

## EXECUTIVE SUMMARY

- This is the fifth edition of *Economic Freedom of the World*. Chapter 1 of this report updates the data from the earlier editions and presents an economic freedom index for 123 countries for 1999. Exhibit 1-1 shows the 21 components used to construct the index.
- In 1999, Hong Kong remained in first place with a rating of 9.4 (out of 10), followed closely by Singapore at 9.3. New Zealand ranked 3, the United Kingdom 4, and the United States 5. Australia, Ireland, Switzerland, Luxembourg, and the Netherlands round out the top ten. The rankings of other large economies include Canada (13), Germany (15), Japan (20), Italy (24), France (34), Taiwan (38), Mexico (62), China (81), India (92), Brazil (96), and Russia (117). Myanmar, Algeria, the Democratic Republic of Congo, Guinea-Bissau, and Sierra Leone rated lowest among the 123 countries for which data were available. See Exhibit 1-2.
- The economic freedom index is shown to correlate positively with measures of income per capita, economic growth, the United Nations Human Development Index, and longevity. It correlates negatively with indexes of corruption and poverty. Exhibits 1-4 through 1-9 illustrate these relationships.
- Chapter 2 uses survey data to supplement the objective components of the main index and develops a more comprehensive index of economic freedom for 58 countries. This more detailed index integrates a number of factors that, until now, have either been omitted or poorly reflected in the economic freedom index. Specifically, it provides a more accurate reflection of cross-country differences in the freedom to contract and compete in business activities and labor markets. The more comprehensive index is constructed for 58 rather than 123 countries because of limitations in the data. See Exhibit 2-8 for the more comprehensive ratings. Exhibit 2-9 compares the more comprehensive index with the economic freedom index for 123 countries described in chapter 1.
- Chapter 3 constructs a Trade Openness Index for the period from 1980 to 1999 using selected components of the economic freedom index. See Exhibits 3-1 and 3-2. This chapter investigates the linkage between the openness of international trade and income levels and growth rates. See Exhibits 3-3 through 3-6.
- Chapter 4 discusses how to measure the strength of protection of property rights in *ideas*. Such a measure could be used for academic research, policy evaluation, or comparisons of intellectual property regimes across countries and over time. Chapter 4 focuses on quantifying the level of *patent rights* protection.
- Chapter 5 presents detailed Country Reports with component, area and overall ratings and rankings for all the countries in the data set from 1970 to 1999.

# CHAPTER 1: ECONOMIC FREEDOM OF THE WORLD

## INTRODUCTION

More than a decade ago, Michael Walker, the Executive Director of the Fraser Institute of Vancouver, British Columbia, and Nobel laureate Milton Friedman organized a series of conferences with the objective of clearly defining and measuring economic freedom. They were able to attract some of the world's leading economists, including Gary Becker, Douglass North, Peter Bauer, and Assar Lindbeck, to participate in the series and provide input for the study. These conferences eventually led to the publishing of *Economic Freedom of the World: 1975-1995* (which we wrote with Walter Block) and the organizing of the Economic Freedom Network, a group of institutes, in over fifty countries, seeking to develop the best possible measure of economic freedom. Since then, we have published *Economic Freedom of the World: 1997 Annual Report*, *Economic Freedom of the World: 1998/1999 Interim Report*, and *Economic Freedom of the World: 2000 Report*.<sup>1</sup> This report represents a continuation of these efforts.

In his foreword to *Economic Freedom of the World: 1975-1995*, Milton Friedman indicated that the indexes presented in that publication had brought the quest for an objective measure of economic freedom to a "temporary conclusion." Amplifying on this statement, Professor Friedman indicated that subsequent studies would "surely make revised editions necessary, both to bring the indexes of economic freedom up-to-date and to incorporate the additional understanding that will be generated." The measures developed in this publication are indicative of this evolutionary process. They reflect improved knowledge about how to measure economic freedom and the development of a more complete set of data for the achievement of that purpose. They represent movement to a new level.

The core ingredients of economic freedom are personal choice, protection of private property, and freedom of exchange. Individuals have economic freedom when the following conditions exist: (a) their property acquired without the use of force, fraud, or theft is protected from physical invasions by others and (b) they are free to use, exchange, or give their property to another as long as their actions do not violate the identical rights of others. Like a compass, this concept of economic freedom has directed our work.

No index of this sort is perfect. There are numerous trade-offs necessary along the way. For instance, the desire to cover a large number of countries means that we can include in the index only those types of infringements that occur widely and systematically across countries and only those for which the data can be relatively easily obtained. This approach means that many violations of economic freedom that occur in an idiosyncratic manner cannot be included in the index. Regulatory policy, in particular, is both complex and subtle and, therefore, difficult to measure.

For the first time, *Economic Freedom of the World* contains chapters devoted to particular topics. Chapter 2 will present a more detailed economic freedom index for a smaller set of countries. This index includes ratings for 58 nations and includes measures of economic freedom in labor markets and other areas that the main economic freedom index cannot measure effectively. Chapter 3 takes a closer look at economic freedom in the area of trade policy and presents a Trade Openness Index based on some of the components of the economic freedom index presented in this volume. Chapter 4, by Walter Park of American University, presents an index of patent rights and represents the

beginning of our investigation of intellectual property rights more generally.

The main purpose of this edition of *Economic Freedom of the World* is to present the updated economic freedom ratings through the most recent period. The focus was to get the most current data available in this report. Nevertheless, often data from 1998 or, in rare cases, from 1997 were used

when data for 1999 were not yet available. Chapter 5 presents Country Tables with the component data and ratings, area ratings, and summary economic freedom ratings.

Below is a review of the basic methodology of the economic freedom index, and a discussion of some of the changes made to the index in this edition.

## METHODOLOGY OF THE INDEX

From the very beginning, our goal was the development of an objective measure of economic freedom rather than an index based on subjective assessments and “judgment calls.” Therefore, our index is founded upon objective components that reflect the presence (or absence) of economic freedom—components that can be derived for a large number of countries from regularly published sources. This method will make it possible both to calculate the index for earlier time periods and to update it regularly. We also wanted to combine the components into a summary index in a sound, objective manner. While it is impossible to eliminate all subjectivity, our goal is to reduce, to the extent possible, judgment calls on the part of the authors.<sup>2</sup>

As Exhibit 1-1 illustrates, the index comprises 21 components designed to identify the consistency of institutional arrangements and policies with economic freedom in seven major areas. The seven areas covered by the index are as follows: (I) size of government, (II) economic structure and use of markets, (III) monetary policy and price stability, (IV) freedom to use alternative currencies, (V) legal structure and security of private ownership, (VI) freedom to trade with foreigners, and (VII) freedom of exchange in capital markets.

