

Doing Business 2016

Measuring Regulatory Quality and Efficiency

Economy Profile 2016

Luxembourg

responsabilité juridique

bureau de crédit единое окно

прозрачность 一站式服务

شفافية تحديد مهل زمنية oficina de crédito

balcão único

在线服务 collateral registry

single window

liability

نافذة موحدّة

transparency

сроки

征信中心

реестр залогового обеспечения

مكتب الائتمان one stop shop

servicios en línea

services en ligne

transparência

реорганизация

credit bureau

reorganización

سجل الضمانات

transparencia

guichet unique

设置办理时限

responsabilidade jurídica

مسؤولية

重组

reorganization

registro de garantías

COMPARING BUSINESS REGULATION FOR DOMESTIC FIRMS IN 189 ECONOMIES



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INTRODUCTION

Doing Business sheds light on how easy or difficult it is for a local entrepreneur to open and run a small to medium-size business when complying with relevant regulations. It measures and tracks changes in regulations affecting 11 areas in the life cycle of a business: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts, resolving insolvency and labor market regulation. *Doing Business 2016* presents the data for the labor market regulation indicators in an annex. The report does not present rankings of economies on labor market regulation indicators or include the topic in the aggregate distance to frontier score or ranking on the ease of doing business.

In a series of annual reports *Doing Business* presents quantitative indicators on business regulations and the protection of property rights that can be compared across 189 economies, from Afghanistan to Zimbabwe, over time. The data set covers 47 economies in Sub-Saharan Africa, 32 in Latin America and the Caribbean, 25 in East Asia and the Pacific, 25 in Eastern Europe and Central Asia, 20 in the Middle East and North Africa and 8 in South Asia, as well as 32 OECD high-income economies. The indicators are used to analyze economic outcomes and identify what reforms have worked, where and why.

This economy profile presents the *Doing Business* indicators for Luxembourg. To allow useful comparison,

it also provides data for other selected economies (comparator economies) for each indicator. The data in this report are current as of June 1, 2015 (except for the paying taxes indicators, which cover the period January–December 2014).

The *Doing Business* methodology has limitations. Other areas important to business—such as an economy's proximity to large markets, the quality of its infrastructure services (other than those related to trading across borders and getting electricity), the security of property from theft and looting, the transparency of government procurement, macroeconomic conditions or the underlying strength of institutions—are not directly studied by *Doing Business*. The indicators refer to a specific type of business, generally a local limited liability company operating in the largest business city. Because standard assumptions are used in the data collection, comparisons and benchmarks are valid across economies. The data not only highlight the extent of obstacles to doing business; they also help identify the source of those obstacles, supporting policy makers in designing regulatory reform.

More information is available in the full report. *Doing Business 2016* presents the indicators, analyzes their relationship with economic outcomes and presents business regulatory reforms. The data, along with information on ordering *Doing Business 2016*, are available on the *Doing Business* website at <http://www.doingbusiness.org>.

CHANGES IN *DOING BUSINESS 2016*

As part of a two-year update in methodology, *Doing Business 2016* expands the focus of five indicator sets (dealing with construction permits, getting electricity, registering property, enforcing contracts and labor market regulation), substantially revises the methodology for one indicator set (trading across borders) and implements small updates to the methodology for another (protecting minority investors).

The indicators on dealing with construction permits now include an index of the quality of building regulation and its implementation. The getting electricity indicators now include a measure of the price of electricity consumption and an index of the reliability of electricity supply and transparency of tariffs. Starting this year, the registering property indicators include an index of the quality of the land administration system in each economy in addition to the indicators on the number of procedures and the time and cost to transfer property. And for enforcing contracts an index of the quality and efficiency of judicial processes has been added while the indicator on the number of procedures to enforce a contract has been dropped.

The scope of the labor market regulation indicator set has also been expanded, to include more areas capturing aspects of job quality. The labor market regulation indicators continue to be excluded from the aggregate distance to frontier score and ranking on the ease of doing business.

The case study underlying the trading across borders indicators has been changed to increase its relevance. For each economy the export product and partner are now determined on the basis of the economy's comparative advantage, the import product is auto parts, and the import partner is selected on the basis of which economy has the highest trade value in that product. The indicators continue to measure the time and cost to export and import.

Beyond these changes there is one other update in methodology, for the protecting minority investors indicators. A few points for the extent of shareholder governance index have been fine-tuned, and the index now also measures aspects of the regulations applicable to limited companies rather than privately held joint stock companies.

For more details on the changes, see the "What is changing in *Doing Business?*" chapter starting on page 27 of the *Doing Business 2016* report. For more details on the data and methodology, please see the "Data Notes" chapter starting on page 119 of the *Doing Business 2016* report. For more details on the distance to frontier metric, please see the "Distance to frontier and ease of doing business ranking" chapter in this profile.

THE BUSINESS ENVIRONMENT

For policy makers trying to improve their economy's regulatory environment for business, a good place to start is to find out how it compares with the regulatory environment in other economies. *Doing Business* provides an aggregate ranking on the ease of doing business based on indicator sets that measure and benchmark regulations applying to domestic small to medium-size businesses through their life cycle. Economies are ranked from 1 to 189 by the ease of doing business ranking. *Doing Business* presents results for 2 aggregate measures: the distance to frontier score and the ease of doing business ranking. The ranking of economies is determined by sorting the aggregate distance to frontier scores, rounded to two decimals. An economy's distance to frontier score is indicated on a scale from 0 to 100, where 0 represents the worst performance and 100 the frontier. (See the chapter on the distance to frontier and ease of doing business).

The ease of doing business ranking compares economies with one another; the distance to frontier score benchmarks economies with respect to regulatory best practice, showing the absolute distance to the best performance on each *Doing Business* indicator. When compared across years, the distance to frontier score shows how much the regulatory environment for local entrepreneurs in an economy has changed over time in absolute terms, while the ease of doing business ranking can show only how much the regulatory environment has changed relative to that in other economies.

The 10 topics included in the ranking in *Doing Business 2016*: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts and resolving insolvency. The labor market regulation indicators are not included in this year's aggregate ease of doing business ranking, but the data are presented in the economy profile.

ECONOMY OVERVIEW

Region: OECD high income

Income category: High income

Population: 556,074

GNI per capita (US\$): 72,728

DB2016 rank: 61

DB2015 rank: 57*

Change in rank: -4

DB 2016 DTF: 68.31

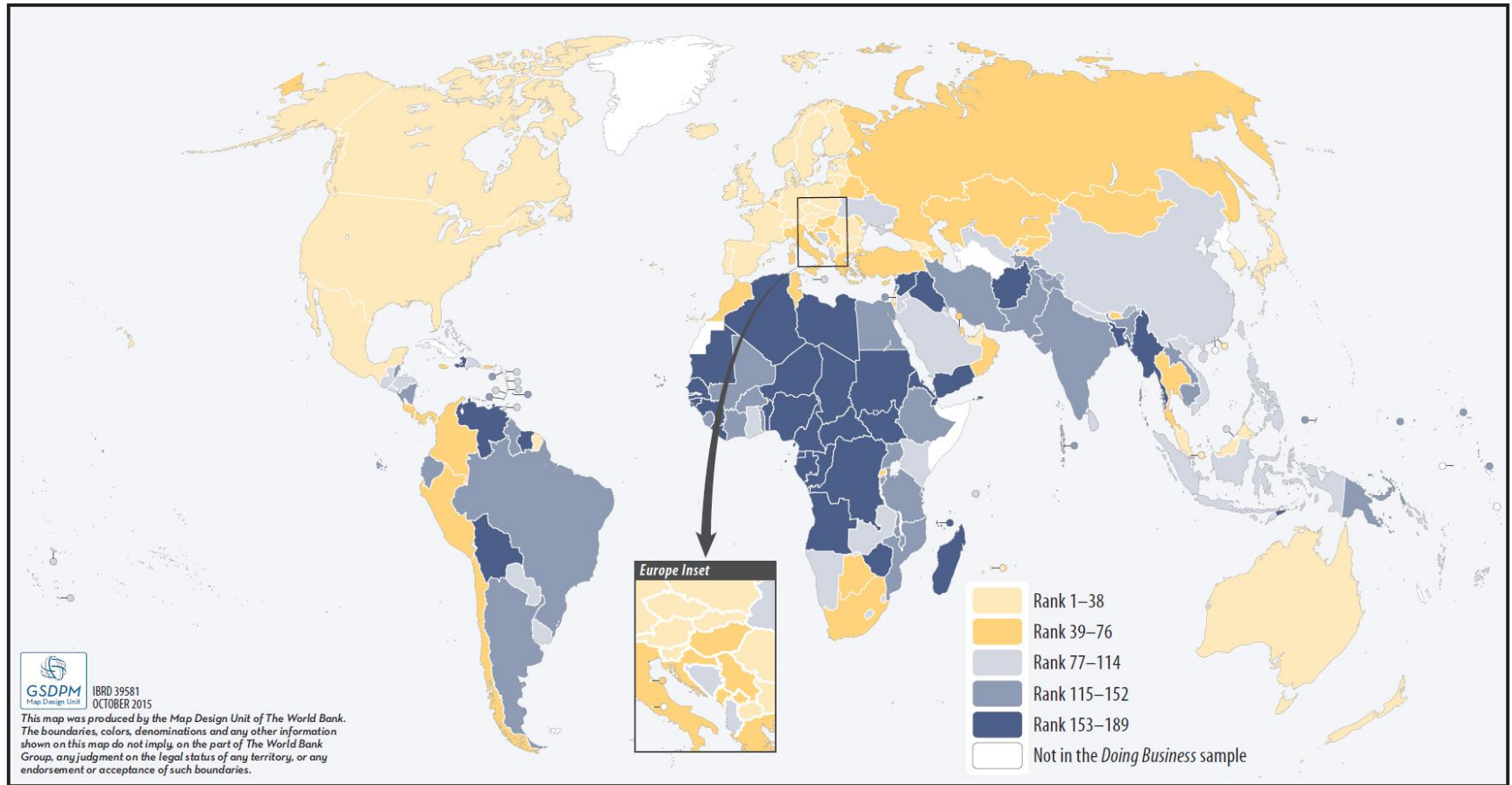
DB 2015 DTF: 68.32

Change in DTF: -0.01

* DB2015 ranking shown is not last year's published ranking but a comparable ranking for DB2015 that captures the effects of such factors as data revisions and the changes in methodology. See the data notes starting on page 119 of the *Doing Business 2016* report for sources and definitions.

THE BUSINESS ENVIRONMENT

Figure 1.1 Where economies stand in the global ranking on the ease of doing business



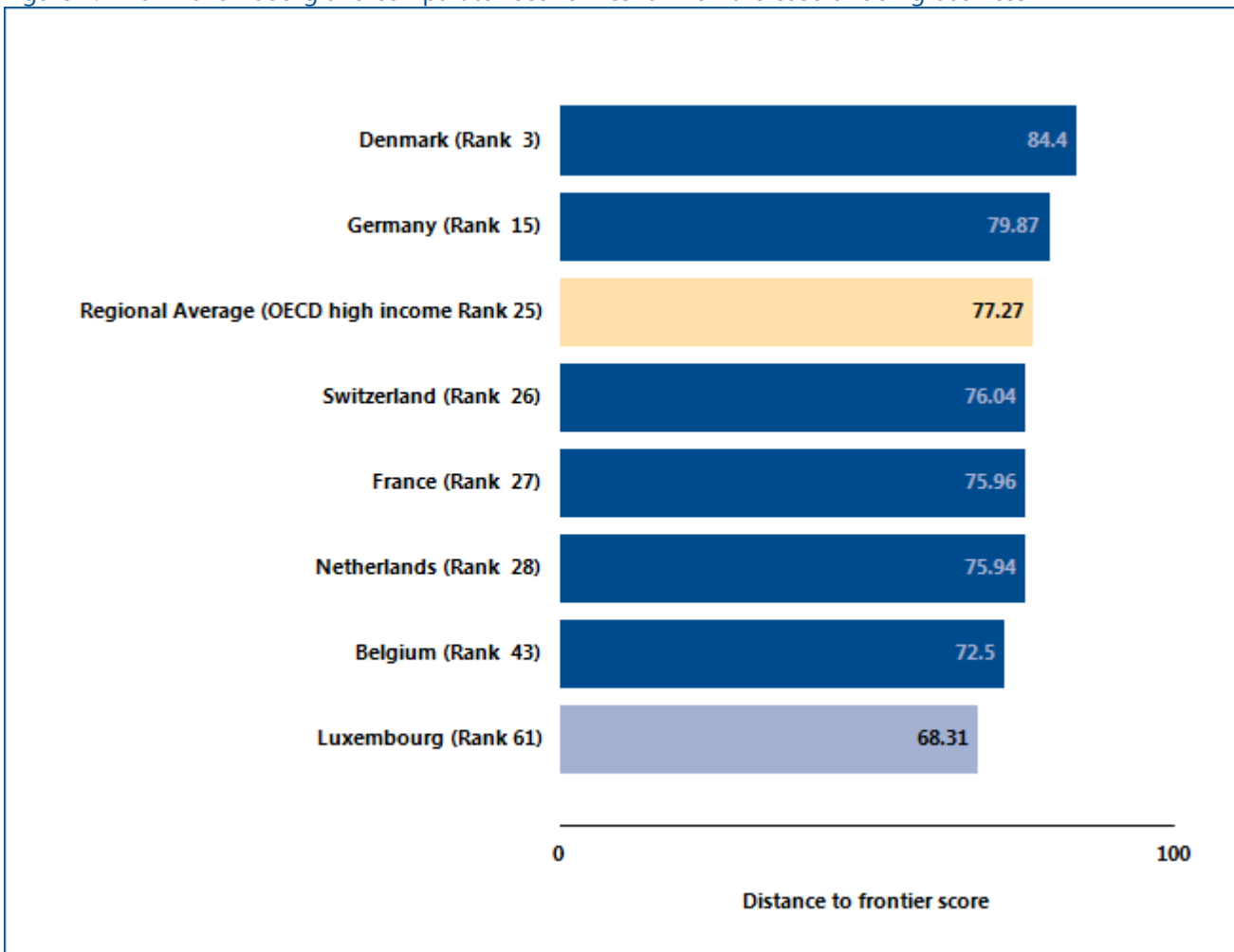
Source: *Doing Business* database.

THE BUSINESS ENVIRONMENT

For policy makers, knowing where their economy stands in the aggregate ranking on the ease of doing business is useful. Also useful is to know how it ranks relative to comparator economies and relative to the

regional average (figure 1.2). The economy's rankings (figure 1.3) and distance to frontier scores (figure 1.4) on the topics included in the ease of doing business ranking provide another perspective.

Figure 1.2 How Luxembourg and comparator economies rank on the ease of doing business



Note: The rankings are benchmarked to June 2015 and based on the average of each economy's distance to frontier (DTF) scores for the 10 topics included in this year's aggregate ranking. The distance to frontier score benchmarks economies with respect to regulatory practice, showing the absolute distance to the best performance in each *Doing Business* indicator. An economy's distance to frontier score is indicated on a scale from 0 to 100, where 0 represents the worst performance and 100 the frontier. For the economies for which the data cover 2 cities, scores are a population-weighted average for the 2 cities.

Source: *Doing Business* database.

THE BUSINESS ENVIRONMENT

Figure 1.3 Rankings on *Doing Business* topics - Luxembourg
 (Scale: Rank 189 center, Rank 1 outer edge)

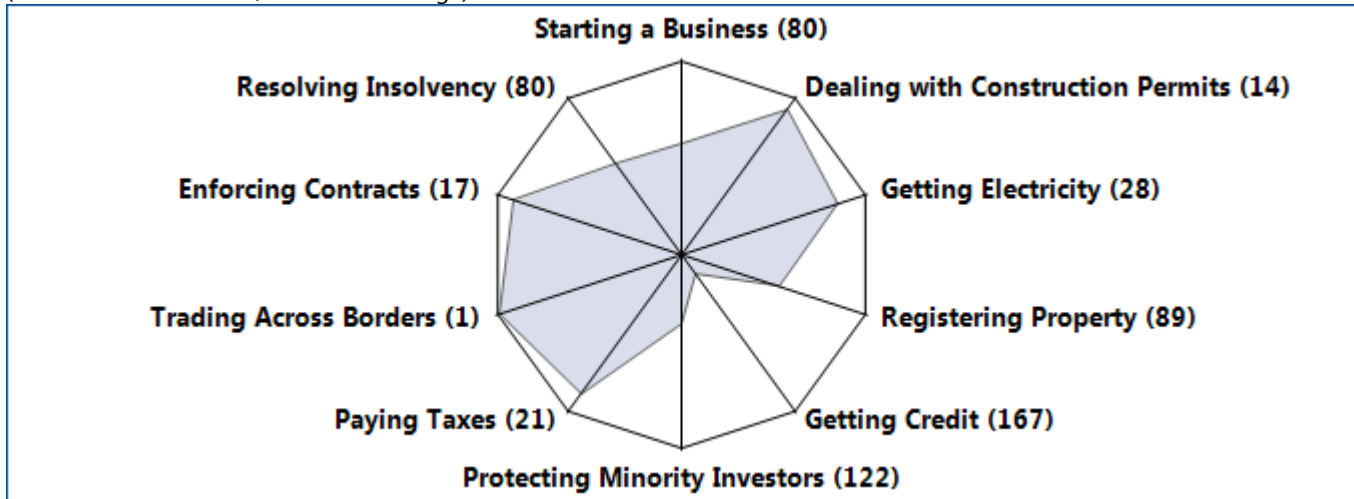
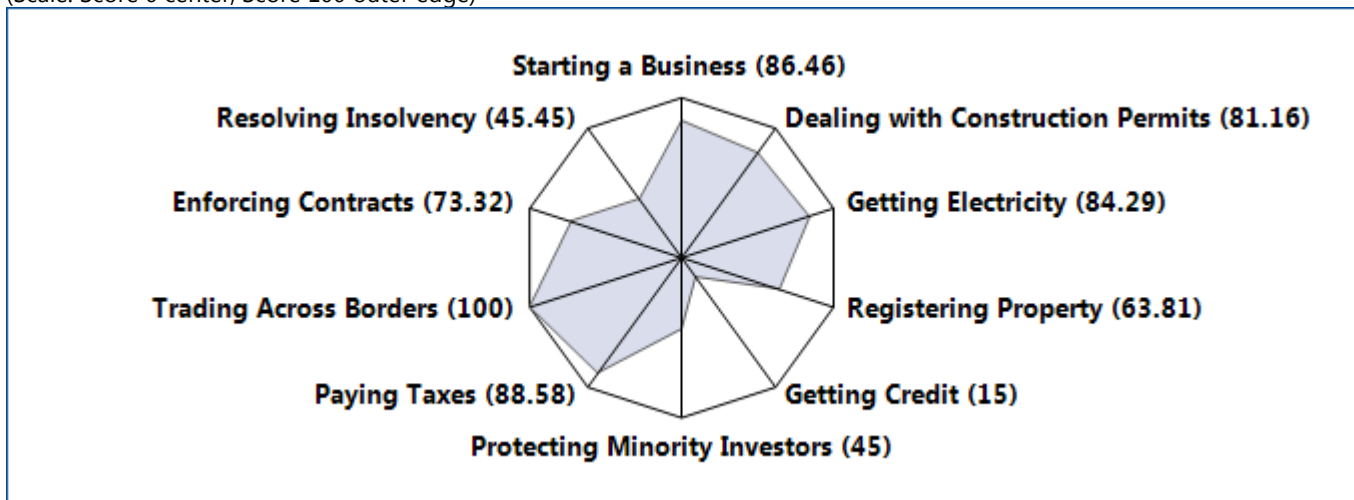


Figure 1.4 Distance to frontier scores on *Doing Business* topics - Luxembourg
 (Scale: Score 0 center, Score 100 outer edge)



Source: *Doing Business* database.

Note: The rankings are benchmarked to June 2015 and based on the average of each economy's distance to frontier (DTF) scores for the 10 topics included in this year's aggregate ranking. The distance to frontier score benchmarks economies with respect to regulatory practice, showing the absolute distance to the best performance in each *Doing Business* indicator. An economy's distance to frontier score is indicated on a scale from 0 to 100, where 0 represents the worst performance and 100 the frontier. For the economies for which the data cover 2 cities, scores are a population-weighted average for the 2 cities.

THE BUSINESS ENVIRONMENT

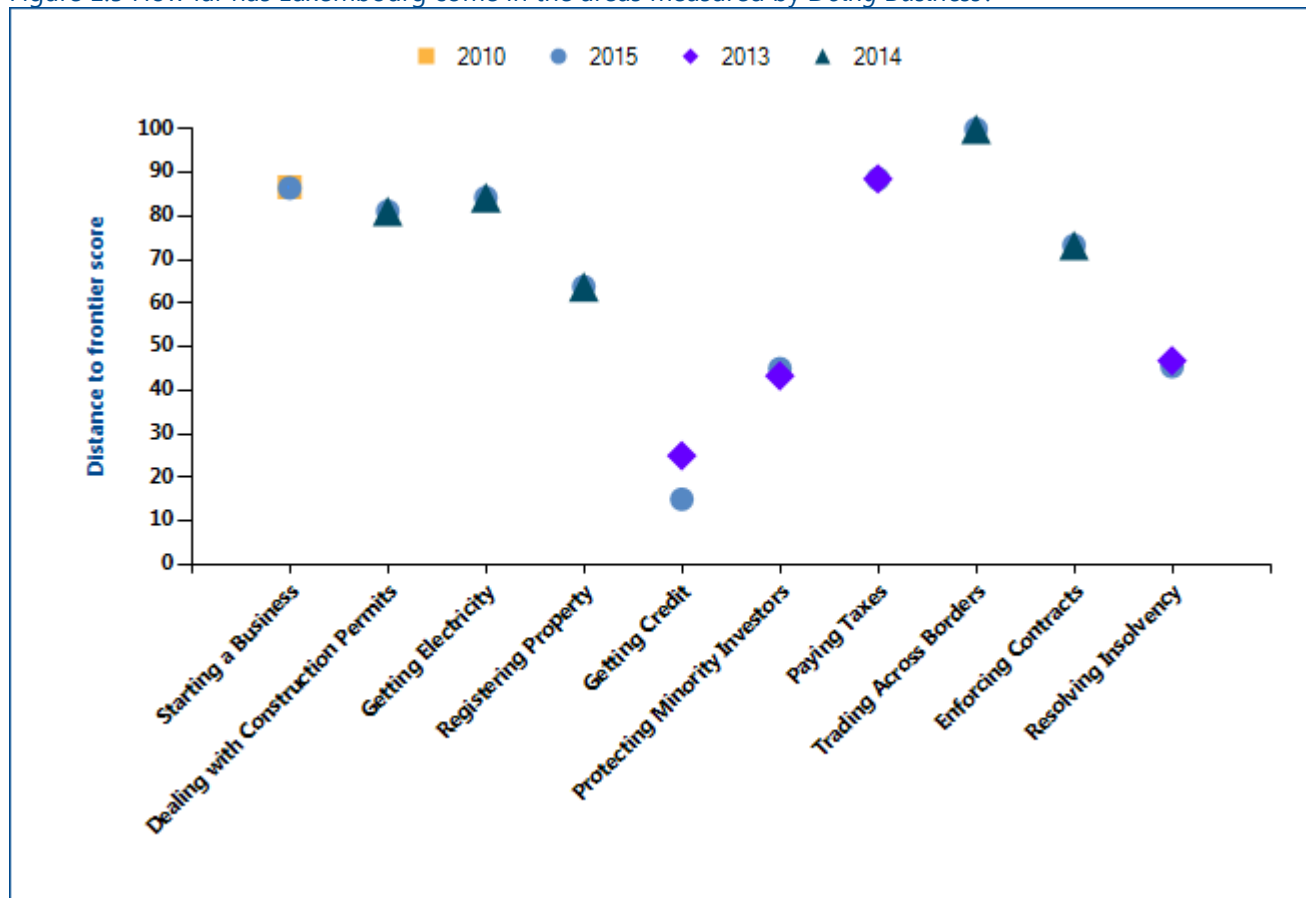
Just as the overall ranking on the ease of doing business tells only part of the story, so do changes in that ranking. Yearly movements in rankings can provide some indication of changes in an economy’s regulatory environment for firms, but they are always relative.

Moreover, year-to-year changes in the overall rankings do not reflect how the business regulatory environment in an economy has changed over time—or how it has changed in different areas. To aid in assessing such changes,

Doing Business introduced the distance to frontier score. This measure shows how far on average an economy is from the best performance achieved by any economy on each *Doing Business* indicator.

Comparing the measure for an economy at 2 points in time allows users to assess how much the economy’s regulatory environment as measured by *Doing Business* has changed over time—how far it has moved toward (or away from) the most efficient practices and strongest regulations in areas covered by *Doing Business* (figure 1.5).

Figure 1.5 How far has Luxembourg come in the areas measured by *Doing Business*?



Note: The distance to frontier score shows how far on average an economy is from the best performance achieved by any economy on each *Doing Business* indicator. Starting a business is comparable to 2010. Getting credit, protecting minority investors, paying taxes and resolving insolvency had methodology changes in 2014 and thus are only comparable to 2013. Dealing with construction permits, registering property, trading across borders, enforcing contracts and getting electricity had methodology changes in 2015 and thus are only comparable to 2014. The measure is normalized to range between 0 and 100, with 100 representing the best performance (the frontier). See the data notes starting on page 119 of the *Doing Business 2016* report for more details on the distance to frontier score. *Source:* *Doing Business* database.

THE BUSINESS ENVIRONMENT

The absolute values of the indicators tell another part of the story (table 1.1). The indicators, on their own or in comparison with the indicators of a good practice economy or those of comparator economies in the region, may reveal bottlenecks reflected in large numbers of procedures, long delays or high costs. Or they may reveal unexpected strengths in an area of business

regulation—such as a regulatory process that can be completed with a small number of procedures in a few days and at a low cost. Comparison of the economy's indicators today with those in the previous year may show where substantial bottlenecks persist—and where they are diminishing.

