

Appendix

Explanatory Notes and Data Sources

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

A General government consumption spending

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); United Nations National Accounts.

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); United Nations National Accounts.

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. In some cases, this rating was estimated from the *Global Competitiveness Report* questions: "State-owned enterprises in your country: (1 = Play a dominant role in the economy ; 7 = Have

little or no role in the economy)”, and “State-owned enterprises in your country: (1 = Are heavily favoured over private sector competitors ; 7 = Compete on an equal basis with the private sector)” • **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); World Economic Forum, *Global Competitiveness Report* (various issues); United Nations National Accounts; European Bank for Reconstruction and Development, Transition Indicators.

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* 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. All variables from the *Global Competitiveness Report* were converted from the original 1-to-7 scale to a 0-to-10 scale using this formula: $EFW_i = ((GCR_i - 1) \div 6) \times 10$. • **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* 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 countries omitted 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/>>.

Area V ratings from *Economic Freedom of the World: 2001 Annual Report*

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 zero 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).

C Protection of property rights

This component is from the *Global Competitiveness Report* 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*, 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 countries omitted 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*, 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 the range marked off by V_{\max} and V_{\min} 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 the range marked off by V_{\max} and V_{\min} 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

The 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 growth in the money supply 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); United Nations National Accounts.

B Standard deviation of inflation

The 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 CPI 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 were permissible without restrictions both domestically and abroad, the rating was 10; when these accounts were restricted, the rating was zero. If foreign currency bank accounts were permissible domestically but not abroad (or vice versa), the rating was 5. • **Source** International Monetary Fund, *Annual Report on Exchange Arrangements and Exchange Restrictions* (various issues).

Area 4: Freedom to Trade Internationally

A Taxes on international trade

i International trade tax revenues (% of trade sector)

This sub-component measures the amount paid in 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** 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** Except for two or three extreme observations, all countries have mean tariff rates within this range from 0% to 50%.) • **Sources** World Trade Organization, *World Tariff Profiles* (various issues).

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** 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.) • **Source** World Trade Organization, *World Tariff Profiles* (various issues).

B Regulatory Trade Barriers

i Non-tariff trade barriers

This sub-component is based on the *Global Competitiveness Report* 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 export or 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 (export) and 80 (import) days (1.5 standard deviations above average) and 2 (export) days (1.5 standard deviations below average) and 0 (import) days. 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/>.

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** 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. Additional details are available in the short paper: Joshua C. Hall, Robert Lawson, and Chuck Skipton, Estimating the Size of the Trade Sector in the Economic Freedom of the World Index, *Economics Bulletin* 31, 1 (2011): 466–72; <<http://www.accessecon.com/Pubs/EB/2011/Volume31/EB-11-V31-I1-P45.pdf>> • **Sources** World Bank, *World Development Indicators* (various issues); International Monetary Fund, *International Financial Statistics* (various issues); United Nations National Accounts.

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; that is, 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** *MRI Bankers' Guide to Foreign Currency* (various issues).

E International capital market controls

i Foreign ownership/investment restrictions

This sub-component is based on the following two *Global Competitiveness Report* questions: "How prevalent is foreign ownership of companies in your country? 1 = Very rare, 7 = Highly prevalent"; and "How restrictive are regulations in your country relating to international capital flows? 1 = Highly restrictive, 7 = Not restrictive at all". • **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 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, *Bank Regulation and Supervision* (various years); James R. Barth, Gerard Caprio, and Ross Levine, *Rethinking Bank Regulation: Till Angels Govern* (2006).

ii Foreign bank competition

If a country approved all or most foreign bank applications and if foreign banks had a large share of the banking sector assets, then the country received a higher rating according to table below.

Foreign Bank License Denial Rate (Denials/Applications)

		0%	0%–49%	50%–100%
Foreign bank assets as a share of total banking sector assets	80%–100%	10	8	5
	40%–79%	9	7	4
	0%–39%	8	6	3

Sources James R. Barth, Gerard Caprio, Jr. and Ross Levine, *Bank Regulation and Supervision* (various years); James R. Barth, Gerard Caprio, and Ross Levine, *Rethinking Bank Regulation: Till Angels Govern* (2006).

iii Private sector credit

This sub-component measures the extent to which government borrowing crowds out private borrowing. If data are available, this sub-component is calculated as the government fiscal deficit as a share of gross saving. Since the deficit is expressed as a negative value, higher numerical values result in higher ratings. The formula used to derive the country ratings for this sub-component was $(-V_{\max} - V_i) / (V_{\max} + V_{\min})$ multiplied by 10. V_i is the ratio of deficit to gross investment, and the values for V_{\max} and V_{\min} are set at 0 and -100.0% respectively. The formula allocates higher ratings as the deficit gets smaller (i.e., closer to zero) relative to gross saving. If the deficit data are not available, this sub-component is instead based on the share of private credit to total credit extended in the banking sector. 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. • **Note** In previous editions, this component was based only on the ratio of private credit to total credit in the banking sector. The database has been updated back to 1990 using this new methodology. • **Sources** World Bank, *World Development Indicators* (various issues); 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** World Bank, *World Development Indicators* (various issues); International Monetary Fund, *International Financial Statistics* (various issues).

