1998 data were weighted half as much as the data for each of the other four periods.)

Figure 1: Trade Openness Index (1998)

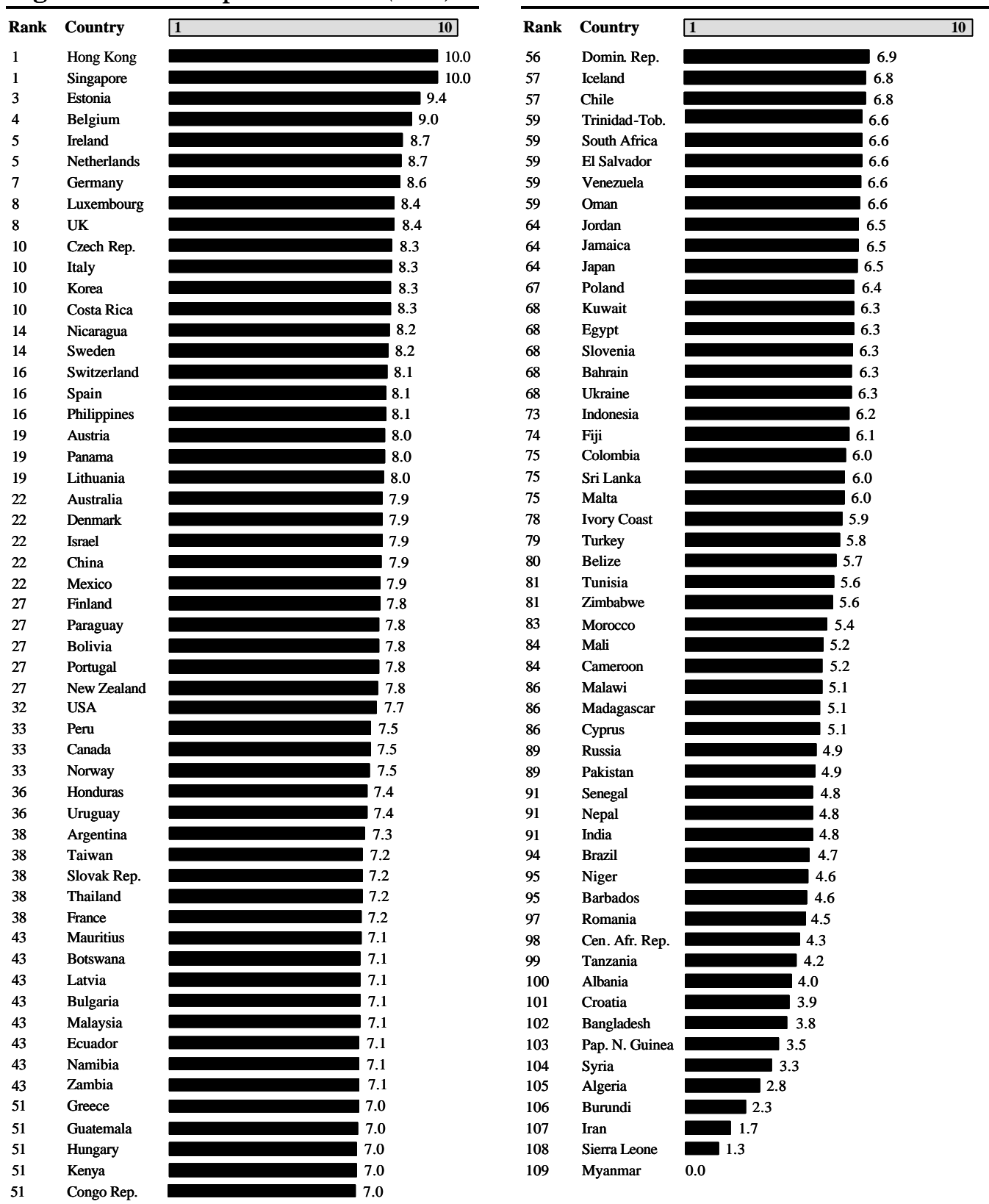
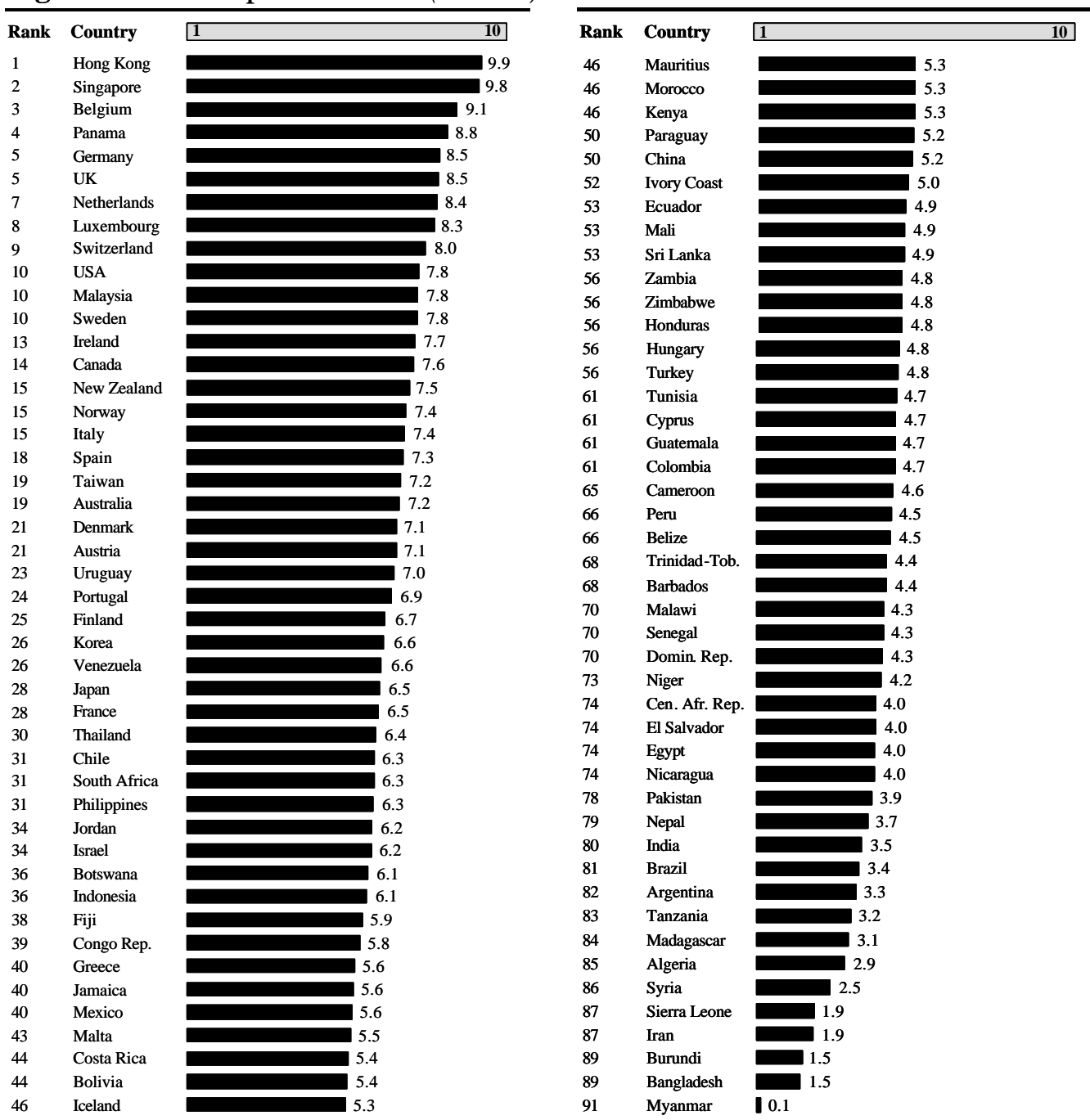


Figure 2: Trade Openness Index (1980-98)



Note: The TOI (80-98) represents a weighted mean of the trade openness index from 80-2, 85-7, 90-2, 95-7, & 98 with the 1998 observation receiving a ½ weight as to not overrepresent the 1990s in the overall period average.

Figure 2 presents the average TOI rating during 1980-98 for each of the 91 countries for which data were available. Table 2A of the Appendix contains the country ratings for each of the five shorter periods. The top-rated countries of Figure 2 had persistently high ratings over time, while those at the bottom had persistently low ratings. Hong Kong, Singapore, Belgium, Panama, Germany, the United Kingdom, the Netherlands, Luxembourg, and Switzerland headed the list. The United States ranked

tenth, tied with Malaysia and Sweden. Ireland ranked 13th, followed closely by Canada, New Zealand, Norway, and Italy.

At the other end of the spectrum, Myanmar, Bangladesh, Burundi, Iran, Sierra Leone, Syria and Algeria were the least open economies during 1980-98. Argentina, India, Nepal, Pakistan, and Egypt also had low average ratings for the period.