Table 1.1 Summary of *Doing Business* indicators for Luxembourg

Indicator	Luxembourg DB2016	Luxembourg DB2015	Belgium DB2016	Denmark DB2016	France DB2016	Germany DB2016	Netherlands DB2016	Switzerland DB2016	Best performer globally DB2016
Starting a Business (rank)	80	76	20	29	32	107	28	69	New Zealand (1)
Starting a Business (DTF Score)	86.46	86.47	94.5	94.04	93.14	83.37	94.14	88.47	New Zealand (99.96)
Procedures (number)	6.0	6.0	3.0	4.0	5.0	9.0	4.0	6.0	New Zealand (1.00)*
Time (days)	18.5	18.5	4.0	3.0	4.0	10.5	4.0	10.0	New Zealand (0.50)
Cost (% of income per capita)	2.0	2.0	4.8	0.2	0.8	1.8	4.6	2.0	Slovenia (0.00)
Paid-in min. capital (% of income per capita)	22.6	22.5	17.2	14.3	0.0	33.9	0.0	24.6	105 Economies (0.00)*
Dealing with Construction Permits (rank)	14	14	54	5	40	13	85	56	Singapore (1)
Dealing with Construction Permits (DTF Score)	81.16	81.17	73.66	86.3	75.46	81.42	69.32	73.43	Singapore (92.97)
Procedures (number)	11.0	11.0	10.0	7.0	9.0	8.0	13.0	13.0	5 Economies (7.00)*

Indicator	Luxembourg DB2016	Luxembourg DB2015	Belgium DB2016	Denmark DB2016	France DB2016	Germany DB2016	Netherlands DB2016	Switzerland DB2016	Best performer globally DB2016
Time (days)	157.0	157.0	212.0	64.0	183.0	96.0	161.0	156.0	Singapore (26.00)
Cost (% of warehouse value)	0.7	0.7	1.0	1.8	4.7	1.1	3.7	0.7	Qatar (0.00)
Building quality control index (0-15)	13.5	13.5	11.0	11.0	13.0	9.5	10.0	10.0	New Zealand (15.00)
Getting Electricity (rank)	28	28	53	12	20	3	43	5	Korea, Rep. (1)
Getting Electricity (DTF Score)	84.29	84.29	79.58	90.19	85.78	98.78	81.57	94.42	Korea, Rep. (99.88)
Procedures (number)	5.0	5.0	6.0	4.0	5.0	3.0	5.0	3.0	14 Economies (3.00)*
Time (days)	56.0	56.0	88.0	38.0	71.0	28.0	110.0	39.0	Korea, Rep. (18.00)*
Cost (% of income per capita)	40.4	40.1	102.4	112.8	41.3	42.0	30.4	57.2	Japan (0.00)
Reliability of supply and transparency of tariff index (0-8)	7.0	7.0	8.0	7.0	8.0	8.0	8.0	7.0	18 Economies (8.00)*
Registering Property (rank)	89	87	132	9	85	62	30	16	New Zealand (1)
Registering Property (DTF Score)	63.81	63.81	51.84	89.88	64.94	69.35	80.03	86.12	New Zealand (94.46)
Procedures (number)	7.0	7.0	8.0	3.0	8.0	5.0	5.0	4.0	4 Economies (1.00)*
Time (days)	26.5	26.5	56.0	4.0	49.0	39.0	2.5	16.0	3 Economies (1.00)*
Cost (% of property value)	10.1	10.1	12.7	0.6	6.1	6.7	6.1	0.3	Saudi Arabia (0.00)
Quality of the land administration index (0-30)	25.5	25.5	23.0	24.5	24.5	22.0	28.5	23.5	3 Economies (28.50)*

Indicator	Luxembourg DB2016	Luxembourg DB2015	Belgium DB2016	Denmark DB2016	France DB2016	Germany DB2016	Netherlands DB2016	Switzerland DB2016	Best performer globally DB2016
Getting Credit (rank)	167	165	97	28	79	28	79	59	New Zealand (1)
Getting Credit (DTF Score)	15	15	45	70	50	70	50	60	New Zealand (100)
Strength of legal rights index (0-12)	3.0	3.0	4.0	8.0	4.0	6.0	3.0	6.0	3 Economies (12.00)*
Depth of credit information index (0-8)	0.0	0.0	5.0	6.0	6.0	8.0	7.0	6.0	26 Economies (8.00)*
Credit registry coverage (% of adults)	0.0	0.0	96.3	0.0	45.1	1.6	0.0	0.0	Portugal (100.00)
Credit bureau coverage (% of adults)	0.0	0.0	0.0	7.7	0.0	100.0	78.2	26.1	22 Economies (100.00)*
Protecting Minority Investors (rank)	122	121	57	20	29	49	66	105	Singapore (1)*
Protecting Minority Investors (DTF Score)	45	45	58.33	68.33	65	60	56.67	50	Singapore (83.33)*
Strength of minority investor protection index (0-10)	4.5	4.5	5.8	6.8	6.5	6.0	5.7	5.0	3 Economies (8.30)*
Extent of conflict of interest regulation index (0-10)	4.3	4.3	7.0	6.7	5.7	5.0	4.7	3.3	Singapore (9.30)*
Extent of shareholder governance index (0-10)	4.7	4.7	4.7	7.0	7.3	7.0	6.7	6.7	4 Economies (8.00)*
Paying Taxes (rank)	21	20	90	12	87	72	26	19	United Arab Emirates (1)*
Paying Taxes (DTF Score)	88.58	88.58	73.8	91.94	74.31	77	85.81	89.13	United Arab Emirates (99.44)*
Payments (number per	23.0	23.0	11.0	10.0	8.0	9.0	9.0	19.0	Hong Kong SAR,

Indicator	Luxembourg DB2016	Luxembourg DB2015	Belgium DB2016	Denmark DB2016	France DB2016	Germany DB2016	Netherlands DB2016	Switzerland DB2016	Best performer globally DB2016
year)									China (3.00)*
Time (hours per year)	55.0	55.0	161.0	130.0	137.0	218.0	123.0	63.0	Luxembourg (55.00)
Total tax rate (% of profit)	20.1	20.2	58.4	24.5	62.7	48.8	41.0	28.8	Ireland (25.90)
Trading Across Borders (rank)	1	1	1	1	1	35	1	40	Denmark (1)*
Trading Across Borders (DTF Score)	100	100	100	100	100	91.77	100	90.16	Denmark (100)*
Time to export: Border compliance (hours)	0	0	0	0	0	36	0	1	15 Economies (0.00)*
Cost to export: Border compliance (USD)	0	0	0	0	0	345	0	201	18 Economies (0.00)*
Time to export: Documentary compliance (hours)	1	1	1	1	1	1	1	2	Jordan (0.00)
Cost to export: Documentary compliance (USD)	0	0	0	0	0	45	0	108	20 Economies (0.00)*
Time to import: Border compliance (hours)	0	0	0	0	0	0	0	1	19 Economies (0.00)*
Cost to import: Border compliance (USD)	0	0	0	0	0	0	0	201	28 Economies (0.00)*
Time to import: Documentary compliance (hours)	1	1	1	1	1	1	1	2	21 Economies (1.00)*
Cost to import: Documentary compliance (USD)	0	0	0	0	0	0	0	108	30 Economies (0.00)*
Enforcing Contracts	17	16	53	37	14	12	91	46	Singapore (1)

Indicator	Luxembourg DB2016	Luxembourg DB2015	Belgium DB2016	Denmark DB2016	France DB2016	Germany DB2016	Netherlands DB2016	Switzerland DB2016	Best performer globally DB2016
(rank)									
Enforcing Contracts (DTF Score)	73.32	73.32	64.25	68.56	74.89	75.08	58.09	66.07	Singapore (84.91)
Time (days)	321.0	321.0	505.0	410.0	395.0	429.0	514.0	390.0	Singapore (150.00)
Cost (% of claim)	9.7	9.7	18.0	23.3	17.4	14.4	23.9	24.0	Iceland (9.00)
Quality of judicial processes index (0-18)	8.5	8.5	8.0	10.0	12.0	12.0	6.0	8.5	3 Economies (15.50)*
Resolving Insolvency (rank)	80	77	10	9	24	3	11	44	Finland (1)
Resolving Insolvency (DTF Score)	45.45	45.58	84	84.78	76.09	91.93	83.77	62.6	Finland (93.81)
Recovery rate (cents on the dollar)	43.8	44.0	89.3	87.8	77.5	83.7	88.9	46.6	Japan (92.90)
Time (years)	2.0	2.0	0.9	1.0	1.9	1.2	1.1	3.0	Ireland (0.40)
Cost (% of estate)	14.5	14.5	3.5	4.0	9.0	8.0	3.5	4.5	Norway (1.00)
Outcome (0 as piecemeal sale and 1 as going concern)	0	0	1	1	1	1	1	0	
Strength of insolvency framework index (0-16)	7.0	7.0	11.5	12.0	11.0	15.0	11.5	12.0	4 Economies (15.00)*

Source: *Doing Business* database.

Note: DB2015 rankings shown are not last year's published rankings but comparable rankings for DB2015 that capture the effects of such factors as data revisions and changes to the methodology. The global best performer on time for paying taxes is defined as the lowest time recorded among all economies in the DB2016 sample that levy the 3 major taxes: profit tax, labor taxes and mandatory contributions, and VAT or sales tax. 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" 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. * Two or more economies share the top ranking on this indicator. A number shown in place of an economy's name indicates the number of economies that share the top ranking on the indicator. For a list of these economies, see the *Doing Business* website (<http://www.doingbusiness.org>).

STARTING A BUSINESS

Formal registration of companies has many immediate benefits for the companies and for business owners and employees. Legal entities can outlive their founders. Resources are pooled as several shareholders join forces to start a company. Formally registered companies have access to services and institutions from courts to banks as well as to new markets. And their employees can benefit from protections provided by the law. An additional benefit comes with limited liability companies. These limit the financial liability of company owners to their investments, so personal assets of the owners are not put at risk. Where governments make registration easy, more entrepreneurs start businesses in the formal sector, creating more good jobs and generating more revenue for the government.

What do the indicators cover?

Doing Business records all procedures officially required, or commonly done in practice, for an entrepreneur to start up and formally operate an industrial or commercial business, as well as the time and cost to complete these procedures and the paid-in minimum capital requirement. These procedures include obtaining all necessary licenses and permits and completing any required notifications, verifications or inscriptions for the company and employees with relevant authorities. The ranking of economies on the ease of starting a business is determined by sorting their distance to frontier scores for starting a business. These scores are the simple average of the distance to frontier scores for each of the component indicators.

To make the data comparable across economies, several assumptions about the business and the procedures are used. It is assumed that any required information is readily available and that the entrepreneur will pay no bribes. Assumptions about the business:

- Is a limited liability company (or its legal equivalent), located in the largest business city and is 100% domestically owned¹ with five owners, none of whom is a legal entity.
- Has at least 10 and up to 50 employees, all of them domestic nationals.
- Performs general commercial or industrial activities.

WHAT THE STARTING A BUSINESS INDICATORS MEASURE

Procedures to legally start and operate a company (number)

Preregistration (for example, name verification or reservation, notarization)

Registration in the economy's largest business city¹

Postregistration (for example, social security registration, company seal)

Time required to complete each procedure (calendar days)

Does not include time spent gathering information

Each procedure starts on a separate day (2 procedures cannot start on the same day). Procedures that can be fully completed online are recorded as ½ day.

Procedure completed once final document is received

No prior contact with officials

Cost required to complete each procedure (% of income per capita)

Official costs only, no bribes

No professional fees unless services required by law or commonly used in practice

Paid-in minimum capital (% of income per capita)

Deposited in a bank or with a notary before registration (or within 3 months)

- Has a start-up capital of 10 times income per capita and a turnover of at least 100 times income per capita.
- Has a company deed 10 pages long.
- Does not qualify for any special benefits.
- Leases the commercial plant or offices and is not a proprietor of real estate.

¹ For 11 economies the data are also collected for the second largest business city.

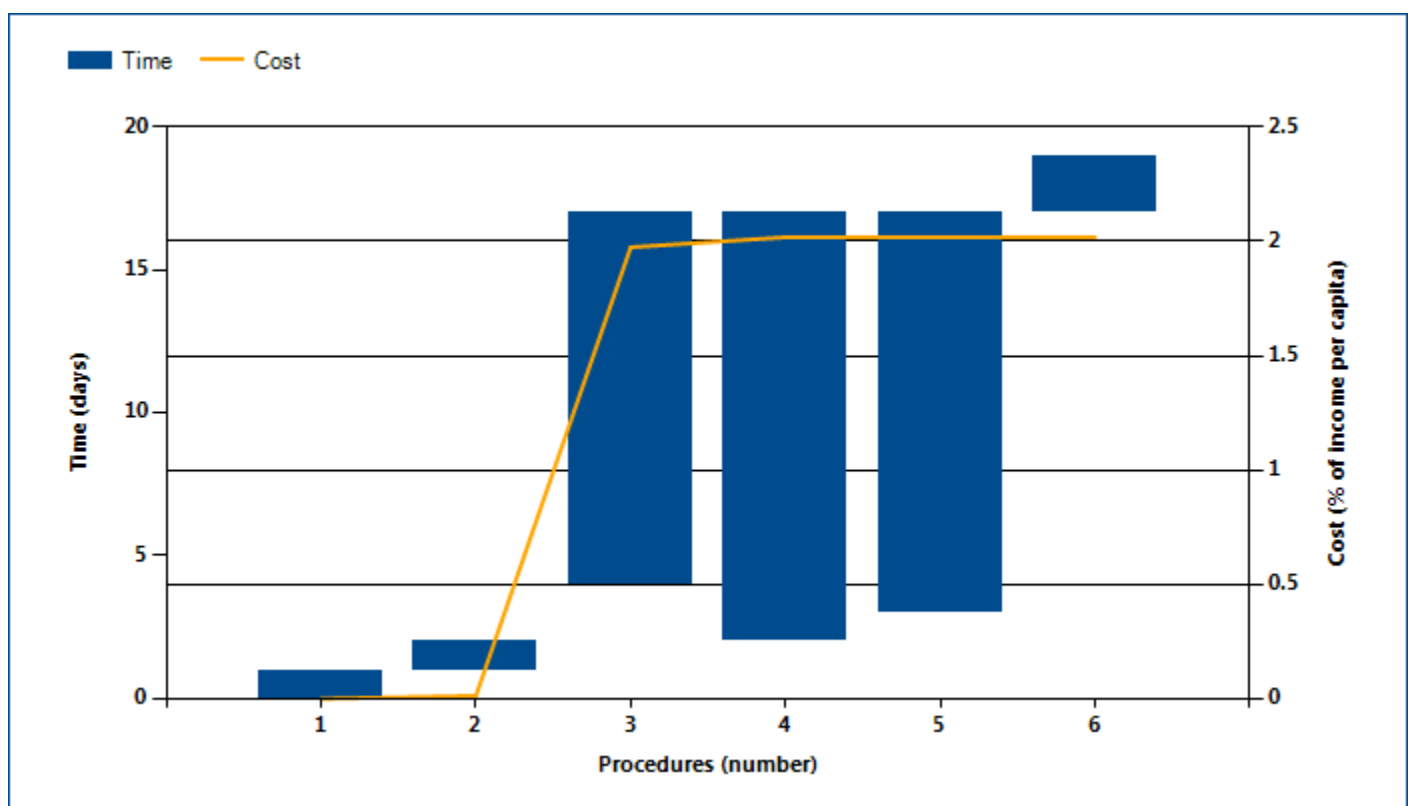
STARTING A BUSINESS

Where does the economy stand today?

What does it take to start a business in Luxembourg? According to data collected by *Doing Business*, starting a business there requires 6.00 procedures, takes 18.50 days, costs 2.00% of income per capita and requires paid-in minimum capital of 22.60% of income per capita (figure 2.1). Most indicator sets refer to a case scenario in

the largest business city of an economy, except for 11 economies for which the data are a population-weighted average of the 2 largest business cities. See the chapter on distance to frontier and ease of doing business ranking at the end of this profile for more details.

Figure 2.1 What it takes to start a business in Luxembourg
Paid-in minimum capital (% of income per capita): 22.60



Source: *Doing Business* database.

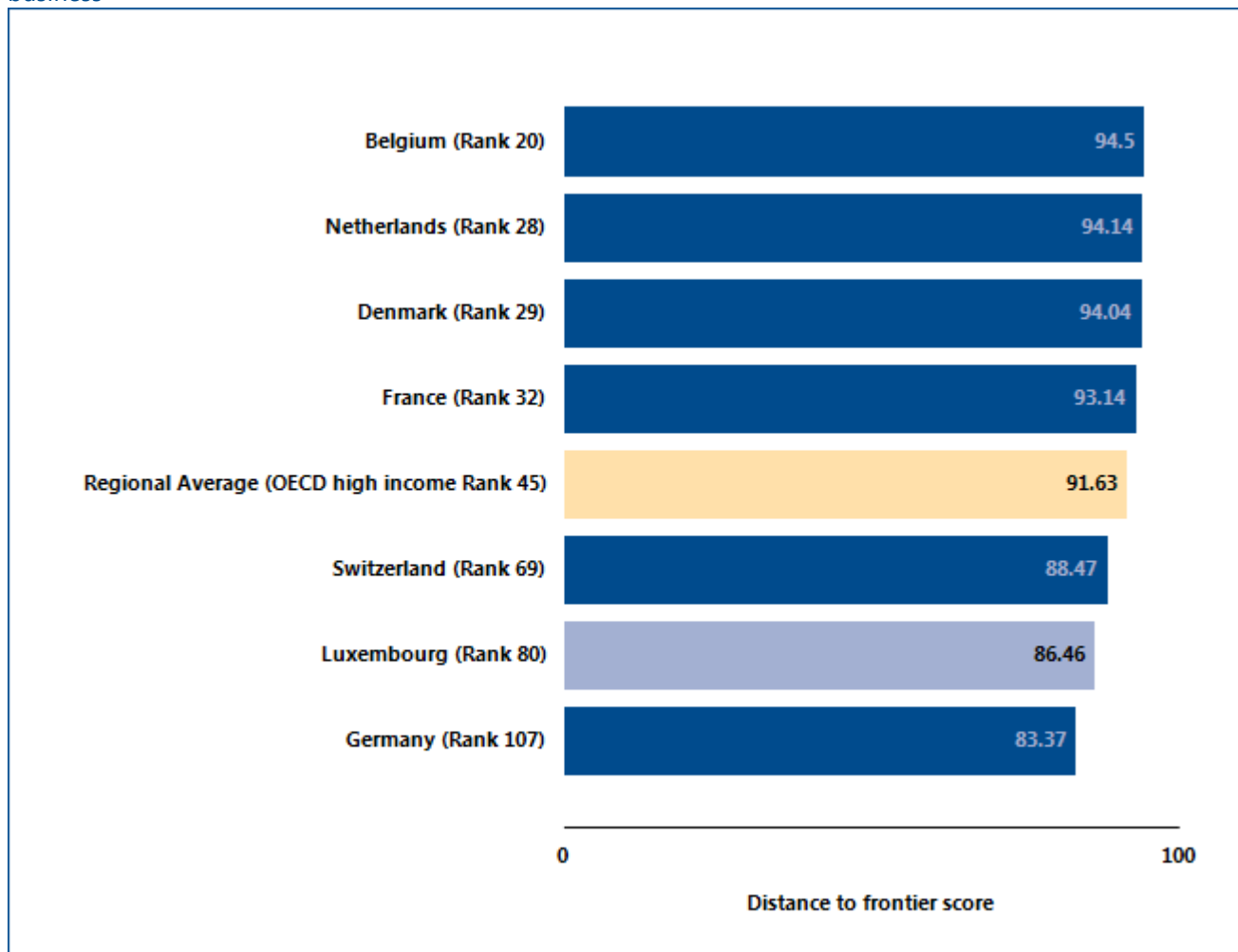
Note: Time shown in the figure above may not reflect simultaneity of procedures. Online procedures account for 0.5 days in the total time calculation. For more information on the methodology of the starting a business indicators, see the *Doing Business* website (<http://www.doingbusiness.org>). For details on the procedures reflected here, see the summary at the end of this chapter.

STARTING A BUSINESS

Globally, Luxembourg stands at 80 in the ranking of 189 economies on the ease of starting a business (figure 2.2). The rankings for comparator economies and the regional

average ranking provide other useful information for assessing how easy it is for an entrepreneur in Luxembourg to start a business.

Figure 2.2 How Luxembourg and comparator economies rank on the ease of starting a business



Source: Doing Business database.

STARTING A BUSINESS

Economies around the world have taken steps making it easier to start a business—streamlining procedures by setting up a one-stop shop, making procedures simpler or faster by introducing technology and reducing or eliminating minimum capital requirements. Many have undertaken business registration reforms in stages—and

they often are part of a larger regulatory reform program. Among the benefits have been greater firm satisfaction and savings and more registered businesses, financial resources and job opportunities.

What business registration reforms has *Doing Business* recorded in Luxembourg (table 2.1)?

Table 2.1 How has Luxembourg made starting a business easier—or not?
By *Doing Business* report year from DB2011 to DB2016

DB year	Reform
DB2011	Luxembourg eased business start-up by speeding up the delivery of the business license.

Source: *Doing Business* database.

Note: For information on reforms in earlier years (back to DB2005), see the *Doing Business* reports for these years, available at <http://www.doingbusiness.org>.

STARTING A BUSINESS

What are the details?

Underlying the indicators shown in this chapter for Luxembourg is a set of specific procedures—the bureaucratic and legal steps that an entrepreneur must complete to incorporate and register a new firm. These are identified by *Doing Business* through collaboration with relevant local professionals and the study of laws, regulations and publicly available information on business entry in that economy. Following is a detailed summary of those procedures, along with the associated time and cost. These procedures are those that apply to a company matching the standard assumptions (the “standardized company”) used by *Doing Business* in collecting the data (see the section in this chapter on what the indicators measure).

STANDARDIZED COMPANY

Legal form: Société a Responsabilité Limitée (SARL)

Paid-in minimum capital requirement: EUR 12,394.7

City: Luxembourg

Start-up Capital: 10 times GNI per capita

Table 2.2 Summary of time, cost and procedures for starting a business in Luxembourg

No.	Procedure	Time to complete	Cost to complete
1	<p>Deposit the minimum capital requirement</p> <p>The promoters must open a bank account in the name of the company in formation and must transfer the amount of the share capital to this account before the passing of the deed of incorporation. For the purpose of the passing of the notarial deed, the bank will remit an escrow certificate (certificat de blocage) certifying that the funds corresponding to the amount of the share capital are "blocked" in the escrow account. The funds are automatically unblocked on delivery of a certified copy of the notarial deed of incorporation and the issue by the notary of the release certificate (certificat de déblocage).</p> <p><i>Agency: Commercial Bank</i></p>	1 day	no charge
2	<p>Verify uniqueness of company name and reserve name</p> <p>Shareholders are free to choose the company's name but must ensure that it is unique (https://www.rcsl.lu). Each person requesting the Trade and Companies Register to confirm the availability or non-availability of a company's name may select four types of documents to reflect the answer of the Trade and Companies Register. The most expensive type of document has a price of EUR 10.</p> <p><i>Agency: Trade and Companies Registrar</i></p>	Less than one day (online procedure)	EUR 4.75 to EUR 10

No.	Procedure	Time to complete	Cost to complete
3	<p>Notary drafts and notarizes the company deed</p> <p>A private limited liability company must be incorporated before a Luxembourg notary public. The Luxembourg notary draws up the deed of incorporation which includes the articles of association of the company. Model of articles of association may be found on Internet (the national Chamber of Commerce's E-space Entreprises information center can help incorporators to complete the model of documents). The Luxembourg notary is held by law to pay all the costs relating to the incorporation and registration of the company and which include, the notary fees EUR 450 (fee EUR 150 + sundry expenses EUR 200 + certified copies EUR 100); Company Register fees EUR 250; Publication in Official Gazette EUR 250; Sundries EUR 50. The notary must provide a detailed account/invoice once the company is incorporated.</p> <p><i>Agency: Notary</i></p>	2 days	EUR 1,000+ EUR 75 fixed registration fee
4	<p>* Apply for business license</p> <p>This license/permit is issued by the Ministry of Middle Classes for a commercial activity or by the Ministry of Economy for industrial activities upon request and on proof of knowledge of business management.</p> <p>To apply for a business license, promoters must submit the following documents:</p> <ul style="list-style-type: none"> • Application form (completed and signed) for an establishment permit. • Tax stamp for EUR 24 EUR (This varies from EUR 24 to EUR 2,500, depending on the type of activity. 24 EUR refers to a sales/trade company). The amount can be transferred to the national Giro account (CCP) of the Registration and Domains Administration (Administration de l'Enregistrement et des Domaines): LU47 1111 0087 9262 0000, with the reference: "Office Fee for Establishment Permit [ENTER APPLICANT'S NAME]." In this case, proof of payment must be presented. The tax stamp can also be obtained from the E-space Entreprises information center. • For non-residents and persons residing in Luxembourg for fewer than 10 years, a recent notarized certificate of non-bankruptcy. • Articles of association (executed or draft) for a commercial company. • School certificates or professional diplomas (certified by the institution) required for the intended activity. Otherwise, proof of relevant professional experience such as an EU certificate or certificate of registration with a social security authority. • An affidavit on the exercise of any management posts previously held in Luxembourg, for verification of non-bankruptcy. • The applicant's identity card (copy). • The applicant's police record or affidavit. Note: This applies to non-residents and persons residing in Luxembourg for less than 10 years. In practice, the Ministry of the Economy and Foreign Trade tends however to request the provision of a police record or affidavit to every applicant although not required as such. 	15 days, (simultaneous with procedure 3)	EUR 24

No.	Procedure	Time to complete	Cost to complete
	<p>The business permit application can be submitted before executing the notary deed because the Ministry of the Economy checks the draft articles of association—the company name, business purpose, and identity of directors and officers for compliance with the provisions of the applicable law. Generally, the business license/establishment permit application and notary deed processes start more or less at the same time and are pursued simultaneously. Although the company incorporation process requires a notary, the founder may directly register the company with different administrations and obtain identification numbers and the business license/establishment permit.</p> <p>Since October 2011, business license requests can be handed in online at www.guichet.lu. The required documents are the same ones. They all need to be transformed into a PDF and attached to the online form. In order to be able to deposit the business license online, the applicant is required to have a LUXTRUST certificate in order to sign the application form electronically.</p> <p><i>Agency: Direction General of Small and Medium-Sized Businesses of the Ministry of Economy</i></p>		
5	<p>* Register at the one-stop shop</p> <p>"The notary public must levy an initial payment for all applicable company incorporation fees and taxes, including registration costs. The notary must register (a) the articles of association with the tax administration (Administration de l'Enregistrement) at the Registry one-stop shop; and (b) the company with the Trade and Companies Register, within 4 weeks of the incorporation of the company. The Trade and Companies Register arranges for the publication of the incorporation deed in the Official Gazette within 2 months of the company's registration.</p> <p>Upon usually 24 hours of the registration, the Trade and Companies Register generates an administrative or official (register) number that accompanies the company during its corporate life (matricule). This number forms the basis for all other identification numbers to be issued by the administration for direct taxes (tax number), the administration for indirect taxes (VAT number), or the social security service (pay-as-you-earn number and employer number). Applications can be filed for both VAT and social security at the one-stop, which distributes the forms to the relevant administrations. The company's registration with the Chamber of Commerce is done automatically."</p> <p><i>Agency: One stop shop Register</i></p>	4 days, (simultaneous with procedure 4)	included in procedure 3

No.	Procedure	Time to complete	Cost to complete
6	<p>Unblock the authorized capital</p> <p>Once the company is incorporated, the notary public immediately issues a release certificate (certificat de déblocage), indicating that the company has come into existence. This certificate will be sent to the bank, together with a copy of the incorporation deed, for the release of the funds corresponding to the share capital.</p> <p><i>Agency: Commercial Bank</i></p>	2 days	no charge

* Takes place simultaneously with another procedure.

Source: *Doing Business* database.

Note: Online procedures account for 0.5 days in the total time calculation.

DEALING WITH CONSTRUCTION PERMITS

Regulation of construction is critical to protect the public. But it needs to be efficient, to avoid excessive constraints on a sector that plays an important part in every economy. Where complying with building regulations is excessively costly in time and money, many builders opt out. They may pay bribes to pass inspections or simply build illegally, leading to hazardous construction that puts public safety at risk. Where compliance is simple, straightforward and inexpensive, everyone is better off.

What do the indicators cover?

Doing Business records all procedures required for a business in the construction industry to build a warehouse along with the time and cost to complete each procedure. In addition, this year *Doing Business* introduces a new measure, the building quality control index, evaluating the quality of building regulations, the strength of quality control and safety mechanisms, liability and insurance regimes, and professional certification requirements.

The ranking of economies on the ease of dealing with construction permits is determined by sorting their distance to frontier scores for dealing with construction permits. These scores are the simple average of the distance to frontier scores for each of the component indicators.

To make the data comparable across economies, several assumptions about the construction company, the warehouse project and the utility connections are used.

Assumptions about the construction company

The construction company (BuildCo):

- Is a limited liability company (or its legal equivalent).
- Operates in the economy's largest business city. For 11 economies the data are also collected for the second largest business city.
- Is 100% domestically and privately owned.
- Has five owners, none of whom is a legal entity.
- Is fully licensed and insured to carry out construction projects, such as building warehouses.

WHAT THE DEALING WITH CONSTRUCTION PERMITS INDICATORS MEASURE

Procedures to legally build a warehouse (number)

Submitting all relevant documents and obtaining all necessary clearances, licenses, permits and certificates

Submitting all required notifications and receiving all necessary inspections

Obtaining utility connections for water and sewerage

Registering and selling the warehouse after its completion

Time required to complete each procedure (calendar days)

Does not include time spent gathering information

Each procedure starts on a separate day. Procedures that can be fully completed online are recorded as ½ day

Procedure considered completed once final document is received

No prior contact with officials

Cost required to complete each procedure (% of warehouse value)

Official costs only, no bribes

Building quality control index (0-15)

Sum of the scores of six component indices:

Quality of building regulations (0-2)

Quality control before construction (0-1)

Quality control during construction (0-3)

Quality control after construction (0-3)

Liability and insurance regimes (0-2)

Professional certifications (0-4)

The construction company (BuildCo) (*continued*):

- Has 60 builders and other employees, all of them nationals with the technical expertise and professional experience necessary to obtain construction permits and approvals.
- Has at least one employee who is a licensed architect or engineer and registered with the local association of architects or engineers. BuildCo is not assumed to have any other employees who are technical or licensed experts, such as geological or topographical experts.
- Has paid all taxes and taken out all necessary insurance applicable to its general business activity (for example, accidental insurance for construction workers and third-person liability).
- Owns the land on which the warehouse will be built and will sell the warehouse upon its completion.
- Is valued at 50 times income per capita.

