Data notes

The indicators presented and analyzed in *Doing Business* measure business regulation and the protection of property rights—and their effect on businesses, especially small and medium-size domestic firms. First, the indicators document the complexity of regulation, such as the number of procedures to start a business or to register and transfer commercial property. Second, they gauge the time and cost of achieving a regulatory goal or complying with regulation, such as the time and cost to enforce a contract, go through bankruptcy or trade across borders. Third, they measure the extent of legal protections of property, for example, the protections of investors against looting by company directors or the range of assets that can be used as collateral according to secured transactions laws. Fourth, a set of indicators documents the tax burden on businesses. Finally, a set of data covers different aspects of employment regulation.

The data for all sets of indicators in *Doing Business 2012* are for June 2011.[1]

METHODOLOGY

The *Doing Business* data are collected in a standardized way. To start, the *Doing Business* team, with academic advisers, designs a questionnaire. The questionnaire uses a simple business case to ensure comparability across economies and over time—with assumptions about the legal form of the business, its size, its location and the nature of its operations. Questionnaires are administered through more than 9,028 local experts, including lawyers, business consultants, accountants, freight forwarders, government officials and other professionals routinely administering or advising on legal and regulatory requirements (table 4.1). These experts have several rounds of interaction with the *Doing Business* team, involving conference calls, written correspondence and visits by the team. For *Doing Business 2012* team members visited 40 economies to verify data and recruit respondents. The data from questionnaires are subjected to numerous rounds of verification, leading to revisions or expansions of the information collected.

The *Doing Business* methodology offers several advantages. It is transparent, using factual information about what laws and regulations say and allowing multiple interactions with local respondents to clarify potential misinterpretations of questions. Having representative samples of respondents is not an issue; *Doing Business* is not a statistical survey, and the texts of the relevant laws and regulations are collected and answers checked for accuracy. The methodology is inexpensive and easily replicable, so data can be collected in a large sample of economies. Because standard assumptions are used in the data collection, comparisons and benchmarks are valid across economies. Finally, the data not only highlight the extent of specific regulatory obstacles to business but also identify their source and point to what might be reformed.

TABLE 4.1 How many experts does *Doing Business* consult?

Indicator set	Contributors
Starting a business	1,755
Dealing with construction permits	837
Getting electricity	782
Registering property	1,257
Getting credit	1,277
Protecting investors	1,139
Paying taxes	1,276
Trading across borders	868
Enforcing contracts	1,088
Resolving insolvency	1,044
Employing workers	1,092

ECONOMY CHARACTERISTICS

Gross national income (GNI) per capita

Doing Business 2012 reports 2010 income per capita as published in the World Bank's *World Development Indicators 2011*. Income is calculated using the Atlas method (current US$). For cost indicators expressed as a percentage of income per capita, 2010 GNI in U.S. dollars is used as the denominator. Data were not available from the World Bank for Afghanistan; Australia; The Bahamas; Bahrain; Brunei Darussalam; Canada; Cyprus; Djibouti; the Islamic Republic of Iran; Kuwait; New Zealand; Oman; Puerto Rico (territory of the United States); Qatar; Saudi Arabia; Suriname; Taiwan, China; the United Arab Emirates; West Bank and Gaza; and the Republic of Yemen. In these cases GDP or GNP per capita data and growth rates from the International Monetary Fund's World Economic Outlook database and the Economist Intelligence Unit were used.

Region and income group

Doing Business uses the World Bank regional and income group classifications, available at http://www.worldbank.org/data/countryclass. The World Bank does not assign regional classifications to high-income economies. For the purpose of the *Doing Business* report, high-income OECD economies are assigned the "regional" classification *OECD high income*. Figures and tables presenting regional averages include economies from all income groups (low, lower middle, upper middle and high income).

Population

Doing Business 2012 reports midyear 2010 population statistics as published in *World Development Indicators 2011*.

LIMITS TO WHAT IS MEASURED

The *Doing Business* methodology has 5 limitations that should be considered when interpreting the data. First, the collected data refer to businesses in the economy's largest business city and may not be representative of regulation in other parts of the economy. To address this limitation, subnational *Doing Business* indicators were created (box 4.1). Second, the data often focus on a specific business form—generally a limited liability company (or its legal equivalent) of a specified size—and may not be representative of the regulation on other businesses, for example, sole proprietorships. Third, transactions described in a standardized case scenario refer to a specific set of issues and may not represent the full set of issues a business encounters. Fourth, the measures of time involve an element of judgment by the expert respondents. When sources indicate different estimates, the time indicators reported in *Doing Business* represent the median values of several responses given under the assumptions of the standardized case.

Finally, the methodology assumes that a business has full information on what is required and does not waste time when completing procedures. In practice, completing a procedure may take longer if the business lacks information or is unable to follow up promptly. Alternatively, the business may choose to disregard some burdensome procedures. For both reasons the time delays reported in *Doing Business 2012* would differ from the recollection of entrepreneurs reported in the World Bank Enterprise Surveys or other perception surveys.

BOX 4.1 Subnational *Doing Business* indicators

This year *Doing Business* published a subnational study for the Philippines and a regional report for Southeast Europe covering 7 economies (Albania, Bosnia and Herzegovina, Kosovo, FYR Macedonia, Moldova, Montenegro and Serbia) and 22 cities. It also published a city profile for Juba, in the Republic of South Sudan.

The subnational studies point to differences in business regulation and its implementation—as well as in the pace of regulatory reform—across cities in the same economy. For several economies subnational studies are now periodically updated to measure change over time or to expand geographic coverage to additional cities. This year that is the case for the subnational studies in the Philippines; the regional report in Southeast Europe; the ongoing studies in Italy, Kenya and the United Arab Emirates; and the projects implemented jointly with local think tanks in Indonesia, Mexico and the Russian Federation.

