

Ease of doing business and distance to frontier

This year's report presents results for 2 aggregate measures: the aggregate ranking on the ease of doing business and a new measure, the "distance to frontier." While the ease of doing business ranking compares economies with one another at a point in time, the distance to frontier measure shows how much the regulatory environment for local entrepreneurs in each economy has changed over time.

EASE OF DOING BUSINESS

The ease of doing business index ranks economies from 1 to 183. For each economy the ranking is calculated as the simple average of the percentile rankings on each of the 10 topics included in the index in *Doing Business 2012*: starting a business, dealing with construction permits, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts, resolving insolvency and, new this year, getting electricity. The employing workers indicators are not included in this year's aggregate ease of doing business ranking. In addition to this year's ranking, *Doing Business* presents a comparable ranking for the previous year, adjusted for any

changes in methodology as well as additions of economies or topics.¹

Construction of the ease of doing business index

Here is one example of how the ease of doing business index is constructed. In Korea it takes 5 procedures, 7 days and 14.6% of annual income per capita in fees to open a business. There is no minimum capital required. On these 4 indicators Korea ranks in the 18th, 14th, 53rd and 0 percentiles. So on average Korea ranks in the 21st percentile on the ease of starting a business. It ranks in the 12th percentile on getting credit, 25th percentile on paying taxes, 8th percentile on enforcing contracts, 7th percentile on resolving insolvency and so on. Higher rankings indicate simpler regulation and stronger protection of property rights. The simple average of Korea's percentile rankings on all topics is 21st. When all economies are ordered by their average percentile rankings, Korea stands at 8 in the aggregate ranking on the ease of doing business.

More complex aggregation methods—such as principal components and unobserved

components—yield a ranking nearly identical to the simple average used by *Doing Business*.² Thus *Doing Business* uses the simplest method: weighting all topics equally and, within each topic, giving equal weight to each of the topic components.³

If an economy has no laws or regulations covering a specific area—for example, insolvency—it receives a "no practice" mark. Similarly, an economy receives a "no practice" or "not possible" mark if regulation exists but is never used in practice or if a competing regulation prohibits such practice. Either way, a "no practice" mark puts the economy at the bottom of the ranking on the relevant indicator.

The ease of doing business index is limited in scope. It does not account for an economy's proximity to large markets, the quality of its infrastructure services (other than services related to trading across borders and getting electricity), the strength of its financial system, the security of property from theft and looting, macroeconomic conditions or the strength of underlying institutions.

TABLE 5.1 Correlations between economy rankings on *Doing Business* topics

	Dealing with construction permits	Registering property	Getting credit	Protecting investors	Paying taxes	Trading across borders	Enforcing contracts	Resolving insolvency	Getting electricity
Starting a business	0.39	0.32	0.45	0.59	0.37	0.45	0.42	0.45	0.28
Dealing with construction permits		0.22	0.19	0.25	0.36	0.45	0.20	0.33	0.40
Registering property			0.39	0.29	0.31	0.27	0.49	0.33	0.24
Getting credit				0.47	0.20	0.41	0.42	0.52	0.24
Protecting investors					0.37	0.39	0.29	0.37	0.20
Paying taxes						0.40	0.27	0.33	0.40
Trading across borders							0.35	0.50	0.56
Enforcing contracts								0.42	0.21
Resolving insolvency									0.32

Source: *Doing Business* database.

Variability of economies' rankings across topics

Each indicator set measures a different aspect of the business regulatory environment. The rankings of an economy can vary, sometimes significantly, across indicator sets. The average correlation coefficient between the 10 indicator sets included in the aggregate ranking is 0.36, and the coefficients between any 2 sets of indicators range from 0.19 (between dealing with construction permits and getting credit) to 0.59 (between starting a business and protecting investors). These correlations suggest that economies rarely score universally well or universally badly on the indicators (table 5.1).

Consider the example of Canada. It stands at 12 in the aggregate ranking on the ease of doing business. Its ranking is 3 on both starting a business and resolving insolvency, and 5 on protecting investors. But its ranking is only 59 on enforcing contracts, 42 on trading across borders and 156 on getting electricity.

Figure 1.6 in the executive summary illustrates the degree of variability in each economy's performance across the different areas of business regulation covered by *Doing Business*. The figure draws attention to economies with a particularly uneven performance by showing the distance between the average of the highest 3 topic rankings and the average of the lowest 3 for each of 183 economies across the 10 topics included in this year's aggregate ranking. While a relatively small distance between these 2 averages suggests a broadly consistent approach across the areas of business regulation measured by *Doing Business*, a relatively large distance suggests a more narrowly focused approach, with greater room for improvement in some areas than in others.

