

Technical Notes and Sources

The data in this *Report* represent the best available estimates from various national authorities, international agencies, and private sources at the time the *Report* was prepared. It is possible that some data will have been revised or updated by the sources after publication. The following notes provide sources for all the indicators listed in the Economy Profiles. The title of each indicator appears on the first line, preceded by its number to allow for quick reference. The numbering is consistent with the one adopted in Appendix A. Below is a description of each indicator or, in the case of Executive Opinion Survey data, the full question and associated answers. If necessary, additional information is provided underneath.

In this year's edition, missing values and reported values older than 2007 have been estimated by the authors for the purpose of calculating the Global Competitiveness Index. Depending on data availability, these values have been imputed by using either a multivariate linear regression or income-regional group means. The multivariate linear regression method substitutes missing values by the predicted values obtained from estimating a regression. The dependent variable of the regression is the indicator hosting the missing value, and the regressors are other indicators showing a high degree of correlation and conceptually linked with the dependent variable. Imputation using the income-regional group mean method replaces missing values with the sample mean. This sample is determined by the region and the income group to which the economy of the missing value belongs. Table 1 at the end of this appendix reports the imputed values by indicator and economy, and the method used. Note that in the ranking tables available online at <http://gcr.weforum.org>, imputed values are *not* reported.

Pillar 1: Institutions

1.01 Property rights

In your country, to what extent are property rights, including financial assets, protected? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.02 Intellectual property protection

In your country, to what extent is intellectual property protected? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.03 Diversion of public funds

In your country, how common is illegal diversion of public funds to companies, individuals, or groups? [1 = very commonly occurs; 7 = never occurs] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.04 Public trust in politicians

In your country, how do you rate the ethical standards of politicians? [1 = extremely low; 7 = extremely high] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.05 Irregular payments and bribes

Average score across the five components of the following Executive Opinion Survey question: In your country, how common is it for firms to make undocumented extra payments or bribes connected with (a) imports and exports; (b) public utilities; (c) annual tax payments; (d) awarding of public contracts and licenses; (e) obtaining favorable judicial decisions? In each case, the answer ranges from 1 [very common] to 7 [never occurs] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.06 Judicial independence

In your country, how independent is the judicial system from influences of the government, individuals, or companies? [1 = not independent at all; 7 = entirely independent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.07 Favoritism in decisions of government officials

In your country, to what extent do government officials show favoritism to well-connected firms and individuals when deciding upon policies and contracts? [1 = show favoritism to a great extent; 7 = do not show favoritism at all] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.08 Efficiency of government spending

In your country, how efficient is the government in spending public revenue? [1 = extremely inefficient; 7 = extremely efficient] | 2017

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.09 Burden of government regulation

In your country, how burdensome is it for companies to comply with public administration's requirements (e.g., permits, regulations, reporting)? [1 = extremely burdensome; 7 = not burdensome at all] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.10 Efficiency of legal framework in settling disputes

In your country, how efficient are the legal and judicial systems for companies in settling disputes? [1 = extremely inefficient; 7 = extremely efficient] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.11 Efficiency of legal framework in challenging regulations

In your country, how easy is it for private businesses to challenge government actions and/or regulations through the legal system? [1 = extremely difficult; 7 = extremely easy] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.12 Transparency of government policymaking

In your country, how easy is it for companies to obtain information about changes in government policies and regulations affecting their activities? [1 = extremely difficult; 7 = extremely easy] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.13 Business costs of terrorism

In your country, to what extent does the threat of terrorism impose costs on businesses? [1 = to a great extent—imposes huge costs; 7 = not at all—imposes no costs] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.14 Business costs of crime and violence

In your country, to what extent does the incidence of crime and violence impose costs on businesses? [1 = to a great extent—imposes huge costs; 7 = not at all—imposes no costs] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.15 Organized crime

In your country, to what extent does organized crime (mafia-oriented racketeering, extortion) impose costs on businesses? [1 = to a great extent—imposes huge costs; 7 = not at all—imposes no costs] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.16 Reliability of police services

In your country, to what extent can police services be relied upon to enforce law and order? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.17 Ethical behavior of firms

In your country, how do you rate the corporate ethics of companies (ethical behavior in interactions with public officials, politicians and other firms)? [1 = extremely poor—among the worst in the world; 7 = excellent—among the best in the world] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.18 Strength of auditing and reporting standards

In your country, how strong are financial auditing and reporting standards? [1 = extremely weak; 7 = extremely strong] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.19 Efficacy of corporate boards

In your country, to what extent is management accountable to investors and boards of directors? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.20 Protection of minority shareholders' interests

In your country, to what extent are the interests of minority shareholders protected by the legal system? [1 = not protected at all; 7 = fully protected] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

1.21 Strength of investor protection

Strength of Investor Protection Index on a 0–10 (best) scale | 2016

This variable is a combination of the Extent of disclosure index (transparency of transactions), the Extent of director liability index (liability for self-dealing), and the Ease of shareholder suit index (shareholders' ability to sue officers and directors for misconduct). For more details about the methodology employed and the assumptions made to compute this indicator, visit <http://www.doingbusiness.org/methodology-surveys/>.