IV. Trade Openness, Income Levels, and Growth: Evidence

If trade makes a difference, countries with persistently high openness ratings should be richer and grow faster than those with persistently low ratings. As Table 1 shows, this was indeed the case. The \$23,387 average GDP per person of the 12 most open economies was more than seven times the average of \$3,250 for the 12 least open economies. (Germany was excluded from this and much of the subsequent analysis because of difficulties in comparing certain statistics before and after its 1990 reunification.) GDP per person in the 12 most open economies grew an average of 2.5 percent a year during 1980-98, compared to 0.3 percent a year in the 12 least open economies. All of the 12 most open economies had positive growth rates and all but one grew at an annual rate of 1.2 percent or more. In contrast, four of the 12 least open economies had reductions in GDP per person and only four achieved growth above 1 percent a year. These differences suggest that openness exerts a major impact on growth and prosperity.

A. The Link Between Openness and Income: Quintile Analysis

Figure 3 (on page 10) illustrates the link between openness and both the level and growth rate of GDP per person for the entire set of 90 countries with 1980-98 TOI ratings. The countries were arrayed from highest to lowest based on their average rating and the distribution was divided into quintiles of 18 countries.

As the top frame of Figure 3 shows, the quintile with the highest TOI ratings had an average GDP of \$22,306 per person, more than 60 percent greater than the level of the second-highest quintiles. A similar relationship existed between each of the lower quintiles and the quintile below it. Clearly, there was a strong relationship between long-term openness and GDP per person.

The bottom frame of Figure 3 illustrates the relationship between the 1980-98 average TOI rating and the annual growth rate of real GDP per person during the same period. The top quintile achieved average growth of 2.4 percent a year during 1980-98, versus 2.0 percent for the second quintile, 1.3 percent for the third quintile, and only 0.5 percent for the two lowest quintiles. These figures suggest that more open economies achieve higher economic growth.

B. The Link Between Openness and Income: Regression Analysis

Table 1 and Figure 3 show a strong positive relationship between trade liberalization as measured by the TOI index on the one hand and both the level and growth of GDP per person on the other hand. However, they do not provide information on the statistical significance of the relationships, nor do they reveal whether openness exerts an independent impact. We now investigate these issues.

Table 1: GDP per Person and the Growth of Nations with the Highest and Lowest 1980-98 Trade Openness Indexes

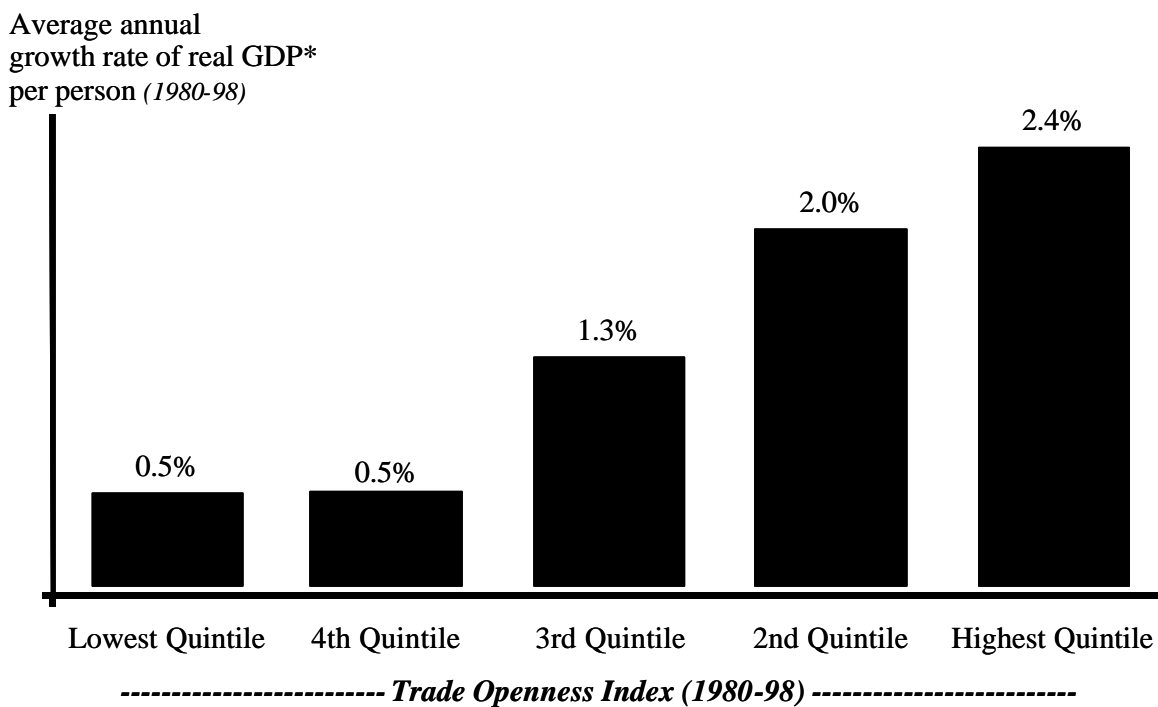
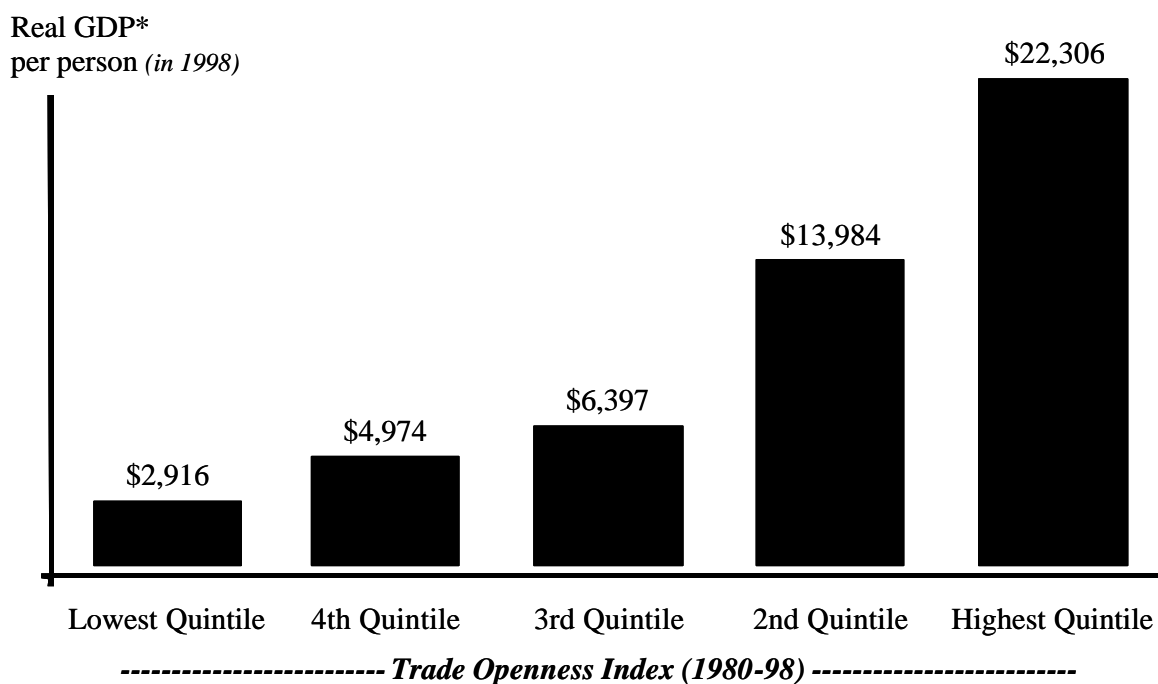
Country	TOI (1980-98)	Real PPP GDP per capita 1998	Average annual growth rate of real GDP* per capita 1980-98
Hong Kong	9.9	\$24,120	4.1%
Singapore	9.8	\$30,621	5.2%
Belgium	9.1	\$24,415	1.8%
Panama	8.8	\$7,705	1.5%
UK	8.5	\$22,258	1.7%
Netherlands	8.4	\$23,444	1.6%
Luxembourg	8.3	\$37,795	2.5%
Switzerland	8.0	\$28,493	0.9%
USA	7.8	\$31,485	1.6%
Malaysia	7.8	\$10,187	3.4%
Sweden	7.8	\$20,852	1.2%
Ireland	7.7	\$19,267	4.3%
Top 12:	8.5	\$23,387	2.5%
India	3.5	\$1,831	3.7%
Brazil	3.4	\$6,560	0.4%
Argentina	3.3	\$10,877	0.5%
Tanzania	3.2	\$709	-0.1%
Madagascar	3.1	\$978	-2.6%
Algeria	2.9	\$5,033	0.1%
Syria	2.5	\$3,258	1.3%
Sierra Leone	1.9	\$530	-3.3%
Iran	1.9	\$6,209	0.1%
Burundi	1.5	\$527	-1.4%
Bangladesh	1.5	\$1,155	1.8%
Myanmar	0.1	\$1,333	3.3%
Bottom 12:	2.4	\$3,250	0.3%

Notes: Germany is omitted from this analysis due to discontinuity in the income data resulting from unification.
* Real GDP data are in 1998 U.S. dollars and are calculated using the purchasing power parity method.

