The Future of Competitiveness Benchmarking: A Proposal

Three years ago, the World Economic Forum embarked on a major review of its flagship Global Competitiveness Index (GCI), originally launched in 2004. The review was prompted by the new economic reality, the advent of the Fourth Industrial Revolution (4IR), new empirical evidence, and new data. Its goal is to ensure that the index remains relevant and continues to inform multi-stakeholder dialogue and find its way into the toolkits of policymakers in the years to come. The new methodology—working title: GCI 4.0—builds on the success of the current methodology and retains some of its key features. It places more emphasis on future orientation, adaptability, and agility than the current GCI—all important features in the context of the 4IR—and is less prescriptive about the path of development.

The review was conducted under the auspices of Professor Klaus Schwab, Chairman of the Forum, and the guidance of Professor Xavier Sala-i-Martin of Columbia University, the long-standing academic advisor of *The Global Competitiveness Report* series. The team leveraged the Forum's extensive network of experts and partner organizations and held numerous consultations and events on key conceptual and technical aspects of the methodology. At various stages of the process, it also consulted with and solicited feedback from many practitioners, including governments from around the world (see Acknowledgments at the end of this appendix).

The 2015–2016 edition of the GCR presented the first reflections on this process, providing a thorough literature review of competitiveness drivers and a first draft of the structure for an updated index. The 2016–2017 edition featured preliminary rankings for selected pillars related to innovation and human capital. This edition presents the key conceptual and technical features of the new index, its detailed structure (Appendix E1), and notional results for 2017 for the overall index and its 12 pillars (Appendix E2).

Publishing the methodology under development offers users the opportunity to familiarize themselves with it and the ways in which the results differ. However, given the many and significant differences, any comparison of the results of the GCI 4.0 with those of the current GCI would be misguided and spurious, and is therefore discouraged (see Box 1).[1] The team will hold further consultations and collect feedback before finalizing the methodology.

KEY FEATURES AND CONCEPTUAL INNOVATIONS

Following initial consultations, it was decided to keep the key objective of the original GCI: to measure the determinants of competitiveness, defined as the *set of institutions, policies, and factors that determine an economy's level of productivity.* Despite the difficulties associated with measuring it, productivity remains a key driver of prosperity and ultimately of economic progress.

Box 1: Main causes of differences in performance across the two methodologies
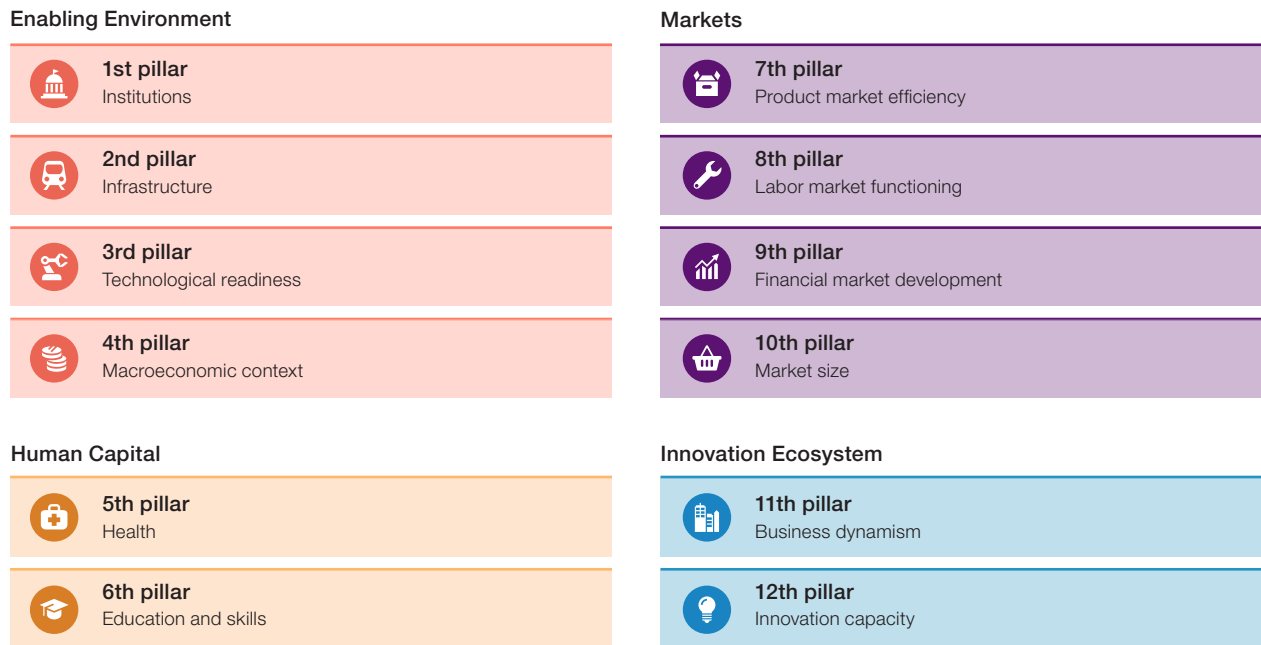
The GCI 4.0 introduces significant changes to the methodology, so the re-stated ranking is therefore not comparable with that of the current methodology. Here is a description of the main types of changes, along with illustrative examples.

- **Changes in weights.** The discontinuation of stages of development significantly alters the weighting scheme used to compute the overall GCI score. The 12 pillars in the GCI 4.0 are weighted equally, each contributing 8.3 percent. With the current methodology, the weight varies by pillar and country, from 5 to 15 percent, according to (1) the subindex to which the pillar belongs and (2) the country's stage of development. In the current methodology, the basic requirements (i.e., institutions, infrastructure, macroeconomic environment, and health and primary education) account for 65 percent of the overall GCI score in the case of low-income countries (i.e., those with GDP per capita of less than US$2,000) and commodity-dependent economies (i.e., those whose share of minerals in exports exceeds 70 percent), while innovation and sophistication factors obtain a weight of 5 percent. In the proposed methodology, each of the pillars will receive equal weight. The new scheme will therefore benefit those low-income and commodity-dependent countries that perform better in the innovation ecosystem; but it will penalize countries that have been neglecting some key enablers of competitiveness. This change reflects the latest thinking that many paths to growth are possible and better reflects the aspirations of low-income and commodity-exporting countries.

- **Changes within pillars.** Within each pillar, changes in the form of the addition, deletion, modification, and reshuffling of concepts and/or individual indicators can significantly impact the performance of a country (a *concept* is a well-defined driver of competitiveness that is assessed through one or more *individual indicators*). The direction and magnitude of this impact is a function of (1) the country's performance in the concept/indicator that has been added/deleted/modified, and (2) the change in the implicit weight of the various components of the pillar. Four types of changes are distinguished:

  - *Reorganization within pillars.* In some pillars, a number of concepts were regrouped, while in others concepts were split into several categories. For instance, the health and primary education pillar of the current methodology has been broken into two: the health component is a pillar of its own in the new methodology, while primary education is part of an enlarged Education and skills pillar.

  - *Change in concept definition.* In several pillars, the scope of certain concepts has been either expanded or reduced. For instance, transport infrastructure includes a connectivity dimension, beyond mere availability and quality, while in the Labor market functioning pillar, the female-to-male labor participation ratio is replaced with a more restrictive measure that takes into account only salaried workers.

  - *Change in concept measurement.* A majority of concepts have been retained in the new methodology, but the ways in which they are assessed has changed or been refined. For instance, the Health pillar is composed of a single indicator, namely health-adjusted life expectancy, which replaces eight health-related indicators in the current GCI. In several cases, indicators derived from the Executive Opinion Survey (EOS) have been replaced by statistical indicators. For example, the perceived impact of terrorism is replaced with a measure of actual terrorism incidence. In the Innovation capacity pillar, the current methodology includes an EOS indicator assessing the propensity of companies to spend on research and development (R&D), which has been replaced with R&D expenditures as a share of GDP.

  - *Introduction/deletion of concepts/indicators.* In the new methodology, recent empirical evidence has led to the introduction of new concepts; other concepts have been dropped, notably to avoid conceptual overlaps or because their link to productivity is less certain. For example, the Institutions pillar now features two new concepts—checks and balances and social capital—both assessed through new indicators and existing ones that were moved to these categories. In another example, the education and skills pillars, which in the current methodology look only at the education of the *future* workforce, now includes an assessment of the skills and education attainment of the *current* workforce. This concept is composed of new indicators exclusively.

Each of the changes to the current methodology has an impact—positive or negative—on how a country fares in a concept, pillar, or the overall GCI. However, the overall impact is difficult to isolate and therefore quantify because of the many overlapping and interconnected changes.

Figure 1: Global Competitiveness Index 4.0: Proposed framework

Enabling Environment

1st pillar
Institutions

2nd pillar
Infrastructure

3rd pillar
Technological readiness

4th pillar
Macroeconomic context

Markets

7th pillar
Product market efficiency

8th pillar
Labor market functioning

9th pillar
Financial market development

10th pillar
Market size

Human Capital

5th pillar
Health

6th pillar
Education and skills

Innovation Ecosystem

11th pillar
Business dynamism

12th pillar
Innovation capacity

Prosperity can increase only if inputs of production are used in smarter and more efficient ways to fulfill constantly evolving human demands. Once this definition was confirmed, the process was guided by the following objectives:

- **Embracing the Fourth Industrial Revolution.** The 4IR is disrupting economies and societies. It redefines the way we work, live, and interact with each other. It is very quickly reshaping the business landscape, often in unexpected ways. In this context, the primary feature of successful economies will be their capacity to be agile, adapt to changes, and respond to shocks relatively smoothly and speedily.