Source: World Bank/International Finance Corporation, *Doing Business 2017: Equal Opportunity for All*

Pillar 2: Infrastructure**2.01 Quality of overall infrastructure**

How do you assess the general state of infrastructure (e.g., transport, communications, and energy) in your country? [1 = extremely underdeveloped—among the worst in the world; 7 = extensive and efficient—among the best in the world] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

2.02 Quality of roads

In your country, what is the quality (extensiveness and condition) of road infrastructure? [1 = extremely poor—among the worst in the world; 7 = extremely good—among the best in the world] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

2.03 Quality of railroad infrastructure

In your country, what is the quality (extensiveness and condition) of the railroad system? [1 = extremely poor—among the worst in the world; 7 = extremely good—among the best in the world] | 2016–17 weighted average

N/A *Appl.* is used for economies where there is no regular train service or where the network covers only a negligible portion of the territory. Assessment of the existence of a network was conducted by the World Economic Forum based on various sources.

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

2.04 Quality of port infrastructure

In your country, what is the quality (extensiveness and condition) of seaports (for landlocked countries, assess access to seaports)? [1 = extremely poor—among the worst in the world; 7 = extremely good—among the best in the world] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

2.05 Quality of air transport infrastructure

In your country, what is the quality (extensiveness and condition) of airports? [1 = extremely poor—among the worst in the world; 7 = extremely good—among the best in the world] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

2.06 Available airline seat kilometers

Airline seat kilometers (in millions) available on all flights (domestic and international service) originating in country per week (year average) | Monthly average for 2017

This indicator measures the total passenger-carrying capacity of all scheduled flights, including domestic flights, originating in a country. It is computed by multiplying the number of seats available on each flight by the flight distance in kilometers and summing the result across all scheduled flights in a week. The final value represents the weekly average for the year (Jan–Dec), taking into account flights scheduled beforehand by airline companies.

Source: International Air Transport Association, SRS Analyser

2.07 Quality of electricity supply

In your country, how reliable is the electricity supply (lack of interruptions and lack of voltage fluctuations)? [1 = extremely unreliable; 7 = extremely reliable] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

2.08 Mobile-cellular telephone subscriptions

Number of mobile-cellular telephone subscriptions per 100 population | 2016

Mobile-cellular telephone subscriptions refers to the number of subscriptions to a public mobile telephone service that provides access to the public switched telephone network (PSTN) using cellular technology. It includes both the number of postpaid subscriptions and the number of active prepaid accounts (i.e., that have been active during the past three months). It includes all mobile-cellular subscriptions that offer voice communications. It excludes subscriptions via data cards or USB modems, subscriptions to public mobile data services, and private trunked mobile radio, telepoint, radio paging, and telemetry services.

Source: International Telecommunication Union, *ITU World Telecommunication/ICT Indicators* (June 2017 edition)

2.09 Fixed-telephone lines

Number of fixed-telephone lines per 100 population | 2016

Fixed-telephone subscriptions refers to the sum of active analogue fixed-telephone lines, voice over IP (VoIP) subscriptions, fixed wireless local loop (WLL) subscriptions, ISDN voice-channel equivalents, and fixed-public payphones. It includes all accesses over fixed infrastructure supporting voice telephony using copper wire, voice services using Internet Protocol (IP) delivered over fixed (wired)-broadband infrastructure (e.g., DSL, fiber optic), and voice services provided over coaxial-cable television networks (cable modem). It also includes fixed wireless local loop (WLL) connections, which are defined as services provided by licensed fixed-line telephone operators that provide last-mile access to the subscriber using radio technology, when the call is then routed over a fixed-line telephone network (and not a mobile-cellular network). In the case of VoIP, it refers to subscriptions that offer the ability to place and receive calls at any time and do not require a computer. VoIP is also known as voice-over broadband (VoB), and includes subscriptions through fixed-wireless, DSL, cable, fiber optic, and other fixed-broadband platforms that provide fixed telephony using IP.

