

## Appendix 1: Explanatory Notes and Data Sources

### Area 1 Size of Government: Expenditures, Taxes, and Enterprises

#### A General government consumption spending as a percentage of total consumption

This component is measured as general government consumption spending as a percentage of total consumption. 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. The 1990 data were used to derive the maximum and minimum values for this component. Countries with a larger proportion of government expenditures received lower ratings. In contrast, as the ratio approaches the maximum value, the ratio moves toward zero. ♦ **Sources:** World Bank, *World Development Indicators* (various issues); International Monetary Fund, *International Financial Statistics* (various issues).

#### B Transfers and subsidies as a percentage of GDP

This component is measured as general government transfers and subsidies as a share of GDP. 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  $V_{\min}$  values are set at 37.2 and 0.5, respectively. The 1990 data were used to derive the maximum and minimum values for this component. 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 1990 benchmark year, the rating of the country will approach zero. ♦ **Sources:** International Monetary Fund, *Government Finance Statistics Yearbook* (various years); World Bank, *World Development Indicators* (various issues); International Monetary Fund, *International Financial Statistics* (various issues); Inter-American Development Bank, *Economic and Social Progress in Latin America*, 1994.

#### C Government enterprises and investment

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 zero-to-10 ratings. Countries with more government enterprises 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 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 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 40% and 50% of the total, countries were rated at 2. A rating of zero was assigned when the economy was dominated by SOEs and government investment exceeded 50% of total investment. ♦ **Sources:** International Monetary

Fund, *Government Finance Statistics Yearbook* (various issues); World Bank, *World Development Indicators* (various issues); International Monetary Fund, *International Finance Statistics* (various issues); International Institute of Management Development (IMD), *World Competitiveness Yearbook* (2007); 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); L. Bouten and M. Sumlinski, *Trends in Private Investment in Developing Countries: Statistics for 1970–1995*.

## D Top marginal tax rate

### i Top marginal income tax rate

Countries with higher marginal tax rates that take effect at lower income thresholds received lower ratings based on the matrix below. 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). These figures include sub-national rates if applicable.

### ii Top marginal income and payroll tax rates

Countries with higher marginal income and payroll (wage) tax rates that take effect at lower income thresholds received lower ratings based on the matrix below. 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). These figures include sub-national rates if applicable.

Top Marginal Tax Rate	Income Threshold at Which the Top Marginal Rate Applies (1982–1984 US\$)			
	< \$25,000	\$25,000– \$50,000	\$50,000– \$150,000	> \$150,000
< 20%	10	10	10	10
21%–25%	9	9	10	10
26%–30%	8	8	9	9
31%–35%	7	7	8	9
36%–40%	5	6	7	8
41%–45%	4	5	6	7
46%–50%	3	4	5	5
51%–55%	2	3	4	4
56%–60%	1	2	3	3
61%–65%	0	1	2	2
66%–70%	0	0	1	1
> 70%	0	0	0	0

**Sources:** PricewaterhouseCoopers, *Worldwide Tax Summaries Online*, <<http://www.pwc.com/extweb/pwcpublishations.nsf/docid/9B2B76032544964C8525717E00606CBD>>; PricewaterhouseCoopers, *Individual Taxes: A Worldwide Summary* (various issues).

## Area 2 Legal Structure and Security of Property Rights

**Note:** The ratings for Area 2 from 1970 to 1995 are the same as the Area V ratings from *Economic Freedom of the World: 2001 Annual Report*. Please see that report for methodological details.

### A Judicial independence

This component is from the *Global Competitiveness Report's* question: "Is the judiciary in your country independent from political influences of members of government, citizens, or firms? No—heavily influenced (= 1) or Yes—entirely independent (= 7)." The question's wording has varied slightly over the years. ♦ **Source:** World Economic Forum, *Global Competitiveness Report* (various issues), <<http://www.weforum.org/en/initiatives/gcp/index.htm>>.