Besides the subnational *Doing Business* indicators, *Doing Business* conducted a pilot study this year on the second largest city in 3 large economies to assess within-country variations. The study collected data for Rio de Janeiro in addition to São Paulo in Brazil, for Beijing in addition to Shanghai in China and for St. Petersburg in addition to Moscow in Russia.

CHANGES IN WHAT IS MEASURED

The methodology for 3 of the *Doing Business* topics was updated this year—getting credit, dealing with construction permits and paying taxes.

First, for getting credit, the scoring of one of the 10 components of the strength of legal rights index was amended to recognize additional protections of secured creditors and borrowers. Previously the highest score of 1 was assigned if secured creditors were not subject to an automatic stay or moratorium on enforcement procedures when a debtor entered a court-supervised reorganization procedure. Now the highest score of 1 is also assigned if the law provides secured creditors with grounds for relief from an automatic stay or moratorium (for example, if the movable property is in danger) or sets a time limit for the automatic stay.

Second, because the ease of doing business index now includes the getting electricity indicators, procedures, time and cost related to obtaining an electricity connection were removed from the dealing with construction permits indicators.

Third, a threshold has been introduced for the total tax rate for the purpose of calculating the ranking on the ease of paying taxes. All economies with a total tax rate below the threshold (which will be calculated and adjusted on a yearly basis) will now receive the same ranking on the total tax rate indicator. The threshold is not based on any underlying theory. Instead, it is meant to emphasize the purpose of the indicator: to highlight economies where the tax burden on business is high relative to the tax burden in other economies. Giving the same ranking to all economies whose total tax rate is below the threshold avoids awarding economies in the scoring for having an unusually low total tax rate, often for reasons unrelated to government policies toward enterprises. For example, economies that are very small or that are rich in natural resources do not need to levy broad-based taxes.

DATA CHALLENGES AND REVISIONS

Most laws and regulations underlying the *Doing Business* data are available on the *Doing Business* website at http://www.doingbusiness.org. All the sample questionnaires and the details underlying the indicators are also published on the website. Questions on the methodology and challenges to data can be submitted through the website's "Ask a Question" function at http://www.doingbusiness.org.

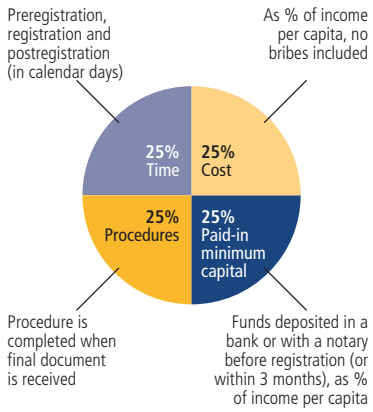
Doing Business publishes 8,967 indicators each year. To create these indicators, the team measures more than 52,000 data points, each of which is made available on the *Doing Business* website. Historical data for each indicator and economy are available on the website, beginning with the first year the indicator or economy was included in the report. To provide a comparable time series for research, the data set is back-calculated to adjust for changes in methodology and any revisions in data due to corrections. The website also makes available all original data sets used for background papers. The correction rate between *Doing Business 2011* and *Doing Business 2012* is 7%.

STARTING A BUSINESS

Doing Business records all procedures that are officially required for an entrepreneur to start up and formally operate an industrial or commercial business. These include obtaining all necessary licenses and permits and completing any required notifications,

FIGURE 4.1 Starting a business: getting a local limited liability company up and running

Rankings are based on 4 indicators



verifications or inscriptions for the company and employees with relevant authorities. The ranking on the ease of starting a business is the simple average of the percentile rankings on its component indicators (figure 4.1).

After a study of laws, regulations and publicly available information on business entry, a detailed list of procedures is developed, along with the time and cost of complying with each procedure under normal circumstances and the paid-in minimum capital requirements. Subsequently, local incorporation lawyers, notaries and government officials complete and verify the data.

Information is also collected on the sequence in which procedures are to be completed and whether procedures may be carried out simultaneously. It is assumed that any required information is readily available and that all agencies involved in the start-up process function without corruption. If answers by local experts differ, inquiries continue until the data are reconciled.

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

Assumptions about the business

The business:

- Is a limited liability company (or its legal equivalent). If there is more than one type of limited liability company in the economy, the limited liability form most popular among domestic firms is chosen. Information on the most popular form is obtained from incorporation lawyers or the statistical office.
- Operates in the economy's largest business city.
- Is 100% domestically owned and has 5 owners, none of whom is a legal entity.
- Has start-up capital of 10 times income per capita at the end of 2010, paid in cash.
- Performs general industrial or commercial activities, such as the production or sale to the public of products or services. The business does not perform foreign trade activities and does not handle products subject to a special tax regime, for example, liquor or tobacco. It is not using heavily polluting production processes.
- Leases the commercial plant and offices and is not a proprietor of real estate.
- Does not qualify for investment incentives or any special benefits.
- Has at least 10 and up to 50 employees 1 month after the commencement of operations, all of them nationals.
- Has a turnover of at least 100 times income per capita.
- Has a company deed 10 pages long.

Procedures

A procedure is defined as any interaction of the company founders with external parties (for example, government agencies, lawyers, auditors or notaries). Interactions between company founders or company officers and employees are not counted as procedures. Procedures that must be completed in the same building but in different offices are counted as separate procedures. If founders have to visit the same office several times for different sequential procedures, each is counted separately. The founders are assumed to complete all procedures themselves, without middlemen, facilitators, accountants or lawyers, unless the use of such a third party is mandated by law. If the services of professionals are required, procedures conducted by such professionals on behalf of the company are counted separately. Each electronic procedure is counted separately. If 2 procedures can be completed through the same website but require separate filings, they are counted as 2 procedures.