Areas I and II are indicators of *reliance on markets* rather than the political process (large government expenditures, state-operated enterprises, price controls, and discriminatory taxes) to allocate resources and determine the distribution of income. Areas III and IV reflect the availability of *sound money*. Area V focuses on the *legal security of property rights and the enforcement of contracts*. Area VI indicates the consistency of policies with *free trade*. Area VII is a measure of the degree to which markets are used to allocate capital. Reliance on

markets, sound money, legal protection of property rights, free trade, and market allocation of capital are important elements of economic freedom captured by the index. We recognize that economic freedom is heterogeneous and highly complex: no single statistic will be able to capture its many facets fully and accurately. However, the index outlined in Exhibit 1-1 does encompass key ingredients of the concept.

We have been forced to make a few changes to the structure of the index in this edition and two components have been dropped. One component in Area V—Viability of Contracts—had to be dropped because the data source stopped reporting it. A second component—Percent of International Trade Covered by Non-tariff Trade Restraints (VI b i in the previous structure)—was eliminated because its data source no longer exists. The weights in Area VI were adjusted to distribute this component’s weight among the remaining five components in that area.<sup>3</sup>

In total, 123 nations are included in this study. However, as the result of incomplete data or other factors (e.g., the split up of Czechoslovakia), we were only able to derive summary ratings for 122 in 1995, 116 in 1990, 112 in 1985, 108 in 1980, 83 in 1975, and 57 in 1970. After the data were assembled for each of the 21 components of the index, the ratings were calculated on a 0-to-10 scale. Higher ratings are indicative of institutions and policies more consistent with economic freedom.

The ratings for many of the 21 components in the index reflect various categorical characteristics; while others are based on continuous data. Countries with categorical characteristics more consistent with economic freedom are given higher ratings. For example, countries with few government enterprises

**Exhibit 1-1: Components of Index of Economic Freedom**

<b>I</b>	<b>Size of Government: Consumption, Transfers, and Subsidies</b>	<b>[11.0%]</b>
a	General Government Consumption Expenditures as a Percentage of Total Consumption	(50%)
b	Transfers and Subsidies as a Percentage of GDP	(50%)
<b>II</b>	<b>Structure of the Economy and Use of Markets</b> ( <i>Production and allocation via governmental and political mandates rather than private enterprises and markets</i> )	<b>[14.2%]</b>
a	Government Enterprises and Investment as a Percentage of the Economy	(32.7%)
b	Price Controls: Extent to which Businesses Are Free to Set Their Own Prices	(33.5%)
c	Top Marginal Tax Rate ( <i>and income threshold at which it applies</i> )	(25.0%)
d	The Use of Conscripts to Obtain Military Personnel	(8.8%)
<b>III</b>	<b>Monetary Policy and Price Stability</b> ( <i>Protection of money as a store of value and medium of exchange</i> )	<b>[9.2%]</b>
a	Average Annual Growth Rate of the Money Supply during the Last Five Years minus the Growth Rate of Real GDP during the Last 10 Years	(34.9%)
b	Standard Deviation of the Annual Inflation Rate during the Last Five Years	(32.6%)
c	Annual Inflation Rate during the Most Recent Year	(32.5%)
<b>IV</b>	<b>Freedom to Use Alternative Currencies</b> ( <i>Freedom of access to alternative currencies</i> )	<b>[14.6%]</b>
a	Freedom of Citizens to Own Foreign Currency Bank Accounts Domestically and Abroad	(50%)
b	Difference between the Official Exchange Rate and the Black Market Rate	(50%)
<b>V</b>	<b>Legal Structure and Property Rights</b> ( <i>Security of property rights and viability of contracts</i> )	<b>[16.6%]</b>
a	Legal Security of Private Ownership Rights ( <i>Risk of confiscation</i> )	(50.0%)
b	Rule of Law: Legal Institutions, Including Access to a Nondiscriminatory Judiciary, That Are Supportive of the Principles of Rule of Law	(50.0%)
<b>VI</b>	<b>International Exchange: Freedom to Trade with Foreigners</b>	<b>[17.1%]</b>
a	Taxes on International Trade	
i	Revenue from Taxes on International Trade as a Percent of Exports plus Imports	(28.2%)
ii	Mean Tariff Rate	(29.4%)
iii	Standard Deviation of Tariff Rates	(28.4%)
b	Actual Size of Trade Sector Compared to the Expected Size	(14.0%)
<b>VII</b>	<b>Freedom of Exchange in Capital and Financial Markets</b>	<b>[17.2%]</b>
a	Ownership of Banks: Percentage of Deposits Held in Privately Owned Banks	(27.1%)
b	Extension of Credit: Percentage of Credit Extended to Private Sector	(21.2%)
c	Interest Rate Controls and Regulations that Lead to Negative Interest Rates	(24.7%)
d	Restrictions on the Freedom of Citizens to Engage in Capital Transactions with Foreigners	(27.1%)

Note: The numbers in parentheses, *e.g.* (27.1%), indicate the weights used to derive the area rating. The numbers in bold in the brackets, *e.g.* [17.2%], indicate the percentage weight allocated to each area when the summary rating was derived. These weights are derived by principal component analysis.

are given higher ratings than those with widespread use of such enterprises. Similarly, countries where price controls are absent (or apply in only a few markets) are given higher ratings than countries where these controls are extensively applied.

Depending on whether higher values are indicative of more or less economic freedom, alternative formulas are used to transform the 11 continuous variables to a 0-to-10 scale. When higher values are indicative of more economic freedom, the formula used to derive the 0-to-10 ratings is:  $(V_i - V_{\min}) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  is the country's actual value for the component,  $V_{\max}$  the maximum value for a country during the 1990 base year, and  $V_{\min}$  the minimum base-year value for the component. This formula is used to derive the ratings for all years. A country's rating will be close to 10 when its value for the component is near the base-year maximum. In contrast, the rating will be near 0 when the observation for a country is near the base-year minimum. As the actual values exceed the base-year minimum by larger and larger amounts, ratings will rise from 0 toward 10. Whenever the actual value for the component is equal to, or greater than, the base-year maximum, a rating of 10 is assigned. When the actual value is equal to or less than the base-year minimum, the rating is 0.

Higher actual values are often indicative of less economic freedom. Inflation and size of the transfer sector provide examples. Increases in these variables reflect reductions in economic freedom. When higher values for a component are indicative of less economic freedom, the formula used to derive the 0-to-10 ratings is:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10. This formula will assign higher ratings to countries with actual values closer to the base-year minimum. In some cases, component values of 0 represent an ideal—a benchmark that should be required for a rating of 10. For example, a 0 mean tariff rate and a 0 rate of inflation (perfect price stability) are benchmark outcomes representing maximum economic freedom. When 0 represents an ideal benchmark value, this value was included as  $V_{\min}$  in the formula even if no country actually achieved this ideal during the base year. In some cases where extreme component values are present (for example, a 10,000% rate of inflation),  $V_{\max}$  is constrained at a level

clearly warranting a rating of 0 even if this was not the maximum observed value during the base year. If this method had not been employed, extreme observations would have created such a large range that the ratings would have been concentrated near 10. The precise formula used to derive the 0-to-10 ratings for each component is presented in the section, Explanatory Notes and Data Sources, at the end of this chapter (page 14).

