Technical Notes and Sources

This section complements the data tables by providing additional information for those indicators that are not derived from the World Economic Forum's Executive Opinion Survey. The number next to the indicator corresponds to the number of the data table that shows the ranks and scores for all countries/economies on this particular indicator. Indicators in Pillars 1 through 12 enter the composition of the Global Competitiveness Index 2013–2014. The data used in this *Report* represent the best available estimates at the time the *Report* was prepared. It is possible that some data will have been updated or revised after publication.

   We acknowledge all the organizations that provide us with data listed below. A special thanks goes to Andrea Navares Juanco and Julie Perovic from the International Air Transport Association; Kerfalla Conte, Mondher Mimouni, and Xavier Pichot from the International Trade Centre; Hélène Dernis from the Organisation for Economic Co-operation and Development, and Richard E. Cibulskis and Ryan O'Neil Williams from the World Health Organization.

Key indicators

0.01 Gross domestic product
Gross domestic product in billions of current US dollars | 2012

Sources: International Monetary Fund, *World Economic Outlook Database* (April 2013 edition); national sources

0.02 Population
Total population in millions | 2011

Sources: The World Bank, *World Development Indicators* (April 2013 edition); national sources

0.03 GDP per capita
Gross domestic product per capita in current US dollars | 2012

Sources: International Monetary Fund, *World Economic Outlook Database* (April 2013 edition); national sources

0.04 GDP as a share of world GDP
Gross domestic product based on purchasing power parity as a percentage of world GDP | 2012

Sources: International Monetary Fund, *World Economic Outlook Database* (April 2013 edition); national sources

Pillar 1: Institutions

1.21 Strength of investor protection
Strength of Investor Protection Index on a 0–10 (best) scale | 2012

This indicator 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/methodologysurveys/.

Source: World Bank/International Finance Corporation, *Doing Business 2013: Smarter Regulations for Small and Medium-Size Enterprises*

Pillar 2: Infrastructure

2.06 Available airline seat kilometers
Scheduled available airline seat kilometers per week originating in country (in millions) | Jan 2013–Jul 2013

This indicator measures the total passenger-carrying capacity of all scheduled flights, including domestic flights, originating in a country. It is computed by taking the number of seats available on each flight multiplied by the flight distance in kilometers, summing the result across all scheduled flights in a week during January (winter schedule) and July (summer schedule) 2013, and taking the average capacity of the two weeks.

Source: International Air Transport Association, SRS Analyser

2.08 Mobile telephone subscriptions
Number of mobile telephone subscriptions per 100 population | 2012

A *mobile telephone subscription* refers to a subscription to a public mobile telephone service that provides access to the public switched telephone network (PSTN) using cellular technology, including the number of pre-paid SIM cards active during the past three months. This includes both analog and digital cellular systems (IMT-2000, Third Generation, 3G) and 4G subscriptions, but excludes mobile broadband subscriptions via data cards or USB modems. Subscriptions to public mobile data services, private trunked mobile radio, telepoint or radio paging, and telemetry services are also excluded. It includes all mobile cellular subscriptions that offer voice communications.

Source: International Telecommunication Union, *ITU World Telecommunication/ICT Indicators Database 2013* (June 2013 edition)

2.09 Fixed telephone lines

Number of active fixed telephone lines per 100 population |
2012

A *fixed telephone line* is an active line connecting the subscriber's
terminal equipment to the public switched telephone network
(PSTN) that has a dedicated port in the telephone exchange
equipment. Active lines are those that have registered an activity
in the past three months.

Source: International Telecommunication Union, *ITU World
Telecommunication/ICT Indicators Database 2013* (June 2013
edition)

Pillar 3: Macroeconomic environment

3.01 Government budget balance

General government budget balance as a percentage of GDP
| 2012

Net lending (+)/borrowing (–) 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.

Sources: International Monetary Fund, *World Economic Outlook
Database* (April 2013 edition); national sources

3.02 Gross national savings

Gross national savings as a percentage of GDP | 2012

Aggregate national savings is defined as public- and private-
sector savings as a percentage of nominal GDP. National savings
equals gross domestic investment plus the current-account
balance.

Sources: International Monetary Fund, *World Economic Outlook
Database* (April 2013 edition); national sources

3.03 Inflation

Annual percent change in consumer price index (year average)
| 2012

In order to capture the idea that both high inflation and deflation
are detrimental, inflation enters the model in a U-shaped manner
as follows: for values of inflation between 0.5 and 2.9 percent,
a country receives the highest possible score of 7. Outside this
range, scores decrease linearly as they move away from these
values.

Source: International Monetary Fund, *World Economic Outlook
Database* (April 2013 edition)

3.04 Government debt

Gross general government debt as a percentage of GDP | 2012

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.