TABLE 4.2 What do 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 city
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
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
Paid-in minimum capital (% of income per capita)
Funds deposited in a bank or with a notary before registration (or within 3 months)

Both pre- and postincorporation procedures that are officially required for an entrepreneur to formally operate a business are recorded (table 4.2).

Procedures required for official correspondence or transactions with public agencies are also included. For example, if a company seal or stamp is required on official documents, such as tax declarations, obtaining the seal or stamp is counted. Similarly, if a company must open a bank account before registering for sales tax or value added tax, this transaction is included as a procedure. Shortcuts are counted only if they fulfill 4 criteria: they are legal, they are available to the general public, they are used by the majority of companies, and avoiding them causes substantial delays.

Only procedures required of all businesses are covered. Industry-specific procedures are excluded. For example, procedures to comply with environmental regulations are included only when they apply to all businesses conducting general commercial or industrial activities. Procedures that the company undergoes to connect to electricity, water, gas and waste disposal services are not included.

Time

Time is recorded in calendar days. The measure captures the median duration that incorporation lawyers indicate is necessary in practice to complete a procedure with minimum follow-up with government agencies and no extra payments. It is assumed that the minimum time required for each procedure is 1 day. Although procedures may take place simultaneously, they cannot start on the same day (that is, simultaneous procedures start on consecutive days). A procedure is considered completed once the company has received the final document, such as the company registration certificate or tax number. If a procedure can be accelerated for an additional cost, the fastest procedure is chosen. It is assumed that the entrepreneur does not waste time and commits to completing each remaining procedure without delay. The time that the entrepreneur spends on gathering information is ignored. It is assumed that the entrepreneur is aware of all entry requirements and their sequence from the beginning but has had no prior contact with any of the officials.

Cost

Cost is recorded as a percentage of the economy's income per capita. It includes all official fees and fees for legal or professional services if such services are required by law. Fees for purchasing and legalizing company books are included if these transactions are required by law. The company law, the commercial code and specific regulations and fee schedules are used as sources for calculating costs. In the absence of fee schedules, a government officer's estimate is taken as an official source. In the absence of a government officer's estimate, estimates of incorporation lawyers are used. If several incorporation lawyers provide different estimates, the median reported value is applied. In all cases the cost excludes bribes.

Paid-in minimum capital

The paid-in minimum capital requirement reflects the amount that the entrepreneur needs to deposit in a bank or with a notary before registration and up to 3 months following incorporation and is recorded as a percentage of the economy's income per capita. The amount is typically specified in the commercial code or the company law. Many economies require minimum capital but allow businesses to pay only a part of it before registration, with the rest to be paid after the first year of operation. In Italy in June 2011 the minimum capital requirement for limited liability companies was €10,000, of which at least €2,500 was payable before registration. The paid-in minimum capital recorded for Italy is therefore €2,500, or 9.9% of income per capita. In Mexico the minimum capital requirement was 50,000 pesos, of which one-fifth needed to be paid before registration. The paid-in minimum capital recorded for Mexico is therefore 10,000 pesos, or 8.4% of income per capita.

The data details on starting a business can be found for each economy at http://www.doingbusiness.org by selecting the economy in the drop-down list. This methodology was developed in Djankov and others (2002) and is adopted here with minor changes.

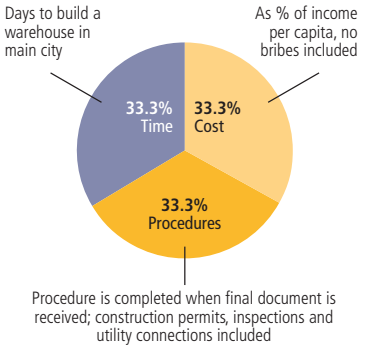
DEALING WITH CONSTRUCTION PERMITS

Doing Business records all procedures required for a business in the construction industry to build a standardized warehouse. These procedures include submitting all relevant project-specific documents (for example, building plans and site maps) to the authorities; obtaining all necessary clearances, licenses, permits and certificates; completing all required notifications; and receiving all necessary inspections. *Doing Business* also records procedures for obtaining connections for water, sewerage and a fixed telephone landline.[2] Procedures necessary to register the property so that it can be used as collateral or transferred to another entity are also counted. The survey divides the process of building a warehouse into distinct procedures and calculates the time and cost of completing each procedure. The ranking on the ease of dealing with construction permits is the simple average of the percentile rankings on its component indicators (figure 4.2).

Information is collected from experts in construction licensing, including architects, construction lawyers, construction firms, utility service providers and public officials who deal with building regulations, including approvals and inspections. To make the data comparable across economies, several assumptions about the business, the warehouse project and the utility connections are used.

FIGURE 4.2 Dealing with construction permits: building a warehouse

Rankings are based on 3 indicators



Assumptions about the construction company

The business (BuildCo):

- Is a limited liability company.
- Operates in the economy's largest business city.
- Is 100% domestically and privately owned.
- Has 5 owners, none of whom is a legal entity.
- Is fully licensed and insured to carry out construction projects, such as building warehouses.
- 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 1 employee who is a licensed architect and registered with the local association of architects.
- 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 is built.

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.
- Has 2 stories, both above ground, with a total surface of approximately 1,300.6 square meters (14,000 square feet). Each floor is 3 meters (9 feet, 10 inches) high.
- Has road access and is 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).
- Is not located in a special economic or industrial zone. The zoning requirements for warehouses are met by building in an area where similar warehouses can be found.
- Is located on a land plot of 929 square meters (10,000 square feet) that is 100% owned by BuildCo and is accurately registered in the cadastre and land registry.
- Is a new construction (there was no previous construction on the land).
- Has complete architectural and technical plans prepared by a licensed architect.
- Will include all technical equipment required to make the warehouse 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 connection:

- Is 10 meters (32 feet, 10 inches) from the existing water source and sewer tap.
- Does 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.
- Has an average water use of 662 liters (175 gallons) a day and an average wastewater flow of 568 liters (150 gallons) a day.
- Has 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.