### B Impartial courts

This component is from the *Global Competitiveness Report's* question: "The legal framework in your country for private businesses to settle disputes and challenge the legality of government actions and/or regulations is inefficient and subject to manipulation (= 1) or is efficient and follows a clear, neutral process (= 7)." The question's wording has varied slightly over the years. ♦ **Note:** The "Rule of Law" ratings from the World Bank's *Governance Indicators* Project have been used to fill in omitted countries in the primary data source since 1995. ♦ **Sources:** World Economic Forum, *Global Competitiveness Report* (various issues), <<http://www.weforum.org/en/initiatives/gcp/index.htm>>; World Bank, *Governance Indicators* (various years), <<http://www.worldbank.org/wbi/governance/govdata/>>.

### C Protection of property rights

This component is from the *Global Competitiveness Report's* question: "Property rights, including over financial assets are poorly defined and not protected by law (= 1) or are clearly defined and well protected by law (= 7)." ♦ **Note:** This replaces previous *Global Competitiveness Report* question on protection of intellectual property. ♦ **Source:** World Economic Forum, *Global Competitiveness Report* (various issues), <<http://www.weforum.org/en/initiatives/gcp/index.htm>>.

### D Military interference in rule of law and the political process

This component is based on the *International Country Risk Guide's* Political Risk Component G: Military in Politics: "A measure of the military's involvement in politics. Since the military is not elected, involvement, even at a peripheral level, diminishes democratic accountability. Military involvement might stem from an external or internal threat, be symptomatic of underlying difficulties, or be a full-scale military takeover. Over the long term, a system of military government will almost certainly diminish effective governmental functioning, become corrupt, and create an uneasy environment for foreign businesses." ♦ **Note:** The "Political Stability and Absence of Violence" ratings from the World Bank's *Governance Indicators* Project have been used to fill in omitted countries in the primary data source since 1995. ♦ **Sources:** PRS Group, *International Country Risk Guide* (various issues), <<http://www.prsgroup.com/ICRG.aspx>>; World Bank, *Governance Indicators* (various years), <<http://www.worldbank.org/wbi/governance/govdata/>>.

### E Integrity of the legal system

This component is based on the *International Country Risk Guide's* Political Risk Component I for Law and Order: "Two measures comprising one risk component. Each sub-component equals half of the total. The 'law' sub-component assesses the strength and impartiality of the legal system, and the 'order' sub-component assesses popular observance of the law." ♦ **Source:** PRS Group, *International Country Risk Guide* (various issues), <<http://www.prsgroup.com/ICRG.aspx>>.

## F Legal enforcement of contracts

This component is based on the World Bank's *Doing Business* estimates for the time and money required to collect a clear-cut debt. The debt is assumed to equal 200% of the country's per-capita income where the plaintiff has complied with the contract and judicial judgment is rendered in his favor. Zero-to-10 ratings were constructed for (1) the time cost (measured in number of calendar days required from the moment the lawsuit is filed until payment) and (2) the monetary cost of the case (measured as a percentage of the debt). These two ratings were then averaged to arrive at the final rating for this sub-component. The formula used to calculate the zero-to-10 ratings was:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the time or money cost value. The values for  $V_{\max}$  and  $V_{\min}$  were set at 725 days and 82.3% (1.5 standard deviations above average) and 62 days (1.5 standard deviations below average) and 0%, respectively. Countries with values outside of the  $V_{\max}$  and  $V_{\min}$  range received ratings of either zero or ten accordingly. ♦ **Source:** World Bank, *Doing Business* (various issues), <<http://www.doingbusiness.org/>>.