- **Rethinking innovation.** Innovation represents a critical driver of productivity growth and value creation; this is even more essential in the age of the 4IR. Three postulates guided the re-design of the entire innovation pillar, and several concepts across other pillars. First, a country's capacity to innovate depends on the quality of a vast and complex *ecosystem* made up of a myriad of factors: beyond traditional factors such as R&D investment, technology, and financing, intangibles such as flexibility, openness to ideas, willingness to collaborate, and risk taking play critical roles. Second, innovation is a *process* through which ideas become successful products. Third, innovation happens everywhere, not just in a laboratory, and its outcomes take many forms, from products—goods and services—to business models and organizational models.

- **Integrating the lessons from the global financial crisis and latest empirical evidence.** The historical proportions of the crisis led to rethinking how financial development, financial stability, and debt sustainability are assessed. The Macroeconomic context pillar and the Financial market development pillar of the GCI 4.0 were completely redesigned to reflect this evolution.

- **Leveraging new data sources.** Over the past decade, governments and international and nongovernmental organizations have greatly increased their capacity to collect reliable data, aided by new technology and partnerships and pressed by the growing need for data and information to guide decision-making. This has resulted in a proliferation of data and new indicators.

Box 2: Conceptual innovations in the GCI 4.0 framework

Some of the most significant conceptual innovations introduced in the GCI 4.0 include:

- The Institutions pillar has been entirely re-designed. Two new categories, Social capital and Checks and balances, capture elements that constitute the bedrock of society and of all economic activity. The pillar also now features a set of indicators that assess the agility and adaptability of the government.

- By making the Technological readiness pillar one of the "Enablers" (see Figure 1 of the main text), the status of digital infrastructure as a general purpose technology is reasserted: for any type of economic activity, information and communication technologies (ICTs) have become as important as electricity and transport infrastructure—for which they can, in some cases, be a substitute.

- Achieving economic progress requires a human-centric approach to policymaking. The GCI 4.0 assigns more weight to human capital–related factors. The Education and skills pillar assesses the capacity to educate, train, and attract talent, drawing a distinction between current and future workforces, while the Labor market functioning pillar measures the capacity of an economy to allocate the available labor to its most productive use. The Health pillar now relies on a single, intuitive indicator—the number of years a newborn can expect to live in good health—which captures with unprecedented accuracy the health status of a population.

- The GCI's Macroeconomic environment pillar has been completely redesigned and renamed Macroeconomic context. Brand new indicators now capture the sustainability of government finances rather than mere levels of deficits or indebtedness. Similarly, the Financial market development pillar has been entirely rethought. As part of the depth assessment, the main sources of financing are now taken into account separately, while financial stability is now assessed through a set of macro-prudential indicators.

- The Innovation capacity pillar and the Business dynamism pillar capture core elements of the innovation ecosystem. Innovation is seen as a complex process that spans the generation of ideas, their translation into products, and the commercialization of these products. The success of this process depends on a myriad of factors that these pillars capture to the extent possible: entrepreneurship, intrapreneurship, diversity, collaboration, and research and development. Beyond these two pillars, the GCI 4.0 includes a number of factors that contribute to shaping the innovation ecosystem, including human capital (Pillar 6), competition and efficiency of the product market (Pillar 7), availability of venture capital (Pillar 8), and, of course, technological readiness (Pillar 3), assessed through the adoption of ICTs.

- **Integrating feedback from practitioners.** Since 2004, users of the GCI have been sharing their comments and suggestions about the methodology; this feedback was taken into account when developing the GCI 4.0.

The GCI 4.0 is the result of the natural evolution of its predecessor rather than a completely new approach. The overall structure of 12 pillars remains relevant because it captures general concepts that are important for any type of market-based economy to thrive. Yet some reshuffling, regrouping, and re-labeling at the pillar level result in a more streamlined framework (see Figure 1). The pillars are organized into four components: Enabling environment, Human capital, Markets, and Innovation ecosystem. These four components are used only for presentation and analysis purposes; they do not enter the calculation of the index, where the 12 pillar scores are averaged to produce the overall GCI score, with each pillar weighted equally.

The GCI 4.0 comprises 106 indicators (compared with 114 in the current methodology). The extent of the changes is significant: 67 percent of the indicators are new. The number of indicators derived from the Executive Opinion Survey (EOS) was reduced from 80 to 45, and their combined weight accounts for 30 percent of the overall score, down from between 69 percent (for advanced economies) and 57 percent (for least-developed economies) in the current methodology.[2] The global coverage of the current GCI is one of its defining features and a main reason for its success, and it was decided from the outset that the GCI 4.0 would maintain similar coverage: this iteration includes 137 economies, accounting for 95 percent of the world's population and 99 percent of global GDP.

The GCI 4.0 discontinues the concept of stages of development that is used in the current methodology to determine the weight assigned to the different pillars based on a country's level of income. In the GCI 4.0, the overall GCI score is simply the average of the 12 pillar scores. The 4IR makes it reasonable to take this more agnostic approach to income level, recognizing that all competitiveness factors matter for all countries and policy prioritization is more complex than has previously been believed. For example, robotics is making light manufacturing less labor-intensive, which reduces the feasibility of lower-income countries developing by leveraging unskilled labor; however, because information and communication technologies (ICTs) enable the rapid transfer of ideas and technologies, they also make innovation less capital-intensive, offering those countries new ways to develop. The GCI 4.0 is less prescriptive about the path to prosperity, rewarding countries that leapfrog while penalizing those that neglect aspects of their competitiveness, regardless of their stage of development.

Each pillar of the current GCI was thoroughly reviewed, taking into account the latest empirical evidence. A significant part of the review process consisted in identifying, validating, and securing access to new indicators, making it possible to cover concepts previously left out because of lack of data and to improve the measurement of existing ones. In the process, many data providers granted privileged access to their data. For some organizations, the prospect of having an indicator included in the GCI 4.0 provided the incentive to commit resources to create or refine an indicator. In addition, several indicators were developed in-house (e.g., the road quality index, an indicator of debt dynamics). Finally, empirical evidence and statistical analysis also prompted the exclusion of a number of indicators and concepts. Box 2 presents some of the most significant conceptual innovations.

COMPUTATIONAL INNOVATIONS

Like its predecessor, the GCI 4.0 is a composite indicator: its computation is based on successive aggregations of scores from the indicator level (i.e., the most disaggregated level) all the way up to the overall GCI score. Yet the GCI 4.0 introduces a number of innovations.

The normalization of the individual indicators remains based on a min-max approach, which converts values for all indicators into unit-less scores ranging from 0 to 100. These normalized scores can then be combined to produce aggregated scores. Formally we have:

$$\text{score}_{i,c} = \underbrace{\frac{\text{value}_{i,c} - \text{low}_i}{\text{high}_i - \text{low}_i} \times 100}_{\alpha},$$

where $\text{value}_{i,c}$ is the value of country c in indicator i; low_i is the the threshold value, which usually—but not always—corresponds to the lowest value in the sample of countries covered; and $\text{high}_{i,c}$, which usually corresponds to the highest value in the sample.

In the case of "flipped" indicators where a higher value corresponds to a worse outcome (e.g., terrorism incidence, power losses), the normalized score becomes $100 - \alpha$ so that 100 always corresponds to the ideal outcome. For each indicator, the high value (or the low value in the case of a flipped indicator) corresponds to widely accepted policy targets or aspirations, the maximum (or minimum) theoretical value, or was derived from research, consultations, and trend and statistical analysis of the distribution. Therefore the ideal value does not always correspond to the actual maximum (or minimum) values in the country sample. In this case, $\text{score}_{i,c}$ is capped to 100 (or 0). The high and low values will be kept constant in future iterations of the model.

A distance-to-frontier approach is used for computation of the pillar scores. Normalized scores of individual indicators (or concepts) are averaged to produce pillar averages. Using the same min-max approach as described above, these pillar averages are transformed onto a 0-to-100 scale to produce the pillar scores used in the computation of the overall GCI 4.0 and reported in Table 2 of Appendix E2. The economy with the highest average is assigned a pillar score of 100 and is considered to be the "frontier," whereas the pillar score of the economy with the lowest pillar score is 0, to signal that it is the one the furthest away from the frontier.[3] With this approach, the score has a straightforward interpretation: it informs how close a country is to the set frontier (the higher the score, the closer the country is to the frontier) and, over time, it shows whether it is moving away from or closer to this goal post or has even exceeded it, in which case its pillar score exceeds 100. Conversely, it is possible that in the future a pillar score could be negative (e.g., if a newly covered country performs worse than the worst performer did in 2017).