Assumptions about the warehouse

The warehouse:

- Will be used for general storage activities, such as storage of books or stationery. The warehouse will not be used for any goods requiring special conditions, such as food, chemicals or pharmaceuticals.
- Will have two stories, both above ground, with a total constructed area of approximately 1,300.6 square meters (14,000 square feet). Each floor will be 3 meters (9 feet, 10 inches) high.
- Will have road access and be located in the periurban area of the economy's largest business city (that is, on the fringes of the city but still within its official limits). For 11 economies the data are also collected for the second largest business city.
- Will not be located in a special economic or industrial zone. Will be located on a land plot of approximately 929 square meters (10,000 square feet) that is 100% owned by BuildCo and is accurately registered in the cadastre and land registry.

- Will be a new construction (there was no previous construction on the land), with no trees, natural water sources, natural reserves or historical monuments of any kind on the plot.
- Will have complete architectural and technical plans prepared by a licensed architect. If preparation of the plans requires such steps as obtaining further documentation or getting prior approvals from external agencies, these are counted as procedures.
- Will include all technical equipment required to be fully operational.
- Will take 30 weeks to construct (excluding all delays due to administrative and regulatory requirements).

Assumptions about the utility connections

The water and sewerage connections:

- Will be 150 meters (492 feet) from the existing water source and sewer tap. If there is no water delivery infrastructure in the economy, a borehole will be dug. If there is no sewerage infrastructure, a septic tank in the smallest size available will be installed or built.
- Will not require water for fire protection reasons; a fire extinguishing system (dry system) will be used instead. If a wet fire protection system is required by law, it is assumed that the water demand specified below also covers the water needed for fire protection.
- Will have an average water use of 662 liters (175 gallons) a day and an average wastewater flow of 568 liters (150 gallons) a day. Will have a peak water use of 1,325 liters (350 gallons) a day and a peak wastewater flow of 1,136 liters (300 gallons) a day.
- Will have a constant level of water demand and wastewater flow throughout the year.
- Will be 1 inch in diameter for the water connection and 4 inches in diameter for the sewerage connection.

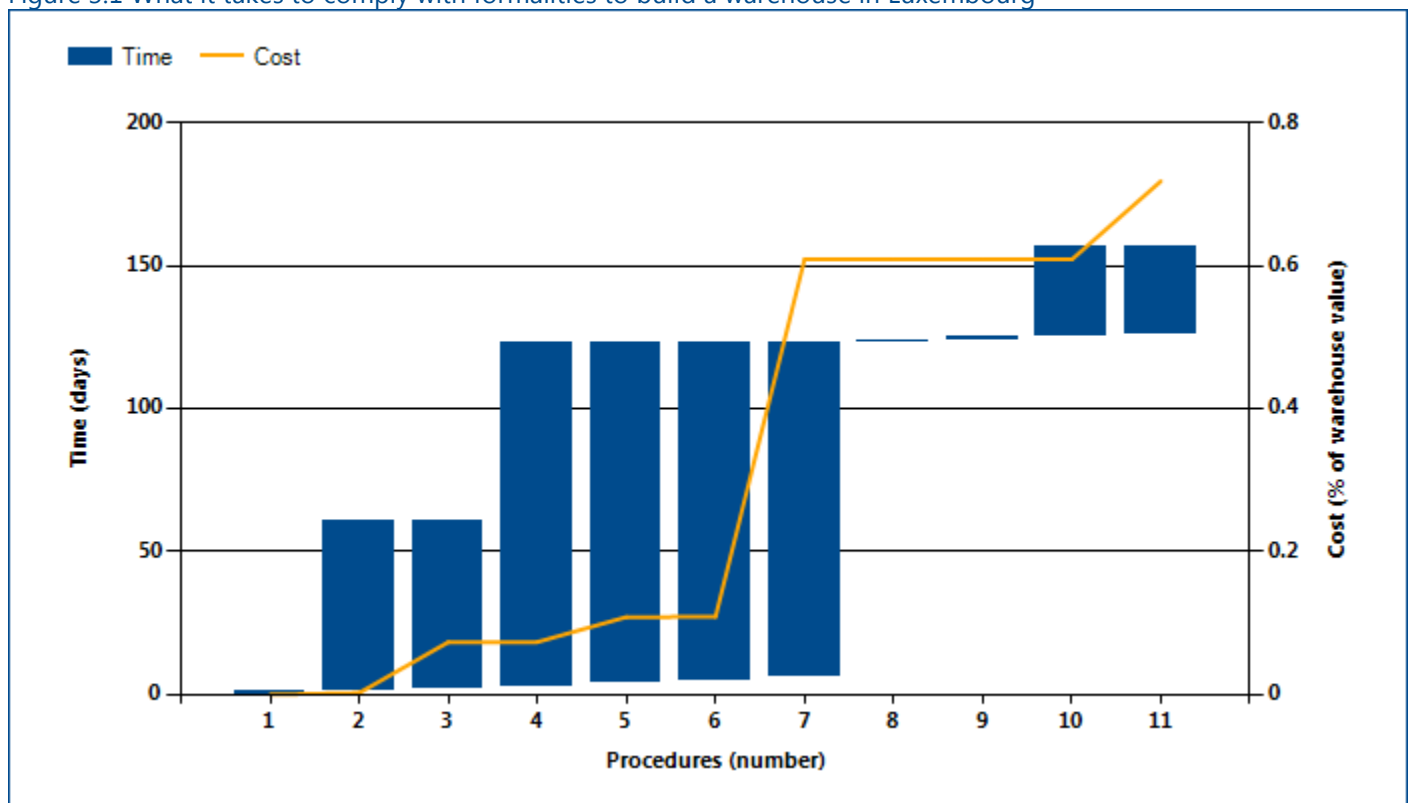
DEALING WITH CONSTRUCTION PERMITS

Where does the economy stand today?

What does it take to comply with the formalities to build a warehouse in Luxembourg? According to data collected by *Doing Business*, dealing with construction permits there requires 11.00 procedures, takes 157.00 days and costs 0.70% of the warehouse value (figure 3.1). Most indicator sets refer to a case scenario in the largest

business city of an economy, except for 11 economies for which the data are a population-weighted average of the 2 largest business cities. See the chapter on distance to frontier and ease of doing business ranking at the end of this profile for more details.

Figure 3.1 What it takes to comply with formalities to build a warehouse in Luxembourg



Source: *Doing Business* database.

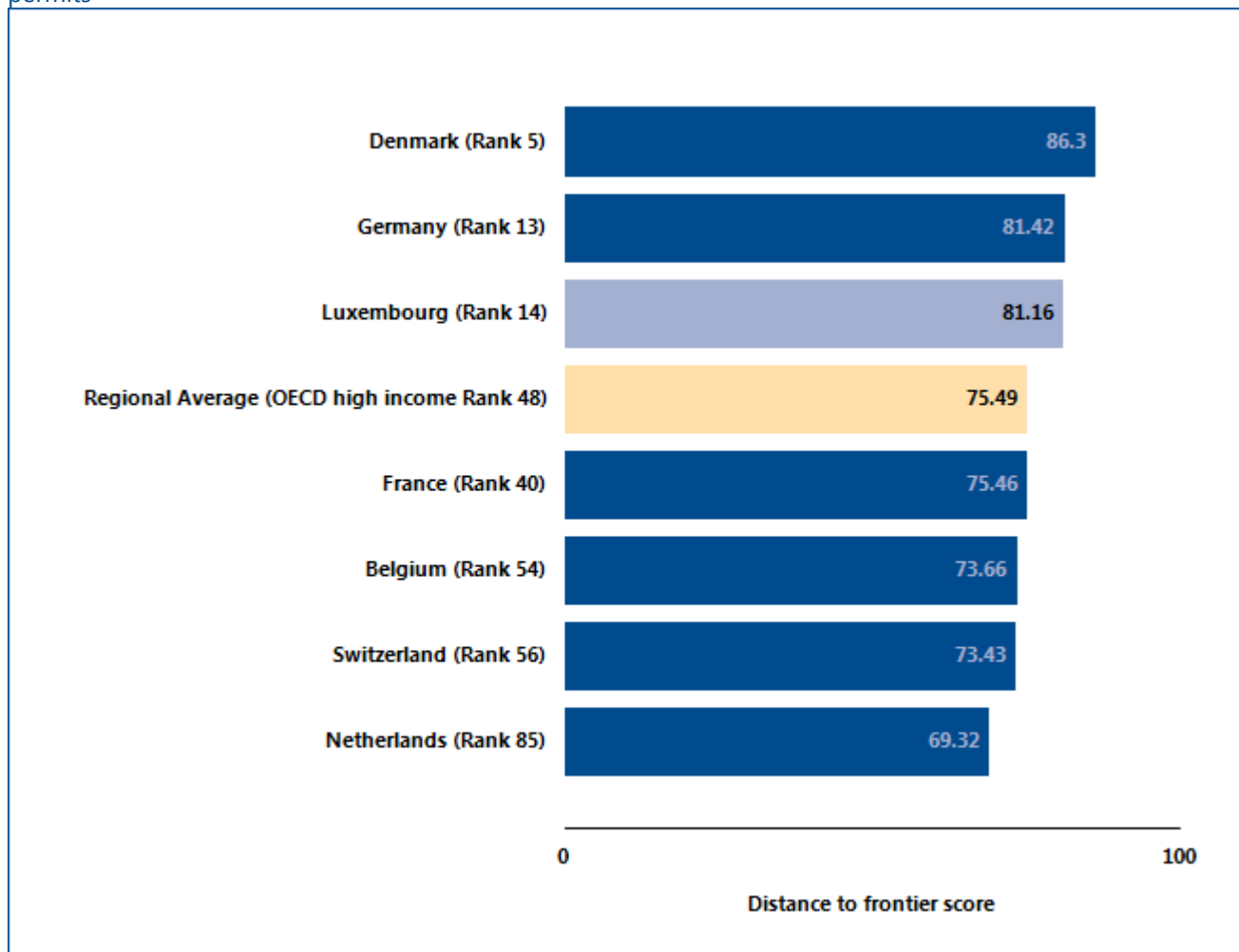
Note: Time shown in the figure above may not reflect simultaneity of procedures. Online procedures account for 0.5 days in the total time calculation. For more information on the methodology of the dealing with construction permits indicators, see the *Doing Business* website (<http://www.doingbusiness.org>). For details on the procedures reflected here, see the summary at the end of this chapter.

DEALING WITH CONSTRUCTION PERMITS

Globally, Luxembourg stands at 14 in the ranking of 189 economies on the ease of dealing with construction permits (figure 3.2). The rankings for comparator economies and the regional average ranking provide

other useful information for assessing how easy it is for an entrepreneur in Luxembourg to legally build a warehouse.

Figure 3.2 How Luxembourg and comparator economies rank on the ease of dealing with construction permits



Source: Doing Business database.

DEALING WITH CONSTRUCTION PERMITS

What are the details?

The indicators reported here for Luxembourg are based on a set of specific procedures—the steps that a company must complete to legally build a warehouse—identified by *Doing Business* through information collected from experts in construction licensing, including architects, civil engineers, construction lawyers, construction firms, utility service providers and public officials who deal with building regulations. These procedures are those that apply to a company and structure matching the standard assumptions used by *Doing Business* in collecting the data (see the section in this chapter on what the indicators cover).

BUILDING A WAREHOUSE

Estimated value of warehouse : EUR 2,740,855

City : Luxembourg

The procedures, along with the associated time and cost, are summarized below.

Table 3.2 Summary of time, cost and procedures for dealing with construction permits in Luxembourg

No.	Procedure	Time to complete	Cost to complete
1	<p>Obtain a recent copy of the cadastre plans from the Cadastre Administration</p> <p><i>Agency: Cadastre Administration</i></p>	1 day	EUR 10
2	<p>Obtain approval in principle (accord de principe)</p> <p>According to Article 57: Application for authorization and declaration of work, an agreement in principle is required for any building with a total built area of more than 2,000 cubic meters.</p> <p>This agreement is valid for a period of 12 months. The final request must be submitted within the deadline.</p> <p><i>Agency: Urban Department, Commune</i></p>	60 days	EUR 60
3	<p>* Obtain feasibility study for the sewage (canalization) connection</p> <p>BuildCo applies for a sewage connection online. The following plans and documents must be attached in duplicate:</p> <ul style="list-style-type: none"> (i) an extract of the cadastral map (ii) the location map of the land and any building or structure (or erect), scale 1:500 (iii) plans for all levels of the building, scale 1:100 or 1:50 (iv) Construction cuts along the plan of the connecting line, scale 1:100 or 1:50, indicating the location of the network and the level of public sewers <p>The construction permit is valid only if a sewage connection</p>	30 days	EUR 1,950

No.	Procedure	Time to complete	Cost to complete
	<p>authorization has been granted.</p> <p><i>Agency: Sewage Department, Commune</i></p>		
4	<p>* Obtain commodo/incommodo classe 3 approval from the Ministry of Environment</p> <p>An environmental clearance is required if the warehouse will be used for storing greater than 10 tons but less than or equivalent to 100 tons.</p> <p><i>Agency: Ministry of Environment</i></p>	120 days	no charge
5	<p>* Obtain construction permit from the Urban Department (service de l'urbanisme) of the Commune</p> <p>The building plans must conform to the master plan of the city of Luxembourg. The application file comprises an application form, a cadastral extract, and the building design plans. Various departments within the Commune must approve the application, including all the utility and the fire safety departments. The Commune charges EUR 24 as an application processing fee and EUR 0.24 per cubic meter. If after 12 months construction has not started, the permit will be nullified.</p> <p><i>Agency: Urban Department, Commune</i></p>	90 days	EUR 960
6	<p>* Obtain excavation permit from the Ministry of Public Works</p> <p>Assuming the warehouse will be built near a main road, BuildCo must obtain an excavation permit to dig for utility connections. The Ministry of Public Works charges a stamp duty of EUR 10.</p> <p><i>Agency: Ministry of Public Works</i></p>	60 days	EUR 10
7	<p>* Hire independent surveillance company to carry out inspections of construction works</p> <p>BuildCo must hire an independent inspection company to perform inspections during construction, which costs about 0.5% of the construction value.</p> <p><i>Agency: Independent Surveillance Company</i></p>	1 day	EUR 13,704

No.	Procedure	Time to complete	Cost to complete
8	<p>Request and receive inspection of completed works from the Urban Department</p> <p>According to Article 66 of the Building Code, an application must be made to the Police des Batisses once the major construction work is completed.</p> <p>The authorization shall be deemed received if within three weeks after the formulation of the relevant application, "La police des batisses" has not raised any objections in writing. Without this authorization, no internal works can be completed.</p> <p><i>Agency: Urban Department, Commune</i></p>	1 day	no charge
9	<p>Request and receive sewage (canalization) inspection</p> <p>BuildCo applies for a sewerage connection and requests water services from the Commune in order to prepare an estimate for all the costs associated with the sewerage connection.</p> <p><i>Agency: Sewage Department, Commune</i></p>	1 day	no charge
10	<p>Obtain sewage (canalization) connection</p> <p><i>Agency: Sewage Department, Commune</i></p>	32 days	no charge
11	<p>* Obtain water connection</p> <p><i>Agency: Water Services Department, Commune</i></p>	5 days	EUR 3,000

* Takes place simultaneously with another procedure.

Source: Doing Business database.

Note: Online procedures account for 0.5 days in the total time calculation.

DEALING WITH CONSTRUCTION PERMITS

Building Quality Control Index

The building quality control index is the sum of the scores on the quality of building regulations, quality control before construction, quality control during construction, quality control after construction, liability and insurance regimes, and professional certifications indices.

The index ranges from 0 to 15, with higher values indicating better quality control and safety mechanisms in the construction permitting system.

The indicator is based on the same case study assumptions as the measures of efficiency.

Table 3.3 Summary of quality control and safety mechanisms in Luxembourg

	Answer	Score
Building quality control index (0-15)		13.50
Quality of building regulations index (0-2)		1.00
In what way are the building regulations (including the building code) or any regulations dealing with construction permits made available? (0-1)	Available online.	1.0
Which requirements for obtaining a building permit are clearly specified by the building regulations or by any accessible website, brochure or pamphlet? (0-1)	List of required documents; Fees to be paid.	0.0
Quality control before construction index (0-1)		1.00
Who is part of the committee or team that reviews and approves building permit applications in the relevant permit-issuing agency? (0-1)	Licensed architect; Licensed engineer.	1.0
Quality control during construction index (0-3)		3.00
What types of inspections (if any) are required by law to be carried out during construction? (0-2)	Inspections by external engineer or firm; Risk-based inspections.	2.0
Do legally mandated inspections occur in practice during construction? (0-1)	Mandatory inspections are always done in practice.	1.0
Quality control after construction index (0-3)		3.00
Is there a final inspection required by law to verify that the building was built in accordance with the approved plans and regulations? (0-2)	Yes, final inspection is done by government agency; Yes, external engineer submits report for final inspection.	2.0
Do legally mandated final inspections occur in practice? (0-1)	Final inspection always occurs in practice.	1.0
Liability and insurance regimes index (0-2)		1.50
Which parties (if any) are held liable by law for structural flaws or problems in the building once it is in use? (0-1)	Architect or engineer.	0.5

	Answer	Score
Which parties (if any) are required by law to obtain an insurance policy to cover possible structural flaws or problems in the building once it is in use? (0-1)	Architect or engineer.	1.0
Professional certifications index (0-4)		4.00
What are the qualification requirements for the professional responsible for verifying that the architectural plans or drawings are in compliance with existing building regulations? (0-2)	Minimum number of years of experience; University degree in architecture or engineering; Being a registered architect or engineer.	2.0
What are the qualification requirements for the professional who supervises the construction on the ground? (0-2)	Minimum number of years of experience; University degree in engineering, construction or construction management; Being a registered architect or engineer.	2.0

Source: Doing Business database.

GETTING ELECTRICITY

Access to reliable and affordable electricity is vital for businesses. To counter weak electricity supply, many firms in developing economies have to rely on self-supply, often at a prohibitively high cost. Whether electricity is reliably available or not, the first step for a customer is always to gain access by obtaining a connection.

What do the indicators cover?

Doing Business records all procedures required for a local business to obtain a permanent electricity connection and supply for a standardized warehouse, as well as the time and cost to complete them. These procedures include applications and contracts with electricity utilities, clearances from other agencies and the external and final connection works. In addition, this year *Doing Business* adds two new measures: the reliability of supply and transparency of tariffs index (included in the aggregate distance to frontier score and ranking on the ease of doing business) and the price of electricity (omitted from these aggregate measures). The ranking of economies on the ease of getting electricity is determined by sorting their distance to frontier scores for getting electricity. These scores are the simple average of the distance to frontier scores for each of the component indicators. To make the data comparable across economies, several assumptions are used.

Assumptions about the warehouse

The warehouse:

- Is owned by a local entrepreneur.
- Is located in the economy's largest business city. For 11 economies the data are also collected for the second largest business city.
- Is located in an area where similar warehouses are typically located. In this area a new electricity connection is not eligible for a special investment promotion regime (offering special subsidization or faster service, for example).
- Is located in an area with no physical constraints. For example, the property is not near a railway.
- Is a new construction and is being connected to electricity for the first time.

WHAT THE GETTING ELECTRICITY INDICATORS MEASURE

Procedures to obtain an electricity connection (number)

- Submitting all relevant documents and obtaining all necessary clearances and permits
- Completing all required notifications and receiving all necessary inspections
- Obtaining external installation works and possibly purchasing material for these works
- Concluding any necessary supply contract and obtaining final supply

Time required to complete each procedure (calendar days)

- Is at least 1 calendar day
- Each procedure starts on a separate day
- Does not include time spent gathering information
- Reflects the time spent in practice, with little follow-up and no prior contact with officials

Cost required to complete each procedure (% of income per capita)

- Official costs only, no bribes
- Excludes value added tax

The reliability of supply and transparency of tariffs index

- Sum of the scores of six component indices:
 - Duration and frequency of outages
 - Tools to monitor power outages
 - Tools to restore power supply
 - Regulatory monitoring of utilities' performance
 - Financial deterrents aimed at limiting outages
 - Transparency and accessibility of tariffs

Price of electricity (cents per kilowatt-hour)*

- Price based on monthly bill for commercial warehouse in case study

**Price of electricity is not included in the calculation of distance to frontier nor ease of doing business ranking*

The warehouse (*continued*):

- Has two stories, both above ground, with a total surface area of approximately 1,300.6 square meters (14,000 square feet). The plot of land on which it is built is 929 square meters (10,000 square feet).
- Is used for storage of goods.

Assumptions about the electricity connection

The electricity connection:

- Is a permanent one.
- Is a three-phase, four-wire Y, 140-kilovolt-ampere (kVA) (subscribed capacity) connection (where the voltage is 120/208 V, the current would be 400 amperes; where it is 230/400 B, the current would be nearly 200 amperes).
- Is 150 meters long. The connection is to either the low-voltage or the medium-voltage distribution network and either overhead or underground, whichever is more common in the area where the warehouse is located.
- Requires works that involve the crossing of a 10-meter road (such as by excavation or overhead lines) but are all carried out on public land. There is no crossing of other owners' private property because the warehouse has access to a road.
- Includes only a negligible length in the customer's private domain.
- Will supply monthly electricity consumption of 26,880 kilowatt-hours (kWh).
- Does not involve work to install the internal electrical wiring. This has already been completed, up to and including the customer's service panel or switchboard and installation of the meter base.

Assumptions about the monthly consumption

- It is assumed that the warehouse operates 8 hours a day for 30 days a month, with equipment utilized at 80% of capacity on average, and that there are no electricity cuts (assumed for simplicity). The subscribed capacity of the warehouse is 140 kVA, with a power factor of 1 (1 kVA = 1 kW). The monthly energy consumption is therefore 26,880 kWh, and the hourly consumption 112 kWh (26,880 kWh/30 days/8 hours).
- If multiple electricity suppliers exist, the warehouse is served by the cheapest supplier.
- Tariffs effective in March of the current year are used for calculation of the price of electricity for the warehouse.

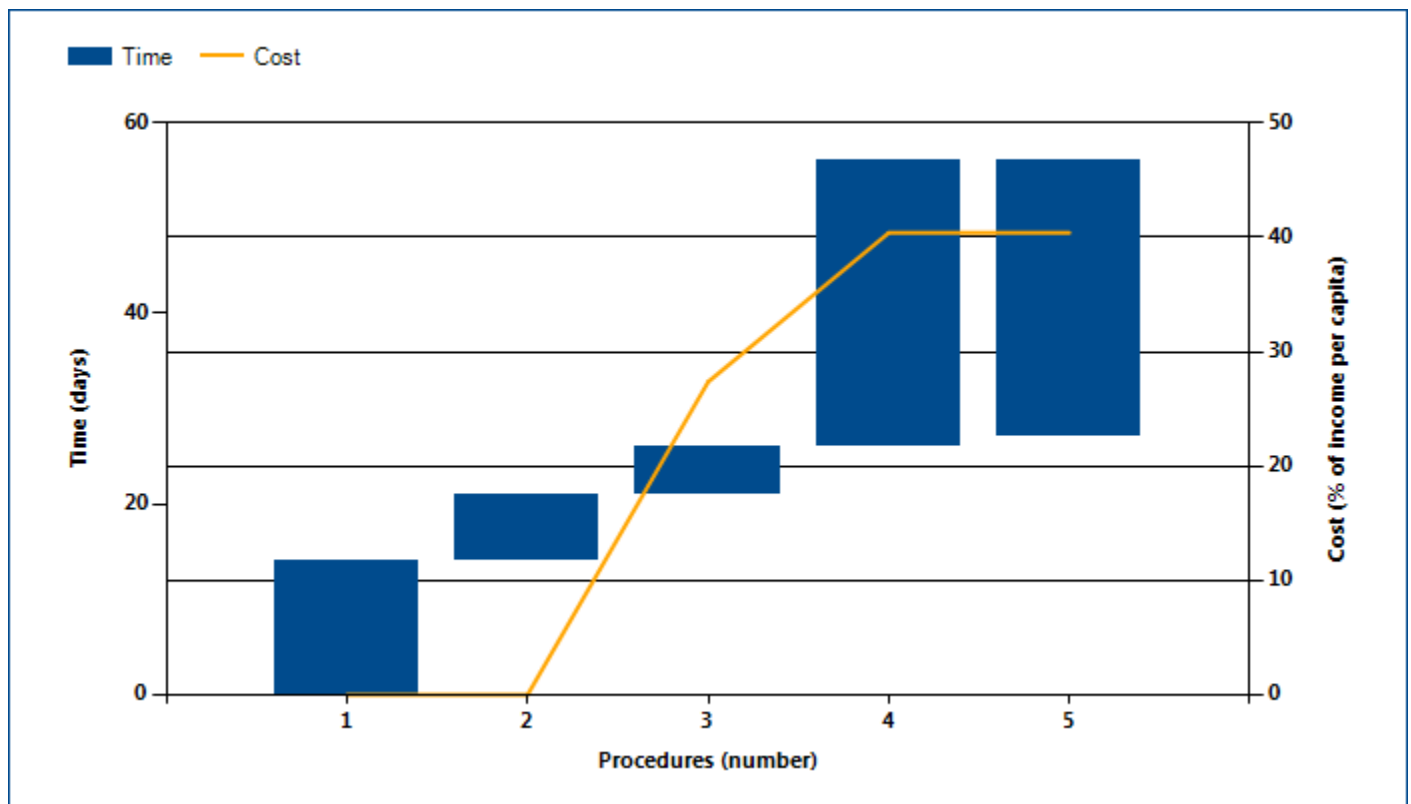
GETTING ELECTRICITY

Where does the economy stand today?

What does it take to obtain a new electricity connection in Luxembourg? According to data collected by *Doing Business*, getting electricity there requires 5.00 procedures, takes 56.00 days and costs 40.40% of income per capita (figure 4.1).

Most indicator sets refer to a case scenario in the largest business city of an economy, except for 11 economies for which the data are a population-weighted average of the 2 largest business cities. See the chapter on distance to frontier and ease of doing business ranking at the end of this profile for more details.

Figure 4.1 What it takes to obtain an electricity connection in Luxembourg



Source: *Doing Business* database.