Source: International Telecommunication Union, *ITU World Telecommunication/ICT Indicators* (June 2017 edition)

Pillar 3: Macroeconomic environment

3.01 Government budget balance

General government budget balance as a percentage of GDP | 2016

General government budget balance is calculated as general government revenue minus total expenditure. This is a core Government Finance Statistics (GFS) balance that measures the extent to which the general government is either putting financial resources at the disposal of other sectors in the economy and nonresidents (net lending), or utilizing the financial resources generated by other sectors and nonresidents (net borrowing). This balance may be viewed as an indicator of the financial impact of general government activity on the rest of the economy and nonresidents. Revenue consists of taxes, social contributions, grants receivable, and other revenue. Revenue increases a government's net worth, which is the difference between its assets and liabilities. General government total expenditure consists of total expenses and the net acquisition of nonfinancial assets.

Source: International Monetary Fund, *World Economic Outlook Database* (April 2017 edition)

3.02 Gross national savings

Gross national savings as a percentage of GDP | 2016 or most recent year available

Gross national savings is expressed as a ratio of gross national savings in current local currency and GDP in current local currency. It corresponds to gross disposable income less final consumption expenditure after taking account of an adjustment for pension funds. For many countries, the estimates of national savings are built up from national accounts data on gross domestic investment and from balance of payments-based data on net foreign investment.

For this indicator, some values were imputed. See Table 1 at the end of this appendix for details.

Source: International Monetary Fund, *World Economic Outlook Database* (April 2017 edition)

3.03 Inflation

Annual percent change in consumer price index (year average) | 2016 or most recent year available

Source: International Monetary Fund, *World Economic Outlook Database* (April 2017 edition)

3.04 Government debt

Gross general government debt as a percentage of GDP | 2016 or most recent year available

Gross debt consists of all liabilities that require payment or payments of interest and/or principal by the debtor to the creditor at a date or dates in the future. This includes debt liabilities in the form of special drawing rights, currency and deposits, debt securities, loans, insurance, pensions and standardized guarantee schemes, and other accounts payable. Thus all liabilities in the *Government Finance Statistics Manual (GFSM) 2001* system are debt, except for equity and investment fund shares, financial derivatives, and employee stock options. For Australia, Belgium, Canada, Hong Kong SAR, Iceland, New Zealand, and Sweden, government debt coverage also includes insurance technical reserves, following the GFSM 2001 definition.

Source: International Monetary Fund, *World Economic Outlook Database* (April 2017 edition) and *Article IV Consultation Staff Reports*

3.05 Country credit rating

Institutional Investor's Country Credit Ratings™ assessing the probability of sovereign debt default on a 0–100 (lowest probability) scale | March 2016

Institutional Investor's Country Credit Ratings™ developed by Institutional Investor are based on information provided by senior economists and sovereign-debt analysts at leading global banks and money management and security firms. Twice a year, the respondents grade each country on a scale of 0 to 100, with 100 representing the least chance of default.

For this indicator, some values were imputed. See Table 1 at the end of this appendix for details

Source: Institutional Investor's "Country Credit Ratings" is a trademark of Institutional Investor, LLC. No further copying or transmission of this material is allowed without the express written permission of Institutional Investor publisher@institutionalinvestor.com. Copyright © Institutional Investor, LLC 2016

Pillar 4: Health and primary education

4.01 Malaria incidence

Estimated number of malaria cases per 100,000 population | 2015 or most recent year available

For economies that: (1) were declared free of malaria by the World Health Organization (WHO) (except in the case of Hong Kong SAR, for which malaria assessment is from the CDC); (2) are included in the WHO's supplementary list of areas where malaria has never existed or has disappeared without specific measures; or (3) are currently in the prevention of reintroduction phase as identified by the WHO, this indicator is excluded from the calculation of the GCI. In the Economy Profiles of these economies, the following abbreviations are used: *M.F.* for malaria-free economies; *P.R.* means the economy is in the prevention of reintroduction phase; and *S.L.* means the economy is on the WHO's supplementary list.