The structure of the index has been greatly simplified to make it more transparent and easier to communicate, understand, and use. In particular, the number of aggregation levels has been drastically reduced. Indicators enter only once into the index, unlike in the current GCI, where some indicators appear in two pillars and are given half-weight in each case. Special weights assigned to certain pillars and concepts have also been abandoned. And, as noted above, the decision to discard the stages and to be more agnostic about the path of development translates into a much simpler weighting scheme, common to all economies covered: the overall GCI 4.0 score is an average (arithmetic mean) of the 12 pillar scores.

Finally, missing data points are now imputed, using econometric methods that rely on the performance of the country on similar indicators and/or the performance of peer countries on the indicator for which the value is missing. A carefully estimated value is greatly preferable to a missing value, which effectively amounts to assigning the average score of the other indicators in the category that contains the missing value.

NOTES

1 Time series will be available only for those individual indicators that are included in both indexes.

2 In the current methodology, the weight of EOS-derived indicators ranges from 57 percent to 69 percent, depending on the country's stage of development. The weight is larger when the weighting scheme specific to a stage of development puts more weight on those pillars that have relatively more EOS-derived indicators.

3 It does not mean that the best- and worst-performing economies necessarily achieved, respectively, the highest and lowest marks in every concept or indicator composing the pillar.

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SESSIONS AND WORKSHOPS

We are very grateful to the participants and panelists of the following events held since 2014:

- "Revision of the Global Competitiveness Index," Expert Session, Annual Meeting of World Economic Forum 2014, January 24, 2014, Davos-Klosters, Switzerland

- "The Evolving Nature of Innovation in Enhancing Competitiveness," Workshop, June 19, 2014, Geneva, Switzerland

- "Mineral Resources and National Competitiveness in the Context of the Global Competitiveness Index," Workshop, November 12, 2014, Dubai, United Arab Emirates

- "Macroeconomics under the Microscope: The Link between Macroeconomic Stability, Financial Development and Productivity Growth," Expert Session, Annual Meeting of the World Economic Forum 2015, January 23, 2015, Davos-Klosters, Switzerland

- Workshop on the Global Competitiveness Index, October 28, 2015, Abu Dhabi,United Arab Emirates

- "Productivity Growth Slowdown in the Age of the Fourth Industrial Revolution," Expert Session, Annual Meeting of the World Economic Forum 2016, January 21 , 2016, Davos-Klosters, Switzerland

- "The Future of Competitiveness," Seminar, World Bank, April 20, 2016, Washington DC, USA

- "The Global Competitiveness Index: A New Index and Methodology," Seminar, World Bank, April 20, 2017, Washington DC, USA

- "A New Framework for Competitiveness," Hub Session, World Economic Forum on Latin America, April 6, 2017, Buenos Aires, Argentina

- "Competitiveness in the Era of the Fourth Industrial Revolution," Hub Session, World Economic Forum on ASEAN, May 11, 2017, Phnom Penh, Cambodia

- "Introducing the Updated Global Competitiveness Index: Briefing for the Geneva-Based Diplomatic Community," Presentation and Q&As, June 9, 2017, Geneva, Switzerland

EXPERT CONSULTATIONS

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- The World Bank Group
- United Nations Educational, Scientific and Cultural Organization
- World Intellectual Property Organization

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- Ministry of National Economy of Kazakhstan
- Permanent Mission of the Republic of Korea
- Secretariat of Economy of Mexico
- Public Authority for Investment Promotion and Export of Oman
- Ministry of Economy of Portugal
- Rwanda Development Board
- Federal Department of Foreign Affairs of Switzerland

Appendix E1:
Preliminary Structure and Composition of the Global Competitiveness Index 4.0

The following table provides the preliminary structure and composition of the Global Competitiveness Index 4.0 to date. It informs on the hierarchy of the index, showing each level of aggregation. At each level, starting from the lowest level (i.e., the individual indicator), values are aggregated using an arithmetic mean (unless noted otherwise) in order to produce the score of their respective parent categories, which in turn are combined to produce the score of their respective categories. At the highest level of aggregation, the scores of the 12 pillars are averaged out to yield the overall GCI score, as described in this appendix.

For each individual indicator, the table provides a short description; the name of the organization from which all, or the majority of data points was collected; and the reference period—that is, the most frequent measurement period. For more details about the indicators derived from the Executive Opinion Survey, refer to Appendix C of this *Report*. For additional information on the methodology, specific indicators, and/or data points, contact gcp@weforum.org.

Table E1: Preliminary structure and composition

Global Competitiveness Index 4.0	*Aggregate*
Enabling environment component	*Not used in calculation, only for presentation purposes*
1st pillar: Institutions	*Aggregate*
1.A Security	*Aggregate*

1.01	**Business costs of organized crime**	*Individual indicator*

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]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

1.02	**Homicide rate**	*Individual indicator*

Number of homicides per 100,000 population.

United Nations Office on Drugs and Crime (UNODC) | 2015

1.03	**Terrorism incidence**	*Individual indicator*

This custom-built index is the weighted average of the number of terrorism-related casualties (injuries and fatalities) and the number of terrorist attacks, discounted by time. Each component is normalized separately and then averaged. Values range from 1 [highest incidence] to 7 [no incidence].

World Economic Forum analysis based on the National Consortium for the Study of Terrorism and Responses to Terrorism (START) | Weighted count 2012–2016

1.04	**Reliability of police services**	*Individual indicator*

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]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

1.B Social capital	*Aggregate*

1.05	**Generosity among population**	*Individual indicator*

This indicator corresponds to the average percentage of people in each country who (a) donate money, (b) volunteer, or (c) help a stranger.

Charities Aid Foundation | 2015

1.06	**Trust among population**	*Individual indicator*

This indicator is derived from the question from the World Value Survey asking: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" It is calculated as the share of respondents who answered "Most people can be trusted."

World Economic Forum's calculations based on World Value Survey data | 2013

1.07	**E-Participation Index**	*Individual indicator*

This indicator assesses the use of online services to facilitate the provision of information by governments to citizens ("e-information sharing"), interaction with stakeholders ("e-consultation"), and engagement in decision-making processes.

United Nations, Department of Economic and Social Affairs (UNDESA) | 2016

1.C Checks and balances	*Aggregate*

1.08 **Budget transparency** *Individual indicator*

This indicator assesses on a scale of 0 to 100 [most transparent] the extent to which governments publish data related to budget and spending.

World Bank Group | 2015

1.09 **Judicial independence** *Individual indicator*

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]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

1.10 **Efficiency of legal framework in challenging regulations** *Individual indicator*

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]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

1.11 **Freedom of the press** *Individual indicator*

The World Press Freedom Index measures media independence, the quality of the infrastructure that supports the production of news, and information and acts of violence against journalists. It is based on two sources: a database of the level of abuses and violence against journalists and media; and an expert opinion survey on pluralism, media independence, self-censorship, transparency, and infrastructure in each country. The scale ranges from 0 [good] to 100 [very bad].

Reporters Without Borders (RSF) | 2016

1.D Public-sector performance	*Aggregate*

1.12 **Burden of government regulation** *Individual indicator*

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]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

1.13 **Efficiency of legal framework in settling disputes** *Individual indicator*

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

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

1.14 **Future orientation of government** *Individual indicator*

Average score of the following four EOS questions: In your country, how fast is the legal framework of your country in adapting to digital business models (e.g., e-commerce, sharing economy, fintech, etc.)? [1 = not fast at all; 7 = very fast]; In your country, to what extent does the government ensure a stable policy environment for doing business?; In your country, to what extent does the government respond effectively to change (e.g., technological changes, societal and demographic trends, security and economic challenges)?; In your country, to what extent does the government have a long-term vision in place? For the last three questions, the answer ranges from 1 [not at all] to 7 [to a great extent].

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

1.E Undue influence and corruption	*Aggregate*

1.15 **Incidence of corruption** *Individual indicator*

The Corruption Perceptions Index aggregates data from a number of different sources that provide perceptions of business people and country experts of the level on corruption in the public sector. The scale ranges from 0 [very clean] to 100 [highly corrupt].

Transparency International | 2016

1.16 **Ethics of politicians** *Individual indicator*

In your country, how do you rate the ethical standards of politicians? [1 = extremely low; 7 = extremely high]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

1.F Property rights	*Aggregate*

1.17 **Property rights** *Individual indicator*

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

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

1.18 **Intellectual property protection** *Individual indicator*

In your country, to what extent is intellectual property protected? [1 = not at all; 7 = to a great extent]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

1.19 **Quality of land administration** *Individual indicator*

The quality of land administration index assesses five dimensions: reliability of infrastructure, transparency of information, geographic coverage, land dispute resolution, and equal access to property rights. The scale ranges from 0 to 30 [best].

World Bank Group | 2016

1.G Corporate governance	*Aggregate*

1.20   **Strength of auditing and accounting standards**   *Individual indicator*

In your country, how strong are financial auditing and reporting standards? [1 = extremely weak; 7 = extremely strong]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

1.21   **Conflict of interest regulation**   *Individual indicator*

The Extent of conflict of interest regulation index measures the protection of shareholders against directors' misuse of corporate assets for personal gain by distinguishing three dimensions of regulation that address conflicts of interest: transparency of related-party transactions, shareholders' ability to sue and hold directors liable for self-dealing, and access to evidence and allocation of legal expenses in shareholder litigation.The scale ranges from 0 to 10 [best].