## G Regulatory restrictions on the sale of real property

This sub-component is based on the World Bank's *Doing Business* data on the time measured in days and monetary costs required to transfer ownership of property that includes land and a warehouse. Zero-to-10 ratings were constructed for (1) the time cost (measured in number of calendar days required to transfer ownership) and (2) the monetary cost of transferring ownership (measured as a percentage of the property value). These two ratings were then averaged to arrive at the final rating for this sub-component. The formula used to calculate the zero-to-10 ratings was:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the time or money cost value. The values for  $V_{\max}$  and  $V_{\min}$  were set at 265 days and 15% (1.5 standard deviations above average) and 0 days and 0%, respectively. Countries with values outside of the  $V_{\max}$  and  $V_{\min}$  range received ratings of either zero or ten accordingly. ♦ **Source:** World Bank, *Doing Business* (various issues), <<http://www.doingbusiness.org/>>.

## Area 3 Access to Sound Money

### A Money growth

This component measures the average annual growth of the money supply in the last five years minus average annual growth of real GDP in the last ten years. 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 ten years. The values for  $V_{\min}$  and  $V_{\max}$  were set at zero and 50%, respectively. Therefore, if the adjusted growth rate of the money supply during the last five years was zero, 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 increases toward 50%. When the adjusted annual money growth is equal to (or greater than) 50% a rating of zero results. ♦ **Sources:** World Bank, *World Development Indicators* (various issues); International Monetary Fund, *International Financial Statistics* (various issues).

### B Standard deviation of inflation

This component measures the standard deviation of the inflation rate over the last five years. Generally, the GDP deflator was used as the measure of inflation for this component. When these data were unavailable, the Consumer Price Index was used. The following formula was used to determine the zero-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 zero 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 zero as the standard deviation of the inflation rate approaches 25% annually. ♦ **Sources:** World Bank, *World Development Indicators* (various issues); International Monetary Fund, *International Financial Statistics* (various issues).

**C Inflation: Most recent year**

Generally, the Consumer Price Index was used as the measure of inflation for this component. When these data were unavailable, the GDP Deflator inflation rate was used. The zero-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 zero 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 zero. A zero rating is assigned to all countries with an inflation rate of 50% or more. ♦ **Sources:** World Bank, *World Development Indicators* (various issues); International Monetary Fund, *International Financial Statistics* (various issues).

**D Freedom to own foreign currency bank accounts**

When foreign currency bank accounts are permissible without restrictions both domestically and abroad, the rating is 10; when these accounts are restricted, the rating is zero. If foreign currency bank accounts are permissible domestically but not abroad (or vice versa), the rating is 5. ♦ **Sources:** International Monetary Fund, *Annual Report on Exchange Arrangements and Exchange Restrictions* (various issues); Currency Data and Intelligence, Inc., *World Currency Yearbook* (various issues).

**Area 4 Freedom to Trade Internationally****A Taxes on international trade****i Revenue from taxes on international trade as a percentage of exports and imports**

This sub-component measures the amount of taxes on international trade as a share of exports and imports. The formula used to calculate the ratings for this sub-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 zero 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 zero. (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 zero to 15% range.) ♦ **Sources:** International Monetary Fund, *Government Finance Statistics Yearbook* (various issues); International Monetary Fund, *International Financial Statistics* (various issues).

**ii Mean tariff rate**

This sub-component is based on the unweighted mean of tariff rates. The formula used to calculate the zero-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 zero as the mean tariff rate approaches 50%. (Note that except for two or three extreme observations, all countries have mean tariff rates within this range from 0% to 50%.) ♦ **Sources:** World Trade Organization/International Trade Centre/United Nations Conference on Trade and Development, *World Tariff Profiles 2006*; World Bank, *World Development Indicators* (various issues); Organisation for Economic Co-operation and Development, *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; Inter-American Development Bank (data supplied to the authors).