Sources: The World Health Organization, *World Malaria Report 2012* and 2016 editions; United States Centers for Disease Control and Prevention (CDC), *Malaria Information and Prophylaxis information* (accessed July 29, 2017)

4.02 Business impact of malaria

How serious an impact do you consider malaria will have on your company in the next five years (e.g., death, disability, medical and funeral expenses, productivity and absenteeism, recruitment and training expenses, revenues)? [1 = a serious impact; 7 = no impact at all] | 2017

For economies that are considered free of malaria; that are included in the World Health Organization's supplementary list; or that are in the prevention of reintroduction phase (see indicator 4.01 above), this indicator is excluded from the calculation of the GCI. In the Economy Profiles of these economies, *N/App.* is used for this indicator.

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

4.03 Tuberculosis incidence

Estimated number of tuberculosis cases per 100,000 population | 2015 or most recent year available

Incidence of tuberculosis is the estimated number of new pulmonary, smear positive, and extra-pulmonary tuberculosis cases.

Sources: The World Bank, *World Development Indicators* (accessed June 8, 2017); national sources

4.04 Business impact of tuberculosis

How serious an impact do you consider tuberculosis will have on your company in the next five years (e.g., death, disability, medical and funeral expenses, productivity and absenteeism, recruitment and training expenses, revenues)? [1 = a serious impact; 7 = no impact at all] | 2017

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

4.05 HIV prevalence

HIV prevalence as a percentage of adults aged 15–49 years | 2016 or most recent year available

HIV prevalence refers to the percentage of people aged 15–49 who are infected with HIV at a particular point in time, no matter when infection occurred.

For this indicator, some values were imputed. See Table 1 at the end of this appendix for details

Sources: The World Bank, *World Development Indicators* (accessed July 27, 2017); UNAIDS, *UNAIDS Global Report 2012*; UNAIDS, *UNAIDS Gap Report 2014*; national sources

Note: Economies with a prevalence rate equal to or less than 0.2 percent are all ranked first and listed alphabetically.

4.06 Business impact of HIV/AIDS

How serious an impact do you consider HIV/AIDS will have on your company in the next five years (e.g., death, disability, medical and funeral expenses, productivity and absenteeism, recruitment and training expenses, revenues)? [1 = a serious impact; 7 = no impact at all] | 2017

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

4.07 Infant mortality

Infant (children aged 0–12 months) mortality per 1,000 live births | 2015 or most recent year available

Infant mortality rate is the number of infants dying before reaching one year of age per 1,000 live births in a given year.

Sources: The World Bank, *World Development Indicators* (accessed June 8, 2017); national sources

4.08 Life expectancy

Life expectancy at birth (years) | 2015

Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life.

Sources: The World Bank, *World Development Indicators* (accessed June 8, 2017); national sources

4.09 Quality of primary education

In your country, how do you assess the quality of primary education? [1 = extremely poor—among the worst in the world; 7 = excellent—among the best in the world] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

4.10 Primary education enrollment rate

Net primary education enrollment rate | 2015 or most recent year available

The reported value corresponds to the ratio of children of official primary school age (as defined by the national education system) who are enrolled in primary school. Primary education (ISCED level 1) provides children with basic reading, writing, and mathematics skills along with an elementary understanding of such subjects as history, geography, natural science, social science, art, and music.

For this indicator, some values were imputed. See Table 1 at the end of this appendix for details

Sources: UNESCO Institute for Statistics, *Data Centre* (accessed June 8, 2017); Organisation for Economic Co-operation and Development (OECD), *Education at a Glance 2016*; UNICEF; national sources

Pillar 5: Higher education and training**5.01 Secondary education enrollment rate**

Gross secondary education enrollment rate | 2015 or most recent year available

The reported value corresponds to the ratio of total secondary enrollment, regardless of age, to the population of the age group that officially corresponds to the secondary education level. Secondary education (ISCED levels 2 and 3) completes the provision of basic education that began at the primary level, and aims to lay the foundations for lifelong learning and human development by offering more subject- or skills-oriented instruction using more specialized teachers.

For this indicator, some values were imputed. See Table 1 at the end of this appendix for details

Sources: UNESCO Institute for Statistics, *Data Centre* (accessed June 8, 2017); national sources

5.02 Tertiary education enrollment rate

Gross tertiary education enrollment rate | 2015 or most recent year available

The reported value corresponds to the ratio of total tertiary enrollment, regardless of age, to the population of the age group that officially corresponds to the tertiary education level. Tertiary education (ISCED levels 5 and 6), whether or not leading to an advanced research qualification, normally requires, as a minimum condition of admission, the successful completion of education at the secondary level.