World Bank Group | 2016

1.22   **Shareholder governance**   *Individual indicator*

The Extent of shareholder governance index measures shareholders' rights in corporate governance by distinguishing three dimensions of good governance: shareholders' rights and role in major corporate decisions; governance safeguards protecting shareholders from undue board control and entrenchment; and corporate transparency on ownership stakes, compensation, audits and financial prospects. The scale ranges from 0 to 10 [best].

World Bank Group | 2016

2nd pillar: Infrastructure	*Aggregate*
2.A Transport infrastructure	*Aggregate*
Roads	*Aggregate*

2.01   **Quality of road network**   *Individual indicator*

The Road Quality Index is composed of two elements: a measure of the average speed of a driving itinerary connecting the 10 or more largest cities in an economy accounting for at least 15 percent of the economy's total population, and a measure of road straightness.

World Economic Forum's calculations based on data from Open Street Maps and Google Directions, and the Geonames database. | 2016

2.02   **Quality of road infrastructure**   *Individual indicator*

In your country, how 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]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

Railroads	*Aggregate*

2.03   **Railroad density**   *Individual indicator*

Kilometers of railroad per 1,000 square kilometers of land.

World Economic Forum calculations based on World Bank data | 2016

2.04   **Efficiency of train services**   *Individual indicator*

In your country, how efficient (i.e., frequency, punctuality, speed, price) are train transport services? [1 = extremely inefficient—among the worst in the world; 7 = extremely efficient—among the best in the world]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

Air transport	*Aggregate*

2.05   **Airport connectivity**   *Individual indicator*

The IATA airport connectivity indicator measures the degree of integration of a country within the global air transport network. It is based on the number of available seats offered in flights originating from a country. For each airport, the number of available seats to each destination is weighted by the size of the destination airport (in terms of number of passengers handled). The weighted totals are then summed for all destinations, then for all airports in the country to produce a score. This score is then divided by the highest score (United States) and multiplied by 100. The scale of this indicator ranges from 0 to 100 [best].

International Air Transport Association (IATA) | 2017

2.06   **Efficiency of air transport services**   *Individual indicator*

In your country, how efficient (i.e., frequency, punctuality, speed, price) are air transport services? [1 = extremely inefficient—among the worst in the world; 7 = extremely efficient—among the best in the world]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

Water transport	*Aggregate*

2.07   **Liner shipping connectivity**   *Individual indicator*

The Liner Shipping Connectivity Index assesses a country's connectivity to global shipping networks. It is based on five components of the maritime transport sector: the number of ships, their container-carrying capacity, the maximum vessel size, the number of services, and the number of companies that deploy container ships in a country's ports. The index uses an open scale, with 100 corresponding to the most connected country in 2004.

United Nations Conference on Trade and Development (UNCTAD) | 2016

| 2.08 | Efficiency of seaport services | *Individual indicator* |

In your country, how efficient (i.e., frequency, punctuality, speed, price) are seaport services (ferries, boats) (for landlocked countries: assess access to seaport services) [1 = extremely inefficient—among the worst in the world; 7 = extremely efficient— among the best in the world]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

| **2.B Utility infrastructure** | *Aggregate* |

| Electricity infrastructure | *Aggregate* |

| 2.09 | Electrification rate | *Individual indicator* |

Share of population with access to electricity.

International Energy Agency | 2014

| 2.10 | Electric power transmission and distribution losses | *Individual indicator* |

Electric power transmission and distribution losses as a percentage of output.

International Energy Agency | 2014

| Water infrastructure | *Aggregate* |

| 2.11 | Exposure to unsafe drinking water | *Individual indicator* |

Percentage of population exposed to unsafe water.

Institute for Health Metrics and Evaluation (IHME) | 2015

| 2.12 | Reliability of water supply | *Individual indicator* |

In your country, how reliable is the water supply (lack of interruptions and flow fluctuations)? [1 = extremely unreliable; 7 = extremely reliable]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

| **3rd pillar: Technological readiness** | *Aggregate* |

Note: In computing the score of this pillar, indicator 3.02 is not directly used in the calculation. Instead the ratio of indicator 3.02 to indicator 3.01 is used and serves as an approximation of the share of mobile-cellular telephone subscriptions that have broadband capability. The same approach is used for indicator 3.04, to approximate the share fixed broadband connections that are optical fiber subscriptions.

| 3.01 | Mobile-cellular telephone subscriptions | *Individual indicator* |

Number of mobile-cellular telephone subscriptions per 100 population. This includes postpaid subscriptions, active prepaid accounts (i.e., that have been active during the past three months), and all mobile-cellular subscriptions that offer voice communications.

International Telecommunications Union (ITU) | 2016

| 3.02 | Mobile-broadband subscriptions | *Individual indicator* |

Number of active mobile-broadband subscriptions per 100 population. This includes standard mobile-broadband subscriptions and dedicated mobile-broadband data subscriptions to the public Internet.

International Telecommunications Union (ITU) | 2016

| 3.03 | Fixed-broadband Internet subscriptions | *Individual indicator* |

Number of fixed-broadband Internet subscriptions per 100 population. This refers to subscriptions for high-speed access to the public Internet (a TCP/IP connection). It includes cable modem, DSL, fiber, and other fixed (wired)-broadband technologies— such as Ethernet LAN, and broadband over powerline communications.

International Telecommunications Union (ITU) | 2016

| 3.04 | Optical fiber subscriptions | *Individual indicator* |

Fiber-to-the-home/building Internet subscriptions divided by 100 population. *Fiber-to-the-home/building Internet* refers to the number of Internet subscriptions using fiber-to-the-home or fiber-to-the-building at downstream speeds equal to, or greater than, 256 kb/s. This should include subscriptions where fiber goes directly to the subscriber's premises or fiber-to-the-building subscriptions that terminate no more than 2 meters from an external wall of the building. Fiber-to-the-cabinet and fiber-to-the-node are excluded.

International Telecommunications Union (ITU) | 2015

| 3.05 | Internet users | *Individual indicator* |

Percentage of individuals who used the Internet from any location and for any purpose, irrespective of the device and network used, in the last three months.

International Telecommunications Union (ITU) | 2016

| **4th pillar: Macroeconomic context** | *Aggregate* |

| 4.01 | Inflation | *Individual indicator* |

Annual percent change in the consumer price index (year average).

International Monetary Fund (IMF) | 2016

4.02	Government debt-to-revenue ratio	*Individual indicator*

General government gross debt as a percentage of general government revenue.

International Monetary Fund (IMF) | 2016

4.03	Debt dynamics	*Individual indicator*

This indicator measures the sustainability of public debt. It is calculated according to the following formula: [primary budget balance] + [public debt] * ([interest rate paid on debt] – [inflation] – [GDP growth rate]). It takes into account that public debt-to-GDP ratio: increases with budget deficit; decreases with inflation; increases with interest rate; and decreases with GDP growth. The value of inflation, GDP growth, primary budget and interest rates are calculated as moving averages for the period 2011–2016. The value of public debt is defined by the ratio of debt to GDP in 2015.

World Economic Forum's calculations based on International Monetary Fund (IMF) data | 2016

Human capital component	*Not used in calculation, only for presentation purposes*
5th pillar: Health	*Aggregate*

5.01	Healthy life expectancy	*Individual indicator*

Number of years that a newborn can expect to live in good health, taking into account mortality and disability.

Institute for Health Metrics and Evaluation (IHME) | 2015

6th pillar: Education and skills	*Aggregate*
6.A Current workforce	*Aggregate*

Note: The score of subpillar 6.A is the average of indicator 6.01 and of the aggregate measure Skills of current workforce.

6.01	Mean years of schooling	*Individual indicator*

Average number of completed years of education of a country's population aged 25 years and older.

United Nations Educational, Scientific and Cultural Organization (UNESCO) | 2015

Skills of current workforce	*Aggregate*

6.02	Extent of staff training	*Individual indicator*

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

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

6.03	Quality of vocational training	*Individual indicator*

In your country, how do you assess the quality of vocational training? [1 = extremely poor—among the worst in the world; 7 = excellent—among the best in the world]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

6.04	Skillset of graduates	*Individual indicator*

Average score of the two following EOS questions: In your country, to what extent do graduating students from secondary education possess the skills needed by businesses? and In your country, to what extent do graduating students from university possess the skills needed by businesses? In each case, the answer ranges from 1 [not at all] to 7 [to a great extent]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

6.05	Digital skills among population	*Individual indicator*

In your country, to what extent does the active population possess sufficient digital skills (e.g., computer skills, basic coding, digital reading)? [1 = not all; 7 = to a great extent]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

6.06	Ease of finding skilled employees	*Individual indicator*

In your country, to what extent can companies find people with the skills required to fill their vacancies? [1 = not at all; 7 = to a great extent]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

6.B Future workforce	*Aggregate*

Note: The score of subpillar 6.B is the average of indicator 6.07 and of the aggregate measure Skills of future workforce.

6.07	School life expectancy	*Individual indicator*

Total number of years of schooling (primary through tertiary) that a child can expect to receive, assuming that the probability of his or her being enrolled in school at any particular future age is equal to the current enrollment ratio at that age.