## iii Standard deviation of tariff rates

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 zero-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 zero. (Note that except for a few very extreme observations, the standard deviations of the tariff rates for the countries in our study fall within this 0% to 25% range.) ♦ **Sources:** World Trade Organization/International Trade Centre/United Nations Conference on Trade and Development, *World Tariff Profiles 2006*; World Bank, *World Development Indicators* (various issues); Organisation for Economic Co-operation and Development, *Indicators of Tariff and Non-tariff Trade Barriers* (1996); Jang-Wha Lee and Phillip Swagel, *Trade Barriers and Trade Flows across Countries and Industries* (NBER Working Paper Series No. 4799, 1994); Inter-American Development Bank (data supplied to the authors).

## B Regulatory Trade Barriers

## i Non-tariff trade barriers

This sub-component is based on the *Global Competitiveness Report's* survey question: "In your country, tariff and non-tariff barriers significantly reduce the ability of imported goods to compete in the domestic market." The question's wording has varied slightly over the years. ♦ **Source:** World Economic Forum, *Global Competitiveness Report* (various issues), <<http://www.weforum.org/en/initiatives/gcp/index.htm>>.

## ii Compliance cost of importing and exporting

This sub-component is based on the World Bank's *Doing Business* data on the time (i.e., non money) cost of procedures required to import a full, 20-foot container of dry goods that contains no hazardous or military items. Countries where it takes longer to export or import are given lower ratings. Zero-to-10 ratings were constructed for (1) the time cost to export a good (measured in number of calendar days required) and (2) the time cost to import a good (measured in number of calendar days required). These two ratings were then averaged to arrive at the final rating for this sub-component. The formula used to calculate the zero-to-10 ratings was:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the time cost value. The values for  $V_{\max}$  and  $V_{\min}$  were set at 62 and 80 days (1.5 standard deviations above average) and 2 days (1.5 standard deviations below average) and 0 days, respectively. Countries with values outside of the  $V_{\max}$  and  $V_{\min}$  range received ratings of either zero or ten, accordingly. ♦ **Note:** In previous years, this component was based on the World Economic Forum's *Global Competitiveness Report* (various issues) survey question, "Costs of importing—the combined effect of import tariffs, license fees, bank fees, and the time required for administrative red-tape raises costs of importing equipment (by 10% or less = score of 10; by more than 50% = score of 0)." ♦ **Source:** World Bank, *Doing Business* (various issues), <<http://www.doingbusiness.org/>>.

## C Size of the trade sector relative to expected

Regression analysis was used to derive an expected size of the trade sector based on the population and geographic size of the country and its location relative to the concentration of world GDP. 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 zero-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. A short paper providing additional details is available on the website: <<http://www.freetheworld.com/2004/TradeSectorMethodology.pdf>>. ♦ **Sources:** World Bank, *World Development Indicators* (various issues); International Monetary Fund, *International Financial Statistics* (various issues); Central Intelligence Agency, *1997 World Factbook*.

#### D Black-market exchange rates

This component is based on the percentage difference between the official and the parallel (black) market exchange rate. The formula used to calculate the zero-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 zero as the black-market premium increases toward 50%. A zero rating is given when the black market premium is equal to, or greater than, 50%. ♦ **Sources:** Monetary Research Institute, *MRI Bankers' Guide to Foreign Currency* (various issues), <<http://www.mriguide.com/>>; World Bank, *World Development Indicators* (various issues); Currency Data and Intelligence, Inc., *World Currency Yearbook* (various issues of the yearbook and the monthly report supplement); International Monetary Fund, *International Financial Statistics* (various issues).

#### E International capital market controls

##### i Foreign ownership/investment restrictions

This sub-component is based on the following two questions in the *Global Competitiveness Report*: "Foreign ownership of companies in your country is rare, limited to minority stakes and often prohibited in key sectors (= 1) or prevalent and encouraged (= 7)"; and "In your country, rules governing foreign direct investment are damaging and discourage foreign direct investment (= 1) or beneficial and encourage foreign direct investment (= 7)." ♦ **Source:** World Economic Forum, *Global Competitiveness Report* (various issues), <<http://www.weforum.org/en/initiatives/gcp/index.htm>>.