For this indicator, some values were imputed. See Table 1 at the end of this Appendix for details

Sources: UNESCO Institute for Statistics, *Data Centre* (accessed June 8, 2017); national sources

5.03 Quality of the education system

In your country, how well does the education system meet the needs of a competitive economy? [1 = not well at all; 7 = extremely well] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

5.04 Quality of math and science education

In your country, how do you assess the quality of math and science education? [1 = extremely poor—among the worst in the world; 7 = excellent—among the best in the world] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

5.05 Quality of management schools

In your country, how do you assess the quality of business schools? [1 = extremely poor—among the worst in the world; 7 = excellent—among the best in the world] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

5.06 Internet access in schools

In your country, to what extent is the Internet used in schools for learning purposes? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

5.07 Local availability of specialized training services

In your country, how available are high-quality, professional training services? [1 = not available at all; 7 = widely available] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

5.08 Extent of staff training

In your country, to what extent do companies invest in training and employee development? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

Pillar 6: Goods market efficiency**6.01 Intensity of local competition**

In your country, how intense is competition in the local markets? [1 = not intense at all; 7 = extremely intense] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

6.02 Extent of market dominance

In your country, how do you characterize corporate activity? [1 = dominated by a few business groups; 7 = spread among many firms] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

6.03 Effectiveness of anti-monopoly policy

In your country, how effective are anti-monopoly policies at ensuring fair competition? [1 = not effective at all; 7 = extremely effective] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

6.04 Effect of taxation on incentives to invest

In your country, to what extent do taxes reduce the incentive to invest? [1 = to a great extent; 7 = not at all] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

6.05 Total tax rate

This variable is a combination of profit tax (% of profits), labor tax and contribution (% of profits), and other taxes (% of profits) | 2016

The total tax rate measures the amount of taxes and mandatory contributions payable by a business in the second year of operation, expressed as a share of commercial profits. The total amount of taxes is the sum of five different types of taxes and contributions payable after accounting for deductions and exemptions: profit or corporate income tax, social contributions and labor taxes paid by the employer, property taxes, turnover taxes, and other small taxes. For more details about the methodology employed and the assumptions made to compute this indicator, visit <http://www.doingbusiness.org/methodologysurveys/>.

Source: World Bank/International Finance Corporation, *Doing Business 2017: Equal Opportunity for All*

6.06 Number of procedures required to start a business

Number of procedures required to start a business | 2016

For details about the methodology employed and the assumptions made to compute this indicator, visit <http://www.doingbusiness.org/methodologysurveys/>.

Source: World Bank/International Finance Corporation, *Doing Business 2017: Equal Opportunity for All*

6.07 Time required to start a business

Number of days required to start a business | 2016

For details about the methodology employed and the assumptions made to compute this indicator, visit <http://www.doingbusiness.org/methodologysurveys/>.

Source: World Bank/International Finance Corporation, *Doing Business 2017: Equal Opportunity for All*

6.08 Agricultural policy costs

In your country, how do you assess the agricultural policy? [1 = excessively burdensome for the economy; 7 = balances well the interests of taxpayers, consumers, and producers] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

6.09 Prevalence of non-tariff barriers

In your country, to what extent do non-tariff barriers (e.g., health and product standards, technical and labeling requirements, etc.) limit the ability of imported goods to compete in the domestic market? [1 = strongly limit; 7 = do not limit at all] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

6.10 Trade tariffs

Trade-weighted average tariff rate | 2016 or most recent year available

An *applied tariff* is a customs duty that is levied on imports of merchandise goods. This indicator is calculated as a weighted average of all the applied tariff rates, including preferential rates that a country applies to the rest of the world. The weights are the trade patterns of the importing country's reference group.

Sources: International Trade Centre; Trade Competitiveness Map Data

6.11 Prevalence of foreign ownership

In your country, how prevalent is foreign ownership of companies? [1 = extremely rare; 7 = extremely prevalent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this Report

6.12 Business impact of rules on FDI

In your country, how restrictive are rules and regulations on foreign direct investment (FDI)? [1 = extremely restrictive; 7 = not restrictive at all] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

6.13 Burden of customs procedures

In your country, how efficient are customs procedures (related to the entry and exit of merchandise)? [1 = extremely inefficient; 7 = extremely efficient] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

6.14 Imports as a percentage of GDP

Imports of goods and services as a percentage of gross domestic product | 2016 or most recent year available

Total imports is the sum of total imports of merchandise and commercial services.