Factors other than openness influence income levels and growth rates. Economic theory and empirical research indicate that the stability of the price level and security of property rights are two key policy variables that influence economic performance. Measures of cross-country differences for these two variables were developed for the 90 countries with TOI ratings for 1980-98. The measure of price level variability was the average standard deviation of the inflation rate for five-year periods during 1980-98. The property rights variable is the rule of law rating from the PRS Group *Country Risk Guide*, which has provided ratings since 1982. We averaged ratings for 1982, 1985, 1990, 1995, in 1998 to derive each country's rating for 1980-98. Both variables were converted to a 0-10 scale.⁵

⁵ For details, see James Gwartney and Robert Lawson, *Economic Freedom of the World, 2000*.

Figure 3: Trade Openness, Income, and Growth



Note: * Real GDP figures are calculated using the purchasing power parity method and are in 1998 U.S. dollars.

Table 2: Trade Openness, Monetary Stability, Property Rights, and Income

	Dependent variable					
	real GDP ^a per capita 1998 (<i>t</i> -statistic is in parenthesis)					
	Complete set (90 countries)		Low- and middle-income countries		Small population countries (<20 million in 1980)	
	(1)	(2)	(3)	(4)	(5)	(6)
Trade Openness Index (1980-98)	3. 63 (10. 41) *	1. 69 (5. 30) *	2. 15 (7. 08) *	1. 58 (5. 42) *	4. 03 (9. 72) *	1. 95 (4. 98) *
Inflation variability rating		0. 39 (1. 82) ***		0. 19 (0. 95)		0. 36 (1. 32)
Property rights rating 1980		2. 21 (9. 22) *		1. 38 (5. 07) *		2. 18 (7. 35) *
Intercept	- 9. 86	- 15. 67	- 4. 48	- 9. 98	- 12. 68	- 17. 27
n	90 ^b	90 ^b	70 ^c	70 ^c	66 ^d	66 ^d
Adj R-Squared	. 55	. 78	. 42	. 58	. 59	. 80

* significant at 99% level

** significant at 95% level

*** significant at 90% level

^a Real GDP numbers are derived using the purchasing power parity (PPP) method and are in 1998 U.S. dollars.^b The complete set includes the countries listed in figure 2, except Germany which was omitted because of discontinuity in income data resulting from unification.^c There are 70 low- and middle-income countries. Countries classified as high-income industrial by the World Bank in 1980 were omitted.^d There are 66 small population countries (fewer than 20 million people in 1980).

Table 2 uses a regression to investigate the link between trade openness, variability of inflation, and the security of property rights on the one hand and 1998 GDP per person on the other. The first two equations are for all 90 countries for which we were able to derive the TOI for the 1980-98 period. As Equation 1 shows, the simple relationship between TOI and per capita GDP is exceedingly strong. The R-squared indicates that the TOI alone explains 55 percent of the cross-country variation in 1998 GDP per person. Equation 2 adds the inflation variability and property right variables into the model. All three of the variables are significant at the 95 percent level of confidence or higher and the R-squared indicates that the model explains 78 percent of the cross-country variation in 1998 GDP per person.

Some argue that rich countries are in a better position than poor countries to reduce trade barriers. According to this view, the relationship illustrated by Equations 1 and 2 runs from wealth to openness. To shed light on this view, the 21 countries (including Germany) that the World Bank classified as “high-income industrial” in 1980 were deleted from the data set, leaving 70 countries. Equations 3 and 4 of Table 2 show that even after omitting the high-income countries, the TOI continues to explain a large share (42 percent in the simple model) of the cross-country variation in GDP per person. In the three-variable model of Equation 4, both the TOI and the rule of law variables remain significant, but the inflation variable does not. This indicates that some of the explanatory power of inflation variability observed in Equation 2 stems from its correlations with high-income status.

Table 3: Trade Openness, Monetary Stability, Size, and Income Growth

	Dependent variable					
	annual growth rate of real per capita GDP ^a					
	<i>(t-statistic is in parenthesis)</i>					
	Complete set (90 countries)		Low- and middle-income countries		Small population countries (<20 million in 1980)	
	(1)	(2)	(3)	(4)	(5)	(6)
Trade Openness Index (1980-98)	0.38 (3.69) *	0.21 (2.07) **	0.46 (3.26) *	0.35 (2.89) *	0.61 (5.80) *	0.39 (3.82) *
Inflation variability rating		0.30 (3.67) *		0.34 (3.71) *		0.31 (3.82) *
Log of population in 1980 (in millions)		0.50 (3.45) *		0.69 (3.83) *		-0.01 (0.05)
Log of land area (in 1000s of sq. kilometers)		-0.29 (2.55) **		-0.33 (2.27) **		-0.19 (1.77) ***
Intercept	-0.78	-1.47	-1.12	-2.90	-2.42	-1.73
n	90^b	90^b	70^c	70^c	66^d	66^d
Adj R-Squared	.12	.35	.12	.43	.33	.51

* significant at 99% level

** significant at 95% level

*** significant at 90% level

^a Real GDP numbers are derived using the purchasing power parity (PPP) method and are in 1998 U.S. dollars.^b The complete set includes the countries listed in figure 2, except Germany which was omitted because of discontinuity in income data resulting from unification.^c There are 70 low- and middle-income countries. Countries classified as high-income industrial by the World Bank in 1980 were omitted.^d There are 66 small population countries (fewer than 20 million people in 1980).

As we have said, it is more important for small countries than for larger ones to maintain open economies. Equations 5 and 6 only include the 66 countries in our database that had fewer than 20 million people in 1980. The R-squares for these equations are larger than for the parallel equations for the complete set of countries and for low- and middle-income countries. This is consistent with the view that openness is more important for smaller countries. The three-variable model of Equation 6 explains 80 percent of the variation in GDP per person across countries. Once again, the significance of both the openness and rule of law variables remains high, while the inflation variable continues to be insignificant at acceptable levels of confidence.

Table 3 focuses on growth; the dependent variable for all equations is the average annual growth rate of GDP per person during 1980-98⁶. In addition to openness, price stability and country size (both population and area) are included in the more comprehensive model. The rule of law variable is not included here because it was not significant in any of the equations. Population and area are included

⁶ For a recent analysis of the link between international trade and growth, see Jeffrey A. Frankel and David Romer, "Does Trade Cause Growth?" *American Economic Review*, June 1999, pp. 379-99.

primarily as control variables. A larger population may create greater opportunity to realize economies of scale within the domestic market. Thus, we expect the sign of this variable to be positive. The sign of the area variable is more ambiguous. The observed negative sign may indicate that transaction costs in the domestic market are higher when the population is spread over a larger area.

Equation 1 of Table 3 looks at the simple relationship between the TOI measure of openness and the growth rate of real GDP per person during 1980-98 for the entire data set of 90 countries. The t-ratio for the TOI is highly significant and the R-squared indicates that openness explains 12 percent of the cross-country variation in growth. When the inflation variability, population, and area variables are added to the model (Equation 2), all of the variables are significant at the 95 percent level or higher and the explanatory power of the model increases to .35.

The coefficient of the openness variable (0.21) indicates that a one-unit change in the TOI, if maintained over a long period, would increase long-term growth by 0.21 percentage points a year. This is a sizeable amount: a country like India, which had a TOI rating of 3.5 during 1980-98, could increase its long-term growth by about 1 percentage point annually if it were as open as Germany and the United Kingdom, countries with TOI ratings of 8.5 during 1980-98.

Some have argued that the relationship between openness and growth merely reflects that high-income countries are more open and that they also grow more rapidly. Thus, the relationship may be spurious. To see if this is the case, we once again omitted the high-income industrial economies and reran the model. Doing so exerted little impact on the simple relationship between openness and growth (Equation 3 versus Equation 1). As Equation 4 shows, all of the variables remain significant and have the expected sign. Both the t-ratio for TOI and the R-squared for the broader model increased when the high-income countries were omitted. Furthermore, the size of the openness coefficient increased from 0.21 in Equation 2 to 0.35 in Equation 4. This indicates that openness actually exerts a larger impact on the growth of developing countries than on the growth of high-income industrial nations.