The procedures used to convert the continuous component values to the 0-to-10 ratings have two important characteristics. First, if all (or most) countries improve (or regress) with the passage of time, the ratings will reflect the change. Second, the distribution of the country ratings along the 0-to-10 scale closely reflects the distribution of the actual values among the countries.

Principal component analysis was used to determine the weight given to each component in the construction of the area index. This procedure partitions the variance of a set of variables and uses it to determine the linear combination—the weights—of these variables that maximizes the variation of the newly constructed principal component. In effect, the newly constructed principal component—an area rating, for example—is the variable that captures the variation of the underlying components most fully. It is an objective method of combining a set of variables into a single variable that best reflects the original data. The procedure is particularly appropriate when several sub-components measure different elements of a principal component. This is precisely the case with our index. Economic theory is a road map indicating components that are likely to capture various elements of a broader area (a principal component). In turn, principal component analysis indicates the permissibility of grouping components together and the weights most appropriate to combine a set of sub-components into a principal component. The component weights derived by this procedure are shown in parentheses in Exhibit 1-1; e.g., (50%). The same procedure was also used to derive the weights for the area components in the construction of what we will refer to as the summary index. These weights for each of the seven areas in Exhibit 1-1 are presented in bold-face type and enclosed within brackets; e.g., [11.0%]. The next section in this chapter looks at some of the basic results.

## ECONOMIC FREEDOM OF THE WORLD IN THE 1990S

Exhibit 1-2 shows the summary economic freedom ratings for 1999, sorted from highest to lowest.<sup>4</sup> As in the past, Hong Kong topped the list, followed closely by Singapore. New Zealand ranked 3, the United Kingdom 4, and the United States 5. Australia, Ireland, Switzerland, Luxembourg, and the Netherlands round out the top ten. The rankings of other large economies include Canada (13), Germany (15), Japan (20), Italy (24), France (34), Taiwan (38), Mexico (62), China (81), India (92), Brazil (96), and Russia (117). Myanmar, Algeria, the Democratic Republic of Congo, Guinea-Bissau, and Sierra Leone rated lowest among the 123 countries for which data were available.

Some have charged that Hong Kong's economy is dominated by a small number of rich and powerful families that are able to manipulate economic affairs for personal benefit. Like other countries, Hong Kong undoubtedly has powerful elites. However, its openness to business and trade make it difficult to stifle the competitive process. Along with Singapore, Hong Kong is one of the world's most open economies. Competition is intense and the latest innovative products and technologies are available at economical prices. During the 1960s and 1970s, growth of the manufacturing sector transformed Hong Kong from a poor, less-developed, country into a high-income industrial power. The dynamic process continued during the 1980s and 1990s, as Hong Kong moved from a manufacturing-based econ-

omy to one based on high technology, finance, service, and trade. Hong Kong's economy is characterized by business entrepreneurship, a high level of employment, income mobility, and a relatively modest degree of income inequality. These are attributes of a free and dynamic economy. Of course, economic freedom should not be taken for granted. This is certainly true for an economy politically tied to a mother nation that is much less free. Hong Kong faces an uncertain future but, at least for now, it continues to be the freest economy in the world.

Exhibit 1-3 shows the summary ratings for 1990. In 1990 the top rated countries were Hong Kong (1), Singapore (2), the United States (3), Switzerland, the United Kingdom and Canada (tied for 4). Myanmar and Russia were at the bottom of the list.

There were many interesting changes during the 1990s. Several countries improved both their ratings and rankings substantially. For example, Ireland's rating rose from 7.3 in 1990 to 8.5 in 1999. During the same period, its ranking jumped from 22 to 6. Many Latin American countries, including Argentina, Bolivia, El Salvador, Nicaragua, and Peru were also among those registering substantial improvement.

As the economic freedom of some improved, the rankings of others declined. Canada dropped from 4 in 1990 to 13 in 1999. Venezuela and Mexico both fell considerably, and Indonesia tumbled from 33 to 72 during the decade.

## ECONOMIC FREEDOM AND MEASURES OF SOCIAL PROGRESS

Although the economic freedom index has been designed as a measurement of economic freedom in its own right, we recognize the interest in how the index correlates with other measures of human well-being. Exhibit 1-4 shows the relationship between the 1999 Economic Freedom Index (EFI) and the level of GDP per capita (measured in 1998 purchasing power parity US dollars). The countries were grouped into quintiles for easy comparison. The relationship between the economic freedom rating and income is quite striking. More economic

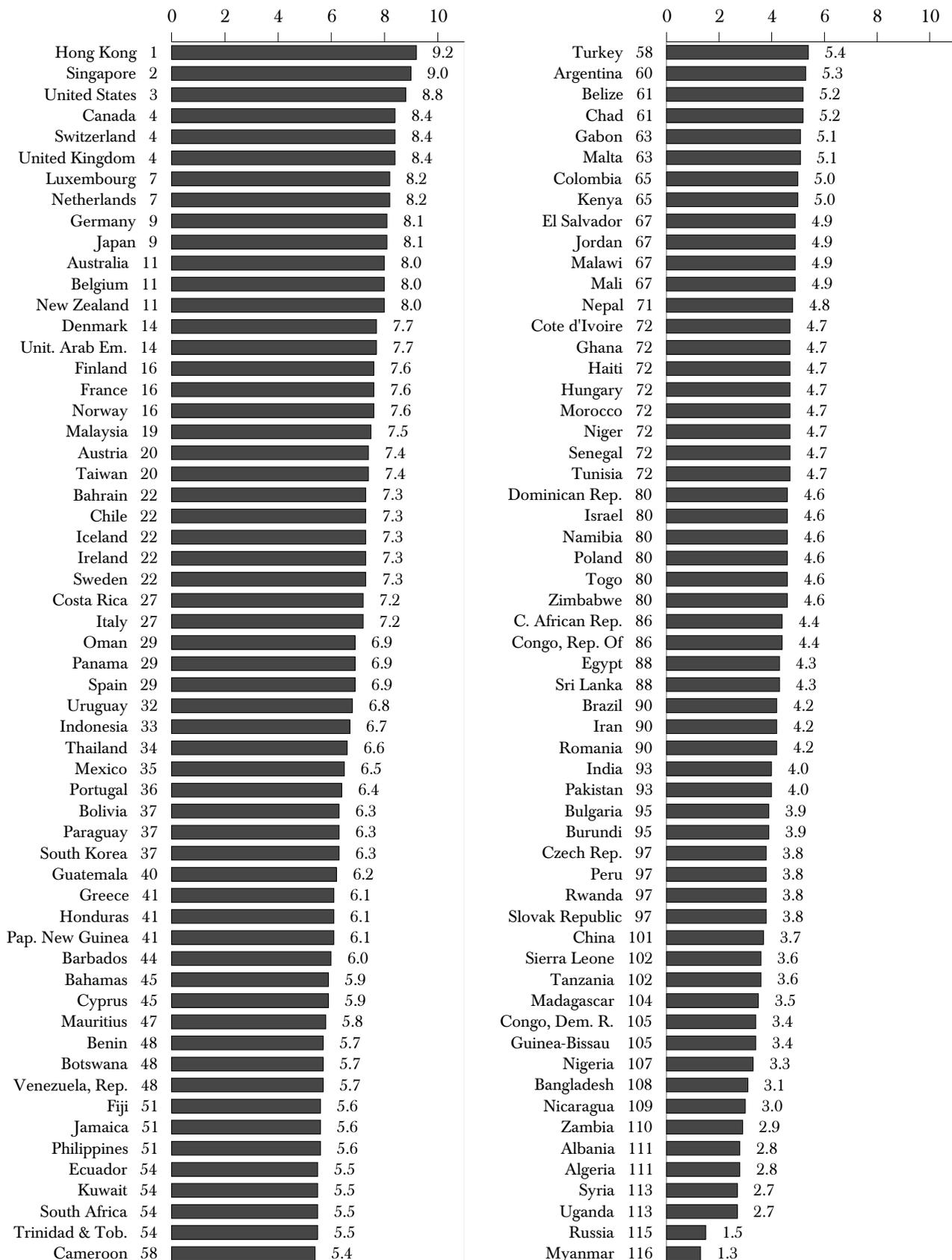
freedom is strongly related with higher levels of income. Exhibit 1-5 shows the same economic freedom quintiles with the rate of economic growth since 1990. The general pattern repeats itself.<sup>5</sup>