Sources: World Trade Organization, *Online Statistics Database* (accessed June 6, 2017); International Monetary Fund, *World Economic Outlook Database* (April 2017 edition); national sources

6.15 Degree of customer orientation

In your country, how well do companies treat customers? [1 = poorly—mostly indifferent to customer satisfaction; 7 = extremely well—highly responsive to customers and seek customer retention] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

6.16 Buyer sophistication

In your country, on what basis do buyers make purchasing decisions? [1 = based solely on the lowest price; 7 = based on sophisticated performance attributes] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

Pillar 7: Labor market efficiency**7.01 Cooperation in labor-employer relations**

In your country, how do you characterize labor-employer relations? [1 = generally confrontational; 7 = generally cooperative] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

7.02 Flexibility of wage determination

In your country, how are wages generally set? [1 = by a centralized bargaining process; 7 = by each individual company] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

7.03 Hiring and firing practices

In your country, to what extent do regulations allow flexible hiring and firing of workers? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

7.04 Redundancy costs

Redundancy costs in weeks of salary | 2016

This variable estimates the cost of advance notice requirements, severance payments, and penalties due when terminating a redundant worker, expressed in weekly wages. For more details about the methodology employed and the assumptions made to compute this indicator, visit <http://www.doingbusiness.org/methodologysurveys/>.

Sources: World Bank/International Finance Corporation, *Doing Business 2017: Equal Opportunity for All*; World Economic Forum's calculations

7.05 Effect of taxation on incentives to work

In your country, to what extent do taxes and social contributions reduce the incentive to work? [1 = to a great extent; 7 = not at all] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

7.06 Pay and productivity

In your country, to what extent is pay related to employee productivity? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

7.07 Reliance on professional management

In your country, who holds senior management positions in companies? [1 = usually relatives or friends without regard to merit; 7 = mostly professional managers chosen for merit and qualifications] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

7.08 Country capacity to retain talent

To what extent does your country retain talented people? [1 = not at all—the best and brightest leave to pursue opportunities abroad; 7 = to a great extent—the best and brightest stay and pursue opportunities in the country] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

7.09 Country capacity to attract talent

To what extent does your country attract talented people from abroad? [1 = not at all; 7 = to a great extent—the country attracts the best and brightest from around the world] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

7.10 Female participation in the labor force

Ratio of women to men in the labor force* | 2016

This measure is the percentage of women aged 15–64 participating in the labor force divided by the percentage of men aged 15–64 participating in the labor force.

Source: International Labour Organization, *Key Indicators of the Labour Markets, 9th Edition*.

Pillar 8: Financial market development**8.01 Availability of financial services**

In your country, to what extent does the financial sector provide the products and services that meet the needs of businesses? [1 = not at all; 7 = to a great extent] | 2017

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

8.02 Affordability of financial services

In your country, to what extent does the cost of financial services (e.g. insurance, loans, trade finance) impede business activity? [1 = to a great extent; 7 = not at all] | 2017

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

8.03 Financing through local equity market

In your country, to what extent can companies raise money by issuing shares and/or bonds on the capital market? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

8.04 Ease of access to loans

In your country, how easy is it for businesses to obtain a bank loan? [1 = extremely difficult; 7 = extremely easy] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

8.05 Venture capital availability

In your country, how easy is it for start-up entrepreneurs with innovative but risky projects to obtain equity funding? [1 = extremely difficult; 7 = extremely easy] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

8.06 Soundness of banks

In your country, how do you assess the soundness of banks? [1 = extremely low—banks may require recapitalization; 7 = extremely high—banks are generally healthy with sound balance sheets] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

8.07 Regulation of securities exchanges

In your country, to what extent do regulators ensure the stability of the financial market? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

8.08 Legal rights index

Degree of legal protection of borrowers' and lenders' rights on a 0–12 (best) scale | 2016

This index measures the degree to which collateral and bankruptcy laws protect borrowers' and lenders' rights and thus facilitate lending. For more details about the methodology employed and the assumptions made to compute this indicator, visit <http://www.doingbusiness.org/methodologysurveys/>.

Source: World Bank/International Finance Corporation, *Doing Business 2017: Equal Opportunity for All*

Pillar 9: Technological readiness**9.01 Availability of latest technologies**

In your country, to what extent are the latest technologies available? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

9.02 Firm-level technology absorption

In your country, to what extent do businesses adopt the latest technologies? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

9.03 FDI and technology transfer

To what extent does foreign direct investment (FDI) bring new technology into your country? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

9.04 Internet users

Percentage of individuals using the Internet | 2016

Individuals using the Internet refers to people who used the Internet from any location and for any purpose, irrespective of the device and network used, in the last three months. It can be via a computer (i.e., desktop computer, laptop computer or tablet, or similar handheld computer), mobile phone, games machine, digital TV, etc. Access can be via a fixed or mobile network.