Equations 5 and 6 apply the growth model to small countries (population less than 20 million). The results are similar to those for developing countries (Equations 3 and 4). In the broad model, the TOI remains significant at the 99 percent level. The TOI coefficient of 0.39 indicates that for small countries, a one-unit change in the openness measure is associated with an increase of 0.39 percentage points a year in long-term growth. Just as we had expected, this suggests that open trade is particularly important for small countries. The R-squared of Equation 6 indicates that TOI and inflation variability, along with the size variables (population and area) explain 51 percent of the variation in growth of per capita GDP over the 1980-98 period. Except for population, all of the variables are significant. The compression of the population measure for this data set undoubtedly contributed to its insignificance.

In summary, the results indicate that economies that remain open over long periods grow faster and achieve higher levels of income per person than more closed economies. Openness continues to exert a positive independent impact on economic performance even after taking account through control variables of the effects of inflation variability, rule of law (when significant), and country size. Furthermore, the results are robust. The positive impact of openness holds for developing countries and small countries, as well as for the entire set of 90 countries. In fact, the positive effects are somewhat larger for developing economies and small countries than for the entire data set.

V. Why Open Trade is Difficult to Maintain

A. Protectionism and Special Interests

Economic theory indicates that open economies grow more rapidly and achieve higher levels of income than those that are more closed. As we have shown, strong evidence supports this proposition. There is also evidence that more liberal trade policies, lower transport costs, and technological advances have stimulated the volume of international trade in recent decades.

Despite these trends, vocal demands for protectionist policies continue. Why is this so? The answer is straightforward: restrictive trade policies are a special-interest issue. They often provide sizeable benefits to well-organized industrial and labor interests at the expense of consumers and taxpayers. The latter two groups are often politically unorganized and the costs of the restrictive policies are typically spread broadly but thinly and difficult to identify. As a result, consumers and taxpayers generally ignore protectionist policies. In contrast, the beneficiaries of trade restraints often derive sizeable personal gain. These gains will motivate them to supply politicians not only with votes, but campaign funds and other political perks. Thus, politicians can often gain by catering to their views even when the restrictive policies are harmful to the economy.

The U.S. sugar program vividly illustrates how the process works. Americans pay about twice the world price for sugar because domestic sugar growers and makers of corn syrup, a sugar substitute, have lobbied the government to impose import quotas that keep low-cost foreign sugar out of the United States. The cost to consumers is estimated at about \$3 billion a year. For the fewer than three dozen firms that are the big beneficiaries of the sugar program, the benefits from restricting trade are in the tens or even hundreds of millions of dollars per firm. It is worthwhile for the sugar lobby to spend millions of dollars defending its privileges. For an average family of four, though, the average savings from lower-cost sugar would be perhaps \$60 a year. It is not worthwhile for consumers to spend time or effort to lobby Congress over such a small amount per family.⁷ Hence the U.S. government prevents free trade in sugar even though it is in the best interest of American consumers.

The same happens with regard to other goods and services, which explains why trade restrictions are imposed and why governments find it so difficult to remove them even though doing so is in the general interest. There is a conflict between sound economics and winning politics here. This is why it is vitally important for Americans to understand this issue and remain vigilant in the pursuit of open markets and the benefits they provide.

B. A Diversionary Tactic: Environmental and Labor Standards

In recent years, proponents of trade restrictions have tried to tie trade issues together with labor and environmental standards. This is a diversionary tactic that reflects the weakness of the intellectual case for protectionism. It would be a colossal mistake for the World Trade Organization (WTO), an entity designed to promote open markets, to shift its focus away from this objective toward regulating labor and environmental standards. Other organizations, notably the International Labor Organization and the United Nations Environmental Program, already exist as forums for handling those issues.

⁷ See James Bovard, "Archer Daniels Midland: A Study in Corporate Welfare," Cato Institute Policy Analysis 241, September 26, 1995.

Understandably, low-income countries resent attempts by the United States and other high-income countries to impose labor and environmental regulations on their economies. They recognize that these efforts are often nothing more than attempts to increase the production costs of their firms. They regard such attempts as hypocritical because their labor and environmental standards are much like those the United States had a century ago, when it had a similar level of income per person.

If we want to improve the environmental policies and labor standards of low-income countries, the best thing we can do is trade with them and thereby make it possible for them to achieve higher incomes. Pressuring developing countries to adopt our labor and environmental standards prematurely may actually impede their advance toward the standards by slowing their economic growth. Most already have met or are striving to meet minimum standards governing such areas as prohibition of forced labor and cross-border pollution. As they grow richer, their own citizens will want them to have standards more like ours. We achieved high environmental and labor standards through economic growth. Why should we expect today's low-income countries to choose a different path?

VI. The Economics of Trade Deficits

Besides protectionism, another potential obstacle to trade openness is fear of trade deficits. A nation runs a trade deficit when it imports more than it exports. During the last 25 years, the United States has persistently run large trade deficits. Reflecting their view that exports are good and imports bad, protectionists often argue that trade deficits are bad for the economy. In evaluating this view, one must keep in mind that trade is a positive-sum activity. Both buyer and seller gain, and this provides the motivation for exchange. Thus, both imports and exports are good. Imports are good because they make it possible for buyers to obtain goods more economically than would otherwise be the case. Exports are good because they provide sellers with revenues to purchase other things.

The trade balance reflects millions of choices by both Americans and foreigners about where and how much they will buy, save, and invest. There is a natural tendency to think that a trade deficit is bad. The tendency is understandable: the word "deficit" suggests things like excessive spending relative to income, bank overdrafts, indebtedness, and a future day of reckoning. Trade deficits, however, are not like other deficits. They often occur because an economy is growing more rapidly than its trading partners. Rapid domestic growth stimulates imports, while slow growth abroad weakens demand for a nation's exports. This combination often causes a trade deficit.

Trade deficits may also arise because the economic environment of a nation is highly attractive to both domestic and foreign investors. When that is the case, a capital inflow will increase the demand for the domestic currency, causing it to appreciate on the foreign exchange market. In turn, the appreciation will stimulate imports relative to exports, causing a trade deficit. Both strong growth and an attractive investment environment have contributed to the trade deficits the United States has experienced during the last two decades.

A. The Link Between Capital Inflows and Trade Deficits

Much of the confusion about trade deficits stems from a failure to recognize the link between inflows of capital and the size of the trade deficit. A floating exchange rate, such as the United States

has, brings total sales to foreigners into balance with total purchases from foreigners. This means that a country's current account (trade in goods and services) plus its capital account (trade in financial assets) must sum to zero. As a result, the following relation must hold:

$$\textit{Exports} + \textit{Net Foreign Investment} = \textit{Imports}^8$$

Therefore, when foreigners invest heavily in a country—when there is a net inflow of capital—a trade deficit (current-account deficit) will occur.

The link between capital inflow and trade deficits is not just an equation in textbooks. As Figure 4 shows, it occurs in the real world. Net foreign investment (net inflow of capital) and the trade deficit are almost mirror images. When net foreign investment increases, demand for the U.S. dollar rises in foreign exchange markets, making the dollar appreciate. This appreciation stimulates imports relative to exports, causing a trade deficit. The opposite happens when there is an outflow of capital: the dollar depreciates, exports are stimulated relative to imports, and the trade balance shifts toward a surplus.

When an economy is an attractive place to invest, opportunities for investment may exceed domestic saving. In an open economy, foreign investment fills the gap. Thus, a net inflow of capital and an accompanying trade deficit can also be viewed as a shortfall between domestic saving and the level of investment.

Once the link between a net inflow of capital and a trade deficit is recognized, the fact that strong economies often experience trade deficits while stagnating economies often have trade surpluses is no longer a puzzle. Growing economies offer attractive investment opportunities that lead to an inflow of capital, currency appreciation, and sizeable trade deficits. This is precisely what has happened in the United States during the Great Expansion our economy has enjoyed since late 1982. Price stability, smaller government, lower taxes, and open trade policies have created an attractive environment for investment. This has led to an inflow of capital that resulted in a trade deficit, but more important, the capital spending also enhanced productivity and living standards. Far from indicating economic weakness, the trade deficit has reflected strength.