##### ii Capital controls

The International Monetary Fund reports on up to 13 different types of international capital controls. The zero-to-10 rating is the percentage of capital controls not levied as a share of the total number of capital controls listed multiplied by 10. ♦ **Source:** International Monetary Fund, *Annual Report on Exchange Arrangements and Exchange Restrictions* (various issues).

### Area 5 Regulation of Credit, Labor, and Business

#### A Credit market regulations

##### i Ownership of banks

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 zero rating was assigned when private deposits were 10% or less of the total. ♦ **Sources:** James R. Barth, Gerard Caprio, Jr., and Ross Levine, *World Bank Regulation Survey III, 2007*; *World Bank Survey of Bank Regulation and Supervision*, <[http://www.worldbank.org/research/interest/2003\\_bank\\_survey/2003\\_bank\\_regulation\\_database.htm](http://www.worldbank.org/research/interest/2003_bank_survey/2003_bank_regulation_database.htm)>.

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); information supplied by member institutes of the Economic Freedom Network.

ii Foreign bank competition

Beginning with the 2007 report, data on foreign bank assets were used to update some countries data.

Foreign bank assets as a share of total banking sector assets	80% – 100%	10
	40% – 79%	9
	0% – 39%	8

In editions of *Economic Freedom of the World* published from 2004 to 2006, data on both the denial rate of foreign bank license applications and on foreign bank assets were used to update some countries' data. In earlier years, this component was based on a survey question, which has since been discontinued, from the World Economic Forum's *Global Competitiveness Report*. ♦ **Sources:** James R. Barth, Gerard Caprio, Jr., and Ross Levine, *World Bank Regulation Survey III*, 2007; *World Bank Survey of Bank Regulation and Supervision*, <[http://www.worldbank.org/research/interest/2003\\_bank\\_survey/2003\\_bank\\_regulation\\_database.htm](http://www.worldbank.org/research/interest/2003_bank_survey/2003_bank_regulation_database.htm)>; World Economic Forum, *Global Competitiveness Report* (2001).

iii Private sector credit

This sub-component is based on the percentage of domestic credit consumed by the private sector. For this component, higher values are indicative of greater economic freedom. Thus, the formula used to derive the country ratings for this sub-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 and the values for  $V_{\max}$  and  $V_{\min}$  are set at 99.9% and 10.0%, respectively. The 1990 data were used to derive the maximum and minimum values for this component. 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 zero results when the private sector's share of credit is close to the base-year minimum (10.0%). ♦ **Source:** International Monetary Fund, *International Financial Statistics* (various issues).

iv Interest rate controls/negative real interest rates

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 market-determined 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 zero rating 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* (various issues).

## B Labor market regulations

### i Minimum wage

This sub-component is based on the World Bank's *Doing Business* data for the ratio of mandated minimum wage to the average value added per worker, an unpublished component that is part of the "Difficulty of Hiring Index". Countries with higher mandated minimum wages relative to average value added per worker are given lower ratings. The formula used to calculate the zero-to-10 ratings for this sub-component was:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the ratio between minimum wage and average value added per worker. The values for  $V_{\max}$  and  $V_{\min}$  were set at 79% (1.5 standard deviations above average) and 0, respectively. Countries where the minimum wage was more than 79% of the average value added per worker were given a rating of zero. Countries with values outside of the  $V_{\max}$  and  $V_{\min}$  range received ratings of either zero or ten accordingly. ♦ **Note:** In earlier reports, this component was based on two survey responses obtained from the World Economic Forum's *Global Competitiveness Report* (various issues). The first question asked about the overall "impact of the minimum wage." The second question asked about the strength of enforcement of the minimum wage law. Countries received higher ratings if the survey respondents indicated the minimum wage had a small impact and/or was not strongly enforced. Countries received lower ratings if the impact was deemed to be great and/or if the law was strongly enforced. ♦ **Source:** World Bank, *Doing Business* (various issues), <<http://www.doingbusiness.org/>>.