The telephone connection:

- Is 10 meters (32 feet, 10 inches) from the main telephone network.
- Is a fixed telephone landline.

Procedures

A procedure is any interaction of the company's employees or managers with external parties, including government agencies, notaries, the land registry, the cadastre, utility companies, public and private inspectors and technical experts apart from in-house architects and engineers. Interactions between company employees, such as development of the warehouse plans and inspections conducted by employees, are not counted as procedures. Procedures that the company undergoes to connect to water, sewerage and telephone services are included. All procedures that are legally or in practice required for building a warehouse are counted, even if they may be avoided in exceptional cases (table 4.3).

Time

Time is recorded in calendar days. The measure captures the median duration that local experts indicate is necessary to complete a procedure in practice. It is assumed that the minimum time required for each procedure is 1 day. Although procedures may take place simultaneously, they cannot start on the same day (that is, simultaneous procedures start on consecutive days). If a procedure can be accelerated legally for an additional cost, the fastest procedure is chosen. It is assumed that BuildCo does not waste time and commits to completing each remaining procedure without delay. The time that BuildCo spends on gathering information is ignored. It is assumed that BuildCo is aware of all building requirements and their sequence from the beginning.

TABLE 4.3 What do 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
Completing all required notifications and receiving all necessary inspections
Obtaining utility connections for water, sewerage and a fixed telephone landline
Registering the warehouse after its completion (if required for use as collateral or for transfer of the warehouse)
Time required to complete each procedure (calendar days)
Does not include time spent gathering information
Each procedure starts on a separate 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

Cost

Cost is recorded as a percentage of the economy's income per capita. Only official costs are recorded. All the fees associated with completing the procedures to legally build a warehouse are recorded, including those associated with obtaining land use approvals and preconstruction design clearances; receiving inspections before, during and after construction; getting utility connections; and registering the warehouse property. Nonrecurring taxes required for the completion of the warehouse project are also recorded. The building code, information from local experts and specific regulations and fee schedules are used as sources for costs. If several local partners provide different estimates, the median reported value is used.

The data details on dealing with construction permits can be found for each economy at http://www.doingbusiness.org by selecting the economy in the drop-down list.

GETTING ELECTRICITY

Doing Business records all procedures required for a business to obtain a permanent electricity connection and supply for a standardized warehouse. These procedures include applications and contracts with electricity utilities, all necessary inspections and clearances from the utility and other agencies and the external and final connection works. The survey divides the process of getting an electricity connection into distinct procedures and calculates the time and cost of completing each procedure. The ranking on the ease of getting electricity is the

simple average of the percentile rankings on its component indicators (figure 4.3).

Data are collected from the electricity 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) where warehouses are located. If there is a choice of distribution utilities, the one serving the largest number of customers is selected.

To make the data comparable across economies, several assumptions about the warehouse and the electricity connection are used.

Assumptions about the warehouse

The warehouse:

- Is owned by a local entrepreneur.
- Is located in the economy's largest business city.
- Is located within the city's official limits and in an area where other warehouses are located (a nonresidential area).
- Is not located in a special economic or investment zone; that is, the electricity connection is not eligible for subsidization or faster service under a special investment promotion regime. If several options for location are available, the warehouse is located where electricity is most easily available.
- Has road access. The connection works involve the crossing of a road (for excavation, overhead lines and the like), but they are all carried out on public land; that is, there is no crossing onto another owner's private property.
- Is located in an area with no physical constraints. For example, the property is not near a railway.
- Is used for storage of refrigerated goods.
- Is a new construction (that is, there was no previous construction on the land where it is located). It is being connected to electricity for the first time.
- Has 2 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).

Assumptions about the electricity connection

The electricity connection:

- Is a permanent one.
- Is a 3-phase, 4-wire Y, 140-kilovolt-ampere (kVA) (subscribed capacity) connection.
- 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 economy and in the area where the warehouse is located. The length of any connection in the customer's private domain is negligible.
- Involves the installation of only one electricity meter. The monthly electricity consumption will be 0.07 gigawatt-hour (GWh). The internal electrical wiring has already been completed.

Procedures

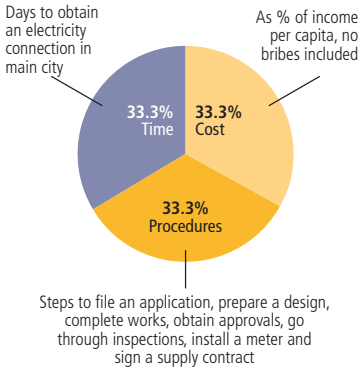
A procedure is defined as any interaction of the company's employees or its main electrician or electrical engineer (that is, the one who may have done the internal wiring) with external parties such as the electricity distribution utility, electricity supply utilities, government agencies, electrical contractors and electrical firms.

TABLE 4.4 What do 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
Value added tax excluded

FIGURE 4.3 Getting electricity: obtaining an electricity connection

Rankings are based on 3 indicators



Interactions between company employees and steps related to the internal electrical wiring, such as the design and execution of the internal electrical installation plans, are not counted as procedures. Procedures that must be completed with the same utility but with different departments are counted as separate procedures (table 4.4).

The company's employees are assumed to complete all procedures themselves unless the use of a third party is mandated (for example, if only an electrician registered with the utility is allowed to submit an application). If the company can, but is not required to, request the services of professionals (such as a private firm rather than the utility for the external works), these procedures are recorded if they are commonly done. For all procedures, only the most likely cases (for example, more than 50% of the time the utility has the material) and those followed in practice for connecting a warehouse to electricity are counted.