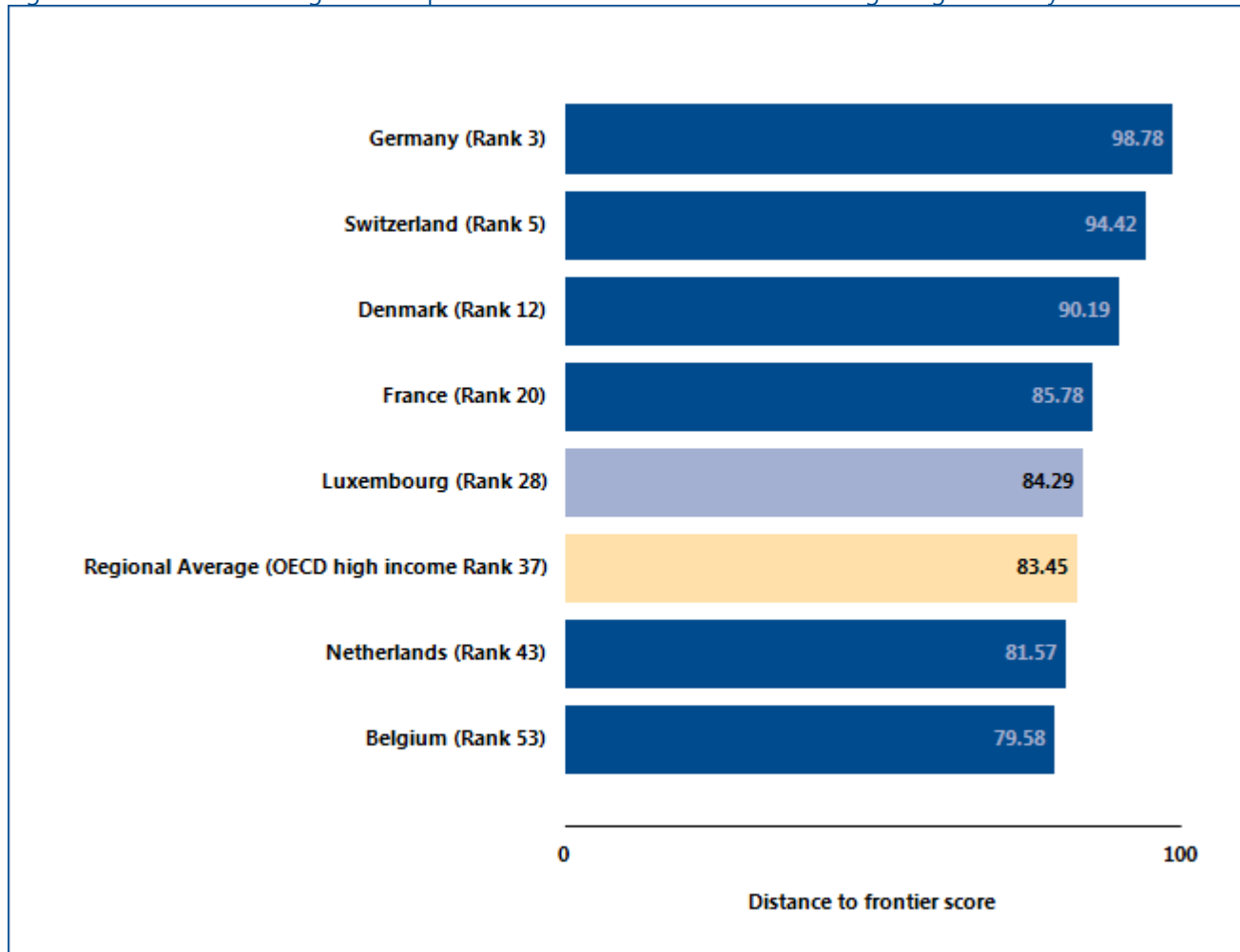
Note: Time shown in the figure above may not reflect simultaneity of procedures. For more information on the methodology of the getting electricity indicators, see the *Doing Business* website (<http://www.doingbusiness.org>). For details on the procedures reflected here, see the summary at the end of this chapter.

GETTING ELECTRICITY

Globally, Luxembourg stands at 28 in the ranking of 189 economies on the ease of getting electricity (figure 4.2). The rankings for comparator economies and the regional

average ranking provide another perspective in assessing how easy it is for an entrepreneur in Luxembourg to connect a warehouse to electricity.

Figure 4.2 How Luxembourg and comparator economies rank on the ease of getting electricity



Source: Doing Business database.

GETTING ELECTRICITY

What are the details?

The indicators reported here for Luxembourg are based on a set of specific procedures—the steps that an entrepreneur must complete to get a warehouse connected to electricity by the local distribution utility—identified by *Doing Business*. Data are collected from the distribution utility, then completed and verified by electricity regulatory agencies and independent professionals such as electrical engineers, electrical contractors and construction companies. The electricity distribution utility surveyed is the one serving the area (or areas) in which warehouses are located. If there is a choice of distribution utilities, the one serving the largest number of customers is selected.

The procedures are those that apply to a warehouse and electricity connection matching the standard assumptions used by *Doing Business* in collecting the data (see the section in this chapter on what the indicators cover). The procedures, along with the associated time and cost, are summarized below.

OBTAINING AN ELECTRICITY CONNECTION*

Name of utility: Creos Luxembourg S.A.

Price of electricity (US cents per kWh): 14

City: Luxembourg

*Price is calculated as a monthly consumption of 26,880 kWh for business customers, based on a standardized case study adopted by the getting electricity methodology. *Doing Business* measures the price of electricity but does not include these data when calculating the distance to frontier score for getting electricity or the ranking on the ease of getting electricity.

Table 4.2 Summary of time, cost and procedures for getting electricity in Luxembourg

No.	Procedure	Time to complete	Cost to complete
1	<p>Submit application to Creos Luxembourg and await connection conditions</p> <p>Upon receiving the application, Creos Luxembourg S.A. will prepare the technical conditions for connecting the client's premises to the grid. It will send the client an offer along with an order confirmation and an authorization for the client's electrical contractor to fill out.</p> <p>The offer is valid for 6 months. It includes all aspects of the connection works, except for the excavation works and repairing of the road, which the customer will be responsible for.</p> <p><i>Agency: Creos Luxembourg S.A.</i></p>	14 calendar days	EUR 0
2	<p>Accept offer and sign connection contract and network usage contract</p> <p>The client accepts the offer and estimate of fees provided by the utility. The utility will then request an excavation permit from the local road authorities and in parallel, will draft a connection agreement and a contract of usage of network. The client will sign both contracts and sends them back to Creos.</p>	7 calendar days	EUR 0

No.	Procedure	Time to complete	Cost to complete
	<i>Agency: Creos Luxembourg S.A.</i>		
3	<p>Await completion of part of external works by contractor</p> <p>The client will be in charge of excavating the road crossing. They will also be responsible for repairing the road once Creos has laid down the cable.</p> <p>The client's contractor will also need to fill out the authorization provided by Creos confirming he has completed the works according to the agreed conditions.</p> <p><i>Agency: Client's contractor</i></p>	5 calendar days	EUR 15,000
4	<p>Await completion of external works and final connection by Creos Luxembourg</p> <p>Creos will then inspect the contractor's internal installation as well as the road opening. Upon satisfactory inspection, it will lay down the low-voltage cable to connect the client's premises to the grid and install the meter.</p> <p><i>Agency: Creos Luxembourg S.A.</i></p>	30 calendar days	EUR 7,143
5	<p>* Sign supply contract with electricity supplier</p> <p>For electricity to be provided, it s necessary to have a supply contract with a supplier. The network manager and provider functions are separated in Luxembourg (based on European law) and Creos does not act as a supplier. The customer therefore needs to sign a contract with a supplier of his choice on the market as soon as he has enough technical details of its consumption. If he does not do so before the final consumption, a default provider will automatically be designated by the regulatory body. The client will still be able to change suppliers at no extra costs thereafter.</p> <p><i>Agency: Electricity supplier on the free market</i></p>	3 calendar days	EUR 0

* Takes place simultaneously with another procedure.

Source: Doing Business database.

GETTING ELECTRICITY

Reliability of supply and transparency of tariffs index

The reliability of supply and transparency of tariffs index encompasses quantitative data on the duration and frequency of power outages as well as qualitative information on the mechanisms put in place by the utility for monitoring power outages and restoring power supply, the reporting relationship between the utility and the regulator for power outages, the transparency and accessibility of tariffs and whether the utility faces a financial deterrent aimed at limiting outages (such as a requirement to compensate customers or pay fines when outages exceed a certain cap).

The index ranges from 0 to 8, with higher values indicating greater reliability of electricity supply and greater transparency of tariffs.

Doing Business uses the system average interruption duration index (SAIDI) and the system average interruption frequency index (SAIFI) to measure the duration and frequency of power outages in the largest business city of each economy (for 11 economies the data are also collected for the second largest business city). SAIDI is the average total duration of outages over the course of a year for each customer served, while SAIFI is the average number of service interruptions experienced by a customer in a year. Annual data (covering the calendar year) are collected from distribution utility companies and national regulators on SAIDI and SAIFI. Both SAIDI and SAIFI estimates include load shedding.

Table 4.3 Reliability of Supply and Transparency of Tariff Index in Luxembourg

	Answer	Score
Reliability of supply and transparency of tariff index (0-8)		7.00
Total duration and frequency of outages per customer a year (0-3)		3.00
System average interruption duration index (SAIDI)	0.2	
System average interruption frequency index (SAIFI)	0.2	
Mechanisms for monitoring outages (0-1)		1.0
Does the distribution utility use automated tools to monitor outages?	Yes	
Mechanisms for restoring service (0-1)		1.0
Does the distribution utility use automated tools to restore service?	Yes	
Regulatory monitoring (0-1)		1.00
Does a regulator—that is, an entity separate from the utility—monitor the utility's performance on reliability of supply?	Yes	
Financial deterrents aimed at limiting outages (0-1)		0.00
Does the utility either pay compensation to customers or face fines by the regulator (or both) if outages exceed a certain cap?	No	
Communication of tariffs and tariff changes (0-1)		1.00
Are effective tariffs available online?	Yes	
Link to the website, if available online	http://www.calculi	

	Answer	Score
	x.lu/web/tk/tk	
Are customers notified of a change in tariff ahead of the billing cycle?	Yes	

Source: *Doing Business* database.

Note: If data on power outages is not collected or if the SAIFI index or SAIDI index are above the threshold of 100, the economy is not eligible to obtain a score in the Reliability of Supply and Transparency of Tariff Index. If SAIDI and SAIFI are 12 (equivalent to an outage of one hour each month) or below, a score of 1 is assigned. If SAIDI and SAIFI are 4 (equivalent to an outage of one hour each quarter) or below, 1 additional point is assigned. Finally, if SAIDI and SAIFI are 1 (equivalent to an outage of one hour per year) or below, 1 more point is assigned. *Doing Business* measures the price of electricity but does not include these data when calculating the distance to frontier score for getting electricity or the ranking on the ease of getting electricity. The price of electricity is measured in cents per kilowatt-hour. On the basis of the assumptions about monthly consumption, a monthly bill for a commercial warehouse in the largest business city of the economy is computed for the month of March. As noted, the warehouse uses electricity 30 days a month, from 9:00 a.m. to 5:00 p.m., so different tariff schedules may apply if a time-of-use tariff is available.

REGISTERING PROPERTY

Ensuring formal property rights is fundamental. Effective administration of land is part of that. If formal property transfer is too costly or complicated, formal titles might go informal again. And where property is informal or poorly administered, it has little chance of being accepted as collateral for loans—limiting access to finance.

What do the indicators cover?

Doing Business records the full sequence of procedures necessary for a business to purchase property from another business and transfer the property title to the buyer's name. The transaction is considered complete when it is opposable to third parties and when the buyer can use the property, use it as collateral for a bank loan or resell it. In addition, this year *Doing Business* adds a new measure to the set of registering property indicators, an index of the quality of the land administration system in each economy. The ranking of economies on the ease of registering property is determined by sorting their distance to frontier scores for registering property. These scores are the simple average of the distance to frontier scores for each of the component indicators. To make the data comparable across economies, several assumptions about the parties to the transaction, the property and the procedures are used.

The parties (buyer and seller):

- Are limited liability companies, 100% domestically and privately owned and perform general commercial activities and are located in the economy's largest business city².
- Have 50 employees each, all of whom are nationals.

The property (fully owned by the seller):

- Has a value of 50 times income per capita. The sale price equals the value and entire property will be transferred.
- Is registered in the land registry or cadastral, or both, and is free of title disputes.

WHAT THE REGISTERING PROPERTY INDICATORS MEASURE

Procedures to legally transfer title on immovable property (number)

Preregistration (for example, checking for liens, notarizing sales agreement, paying property transfer taxes)

Registration in the economy's largest business city²

Postregistration (for example, filing title with the municipality)

Time required to complete each procedure (calendar days)

Does not include time spent gathering information

Each procedure starts on a separate day. Procedures that can be fully completed online are recorded as ½ day.

Procedure considered completed once final document is received

No prior contact with officials

Cost required to complete each procedure (% of property value)

Official costs only, no bribes

No value added or capital gains taxes included

Quality of land administration index (0-30)

- Is located in a periurban commercial zone, and no rezoning is required.
- Has no mortgages attached, has been under the same ownership for the past 10 years.
- Consists of 557.4 square meters (6,000 square feet) of land and a 10-year-old, 2-story warehouse of 929 square meters (10,000 square feet). The warehouse is in good condition and complies with all safety standards, building codes and legal requirements. There is no heating system.

² For the 11 economies with a population of more than 100 million, data for a second city have been added.

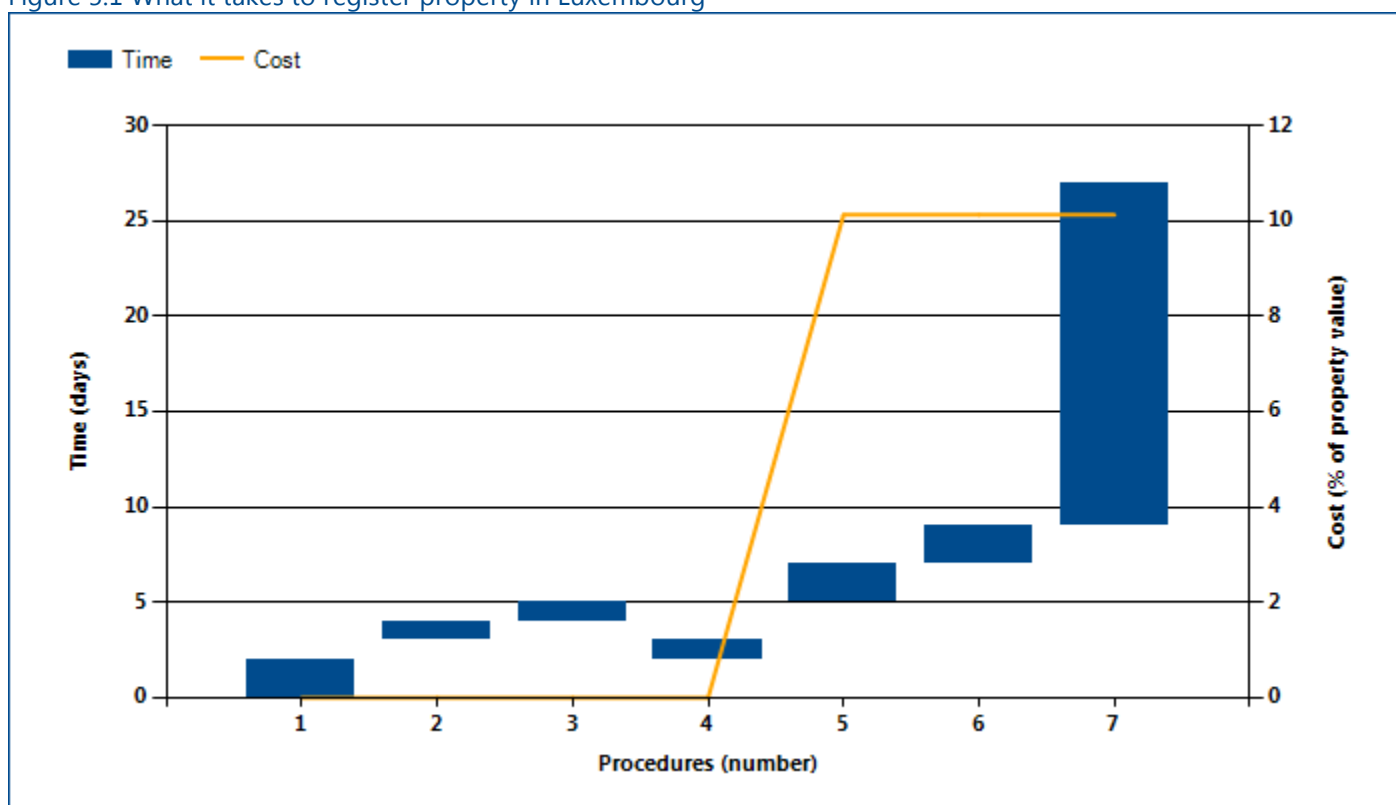
REGISTERING PROPERTY

Where does the economy stand today?

What does it take to complete a property transfer in Luxembourg? According to data collected by *Doing Business*, registering property there requires 7.00 procedures, takes 26.50 days and costs 10.10% of the property value (figure 5.1).

Most indicator sets refer to a case scenario in the largest business city of an economy, except for 11 economies for which the data are a population-weighted average of the 2 largest business cities. See the chapter on distance to frontier and ease of doing business ranking at the end of this profile for more details.

Figure 5.1 What it takes to register property in Luxembourg



Source: *Doing Business* database.

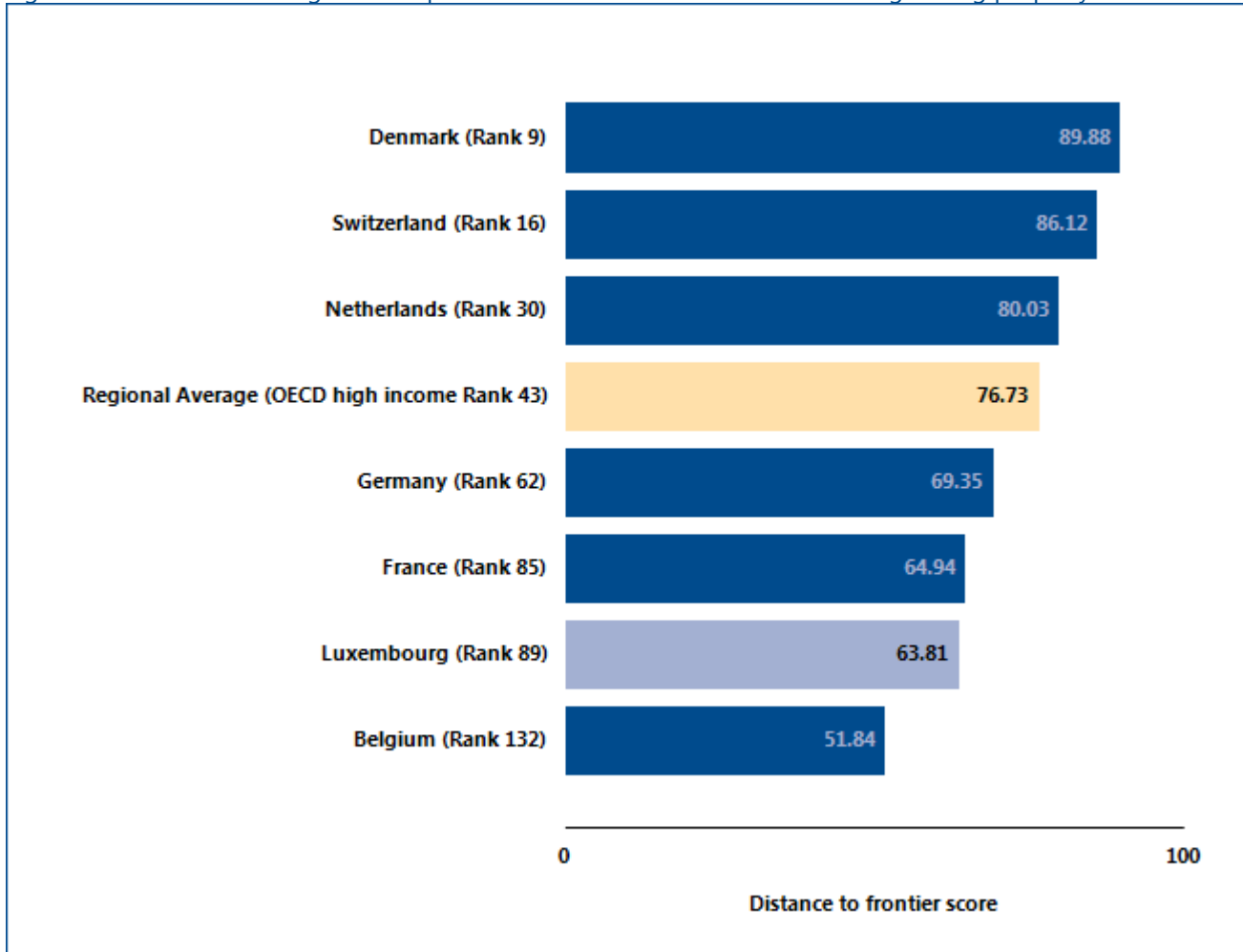
Note: Time shown in the figure above may not reflect simultaneity of procedures. Online procedures account for 0.5 days in the total time calculation. For more information on the methodology of the registering property indicators, see the *Doing Business* website (<http://www.doingbusiness.org>). For details on the procedures reflected here, see the summary at the end of this chapter.

REGISTERING PROPERTY

Globally, Luxembourg stands at 89 in the ranking of 189 economies on the ease of registering property (figure 5.2). The rankings for comparator economies and the

regional average ranking provide other useful information for assessing how easy it is for an entrepreneur in Luxembourg to transfer property.

Figure 5.2 How Luxembourg and comparator economies rank on the ease of registering property



Source: Doing Business database.

REGISTERING PROPERTY

What are the details?

The indicators reported here are based on a set of specific procedures—the steps that a buyer and seller must complete to transfer the property to the buyer’s name—identified by *Doing Business* through information collected from local property lawyers, notaries and property registries. These procedures are those that apply to a transaction matching the standard assumptions used by *Doing Business* in collecting the data (see the section in this chapter on what the indicators cover). The procedures, along with the associated time and cost, are summarized below.

STANDARD PROPERTY TRANSFER	
Property value:	EUR 2,740,855
City:	Luxembourg

Table 5.2 Summary of time, cost and procedures for registering property in Luxembourg

No.	Procedure	Time to complete	Cost to complete
1	<p>Parties visit notary to draft and authenticate the sale agreement (Compromis de Vente)</p> <p>After signing a sale agreement ("compromis de vente") between each other, as per common practice, the parties will visit a civil law notary so he can draft and authenticate the notarial deed. The sale is complete between the parties, and ownership is acquired as of right by the buyer with respect to the seller, as soon as the property and the price have been agreed upon, although the property has not yet been delivered or the price paid (Article 1583 of the Civil Code). As a sale of real estate must be registered (which triggers the payment of registration taxes) and recorded in the mortgage registry in order to be enforceable vis-à-vis third parties and as only duly certified deeds may be entered in the register, the sale must be recorded in a notarial deed ("acte de vente").</p> <p>The Civil Law notary is deemed a public official with powers delegated by the State to authenticate the deeds he drafts and provides complete security to the contracts he supervises. The authenticity of the deeds grants the parties an undisputable date and content in Court. The law imposes a personal liability on the notary for his professional acts which is more extensive than that of other branches of the legal profession.</p> <p>There are 34 Civil Law notaries, 18 of those in Luxembourg canton, in the Grand-Duchy of Luxembourg and the sale may be drawn up in front of anyone of them. This study assumes that parties would call on day one and receive an appointment for the same or following day.</p> <p><i>Agency: Civil Law Notary</i></p>	1 - 2 days	4 EUR stamp per page of the deed (2-3 pages) + notary fees (included in procedure 5)

No.	Procedure	Time to complete	Cost to complete
2	<p>Notary conducts full search at property registry</p> <p>The notary may go in person to the Bureau des Hypotheques to request and receive either a 'releve des inscriptions hypothecaires' (containing a list of mortgages), or a 'recherche par case hypothecaire' (containing a list of all land transactions effected by the landowner together with that of every mortgage or charge burdening the property). For each excerpt of the registry EUR 1.24 is payable per property owner and EUR 0.50 per each registered property. If the excerpt includes photocopies, EUR 0.50 is payable per each photocopy. For a closing certificate which confirms that the excerpts are the only existing ones EUR 1.24 per property-owner is payable. For a negative excerpt (no properties registered) EUR 2.48 is payable per person.</p> <p><i>Agency: Property registry (Bureau des Hypotheques)</i></p>	1 day in person (simultaneous with procedures 3 and 4)	EUR 2.48 for full search
3	<p>* Notary conducts search at the Administration du Cadastre (online)</p> <p>The notary should also check the status of the property at the cadastre. The notary can equally obtain this information through the cadastre's webpage where all this information is online. Free http://www.geoportail.lu information is available to the general public. Authorized users, such as notaries, have direct access to all information whereas the general public has only limited but adequate access to the land register information.</p> <p><i>Agency: Administration du Cadastre</i></p>	Less than one day (online procedure; simultaneous with procedures 2 and 4)	3 EUR per page, free consultation online
4	<p>* Notary notifies tax administration of transfer and obtains tax clearance</p> <p>The notary contacts the tax administration office to notify them that the property will be sold. The tax administration office confirms that the property has no claims or unpaid taxes on it. If there are outstanding claims or taxes, the tax administration may register a hidden mortgage ("hypothèque occulte") on the property.</p> <p><i>Agency: Tax Administration office</i></p>	1 day in person (simultaneous with procedures 2 and 3)	no cost
5	<p>Buyer sends funds, fees, taxes and anti-money laundering documents to notary</p> <p>The buyer will pay the taxes, fees and funds for the property by wire transfer to the notary, in addition to notarial fees. Notarial fees are determined by the Regulation of 24 July, 1971 on notary fees. The buyer must also send anti-money laundering documentation to the notary at this time, regarding the origin of the funds he is using. The notary also checks whether the persons signing the authenticated deed</p>	2 days	6% of the market value of property (registration fee) + 3% of the market value of property (municipal surcharge within city of

No.	Procedure	Time to complete	Cost to complete
	<p>have the necessary power of representation.</p> <p><i>Agency: Civil Law Notary</i></p>		<p>Luxembourg) + 1% market value of property (transcription duty)+ Notary fee schedule according to the official schedule</p>
6	<p>Parties return to notary to sign transfer deed in original</p> <p><i>Agency: Civil Law Notary</i></p>	1 - 2 days	already paid in Procedure 5
7	<p>Notary registers transfer deed at the Administration de l'Enregistrement et des Domaines</p> <p>The notary registers the transfer deed at the Administration de l'Enregistrement et des Domaines, which charges the transfer duty to the notary. The Administration will record the transfer after two to five days. The Administration will also send the deed to the Administration du Cadastre for registration of the new owner there. It will take the Cadastre about two weeks to record the new owner. At the same time, the Administration will take about two weeks to send a copy of the registered deed, with the stamp of the Administration and a reference number on it, back to the notary. The registration, municipal and inscription fees are paid by the parties to the notary, who pays the Administration.</p> <p><i>Agency: Administration de l'Enregistrement et des Domaines</i></p>	2 - 5 days to record + 14 days to send a copy of the registered deed	already paid in Procedure 5

* Takes place simultaneously with another procedure.

Source: Doing Business database.

Note: Online procedures account for 0.5 days in the total time calculation.

REGISTERING PROPERTY

Quality of land administration

The quality of land administration index is the sum of the scores on the reliability of infrastructure, transparency of information, geographic coverage and land dispute resolution indices.

The index ranges from 0 to 30, with higher values indicating better quality of the land administration system.

If private sector entities were unable to register property transfers in an economy between June 2014 and June 2015, the economy receives a “no practice” mark on the procedures, time and cost indicators. A “no practice” economy receives a score of 0 on the quality of land administration index even if its legal framework includes provisions related to land administration.