The economic freedom index has been useful in many other contexts besides examinations of income and economic growth. The next set of exhibits examines the simple relationships between the economic freedom index and other measures of social progress. Exhibit 1-6 shows the economic freedom quintiles with the Corruption

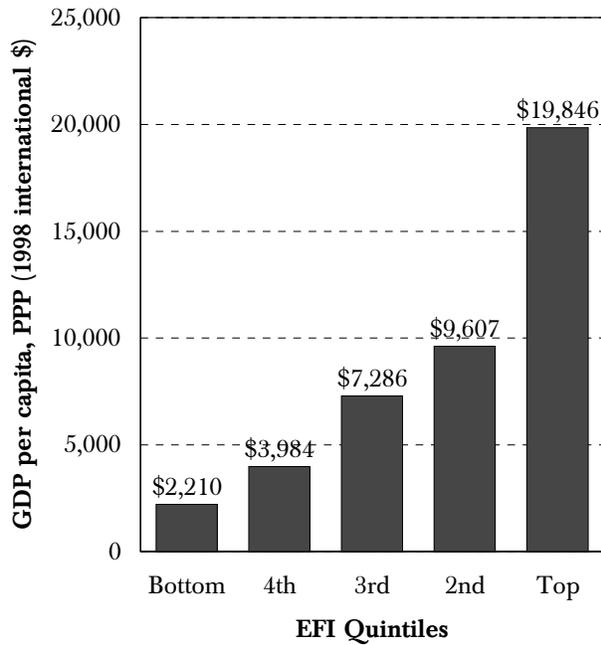
## Exhibit 1-2: Summary Ratings for 1999



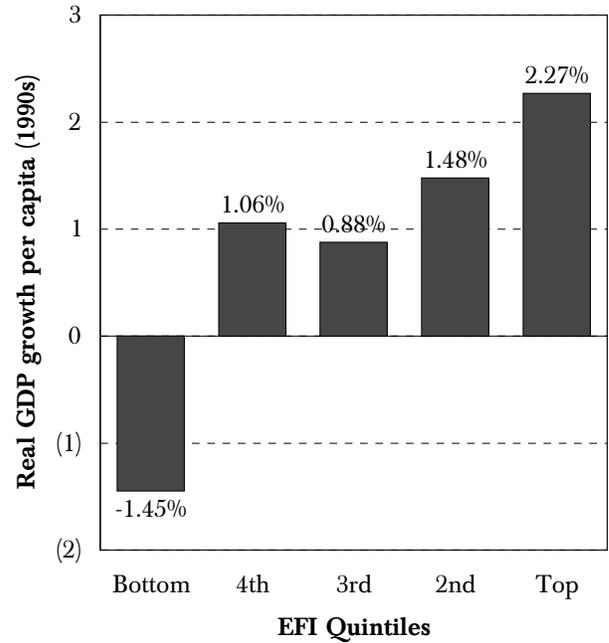
Exhibit 1-3: Summary Ratings for 1990



**Exhibit 1-4: Economic Freedom and Income**



**Exhibit 1-5: Economic Freedom and Growth**

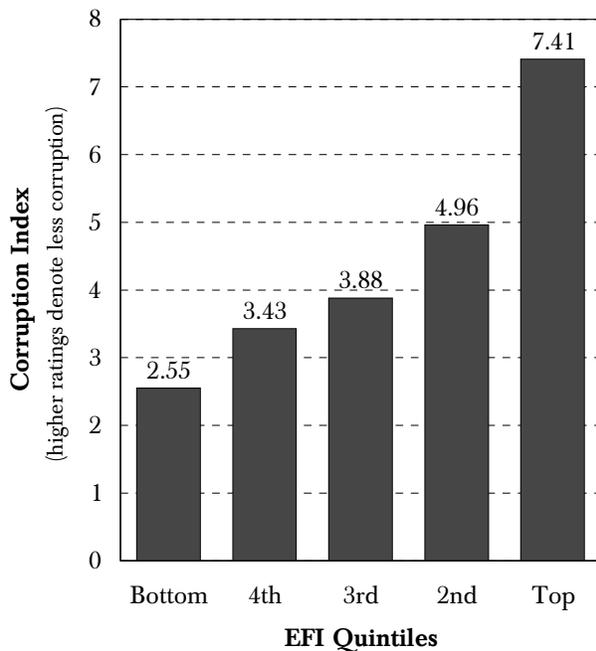


Perceptions Index (CPI) published annually by Transparency International.<sup>6</sup> Higher values for the CPI reflect less bribery and corruption. Exhibit 1-6 indicates that more economic freedom correlates with less corruption.