Time

Time is recorded in calendar days. The measure captures the median duration that the electricity utility and experts indicate is necessary in practice, rather than required by law, to complete a procedure with minimum follow-up and no extra payments. It is also assumed that the minimum time required for each procedure is 1 day. Although procedures may take place simultaneously, they cannot start on the same day (that is, simultaneous procedures start on consecutive days). It is assumed that the company does not

waste time and commits to completing each remaining procedure without delay. The time that the company spends on gathering information is ignored. It is assumed that the company is aware of all electricity connection requirements and their sequence from the beginning.

Cost

Cost is recorded as a percentage of the economy's income per capita. Costs are recorded exclusive of value added tax. All the fees and costs associated with completing the procedures to connect a warehouse to electricity are recorded, including those related to obtaining clearances from government agencies, applying for the connection, receiving inspections of both the site and the internal wiring, purchasing material, getting the actual connection works and paying a security deposit. Information from local experts and specific regulations and fee schedules are used as sources for costs. If several local partners provide different estimates, the median reported value is used. In all cases the cost excludes bribes.

Security deposit

Utilities require security deposits as a guarantee against the possible failure of customers to pay their consumption bills. For this reason the security deposit for a new customer is most often calculated as a function of the customer's estimated consumption.

Doing Business does not record the full amount of the security deposit. If the deposit is based on the customer's actual consumption, this basis is the one assumed in the case study. Rather than the full amount of the security deposit, *Doing Business* records the present value of the losses in interest earnings experienced by the customer because the utility holds the security deposit over a prolonged period, in most cases until the end of the contract (assumed to be after 5 years). In cases where the security deposit is used to cover the first monthly consumption bills, it is not recorded. To calculate the present value of the lost interest earnings, the end-2010 lending rates from the International Monetary Fund's *International Financial Statistics* are used. In cases where the security deposit is returned with interest, the difference between the lending rate and the interest paid by the utility is used to calculate the present value.

In some economies the security deposit can be put up in the form of a bond: the company can obtain from a bank or an insurance company a guarantee issued on the assets it holds with that financial institution. In contrast to the scenario in which the customer pays the deposit in cash to the utility, in this scenario the company does not lose ownership control over the full amount and can continue using it. In return the company will pay the bank a commission for obtaining the bond. The commission charged may vary depending on the credit standing of the company. The best possible credit standing and thus the lowest possible commission are assumed. Where a bond can be put up, the value recorded for the deposit is the annual commission times the 5 years assumed to be the length of the contract. If both options exist, the cheaper alternative is recorded.

In Honduras in June 2011 a customer requesting a 140-kVA electricity connection would have had to put up a security deposit of 126,894 Honduran lempiras (L) in cash or check, and the deposit would have been returned only at the end of the contract. The customer could instead have invested this money at the prevailing lending rate of 18.87%. Over the 5 years of the contract this would imply a present value of lost interest earnings of L 73,423. In contrast, if the customer chose to settle the deposit with a bank guarantee at an annual rate of 2.5%, the amount lost over the 5 years would be just L 15,862.

The data details on getting electricity can be found for each economy at http://www.doingbusiness.org.

REGISTERING PROPERTY

Doing Business records the full sequence of procedures necessary for a business (buyer) to purchase a property from another business (seller) and to transfer the property title to the buyer's name so that the buyer can use the property for expanding its business, use the property as collateral in taking new loans or, if necessary, sell the property to another business. The process starts with obtaining the necessary documents, such as a copy of the seller's title if necessary, and conducting due diligence if required. 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. The ranking on the ease of registering property is the simple average of the percentile rankings on its component indicators (figure 4.4).

Every procedure required by law or necessary in practice is included, whether it is the responsibility of the seller or the buyer or must be completed by a third party on their behalf. Local property lawyers, notaries and property registries provide information on procedures as well as the time and cost to complete each of them.

To make the data comparable across economies, several assumptions about the parties to the transaction, the property and the procedures are used.

Assumptions about the parties

The parties (buyer and seller):

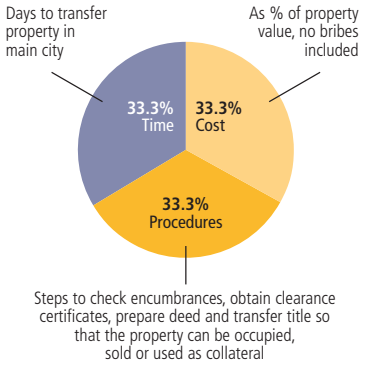
- Are limited liability companies.
- Are located in the periurban area of the economy's largest business city.
- Are 100% domestically and privately owned.
- Have 50 employees each, all of whom are nationals.
- Perform general commercial activities.

Assumptions about the property

The property:

- Has a value of 50 times income per capita. The sale price equals the value.
- Is fully owned by the seller.
- Has no mortgages attached and has been under the same ownership for the past 10 years.
- Is registered in the land registry or cadastre, or both, and is free of title disputes.
- Is located in a periurban commercial zone, and no rezoning is required.
- Consists of land and a building. The land area is 557.4 square meters (6,000 square feet). A 2-story warehouse of 929 square meters (10,000 square feet) is located on the land. The warehouse is 10 years old,

FIGURE 4.4 Registering property: transfer of property between 2 local companies
Rankings are based on 3 indicators



is in good condition and complies with all safety standards, building codes and other legal requirements. The property of land and building will be transferred in its entirety.

- Will not be subject to renovations or additional building following the purchase.
- Has no trees, natural water sources, natural reserves or historical monuments of any kind.
- Will not be used for special purposes, and no special permits, such as for residential use, industrial plants, waste storage or certain types of agricultural activities, are required.
- Has no occupants (legal or illegal), and no other party holds a legal interest in it.