Table 5.3 Summary of quality of land administration in Luxembourg

	Answer	Score
Quality of the land administration index (0-30)		25.50
Reliability of infrastructure index (0-8)		8.00
What is the institution in charge of immovable property registration?	Property Registry (Bureau des Hypothèques, Administration de l'Enregistrement et des Domaines)	
In what format are the majority of title or deed records kept in the largest business city—in a paper format or in a computerized format (scanned or fully digital)?	Computer/Fully digital	2.0
Is there an electronic database for checking for encumbrances (liens, mortgages, restrictions and the like)?	Yes	1.0
Institution in charge of the plans showing legal boundaries in the largest business city:	Cadastre (Administration du Cadastre et de la Topographie)	
In what format are the majority of maps of land plots kept in the largest business city—in a paper format or in a computerized format (scanned or fully digital)?	Computer/Fully digital	2.0
Is there an electronic database for recording boundaries, checking plans and providing cadastral information (geographic information system)?	Yes	1.0
Is the information recorded by the immovable property registration agency and the cadastral or mapping agency kept in a single database, in different but linked databases or in separate databases?	Different databases but linked	1.0
Do the immovable property registration agency and cadastral or mapping agency use the same identification number for properties?	Yes	1.0

	Answer	Score
Transparency of information index (0–6)		3.50
Who is able to obtain information on land ownership at the agency in charge of immovable property registration in the largest business city?	Anyone who pays the official fee	1.0
Is the list of documents that are required to complete any type of property transaction made publicly available—and if so, how?	Yes, on public boards	0.5
Link for online access:		
Is the applicable fee schedule for any property transaction at the agency in charge of immovable property registration in the largest business city made publicly available—and if so, how?	Yes, online	0.5
Link for online access:	The "fee schedule for property transaction" can be found at http://www.legilux.lu (http://www.legilux.public.lu/leg/a/archives/2002/0108/a108.pdf#page=11 http://www.legilux.public.lu/leg/a/archives/2009/0060/a060.pdf#page=21#page=21).	
Does the agency in charge of immovable property registration commit to delivering a legally binding document that proves property ownership within a specific time frame—and if so, how does it communicate the service standard?	No	0.0
Link for online access:		
Is there a specific and separate mechanism for filing complaints about a problem that occurred at the agency in charge of immovable property registration?	No	0.0
Contact information:		
Are there publicly available official statistics tracking the number of transactions at the immovable property registration agency?	Yes	0.5
Number of property transfers in the largest business city in 2014:	18.248 registered deeds in 2014 concerning transfers of immovable	

	Answer	Score
	property rights.	
Who is able to consult maps of land plots in the largest business city?	Freely accessible by anyone	0.5
Is the applicable fee schedule for accessing maps of land plots made publicly available—and if so, how?	Yes, online	0.5
Link for online access:	http://www.geoportail.lu http://www.legilux.public.lu/leg/a/archives/2009/0060/a060.pdf#page=5#page=5#page=5	
Does the cadastral or mapping agency commit to delivering an updated map within a specific time frame—and if so, how does it communicate the service standard?	No	0.0
Link for online access:		
Is there a specific and separate mechanism for filing complaints about a problem that occurred at the cadastral or mapping agency?	No	0.0
Contact information:		
Geographic coverage index (0–8)		8.00
Are all privately held land plots in the economy formally registered at the immovable property registry?	Yes	2.0
Are all privately held land plots in the largest business city formally registered at the immovable property registry?	Yes	2.0
Are all privately held land plots in the economy mapped?	Yes	2.0
Are all privately held land plots in the largest business city mapped?	Yes	2.0
Land dispute resolution index (0–8)		6.00
Does the law require that all property sale transactions be registered at the immovable property registry to make them opposable to third parties?	Yes	1.5
Is the system of immovable property registration subject to a state or private guarantee?	Yes	0.5
Is there a specific compensation mechanism to cover for losses incurred by parties who engaged in good faith in a property transaction based on erroneous information certified by the immovable property registry?	No	0.0

	Answer	Score
Does the legal system require a control of legality of the documents necessary for a property transaction (e.g., checking the compliance of contracts with requirements of the law)?	Yes	0.5
If yes, who is responsible for checking the legality of the documents?	Notary.	
Does the legal system require verification of the identity of the parties to a property transaction?	Yes	0.5
If yes, who is responsible for verifying the identity of the parties?	Notary.	
Is there a national database to verify the accuracy of identity documents?	Yes	1.0
For a standard land dispute between two local businesses over tenure rights of a property worth 50 times gross national income (GNI) per capita and located in the largest business city, what court would be in charge of the case in the first instance?	Tribunal d'arrondissement	
How long does it take on average to obtain a decision from the first-instance court for such a case (without appeal)?	Between 1 and 2 years	2.0
Are there any statistics on the number of land disputes in the first instance?	No	0.0
Number of land disputes in the largest business city in 2014:		

Source: Doing Business database.

GETTING CREDIT

Two types of frameworks can facilitate access to credit and improve its allocation: credit information systems and borrowers and lenders in collateral and bankruptcy laws. Credit information systems enable lenders' rights to view a potential borrower's financial history (positive or negative)—valuable information to consider when assessing risk. And they permit borrowers to establish a good credit history that will allow easier access to credit. Sound collateral laws enable businesses to use their assets, especially movable property, as security to generate capital—while strong creditors' rights have been associated with higher ratios of private sector credit to GDP.

What do the indicators cover?

Doing Business assesses the sharing of credit information and the legal rights of borrowers and lenders with respect to secured transactions through 2 sets of indicators. The depth of credit information index measures rules and practices affecting the coverage, scope and accessibility of credit information available through a credit registry or a credit bureau. The strength of legal rights index measures whether certain features that facilitate lending exist within the applicable collateral and bankruptcy laws. *Doing Business* uses two case scenarios, Case A and Case B, to determine the scope of the secured transactions system, involving a secured borrower and a secured lender and examining legal restrictions on the use of movable collateral (for more details on each case, see the Data Notes section of the *Doing Business 2016* report). These scenarios assume that the borrower:

- Is a private limited liability company.
- Has its headquarters and only base of operations in the largest business city. For the 11 economies with a population of more than 100 million, data for a second city have been added.

WHAT THE GETTING CREDIT INDICATORS MEASURE

Strength of legal rights index (0–12)

Rights of borrowers and lenders through collateral laws

Protection of secured creditors' rights through bankruptcy laws

Depth of credit information index (0–8)

Scope and accessibility of credit information distributed by credit bureaus and credit registries

Credit bureau coverage (% of adults)

Number of individuals and firms listed in largest credit bureau as percentage of adult population

Credit registry coverage (% of adults)

Number of individuals and firms listed in credit registry as percentage of adult population

- Has up to 50 employees.
- Is 100% domestically owned, as is the lender.

The ranking of economies on the ease of getting credit is determined by sorting their distance to frontier scores for getting credit. These scores are the distance to frontier score for the strength of legal rights index and the depth of credit information index.

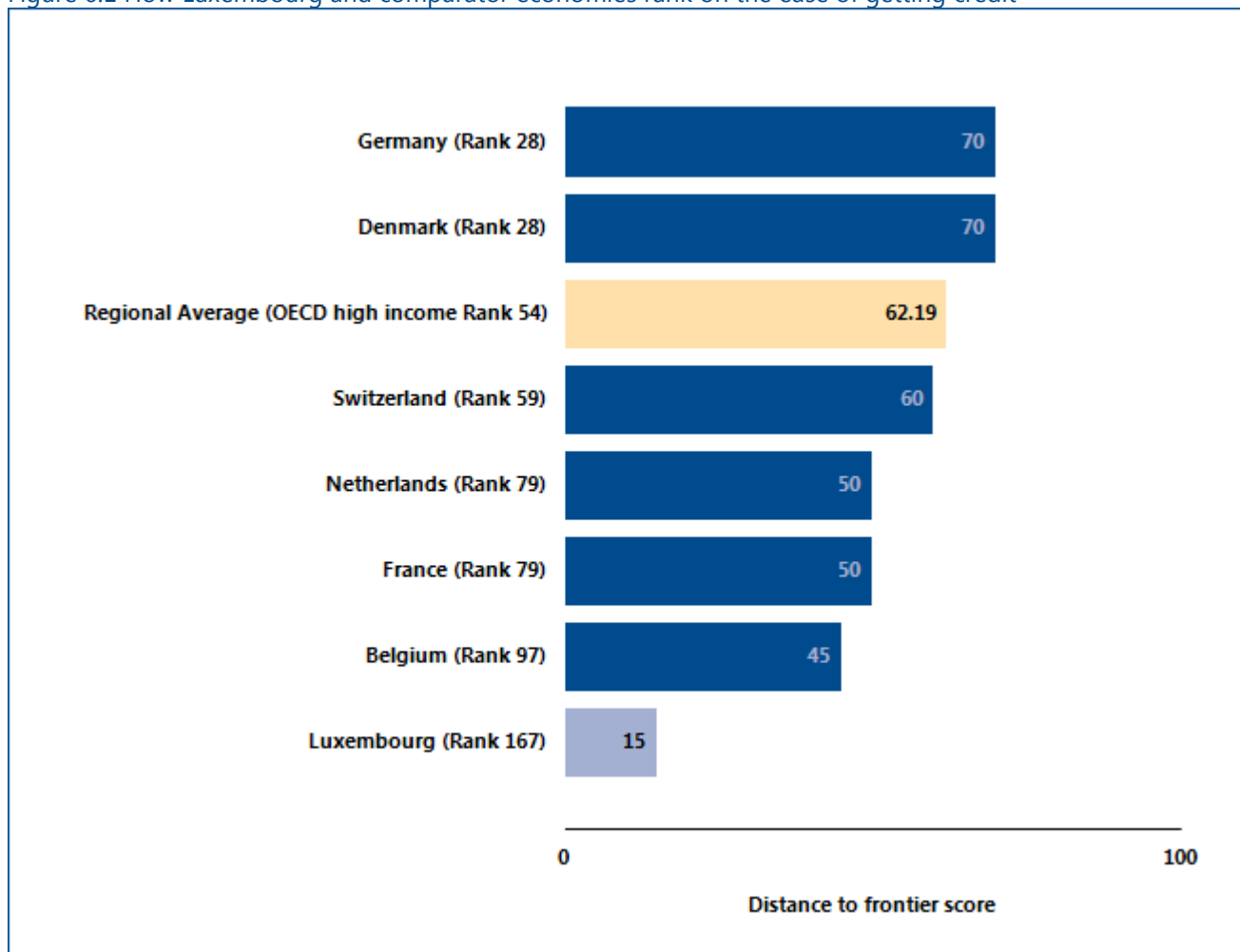
GETTING CREDIT

Where does the economy stand today?

How well do the credit information system and collateral and bankruptcy laws in Luxembourg facilitate access to credit? The economy has a score of 0.00 on the depth of credit information index and a score of 3.00 on the strength of legal rights index (see the summary of scoring at the end of this chapter for details). Higher scores indicate more credit information and stronger legal rights for borrowers and lenders.

Globally, Luxembourg stands at 167 in the ranking of 189 economies on the ease of getting credit (figure 6.1). The rankings for comparator economies provide other useful information for assessing how well regulations and institutions in Luxembourg support lending and borrowing.

Figure 6.1 How Luxembourg and comparator economies rank on the ease of getting credit



Source: Doing Business database.

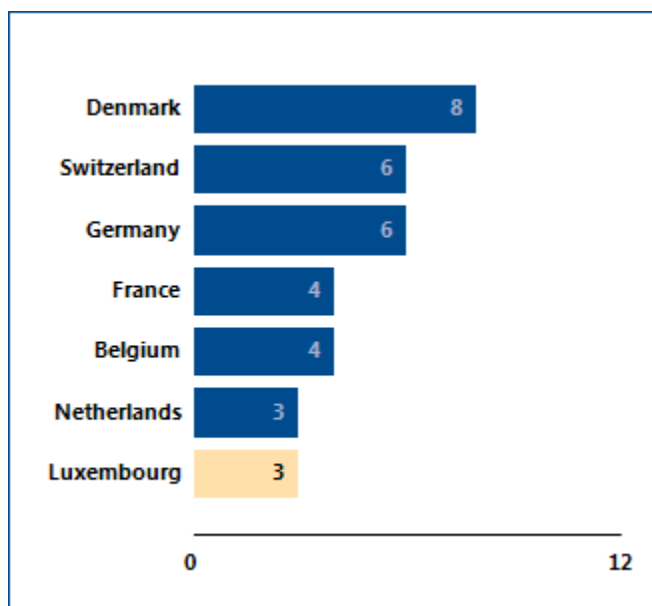
GETTING CREDIT

One way to put an economy’s score on the getting credit indicators into context is to see where the economy stands in the distribution of scores across economies. Figure 6.2 highlights the score on the strength of legal

rights index for Luxembourg and shows the scores for comparator economies as well as the regional average score. Figure 6.3 shows the same for the depth of credit information index.

Figure 6.2 How strong are legal rights for borrowers and lenders?

Economy scores on strength of legal rights index

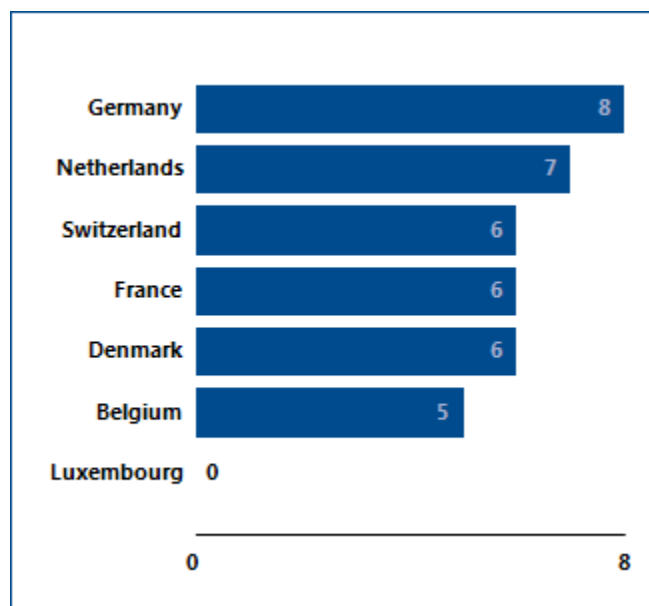


Source: Doing Business database.

Note: Higher scores indicate that collateral and bankruptcy laws are better designed to facilitate access to credit.

Figure 6.3 How much credit information is shared—and how widely?

Economy scores on depth of credit information index



Source: Doing Business database.

Note: Higher scores indicate the availability of more credit information, from either a credit registry or a credit bureau, to facilitate lending decisions. If the credit bureau or registry is not operational or covers less than 5% of the adult population, the total score on the depth of credit information index is 0.

GETTING CREDIT

What are the details?

The getting credit indicators reported here for Luxembourg are based on detailed information collected in that economy. The data on credit information sharing are collected through a survey of a credit registry and/or credit bureau (if one exists). To construct the depth of credit information index, a score of 1 is assigned for each of 8 features of the credit registry or credit bureau (see summary of scoring below).

The data on the legal rights of borrowers and lenders are gathered through a survey of financial lawyers and verified through analysis of laws and regulations as well as public sources of information on collateral and bankruptcy laws. For the strength of legal rights index, a score of 1 is assigned for each of 10 aspects related to legal rights in collateral law and 2 aspects in bankruptcy law.

Strength of legal rights index (0–12)	Index score: 3.00
Does an integrated or unified legal framework for secured transactions that extends to the creation, publicity and enforcement of functional equivalents to security interests in movable assets exist in the economy?	No
Does the law allow businesses to grant a non possessory security right in a single category of movable assets, without requiring a specific description of collateral?	No
Does the law allow businesses to grant a non possessory security right in substantially all of its assets, without requiring a specific description of collateral?	Yes
May a security right extend to future or after-acquired assets, and may it extend automatically to the products, proceeds or replacements of the original assets?	No
Is a general description of debts and obligations permitted in collateral agreements; can all types of debts and obligations be secured between parties; and can the collateral agreement include a maximum amount for which the assets are encumbered?	Yes
Is a collateral registry in operation for both incorporated and non-incorporated entities, that is unified geographically and by asset type, with an electronic database indexed by debtor's name?	No
Does a notice-based collateral registry exist in which all functional equivalents can be registered?	No
Does a modern collateral registry exist in which registrations, amendments, cancellations and searches can be performed online by any interested third party?	No
Are secured creditors paid first (i.e. before tax claims and employee claims) when a debtor defaults outside an insolvency procedure?	Yes
Are secured creditors paid first (i.e. before tax claims and employee claims) when a business is liquidated?	No
Are secured creditors subject to an automatic stay on enforcement when a debtor enters a court-supervised reorganization procedure? Does the law protect secured creditors' rights by providing clear grounds for relief from the stay and/or sets a time limit for it?	No
Does the law allow parties to agree on out of court enforcement at the time a security interest is created? Does the law allow the secured creditor to sell the collateral through public auction and private tender, as well as, for the secured creditor to keep the asset in satisfaction of the debt?	No

Depth of credit information index (0–8)	Credit bureau	Credit registry	Index score: 0.00
Are data on both firms and individuals distributed?	No	No	0
Are both positive and negative credit data distributed?	No	No	0
Are data from retailers or utility companies - in addition to data from banks and financial institutions - distributed?	No	No	0
Are at least 2 years of historical data distributed? (Credit bureaus and registries that distribute more than 10 years of negative data or erase data on defaults as soon as they are repaid obtain a score of 0 for this component.)	No	No	0
Are data on loan amounts below 1% of income per capita distributed?	No	No	0
By law, do borrowers have the right to access their data in the credit bureau or credit registry?	No	No	0
Can banks and financial institutions access borrowers' credit information online (for example, through an online platform, a system-to-system connection or both)?	No	No	0
Are bureau or registry credit scores offered as a value-added service to help banks and financial institutions assess the creditworthiness of borrowers?	No	No	0

Note: An economy receives a score of 1 if there is a "yes" to either bureau or registry. If the credit bureau or registry is not operational or covers less than 5% of the adult population, the total score on the depth of credit information index is 0.

Coverage	Credit bureau	Credit registry
Number of firms	0	0
Number of individuals	0	0
Total	0	0
Total percentage of adult population	0.00	0.00

Source: Doing Business database.

PROTECTING MINORITY INVESTORS

Protecting minority investors matters for the ability of companies to raise the capital they need to grow, innovate, diversify and compete. Effective regulations define related-party transactions precisely, promote clear and efficient disclosure requirements, require shareholder participation in major decisions of the company and set detailed standards of accountability for company insiders.

What do the indicators cover?

Doing Business measures the protection of minority investors from conflicts of interest through one set of indicators and shareholders' rights in corporate governance through another. The ranking of economies on the strength of minority investor protections is determined by sorting their distance to frontier scores for protecting minority investors. These scores are the simple average of the distance to frontier scores for the extent of conflict of interest regulation index and the extent of shareholder governance index. To make the data comparable across economies, a case study uses several assumptions about the business and the transaction.

The business (Buyer):

- Is a publicly traded corporation listed on the economy's most important stock exchange (or at least a large private company with multiple shareholders).
- Has a board of directors and a chief executive officer (CEO) who may legally act on behalf of Buyer where permitted, even if this is not specifically required by law.

The transaction involves the following details:

- Mr. James, a director and the majority shareholder of the company, proposes that the company purchase used trucks from another company he owns.
- The price is higher than the going price for used trucks, but the transaction goes forward.
- All required approvals are obtained, and all required disclosures made, though the transaction is prejudicial to Buyer.
- Shareholders sue the interested parties and the members of the board of directors.

WHAT THE PROTECTING MINORITY INVESTORS INDICATORS MEASURE

Extent of disclosure index (0–10)

Review and approval requirements for related-party transactions; Disclosure requirements for related-party transactions

Extent of director liability index (0–10)

Ability of minority shareholders to sue and hold interested directors liable for prejudicial related-party transactions; Available legal remedies (damages, disgorgement of profits, fines, imprisonment, rescission of the transaction)

Ease of shareholder suits index (0–10)

Access to internal corporate documents; Evidence obtainable during trial and allocation of legal expenses

Extent of conflict of interest regulation index (0–10)

Simple average of the extent of disclosure, extent of director liability and ease of shareholder indices

Extent of shareholder rights index (0–10)

Shareholders' rights and role in major corporate decisions

Extent of ownership and control index (0–10)

Governance safeguards protecting shareholders from undue board control and entrenchment

Extent of corporate transparency index (0–10)

Corporate transparency on ownership stakes, compensation, audits and financial prospects

Extent of shareholder governance index (0–10)

Simple average of the extent of shareholders rights, extent of ownership and control and extent of corporate transparency indices

Strength of investor protection index (0–10)

Simple average of the extent of conflict of interest regulation and extent of shareholder governance indices

PROTECTING MINORITY INVESTORS

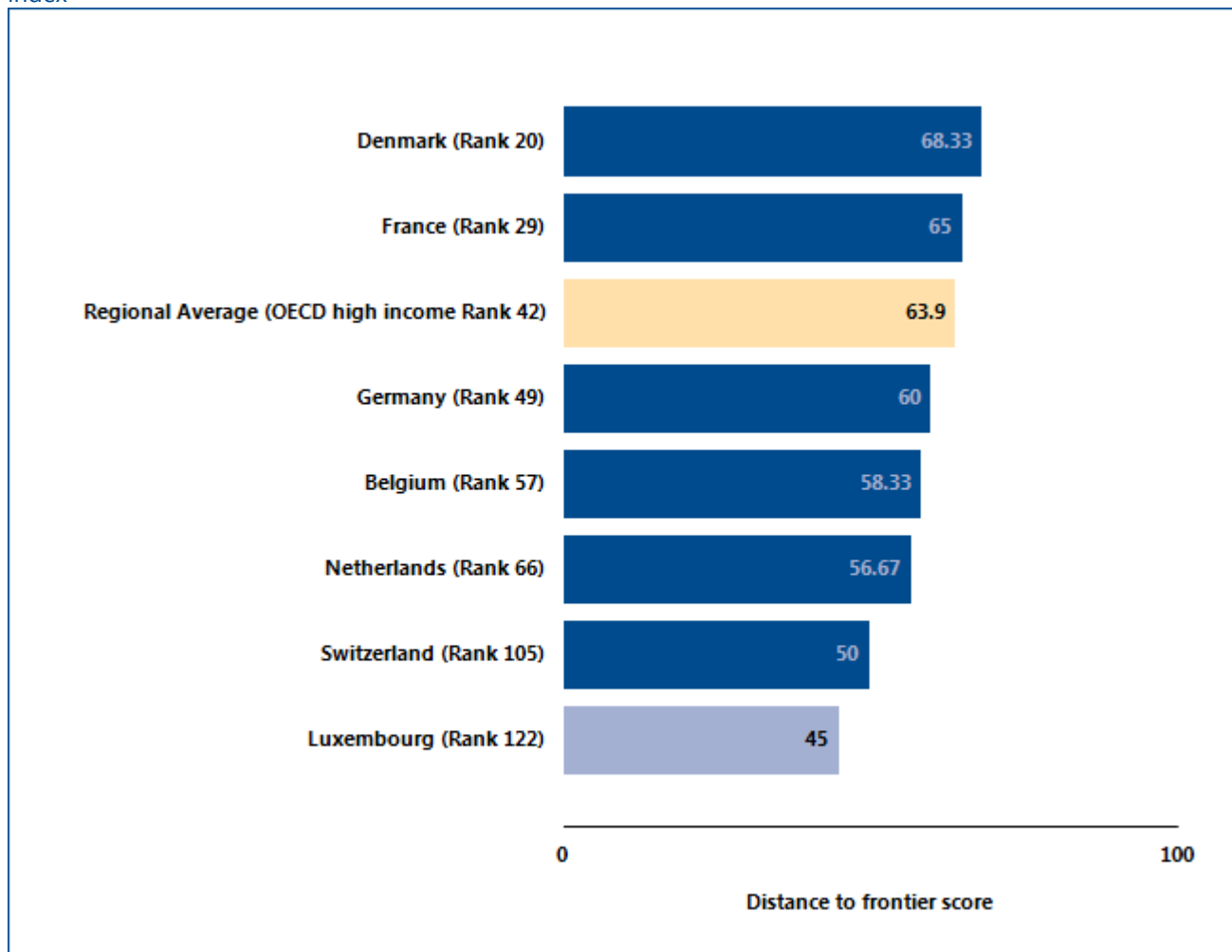
Where does the economy stand today?

How strong are minority investor protections against self-dealing in Luxembourg? The economy has a score of 4.50 on the strength of minority investor protection index, with a higher score indicating stronger protections.

Globally, Luxembourg stands at 122 in the ranking of 189 economies on the strength of minority investor

protection index (figure 7.1). While the indicator does not measure all aspects related to the protection of minority investors, a higher ranking does indicate that an economy's regulations offer stronger minority investor protections against self-dealing in the areas measured.

Figure 7.1 How Luxembourg and comparator economies perform on the strength of minority investor protection index



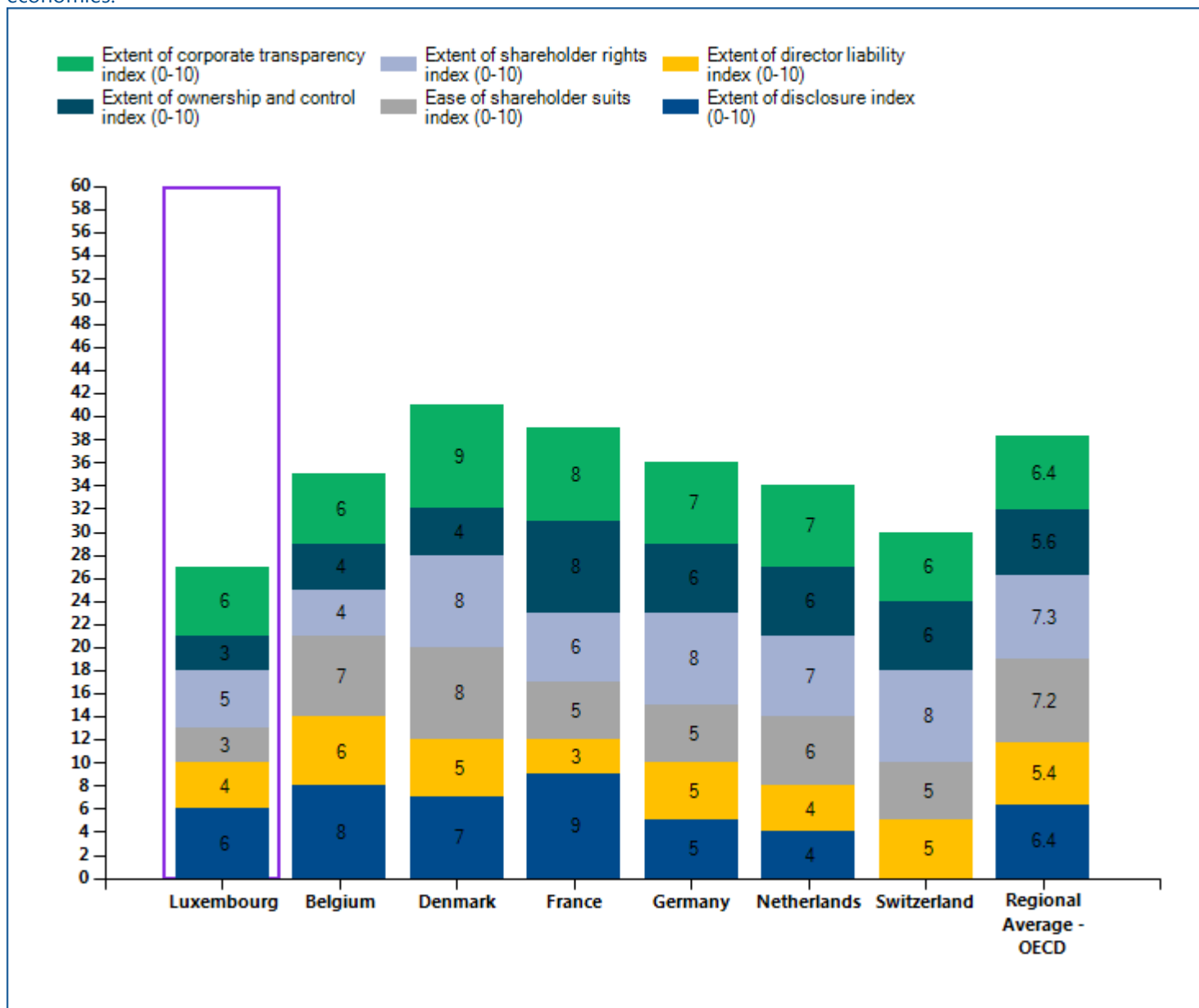
Source: Doing Business database.

PROTECTING MINORITY INVESTORS

One way to put an economy's scores on the protecting minority investors indicators into context is to see where the economy stands in the distribution of scores across comparator economies. Figure 7.2 highlights the scores on the various minority investor protection indices for Luxembourg.

A summary of scoring for the protecting minority investors indicators at the end of this chapter provides details on how the indices were calculated.

Figure 7.2 Summary of the various minority investor protection indices for Luxembourg and comparator economies.



Source: Doing Business database.

PROTECTING MINORITY INVESTORS

What are the details?

The protecting minority investors indicators reported here for Luxembourg are based on detailed information collected through a survey of corporate and securities lawyers about securities regulations, company laws and court rules of evidence and procedure. To construct the six indicators on minority investor protection, scores are assigned to each based on a range of conditions relating

to disclosure, director liability, shareholder suits, shareholder rights, ownership and control and corporate transparency in a standard case study (for more details, see the Data Notes section of the *Doing Business 2016* report). The summary below shows the details underlying the scores for Luxembourg.