B. Are Trade Deficits Sustainable?

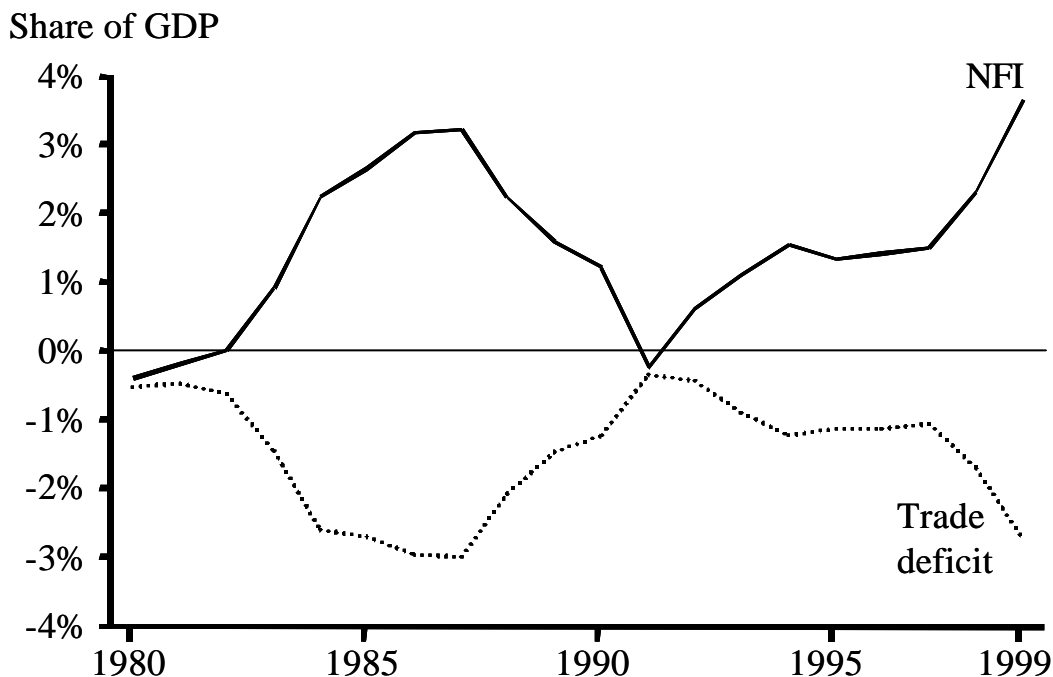
Are our present trade deficits like business losses: will they soon have to be terminated? Perhaps surprisingly, the answer is “No.” Remember that trade deficits are the other side of the coin from net inflows of capital, which are likely to continue as long as the United States follows sound policies that create an attractive environment for investment. In turn, foreigners will be happy to supply investment capital as long as they can earn competitive returns. There is no reason why the process cannot continue for many years.

Historical evidence is consistent with this view. The United States experienced trade deficits and capital inflows year after year from 1820 to 1870. During that period, investment opportunities in the New World were more attractive than those in Europe, so Europeans were willing to continue financing undertakings in the New World.

⁸ This formula omits investment income and unilateral transfers, which are small in the case of the United States.

Figure 4: The Trade Deficit and Net Foreign Investment (NFI) as a Share of U.S. GDP

Net foreign investment (NFI) and the trade deficit are closely linked. When NFI changes, so too does the trade deficit.



Source: Haver Analytics; *Economic Report of the President*, 2000, b-22.

The financing of a growing business provides insight on the relationship between growth, capital inflow, and the sustainability of trade deficits. If a business is growing slowly, the owner may choose to finance capital expansion entirely with internal savings. When a business is growing rapidly, however, its investment opportunities generally exceed its internal financing capabilities. Rapidly growing businesses invariably resort to some external financing. Furthermore, as long as the firm is able to earn an attractive rate of return on investment, the growth of external financing can continue indefinitely. The situation is the same for a nation. When the environment for growth and investment is attractive, there may well be a shortfall between domestic investment and savings. Just as a shortfall of investment relative to internal financing does not limit the growth of a firm, neither does a shortfall of domestic savings relative to opportunities for profitable investment limit the growth of a nation.

C. Trade Deficits and Indebtedness to Foreigners

Critics often argue that trade deficits increase the indebtedness of Americans to foreigners. They point out that the assets owned by foreigners in the United States currently exceed those Americans own abroad by approximately \$2 trillion. When considering the significance of this charge it is important to keep several points in mind. First, \$2 trillion is only 5 percent of the total value of U.S. assets. Second, approximately half of the foreign investment is in the form of equity (stocks, land, and

direct ownership of business assets). No debt obligation accompanies the foreign ownership of these assets. Americans benefit from direct investments by foreigners and from selling assets to foreigners at attractive prices.

Of course, some foreign investments are in the form of loans or the purchase of bonds. But this results in lower interest rates for Americans. If the investments are sound, they will generate a future income stream that is more than sufficient to repay the loans. Even in this case, the loans are helpful to the U.S. economy. The bottom line is that both debt and equity investments increase foreign ownership, but they also increase capital formation, worker productivity, and the living standards of Americans. Policies that would reduce foreign investment would also reduce the benefits it brings.

Some fear that the growth of foreign investment makes the United States vulnerable to a sudden sale of assets and withdrawal of funds by foreigners. When considering this argument, it is important to recognize that foreign and domestic investors are influenced by the same considerations. Anything that would cause foreigners to withdraw funds would cause domestic investors to do likewise. In fact, the vulnerability runs the other way. If foreign investors left, the assets financed by their funds would remain. Thus, they are in a weak position to impose harm on the U.S. economy.

D. Trade Deficits and Employment

Critics of trade also often argue that trade deficits mean the loss of jobs. Once the link between the inflow of capital and trade deficits is recognized, the error of this view is obvious. The inflow of capital that must accompany a trade deficit will lead to lower interest rates and a higher level of investment. Any loss of jobs accompanying the excess of the imports relative to exports will be offset by higher employment due to the lower interest rates and more investment. U.S. experience during the Great Expansion illustrates this. Even though imports grew more rapidly than exports and trade deficits were sizeable throughout much of the period, total employment increased by 35 million from 1983 to 1999 and the unemployment rate fell to a 30-year low. Simply put, the protectionist view that trade deficits reduce employment is not supported by economic theory or evidence.

E. What Should We Do About the Trade Deficit?

A trade deficit is quite different from a business loss or even the budget deficit of a government. No legal entity is responsible for the trade deficit.⁹ It is not something that one party owes to another; it is merely the sum of the buying and selling decisions of millions of individuals that will both reap the benefits and bear the costs of their choices.

The best thing policy makers can do is focus on keeping the U.S. an attractive place to invest. That means having price stability, free trade, low taxes, and restraints on the growth of government. If we have these basics right, we should not worry about the trade deficit, because the inflow of foreign capital reflects the attractiveness of the United States as a place to invest and boosts our economic growth. To the extent we need to be worried, the focus should be on our relatively low savings rate rather than on the trade deficit. The U.S. tax system discriminates against saving and favors current

⁹ In his typical satirical manner, the late Herbert Stein wrote: "The trade deficit does not belong to any individual or institution. It is a pure statistical aggregate, like the number of eggs laid in the U.S. or the number of bald-headed men living here." Herbert Stein, "Leave the Trade Deficit Alone," *Wall Street Journal*, March 11, 1987.

consumption. Eliminating this discrimination would lead to both more domestic savings and a smaller trade deficit.

VII. Summary and Conclusions

The major findings of this report are:

- M Economic theory indicates that open trade makes it possible for individuals and businesses to specialize more fully in those things they do best. Openness also encourages innovative and entrepreneurial activities. Thus, one would expect open economies to grow more rapidly and achieve higher levels of income.
- M To investigate the impact of openness on economic performance, a Trade Openness Index (TOI) was constructed for both 1998 and the 1980-98 period. The TOI measures the extent that a country has a fully convertible currency (no black-market exchange rate), low and relatively uniform tariffs, few restrictions on capital movements, and a large trade sector (given its size and location).
- M The TOI indicates that Hong Kong and Singapore are the world's most open economies. The United States ranked tenth (with Sweden and Malaysia) during the 1980-98 period.
- M Using the TOI to analyze the impact of cross-country differences in openness on growth and income shows that countries with persistently open trade sectors achieve higher levels of income per person and grow more rapidly.
- M Openness is difficult to maintain because protectionist policies are a special-interest issue. They tend to generate large individual gains for small but well-organized groups at the expense of costs that are spread across larger but unorganized groups of consumers or taxpayers. Thus, even though they are harmful to the economy, they are politically difficult to resist.
- M Economics indicates that the trade deficit is primarily the result of capital inflow attracted by the strong growth and sound policies of the last two decades. Contrary to the views of protectionists, there is little reason to worry about it.

Prepared by James Gwartney, Chief Economist to the Chairman, and Charles D. Skipton, Angela Rizert, and Kurt Schuler.

This staff report expresses the views of the authors only. These views do not necessarily reflect those of the Joint Economic Committee, its Chairman, its Vice Chairman, or its Members.