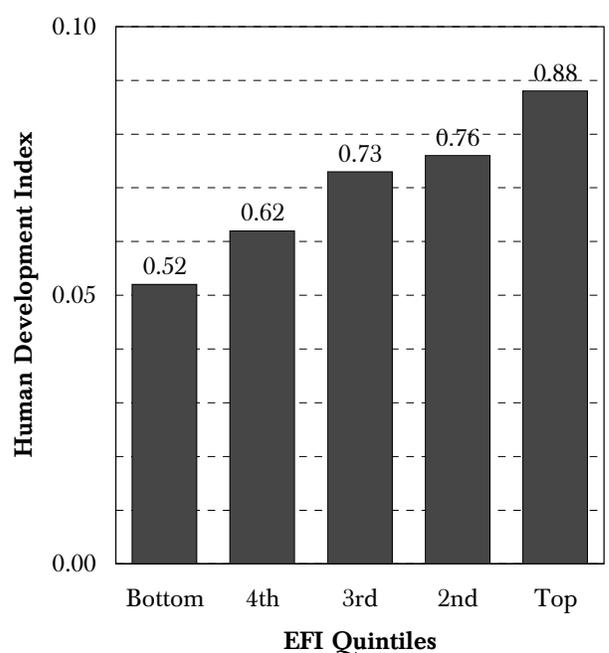
Exhibit 1-7 charts the economic freedom index against the United Nations Human Development

Index. The Human Development Index (HDI) “measures a country’s achievements in three aspects of human development: longevity, knowledge, and a decent standard of living.”<sup>7</sup> Exhibit 1-7 shows that countries with higher levels of economic freedom also score well on the United Nations Human Development Index.

**Exhibit 1-6: Economic Freedom and Corruption**



**Exhibit 1-7: Economic Freedom and Human Development**



The United Nations also computes a Human Poverty Index for both developed (HPI-2) and developing countries (HPI-1). The two indexes are not comparable, however. Exhibit 1-8 looks at the relationship among the developing nations using HPI-1. According to the United Nations, the Human Poverty Index for developing nations (HPI-1) is similar to the HDI but “includes ... social exclusion.”<sup>8</sup> The HPI-1 is measured on a scale such that increasing values indicate more poverty. Economic freedom therefore is negatively correlated with poverty: more freedom, less poverty.

**Exhibit 1-8: Economic Freedom and Human Poverty**

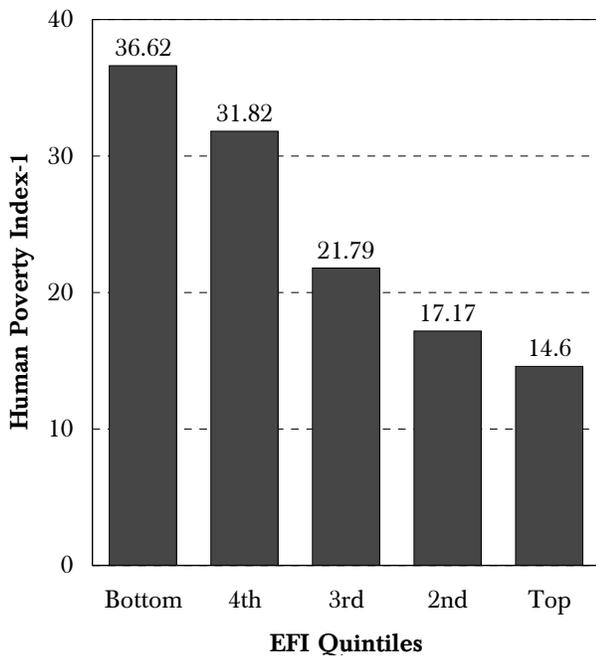
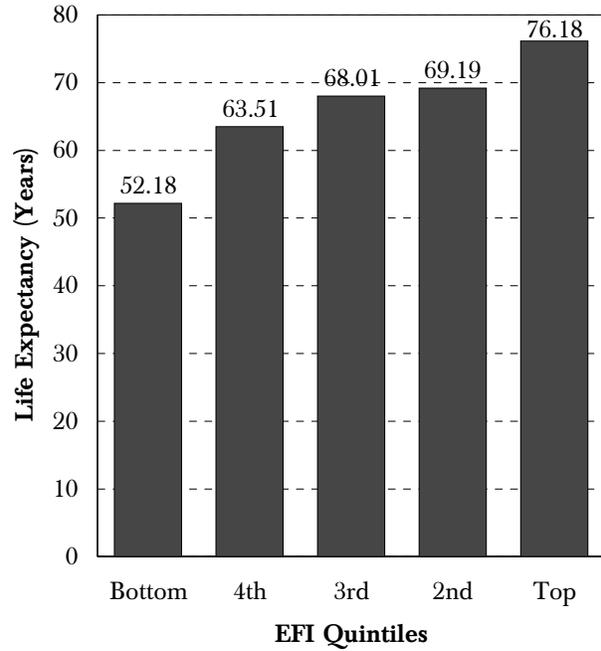


Exhibit 1-9 shows the relationship between the economic freedom quintiles and life expectancy. Not surprisingly, economic freedom corresponds with greater longevity.<sup>9</sup>

**Exhibit 1-9: Economic Freedom and Life Expectancy**



## NOTES

- (1) See Michael Walker, ed., *Freedom, Democracy, and Economic Welfare* (Vancouver: Fraser Institute, 1988); Walter Block, ed., *Economic Freedom: Toward a Theory of Measurement* (Vancouver: Fraser Institute, 1991); Stephen Easton and Michael Walker, eds., *Rating Global Economic Freedom* (Vancouver: Fraser Institute, 1992); James Gwartney, Robert Lawson and Walter Block, *Economic Freedom of the World: 1975-1995* (Vancouver: Fraser Institute, 1996); James Gwartney and Robert Lawson, *Economic Freedom of the World: 1997 Report* (Vancouver: Fraser Institute, 1997); James Gwartney and Robert Lawson, *Economic Freedom of the World: 1998/99 Interim Report* (Vancouver: Fraser Institute, 1998); James Gwartney and Robert Lawson with Dexter Samida, *Economic Freedom of the World: 2000 Report* (Vancouver, Fraser Institute, 1999).
- (2) One of the important trade-offs associated with our decision to rely almost exclusively on regularly published international data is that we cannot rate more than about 120 to 125 countries. Many countries such as Cuba and North Korea that have poor records of maintaining economic freedom do not have the requisite data available and, hence, are not rated in our index.
- (3) Component (V b), Viability of Contracts, was dropped. Consequently, Component (V c), Rule of Law, was designated (V b) in the new edition. Likewise, with the elimination of Component (VI b i), the previous Component (VI b ii), Actual Size of the Trade Sector Compared to the Expected Size, is now denoted (VI b).
- (4) We have endeavored to use the most recent data available. In cases where data for 1999 were not available, data for 1998 or 1997 were used instead.
- (5) Data on income and economic growth were obtained from the World Bank, *World Development Indicators 2000* (CD). For a more rigorous examination of the relationship between the economic freedom index and economic growth see, James Gwartney, Randall Holcombe and Robert Lawson, Economic Freedom and the Environment for Economic Growth, *Journal of Institutional and Theoretical Economics*, 155, 4 (December 1999): 1–21.
- (6) Transparency International, *2000 Corruption Perceptions Index*, <http://transparency.de/documents/cpi/2000/cpi2000.html> (accessed 21 September 2000).
- (7) United Nations Development Project, *Human Development Report 2000*, <http://www.undp.org/hdr2000/> (accessed 26 November 2000).
- (8) United Nations Development Project, *Human Development Report 2000*, <http://www.undp.org/hdr2000/>, HPI-1: deprivations in longevity are measured by the percentage of newborns not expected to survive to age 40. Deprivations in knowledge are measured by percentage of adults who are illiterate. Deprivations in a decent standard of living are measured by three variables: the percentage of people without access to safe water, the percentage of people without access to health services, and the percentage of moderately and severely underweight children below the age of five.
- (9) Life expectancy data were obtained from the United Nations Development Project, *Human Development Report 2000*, <http://www.undp.org/hdr2000/> (accessed 26 November 2000).