Source: International Telecommunication Union, *ITU World Telecommunication/ICT Indicators* (June 2017 edition)

9.05 Fixed-broadband Internet subscriptions

Fixed-broadband Internet subscriptions per 100 population | 2016 or most recent year available

Fixed (wired)-broadband subscriptions refers to the number of subscriptions for high-speed access to the public Internet (a TCP/IP connection). *Highspeed access* is defined as downstream speeds equal to, or greater than, 256 kbit/s. Fixed (wired)-broadband includes cable modem, DSL, fiber, and other fixed (wired)-broadband technologies—such as Ethernet LAN, and broadband over powerline (BPL) communications. Subscriptions with access to data communications (including the Internet) via mobile-cellular networks are excluded.

Source: International Telecommunication Union, *ITU World Telecommunication/ICT Indicators* (June 2017 edition)

9.06 Internet bandwidth

International Internet bandwidth (kb/s) per Internet user | 2016

International Internet bandwidth refers to the total used capacity of international Internet bandwidth, in megabits per second (Mb/s). It is measured as the sum of used capacity of all Internet exchanges offering international bandwidth. If capacity is asymmetric, then the incoming capacity is used. *International Internet bandwidth (kb/s) per Internet user* is calculated by dividing the capacity in Mb/s by a thousand and dividing it by the total number of Internet users.

Source: International Telecommunication Union, *ITU World Telecommunication/ICT Indicators* (June 2017 edition)

9.07 Mobile-broadband subscriptions

Active mobile-broadband subscriptions per 100 population | 2016

Active mobile-broadband subscriptions refers to the sum of standard mobile-broadband subscriptions and dedicated mobile-broadband data subscriptions to the public Internet. It covers actual subscribers, not potential subscribers, even though the latter may have broadband-enabled handsets. *Standard mobile-broadband subscriptions* refers to active mobile-cellular subscriptions with advertised data speeds of 256 kb/s or greater that allow access to the greater Internet via HTTP and that have been used to set up an Internet data connection using Internet Protocol (IP) in the past three months. Standard SMS and MMS messaging do not count as an active Internet data connection, even if the messages are delivered via IP. *Dedicated mobile-broadband data subscriptions* refers to subscriptions to dedicated data services (over a mobile network) that allow access to the greater Internet and that are purchased separately from voice services, either as a standalone service (e.g., using a data card such as a USB modem/dongle) or as an add-on data package to voice services that requires an additional subscription. All dedicated mobile-broadband subscriptions with recurring subscription fees are included regardless of actual use. Prepaid mobile-broadband plans require use if there is no monthly subscription. This indicator could also include mobile WiMAX subscriptions.

Source: International Telecommunication Union, *ITU World Telecommunication/ICT Indicators* (June 2017 edition)

Pillar 10: Market size**10.01 Domestic market size index**

Sum of gross domestic product plus value of imports of goods and services, minus value of exports of goods and services, normalized on a 1–7 (best) scale | 2016 or most recent year available

Source: World Economic Forum. For more details, refer to Appendix A of this *Report*

10.02 Foreign market size index

Value of exports of goods and services, normalized on a 1–7 (best) scale | 2016 or most recent year available

Source: World Economic Forum. For more details, refer to Appendix A of this *Report*

10.03 GDP (PPP)

Gross domestic product valued at purchasing power parity in billions of international dollars | 2016

Source: International Monetary Fund, *World Economic Outlook Database* (April 2017 edition)

10.04 Exports as a percentage of GDP

Exports of goods and services as a percentage of gross domestic product | 2016 or most recent year available

Total exports is the sum of total exports of merchandise and commercial services.

Sources: World Trade Organization, *Online Statistics Database* (accessed June 08, 2017); International Monetary Fund, *World Economic Outlook Database* (April 2017 edition); national sources

Pillar 11: Business sophistication**11.01 Local supplier quantity**

In your country, how numerous are local suppliers? [1 = largely nonexistent; 7 = extremely numerous] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

11.02 Local supplier quality

In your country, how do you assess the quality of local suppliers? [1 = extremely poor quality; 7 = extremely high quality] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

11.03 State of cluster development

In your country, how widespread are well-developed and deep clusters (geographic concentrations of firms, suppliers, producers of related products and services, and specialized institutions in a particular field)? [1 = nonexistent; 7 = widespread in many fields] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