United Nations Educational, Scientific and Cultural Organization (UNESCO) | 2015

Skills of future workforce	*Aggregate*

6.08	Critical thinking in teaching	*Individual indicator*

In your country, how do you assess the style of teaching? [1 = frontal, teacher based, and focused on memorizing; 7 = encourages creative and critical individual thinking]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

| 6.09 | **Pupil-to-teacher ratio in primary education** | *Individual indicator* |

Average number of pupils per teacher, based on headcounts of both pupils and teachers.

World Bank | 2015

| **Markets component** | *Not used in calculation, only for presentation purposes* |

| **7th pillar: Product market efficiency** | *Aggregate* |

| **7.A Domestic competition** | *Aggregate* |

| 7.01 | **Extent of market dominance** | *Individual indicator* |

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

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

| 7.02 | **Competition in services** | *Individual indicator* |

Average of the scores of the three components of the following EOS question: In your country, how competitive is the provision of the following services: (a) professional services (legal services, accounting, engineering, etc.); (b) retail services; and (c) network sector (telecommunications, utilities, postal, transport, etc.)? In each case, the answer ranges from 1 [not at all competitive] to 7 [extremely competitive]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

| **7.B Foreign competition** | *Aggregate* |

| 7.03 | **Prevalence of non-tariff barriers** | *Individual indicator* |

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]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

| 7.04 | **Trade tariffs** | *Individual indicator* |

Trade-weighted average applied tariff rate (%).

International Trade Centre | 2016

| 7.05 | **Complexity of tariffs** | *Individual indicator* |

Index (1–7 best) that measures the complexity of a country's tariff regime based on three criteria: tariff dispersion, the prevalence of tariff peak and specific tariffs, and the number of distinct tariffs.

International Trade Centre | 2016

| 7.06 | **Efficiency of customs clearance** | *Individual indicator* |

This indicator assesses the effectiveness and efficiency of the clearance process by customs and other border control agencies in the eight major trading partners of each country. The scale ranges from 1 to 5 [best].

World Bank and Turku School of Economics | 2016

| 7.07 | **Services trade openness** | *Individual indicator* |

The Services Trade Restrictiveness Index assesses the overall openness of the service sector of a country for five major services sectors (financial services, telecommunications, retail distribution, transportation, professional services) and three modes of supply (cross-border supply of services, supply of services through commercial presence or FDI, and temporary presence of natural persons). The scale ranges from 0 [completely open] to 100 [completely closed].

World Bank | 2009

| **7.C Taxation and regulation distortions** | *Aggregate* |

| 7.08 | **Non-labor tax rate** | *Individual indicator* |

Sum of profit tax and other taxes paid by businesses as a percentage of profit.

World Bank Group | 2016

| 7.09 | **Distortive effect of taxes and subsidies on competition** | *Individual indicator* |

In your country, to what extent do fiscal measures (subsidies, tax breaks, etc.) distort competition? [1 = distort competition to a great extent; 7 = do not distort competition at all]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

| **8th pillar: Labor market functioning** | *Aggregate* |

| **8.A Flexibility** | *Aggregate* |

| 8.01 | **Redundancy costs** | *Individual indicator* |

Cost (in weekly wages) of advance notice requirements, severance payments, and penalties due when terminating a redundant worker.

World Bank Group | 2016

8.02   Hiring and firing practices   *Individual indicator*

In your country, to what extent do regulations allow for the flexible hiring and firing of workers? [1 = not at all; 7 = to a great extent]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

8.03   Cooperation in labor-employer relations   *Individual indicator*

In your country, how do you characterize labor-employer relations? [1 = generally confrontational; 7 = generally cooperative]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

8.04   Flexibility of wage determination   *Individual indicator*

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

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

8.05   Active labor policies   *Individual indicator*

In your country, to what extent do labor market policies help unemployed people to reskill and find new employment (including skills matching, retraining, etc.)? [1 = not at all; 7 = to a great extent]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

8.06   Workers' rights   *Individual indicator*

This index is adapted from the ITUC Global Rights Index, which measures the level of protection of internationally recognized core labor standards including civil rights, the right to bargain collectively, the right to strike, the right to associate freely, and access to due process rights. It does not take into account any element of firing regulations. The scale ranges from 1 [no protection] to 7 [high protection].

World Economic Forum's calculations based on International Trade Union Confederation (ITUC) data | 2016

8.07   Ease of hiring foreign labor   *Individual indicator*

In your country, how restrictive are regulations related to the hiring of foreign labor? [1 = highly restrictive; 7 = not restrictive at all]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

8.08   Internal labor mobility   *Individual indicator*

In your country, to what extent do people move to other parts of the country for professional reasons? [1 = not at all; 7 = to a great extent]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

8.B Talent utilization	*Aggregate*

8.09   Reliance of professional management   *Individual indicator*

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]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

8.10   Pay and productivity   *Individual indicator*

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

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

8.11   Female participation in labor force   *Individual indicator*

The ratio of the percentage of women aged 15–64 participating in the labor force as wage and salaried workers to the percentage of men aged 15–64 participating in the labor force as wage and salaried workers.

World Economic Forum's calculations based on International Labour Organization (ILO) data | 2016

8.12   Labor tax rate   *Individual indicator*

The amount of labor taxes and social contributions paid by the employer as a percentage of profits.

World Bank Group | 2016

9th pillar: Financial market development	*Aggregate*
9.A Depth	*Aggregate*

9.01   Domestic credit to private sector   *Individual indicator*

Financial resources provided to the private sector by financial corporations as a percentage of GDP. *Financial resources* are loans, purchases of non-equity securities, and trade credits and other accounts receivable, that establish a claim for repayment.

World Bank | 2015

9.02   Financing of SMEs   *Individual indicator*

In your country, to what extent can small- and medium-sized enterprises (SMEs) access finance they need for their business operations through the financial sector? [1 = not at all; 7 = to a great extent]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

9.03   Venture capital availability   *Individual indicator*

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]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

9.04   **Market capitalization** *Individual indicator*

Total value of listed companies as a percentage of GDP. The total value is calculated as the price of all listed domestic companies multiplied by the number of their outstanding shares. It is a measure of the depth of the equity market.

World Bank | 2014

9.05   **Stock market turnover** *Individual indicator*

Total value of shares traded during a calendar year divided by the average market capitalization for that year.

World Bank | 2014

9.06   **Non-life insurance premiums** *Individual indicator*

Ratio of non-life insurance premium volume as a percentage of GDP. Premium volume is the insurer's direct premiums earned (if Property/Casualty) or received (if Life/Health) during the previous calendar year.

World Bank | 2014

9.07   **Collateral and bankruptcy regulation** *Individual indicator*

This indicator combines two measures: the Strength of legal rights index, which assesses the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending; and the Depth of credit information index, which measures rules and practices affecting the coverage, scope, and accessibility of credit information available through either a credit bureau or a credit registry. The scale ranges from 1 to 7 [best].

World Economic Forum's calculations based on World Bank Group data | 2016

9.B Stability	*Aggregate*

9.08   **Soundness of banks** *Individual indicator*

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]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

9.09   **Non-performing loans** *Individual indicator*

Value of non-performing loans divided by the total value of the loan portfolio (including non-performing loans before the deduction of specific loan-loss provisions).

World Bank | 2016

9.10   **Credit gap** *Individual indicator*

Difference between the most recent domestic credit to private sector, as a percentage of GDP, and its 20-year trend.

World Economic Forum's calculations based on World Bank data | 2015

9.11   **Banks' regulatory capital ratio** *Individual indicator*

Ratio of total regulatory capital of banks to their assets, weighted according to the risk of those assets.

World Bank | 2014

10th pillar: Market size	*Aggregate*

Note: The score of this pillar corresponds to the natural logarithm of the sum of GDP and imports, valued at purchasing power parity (PPP). Valuation of imports at PPP is estimated by multiplying the share of exports (indicator 10.02) by the value of GDP (indicator 10.02).

10.01   **Gross domestic product** *Individual indicator*

Gross domestic product (GDP) valued at purchasing power parity in billions of international dollars.

International Monetary Fund (IMF) | 2016

10.02   **Imports of goods and services** *Individual indicator*

Imports of goods and services as a percentage of GDP.

World Trade Organization (WTO) and International Monetary Fund (IMF) | 2016

Innovation ecosystem component	*Not used in calculation, only for presentation purposes*
11th pillar: Business dynamism	*Aggregate*
11.A Regulation	*Aggregate*

11.01   **Cost of starting a business** *Individual indicator*

Ratio of total cost to start a business to the economy's income per capita. *Total cost* includes all official fees and fees for legal or professional services if such services are required by law or commonly used in practice.

World Bank Group | 2016

11.02   **Time to start a business** *Individual indicator*

Number of days required to start a business. This is the median duration that incorporation lawyers indicate is necessary to complete a procedure with minimum follow-up with government agencies and no extra payments.

World Bank Group | 2016

11.03 **Insolvency recovery rate** *Individual indicator*

The recovery rate is recorded as cents on the dollar recovered by secured creditors through judicial reorganization, liquidation, or debt enforcement (foreclosure or receivership) proceedings.