## EXPLANATORY NOTES AND DATA SOURCES

### Component

- I a** The rating for this component is equal to:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10. The  $V_i$  is the country's actual government consumption as a proportion of total consumption, while the  $V_{\max}$  and  $V_{\min}$  were set at 40 and 6 respectively. Countries with a larger proportion of government expenditures received lower ratings. If the ratio of a country's government consumption to total consumption is close to the minimum value of this ratio during the 1990 base year, the country's rating will be close to 10. In contrast, if this ratio is close to the highest value during the base year, the rating will be close to 0.
- Sources World Bank, *World Development Indicators CD-ROM* (various editions) and International Monetary Fund, *International Financial Statistics* (various issues). The 1997 figures were primarily from the latter publication.
- I b** The rating for this component is equal to:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10. The  $V_i$  is the country's ratio of transfers and subsidies to GDP, while the  $V_{\max}$  and  $V_{\min}$  represent the maximum and minimum values of this component during the 1990 base year. The formula will generate lower ratings for countries with larger transfer sectors. When the size of a country's transfer sector approaches that of the country with the largest transfer sector during the base year, the rating of the country will approach 0.
- Sources World Bank, *World Development Indicators CD-ROM* (various editions); International Monetary Fund, *International Financial Statistics* (various issues); International Monetary Fund, *Government Finance Statistics Yearbook* (various years); and Inter-American Development Bank, *Economic and Social Progress in Latin America, 1994*.
- II a** Data on the number, composition, and share of output supplied by State-Operated Enterprises (SOEs) and government investment as a share of total investment were used to construct the 0-to-10 ratings. Countries with more government enterprise and government investment received lower ratings. When there were few SOEs and government investment was generally less than 15% of total investment, countries were given a rating of 10. When there were few SOEs other than those involved in industries where economies of scale reduce the effectiveness of competition (e.g., power generation) and government investment was between 15% and 20% of the total, countries received a rating of 8. When there were, again, few SOEs other than those involved in energy and other such industries and government investment was between about 20% and 25% of the total, countries were rated at 7. When SOEs were present in the energy, transportation, and communication sectors of the economy and government investment was between about 25% and 30% of the total, countries were assigned a rating of 6. When a substantial number of SOEs operated in many sectors, including manufacturing, and government investment was generally between 30% and 40% of the total, countries received a rating of 4. When numerous SOEs operated in many sectors, including retail sales, and government investment was between about 40% and 50% of the total, countries were rated at 2. A rating of 0 was assigned when the economy was dominated by SOEs and government investment exceeded 50% of the total.

- Sources World Bank Policy Research Report, *Bureaucrats in Business* (1995); Rexford A. Ahene and Bernard S. Katz, eds., *Privatization and Investment in Sub-Saharan Africa* (1992); Manuel Sanchez and Rossana Corona, eds., *Privatization in Latin America* (1993); Iliya Harik and Denis J. Sullivan, eds., *Privatization and Liberalization in the Middle East* (1992); OECD, *Economic Surveys* (various issues); and L. Bouten and M. Sumlinski, *Trends in Private Investment in Developing Countries: Statistics for 1970–1995* (1997).
- II b** The more widespread the use of price controls, the lower the rating. The survey data of the International Institute for Management Development (IMD), *World Competitiveness Report*, various editions, were used to rate the 46 countries (mostly developed economies) covered by this report. For other countries, the Price Waterhouse series, *Doing Business in ...* and other sources were used to categorize countries. Countries were given a rating of 10 if no price controls or marketing boards were present. When price controls were limited to industries where economies of scale may reduce the effectiveness of competition (e.g., power generation), a country was given a rating of 8. When price controls were applied in only a few other industries, such as agriculture, a country was given a rating of 6. When price controls were levied on energy, agriculture, and many other staple products that are widely purchased by households, a rating of 4 was given. When price controls applied to a significant number of products in both agriculture and manufacturing, the rating was 2. A rating of 0 was given when there was widespread use of price controls throughout various sectors of the economy.
- Sources IMD, *World Competitiveness Report* (various issues); Price Waterhouse, *Doing Business in ...* publication series; World Bank, *Adjustment in Africa: Reforms, Results, and the Road Ahead* (1994); and US State Department, *Country Reports on Economic Policy and Trade Practices* (various years).
- II c** Data on the top marginal tax rates and the income thresholds at which they take effect were used to construct a rating grid. Countries with higher marginal tax rates that take effect at lower income thresholds received lower ratings. The income threshold data were converted from local currency to 1982/1984 US dollars (using beginning-of-year exchange rates and the US Consumer Price Index). See *Economic Freedom of the World: 1997 Annual Report*, page 265, for the precise relationship between a country's rating and its top marginal tax and income threshold.
- Source Price Waterhouse, *Individual Taxes: A Worldwide Summary* (various issues).
- II d** Data on the use and duration of military conscription were used to construct rating intervals. Countries with longer conscription periods received lower ratings. A rating of 10 was assigned to countries without military conscription. When length of conscription was six months or less, countries were given a rating of 5. When length of conscription was more than six months but not more than 12 months, countries were rated at 3. When length of conscription was more than 12 months but not more than 18 months, countries were assigned a rating of 1. When conscription periods exceeded 18 months, countries were rated 0.
- Source International Institute for Strategic Studies, *The Military Balance* (various issues).
- III a** The M1 money supply figures were used to measure the growth rate of the money supply. The rating is equal to:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the average

annual growth rate of the money supply during the last five years adjusted for the growth of real GDP during the previous 10 years. The values for  $V_{\min}$  and  $V_{\max}$  were set at 0% and 50%, respectively. Therefore, if the adjusted growth rate of the money supply during the last five years was 0, indicating that money growth was equal to the long-term growth of real output, the formula generates a rating of 10. Ratings decline as the adjusted money supply growth differs from 0. When the adjusted annual money growth is equal to (or greater than) 50%, a rating of 0 results.