Sources: International Monetary Fund, *World Economic Outlook
Database* (April 2013 edition) and *Public Information Notices*
(various issues); national sources

3.05 Country credit rating

Institutional Investor's Country Credit Ratings™ based on
expert assessment of the probability of sovereign debt default
on a 0–100 (lowest probability) scale | March 2013

Institutional Investor's Country Credit Ratings™ 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. No further copying or transmission of the Country Credit
Ratings data is allowed without the express written permission of
Institutional Investor. Contact publisher@institutionalinvestor.com
for any further information.

Source: Institutional Investor.

Pillar 4: Health and basic education

4.02 Malaria incidence

Number of malaria cases per 100,000 population | 2010

Data are estimates and are provided only for economies in which
malaria is considered to be endemic. In the corresponding data
table, "(NE)" denotes an economy where malaria is not endemic.
For an explanation of the way this indicator is combined with the
related Survey question to estimate the impact of malaria, refer to
the appendix in Chapter 1.1 of this *Report*.

Source: The World Health Organization, *World Malaria Report
2012*

4.04 Tuberculosis incidence

Number of tuberculosis cases per 100,000 population | 2011

Incidence of tuberculosis is the estimated number of new
pulmonary, smear positive, and extra-pulmonary tuberculosis
cases. For an explanation of the way this indicator is combined
with the related Survey question to estimate the impact of
tuberculosis, refer to the appendix in Chapter 1.1 of this *Report*.

Sources: The World Bank, *World Development Indicators* (April
2013 edition); national sources

4.06 HIV prevalence

HIV prevalence as a percentage of adults aged 15–49 years |
2011

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 an explanation of the way this
indicator is combined with the related Survey question to estimate
the impact of HIV/AIDS, refer to the appendix in Chapter 1.1 of
this *Report*.

Sources: The World Bank, *World Development Indicators* (April
2013 edition); UNAIDS, *Global Report on the Global AIDS
Epidemic* (2008 edition); national sources

4.07 **Infant mortality**

Infant (children aged 0–12 months) mortality per 1,000 live births | 2011

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* (April 2013 edition); national sources

4.08 **Life expectancy**

Life expectancy at birth (years) | 2011

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* (April 2013 edition); national sources

4.10 **Primary education enrollment rate**

Net primary education enrollment rate | 2011

The reported value corresponds to the ratio of children of official school age (as defined by the national education system) who are enrolled in school to the population of the corresponding official school age. 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.

Sources: UNESCO Institute for Statistics (accessed June 21, 2013); The Asian Development Bank, *Key Indicators for Asia and the Pacific 2012*; The World Bank, *EdStats Database* (accessed June 27, 2012): Organisation for Economic Co-operation and Development (OECD), UNICEF *Education at a Glance 2011*; UNESCO Country Programming Document; national sources

Pillar 5: Higher education and training

5.01 **Secondary education enrollment rate**

Gross secondary education enrollment rate | 2011

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.

Sources: UNESCO Institute for Statistics (accessed June 21, 2013, and April 21, 2013); ChildInfo.org Country Profiles; national sources

5.02 **Tertiary education enrollment rate**

Gross tertiary education enrollment rate | 2011

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.

Sources: UNESCO Institute for Statistics (accessed June 21, 2013); national sources

Pillar 6: Goods market efficiency

6.05 **Total tax rate**

This indicator is a combination of profit tax (% of profits), labor tax and contributions (% of profits), and other taxes (% of profits) | 2012

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, please visit http://www.doingbusiness.org/methodologysurveys/.

Source: World Bank/International Finance Corporation, *Doing Business 2013: Smarter Regulations for Small and Medium-Size Enterprises*

6.06 **Number of procedures required to start a business**

Number of procedures required to start a business | 2012

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 2013: Smarter Regulations for Small and Medium-Size Enterprises*

6.07 **Time required to start a business**

Number of days required to start a business | 2012

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 2013: Smarter Regulations for Small and Medium-Size Enterprises*

6.10 **Trade tariffs**

Trade-weighted average tariff rate | 2012

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 (2011 data). An *applied tariff* is a customs duty that is levied on imports of merchandise goods.

Source: International Trade Centre

6.14 **Imports as a percentage of GDP**

Imports of goods and services as a percentage of gross domestic product | 2012

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

Sources: World Trade Organization, *Statistical Database: Time Series on Merchandise and Commercial Services* (accessed June 12, 1013); International Monetary Fund, *World Economic Outlook Database* (April 2013 edition); national sources

Pillar 7: Labor market efficiency

7.04 Redundancy costs

Redundancy costs in weeks of salary | 2012

This indicator 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 2013: Smarter Regulations for Small and Medium-Size Enterprises*; authors' calculations

7.10 Female participation in labor force

Ratio of women to men in the labor force* | 2010

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.

Sources: International Labour Organization, *Key Indicators of the Labour Markets* (accessed June 27, 2013); national sources

Pillar 8: Financial market development

8.08 Legal rights index

Degree of legal protection of borrowers' and lenders' rights on a 0–10 (best) scale | 2012

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/.