B Labor market regulations

i Hiring regulations and minimum wage

This sub-component is based on the World Bank's *Doing Business* Difficulty of Hiring Index, which is described as follows: "The difficulty of hiring index measures (i) whether fixed-term contracts are prohibited for permanent tasks; (ii) the maximum cumulative duration of fixed-term contracts; and (iii) the ratio of the minimum wage for a trainee or first-time employee to the average value added per worker. An economy is assigned a score of 1 if fixed-term contracts are prohibited for permanent tasks and a score of 0 if they can be used for any task. A score of 1 is assigned if the maximum cumulative duration of fixed-term contracts is less than 3 years; 0.5 if it is 3 years or more but less than 5 years; and 0 if fixed-term contracts can last 5 years or more. Finally, a score of 1 is assigned if the ratio of the minimum wage to the average value added per worker is 0.75 or more; 0.67 for a ratio of 0.50 or more but less than 0.75; 0.33 for a ratio of 0.25 or more but less than 0.50; and 0 for a ratio of less than 0.25." Countries with higher difficulty of hiring are given lower ratings. • **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* 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* 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 Hours regulations

This sub-component is based on the World Bank's *Doing Business* Rigidity of Hours Index, which is described as follows: "The rigidity of hours index has 5 components: (i) whether there are restrictions on night work; (ii) whether there are restrictions on weekly holiday work; (iii) whether the work week can consist of 5.5 days; (iv) whether the work week can extend to 50 hours or more (including overtime) for 2 months a year to respond to a seasonal increase in production; and (v) whether paid annual vacation is 21 working days or fewer. For questions (i) and (ii), when restrictions other than premiums apply, a score of 1 is given. If the only restriction is a premium for night work and weekly holiday work, a score of 0, 0.33, 0.66 or 1 is given according to the quartile in which the economy's premium falls. If there are no restrictions, the economy receives a score of 0. For questions (iii), (iv) and (v), when the answer is no, a score of 1 is assigned; otherwise a score of 0 is assigned." • **Note** This component was previously called "Mandated cost of hiring a worker" and was 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. Because of pressure from the International Labour Organization, this measure was dropped from the *Doing Business* project. In order to maintain as much consistency over time as possible, we have revised the dataset back to 2002 with these data replacing the previous values. • **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 0 weeks, respectively. Countries with values outside the range marked off by V_{\max} and V_{\min} received ratings of either zero or ten, 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. If conscription was present, but apparently not strictly enforced or the length of service could not be determined, the country was given a rating of 3. In cases where it is clear conscription is never used, even though it may be possible, a rating of 10 is given. If a country's mandated national service includes clear non-military options, the country was given a rating of 5. • **Source** International Institute for Strategic Studies, *The Military Balance* (various issues); War Resisters International, *World Survey of Conscription and Conscientious Objection to Military Service*, <http://www.wri-irg.org/programmes/world_survey/>.

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 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), European Bank for Reconstruction and Development, *Transition Indicators*.

ii Administrative requirements

This sub-component is based on the *Global Competitiveness Report* question: "Complying with administrative requirements (permits, regulations, reporting) issued by the government in your country is (1 = burdensome, 7 = not burdensome)." • **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* question: “Standards on product/service quality, energy and other regulations (outside environmental regulations) in your country are: (1 = Lax or non-existent, 7 = among the world’s most stringent)”. • **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, that is, funds that must be deposited into a 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 1017% (1.5 standard deviations above average) and 0 days, 0%, and 0%, respectively. Countries with values outside the range marked off by V_{\max} and V_{\min} received ratings of either zero or 10, accordingly. • **Source** World Bank, *Doing Business* (various issues), <<http://www.doingbusiness.org/>>.

v Extra payments/bribes/favoritism

This sub-component is based on the *Global Competitiveness Report* questions. [1] “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)”? [2] “Do illegal payments aimed at influencing government policies, laws or regulations have an impact on companies in your country: 1 = Yes, significant negative impact, 7 = No, no impact at all”? [3] “To what extent do government officials in your country show favouritism to well-connected firms and individuals when deciding upon policies and contracts: 1 = Always show favouritism, 7 = Never show favouritism”? • **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 2763% (1.5 standard deviations above average) and 56 days (1.5 standard deviations below average) and 0%, respectively. Countries with values outside the range marked off by V_{\max} and V_{\min} received ratings of either zero or ten, 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 the range marked off by V_{\max} and V_{\min} received ratings of either zero or ten, accordingly. • **Source** World Bank, *Doing Business* (various issues), <<http://www.doingbusiness.org/>>.