Sources World Bank, *World Development Indicators CD-ROM* (various editions), with updates from International Monetary Fund, *International Financial Statistics* (various issues).

**III b** The GDP deflator was used as the measure of inflation. When these data were unavailable, the Consumer Price Index was used. The following formula was used to determine the 0-to-10 scale rating for each country:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the country's standard deviation of the annual rate of inflation during the last five years. The values for  $V_{\min}$  and  $V_{\max}$  were set at 0% and 25%, respectively. This procedure will allocate the highest ratings to the countries with least variation in the annual rate of inflation. A perfect 10 results when there is no variation in the rate of inflation over the five-year period. Ratings will decline toward 0 as the standard deviation of the inflation rate approaches 25% annually.

Sources World Bank, *World Development Indicators CD-ROM* (various editions), with updates from International Monetary Fund, *International Financial Statistics* (various issues).

**III c** The 0-to-10 country ratings were derived by the following formula:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the rate of inflation during the most recent year. The values for  $V_{\min}$  and  $V_{\max}$  were set at 0% and 50%, respectively. The lower the rate of inflation, the higher the rating. Countries that achieve perfect price stability earn a rating of 10. As the inflation rate moves toward a 50% annual rate, the rating for this component moves toward 0. A 0 rating is assigned to all countries with an inflation rate of 50% or more.

Sources World Bank, *World Development Indicators CD-ROM* (various editions), with updates from International Monetary Fund, *International Financial Statistics* (various issues).

**IV a** When foreign currency bank accounts were permissible without restrictions both domestically and abroad, the rating was 10; when these accounts were restricted, the rating was 0. If foreign currency bank accounts were permissible domestically but not abroad (or vice versa), the rating was 5.

Sources Currency Data and Intelligence, Inc., *World Currency Yearbook* (various issues) and International Monetary Fund, *Annual Report on Exchange Arrangements and Exchange Restrictions* (various issues).

**IV b** The formula used to calculate the 0-to-10 ratings for this component was the following:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  is the country's black-market exchange rate premium. The values for  $V_{\min}$  and  $V_{\max}$  were set at 0% and 50%, respectively. This formula will allocate a rating of 10 to countries without a black-market exchange rate; *i.e.*, those with a domestic currency that is fully convertible without restrictions. When exchange rate controls are present and a black market exists, the ratings will decline toward 0 as the black market premium increases toward 50%. A 0 rating is given when the black market premium is equal to, or greater than, 50%.

Sources World Bank, *World Development Report 2000*, Currency Data and Intelligence, Inc., *World Currency Yearbook* (various issues of the yearbook and the monthly report supplement) and International Monetary Fund, *International Financial Statistics* (various issues).

**V a** Countries with more secure property rights received higher ratings. The data for 1999 are from the IMD, *World Competitiveness Report, 2000*. No reliable data were available for 1995. The data from 1980 to 1990 are from PRS Group, *International Country Risk Guide* (various issues). The 1970 and 1975 data are from Business Environment Risk Intelligence (BERI). The ICRG did not provide ratings for Barbados, Benin, Burundi, Central African Republic, Chad, Estonia, Latvia, Lithuania, Mauritius, Slovenia and Ukraine. We rated these countries based on the ratings for similar countries (in parentheses): for Barbados (Bahamas), Mauritius (Botswana), Estonia, Latvia, and Lithuania (Poland and Russia), Slovenia (Czech Republic and Slovakia), Ukraine (Bulgaria and Russia), Benin, Burundi, Central African Republic, and Chad (Cameroon, Republic of Congo, Gabon, Mali, and Niger).

While the original rating scale for the ICRG data was 0-to-10, BERI data were on a one-to-four scale. We used regression analysis from the two sources during the initial overlapping year 1982 to merge the two data sets and place the 1970 and 1975 ratings on a scale comparable to that used for the other years. Likewise, regression analysis between the 1999 IMD data and the 1990 ICRG data was used to splice in the new data set.

Because of inconsistencies in the ICRG ratings over time, all ratings were adjusted using the maximum and minimum procedure used in other components in order to make the component consistent over time. The following formula was used to place the figures on a 0-to-10 scale:  $(V_i - V_{\min}) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  is the country's actual value for the component.  $V_{\max}$  and  $V_{\min}$  were set at 10 and 2 standard deviations below the average, respectively.

Sources IMD, *World Competitiveness Report, 2000*, PRS Group, *International Country Risk Guide* (various issues), and Business Environment Risk Intelligence.

**V b** Countries with legal institutions that were more supportive of rule of law received higher ratings. The data from 1980 to 1999 on the rule of law are from PRS Group, *International Country Risk Guide* (various issues). In certain years, the ICRG did not provide ratings for Barbados, Benin, Burundi, Central African Republic, Chad, Estonia, Latvia, Lithuania, Mauritius, Slovenia and Ukraine. In those cases, we rated these countries based on the ratings for similar countries (in parentheses): Barbados (Bahamas), Mauritius (Botswana), Estonia, Latvia, and Lithuania (Poland and Russia), Slovenia (Czech Republic and Slovakia), Ukraine (Bulgaria and Russia), Benin, Burundi, Central African Republic, and Chad (Cameroon, Republic of Congo, Gabon, Mali, and Niger).

Because of inconsistencies in the ICRG ratings over time, all ratings were adjusted each year using the maximum and minimum procedure used in other components in order to make the component more consistent over time. The following formula was used to place the figures on a 0-to-10 scale:  $(V_i - V_{\min}) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  is the country's actual value for the component.  $V_{\max}$  and  $V_{\min}$  were set at 10 and 2 standard deviations below the average, respectively.

Source PRS Group, *International Country Risk Guide* (various issues).

**VI a i** The formula used to calculate the ratings for this component was:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the revenue derived from taxes on international trade as a

share of the trade sector. The values for  $V_{\min}$  and  $V_{\max}$  were set at 0% and 15%, respectively. This formula leads to lower ratings as the average tax rate on international trade increases. Countries with no specific taxes on international trade earn a perfect 10. As the revenues from these taxes rise toward 15% of international trade, ratings decline toward 0. (Note that except for two or three extreme observations, the revenues from taxes on international trade as a share of the trade sector are within the range of 0% to 15%.)

Sources International Monetary Fund, *Government Finance Statistics Yearbook* (various issues), International Monetary Fund, *International Financial Statistics* (various issues), and Office of the United States Trade Representative, *Annual Report*.

**VI a ii** The formula used to calculate the 0-to-10 rating for each country was:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the country's mean tariff rate. The values for  $V_{\min}$  and  $V_{\max}$  were set at 0% and 50%, respectively. This formula will allocate a rating of 10 to countries that do not impose tariffs. As the mean tariff rate increases, countries are assigned lower ratings. The rating will decline toward 0 as the mean tariff rate approaches 50%. (Note that except for two or three extreme observations, all countries have mean tariff rates within the range of 0% to 50%.)