Table 7.2 Summary of scoring for the protecting minority investors indicators in Luxembourg

	Answer	Score
Strength of minority investor protection index (0-10)		4.50
Extent of conflict of interest regulation index (0-10)		4.30
Extent of disclosure index (0-10)		6.00
Which corporate body can provide legally sufficient approval for the Buyer-Seller transaction? (0-3)	Board of directors excluding interested members	2.0
Is disclosure by the interested director to the board of directors required? (0-2)	Existence of a conflict without any specifics	1.0
Is disclosure of the transaction in published periodic filings (annual reports) required? (0-2)	Disclosure on the transaction only	1.0
Is immediate disclosure of the transaction to the public and/or shareholders required? (0-2)	Disclosure on the transaction and on the conflict of interest	2.0
Must an external body review the terms of the transaction before it takes place? (0-1)	No	0.0
Extent of director liability index (0-10)		4.00
Can shareholders sue directly or derivatively for the damage caused by the Buyer-Seller transaction to the company? (0-1)	No	0.0
Can shareholders hold the interested director liable for the damage caused by the transaction to the company? (0-2)	Liable if negligent	1.0
Can shareholders hold members of the approving body liable for the damage caused by the transaction to the company? (0-2)	Liable if negligent	1.0
Must the interested director pay damages for the harm caused to the company upon a successful claim by a shareholder plaintiff? (0-1)	Yes	1.0
Must the interested director repay profits made from the transaction upon a successful claim by a shareholder plaintiff? (0-1)	No	0.0
Is the interested director fined and imprisoned or disqualified upon a successful claim by the shareholder plaintiff? (0-1)	Yes	1.0
Can a court void the transaction upon a successful claim by a shareholder plaintiff? (0-2)	Only in case of fraud or bad faith	0.0
Ease of shareholder suits index (0-10)		3.00
Before filing suit, can shareholders owning 10% of the	No	0.0

company's share capital inspect the transaction documents? (0-1)		
Can the plaintiff obtain any documents from the defendant and witnesses during trial? (0-3)	Any relevant document	3.0
Can the plaintiff request categories of documents from the defendant without identifying specific ones? (0-1)	No	0.0
Can the plaintiff directly question the defendant and witnesses during trial? (0-2)	No	0.0
Is the level of proof required for civil suits lower than that of criminal cases? (0-1)	No	0.0
Can shareholder plaintiffs recover their legal expenses from the company? (0-2)	At the discretion of the court	0.0
Extent of shareholder governance index (0-10)		4.70
Extent of shareholder rights index (0-10)		5.00
Does the sale of 51% of Buyer's assets require shareholder approval?	No	0.0
Can shareholders representing 10% of Buyer's share capital call for an extraordinary meeting of shareholders?	Yes	1.0
Must Buyer obtain its shareholders' approval every time it issues new shares?	No	0.0
Do shareholders automatically receive preemption rights every time Buyer issues new shares?	Yes	1.0
Must shareholders approve the election and dismissal of the external auditor?	Yes	1.0
Must changes to the voting rights of a class of shares be approved only by the holders of the affected shares?	Yes	1.0
Assuming that Buyer is a limited company, does the sale of 51% of Buyer's assets requires shareholder approval?	No	0.0
Assuming that Buyer is a limited company, can shareholders representing 10% of Buyer's share capital call for an extraordinary meeting of shareholders?	No	0.0
Assuming that Buyer is a limited company, must Buyer obtain its shareholders' approval every time it issues new shares?	No	0.0
Assuming that Buyer is a limited company, do shareholders automatically receive preemption rights every time Buyer issues new shares?	Yes	1.0
Extent of ownership and control index (0-10)		3.00
Is the CEO prohibited from also being chair of the board of directors?	No	0.0
Must the board of directors include independent and nonexecutive board members?	No	0.0
Can shareholders remove members of Buyer's board of directors without cause before the end of their term?	Yes	1.0
Must Buyer's board of directors include a separate audit committee?	No	0.0
Must a potential acquirer make a tender offer to all shareholders upon acquiring 50% of Buyer?	Yes	1.0
Must Buyer pay dividends within a maximum period set by law after the declaration date?	No	0.0
Is a subsidiary prohibited from acquiring shares issued by its parent company?	No	0.0

Assuming that Buyer is a limited company, can shareholders remove members of Buyer's board of directors without cause before the end of their term?	Yes	1.0
Assuming that Buyer is a limited company, must a potential acquirer make a tender offer to all shareholders upon acquiring 50% of Buyer?	No	0.0
Assuming that Buyer is a limited company, must Buyer pay dividends within a maximum period set by law after the declaration date?	No	0.0
Extent of corporate transparency index (0-10)		6.00
Must Buyer disclose direct and indirect beneficial ownership stakes representing 5%?	Yes	1.0
Must Buyer disclose information about board members' other directorships as well as basic information on their primary employment?	Yes	1.0
Must Buyer disclose the compensation of individual managers?	No	0.0
Must a detailed notice of general meeting be sent 30 days before the meeting?	Yes	1.0
Can shareholders representing 5% of Buyer's share capital put items on the agenda for the general meeting?	Yes	1.0
Must Buyer's annual financial statements be audited by an external auditor?	Yes	1.0
Must Buyer disclose its audit reports to the public.	Yes	1.0
Assuming that Buyer is a limited company, must a detailed notice of general meeting be sent 30 days before the meeting?	No	0.0
Assuming that Buyer is a limited company, can shareholders representing 5% of Buyer's share capital put items on the agenda for the general meeting?	No	0.0
Assuming that Buyer is a limited company, must Buyer's annual financial statements be audited by an external auditor?	No	0.0

Source: Doing Business database.

PAYING TAXES

Taxes are essential. The level of tax rates needs to be carefully chosen—and needless complexity in tax rules avoided. Firms in economies that rank better on the ease of paying taxes in the *Doing Business* study tend to perceive both tax rates and tax administration as less of an obstacle to business according to the World Bank Enterprise Survey research.

What do the indicators cover?

Using a case scenario, *Doing Business* records the taxes and mandatory contributions that a medium-size company must pay in a given year as well as measures of the administrative burden of paying taxes and contributions. This case scenario uses a set of financial statements and assumptions about transactions made over the year. Information is also compiled on the frequency of filing and payments as well as time taken to comply with tax laws. The ranking of economies on the ease of paying taxes is determined by sorting their distance to frontier scores on the ease of paying taxes. These scores are the simple average of the distance to frontier scores for each of the component indicators, with a threshold and a nonlinear transformation applied to one of the component indicators, the total tax rate³. All financial statement variables are proportional to 2012 income per capita. To make the data comparable across economies, several assumptions are used.

- TaxpayerCo is a medium-size business that started operations on January 1, 2013.
- The business starts from the same financial position in each economy. All the taxes and mandatory contributions paid during the second year of operation are recorded.
- Taxes and mandatory contributions are measured at all levels of government.

WHAT THE PAYING TAXES INDICATORS MEASURE

Tax payments for a manufacturing company in 2014 (number per year adjusted for electronic and joint filing and payment)

Total number of taxes and contributions paid, including consumption taxes (value added tax, sales tax or goods and service tax)

Method and frequency of filing and payment

Time required to comply with 3 major taxes (hours per year)

Collecting information and computing the tax payable

Completing tax return forms, filing with proper agencies

Arranging payment or withholding

Preparing separate tax accounting books, if required

Total tax rate (% of profit before all taxes)

Profit or corporate income tax

Social contributions and labor taxes paid by the employer

Property and property transfer taxes

Dividend, capital gains and financial transactions taxes

Waste collection, vehicle, road and other taxes

- Taxes and mandatory contributions include corporate income tax, turnover tax and all labor taxes and contributions paid by the company.
- A range of standard deductions and exemptions are also recorded.

³ The nonlinear distance to frontier for the total tax rate is equal to the distance to frontier for the total tax rate to the power of 0.8. The threshold is defined as the total tax rate at the 15th percentile of the overall distribution for all years included in the analysis up to and including *Doing Business 2015*, which is 26.1%. All economies with a total tax rate below this threshold receive the same score as the economy at the threshold.

PAYING TAXES

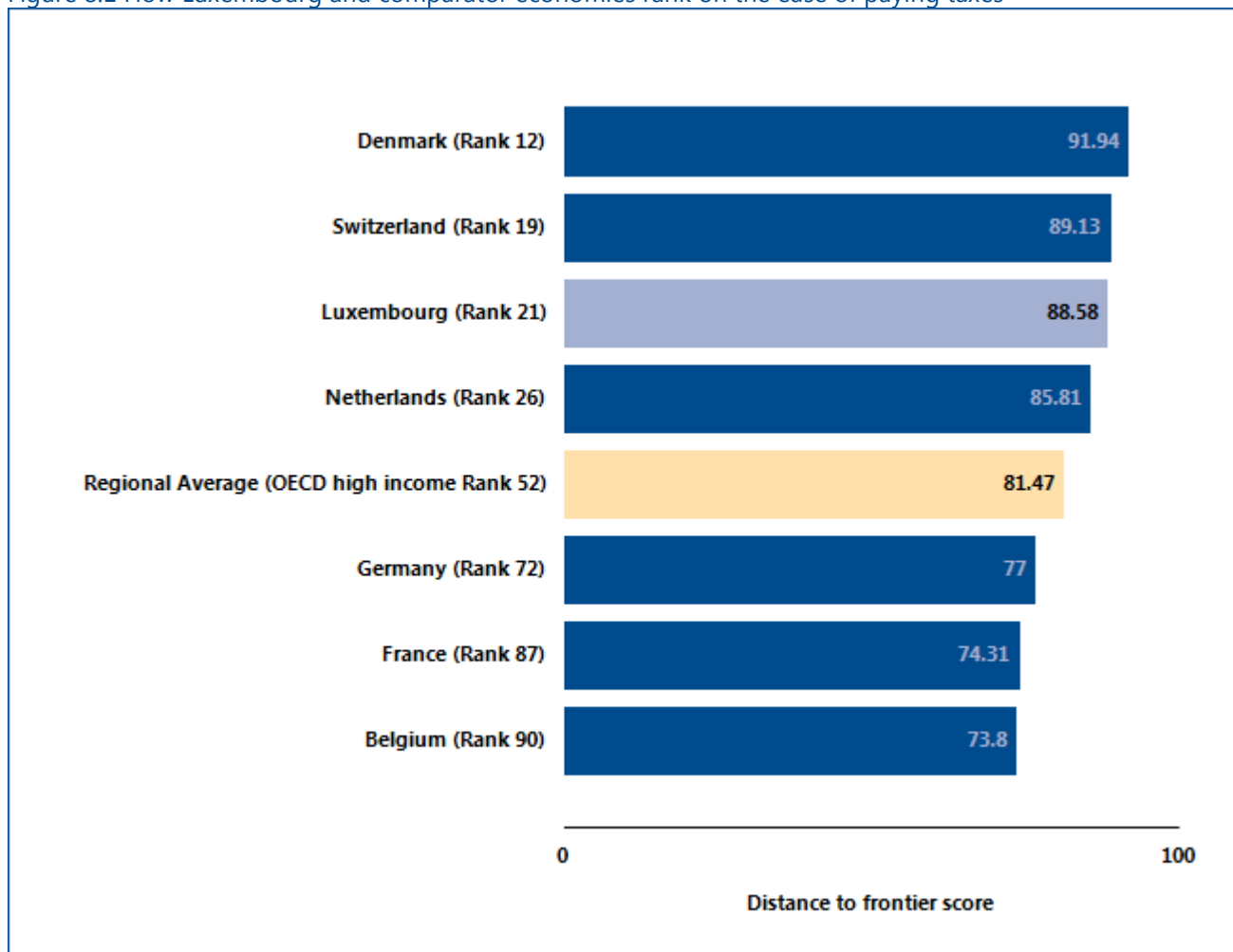
Where does the economy stand today?

What is the administrative burden of complying with taxes in Luxembourg—and how much do firms pay in taxes? On average, firms make 23.00 tax payments a year, spend 55.00 hours a year filing, preparing and paying taxes and pay total taxes amounting to 20.10% of profit (see the summary at the end of this chapter for details). Most indicator sets refer to a case scenario in the largest business city of an economy, except for 11 economies for which the data are a population-weighted

average of the 2 largest business cities. See the chapter on distance to frontier and ease of doing business ranking at the end of this profile for more details.

Globally, Luxembourg stands at 21 in the ranking of 189 economies on the ease of paying taxes (figure 8.1). The rankings for comparator economies and the regional average ranking provide other useful information for assessing the tax compliance burden for businesses in Luxembourg.

Figure 8.1 How Luxembourg and comparator economies rank on the ease of paying taxes



Source: Doing Business database.

PAYING TAXES

What are the details?

The indicators reported here for Luxembourg are based on the taxes and contributions that would be paid by a standardized case study company used by *Doing Business* in collecting the data (see the section in this chapter on what the indicators cover). Tax practitioners are asked to review a set of financial statements as well as a standardized list of assumptions and transactions that the company completed during its 2nd year of operation. Respondents are asked how much taxes and mandatory contributions the business must pay and how these taxes are filed and paid.

LOCATION OF STANDARDIZED COMPANY

City: Luxembourg

The taxes and contributions paid are listed in the summary below, along with the associated number of payments, time and tax rate.

Table 8.2 Summary of tax rates and administration

Tax or mandatory contribution	Payments (number)	Notes on payments	Time (hours)	Statutory tax rate	Tax base	Total tax rate (% of profit)	Notes on total tax rate
Social security contributions employers	12		14	12.72%-14.89%	gross salaries	15.51	
Municipal tax	5			0.0675	taxable profits with an allowance of EUR 17,500	4.18	
Property tax	1			7.5	0.9% to 1% of unitary value	0.23	
Net wealth tax	0	jointly		0.005	net equity with some exemptions	0.12	
Tax on insurance contracts	1			0.04	insurance premium	0.08	
Vehicle tax	1			varies	vehicle weight	0.01	
Value added tax (VAT)	1	online	22	0.15	value added	0	not included

Tax or mandatory contribution	Payments (number)	Notes on payments	Time (hours)	Statutory tax rate	Tax base	Total tax rate (% of profit)	Notes on total tax rate
Fuel tax	1				included in fuel price	0	small amount
Stamp duty	1			EUR 1.86-9.92	paper size	0	small amount
Social security contributions on employee	0			0.1105	gross salaries	0	
Corporate income tax	0	jointly	19	0.2247	taxable profit	0	
Totals	23.00		55.00			20.10	

Source: Doing Business database.

TRADING ACROSS BORDERS

In today's globalized world, making trade between economies easier is increasingly important for business. Excessive document requirements, burdensome customs procedures, inefficient port operations and inadequate infrastructure all lead to extra costs and delays for exporters and importers, stifling trade potential.

What do the indicators cover?

Doing Business records the time and cost associated with the logistical process of exporting and importing goods. Under the new methodology introduced this year, *Doing Business* measures the time and cost (excluding tariffs) associated with three sets of procedures—documentary compliance, border compliance and domestic transport—within the overall process of exporting or importing a shipment of goods. The ranking of economies on the ease of trading across borders is determined by sorting their distance to frontier scores for trading across borders. These scores are the simple average of the distance to frontier scores for the time and cost for documentary compliance and border compliance to export and import.

To make the data comparable across economies, a few assumptions are made about the traded goods and the transactions:

Time

- Time is measured in hours, and 1 day is 24 hours (for example, 22 days are recorded as $22 \times 24 = 528$ hours). If customs clearance takes 7.5 hours, the data are recorded as is. Alternatively, suppose that documents are submitted to a customs agency at 8:00 a.m., are processed overnight and can be picked up at 8:00 a.m. the next day. In this case the time for customs clearance would be recorded as 24 hours because the actual procedure took 24 hours.

WHAT THE TRADING ACROSS BORDERS

INDICATORS MEASURE FOR IMPORT & EXPORT

Documentary compliance – cost (US\$) & time (hours)

Obtain, prepare and submit documents:

- During transport, clearance, inspections and port or border handling in origin economy
- Required by origin, transit and destination economies

Covers all documents by law and in practice

Border compliance – cost (US\$) & time (hours)

Customs clearance and inspections

Inspections by other agencies

Port or border handling

Obtaining, preparing and submitting documents during clearance, inspections and port or border handling

Domestic transport*

Loading and unloading of shipment

Transport between warehouse and terminal/port

Transport between terminal/port and border

Obtaining, preparing and submitting documents during domestic transport

Traffic delays and road police checks while shipment is en route

* Although *Doing Business* collects and publishes data on the time and cost for domestic transport, it does not use these data in calculating the distance to frontier score for trading across borders or the ranking on the ease of trading across borders.

Cost

- Insurance cost and informal payments for which no receipt is issued are excluded from the costs recorded. Costs are reported in U.S. dollars. Contributors are asked to convert local currency into U.S. dollars based on the exchange rate prevailing on the day they answer the questionnaire.

Assumptions of the case study

- For each of the 189 economies covered by *Doing Business*, it is assumed that a shipment travels from a warehouse in the largest business city of the exporting economy to a warehouse in the largest business city of the importing economy. For 11 economies the data are also collected, under the same case study assumptions, for the second largest business city.
- The import and export case studies assume different traded products. It is assumed that each economy imports a standardized shipment of 15 metric tons of containerized auto parts (HS 8708) from its natural import partner—the economy from which it imports the largest value (price times quantity) of auto parts. It is assumed that each economy exports the product of its comparative advantage (defined by the largest export value) to its natural export partner—the economy that is the largest purchaser of this product. Precious metal and gems, live animals and pharmaceuticals are excluded from the list of possible export products, however, and the second largest product category is considered as needed.
- To identify the trading partners and export product for each economy, *Doing Business* collected data on trade flows for the most recent four-year period from international databases such as the United Nations Commodity Trade Statistics Database (UN Comtrade). For economies for which trade flow data were not available, data from ancillary government sources (various ministries and departments) and World Bank Group country offices were used to identify the export product and natural trading partners.
- A shipment is a unit of trade. Export shipments do not necessarily need to be containerized, while import shipments of auto parts are assumed to be containerized.
- Shipping cost based on weight is assumed to be greater than shipping cost based on volume.
- If government fees are determined by the value of the shipment, the value is assumed to be \$50,000.
- The product is new, not secondhand or used merchandise.
- The exporting firm is responsible for hiring and paying for a freight forwarder or customs broker (or both) and pays for all costs related to international shipping, domestic transport, clearance and mandatory inspections by customs and other government agencies, port or border handling, documentary compliance fees and the like for exports. The importing firm is responsible for the above costs for imports.
- The mode of transport is the one most widely used for the chosen export or import product and the trading partner, as is the seaport, airport or land border crossing.
- All electronic submissions of information requested by any government agency in connection with the shipment are considered to be documents obtained, prepared and submitted during the export or import process.
- A port or border is defined as a place (seaport, airport or land border crossing) where merchandise can enter or leave an economy.
- Government agencies considered relevant are agencies such as customs, port authorities, road police, border guards, standardization agencies, ministries or departments of agriculture or industry, national security agencies and any other government authorities.

TRADING ACROSS BORDERS

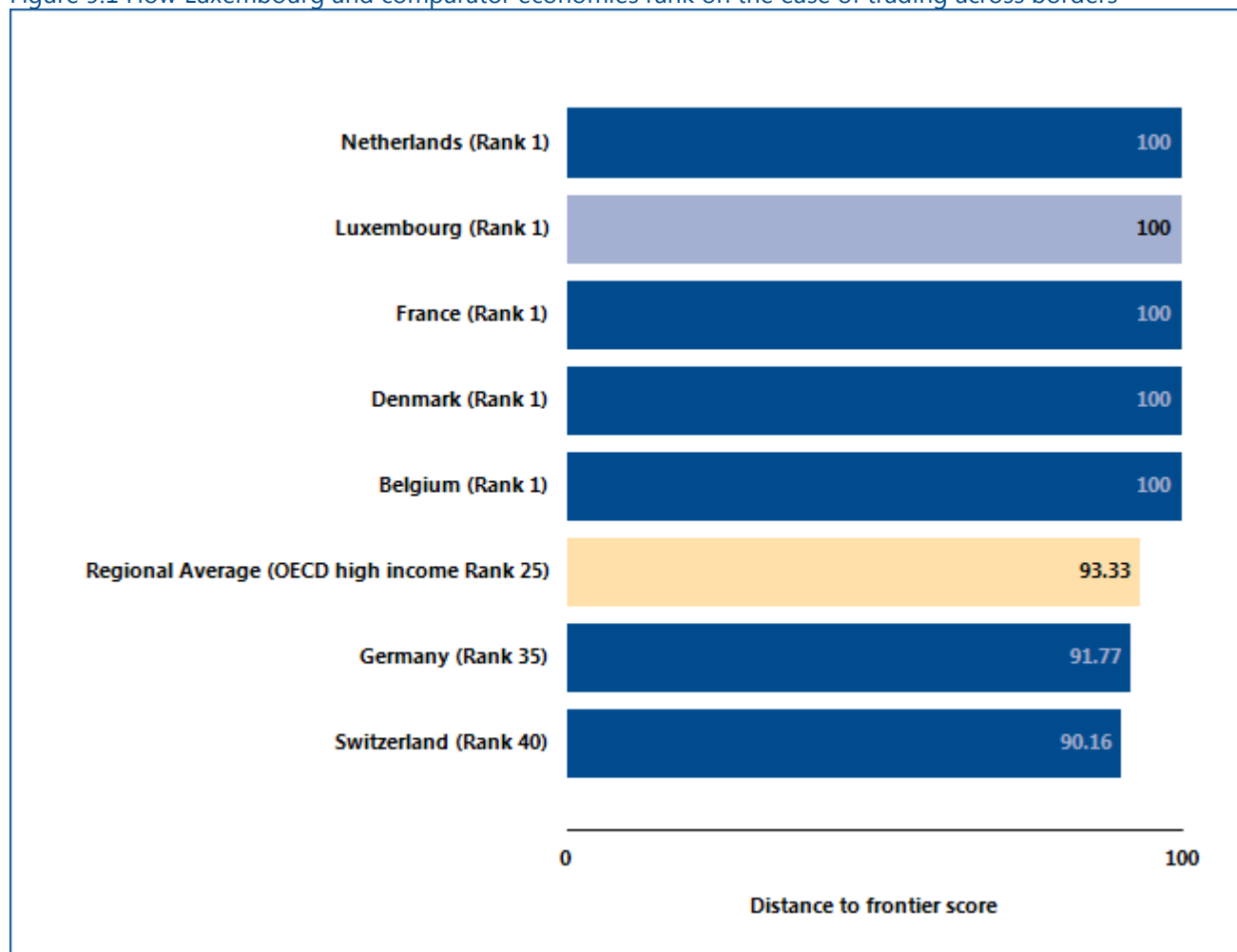
Where does the economy stand today?

The Trading across Border indicator refers to a case study scenario of a warehouse in the largest business city of an economy (except for 11 economies for which the data are a population-weighted average of the 2 largest business cities) trading with the main import and export partner through the economy's main border crossing.

Globally, Luxembourg stands at 1 in the ranking of 189 economies on the ease of trading across borders (figure 9.1).

While not included in the distance to frontier or ease of doing business ranking, data on domestic transportation is also recorded for all economies and provided in Table 9.3.

Figure 9.1 How Luxembourg and comparator economies rank on the ease of trading across borders



Source: Doing Business database.

TRADING ACROSS BORDERS

What are the details?

The indicators reported here for Luxembourg are based on a set of specific predefined procedures for trading a shipment of goods by the most widely used mode of transport (whether sea, land, air or some combination of these). The information on the time and cost to complete export and import is collected from local freight forwarders, customs brokers and traders.

LOCATION OF STANDARDIZED COMPANY

City: Luxembourg

The details on the predefined set of procedures, and the associated time and cost, for exporting and importing a shipment of goods are listed in the summary below, along with the required documents.

Table 9.2 Summary of export and import time and cost for trading across borders in Luxembourg

	Luxembourg	OECD high income
Time to export: Border compliance (hours)	0	15
Cost to export: Border compliance (USD)	0	160
Time to export: Documentary compliance (hours)	1	5
Cost to export: Documentary compliance (USD)	0	36
Time to import: Border compliance (hours)	0	9
Cost to import: Border compliance (USD)	0	123
Time to import: Documentary compliance (hours)	1	4
Cost to import: Documentary compliance (USD)	0	25

Source: Doing Business database.

Table 9.3 Summary of trading details, transport time and documents for trading across borders in Luxembourg

	Export	Import
Product	HS 72 : Iron and steel	HS 8708: Parts and accessories of motor vehicles
Trade partner	Germany	Germany
Border	Luxembourg-Germany border crossing	Luxembourg-Germany border crossing
Distance (km)	45	45
Domestic transport time (hours)	1	1
Domestic transport cost (USD)	60	60
Domestic transport speed (km/hour)	45.0	45.0
Domestic transport cost per distance (USD/km)	1.3	1.3

Source: *Doing Business* database.

Note: Although *Doing Business* collects and publishes data on the time and cost for domestic transport, it does not use these data in calculating the distance to frontier score for trading across borders or the ranking on the ease of trading across borders.

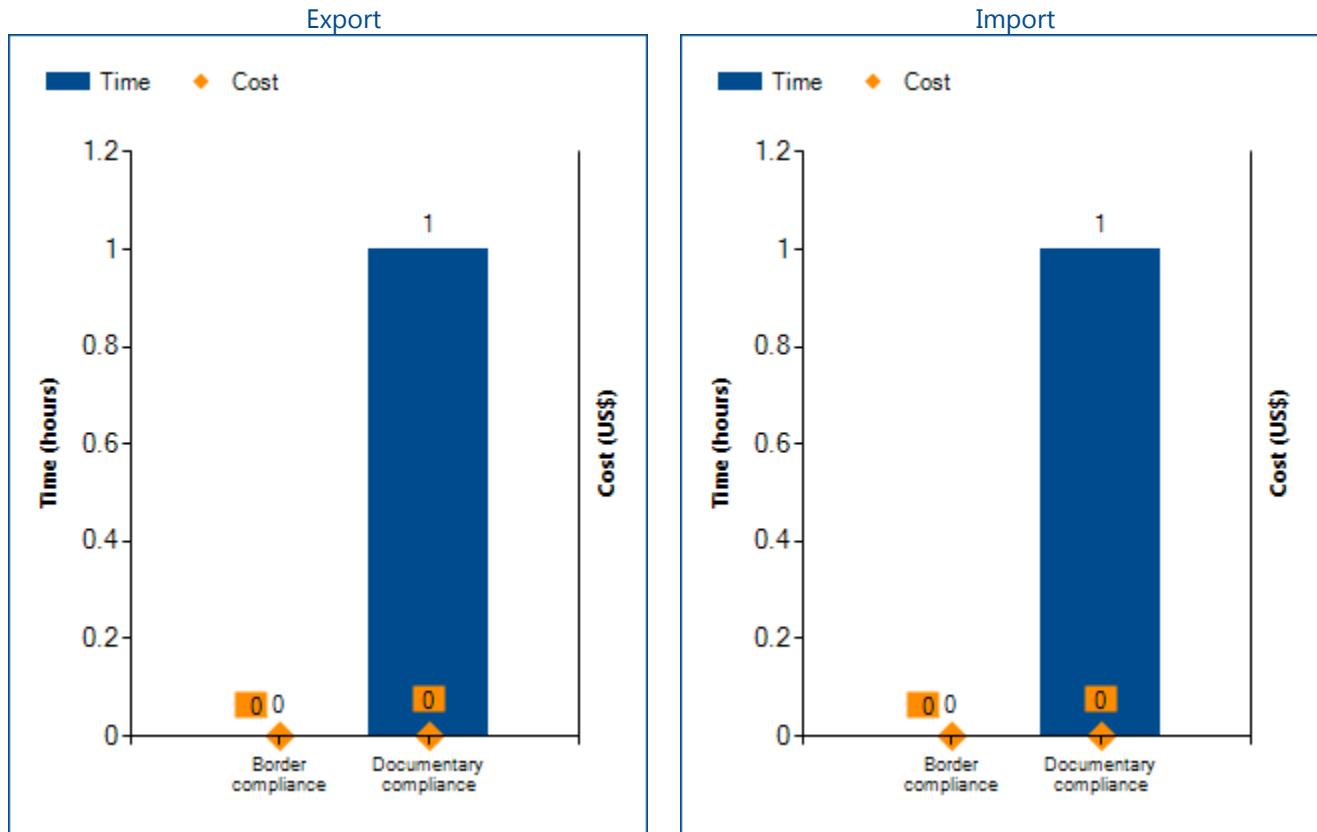
Documents to export
CMR waybill
Commercial invoice
Intrastat
Packing list

Documents to import
CMR waybill
Commercial invoice
Intrastat
Packing list

Source: *Doing Business* database.

Note: *Doing Business* continues to collect data on the number of documents needed to trade internationally. Unlike in previous years, however, these data are excluded from the calculation of the distance to frontier score and ranking. The time and cost for documentary compliance serve as better measures of the overall cost and complexity of compliance with documentary requirements than does the number of documents required.