World Bank Group | 2016

11.04 **Insolvency regulatory framework** *Individual indicator*

Index (0–16 best) measuring the adequacy and integrity of the legal framework applicable to liquidation and reorganization proceedings. This is based on four other indexes: the Commencement of proceedings index, the Management of debtor's assets index, the Reorganization proceedings index, and the Creditor participation index.

World Bank Group | 2016

11.B Entrepreneurship	*Aggregate*

11.05 **Attitudes toward entrepreneurial risk** *Individual indicator*

In your country, to what extent do people have an appetite for entrepreneurial risk? [1 = not at all; 7 = to a great extent]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

11.06 **Willingness to delegate authority** *Individual indicator*

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

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

11.07 **Growth of innovative companies** *Individual indicator*

In your country, to what extent do new companies with innovative ideas grow rapidly? [1 = not at all; 7 = to a great extent]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

11.08 **Companies embracing disruptive ideas** *Individual indicator*

In your country, to what extent do companies embrace risky or disruptive business ideas? [1 = not at all; 7 = to a great extent]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

12th pillar: Innovation capacity	*Aggregate*
12.A: Interaction and diversity	*Not used in calculation, only for presentation purposes*

12.01 **Urbanization rate** *Individual indicator*

Share of urban population to total population. *Urban population* refers to people living in urban areas as defined by national statistical offices.

United Nations, Department of Economic and Social Affairs (UNDESA) | 2015

12.02 **Diversity of workforce** *Individual indicator*

In your country, to what extent do companies have a diverse workforce (e.g., in terms of ethnicity, religion, sexual orientation, gender) ? [1 = not at all; 7 = to a great extent]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

12.03 **State of clusters development** *Individual indicator*

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]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

12.04 **International co-inventions** *Individual indicator*

Number of patent families with co-inventors located abroad, filed in at least two of the major 5 (IP5) offices in the World: the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), and the United States Patent and Trademark Office (USPTO). Data are extracted from the PATSTAT database by earliest filing date and inventor country, using fractional counts.

Organisation for Economic Co-operation and Development (OECD) | 2013–2015 moving average

12.05 **Multi-stakeholder collaboration** *Individual indicator*

Average score of the three following EOS questions: In your country, to what extent do people collaborate and share ideas within a company? [1 = not at all; 7 = to a great extent]; In your country, to what extent do companies collaborate in sharing ideas and innovating? [1 = not at all; 7 = to a great extent]; In your country, to what extent do business and universities collaborate on research and development (R&D)? [1 = not at all; 7 = to a great extent]

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

12.B: Research and development	*Not used in calculation, only for presentation purposes*

12.06 **Citable publications** *Individual indicator*

Number of citable documents published by a journal in the three previous years (selected year documents are excluded). Exclusively articles, reviews, and conference papers are considered. The documents universe is defined by the documents tracked by Scopus, the largest abstract and citation database of peer-reviewed literature: scientific journals, books, and conference proceedings.

SCImago | 2014–2016 moving average

12.07   **Patent applications**   *Individual indicator*

Total number of patent families filed in at least two of the major 5 (IP5) offices in the World: the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), and the United States Patent and Trademark Office (USPTO). Data are extracted from the PATSTAT database by earliest filing date and inventor country, using fractional counts.

Organisation for Economic Co-operation and Development (OECD) | 2013–2015 moving average

12.08   **R&D expenditures**   *Individual indicator*

Expenditure on research and development (R&D) as a percentage of GDP. Expenditures for research and development are current and capital expenditures (both public and private) on creative work undertaken systematically to increase knowledge, including knowledge of humanity, culture, and society, and the use of knowledge for new applications. R&D covers basic research, applied research, and experimental development.

World Bank | 2014

12.09   **Quality of research institutions**   *Individual indicator*

This indicator assesses the prevalence and standing of private and public research institutions. It is calculated as the sum of the inverse ranks of all research institutions of a country included in the SCImago Institutions Rankings.

World Economic Forum's calculations based on SCImago data | 2016

12.C: Commercialization	*Not used in calculation, only for presentation purposes*

12.10   **Buyer sophistication**   *Individual indicator*

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

World Economic Forum, Executive Opinion Survey | 2016–2017 weighted average

12.11   **Trademark applications**   *Individual indicator*

Number of international trademark applications issued directly or through the Madrid System by country of origin per 1,000 population.

World Intellectual Property Organization (WIPO) | 2013–2015 moving average

Appendix E2:
Global Competitiveness Index 4.0: 2017 notional results

Table E2.1: 2017 notional overall score (0–100)

Economy	Score
Albania	50.6
Algeria	38.1
Argentina	48.6
Armenia	51.8
Australia	79.4
Austria	74.6
Azerbaijan	53.3
Bahrain	60.5
Bangladesh	35.3
Belgium	76.1
Benin	29.7
Bhutan	41.3
Bosnia and Herzegovina	47.2
Botswana	44.1
Brazil	49.9
Brunei Darussalam	57.1
Bulgaria	56.5
Burundi	22.8
Cambodia	40.1
Cameroon	32.4
Canada	83.5
Cape Verde	36.0
Chad	15.2
Chile	64.9
China	67.1
Colombia	50.9
Congo, Democratic Rep.	22.0
Costa Rica	53.7
Croatia	53.3
Cyprus	59.8
Czech Republic	68.5
Denmark	84.2
Dominican Republic	47.1
Ecuador	46.8
Egypt	39.6
El Salvador	41.1
Estonia	70.5
Ethiopia	28.5
Finland	82.7
France	77.0
Gambia, The	30.0
Georgia	56.4
Germany	86.4
Ghana	36.9
Greece	51.3
Guatemala	45.2
Guinea	27.6
Haiti	16.6
Honduras	41.8
Hong Kong SAR	84.8
Hungary	58.2
Iceland	77.2
India	48.9
Indonesia	57.8
Iran, Islamic Rep.	43.6
Ireland	74.8
Israel	75.9
Italy	64.4
Jamaica	49.5
Japan	80.5
Jordan	51.3
Kazakhstan	52.0
Kenya	42.6
Korea, Rep.	78.4
Kuwait	53.5
Kyrgyz Republic	44.4
Lao PDR	38.7
Latvia	61.1
Lebanon	46.9

Economy	Score
Lesotho	28.9
Liberia	25.8
Lithuania	61.6
Luxembourg	77.0
Madagascar	28.3
Malawi	22.9
Malaysia	70.2
Mali	30.8
Malta	64.1
Mauritania	24.4
Mauritius	58.7
Mexico	54.9
Moldova	47.2
Mongolia	46.2
Montenegro	52.2
Morocco	46.0
Mozambique	22.4
Namibia	43.9
Nepal	34.6
Netherlands	85.6
New Zealand	81.1
Nicaragua	41.2
Nigeria	32.5
Norway	82.3
Oman	53.3
Pakistan	36.6
Panama	54.1
Paraguay	44.8
Peru	53.2
Philippines	50.2
Poland	63.3
Portugal	63.7
Qatar	69.9
Romania	55.8
Russian Federation	58.9
Rwanda	43.8
Saudi Arabia	62.0
Senegal	35.4
Serbia	52.2
Seychelles	47.6
Sierra Leone	22.8
Singapore	85.9
Slovak Republic	60.5
Slovenia	63.4
South Africa	52.8
Spain	69.6
Sri Lanka	45.3
Swaziland	34.1
Sweden	85.1
Switzerland	87.0
Taiwan, China	77.9
Tajikistan	44.6
Tanzania	34.4
Thailand	60.7
Trinidad and Tobago	49.3
Tunisia	42.3
Turkey	56.1
Uganda	37.7
Ukraine	45.6
United Arab Emirates	74.9
United Kingdom	87.1
United States	88.8
Uruguay	53.1
Venezuela	30.8
Vietnam	51.2
Yemen	18.8
Zambia	30.7
Zimbabwe	27.7

Note: The methodology on which these results are based is under development and subject to feedback and comments.