Table 1-A
Trade Openness Index (1998)

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Country	----- Tariffs (i) ----- Revenues from taxes on trade as a share of the trade sector	--- Tariffs (ii) --- Mean tariff rate	----- Tariffs (iii) ----- Standard deviation of tariff rates	--- Tariffs --- Composite tariff rating	----- Black Market ----- Difference between the official and black market exchange rate	----- Capital ----- Citizen restrictions on capital transactions with foreigners	----- Trade ----- Actual relative to expected size of trade sector	TOI 1998
Albania	5.2 (7.2)	6.8 (15.9)	6.7 (8.3)	6.2	7.8 (11.1)	2	0.0 (-59.8%)	4.0
Algeria	3.9 (9.2)	5.2 (24.2)	3.3 (16.7)	4.1	0.0 (150.0)	2	5.1 (1.3%)	2.8
Argentina	7.1 (4.4)	7.3 (13.5)	7.2 (6.9)	7.2	10.0 (0.0)	10	2.0 (-37.1%)	7.3
Australia	9.0 (1.4)	9.0 (5.0)	7.3 (6.7)	8.5	10.0 (0.0)	8	5.3 (6.4%)	7.9
Austria	9.9 (0.2)	8.9 (5.6)	7.6 (5.9)	8.8	10.0 (0.0)	8	5.4 (7.5%)	8.0
Bahrain	9.1 (1.4)	--- N/A ---	--- N/A ---	9.1	10.0 (0.0)	2	4.0 (-17.3%)	6.3
Bangladesh	3.7 (9.5)	5.6 (22.1)	4.2 (14.6)	4.5	7.8 (11.1)	0	3.1 (-27.4%)	3.8
Barbados	--- N/A ---	6.2 (19.0)	--- N/A ---	6.2	9.8 (1.0)	0	2.2 (-35.6%)	4.6
Belgium	9.7 (0.4)	8.9 (5.6)	7.6 (5.9)	8.8	10.0 (0.0)	10	7.4 (48.9%)	9.0
Belize	5.6 (6.6)	--- N/A ---	--- N/A ---	5.6	9.2 (4.0)	5	2.8 (-30.3%)	5.7
Bolivia	8.4 (2.4)	8.1 (9.7)	9.5 (1.2)	8.7	10.0 (0.0)	8	4.6 (-7.9%)	7.8
Botswana	6.0 (6.1)	8.6 (7.2)	6.0 (10.0)	6.8	10.0 (0.0)	5	6.7 (33.5%)	7.1
Brazil	4.5 (8.3)	7.1 (14.6)	7.1 (7.3)	6.2	10.0 (0.0)	0	2.5 (-33.2%)	4.7
Bulgaria	8.5 (2.2)	7.5 (12.6)	6.1 (9.1)	7.4	10.0 (0.0)	5	5.9 (17.8%)	7.1
Burundi	4.1 (8.9)	--- N/A ---	--- N/A ---	4.1	5.0 (25.0)	0	0.0 (-72.7%)	2.3
Cameroon	--- N/A ---	6.3 (18.4)	--- N/A ---	6.3	9.6 (2.0)	0	4.8 (-4.2%)	5.2
Canada	9.8 (0.3)	8.6 (7.1)	0.0 (25.7)	6.1	10.0 (0.0)	8	5.8 (16.9%)	7.5
Central Afr. Rep.	4.3 (8.6)	6.3 (18.6)	--- N/A ---	5.3	10.0 (0.0)	0	1.9 (-38.0)	4.3
Chile	7.9 (3.1)	7.8 (11.0)	9.7 (0.7)	8.5	7.8 (11.1)	5	5.8 (15.6%)	6.8
China	9.3 (1.0)	6.5 (17.5)	4.8 (13.0)	6.9	10.0 (0.0)	5	9.8 (95.2%)	7.9
Colombia	7.8 (3.3)	7.7 (11.7)	7.5 (6.2)	7.6	7.8 (11.1)	5	3.7 (-20.2%)	6.0
Congo, Rep.	8.8 (1.8)	--- N/A ---	--- N/A ---	8.8	9.6 (2.0)	0	9.5 (89.1%)	7.0
Costa Rica	8.4 (2.4)	8.6 (7.2)	4.5 (13.8)	7.1	10.0 (0.0)	10	5.9 (17.4%)	8.3
Cote d'Ivoire	1.2 (13.2)	9.0 (4.8)	9.6 (1.1)	6.6	9.6 (2.0)	0	7.4 (47.4%)	5.9
Croatia	7.7 (3.5)	--- N/A ---	--- N/A ---	7.7	1.4 (42.9)	2	4.5 (-8.6%)	3.9
Cyprus	8.5 (2.3)	6.7 (16.4)	--- N/A ---	7.6	10.0 (0.0)	0	2.7 (-31.5%)	5.1
Czech Rep.	9.6 (0.6)	8.6 (6.8)	5.6 (11.0)	7.9	10.0 (0.0)	8	7.4 (47.1%)	8.3
Denmark	9.8 (0.3)	8.9 (5.6)	7.6 (5.9)	8.8	10.0 (0.0)	10	3.0 (-28.9%)	7.9
Dominican Rep.	4.0 (9.0)	7.1 (14.5)	6.3 (9.2)	5.8	10.0 (0.0)	5	6.8 (36.9%)	6.9
Ecuador	6.5 (5.2)	7.7 (11.3)	7.4 (6.4)	7.2	7.8 (11.1)	8	5.3 (6.5%)	7.1
Egypt	5.1 (7.3)	6.1 (19.7)	--- N/A ---	5.6	10.0 (0.0)	5	4.7 (-5.4%)	6.3
El Salvador	8.5 (2.2)	8.9 (5.7)	6.8 (7.9)	8.1	7.8 (11.1)	8	2.7 (-31.5%)	6.6
Estonia	10.0 (0.0)	--- N/A ---	--- N/A ---	10.0	10.0 (0.0)	10	7.4 (48.6%)	9.4
Fiji	7.0 (4.5)	7.5 (12.4)	--- N/A ---	7.3	9.4 (3.0)	2	5.9 (18.1%)	6.1
Finland	9.7 (0.5)	8.9 (5.6)	7.6 (5.9)	8.7	10.0 (0.0)	8	4.6 (-7.2%)	7.8
France	9.8 (0.3)	8.9 (5.6)	7.6 (5.9)	8.8	10.0 (0.0)	5	4.8 (-3.2%)	7.2
Germany	9.7 (0.5)	8.9 (5.6)	7.6 (5.9)	8.7	10.0 (0.0)	10	5.6 (12.9%)	8.6
Greece	9.7 (0.4)	8.9 (5.6)	7.6 (5.9)	8.8	10.0 (0.0)	8	1.4 (-41.6%)	7.0

Notes: When ratings are transformations, actual data are presented in parenthesis. Totals may not exactly equal the sum of their parts due to rounding.

Table 1-A
Trade Openness Index (1998)