Figure 9.2 Summary of Luxembourg on the ease of trading across borders



Source: Doing Business database.

ENFORCING CONTRACTS

Effective commercial dispute resolution has many benefits. Courts are essential for entrepreneurs because they interpret the rules of the market and protect economic rights. Efficient and transparent courts encourage new business relationships because businesses know they can rely on the courts if a new customer fails to pay. Speedy trials are essential for small enterprises, which may lack the resources to stay in business while awaiting the outcome of a long court dispute.

What do the indicators cover?

Doing Business measures the time and cost for resolving a standardized commercial dispute through a local first-instance court. In addition, this year it introduces a new measure, the quality of judicial processes index, evaluating whether each economy has adopted a series of good practices that promote quality and efficiency in the court system. This new index replaces the indicator on procedures, which was eliminated this year. The ranking of economies on the ease of enforcing contracts is determined by sorting their distance to frontier scores. These scores are the simple average of the distance to frontier scores for each of the component indicators.

The dispute in the case study involves the breach of a sales contract between 2 domestic businesses. The case study assumes that the court hears an expert on the quality of the goods in dispute. This distinguishes the case from simple debt enforcement. To make the data comparable across economies, *Doing Business* uses several assumptions about the case:

- The dispute concerns a lawful transaction between two businesses (Seller and Buyer), both located in the economy's largest business city. For 11 economies the data are also collected for the second largest business city.
- The buyer orders custom-made goods, then fails to pay.

WHAT THE ENFORCING CONTRACTS

INDICATORS MEASURE

Time required to enforce a contract through the courts (calendar days)

- Time to file and serve the case
- Time for trial and to obtain the judgment
- Time to enforce the judgment

Cost required to enforce a contract through the courts (% of claim)

- Attorney fees
- Court fees
- Enforcement fees

Quality of judicial processes index (0-18)

- Court structure and proceedings (0-5)
- Case management (0-6)
- Court automation (0-4)
- Alternative dispute resolution (0-3)

- The value of the dispute is 200% of the income per capita or the equivalent in local currency of USD 5,000, whichever is greater.
- The seller sues the buyer before the court with jurisdiction over commercial cases worth 200% of income per capita or \$5,000.
- The seller requests a pretrial attachment to secure the claim.
- The dispute on the quality of the goods requires an expert opinion.
- The judge decides in favor of the seller; there is no appeal.
- The seller enforces the judgment through a public sale of the buyer's movable assets.

ENFORCING CONTRACTS

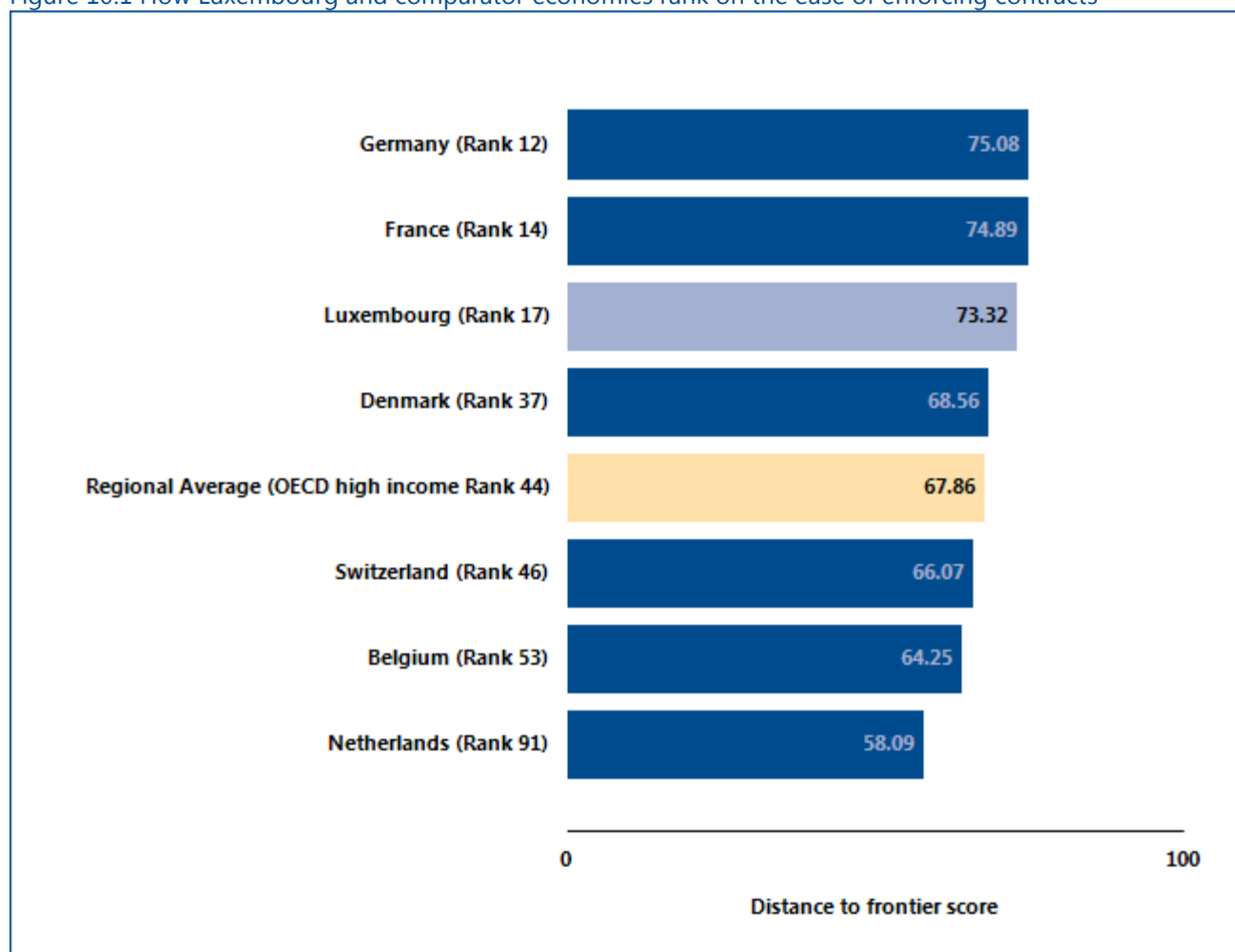
Where does the economy stand today?

How efficient is the process of resolving a commercial dispute through the courts in Luxembourg? According to data collected by *Doing Business*, contract enforcement takes 321.00 days and costs 9.70% of the value of the claim. Most indicator sets refer to the largest business city of an economy, except for 11 economies for which the data are a population-weighted average of the 2 largest business cities. See the chapter on distance to

frontier and ease of doing business ranking at the end of this profile for more details.

Globally, Luxembourg stands at 17 in the ranking of 189 economies on the ease of enforcing contracts (figure 10.1). The rankings for comparator economies and the regional average ranking provide other useful benchmarks for assessing the efficiency of contract enforcement in Luxembourg.

Figure 10.1 How Luxembourg and comparator economies rank on the ease of enforcing contracts



Source: *Doing Business* database.

ENFORCING CONTRACTS

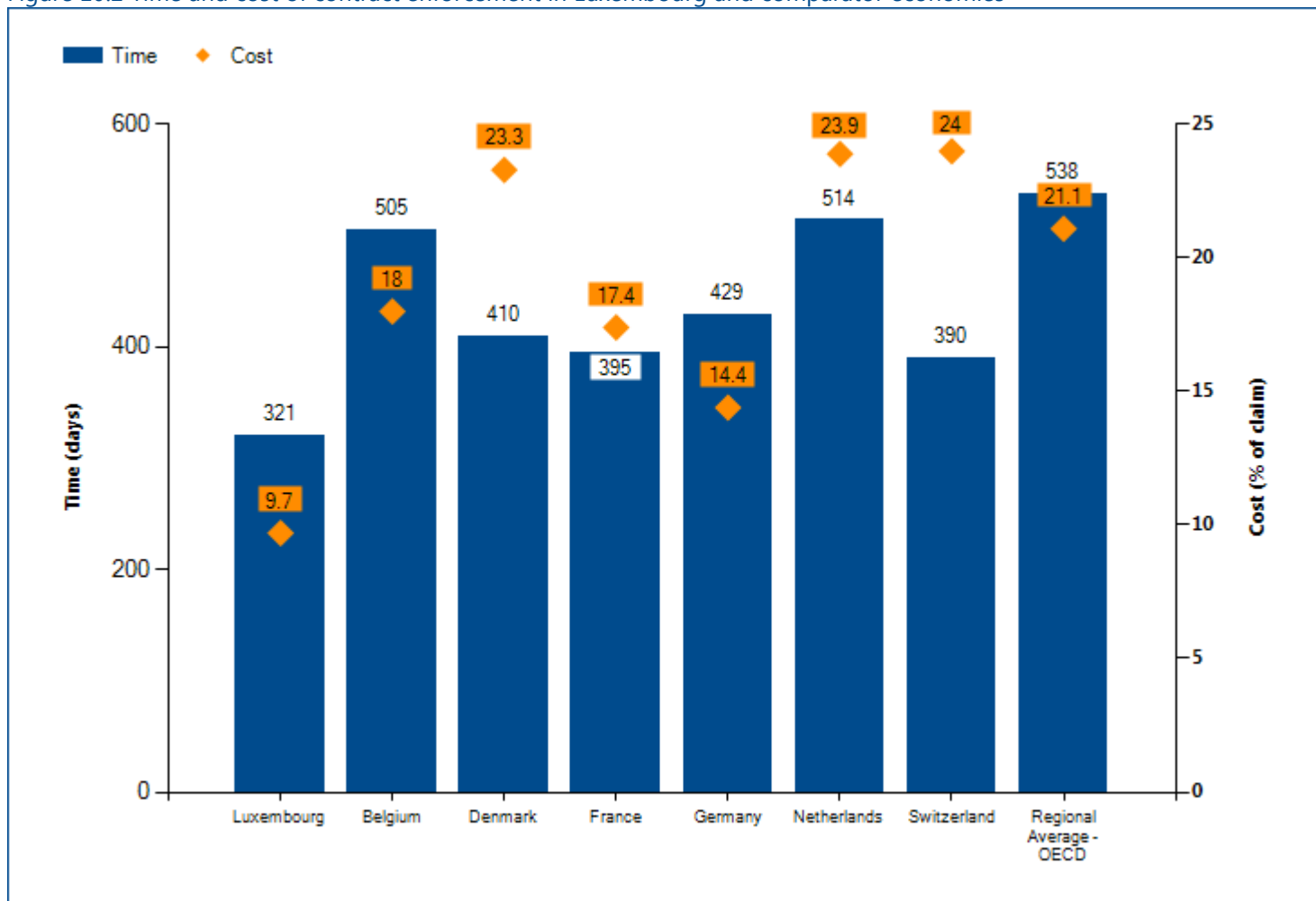
What are the details?

The data on time and cost reported here for Luxembourg are built by following the step-by-step evolution of a commercial sale dispute within the court, under the assumptions about the case described above (figure 10.2). The time and cost of resolving the standardized dispute are identified through study of the codes of civil procedure and other court regulations, as well as through questionnaires completed by local litigation lawyers (and, in a quarter of the economies covered by *Doing Business*, by judges as well).

ECONOMY DETAILS

Court name:	Luxembourg District Court, Commercial Section
City:	Luxembourg

Figure 10.2 Time and cost of contract enforcement in Luxembourg and comparator economies



Source: *Doing Business* database.

Table 10.2 Details on time and cost for enforcing contracts in Luxembourg

Indicator	Luxembourg	OECD high income average
Time (days)	321	538
Filing and service	21	
Trial and judgment	240	
Enforcement of judgment	60	
Cost (% of claim)	9.7	21.1
Attorney fees (% of claim)	8.7	
Court fees (% of claim)	0.1	
Enforcement fees (% of claim)	0.9	

Source: Doing Business database.

ENFORCING CONTRACTS

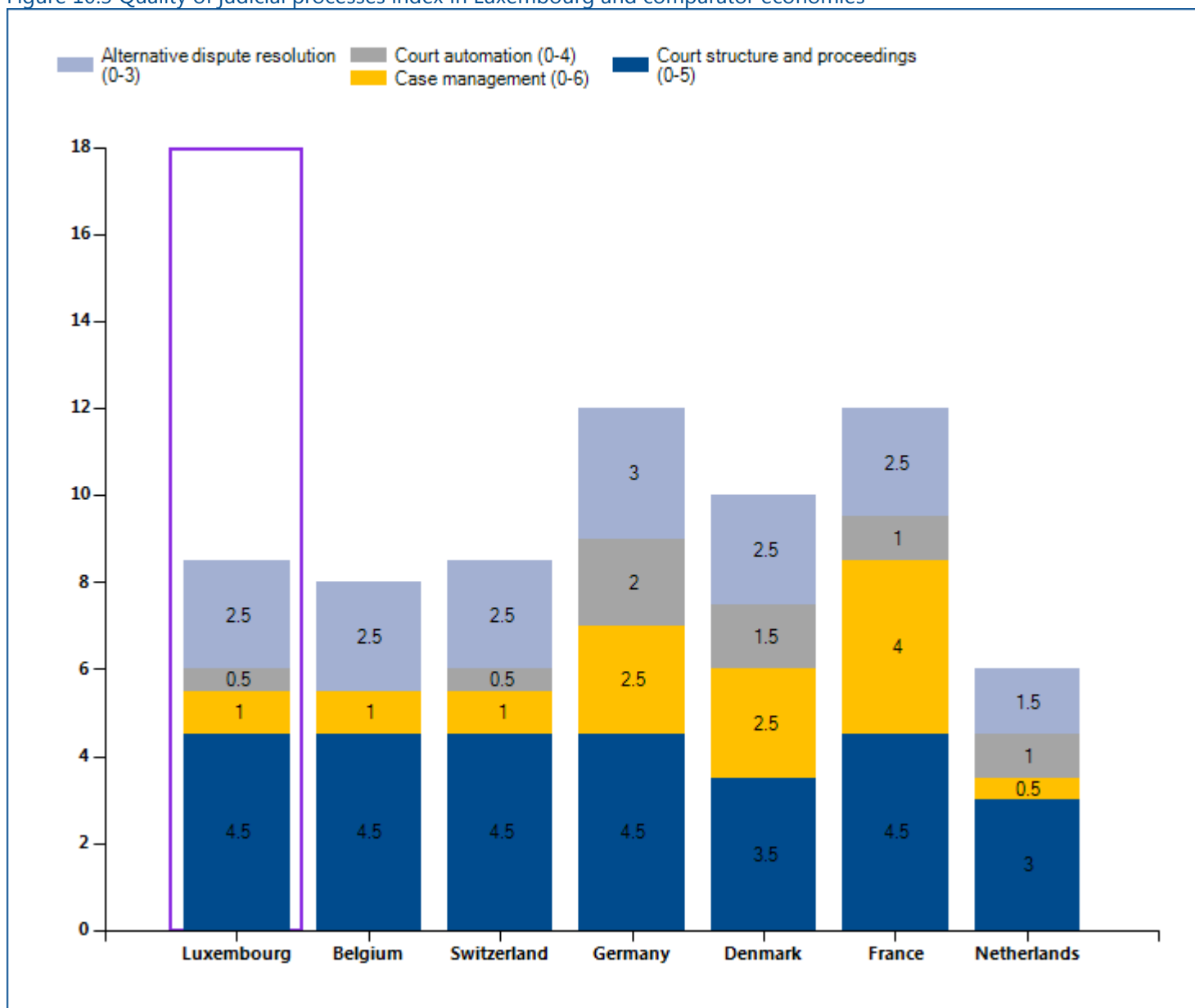
Quality of judicial processes index

The quality of judicial processes index measures whether each economy has adopted a series of good practices in its court system in four areas: court structure and proceedings, case management, court automation and alternative dispute resolution. The score on the quality of judicial processes index is the sum of the scores on these 4 sub-components. The index ranges from 0 to 18, with higher values indicating more efficient judicial processes.

The scores reported here show which of these good practices are available in Luxembourg.

This methodology was initially developed by Djankov and others (2003) and is adopted here with several changes. The quality of judicial processes index was introduced in *Doing Business 2016*. The good practices tested in this index were developed on the basis of internationally recognized good practices promoting judicial efficiency.

Figure 10.3 Quality of judicial processes index in Luxembourg and comparator economies



Source: Doing Business database.

Table 10.3 Details of the quality of judicial processes index in Luxembourg

	Answer	Score
Quality of judicial processes index (0-18)		8.50
Court structure and proceedings (0-5)		4.5
1. Is there a court or division of a court dedicated solely to hearing commercial cases?	Yes	1.5
2. Small claims court		1.5
2.a. Is there a small claims court or a fast-track procedure for small claims?	Yes	
2.b. If yes, is self-representation allowed?	Yes	
3. Is pretrial attachment available?	Yes	1.0
4. Are new cases assigned randomly to judges?	Yes	0.5
Case management (0-6)		1.0
1. Time standards		0.0
1.a. Are there laws setting overall time standards for key court events in a civil case?	No	
1.b. If yes, are the time standards set for at least three court events?	n.a.	
1.c. Are these time standards respected in more than 50% of cases?	n.a.	
2. Adjournments		0.0
2.a. Does the law regulate the maximum number of adjournments that can be granted?	No	
2.b. Are adjournments limited to unforeseen and exceptional circumstances?	No	
2.c. If rules on adjournments exist, are they respected in more than 50% of cases?	n.a.	
3. Can two of the following four reports be generated about the competent court: (i) time to disposition report; (ii) clearance rate report; (iii) age of pending cases report; and (iv) single case progress report?	Yes	1.0
4. Is a pretrial conference among the case management techniques used before the competent court?	No	0.0
5. Are there any electronic case management tools in place within the competent court for use by judges?	No	0.0
6. Are there any electronic case management tools in place within the competent court for use by lawyers?	No	0.0
Court automation (0-4)		0.5

	Answer	Score
1. Can the initial complaint be filed electronically through a dedicated platform within the competent court?	No	0.0
2. Is it possible to carry out service of process electronically for claims filed before the competent court?	No	0.0
3. Can court fees be paid electronically within the competent court?	No	0.0
4. Publication of judgments		0.5
4.a Are judgments rendered in commercial cases at all levels made available to the general public through publication in official gazettes, in newspapers or on the internet or court website?	No	
4.b. Are judgments rendered in commercial cases at the appellate and supreme court level made available to the general public through publication in official gazettes, in newspapers or on the internet or court website?	Yes	
Alternative dispute resolution (0-3)		2.5
1. Arbitration		1.5
1.a. Is domestic commercial arbitration governed by a consolidated law or consolidated chapter or section of the applicable code of civil procedure encompassing substantially all its aspects?	Yes	
1.b. Are there any commercial disputes—aside from those that deal with public order or public policy—that cannot be submitted to arbitration?	No	
1.c. Are valid arbitration clauses or agreements usually enforced by the courts?	Yes	
2. Mediation/Conciliation		1.0
2.a. Is voluntary mediation or conciliation available?	Yes	
2.b. Are mediation, conciliation or both governed by a consolidated law or consolidated chapter or section of the applicable code of civil procedure encompassing substantially all their aspects?	Yes	
2.c. Are there financial incentives for parties to attempt mediation or conciliation (i.e., if mediation or conciliation is successful, a refund of court filing fees, income tax credits or the like)?	No	

Source: *Doing Business* database.

RESOLVING INSOLVENCY

A robust bankruptcy system functions as a filter, ensuring the survival of economically efficient companies and reallocating the resources of inefficient ones. Fast and cheap insolvency proceedings result in the speedy return of businesses to normal operation and increase returns to creditors. By clarifying the expectations of creditors and debtors about the outcome of insolvency proceedings, well-functioning insolvency systems can facilitate access to finance, save more viable businesses and sustainably grow the economy.

What do the indicators cover?

Doing Business studies the time, cost and outcome of insolvency proceedings involving domestic legal entities. These variables are used to calculate the recovery rate, which is recorded as cents on the dollar recovered by secured creditors through reorganization, liquidation or debt enforcement (foreclosure or receivership) proceedings. To determine the present value of the amount recovered by creditors, *Doing Business* uses the lending rates from the International Monetary Fund, supplemented with data from central banks and the Economist Intelligence Unit.

In addition, *Doing Business* evaluates the adequacy and integrity of the existing legal framework applicable to liquidation and reorganization proceedings through the strength of insolvency framework index. The index tests whether economies adopted internationally accepted good practices in four areas: commencement of proceedings, management of debtor's assets, reorganization proceedings and creditor participation.

The ranking of economies on the ease of resolving insolvency is determined by sorting their distance to frontier scores for resolving insolvency. These scores are the simple average of the distance to frontier scores for the recovery rate and the strength of insolvency framework index. The Resolving Insolvency indicators do not measure insolvency proceedings of individuals and financial institutions. The data are derived from questionnaire responses by local insolvency practitioners and verified through a study of laws and regulations as well as public information on bankruptcy systems.

WHAT THE RESOLVING INSOLVENCY INDICATORS MEASURE

Time required to recover debt (years)

Measured in calendar years

Appeals and requests for extension are included

Cost required to recover debt (% of debtor's estate)

Measured as percentage of estate value

Court fees

Fees of insolvency administrators

Lawyers' fees

Assessors' and auctioneers' fees

Other related fees

Outcome

Whether business continues operating as a going concern or business assets are sold piecemeal

Recovery rate for creditors

Measures the cents on the dollar recovered by secured creditors

Outcome for the business (survival or not) determines the maximum value that can be recovered

Official costs of the insolvency proceedings are deducted

Depreciation of furniture is taken into account

Present value of debt recovered

Strength of insolvency framework index (0-16)

Sum of the scores of four component indices:

Commencement of proceedings index (0-3)

Management of debtor's assets index (0-6)

Reorganization proceedings index (0-3)

Creditor participation index (0-4)

RESOLVING INSOLVENCY

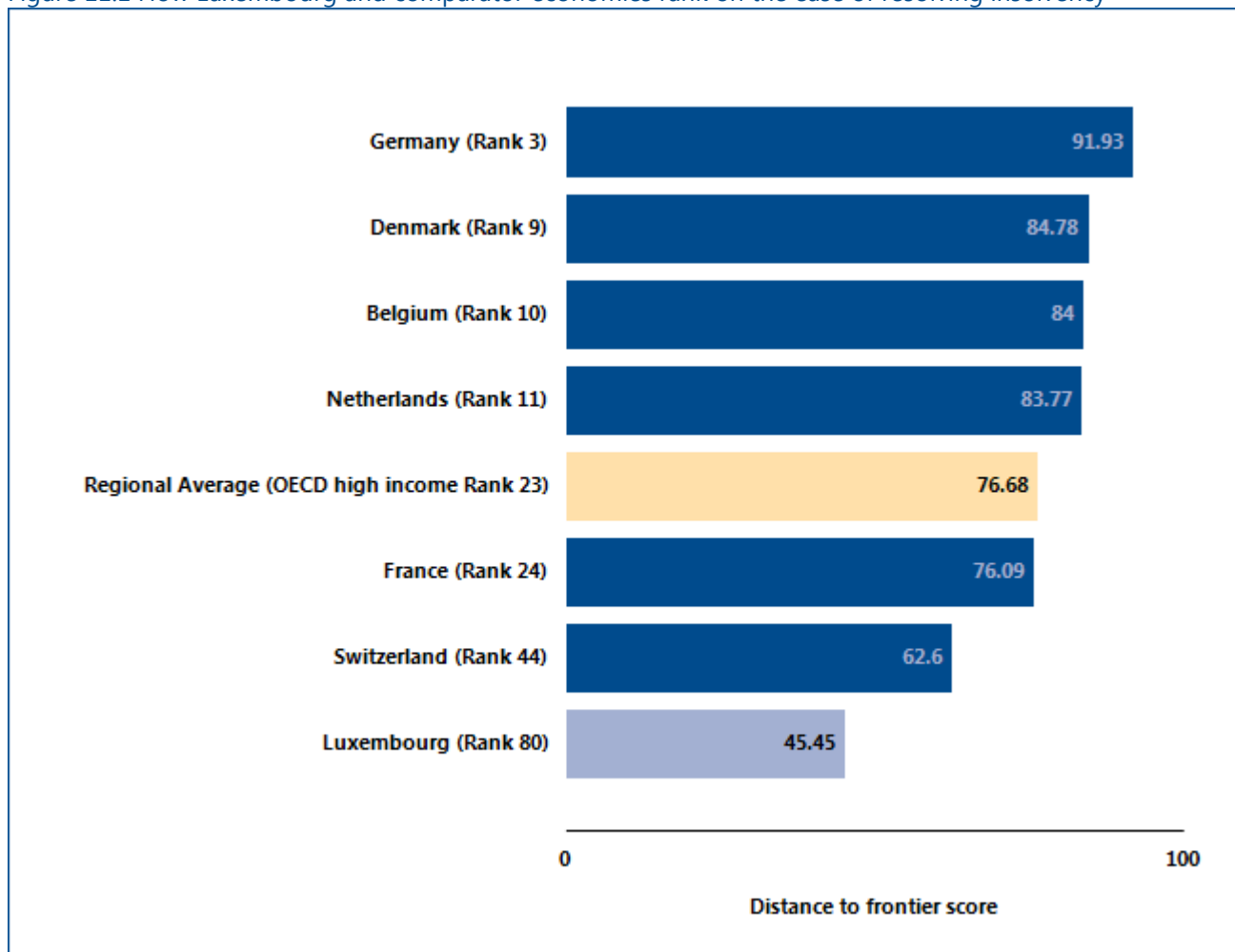
Where does the economy stand today?

According to data collected by *Doing Business*, resolving insolvency takes 2.00 years on average and costs 14.50% of the debtor’s estate, with the most likely outcome being that the company will be sold as piecemeal sale. The average recovery rate is 43.80 cents on the dollar. Most indicator sets refer to a case scenario in the largest business city of an economy, except for 11 economies for which the data are a population-weighted average of the 2 largest business cities.

Globally, Luxembourg stands at 80 in the ranking of 189 economies on the ease of resolving insolvency (figure 11.1).

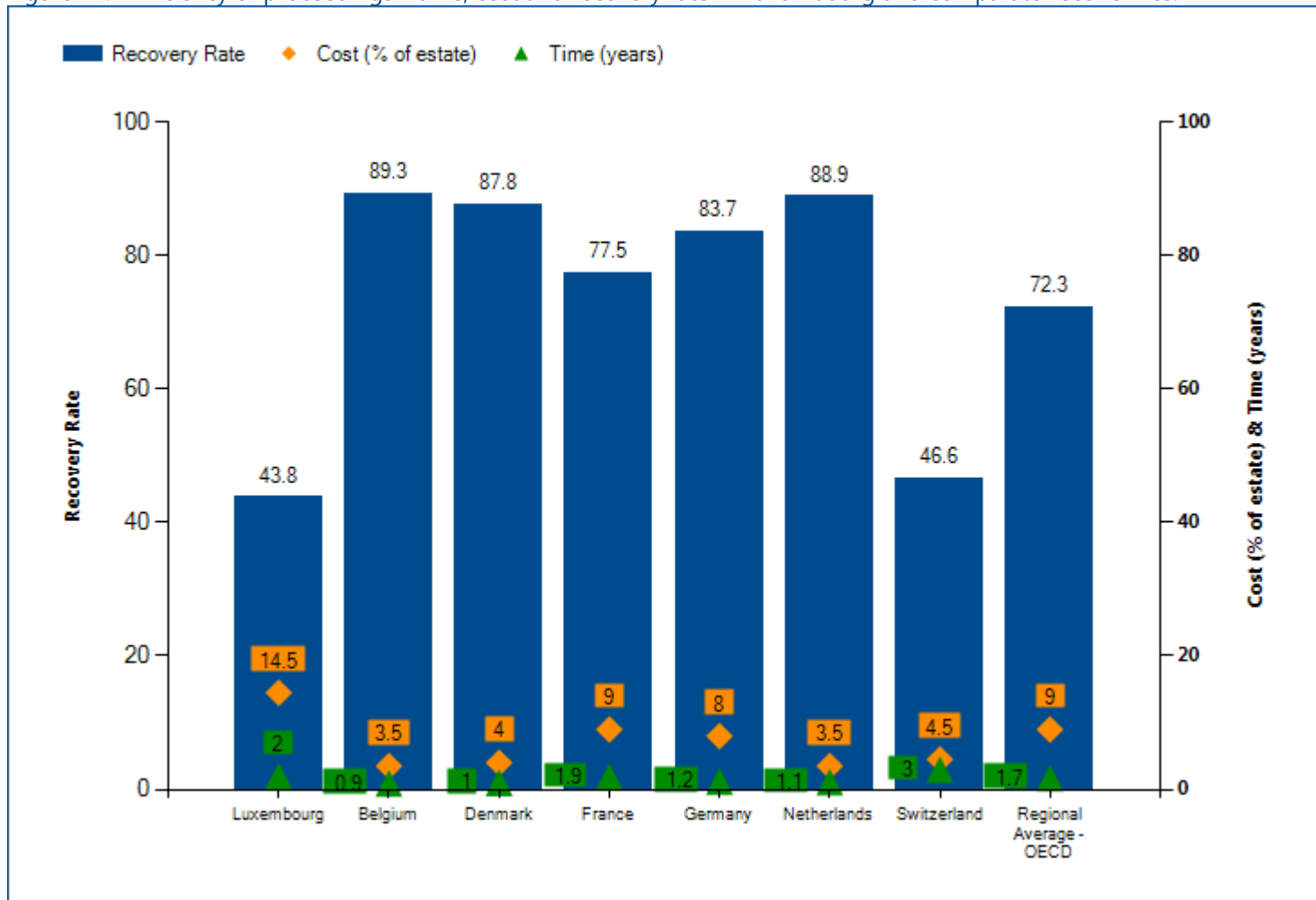
The resolving insolvency indicators are based on detailed information collected through questionnaires completed by insolvency experts, including lawyers, practitioners (administrators, trustees), accountants and judges. Data on the time, cost and outcome refer to the most likely in-court insolvency procedure applicable under specific case study assumptions. Data on provisions applicable to judicial liquidation and reorganization is based on the current law governing insolvency proceedings in each economy.