Table E2.2: 2017 notional pillar scores (0–100)

Economy	ENABLING ENVIRONMENT				HUMAN CAPITAL		MARKETS				INNOVATION ECOSYSTEM	
	1st pillar: Institutions	2nd pillar: Infrastructure	3rd pillar: Technological readiness	4th pillar: Macroeconomic context	5th pillar: Health	6th pillar: Education and skills	7th pillar: Product market efficiency	8th pillar: Labor market functioning	9th pillar: Financial market development	10th pillar: Market size	11th pillar: Business dynamism	12th pillar: Innovation capacity
Albania	45.6	37.5	42.8	79.1	88.8	64.9	51.1	57.5	32.1	26.8	67.1	13.7
Algeria	29.9	37.4	33.0	55.2	81.4	46.4	21.6	3.0	23.6	59.6	52.0	13.8
Argentina	36.5	55.6	52.8	51.6	85.9	68.1	16.9	22.8	42.7	61.7	60.2	27.9
Armenia	45.3	46.9	53.0	77.7	79.6	59.7	56.6	62.9	33.6	23.0	65.8	17.3
Australia	81.2	80.8	73.3	94.6	98.1	95.0	62.1	64.7	82.6	66.0	84.4	69.9
Austria	75.7	88.1	63.1	93.7	96.9	80.5	70.0	54.9	67.1	56.5	78.9	70.5
Azerbaijan	53.6	60.8	53.0	44.0	74.7	64.6	63.1	52.1	38.3	44.8	71.7	18.6
Bahrain	65.9	65.8	66.5	60.9	87.0	70.6	75.9	52.7	59.1	33.1	67.9	20.7
Bangladesh	31.2	31.5	29.4	63.9	64.4	15.1	23.6	27.6	18.1	58.6	51.7	8.6
Belgium	70.2	87.7	66.0	87.6	94.5	94.5	75.4	47.1	67.3	62.1	85.9	75.3
Benin	28.1	11.4	24.4	75.7	44.1	16.1	29.2	21.9	22.5	20.9	55.2	7.4
Bhutan	63.2	43.4	29.6	78.0	68.9	31.1	25.0	49.9	41.5	7.5	47.6	10.1
Bosnia and Herzegovina	28.6	52.3	41.0	85.4	90.6	50.0	49.5	40.7	38.3	29.7	54.3	6.2
Botswana	46.5	35.9	47.2	78.9	33.5	46.0	42.4	56.4	45.5	27.0	57.6	12.9
Brazil	33.9	46.9	52.7	52.0	76.7	48.4	35.6	19.7	61.3	76.6	55.1	40.3
Brunei Darussalam	47.5	66.4	72.9	85.6	88.7	63.3	64.0	54.1	34.0	25.3	64.1	19.6
Bulgaria	41.2	61.5	68.9	82.4	80.7	59.1	59.4	52.5	33.6	44.7	63.5	30.3
Burundi	22.9	7.5	0.0	79.1	43.7	7.2	27.5	19.9	7.0	7.4	51.2	0.0
Cambodia	23.4	19.9	35.6	93.7	64.4	13.7	43.9	52.5	47.3	34.8	42.9	8.7
Cameroon	28.0	22.3	33.1	88.2	34.8	24.7	22.3	29.0	10.6	34.5	51.8	9.6
Canada	84.7	82.2	67.9	88.0	97.0	86.9	76.0	92.7	86.3	71.4	86.0	82.9
Cape Verde	39.9	22.7	38.4	37.9	72.9	42.2	46.6	37.5	39.8	0.6	42.1	11.8
Chad	12.0	4.5	0.5	70.2	28.2	0.0	5.2	0.0	13.2	24.2	23.8	0.5
Chile	58.7	70.9	51.8	99.4	94.0	66.9	58.4	59.1	66.3	55.0	69.6	28.6
China	53.7	73.2	63.2	95.3	87.1	56.3	55.5	33.9	60.1	100.0	70.5	56.3
Colombia	34.2	46.9	40.3	69.2	88.5	51.5	25.5	43.9	60.3	59.5	72.3	18.7
Congo, Democratic Rep.	14.5	4.5	29.3	22.9	31.0	19.6	15.0	39.0	13.7	31.2	38.3	4.8
Costa Rica	46.2	44.5	53.1	68.5	95.0	67.2	50.2	39.4	59.2	35.2	60.7	25.0
Croatia	39.7	67.5	59.1	66.7	88.2	61.3	58.3	41.4	39.0	38.7	60.3	19.3
Cyprus	52.9	71.5	67.7	58.7	97.8	74.1	69.0	61.3	33.6	25.7	75.4	29.7
Czech Republic	52.2	81.1	64.8	98.3	90.9	78.9	65.3	45.7	63.2	56.6	78.4	47.1
Denmark	86.0	86.0	88.2	96.6	94.5	100.0	64.4	95.7	82.7	50.9	90.7	74.5
Dominican Republic	27.1	46.6	39.5	87.3	80.7	45.0	38.5	43.0	45.1	43.1	52.2	17.4
Ecuador	29.0	56.8	39.0	91.9	81.9	53.1	35.4	29.3	44.9	43.8	45.4	11.1
Egypt	31.8	51.3	41.2	26.4	67.5	37.1	42.1	6.5	32.6	65.6	56.6	16.5
El Salvador	21.0	40.9	26.1	73.0	79.0	32.2	43.9	32.3	48.2	31.6	54.4	10.6
Estonia	71.9	70.7	82.6	100.0	87.9	84.0	75.7	63.1	62.3	30.3	78.2	39.1
Ethiopia	32.8	16.9	0.5	56.7	52.5	2.7	23.1	38.7	19.4	44.2	46.9	7.7
Finland	96.4	82.3	82.9	90.7	95.1	96.4	76.2	68.7	88.0	48.2	91.0	76.5
France	68.0	95.8	73.3	82.8	98.7	74.2	70.3	44.5	74.6	77.1	78.4	86.7
Gambia, The	38.5	25.8	18.9	41.9	59.8	14.0	28.8	44.9	23.3	0.1	50.2	13.5
Georgia	53.5	51.4	58.4	96.0	75.4	69.6	60.1	65.0	46.7	28.5	61.3	10.9
Germany	81.1	97.3	70.8	93.8	95.4	97.9	68.5	77.8	79.8	82.1	95.1	96.7
Ghana	46.8	23.5	58.7	0.0	53.4	35.0	52.3	38.1	22.8	41.1	56.8	14.2
Greece	34.0	71.7	54.4	40.5	97.2	75.1	47.3	28.3	22.7	50.2	64.5	30.4
Guatemala	27.0	39.3	21.1	85.3	71.6	36.8	59.9	37.9	51.3	40.8	59.6	11.9
Guinea	23.8	6.7	33.1	58.3	34.2	0.6	23.9	29.3	28.3	16.8	63.3	12.6
Haiti	9.6	0.0	28.7	27.1	47.2	7.0	14.6	28.5	12.5	19.9	0.0	3.9
Honduras	24.1	31.8	28.6	91.5	75.2	30.9	26.7	39.7	54.8	29.9	55.2	13.0
Hong Kong SAR	87.7	92.0	84.5	100.0	100.0	80.8	87.4	90.5	87.5	64.5	87.8	55.2
Hungary	41.6	72.0	58.5	93.8	84.9	68.2	49.1	37.1	47.3	53.7	57.7	33.9
Iceland	81.9	74.9	86.1	95.9	100.0	99.1	67.9	84.9	67.4	17.5	89.3	61.9
India	52.3	51.4	14.8	72.1	54.9	36.6	26.1	37.7	45.5	89.7	63.3	41.7
Indonesia	51.2	55.2	46.8	93.1	69.4	54.9	57.2	49.0	52.5	76.9	68.5	19.3
Iran, Islamic Rep.	29.3	46.2	33.2	59.2	76.8	51.7	34.9	7.9	39.5	67.8	52.2	24.8
Ireland	78.4	72.6	67.0	77.7	97.8	88.4	71.7	90.3	48.2	56.1	88.7	60.3
Israel	67.2	83.4	72.2	80.7	99.2	86.7	58.3	78.1	68.9	50.5	92.0	73.8
Italy	44.8	85.4	57.2	71.3	99.7	70.4	60.0	26.7	45.1	74.2	72.7	64.9
Jamaica	37.0	37.4	44.8	66.9	78.4	50.0	47.3	66.6	52.4	22.9	73.4	17.0
Japan	75.4	98.2	96.3	48.6	100.0	73.5	64.4	71.5	84.4	83.2	84.8	85.2
Jordan	50.4	50.9	46.9	56.9	86.0	56.0	56.4	39.7	54.6	38.3	55.9	23.7
Kazakhstan	47.9	54.8	63.2	29.4	66.7	68.0	52.1	65.7	33.2	55.2	73.8	13.4
Kenya	43.3	26.2	36.1	68.4	48.9	31.2	35.8	54.5	45.9	42.1	65.7	13.3
Korea, Rep.	62.3	89.3	100.0	93.2	99.2	73.8	50.2	53.0	80.5	73.3	81.0	85.3
Kuwait	49.1	52.1	49.8	100.0	92.9	48.1	59.9	23.3	43.2	52.6	49.7	20.8
Kyrgyz Republic	42.0	30.7	41.3	93.4	66.6	49.7	50.6	39.5	32.7	22.9	56.1	7.2
Lao PDR	33.6	34.2	28.3	81.1	57.7	30.2	46.4	42.0	31.7	28.1	38.8	12.2
Latvia	43.7	63.6	77.8	97.3	81.3	69.0	63.6	59.6	47.6	32.0	69.8	28.2
Lebanon	27.5	37.1	62.8	44.7	85.0	53.7	54.5	30.6	48.2	38.4	57.0	23.2

(Cont'd.)