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Country	----- Tariffs (i) ----- Revenues from taxes on trade as a share of the trade sector	--- Tariffs (ii) --- Mean tariff rate	----- Tariffs (iii) ----- Standard deviation of tariff rates	--- Tariffs --- Composite tariff rating	----- Black Market ----- Difference between the official and black market exchange rate	----- Capital ----- Citizen restrictions on capital transactions with foreigners	----- Trade ----- Actual relative to expected size of trade sector	TOI 1998
Guatemala	7.7 (3.4)	8.3 (8.4)	6.2 (9.5)	7.4	10.0 (0.0)	8	2.7 (-32.0%)	7.0
Honduras	8.1 (2.9)	8.4 (7.8)	6.8 (8.0)	7.8	10.0 (0.0)	5	6.7 (34.0%)	7.4
Hong Kong	9.8 (0.3)	10.0 (0.0)	10.0 (0.0)	9.9	10.0 (0.0)	10	10.0 (106.1%)	10.0
Hungary	9.2 (1.3)	7.1 (14.3)	3.2 (17.0)	6.5	10.0 (0.0)	5	6.5 (29.1%)	7.0
Iceland	9.7 (0.5)	9.6 (1.9)	4.8 (13.0)	8.0	10.0 (0.0)	8	1.1 (-43.8%)	6.8
India	2.8 (10.8)	3.4 (32.9)	4.9 (12.7)	3.7	10.0 (0.0)	0	5.4 (8.1%)	4.8
Indonesia	9.5 (0.7)	7.6 (11.9)	3.4 (16.6)	6.8	7.8 (11.1)	0	10.0 (114.7%)	6.2
Iran	3.9 (9.2)	--- N/A ---	--- N/A ---	3.9	0.0 (150.0)	0	2.8 (-30.2%)	1.7
Ireland	9.7 (0.5)	8.6 (6.9)	7.6 (5.9)	8.6	10.0 (0.0)	8	8.2 (63.7%)	8.7
Israel	9.8 (0.2)	9.6 (2.0)	--- N/A ---	9.7	10.0 (0.0)	8	4.0 (-17.2%)	7.9
Italy	9.8 (0.3)	8.6 (6.9)	7.6 (5.9)	8.7	10.0 (0.0)	10	4.5 (-9.9%)	8.3
Jamaica	3.6 (9.6)	6.2 (19.0)	5.6 (11.1)	5.1	7.8 (11.1)	8	5.3 (5.7%)	6.5
Japan	9.0 (1.5)	8.7 (6.6)	6.3 (9.3)	8.0	10.0 (0.0)	8	0.0 (-51.7%)	6.5
Jordan	6.9 (4.7)	7.1 (14.4)	--- N/A ---	7.0	10.0 (0.0)	2	7.2 (43.8%)	6.5
Kenya	6.2 (5.8)	5.9 (20.8)	--- N/A ---	6.0	7.8 (11.1)	8	6.1 (22.3%)	7.0
Korea, South	8.8 (1.8)	8.1 (9.4)	7.0 (7.6)	8.0	10.0 (0.0)	8	7.1 (42.9%)	8.3
Kuwait	9.4 (1.0)	--- N/A ---	--- N/A ---	9.4	10.0 (0.0)	2	4.0 (-16.1%)	6.3
Latvia	9.7 (0.5)	8.8 (5.9)	5.7 (10.7)	8.1	10.0 (0.0)	5	5.4 (8.1%)	7.1
Lithuania	9.6 (0.5)	9.1 (4.6)	6.3 (9.3)	8.3	10.0 (0.0)	8	5.7 (13.4%)	8.0
Luxembourg	9.9 (0.1)	8.9 (5.6)	7.6 (5.9)	8.8	10.0 (0.0)	10	4.8 (-3.3%)	8.4
Madagascar	3.4 (10.0)	--- N/A ---	--- N/A ---	3.4	10.0 (0.0)	2	4.9 (-1.5%)	5.1
Malawi	4.6 (8.1)	4.9 (25.3)	5.4 (11.6)	5.0	7.8 (11.1)	2	5.8 (16.1%)	5.1
Malaysia	8.9 (1.6)	8.2 (9.1)	2.2 (19.6)	6.4	10.0 (0.0)	2	10.0 (286.3%)	7.1
Mali	--- N/A ---	5.6 (22.1)	--- N/A ---	5.6	9.6 (2.0)	0	5.6 (11.3%)	5.2
Malta	9.5 (0.8)	8.5 (7.6)	7.7 (5.8)	8.5	9.4 (3.0)	2	4.0 (-17.2%)	6.0
Mauritius	6.7 (5.0)	4.2 (29.1)	0.0 (26.2)	3.6	10.0 (0.0)	10	5.0 (-1.0%)	7.1
Mexico	9.4 (0.9)	7.3 (13.3)	5.8 (10.6)	7.5	10.0 (0.0)	5	9.0 (79.0%)	7.9
Morocco	--- N/A ---	4.8 (26.0)	4.6 (13.5)	4.7	10.0 (0.0)	2	4.7 (-5.5%)	5.4
Myanmar	0.0 (35.9)	--- N/A ---	--- N/A ---	0.0	0.0 (2604.0)	0	0.0 (-96.7%)	0.0
Namibia	--- N/A ---	8.6 (7.2)	6.0 (10.0)	7.3	10.0 (0.0)	2	9.0 (80.9%)	7.1
Nepal	6.7 (5.0)	7.5 (12.4)	5.5 (11.3)	6.6	7.8 (11.1)	0	4.8 (-3.0%)	4.8
Netherlands	9.7 (0.5)	8.9 (5.6)	7.6 (5.9)	8.7	10.0 (0.0)	10	5.9 (17.6%)	8.7
New Zealand	8.9 (1.6)	9.2 (3.8)	8.0 (5.1)	8.7	10.0 (0.0)	8	4.5 (-9.7%)	7.8
Nicaragua	7.1 (4.3)	7.8 (10.9)	7.0 (7.5)	7.3	10.0 (0.0)	8	7.6 (51.6%)	8.2
Niger	--- N/A ---	5.6 (22.1)	--- N/A ---	5.6	9.6 (2.0)	0	3.4 (-24.7%)	4.6
Norway	9.8 (0.3)	9.2 (4.1)	3.4 (16.5)	7.5	10.0 (0.0)	8	4.4 (-10.3%)	7.5
Oman	9.4 (0.9)	--- N/A ---	--- N/A ---	9.4	10.0 (0.0)	2	4.8 (-3.4%)	6.6
Pakistan	5.0 (7.6)	--- N/A ---	--- N/A ---	5.0	7.8 (11.1)	2	4.8 (-4.7%)	4.9

Notes: When ratings are transformations, actual data are presented in parenthesis. T+E19totals may not exactly equal the sum of their parts due to rounding.

Table 1-A
Trade Openness Index (1998)

Country	----- Tariffs (i) ----- Revenues from taxes on trade as a share of the trade sector	--- Tariffs (ii) --- Mean tariff rate	----- Tariffs (iii) ----- Standard deviation of tariff rates	--- Tariffs --- Composite tariff rating	----- Black Market ----- Difference between the official and black market exchange rate	----- Capital ----- Citizen restrictions on capital transactions with foreigners	----- Trade ----- Actual relative to expected size of trade sector	TOI 1998
Panama	7.3 (4.0)	8.2 (9.2)	7.6 (5.9)	7.7	10.0 (0.0)	10	4.4 (-10.0%)	8.0
Pap. N. Guinea	--- N/A ---	5.9 (20.7)	2.3 (19.2)	4.1	0.0 (66.7)	0	10.0 (118.0%)	3.5
Paraguay	7.1 (4.4)	8.1 (9.5)	7.4 (6.5)	7.5	7.8 (11.1)	10	5.9 (18.6%)	7.8
Peru	6.6 (5.2)	7.4 (13.2)	8.8 (2.9)	7.6	10.0 (0.0)	10	2.4 (-33.8%)	7.5
Philippines	7.6 (3.6)	8.0 (10.2)	6.1 (9.7)	7.2	10.0 (0.0)	5	10.0 (134.7%)	8.1
Poland	8.2 (2.7)	6.5 (17.6)	0.0 (28.1)	4.9	10.0 (0.0)	5	5.5 (10.9%)	6.4
Portugal	9.7 (0.5)	8.9 (5.6)	7.6 (5.9)	8.7	10.0 (0.0)	8	4.5 (-9.1%)	7.8
Romania	8.5 (2.3)	6.1 (19.4)	2.8 (18.1)	5.8	7.8 (11.1)	0	4.5 (-8.9%)	4.5
Russian Fed.	6.6 (5.1)	7.5 (12.6)	6.6 (8.4)	6.9	1.4 (42.9)	2	9.4 (87.3%)	4.9
Senegal	0.6 (14.1)	7.4 (12.8)	--- N/A ---	4.0	9.6 (2.0)	0	5.6 (11.8%)	4.8
Sierra Leone	0.0 (15.8)	--- N/A ---	--- N/A ---	0.0	5.0 (25.0)	0	0.0 (-68.4%)	1.3
Singapore	9.9 (0.1)	9.9 (0.4)	--- N/A ---	9.9	10.0 (0.0)	10	10.0 (115.2%)	10.0
Slovak Rep.	--- N/A ---	8.8 (6.0)	--- N/A ---	8.8	7.8 (11.1)	5	7.2 (44.8%)	7.2
Slovenia	8.2 (2.7)	7.9 (10.6)	7.0 (7.4)	7.7	7.8 (11.1)	5	4.7 (-6.1%)	6.3
South Africa	9.9 (0.1)	8.6 (7.2)	6.0 (10.0)	8.2	10.0 (0.0)	2	6.4 (27.7%)	6.6
Spain	9.7 (0.5)	8.9 (5.6)	7.6 (5.9)	8.7	10.0 (0.0)	8	5.5 (11.0%)	8.1
Sri Lanka	7.6 (3.5)	6.0 (20.0)	3.8 (15.4)	5.8	10.0 (0.0)	2	6.2 (23.1%)	6.0
Sweden	9.8 (0.3)	8.9 (5.6)	7.6 (5.9)	8.8	10.0 (0.0)	8	6.0 (19.4%)	8.2
Switzerland	9.8 (0.3)	9.5 (2.4)	7.0 (7.4)	8.8	10.0 (0.0)	10	3.8 (-19.9%)	8.1
Syria	7.6 (3.7)	--- N/A ---	--- N/A ---	7.6	0.0 (400.0)	0	5.4 (9.0%)	3.3
Taiwan	9.1 (1.3)	8.1 (9.7)	5.6 (11.0)	7.6	10.0 (0.0)	5	6.3 (26.2%)	7.2
Tanzania	2.1 (11.9)	5.6 (22.1)	4.4 (13.9)	4.0	7.8 (11.1)	0	5.0 (-0.6%)	4.2
Thailand	9.0 (1.5)	4.5 (27.6)	--- N/A ---	6.8	10.0 (0.0)	2	10.0 (130.1%)	7.2
Trinidad Tob.	3.2 (10.2)	6.1 (19.3)	5.4 (11.4)	4.9	10.0 (0.0)	8	3.7 (-21.0%)	6.6
Tunisia	4.1 (8.9)	4.0 (29.9)	4.9 (12.8)	4.3	10.0 (0.0)	2	6.0 (20.4%)	5.6
Turkey	9.4 (0.9)	7.3 (13.5)	0.0 (25.4)	5.6	9.8 (1.0)	2	5.9 (18.6%)	5.8
Ukraine	--- N/A ---	8.0 (10.0)	5.6 (10.9)	6.8	7.8 (11.1)	2	8.4 (68.6%)	6.3
UK	9.7 (0.5)	8.9 (5.6)	7.6 (5.9)	8.7	10.0 (0.0)	10	4.9 (-2.7%)	8.4
USA	9.4 (0.9)	9.0 (4.8)	5.4 (11.6)	7.9	10.0 (0.0)	8	5.0 (-0.2%)	7.7
Uruguay	8.2 (2.7)	7.6 (12.2)	6.8 (7.9)	7.5	10.0 (0.0)	10	1.9 (-38.5%)	7.4
Venezuela	6.7 (4.9)	7.6 (12.0)	7.6 (6.1)	7.3	10.0 (0.0)	5	4.1 (-15.2%)	6.6
Zambia	7.1 (4.3)	7.3 (13.6)	6.3 (9.3)	6.9	5.0 (25.0)	10	6.4 (27.2%)	7.1
Zimbabwe	5.1 (7.3)	5.6 (22.2)	2.9 (17.8)	4.5	7.2 (14.0)	2	8.6 (71.2%)	5.6