Figure 11.1 How Luxembourg and comparator economies rank on the ease of resolving insolvency



Source: *Doing Business* database.

Figure 11.2 Efficiency of proceedings - time, cost and recovery rate in Luxembourg and comparator economies.



Source: *Doing Business* database.

Note: The recovery rate is calculated based on the time, cost and outcome of insolvency proceedings involving domestic legal entities and is recorded as cents on the dollar recovered by secured creditors. The calculation takes into account the outcome: whether the business emerges from the proceedings as a going concern or the assets are sold piecemeal. Then the costs of the proceedings are deducted. Finally, the value lost as a result of the time the money remains tied up in insolvency proceedings is taken into account. The recovery rate is the present value of the remaining proceeds, based on end-2014 lending rates.

Table 11.1 Details of data on efficiency of insolvency proceedings in Luxembourg

Indicator	Answer	Explanation
Proceeding	liquidation (after an attempt at reorganization)	As Mirage' management wants to keep the company operating, it will likely request the controlled management procedure governed by the Grand-Ducal decree of May 24, 1935. In controlled management proceedings, both secured and unsecured creditors would be precluded from enforcing their rights. After an administrator appointed by the court makes an assessment of the company's financials, it will propose reorganization or a liquidation plan, which must be approved by the creditors. If the plan is not approved, the court will declare Mirage bankrupt and bankruptcy proceedings will commence.
Outcome	piecemeal sale	During a bankruptcy procedure, the operations would as a matter of principle stop and, at the end of the proceedings, the company is likely to be liquidated and its assets sold piecemeal. Few companies continue operating after completion of the bankruptcy proceedings.
Time (in years)	2.0	<p>Mirage's management will file an application for controlled management procedure, supported by a list of creditors. The court will hold a hearing and one of the judges from the section on commercial matters will be appointed to report on the financial situation of the company. This can be done with the assistance of an expert. When the report is finalized, the court will decide whether to accept or reject the application for controlled judicial management. If the application is accepted, one or more administrators will be appointed by the court. The administrator will take inventory of the assets and assess the financial situation of the company. After that, the administrator will prepare a reorganization or liquidation plan. The plan will be forwarded to the creditors, who have to inform the court within 2 weeks whether they approve or reject the plan. If the plan is rejected, the court will declare the debtor bankrupt.</p> <p>The bankruptcy judgment will be published in two local newspapers and individual notice will be given to known creditors. A receiver will be appointed. Creditors must file their claims within allocated time (usually 15-20 days), if the receiver disputes any of the claims, they will be litigated in court. After all claims have been confirmed, the receiver must convene a meeting of the creditors and present his report on the bankruptcy. The assets can only be sold with court's authorization. A secured creditor may acquire the assets from the estate and set-off its claim.</p>
Cost (% of estate)	14.5	Major expenses will include attorneys' fees (up to 10%) and remuneration of the administrator and receiver (up to 5%).
Recovery rate: 43.80		

Source: Doing Business database.

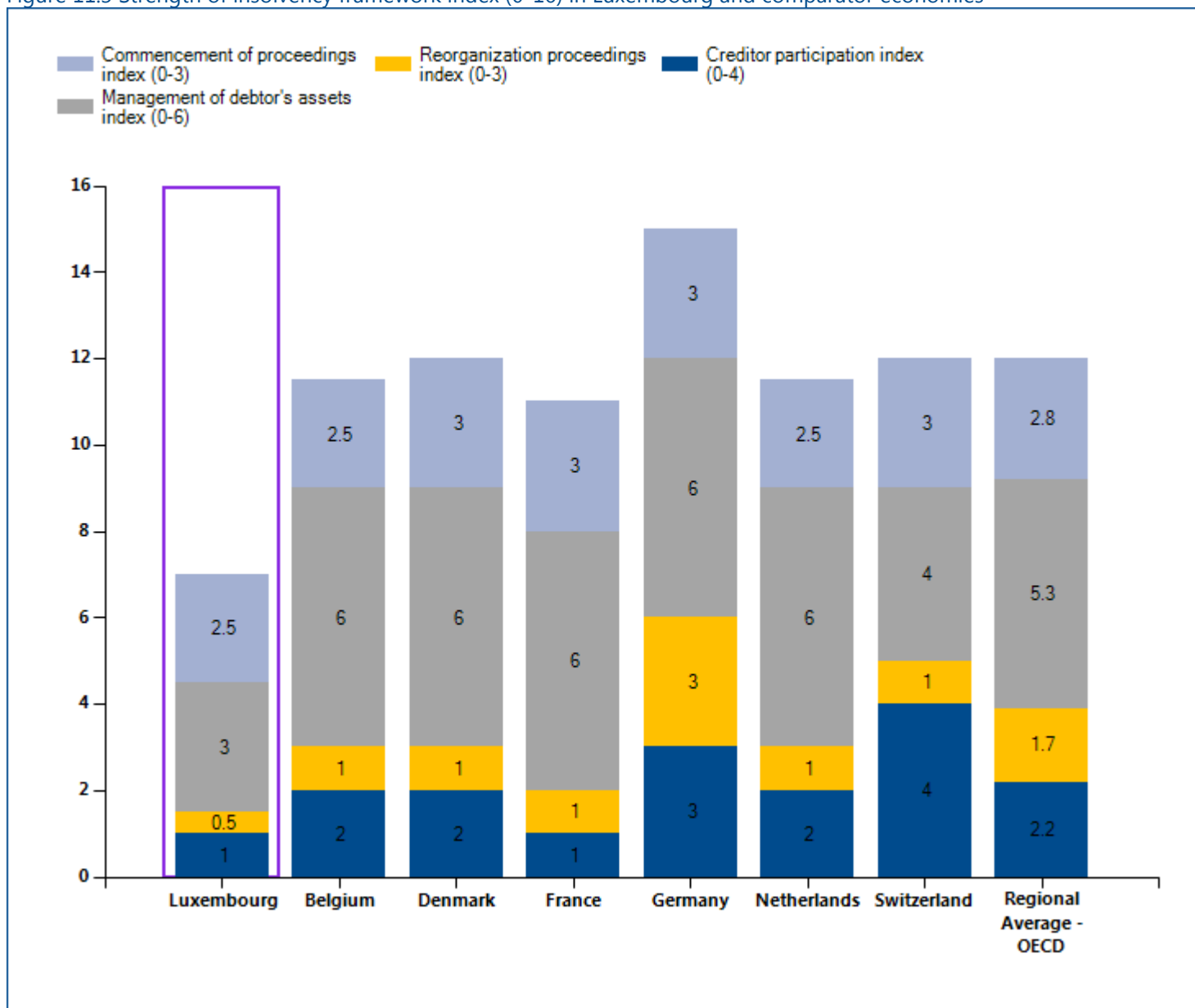
RESOLVING INSOLVENCY

Strength of resolving insolvency index

The strength of insolvency framework index is the sum of the scores on the commencement of proceedings index, management of debtor's assets index, reorganization proceedings index and creditor participation index. The index ranges from 0 to 16,

with higher values indicating insolvency legislation that is better designed for rehabilitating viable firms and liquidating nonviable ones. Luxembourg's score on the strength of insolvency framework index is 7.00 out of 16.

Figure 11.3 Strength of insolvency framework index (0-16) in Luxembourg and comparator economies



Source: Doing Business database.

Note: Even if the economy's legal framework includes provisions related to insolvency proceedings (liquidation or reorganization), the economy receives 0 points for the strength of insolvency framework index, if time, cost and outcome indicators are recorded as "no practice".

Table 11.3 Summary of data for the strength of insolvency framework index in Luxembourg

	Answer	Score
Strength of insolvency framework index (0-16)		7.00
Commencement of proceedings index (0-3)		2.50
What procedures are available to a DEBTOR when commencing insolvency proceedings?	(a) Debtor may file for both liquidation and reorganization	1.0
Does the insolvency framework allow a CREDITOR to file for insolvency of the debtor?	(b) Yes, but a creditor may file for liquidation only	0.5
What basis for commencement of the insolvency proceedings is allowed under the insolvency framework?	(a) Debtor is generally unable to pay its debts as they mature	1.0
Management of debtor's assets index (0-6)		3.00
Does the insolvency framework allow the continuation of contracts supplying essential goods and services to the debtor?	No	0.0
Does the insolvency framework allow the rejection by the debtor of overly burdensome contracts?	No	0.0
Does the insolvency framework allow avoidance of preferential transactions?	Yes	1.0
Does the insolvency framework allow avoidance of undervalued transactions?	Yes	1.0
Does the insolvency framework provide for the possibility of the debtor obtaining credit after commencement of insolvency proceedings?	Yes	1.0
Does the insolvency framework assign priority to post-commencement credit?	(c) No priority is assigned to post-commencement creditors	0.0
Reorganization proceedings index (0-3)		0.50
Which creditors vote on the proposed reorganization plan?	(a) All creditors	0.5
Does the insolvency framework require that dissenting creditors in reorganization receive at least as much as what they would obtain in a liquidation?	No	0.0
Are the creditors divided into classes for the purposes of voting on the reorganization plan, does each class vote separately and are creditors in the same class treated equally?	No	0.0
Creditor participation index (0-4)		1.00

	Answer	Score
Does the insolvency framework require approval by the creditors for selection or appointment of the insolvency representative?	No	0.0
Does the insolvency framework require approval by the creditors for sale of substantial assets of the debtor?	No	0.0
Does the insolvency framework provide that a creditor has the right to request information from the insolvency representative?	No	0.0
Does the insolvency framework provide that a creditor has the right to object to decisions accepting or rejecting creditors' claims?	Yes	1.0

Source: *Doing Business* database.

LABOR MARKET REGULATION

Doing Business has historically studied the flexibility of regulation of employment, specifically as it relates to the areas of hiring, working hours and redundancy. This year *Doing Business* has expanded the scope of the labor market regulation indicators by adding 16 new questions, most of which focus on measuring job quality.

Over the period from 2007 to 2011 improvements were made to align the methodology for the labor market regulation indicators (formerly the employing workers indicators) with the letter and spirit of the International Labour Organization (ILO) conventions. Ten of the 189 ILO conventions cover areas now measured by *Doing Business* (up from four previously): employee termination, weekend work, holiday with pay, night work, protection against unemployment, sickness benefits, maternity protection, working hours, equal remuneration and labor inspections.

Between 2009 and 2011 the World Bank Group worked with a consultative group—including labor lawyers, employer and employee representatives, and experts from the ILO, the Organisation for Economic Co-operation and Development (OECD), civil society and the private sector—to review the methodology for the labor market regulation indicators and explore future areas of research.

A full report with the conclusions of the consultative group, along with the methodology it proposed, is available on the *Doing Business* website at: <http://www.doingbusiness.org/methodology/labor-market-regulation>.

Doing Business 2016 presents the data for the labor market regulation indicators in an annex. The report does not present rankings of economies on these indicators or include the topic in the aggregate distance to frontier score or ranking on the ease of doing business. Detailed data collected on labor market regulation are available on the *Doing Business* website (<http://www.doingbusiness.org>). The data on labor market regulation are based on a detailed questionnaire on employment regulations that is completed by local lawyers and public officials. Employment laws and

regulations as well as secondary sources are reviewed to ensure accuracy.

To make the data comparable across economies, several assumptions about the worker and the business are used.

The worker:

- Is a cashier in a supermarket or grocery store, age 19, with one year of work experience.
- Is a full-time employee.
- Is not a member of the labor union, unless membership is mandatory.

The business:

- Is a limited liability company (or the equivalent in the economy).
- Operates a supermarket or grocery store in the economy's largest business city. For 11 economies the data are also collected for the second largest business city.
- Has 60 employees.
- Is subject to collective bargaining agreements if such agreements cover more than 50% of the food retail sector and they apply even to firms that are not party to them.
- Abides by every law and regulation but does not grant workers more benefits than those mandated by law, regulation or (if applicable) collective bargaining agreements.

LABOR MARKET REGULATION

What are the details?

The data reported here for Luxembourg are based on a detailed survey of labor market regulation that is completed by local lawyers and public officials.

Employment laws and regulations as well as secondary sources are reviewed to ensure accuracy.

Hiring

Data on hiring cover five areas: (i) whether fixed-term contracts are prohibited for permanent tasks; (ii) the maximum cumulative duration of fixed-term contracts; (iii) the minimum wage for a cashier, age 19, with one year of work experience; (iv) the ratio of the minimum

wage to the average value added per worker (the ratio of an economy's GNI per capita to the working-age population as a percentage of the total population), and (v) the availability of incentives for employers to hire employees under the age of 25*.

Hiring	Data
Fixed-term contracts prohibited for permanent tasks?	Yes
Maximum length of a single fixed-term contract (months)	24 months - Art. L. 122-4 (1)
Maximum length of fixed-term contracts, including renewals (months)	24.0
Minimum wage applicable to the worker assumed in the case study (US\$/month)	3061.5
Ratio of minimum wage to value added per worker	0.3
Incentives for employing workers under age 25?	Yes

Source: *Doing Business* database.

*A new question introduced in the *Doing Business 2016* report for the first time.

LABOR MARKET REGULATION

Working hours

Data on working hours cover nine areas: i) the maximum number of working days allowed per week; (ii) the premium for night work (as a percentage of hourly pay); (iii) the premium for work on a weekly rest day (as a percentage of hourly pay); (iv) the premium for overtime work (as a percentage of hourly pay)*; (v) whether there are restrictions on night work; (vi) whether nonpregnant

and nonnursing women can work the same night hours as men*; (vii) whether there are restrictions on weekly holiday work; (viii) whether there are restrictions on overtime work*; and (ix) the average paid annual leave for workers with 1 year of tenure, 5 years of tenure, and 10 years of tenure.

Working Hours	Data
Maximum number of working days per week	5.5
Premium for night work (% of hourly pay)	0.0
Premium for work on weekly rest day (% of hourly pay)	70.0
Premium for overtime work (% of hourly pay)	40.0
Restrictions on night work?	0.0
Whether nonpregnant and nonnursing women can work the same night hours as men	Yes
Restrictions on weekly holiday?	1.0
Restrictions on overtime work?	No
Paid annual leave for a worker with 1 year of tenure (working days)	25.0
Paid annual leave for a worker with 5 years of tenure (working days)	25.0
Paid annual leave for a worker with 10 years of tenure (working days)	25.0
Paid annual leave (average for workers with 1, 5 and 10 years of tenure, in working days)	25.0

Source: *Doing Business* database.

*A new question introduced in the *Doing Business 2016* report for the first time.

LABOR MARKET REGULATION

Redundancy rules

Data on redundancy cover nine areas: (i) the length of the maximum probationary period (in months) for permanent employees; (ii) whether redundancy is allowed as a basis for terminating workers; (iii) whether the employer needs to notify a third party (such as a government agency) to terminate one redundant worker; (iv) whether the employer needs to notify a third party to terminate a group of nine redundant workers; (v)

whether the employer needs approval from a third party to terminate one redundant worker; (vi) whether the employer needs approval from a third party to terminate a group of nine redundant workers; (vii) whether the law requires the employer to reassign or retrain a worker before making the worker redundant; (viii) whether priority rules apply for redundancies; and (ix) whether priority rules apply for reemployment.

Redundancy rules	Data
Maximum length of probationary period (months)	6.0
Dismissal due to redundancy allowed by law?	Yes
Third-party notification if one worker is dismissed?	Yes
Third-party approval if one worker is dismissed?	No
Third-party notification if nine workers are dismissed?	Yes
Third-party approval if nine workers are dismissed?	No
Retraining or reassignment obligation before redundancy?	No
Priority rules for redundancies?	No
Priority rules for reemployment?	Yes

Source: *Doing Business* database.

LABOR MARKET REGULATION

Redundancy cost

Redundancy cost measures the cost of advance notice requirements and severance payments due when terminating a redundant worker, expressed in weeks of salary. The average value of notice requirements and

severance payments applicable to a worker with 1 year of tenure, a worker with 5 years and a worker with 10 years is considered. One month is recorded as 4 and 1/3 weeks.

Redundancy cost indicator (in salary weeks)	Data
Notice period for redundancy dismissal for a worker with 1 year of tenure	8.7
Notice period for redundancy dismissal for a worker with 5 years of tenure	17.3
Notice period for redundancy dismissal for a worker with 10 years of tenure	26.0
Notice period for redundancy dismissal (average for workers with 1, 5 and 10 years of tenure)	17.3
Severance pay for redundancy dismissal for a worker with 1 year of tenure	0.0
Severance pay for redundancy dismissal for a worker with 5 years of tenure	4.3
Severance pay for redundancy dismissal for a worker with 10 years of tenure	8.7
Severance pay for redundancy dismissal (average for workers with 1, 5 and 10 years of tenure)	4.3

Source: Doing Business database.

LABOR MARKET REGULATION

Job quality

Doing Business 2016 report presents, for the first time, data on 12 job quality areas: (i) whether the law mandates equal remuneration for work of equal value; (ii) whether the law mandates nondiscrimination based on gender in hiring, (iii) whether the law mandates paid or unpaid maternity leave; (iv) the minimum length of maternity leave in calendar days (minimum number of days that legally have to be paid by the government, the employer or both); (v) whether employees on maternity leave receive 100 % of wages; (vi) the availability of five fully paid days of sick leave a year; (vii) the availability of

on-the-job training at no cost to the employee; (viii) whether a worker is eligible for an unemployment protection scheme after one year of service; (ix) the minimum duration of the contribution period (in months) required for unemployment protection; (x) whether an employee can create or join a union; (xi) the availability of administrative or judicial relief in case of infringement of employees' rights; and (xii) the availability of a labor inspection system. If no maternity leave is mandated by law, parental leave is measured if applicable.

Job Quality	Data
Equal remuneration for work of equal value?	Yes
Gender nondiscrimination in hiring?	No
Paid or unpaid maternity leave mandated by law?	Yes
Minimum length of maternity leave (calendar days)?	112.0
Receive 100% of wages on maternity leave?	Yes
Five fully paid days of sick leave a year?	Yes
On-the-job training?	Yes
Unemployment protection after one year of employment?	Yes
Minimum contribution period for unemployment protection (months)?	6.0
Can employee create or join union?	Yes
Administrative or judicial relief for infringement of employees' rights?	Yes
Labor inspection system?	Yes

Source: *Doing Business* database.

DISTANCE TO FRONTIER AND EASE OF DOING BUSINESS RANKING

Doing Business presents results for two aggregate measures: the distance to frontier score and the ease of doing business ranking, which is based on the distance to frontier score. The ease of doing business ranking compares economies with one another; the distance to frontier score benchmarks economies with respect to regulatory best practice, showing the absolute distance to the best performance on each *Doing Business* indicator. When compared across years, the distance to frontier score shows how much the regulatory environment for local entrepreneurs in an economy has changed over time in absolute terms, while the ease of doing business ranking can show only how much the regulatory environment has changed relative to that in other economies.

Distance to Frontier

The distance to frontier score captures the gap between an economy's performance and a measure of best practice across the entire sample of 36 indicators for 10 *Doing Business* topics (the labor market regulation indicators are excluded). For starting a business, for example, the former Yugoslav Republic of Macedonia and New Zealand have the smallest number of procedures required (1), and New Zealand the shortest time to fulfill them (0.5 days). Slovenia has the lowest cost (0.0), and Australia, Colombia and 103 other economies have no paid-in minimum capital requirement (table 14.1 in the *Doing Business 2016* report).

Calculation of the distance to frontier score

Calculating the distance to frontier score for each economy involves two main steps. In the first step individual component indicators are normalized to a common unit where each of the 36 component indicators y (except for the total tax rate) is rescaled using the linear transformation $(\text{worst} - y)/(\text{worst} - \text{frontier})$. In this formulation the frontier represents the best performance on the indicator across all economies since 2005 or the third year in which data for the indicator were collected. Both the best performance and the worst performance are established every five years based on the *Doing Business* data for the year in which they are established, and remain at that level for the five years regardless of any changes in data in interim years. Thus an economy may set the frontier for an indicator

even though it is no longer at the frontier in a subsequent year.

For scores such as those on the strength of legal rights index or the quality of land administration index, the frontier is set at the highest possible value. For the total tax rate, consistent with the use of a threshold in calculating the rankings on this indicator, the frontier is defined as the total tax rate at the 15th percentile of the overall distribution for all years included in the analysis up to and including *Doing Business 2015*. For the time to pay taxes the frontier is defined as the lowest time recorded among all economies that levy the three major taxes: profit tax, labor taxes and mandatory contributions, and value added tax (VAT) or sales tax. For the different times to trade across borders, the frontier is defined as 1 hour even though in many economies the time is less than that.

In the same formulation, to mitigate the effects of extreme outliers in the distributions of the rescaled data for most component indicators (very few economies need 700 days to complete the procedures to start a business, but many need 9 days), the worst performance is calculated after the removal of outliers. The definition of outliers is based on the distribution for each component indicator. To simplify the process two rules were defined: the 95th percentile is used for the indicators with the most dispersed distributions (including minimum capital, number of payments to pay taxes, and the time and cost indicators), and the 99th percentile is used for number of procedures. No outlier is removed for component indicators bound by definition or construction, including legal index scores (such as the depth of credit information index, extent of conflict of interest regulation index and strength of insolvency framework index) and the recovery rate (figure 14.1).

In the second step for calculating the distance to frontier score, the scores obtained for individual indicators for each economy are aggregated through simple averaging into one distance to frontier score, first for each topic and then across all 10 topics: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts and resolving insolvency. More complex aggregation methods—such as principal components and unobserved components—yield a ranking nearly

identical to the simple average used by *Doing Business*⁴. Thus *Doing Business* uses the simplest method: weighting all topics equally and, within each topic, giving equal weight to each of the topic components⁵.

An economy's distance to frontier score is indicated on a scale from 0 to 100, where 0 represents the worst performance and 100 the frontier. All distance to frontier calculations are based on a maximum of five decimals. However, indicator ranking calculations and the ease of doing business ranking calculations are based on two decimals.

The difference between an economy's distance to frontier score in any previous year and its score in 2015 illustrates the extent to which the economy has closed the gap to the regulatory frontier over time. And in any given year the score measures how far an economy is from the best performance at that time.

Treatment of the total tax rate

The total tax rate component of the paying taxes indicator set enters the distance to frontier calculation in a different way than any other indicator. The distance to frontier score obtained for the total tax rate is transformed in a nonlinear fashion before it enters the distance to frontier score for paying taxes. As a result of the nonlinear transformation, an increase in the total tax rate has a smaller impact on the distance to frontier score for the total tax rate—and therefore on the distance to frontier score for paying taxes—for economies with a below-average total tax rate than it would have had before this approach was adopted in *Doing Business 2015* (line B is smaller than line A in figure 14.2 of the *Doing Business 2016* report). And for economies with an extreme total tax rate (a rate that is very high relative to the average), an increase has a greater impact on both these distance to frontier scores than it would have had before (line D is bigger than line C in figure 14.2 of the *Doing Business 2016* report).

⁴ See Djankov, Manraj 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.

⁵ For getting credit, indicators are weighted proportionally, according to their contribution to the total score, with a weight of 60% assigned to the strength of legal rights index and 40% to the depth of credit information index. Indicators for all other topics are assigned equal weights

The nonlinear transformation is not based on any economic theory of an "optimal tax rate" that minimizes distortions or maximizes efficiency in an economy's overall tax system. Instead, it is mainly empirical in nature. The nonlinear transformation along with the threshold reduces the bias in the indicator toward economies that do not need to levy significant taxes on companies like the *Doing Business* standardized case study company because they raise public revenue in other ways—for example, through taxes on foreign companies, through taxes on sectors other than manufacturing or from natural resources (all of which are outside the scope of the methodology). In addition, it acknowledges the need of economies to collect taxes from firms.

Calculation of scores for economies with 2 cities covered

For each of the 11 economies in which *Doing Business* collects data for the second largest business city as well as the largest one, the distance to frontier score is calculated as the population-weighted average of the distance to frontier scores for these two cities (table 13.1). This is done for the aggregate score, the scores for each topic and the scores for all the component indicators for each topic.

Table 13.1 Weights used in calculating the distance to frontier scores for economies with 2 cities covered

Economy	City	Weight (%)
Bangladesh	Dhaka	78
	Chittagong	22
Brazil	São Paulo	61
	Rio de Janeiro	39
China	Shanghai	55
	Beijing	45
India	Mumbai	47
	Delhi	53
Indonesia	Jakarta	78
	Surabaya	22
Japan	Tokyo	65
	Osaka	35
Mexico	Mexico City	83
	Monterrey	17
Nigeria	Lagos	77
	Kano	23
Pakistan	Karachi	65
	Lahore	35
Russian Federation	Moscow	70
	St. Petersburg	30
United States	New York	60
	Los Angeles	40

Source: United Nations, Department of Economic and Social Affairs, Population Division, World Urbanization Prospects, 2014 Revision. <http://esa.un.org/unpd/wup/CD-ROM/Default.aspx>.

Economies that improved the most across 3 or more *Doing Business* topics in 2014/15

Doing Business 2016 uses a simple method to calculate which economies improved the ease of doing business the most. First, it selects the economies that in 2014/15

implemented regulatory reforms making it easier to do business in 3 or more of the 10 topics included in this year's aggregate distance to frontier score. Changes making it more difficult to do business are subtracted from the total number of those making it easier to do business. Twenty-four economies meet this criterion: Armenia; Azerbaijan; Benin; Costa Rica; Côte d'Ivoire; Cyprus; Hong Kong SAR, China; Indonesia; Jamaica; Kazakhstan; Kenya; Lithuania; Madagascar; Mauritania; Morocco; Romania; the Russian Federation; Rwanda; Senegal; Togo; Uganda; the United Arab Emirates; Uzbekistan; and Vietnam. Second, *Doing Business* sorts these economies on the increase in their distance to frontier score from the previous year using comparable data.

Selecting the economies that implemented regulatory reforms in at least three topics and had the biggest improvements in their distance to frontier scores is intended to highlight economies with ongoing, broad-based reform programs. The improvement in the distance to frontier score is used to identify the top improvers because this allows a focus on the absolute improvement—in contrast with the relative improvement shown by a change in rankings—that economies have made in their regulatory environment for business.

Ease of *Doing Business* ranking

The ease of doing business ranking ranges from 1 to 189. The ranking of economies is determined by sorting the aggregate distance to frontier scores, rounded to 2 decimals.

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Doing Business 2016 is the 13th in a series of annual reports investigating the regulations that enhance business activity and those that constrain it. The report provides quantitative indicators covering 11 areas of the business environment in 189 economies. The goal of the *Doing Business* series is to provide objective data for use by governments in designing sound business regulatory policies and to encourage research on the important dimensions of the regulatory environment for firms.

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