Sources: World Bank/International Finance Corporation, *Doing Business 2013: Smarter Regulations for Small and Medium-Size Enterprises*; authors' calculations

Pillar 9: Technological readiness

9.04 Internet users

Percentage of individuals using the Internet | 2012

Internet users refers to people using the Internet from any device (including mobile phones) in the last 12 months. Data are based on surveys generally carried out by national statistical offices or estimated based on the number of Internet subscriptions.

Source: International Telecommunication Union, *World Telecommunication/ICT Indicators 2013* (June 2013 edition)

9.05 Fixed broadband Internet subscriptions

Fixed broadband Internet subscriptions per 100 population | 2012

This refers to total fixed (wired) broadband Internet subscriptions (that is, subscriptions to high-speed access to the public Internet—a TCP/IP connection—at downstream speeds equal to or greater than 256 kb/s).

Source: International Telecommunication Union, *World Telecommunication/ICT Indicators 2013* (June 2013 edition)

9.06 Internet bandwidth

International Internet bandwidth (kb/s) per Internet user | 2012

International Internet bandwidth is the sum of capacity of all Internet exchanges offering international bandwidth measured in kilobits per second (kb/s).

Source: International Telecommunication Union, *World Telecommunication/ICT Indicators 2013* (June 2013 edition)

9.07 Mobile broadband subscriptions

Mobile broadband subscriptions per 100 population | 2012

Mobile broadband subscriptions refers to active SIM cards or, on CDMA networks, connections accessing the Internet at consistent broadband speeds of over 512 kb/s, including cellular technologies such as HSPA, EV-DO, and above. This includes connections being used in any type of device able to access mobile broadband networks, including smartphones, USB modems, mobile hotspots, and other mobile-broadband connected devices.

Source: International Telecommunication Union, *ITU World Telecommunication/ICT Indicators Database 2013* (June 2013 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 | 2012

The size of the domestic market is calculated as the natural log of the sum of the gross domestic product valued at PPP plus the total value (PPP estimates) of imports of goods and services, minus the total value (PPP estimates) of exports of goods and services. Data are then normalized on a 1–7 scale. PPP estimates of imports and exports are obtained by taking the product of exports as a percentage of GDP and GDP valued at PPP. For more details, refer to the appendix in Chapter 1.1 of this *Report*.

Source: Authors' calculations.

10.02 Foreign market size index

Value of exports of goods and services, normalized on a 1–7 (best) scale | 2012

The size of the foreign market is estimated as the natural log of the total value (PPP estimates) of exports of goods and services, normalized on a 1–7 scale. PPP estimates of exports are obtained by taking the product of exports as a percentage of GDP and GDP valued at PPP. For more details, refer to the appendix in Chapter 1.1 of this *Report*.

Source: Authors' calculations

10.03 GDP (PPP)

Gross domestic product valued at purchasing power parity in billions of international dollars | 2012

Sources: International Monetary Fund, *World Economic Outlook Database* (April 2013 edition); national sources

10.04 Exports as a percentage of GDP

Exports of goods and services as a percentage of gross domestic product | 2012

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

Sources: World Trade Organization, *Online Statistics Database* (accessed June 12, 2013); International Monetary Fund, *World Economic Outlook Database* (April 2013 edition); national sources

Pillar 12: Innovation

12.07 PCT patent applications

Number of applications filed under the Patent Cooperation
Treaty (PCT) per million population | 2009-2010

This indicator measures the total count of applications filed under
the Patent Cooperation Treaty (PCT) by priority date and inventor
nationality, using a fractional count if an application is filed by
multiple inventors. The average count of applications filed in 2009
and 2010 is divided by population figures for 2010. For Taiwan
(China) and Hong Kong SAR, two advanced economies, we use
estimates in the absence of reliable data on PCT applications.
First, we compute the average number of all patent applications
filed with the United States Patents and Trademarks Office
(USPTO) in 2009–10. We then compute the average number
of PCT applications for 2009 and 2010, before computing the
ratio of the two averages (1.56). Only economies with a two-year
average number of at least 100 USPTO applications and 50 PCT
are considered for the computation of the two averages, and
Taiwan (China) and Hong Kong SAR are excluded. We then divide
the average number of applications filed by residents of Taiwan
and residents of Hong Kong at the USPTO in 2009 and 2010,
respectively, by the ratio above in order to produce an estimate
for PCT applications. As a final step, we compute the estimates
per million population—that is, 537.5 for Taiwan (China) and 85.3
for Hong Kong SAR. The estimates are used to compute the
respective Innovation pillar score of the two economies.

Sources: Organisation for Economic Co-operation and
Development (OECD), *Patent Database*, as of June 2013; The
World Bank, *World Development Indicators Online* (retrieved April
21, 2013); authors' calculations