

Appendix Explanatory Notes and Data Sources

Area 1 Size of Government

A Government 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); United Nations National Accounts.

B Transfers and subsidies

This component is measured as general government transfers and subsidies as a percentage 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 government investment was generally less than 15% of total investment, countries were given a rating of 10. When government investment was between 15% and 20% of the total, countries received a rating of 8. When government investment was between 20% and 25% of the total, countries were rated at 7. When government investment was between 25% and 30% of the total, countries were assigned a rating of 6. When government investment was generally between 30% and 40% of the total, countries received a rating of 4. When government investment was between 40% and 50% of the total, countries were rated at 2. A rating of zero was assigned when government investment exceeded 50% of total investment.

In cases where government investment data were unavailable we used qualitative data on the scope of SOEs to assign ratings. Also, 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.

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

	Income Threshold at Which the Top Marginal Rate Applies (1982/1984 US\$)			
	< \$25,000	\$25,000 – \$50,000	\$50,000 – \$150,000	> \$150,000
Top Marginal Tax Rate				
< 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

Area 2 Legal System and 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 *Worldwide Governance Indicators* have been used to fill in country omissions in the primary data source since 1995.

Source World Economic Forum, *Global Competitiveness Report* (various issues), <<http://www.weforum.org/en/initiatives/gcp/index.htm>>; World Bank, *Worldwide Governance Indicators* (various years), <<http://info.worldbank.org/governance/wgi/index.asp>>.

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 a 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 politics

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 *Worldwide Governance Indicators* Project have been used to fill in country omissions in the primary data source since 1995.

Sources PRS Group, *International Country Risk Guide* (various issues), <<http://www.prgroup.com/ICRG.aspx>>; World Bank, *Worldwide Governance Indicators* (various years), <<http://info.worldbank.org/governance/wgi/index.asp>>.

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.prgroup.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 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/>>.

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 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/>>.

H Reliability of police

This component is from the *Global Competitiveness Report* question: "To what extent can police services be relied upon to enforce law and order in your country? (1 = Cannot be relied upon at all; 7 = Can be completely relied upon)."

Source World Economic Forum, *Global Competitiveness Report* (various issues), <<http://www.weforum.org/en/initiatives/gcp/index.htm>>.

I Business costs of crime

This component is from the *Global Competitiveness Report* question: "To what extent does the incidence of crime and violence impose costs on businesses in your country? (1 = To a great extent; 7 = Not at all)."

Source World Economic Forum, *Global Competitiveness Report* (various issues), <<http://www.weforum.org/en/initiatives/gcp/index.htm>>.

Area 3 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 of 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.

Sources International Monetary Fund, *Annual Report on Exchange Arrangements and Exchange Restrictions* (various issues).

Area 4 Freedom to Trade Internationally

A Tariffs

i Revenue from trade taxes (% of trade sector)

This sub-component measures the amount of tax 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 0%-to-50% range.)

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 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, *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 costs 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 import and export 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 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 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).

D Controls of the movement of capital and people

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).

iii Freedom of foreigners to visit

This component measures the percentage of countries for which this country requires a visa from foreign visitors. It reflects the freedom of foreigners to travel to this country for tourist and short-term business purposes. The formula used to calculate the zero-to-10 ratings was: $(V_i - V_{\min}) / (V_{\max} - V_{\min})$ multiplied by 10. V_i represents the component value. The values for V_{\max} and V_{\min} were set at 47.2 (1 standard deviation above average) and 0. Countries with values outside the V_{\max} and V_{\min} range received ratings of either zero or ten accordingly.

Source Robert Lawson and Jayme Lemke, *Travel Visas*, *Public Choice* (2011), <<http://www.springerlink.com/content/n0n2x00164v74123/>>.

Area 5 Regulation

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 Private sector credit

This sub-component measures the extent to which government borrowing crowds out private borrowing. If 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 deficit to gross investment ratio, 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, the 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).

iii 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.” Countries with less rigid work rules receive better scores in this component.

Source World Bank, *Doing Business* (various issues), <<http://www.doingbusiness.org/>>.

Note This component was previously denoted “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 recent years, the entire labor market area has been dropped from the *Doing Business* project; however, they continue to present the data in a separate section. 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.

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 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/>>.

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 *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>>.

ii *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>>.

iii *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 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/>>.

iv *Extra payments/bribes/favoritism*

This sub-component is based on the *Global Competitiveness Report* questions: “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 favorable judicial decisions. Common (= 1) Never occur (= 7)”; “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”; and “To what extent do government officials in your country show favoritism to well-connected firms and individuals when deciding upon policies and contracts? 1 = Always show favoritism, 7 = Never show favoritism.”

Source World Economic Forum, *Global Competitiveness Report* (various issues), <<http://www.weforum.org/en/initiatives/gcp/index.htm>>.

v *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 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 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 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/>>.