Variation in performance across the indicator sets is not at all unusual. It reflects differences in the degree of priority that government authorities give to particular areas of business regulation reform and the ability of different government agencies to deliver tangible results in their area of responsibility.

Economies that improved the most across 3 or more *Doing Business* topics in 2010/11

Doing Business 2012 uses a simple method to calculate which economies improved the most in the ease of doing business. First, it selects the economies that in 2010/11 implemented regulatory reforms making it easier to do business in 3 or more of the 10 topics included in this year's ease of doing business ranking.⁴ Thirty economies meet this criterion: Armenia, Burkina Faso, Burundi, Cape Verde, the Central African Republic, Chile, Colombia, the Democratic Republic of Congo, Côte d'Ivoire, The Gambia, Georgia, Korea, Latvia, Liberia, FYR Macedonia, Mexico, Moldova, Montenegro, Morocco, Nicaragua, Oman, Peru, Russia, São Tomé and Príncipe, Senegal, Sierra Leone, Slovenia, the Solomon Islands, South Africa and Ukraine. Second, *Doing Business* ranks these economies on the increase in their ranking on the ease of doing business from the previous year using comparable rankings.

Selecting the economies that implemented regulatory reforms in at least 3 topics and improved the most in the aggregate ranking is intended to highlight economies with ongoing, broad-based reform programs.

DISTANCE TO FRONTIER MEASURE

This year's report introduces a new measure to illustrate how the regulatory environment for local businesses in each economy has changed over time. The distance to frontier measure illustrates the distance of an economy to the "frontier" and shows the extent to which the economy has closed this gap over time. The frontier is a score derived from the most efficient practice or highest score achieved on each of the component indicators in 9 *Doing Business* indicator sets (excluding the employing workers and getting electricity indicators) by any economy since 2005. In starting a business, for example, New Zealand has achieved the highest performance on the time (1 day), Canada and New Zealand on the number of procedures required (1), Denmark and Slovenia on the cost (0% of income per capita) and Australia on the paid-in minimum capital requirement (0% of income per capita).

Calculating the distance to frontier for each economy involves 2 main steps. First, individual indicator scores are normalized to a common unit. To do so, each of the 32 component indicators y is rescaled to $(y - \min)/(\max - \min)$, with the minimum value (\min) representing the frontier—the highest performance on that indicator across all economies since 2005. Second, for each economy the scores obtained for individual indicators are aggregated through simple averaging into one distance to frontier score. An economy's distance to the frontier is indicated on a scale from 0 to 100, where 0 represents the frontier and 100 the lowest performance.

The difference between an economy's distance to frontier score in 2005 and its score in 2011 illustrates the extent to which the economy has closed the gap to the frontier over time.

The maximum (\max) and minimum (\min) observed values are computed for the 174 economies included in the *Doing Business* sample since 2005 and for all years (from 2005 to 2011). The year 2005 was chosen as the baseline for the economy sample because it was the first year in which data were available for the majority of economies (a total of 174) and for all 9 indicator sets included in the measure. To mitigate the effects of extreme outliers in the distributions of the rescaled data (very few economies need 694 days to complete the procedures to start a business, but many need 9 days), the maximum (\max) is defined as the 95th percentile of the pooled data for all economies and all years for each indicator.

Take Colombia, which has a score of 0.30 on the distance to frontier measure for 2011. This score indicates that the economy is 30 percentage points away from the frontier constructed from the best performances across all economies and all years. Colombia was further from the frontier in 2005, with a score of 0.46. The difference between the scores shows an improvement over time.

NOTES

1. In case of revisions to the methodology or corrections to the underlying data, the data are back-calculated to provide a comparable time series since the year the relevant economy or topic was first included in the data set. The time series is available on the *Doing Business* website (<http://www.doingbusiness.org>). The *Doing Business* report publishes yearly rankings for the year of publication as well as the previous year to shed light on year-to-year developments. Six topics and more than 50 economies have been added since the inception of the project. Earlier rankings on the ease of doing business are therefore not comparable.
2. See Djankov and others (2005). Principal components and unobserved components methods yield a ranking nearly identical

to that from the simple average method because both these methods assign roughly equal weights to the topics, since the pairwise correlations among indicators do not differ much. An alternative to the simple average method is to give different weights to the topics, depending on which are considered of more or less importance in the context of a specific economy.

3. A technical note on the different aggregation and weighting methods is available on the *Doing Business* website (<http://www.doingbusiness.org>).
4. *Doing Business* reforms making it more difficult to do business are subtracted from the total number of those making it easier to do business.