About the Authors

James D. Gwartney

James Gwartney holds the Gus A. Stavros Eminent Scholar Chair at Florida State University, where he directs the Stavros Center for the Advancement of Free Enterprise and Economic Education. He is the coauthor of *Economics: Private and Public Choice* (Cengage/South-Western Press, 2011), a widely used principles of economics text that is now in its 13th edition. He is also coauthor of an economics primer, *Common Sense Economics: What Everyone Should Know about Wealth and Prosperity* (St. Martin's Press, 2010). His publications have appeared in both professional journals and popular media such as the *Wall Street Journal* and the *New York Times*. He served as Chief Economist of the Joint Economic Committee of the US Congress during 1999/2000. In 2004, he was the recipient of the Adam Smith Award of the Association of Private Enterprise Education for his contribution to the advancement of free-market ideals. He is a past President of the Southern Economic Association and the Association of Private Enterprise Education. His Ph.D. in economics is from the University of Washington.

Robert A. Lawson

Robert Lawson is the Jerome M. Fullinwider Chair in Economic Freedom in the O'Neil Center for Global Markets and Freedom in the Cox School of Business at Southern Methodist University. Prior to taking a position at SMU, he taught at Auburn University, Capital University, and Shawnee State University. Lawson has numerous professional publications in journals such as *Public Choice*, *Journal of Economic Behavior and Organization*, *Cato Journal*, *Kyklos*, *Journal of Labor Research*, *Journal of Institutional and Theoretical Economics*, and *European Journal of Political Economy*. Lawson has served as president of the Association of Private Enterprise Education and is a member of the Mont Pelerin Society. He earned his B.S. in economics from the Honors Tutorial College at Ohio University and his M.S. and Ph.D. in economics from Florida State University.

Joshua C. Hall

Joshua C. Hall is an assistant professor in the Department of Economics and Management at Beloit College in Beloit, Wisconsin. He earned his B.A. and M.A. in economics from Ohio University and his Ph.D. from West Virginia University. Formerly an economist for the Joint Economic Committee of the US Congress, he has published numerous policy studies and professional publications. Professor Hall's research has appeared in journals such as the *Atlantic Economic Journal*, *Cato Journal*, *Journal of Economic Behavior and Organization*, *Journal of Economic Education*, *Journal of Labor Research*, *Southern Economic Journal*, and *Public Finance Review*.

About the Contributors

Jean-Pierre Chauffour

Jean-Pierre Chauffour is lead economist in the World Bank's Middle East and North Africa Region, where he works on regionalism, competitiveness, and economic integration issues. Prior to joining the World Bank in 2007, he spent 15 years at the IMF, where he held various positions, including mission chief in the African Department and representative to the WTO and United Nations in Geneva. Mr. Chauffour has extensive economic policy experience and has worked in many areas of the developing world, most extensively in the Middle East, Africa, and Eastern Europe. He holds a master in economics and a master in money, banking, and finance from the Panthéon-Sorbonne University in Paris. He is the author of *The Power of Freedom: Uniting Human Rights and Development* (Cato Institute, 2009) and has recently co-edited two books: *Preferential Trade Agreement Policies for Development: A Handbook* (World Bank, 2011) and *Trade Finance during the Great Trade Collapse* (World Bank, 2011).

Michael Stroup

Michael Stroup is currently a professor of economics at Stephen F. Austin State University (SFASU), where he has also served as Associate Dean of the Rusche College of Business and the Director of the MBA program. He earned his Ph.D. in economics from Florida State University, his M.A. in economics from the University of Washington, and his B.S. in Economics from Montana State University. Professor Stroup has written many articles in scholarly journals, such as *Public Choice*, *Journal of Economic Behavior and Organization*, *Kyklos*, *World Development*, *Journal of Applied Economics*, *Journal of Economics and Finance*, *Applied Financial Economics*, and *Economics Letters*. His latest research focuses on using international panel data to quantify the beneficial impact that economic and political freedoms have on various non-monetary measures of individual well-being in society, particularly in the areas of health, education, women's well-being and the environment. While at SFASU, Professor Stroup taught both undergraduate and graduate economics courses, co-authored two instructor's manuals for Michael Parkin's highly successful principles of economics textbook, and earned teaching excellence and research excellence awards.

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James Gwartney, Robert Lawson & Joshua Hall