11.04 Nature of competitive advantage

On what is the competitive advantage of your country's companies in international markets based? [1 = primarily low-cost labor or natural resources; 7 = primarily unique products and processes] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

11.05 Value chain breadth

In your country, how broad is companies' presence in the value chain? [1 = narrow, primarily involved in individual steps of the value chain (e.g., resource extraction or production); 7 = broad, present across the entire value chain (e.g., including production, marketing, distribution, design, etc.)] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

11.06 Control of international distribution

In your country, to what extent do domestic companies control the international distribution of their products? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

11.07 Production process sophistication

In your country, how sophisticated are production processes? [1 = not at all—production uses labor-intensive processes; 7 = highly—production uses latest technologies] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

11.08 Extent of marketing

In your country, how successful are companies in using marketing to differentiate their products and services? [1 = not successful at all; 7 = extremely successful] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

11.09 Willingness to delegate authority

In your country, to what extent does senior management delegate authority to subordinates? [1 = not at all; 7 = to a great extent] | 2017

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

Pillar 12: Innovation

12.01 Capacity for innovation

In your country, to what extent do companies have the capacity to innovate? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

12.02 Quality of scientific research institutions

In your country, how do you assess the quality of scientific research institutions? [1 = extremely poor—among the worst in the world; 7 = extremely good—among the best in the world] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

12.03 Company spending on R&D

In your country, to what extent do companies invest in research and development (R&D)? [1 = do not invest at all in R&D; 7 = invest heavily in R&D] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

12.04 University-industry collaboration in R&D

In your country, to what extent do business and universities collaborate on research and development (R&D)? [1 = do not collaborate at all; 7 = collaborate extensively] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

12.05 Government procurement of advanced technology products

In your country, to what extent do government purchasing decisions foster innovation? [1 = not at all; 7 = to a great extent] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

12.06 Availability of scientists and engineers

In your country, to what extent are scientists and engineers available? [1 = not available at all; 7 = widely available] | 2016–17 weighted average

Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Appendix C of this *Report*

12.07 PCT patent applications

Number of applications filed under the Patent Cooperation Treaty (PCT) per million population | 2013–2014 average

This indicator measures the total count of applications filed under the Patent Cooperation Treaty (PCT), by priority date and inventor nationality, using fractional count if an application is filed by multiple inventors. The average count of applications filed in 2013 and 2014 is divided by population figures for 2014. For more details about the treatment of Hong Kong SAR and Taiwan (China), refer to the imputation methodology described at the beginning of this section.

For this indicator, some values were imputed. See Table 1 at the end of this appendix for details.

Sources: Organisation for Economic Co-operation and Development (OECD), *Patent Database*, (situation as of July 2017). For population data: International Monetary Fund, *World Economic Outlook Database* (April 2017 edition); World Economic Forum's calculations.

Table 1: Imputation methodology details and imputed values

Indicator	Imputation method	Economy	Imputed value
3.02 Gross national savings	Linear multivariate regression estimation. Regressors: government debt-to-GDP ratio; exports-to-GDP ratio; GDP valued at purchasing power parity; inflation rate; imports-to-GDP ratio	Liberia	5.33
3.05 Country credit rating	Linear multivariate regression estimation. Regressors: government debt-to-GDP ratio; GDP valued at purchasing power parity; inflation rate	Brunei Darussalam	52.73
4.05 HIV prevalence	Peer group mean. <i>Group</i> is defined as the combination of World Bank income group and IMF regional classification	Bosnia and Herzegovina Brunei Darussalam United Arab Emirates	2.00 0.27 0.27
4.10 Primary education enrollment rate	Linear multivariate regression estimation. Regressors: Mean years of schooling; GDP per capita (log)	Haiti Madagascar Slovak Republic	86.69 86.92 97.74
5.01 Secondary education enrollment rate	Linear multivariate regression estimation. Regressors: Mean years of schooling; GDP per capita (log)	Haiti Trinidad and Tobago United Arab Emirates	54.69 103.91 107.29
5.02 Tertiary education enrollment rate	Linear multivariate regression estimation. Regressors: Mean years of schooling; GDP per capita (log)	Haiti Nicaragua Sierra Leone	13.60 25.64 4.52
7.10 Female participation in the labor force	Peer group mean. <i>Group</i> is defined as the combination of World Bank income group and IMF regional classification	Seychelles	0.69
12.07 PCT patent applications	Linear univariate regression estimation. Regressor: IP 5 patent applications. The estimated number is then divided by total population.	Hong Kong SAR Taiwan (China)	60.31 460.13