### ii Hiring and firing regulations

This sub-component is based on the *Global Competitiveness Report's* question: "The hiring and firing of workers is impeded by regulations (= 1) or flexibly determined by employers (= 7)." The question's wording has varied slightly over the years. ♦ **Source:** World Economic Forum, *Global Competitiveness Report* (various issues), <<http://www.weforum.org/en/initiatives/gcp/index.htm>>.

### iii Centralized collective bargaining

This sub-component is based on the *Global Competitiveness Report's* question: "Wages in your country are set by a centralized bargaining process (= 1) or up to each individual company (= 7)." The question's wording has varied slightly over the years. ♦ **Source:** World Economic Forum, *Global Competitiveness Report* (various issues), <<http://www.weforum.org/en/initiatives/gcp/index.htm>>.

### iv Mandated cost of hiring

This sub-component is based on the World Bank's *Doing Business* data on the cost of all social security and payroll taxes and the cost of other mandated benefits including those for retirement, sickness, health care, maternity leave, family allowance, and paid vacations and holidays associated with hiring an employee. The formula used to calculate the zero-to-10 ratings was:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the hiring cost (measured as a percentage of salary). The values for  $V_{\max}$  and  $V_{\min}$  were set at 33% (1.5 standard deviations above average) and 0%, respectively. Countries with values outside of the  $V_{\max}$  and  $V_{\min}$  range received ratings of either zero or 10 accordingly. ♦ **Source:** World Bank, *Doing Business* (various issues), <<http://www.doingbusiness.org/>>.

### v Mandated cost of worker dismissal

This sub-component is based on the World Bank's *Doing Business* data on the cost of the advance notice requirements, severance payments, and penalties due when dismissing a redundant worker. The formula used to calculate the zero-to-10 ratings was:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the dismissal cost (measured in weeks of wages). The values for  $V_{\max}$  and  $V_{\min}$  were set at 108 weeks (1.5 standard deviations above average) and zero weeks, respectively. Countries with values outside of the  $V_{\max}$  and  $V_{\min}$  range received ratings of either zero or 10 accordingly. ♦ **Source:** World Bank, *Doing Business* (various issues), <<http://www.doingbusiness.org/>>.

## vi Conscription

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 zero. ♦ **Source:** International Institute for Strategic Studies, *The Military Balance* (various issues); War Resisters International, *Refusing to Bear Arms: A World Survey of Conscription and Conscientious Objection to Military Service*, <<http://www.wri-irg.org/co/rtba/index.html>>.

## C Business Regulations

## i Price controls

The more widespread the use of price controls, the lower the rating. The survey data of the International Institute for Management Development's (IMD) *World Competitiveness Yearbook* (various editions) were used to rate the 46 countries (mostly developed economies) covered by this report. For other countries, 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 zero was given when there was widespread use of price controls throughout various sectors of the economy. ♦ **Sources:** International Institute for Management Development (IMD), *World Competitiveness Yearbook* (various issues); Price Waterhouse, *Doing Business In ...* publication series; World Bank, *Adjustment in Africa: Reforms, Results, and the Road Ahead* (1994); Economist Intelligence Unit, *EIU Country Reports and Country Commerce*, 2001; US State Department, *Country Commercial Guides and Country Reports on Economic Policy and Trade Practices* (various years).

## ii Administrative requirements

This sub-component is based on the *Global Competitiveness Report's* question: "Complying with administrative requirements (permits, regulations, reporting) issued by the government in your country is (1 = burdensome, 7 = not burdensome)." The question's wording has varied slightly over the years. ♦ **Source:** World Economic Forum, *Global Competitiveness Report* (various issues), <http://www.weforum.org/en/initiatives/gcp/index.htm>.