Procedures

A procedure is defined as any interaction of the buyer or the seller, their agents (if an agent is legally or in practice required) or the property with external parties, including government agencies, inspectors, notaries and lawyers. Interactions between company officers and employees are not considered. All procedures that are legally or in practice required for registering property are recorded, even if they may be avoided in exceptional cases (table 4.5). It is assumed that the buyer follows the fastest legal option available and used by the majority of property owners. Although the buyer may use lawyers or other professionals where necessary in the registration process, it is assumed that the buyer does not employ an outside facilitator in the registration process unless legally or in practice required to do so.

Time

Time is recorded in calendar days. The measure captures the median duration that property lawyers, notaries or registry officials indicate is necessary to complete a procedure. It is assumed that the minimum time required for each procedure is 1 day. Although procedures may take place simultaneously, they cannot start on the same day. It is assumed that the buyer does not waste time and commits to completing each remaining procedure without delay. If a procedure can be accelerated for an additional cost, the fastest legal procedure available and used by the majority of property owners is chosen. If procedures can be undertaken simultaneously, it is assumed that they are. It is assumed that the parties involved are aware of all requirements and their sequence from the beginning. Time spent on gathering information is not considered.

Cost

Cost is recorded as a percentage of the property value, assumed to be equivalent to 50 times income per capita. Only official costs required by law are recorded, including fees, transfer taxes, stamp duties and any other payment to the property registry, notaries, public agencies or lawyers. Other taxes, such as capital gains tax or value added tax, are excluded from the cost measure. Both costs borne by the buyer and those borne by the seller are included. If cost estimates differ among sources, the median reported value is used.

TABLE 4.5 What do the registering property indicators measure?

Procedures to legally transfer title on immovable property (number)
Preregistration procedures (for example, checking for liens, notarizing sales agreement, paying property transfer taxes)
Registration procedures in the economy's largest business city
Postregistration procedures (for example, filing title with municipality)
Time required to complete each procedure (calendar days)
Does not include time spent gathering information
Each procedure starts on a separate day
Procedure 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

The data details on registering property can be found for each economy at http://www.doingbusiness.org by selecting the economy in the drop-down list.

GETTING CREDIT

Doing Business measures the legal rights of borrowers and lenders with respect to secured transactions through one set of indicators and the sharing of credit information through another. The first set of indicators describes how well collateral and bankruptcy laws facilitate lending. The second set measures the coverage, scope and accessibility of credit information available through public credit registries and private credit bureaus. The ranking on the ease of getting credit is based on the percentile rankings on its component indicators: the depth of credit information index (weighted at 37.5%) and the strength of legal rights index (weighted at 62.5%) (figure 4.5).[3]

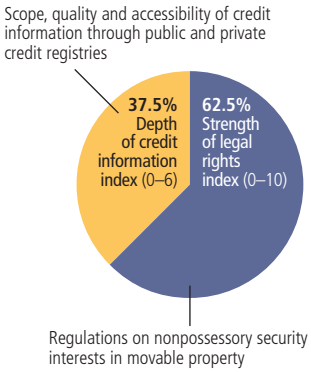
LEGAL RIGHTS

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. Survey responses are verified through several rounds of follow-up communication with respondents as well as by contacting third parties and consulting public sources. The survey data are confirmed through teleconference calls or on-site visits in all economies.

Strength of legal rights index

The strength of legal rights index measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending (table 4.6). Two case scenarios, case A and case B, are used to determine the scope of the secured transactions system. The case scenarios involve a secured borrower, the company ABC, and a secured lender, BizBank. In certain

FIGURE 4.5 Getting credit: collateral rules and credit information
Rankings are based on 2 indicators



Note: Private bureau coverage and public registry coverage are measured but do not count for the rankings.

economies the legal framework for secured transactions means that only case A or case B can apply (not both). Both cases examine the same set of legal provisions relating to the use of movable collateral.

Several assumptions about the secured borrower and lender are used:

- ABC is a domestic, limited liability company.
- The company has 100 employees.
- ABC has its headquarters and only base of operations in the economy's largest business city.
- Both ABC and BizBank are 100% domestically owned.

TABLE 4.6 What do the getting credit indicators measure?

Strength of legal rights index (0–10)
Protection of rights of borrowers and lenders through collateral laws
Protection of secured creditors' rights through bankruptcy laws
Depth of credit information index (0–6)
Scope and accessibility of credit information distributed by public credit registries and private credit bureaus
Public credit registry coverage (% of adults)
Number of individuals and firms listed in a public credit registry as percentage of adult population
Private credit bureau coverage (% of adults)
Number of individuals and firms listed in largest private credit bureau as percentage of adult population

The case scenarios also involve assumptions. In case A, as collateral for the loan, ABC grants BizBank a nonpossessory security interest in one category of movable assets, for example, its accounts receivable or its inventory. ABC wants to keep both possession and ownership of the collateral. In economies where the law does not allow nonpossessory security interests in movable property, ABC and BizBank use a fiduciary transfer-of-title arrangement (or a similar substitute for nonpossessory security interests). The strength of legal rights index does not cover functional equivalents to security over movable assets (for example, leasing or reservation of title).

In case B, ABC grants BizBank a business charge, enterprise charge, floating charge or any charge that gives BizBank a security interest over ABC's combined movable assets (or as much of ABC's movable assets as possible). ABC keeps ownership and possession of the assets.