Sources OECD, *Indicators of Tariff and Non-tariff Trade Barriers* (1996); World Bank, *World Development Report 2000*; J. Michael Finger, Merlinda D. Ingco, and Ulrich Reincke, *Statistics on Tariff Concessions Given and Received* (1996); Judith M. Dean, Seema Desai, and James Riedel, *Trade Policy Reform in Developing Countries since 1985: A Review of the Evidence* (1994); GATT, *The Tokyo Round of Multilateral Trade Negotiations, Vol. II: Supplementary Report* (1979); UNCTAD, *Revitalizing Development, Growth and International Trade: Assessment and Policy Options* (1987); R. Erzan and K. Kuwahara, The Profile of Protection in Developing Countries, *UNCTAD Review* 1, 1 (1989): 29–49; and Inter-American Development Bank (data supplied to the authors).

**VI a iii** Compared to a uniform tariff, wide variation in tariff rates exerts a more restrictive impact on trade, and therefore on economic freedom. Thus, countries with greater variation in their tariff rates should be given lower ratings. The formula used to calculate the 0-to-10 ratings for this component was:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the standard deviation of the country's tariff rates. The values for  $V_{\min}$  and  $V_{\max}$  were set at 0% and 25%, respectively. This formula will allocate a rating of 10 to countries that impose a uniform tariff. As the standard deviation of tariff rates increases toward 25%, ratings decline toward 0. (Note that except for a few very extreme observations, the standard deviations of the tariff rates for the countries in our study fall within the range of 0% to 25%.)

Sources OECD, *Indicators of Tariff and Non-tariff Trade Barriers* (1996); World Bank, *1997 World Development Indicators CD-ROM*; Jang-Wha Lee and Phillip Swagel, *Trade Barriers and Trade Flows across Countries and Industries*, NBER Working Paper Series No. 4799 (1994); and Inter-American Development Bank (data supplied to the authors).

**VI b** Regression analysis was used to derive an expected size of the trade sector based on various structural and geographic characteristics. A basic description of the methodology can be found in chapter 3. The actual size of the trade sector was then compared with the expected size for the country. If the actual size of the trade sector is greater than expected, this figure will be positive. If it is less than expected, the number will be negative. The percent change of the negative numbers was adjusted to make it symmetrical with the percent change of the

- positive numbers. The following formula was used to place the figures on a 0-to-10 scale:  $(V_i - V_{\min}) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  is the country's actual value for the component.  $V_{\max}$  and  $V_{\min}$  were set at 100% and minus 50%, respectively. (Note that minus 50% is symmetrical with positive 100%.) This procedure allocates higher ratings to countries with large trade sectors compared to what would be expected, given their population, geographic size, and location. On the other hand, countries with small trade sectors relative to the expected size receive lower ratings.
- Sources World Bank, *World Development Indicators CD-ROM* (various editions); International Monetary Fund, *International Financial Statistics* (various issues); and Central Intelligence Agency, *1997 World Factbook*.
- VII a** Data on the percentage of bank deposits held in privately owned banks were used to construct rating intervals. Countries with larger shares of privately held deposits received higher ratings. When privately held deposits totaled between 95% and 100%, countries were given a rating of 10. When private deposits constituted between 75% and 95% of the total, a rating of 8 was assigned. When private deposits were between 40% and 75% of the total, the rating was 5. When private deposits totaled between 10% and 40%, countries received a rating of 2. A 0 rating was assigned when private deposits were 10% or less of the total.
- Sources Euromoney Publications, *The Telrate Bank Register* (various editions); World Bank, *Adjustment in Africa: Reforms, Results, and the Road Ahead* (1994); Price Waterhouse, *Doing Business in . . .* publication series; H.T. Patrick and Y.C. Park, eds., *The Financial Development of Japan, Korea, and Taiwan: Growth, Repression, and Liberalization* (1994); D.C. Cole and B.F. Slade, *Building a Modern Financial System: The Indonesian Experience* (1996); and information supplied by member institutes of the Economic Freedom Network.
- VII b** For this component, higher values are indicative of greater economic freedom. Thus, the formula used to derive the country ratings for this component was  $(V_i - V_{\min}) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  is the share of the country's total domestic credit allocated to the private sector.  $V_{\max}$  is the maximum value and  $V_{\min}$  the minimum value for the figure during the 1990 base year. Respectively, these figures were 99.9% and 0%. The formula allocates higher ratings as the share of credit extended to the private sector increases. A country's rating will be close to 10 when the private sector's share of domestic credit is near the base-year maximum (99.9%). A rating near 0 results when the private sector's share of credit is close to the base-year minimum (0%).
- Sources International Monetary Fund, *International Financial Statistics* (the 1997 yearbook and June 1998 monthly supplement) and *Statistical Yearbook of the Republic of China* (1996).
- VII c** Data on credit-market controls and regulations were used to construct rating intervals. Countries with interest rates determined by the market, stable monetary policy, and positive real deposit and lending rates received higher ratings. When interest rates were determined primarily by market forces and the real rates were positive, countries were given a rating of 10. When interest rates were primarily determined by the market but the real rates were sometimes slightly negative (less than 5%) or the differential between the deposit and lending rates was large (8% or more), countries received a rating of 8. When the real deposit or lending rate was persistently negative by a single-digit amount or the differential between them was regulated by the government, countries were rated at 6. When the deposit and lending rates were fixed by the government and the real rates were often negative by single-

digit amounts, countries were assigned a rating of 4. When the real deposit or lending rate was persistently negative by a double-digit amount, countries received a rating of 2. A rating of 0 was assigned when the deposit and lending rates were fixed by the government and real rates were persistently negative by double-digit amounts or hyperinflation had virtually eliminated the credit market.

Source International Monetary Fund, *International Financial Statistics Yearbook* (various issues, as well as the monthly supplements).

**VII d** Descriptive data on capital-market arrangements were used to place countries into rating categories. Countries with more restrictions on foreign capital transactions received lower ratings. When domestic investments by foreigners and foreign investments by citizens were unrestricted, countries were given a rating of 10. When these investments were restricted only in a few industries (e.g., banking, defence, and telecommunications), countries were assigned a rating of 8. When these investments were permitted but regulatory restrictions slowed the mobility of capital, countries were rated at 5. When either domestic investments by foreigners or foreign investments by citizens required approval from government authorities, countries received a rating of 2. A rating of 0 was assigned when both domestic investments by foreigners and foreign investments by citizens required government approval.

Sources International Monetary Fund, *Annual Report on Exchange Arrangements and Exchange Restrictions* (various issues) and Price Waterhouse, *Doing Business in . . .* publication series.