## iii Bureaucracy costs

This sub-component is based on the *Global Competitiveness Report's* question: "How much time does your firm's senior management spend dealing/negotiating with government officials (as a percentage of work time)?" The question's wording has varied slightly over the years. ♦ **Source:** World Economic Forum, *Global Competitiveness Report* (various issues), <<http://www.weforum.org/en/initiatives/gcp/index.htm>>.

## iv Starting a business

This sub-component is based on the World Bank's *Doing Business* data on the amount of time and money it takes to start a new limited-liability business. Countries where it takes longer or is more costly to start a new business are given lower ratings. Zero-to-10 ratings were constructed for three different variables: (1) time (measured in days) necessary to comply with regulations when starting a limited liability company, (2) money costs of the fees paid to regulatory authorities (measured as a share of per-capita income) and (3) minimum capital requirements, i.e., funds that must be deposited into company bank account (measured as a share of per-capita income). These three ratings were then averaged to arrive at the final rating for this sub-component. The

formula used to calculate the zero-to-10 ratings was:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the variable value. The values for  $V_{\max}$  and  $V_{\min}$  were set at 104 days, 317%, and 1,017% (1.5 standard deviations above average) and 0 days, 0%, and 0%, respectively. Countries with values outside of the  $V_{\max}$  and  $V_{\min}$  range received ratings of either zero or 10 accordingly. ♦ **Note:** In previous years, this component was based on the survey question in the World Economic Forum's *Global Competitiveness Report* (various issues): "Starting a new business—starting a new business is generally easy." ♦ **Source:** World Bank, *Doing Business* (various issues), <<http://www.doingbusiness.org/>>.

v Extra payments/bribes

This sub-component is based on the *Global Competitiveness Report's* question: "In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with the following: A— Import and export permits; B— Connection to public utilities (e.g., telephone or electricity); C— Annual tax payments; D— Awarding of public contracts (investment projects); E— Getting favourable judicial decisions. Common (= 1) Never occur (= 7)." The question's wording has varied slightly over the years. ♦ **Source:** World Economic Forum, *Global Competitiveness Report* (various issues), <<http://www.weforum.org/en/initiatives/gcp/index.htm>>.

vi Licensing restrictions

This sub-component is based on the World Bank's *Doing Business* data on the time in days and monetary costs required to obtain a license to construct a standard warehouse. Zero-to-10 ratings were constructed for (1) the time cost (measured in number of calendar days required to obtain a license) and (2) the monetary cost of obtaining the license (measured as a share of per-capita income). These two ratings were then averaged to arrive at the final rating for this sub-component. The formula used to calculate the zero-to-10 ratings was:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the time or money cost value. The values for  $V_{\max}$  and  $V_{\min}$  were set at 363 days and 2,763% (1.5 standard deviations above average) and 56 days (1.5 standard deviations below average) and 0%, respectively. Countries with values outside of the  $V_{\max}$  and  $V_{\min}$  range received ratings of either zero or 10 accordingly. ♦ **Source:** World Bank, *Doing Business* (various issues), <<http://www.doingbusiness.org/>>.

vii Cost of tax compliance

This sub-component is based on the World Bank's *Doing Business* data on the time required per year for a business to prepare, file, and pay taxes on corporate income, value added or sales taxes, and taxes on labor. The formula used to calculate the zero-to-10 ratings was:  $(V_{\max} - V_i) / (V_{\max} - V_{\min})$  multiplied by 10.  $V_i$  represents the time cost (measured in hours) of tax compliance. The values for  $V_{\max}$  and  $V_{\min}$  were set at 892 hours (1.5 standard deviations above average) and 0 hours, respectively. Countries with values outside of the  $V_{\max}$  and  $V_{\min}$  range received ratings of either zero or 10 accordingly. ♦ **Source:** World Bank, *Doing Business* (various issues), <<http://www.doingbusiness.org/>>.