Table E2.2: 2017 notional pillar scores (0–100) *(cont'd.)*

Economy	ENABLING ENVIRONMENT				HUMAN CAPITAL		MARKETS				INNOVATION ECOSYSTEM	
	1st pillar: Institutions	2nd pillar: Infrastructure	3rd pillar: Technological readiness	4th pillar: Macroeconomic context	5th pillar: Health	6th pillar: Education and skills	7th pillar: Product market efficiency	8th pillar: Labor market functioning	9th pillar: Financial market development	10th pillar: Market size	11th pillar: Business dynamism	12th pillar: Innovation capacity
Lesotho	31.9	9.6	21.5	80.0	0.0	24.0	52.4	41.2	18.7	10.6	50.1	6.6
Liberia	30.1	3.2	30.0	63.0	42.2	16.6	17.4	28.1	20.2	2.0	46.3	10.2
Lithuania	54.6	59.0	77.0	98.1	80.3	68.8	65.6	48.1	45.3	39.3	70.0	33.3
Luxembourg	81.2	84.0	76.8	97.4	97.9	75.6	81.3	76.8	73.9	39.6	71.3	68.5
Madagascar	25.9	4.2	4.9	63.3	46.1	19.7	44.1	33.7	16.5	26.7	50.0	4.5
Malawi	33.8	8.2	7.7	14.1	38.3	10.3	37.2	38.3	21.5	20.7	42.4	1.9
Malaysia	69.9	75.4	64.7	85.5	81.4	71.1	60.0	68.8	76.4	66.3	82.7	40.0
Mali	23.3	11.8	41.1	77.0	36.5	5.8	50.9	12.3	23.4	26.6	53.1	8.3
Malta	59.7	75.7	66.9	94.8	98.7	75.2	49.0	70.2	49.0	23.9	65.1	41.4
Mauritania	17.7	8.4	40.7	78.7	61.9	6.8	0.0	9.1	2.2	18.0	36.8	12.1
Mauritius	56.8	61.2	51.1	84.0	79.3	58.0	65.2	63.2	60.8	23.7	75.0	26.0
Mexico	31.9	59.1	45.3	85.6	83.6	45.5	44.3	32.5	54.9	75.8	72.9	27.5
Moldova	34.2	46.1	62.2	84.1	77.6	52.9	55.4	37.5	22.3	21.1	62.5	10.1
Mongolia	38.4	35.6	44.7	91.2	59.6	49.7	50.1	57.9	29.7	27.3	57.0	13.8
Montenegro	44.6	46.0	52.4	72.2	87.0	61.9	60.2	62.3	43.5	13.7	67.5	15.6
Morocco	49.3	51.4	35.9	79.6	74.4	26.5	42.3	21.8	47.5	51.3	55.5	15.9
Mozambique	23.4	16.8	26.3	6.1	27.2	0.4	28.3	17.1	32.0	28.7	56.0	6.6
Namibia	48.6	30.2	31.5	73.6	46.4	30.4	50.0	60.2	65.8	24.6	52.3	12.8
Nepal	36.7	17.0	27.0	58.2	62.9	25.2	34.8	28.2	30.7	35.4	54.4	5.3
Netherlands	92.6	96.1	78.6	89.1	96.5	95.7	77.0	81.2	78.6	67.5	92.1	82.1
New Zealand	100.0	73.9	74.4	100.0	96.4	97.5	66.9	100.0	75.3	44.0	90.3	55.0
Nicaragua	24.7	31.1	32.8	97.9	88.4	24.7	25.3	40.2	40.3	27.3	51.7	10.1
Nigeria	20.8	15.3	19.2	13.5	46.3	16.6	47.3	52.3	25.0	64.2	57.4	12.1
Norway	93.1	73.4	87.9	100.0	98.4	97.2	60.6	81.5	80.5	53.1	92.0	69.3
Oman	60.3	61.2	48.3	82.5	81.7	54.6	62.8	23.7	43.8	46.3	61.7	12.5
Pakistan	28.0	35.1	10.1	69.6	51.7	10.8	40.6	21.9	33.1	63.7	61.3	13.4
Panama	38.2	54.8	34.8	92.0	88.2	47.5	61.0	44.5	60.2	37.8	63.5	26.3
Paraguay	26.9	40.8	32.3	99.4	77.0	38.6	51.7	36.1	41.6	33.2	51.8	8.8
Peru	34.3	47.0	37.5	98.6	92.1	50.8	49.7	49.6	47.0	53.5	60.7	17.8
Philippines	28.2	39.7	49.1	92.3	67.7	48.2	33.7	50.6	51.2	62.9	66.2	12.9
Poland	48.2	74.8	52.1	83.7	88.0	76.5	63.7	46.3	55.6	67.2	67.3	36.8
Portugal	54.7	80.2	63.7	66.1	95.3	69.7	67.5	55.2	41.1	51.5	80.2	40.0
Qatar	67.9	66.4	87.2	100.0	89.7	69.4	84.6	53.2	54.3	52.5	75.7	38.0
Romania	43.0	58.9	65.6	82.1	81.8	58.1	59.7	45.5	36.4	56.6	63.0	19.5
Russian Federation	43.2	65.7	72.2	78.1	67.3	68.6	55.2	39.7	32.2	79.8	67.6	37.4
Rwanda	67.0	25.3	13.6	85.0	53.3	17.4	52.5	70.4	42.9	20.8	67.0	10.1
Saudi Arabia	61.7	62.9	53.1	86.4	91.4	70.3	71.9	35.2	62.1	71.5	49.8	27.0
Senegal	41.0	30.1	17.4	82.4	52.9	15.8	46.9	25.5	21.7	28.0	52.7	10.6
Serbia	37.8	59.1	51.9	87.6	84.0	62.5	45.6	49.0	28.1	40.4	63.6	17.0
Seychelles	43.1	53.2	43.5	79.9	78.6	60.4	38.7	49.8	39.9	0.0	55.5	28.3
Sierra Leone	30.0	7.4	38.0	32.2	29.0	12.3	30.9	18.5	7.7	13.3	49.3	5.4
Singapore	97.2	100.0	89.9	58.6	100.0	81.7	100.0	94.1	81.8	64.1	85.7	77.4
Slovak Republic	41.9	75.8	68.3	86.3	87.6	68.7	56.5	38.0	52.3	48.6	72.4	30.0
Slovenia	56.2	74.6	63.6	71.0	96.7	78.0	65.7	51.8	45.1	36.5	77.9	43.1
South Africa	44.7	55.3	37.3	77.0	37.9	46.5	49.3	52.5	75.5	61.8	68.3	26.9
Spain	60.2	91.4	71.6	61.3	100.0	72.8	65.7	37.7	68.7	71.2	75.2	59.4
Sri Lanka	43.1	54.6	21.8	63.4	87.5	58.2	22.0	27.5	44.1	49.0	63.3	9.0
Swaziland	34.9	36.0	36.7	68.0	11.5	30.8	35.6	47.3	38.5	12.7	52.1	5.2
Sweden	88.2	84.8	91.9	100.0	99.7	97.0	76.6	61.4	88.6	57.4	94.2	80.8
Switzerland	87.9	94.0	81.7	90.2	100.0	98.9	80.2	94.2	92.8	58.7	82.9	82.1
Taiwan, China	70.4	81.6	80.1	86.8	94.4	67.3	71.9	75.6	70.6	68.3	83.9	83.3
Tajikistan	48.0	44.2	40.1	86.2	73.5	51.0	32.2	53.2	19.6	23.3	59.9	4.2
Tanzania	39.0	21.3	4.8	79.2	48.6	10.2	36.4	34.4	32.7	41.9	55.7	8.9
Thailand	43.4	62.2	46.5	89.2	80.1	59.2	40.2	60.5	80.5	69.0	76.5	21.6
Trinidad and Tobago	30.6	50.2	54.4	84.0	71.2	57.1	43.7	55.9	52.6	24.6	60.6	7.1
Tunisia	39.0	40.4	39.4	83.3	85.0	48.4	25.8	11.0	19.5	42.7	59.4	13.3
Turkey	41.6	58.8	49.7	74.9	89.0	54.8	53.3	23.5	64.4	72.6	57.8	32.7
Uganda	33.8	14.8	43.1	77.8	40.8	16.1	40.3	51.1	34.7	35.5	58.0	6.3
Ukraine	31.3	54.2	47.4	25.6	70.5	72.3	56.4	32.8	22.5	54.5	59.0	21.1
United Arab Emirates	86.0	82.2	87.6	100.0	79.0	64.7	91.7	63.3	62.1	64.1	75.6	42.2
United Kingdom	87.6	93.0	81.5	78.8	96.7	88.6	72.7	91.0	95.2	77.2	92.1	91.3
United States	82.0	94.1	74.8	73.7	87.5	94.5	62.3	99.0	100.0	98.0	100.0	100.0
Uruguay	58.2	63.6	60.6	51.7	87.0	60.7	45.1	46.2	45.3	33.1	62.1	23.3
Venezuela	0.0	22.5	35.8	18.5	76.5	54.9	2.2	18.9	46.8	52.9	25.1	15.6
Vietnam	45.2	56.3	44.3	84.0	83.1	44.7	50.9	31.2	43.1	63.6	56.5	10.9
Yemen	6.6	4.5	6.4	51.5	53.0	2.8	25.4	3.3	0.0	32.4	35.3	4.0
Zambia	35.5	22.4	18.3	12.1	28.0	29.2	53.6	29.9	35.9	33.3	61.5	9.0
Zimbabwe	23.2	22.7	21.7	73.2	34.0	29.0	20.9	25.7	22.2	23.3	31.9	4.6

Note: The methodology on which these results are based is under development and subject to feedback and comments.