The strength of legal rights index includes 8 aspects related to legal rights in collateral law and 2 aspects in bankruptcy law. A score of 1 is assigned for each of the following features of the laws:

- Any business may use movable assets as collateral while keeping possession of the assets, and any financial institution may accept such assets as collateral.
- The law allows a business to grant a nonpossessory security right in a single category of movable assets (such as accounts receivable or inventory), without requiring a specific description of the collateral.
- The law allows a business to grant a nonpossessory security right in substantially all its movable assets, without requiring a specific description of the collateral.
- A security right may extend to future or after-acquired assets and may extend automatically to the products, proceeds or replacements of the original assets.
- A general description of debts and obligations is permitted in the collateral agreement and in registration documents; all types of debts and obligations can be secured between the parties, and the collateral agreement can include a maximum amount for which the assets are encumbered.
- A collateral registry or registration institution for security interests over movable property is in operation, unified geographically and by asset type, with an electronic database indexed by debtors' names.
- Secured creditors are paid first (for example, before general tax claims and employee claims) when a debtor defaults outside an insolvency procedure.
- Secured creditors are paid first (for example, before general tax claims and employee claims) when a business is liquidated.
- Secured creditors either are not subject to an automatic stay or moratorium on enforcement procedures when a debtor enters a court-supervised reorganization procedure, or the law provides secured creditors with grounds for relief from an automatic stay or moratorium (for example, if the movable property is in danger) or sets a time limit for the automatic stay.[4]
- The law allows parties to agree in a collateral agreement that the lender may enforce its security right out of court.

The index ranges from 0 to 10, with higher scores indicating that collateral and bankruptcy laws are better designed to expand access to credit.

CREDIT INFORMATION

The data on credit information sharing are built in 2 stages. First, banking supervision authorities and public information sources are surveyed to confirm the presence of a public credit registry or private credit bureau. Second, when applicable, a detailed survey on the public credit registry's or private credit bureau's structure, laws and associated rules is administered to the entity itself. Survey responses are verified through several rounds of follow-up communication with respondents as well as by contacting third parties and consulting public sources. The survey data are confirmed through teleconference calls or on-site visits in all economies.

Depth of credit information index

The depth of credit information index measures rules and practices affecting the coverage, scope and accessibility of credit

information available through either a public credit registry or a private credit bureau. A score of 1 is assigned for each of the following 6 features of the public credit registry or private credit bureau (or both):

- Both positive credit information (for example, outstanding loan amounts and pattern of on-time repayments) and negative information (for example, late payments, and number and amount of defaults and bankruptcies) are distributed.
- Data on both firms and individuals are distributed.
- Data from retailers and utility companies as well as financial institutions are distributed.
- More than 2 years of historical data are distributed. Credit registries and bureaus that erase data on defaults as soon as they are repaid obtain a score of 0 for this indicator.
- Data on loan amounts below 1% of income per capita are distributed. Note that a credit registry or bureau must have a minimum coverage of 1% of the adult population to score a 1 on this indicator.
- By law, borrowers have the right to access their data in the largest credit registry or bureau in the economy.

The index ranges from 0 to 6, with higher values indicating the availability of more credit information, from either a public credit registry or a private credit bureau, to facilitate lending decisions. If the credit registry or bureau is not operational or has a coverage of less than 0.1% of the adult population, the score on the depth of credit information index is 0.

In Lithuania, for example, both a public credit registry and a private credit bureau operate. Both distribute positive and negative information (a score of 1). Both distribute data on firms and individuals (a score of 1). Although the public credit registry does not distribute data from retailers or utilities, the private credit bureau does do so (a score of 1). Although the private credit bureau does not distribute more than 2 years of historical data, the public credit registry does do so (a score of 1). Although the public credit registry has a threshold of 50,000 litai, the private credit bureau distributes data on loans of any value (a score of 1). Borrowers have the right to access their data in both the public credit registry and the private credit bureau (a score of 1). Summing across the indicators gives Lithuania a total score of 6.

Public credit registry coverage

The public credit registry coverage indicator reports the number of individuals and firms listed in a public credit registry with information on their borrowing history from the past 5 years. The number is expressed as a percentage of the adult population (the population age 15 and above in 2010 according to the World Bank's *World Development Indicators*). A public credit registry is defined as a database managed by the public sector, usually by the central bank or the superintendent of banks, that collects information on the creditworthiness of borrowers (individuals or firms) in the financial system and facilitates the exchange of credit information among banks and other regulated financial institutions. If no public registry operates, the coverage value is 0.

Private credit bureau coverage

The private credit bureau coverage indicator reports the number of individuals and firms listed by a private credit bureau with information on their borrowing history from the past 5 years. The number is expressed as a percentage of the adult population (the population age 15 and above in 2010 according to the World Bank's *World Development Indicators*). A private credit bureau is defined as a private firm or nonprofit organization that maintains a database on the creditworthiness of borrowers (individuals or firms) in the financial system and facilitates the exchange of credit information among creditors. Credit investigative bureaus and credit reporting firms that do not directly facilitate information exchange among banks and other financial institutions are not considered. If no private bureau operates, the coverage value is 0.

The data details on getting credit can be found for each economy at http://www.doingbusiness.org by selecting the economy in the drop-down list. This methodology was developed in Djankov, McLiesh and Shleifer (2007) and is adopted here with minor changes.

PROTECTING INVESTORS

Doing Business measures the strength of minority shareholder protections against directors' misuse of corporate assets for personal gain. The indicators distinguish 3 dimensions of investor protections: transparency of related-party transactions (extent of disclosure index), liability for self-dealing (extent of director liability index) and shareholders' ability to sue officers and directors for misconduct (ease of shareholder suits index). The data come from a survey of corporate and securities lawyers and are based on securities regulations, company laws, civil procedure codes and court rules of evidence. The ranking on the strength of investor protection index is the simple average of the percentile rankings on its component indicators (figure 4.6).

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

Assumptions about the business

The business (Buyer):

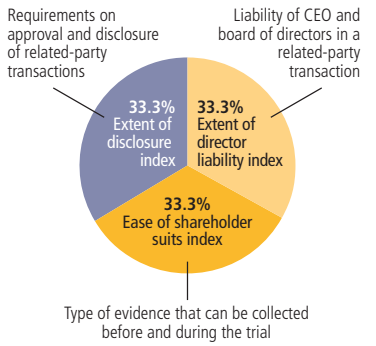
- Is a publicly traded corporation listed on the economy's most important stock exchange. If the number of publicly traded companies listed on that exchange is less than 10, or if there is no stock exchange in the economy, it is assumed that Buyer is a large private company with multiple shareholders.
- 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.
- Is a manufacturing company.
- Has its own distribution network.