Notes: When ratings are transformations, actual data are presented in parenthesis. Totals may not exactly equal the sum of their parts due to rounding.

Table 2-A
Trade Openness Index, 1980-1998

Country	TOI (80-2)	TOI (85-7)	TOI (90-2)	TOI (95-7)	TOI (98)	TOI (80-98)*	Country	TOI (80-2)	TOI (85-7)	TOI (90-2)	TOI (95-7)	TOI (98)	TOI (80-98)*
Algeria	3.7	2.4	2.7	3.0	2.8	2.9	Kenya	4.2	4.5	3.9	7.5	7.0	5.3
Argentina	1.5	1.0	2.0	6.9	7.3	3.3	Korea, South	5.8	6.1	6.9	6.9	8.3	6.6
Australia	6.1	7.0	7.4	7.8	7.9	7.2	Luxembourg	8.3	8.6	8.3	8.1	8.4	8.3
Austria	6.4	6.5	7.0	7.9	8.0	7.1	Madagascar	1.9	2.7	3.3	3.4	5.1	3.1
Bangladesh	0.8	0.6	0.8	2.5	3.8	1.5	Malawi	3.1	4.5	4.3	4.8	5.1	4.3
Barbados	4.8	4.5	3.7	4.4	4.6	4.4	Malaysia	7.8	7.9	7.9	7.9	7.1	7.8
Belgium	9.1	9.4	9.0	8.9	9.0	9.1	Mali	3.6	5.2	5.2	5.5	5.2	4.9
Belize	4.0	3.6	4.6	5.3	5.7	4.5	Malta	5.2	5.6	5.7	5.5	6.0	5.5
Bolivia	2.4	4.9	5.9	7.1	7.8	5.4	Mauritius	3.6	5.0	4.9	6.8	7.1	5.3
Botswana	5.5	5.5	6.4	6.5	7.1	6.1	Mexico	1.8	4.8	7.0	7.5	7.9	5.6
Brazil	2.9	1.5	4.0	4.7	4.7	3.4	Morocco	4.4	5.7	5.2	5.7	5.4	5.3
Burundi	1.0	1.9	1.6	1.3	2.3	1.5	Myanmar	0.5	0.0	0.0	0.0	0.0	0.1
Cameroon	3.3	5.3	4.7	4.7	5.2	4.6	Nepal	3.1	3.9	3.1	4.4	4.8	3.7
Canada	7.5	7.7	7.5	7.9	7.5	7.6	Netherlands	8.4	8.5	8.2	8.6	8.7	8.4
Central Afr. Rep.	3.2	4.4	3.6	4.7	4.3	4.0	New Zealand	7.0	7.0	7.7	8.1	7.8	7.5
Chile	5.9	5.5	6.7	6.9	6.8	6.3	Nicaragua	1.5	0.6	4.7	6.9	8.2	4.0
China	3.0	5.0	4.0	7.3	7.9	5.2	Niger	3.8	4.6	4.0	4.2	4.6	4.2
Colombia	3.4	3.9	4.4	6.2	6.0	4.7	Norway	6.7	7.4	7.8	7.5	7.5	7.4
Congo, Rep.	5.5	5.3	5.2	6.7	7.0	5.8	Pakistan	2.1	4.0	4.0	4.8	4.9	3.9
Costa Rica	2.6	4.0	5.8	7.9	8.3	5.4	Panama	9.0	8.6	8.4	9.5	8.0	8.8
Cote d'Ivoire	3.8	5.2	4.6	6.2	5.9	5.0	Paraguay	2.6	3.7	5.8	7.5	7.8	5.2
Cyprus	3.7	5.1	4.5	5.2	5.1	4.7	Peru	4.0	2.0	3.7	7.0	7.5	4.5
Denmark	7.0	7.0	6.7	7.3	7.9	7.1	Philippines	5.2	5.6	6.0	7.4	8.1	6.3
Dominican Rep.	2.0	4.6	3.5	5.6	6.9	4.3	Portugal	5.9	6.3	7.0	7.8	7.8	6.9
Ecuador	2.9	3.8	5.2	6.8	7.1	4.9	Senegal	3.5	4.7	4.2	4.6	4.8	4.3
Egypt	3.4	1.9	3.5	5.9	6.3	4.0	Sierra Leone	1.8	2.4	2.4	1.4	1.3	1.9
El Salvador	2.2	2.5	4.1	5.9	6.6	4.0	Singapore	9.5	10.0	9.9	9.9	10.0	9.8
Fiji	6.0	5.7	5.9	5.9	6.1	5.9	South Africa	6.4	6.2	6.2	6.2	6.6	6.3
Finland	6.4	6.3	5.7	7.8	7.8	6.7	Spain	6.6	6.9	7.4	7.9	8.1	7.3
France	5.0	6.5	7.0	7.0	7.2	6.5	Sri Lanka	4.4	4.5	4.2	5.9	6.0	4.9
Germany	8.3	8.7	8.5	8.4	8.6	8.5	Sweden	6.4	7.5	8.3	8.6	8.2	7.8
Greece	4.8	5.3	5.6	6.1	7.0	5.6	Switzerland	8.2	8.3	7.8	7.8	8.1	8.0
Guatemala	3.2	2.1	5.2	6.9	7.0	4.7	Syria	1.9	2.1	2.4	3.2	3.3	2.5
Honduras	3.1	2.3	5.3	7.3	7.4	4.8	Taiwan	6.8	7.0	7.6	7.5	7.2	7.2
Hong Kong	9.7	10.0	10.0	10.0	10.0	9.9	Tanzania	2.2	2.2	2.6	5.2	4.2	3.2
Hungary	3.1	4.1	4.3	6.6	7.0	4.8	Thailand	5.9	6.0	6.3	6.9	7.2	6.4
Iceland	4.2	5.6	4.9	6.0	6.8	5.3	Trinidad Tob.	2.8	3.0	3.4	7.1	6.6	4.4
India	3.0	2.8	3.4	4.2	4.8	3.5	Tunisia	3.4	4.4	5.1	5.5	5.6	4.7
Indonesia	6.2	5.9	6.1	6.1	6.2	6.1	Turkey	2.7	5.1	4.4	6.4	5.8	4.8
Iran	1.6	0.8	2.9	2.4	1.7	1.9	UK	8.5	8.7	8.3	8.5	8.4	8.5
Ireland	7.2	7.3	7.2	8.5	8.7	7.7	USA	7.9	7.9	7.8	7.8	7.7	7.8
Israel	5.7	5.9	6.1	6.2	7.9	6.2	Uruguay	6.2	7.1	7.1	7.2	7.4	7.0
Italy	7.2	7.2	6.7	7.8	8.3	7.4	Venezuela	7.9	5.1	6.5	6.8	6.6	6.6
Jamaica	3.8	5.6	5.5	7.1	6.5	5.6	Zambia	4.5	3.8	3.9	6.0	7.1	4.8
Japan	6.2	6.6	6.7	6.5	6.5	6.5	Zimbabwe	4.0	3.6	5.5	5.7	5.6	4.8
Jordan	6.1	6.0	6.2	6.4	6.5	6.2							

Note: * TOI (80-98) is a weighted average giving full weight to all periods except 1998, which receives a 1/2 weight to compensate for its shorter period representation.