Assumptions about the transaction

- Mr. James is Buyer's controlling shareholder and a member of Buyer's board of directors. He owns 60% of Buyer and elected 2 directors to Buyer's 5-member board.
- Mr. James also owns 90% of Seller, a company that operates a chain of retail hardware stores. Seller recently closed a large number of its stores.
- Mr. James proposes that Buyer purchase Seller's unused fleet of trucks to expand

FIGURE 4.6 Protecting investors: minority shareholder rights in related-party transactions

Rankings are based on 3 indicators



Buyer's distribution of its products, a proposal to which Buyer agrees. The price is equal to 10% of Buyer's assets and is higher than the market value.

- The proposed transaction is part of the company's ordinary course of business and is not outside the authority of the company.
- Buyer enters into the transaction. All required approvals are obtained, and all required disclosures made (that is, the transaction is not fraudulent).
- The transaction causes damages to Buyer. Shareholders sue Mr. James and the other parties that approved the transaction.

Extent of disclosure index

The extent of disclosure index has 5 components (table 4.7):

- Which corporate body can provide legally sufficient approval for the transaction. A score of 0 is assigned if it is the CEO or the managing director alone; 1 if the board of directors or shareholders must vote and Mr. James is permitted to vote; 2 if the board of directors must vote and Mr. James is not permitted to vote; 3 if shareholders must vote and Mr. James is not permitted to vote.
- Whether immediate disclosure of the transaction to the public, the regulator or the shareholders is required.[5] A score of 0 is assigned if no disclosure is required; 1 if disclosure on the terms of the transaction is required but not on Mr. James's conflict of interest; 2 if disclosure on both the terms and Mr. James's conflict of interest is required.
- Whether disclosure in the annual report is required. A score of 0 is assigned if no disclosure on the transaction is required; 1 if disclosure on the terms of the transaction is required but not on Mr. James's conflict of interest; 2 if disclosure on both the terms and Mr. James's conflict of interest is required.
- Whether disclosure by Mr. James to the board of directors is required. A score of 0 is assigned if no disclosure is required; 1 if a general disclosure of the existence of a conflict of interest is required without any specifics; 2 if full disclosure of all material facts relating to Mr. James's interest in the Buyer-Seller transaction is required.
- Whether it is required that an external body, for example, an external auditor, review the transaction before it takes place. A score of 0 is assigned if no; 1 if yes.

The index ranges from 0 to 10, with higher values indicating greater disclosure. In Poland, for example, the board of directors must approve the transaction and Mr. James is not allowed to vote (a score of 2). Buyer is required to disclose immediately all information affecting the stock price, including the conflict of interest (a score of 2). In its annual report Buyer must also disclose the terms of the transaction and Mr. James's ownership in Buyer and Seller (a score of 2). Before the transaction Mr. James must disclose his conflict of interest to the other directors, but he is not required to provide specific information about it (a score of 1). Poland does not require an external body to review the transaction (a score of 0). Adding these numbers gives Poland a score of 7 on the extent of disclosure index.

TABLE 4.7 What do the protecting investors indicators measure?

Extent of disclosure index (0–10)
Who can approve related-party transactions
Disclosure requirements in case of related-party transactions
Extent of director liability index (0–10)
Ability of shareholders to hold interested parties and members of the approving body liable in case of related-party transactions
Available legal remedies (damages, repayment of profits, fines and imprisonment)
Ability of shareholders to sue directly or derivatively
Ease of shareholder suits index (0–10)
Direct access to internal documents of the company and use of a government inspector without filing suit in court
Documents and information available during trial
Strength of investor protection index (0–10)
Simple average of the extent of disclosure, extent of director liability and ease of shareholder suits indices

Extent of director liability index

The extent of director liability index has 7 components:[6]

- Whether a shareholder plaintiff is able to hold Mr. James liable for the damage the Buyer-Seller transaction causes to the company. A score of 0 is assigned if Mr. James cannot be held liable or can be held liable only for fraud or bad faith; 1 if Mr. James can be held liable only if he influenced the approval of the transaction or was negligent; 2 if Mr. James can be held liable when the transaction is unfair or prejudicial to the other shareholders.
- Whether a shareholder plaintiff is able to hold the approving body (the CEO or the members of the board of directors) liable for the damage the transaction causes to the company. A score of 0 is assigned if the approving body cannot be held liable or can be held liable only for fraud or bad faith; 1 if the approving body can be held liable for negligence; 2 if the approving body can be held liable when the transaction is unfair or prejudicial to the other shareholders.
- Whether a court can void the transaction upon a successful claim by a shareholder plaintiff. A score of 0 is assigned if rescission is unavailable or is available only in case of fraud or bad faith; 1 if rescission is available when the transaction is oppressive or prejudicial to the other shareholders; 2 if rescission is available when the transaction is unfair or entails a conflict of interest.
- Whether Mr. James pays damages for the harm caused to the company upon a successful claim by the shareholder plaintiff. A score of 0 is assigned if no; 1 if yes.
- Whether Mr. James repays profits made from the transaction upon a successful claim by the shareholder plaintiff. A score of 0 is assigned if no; 1 if yes.

- Whether both fines and imprisonment can be applied against Mr. James. A score of 0 is assigned if no; 1 if yes.
- Whether shareholder plaintiffs are able to sue directly or derivatively for the damage the transaction causes to the company. A score of 0 is assigned if suits are unavailable or are available only for shareholders holding more than 10% of the company's share capital; 1 if direct or derivative suits are available for shareholders holding 10% or less of share capital.

The index ranges from 0 to 10, with higher values indicating greater liability of directors. Assuming that the prejudicial transaction was duly approved and disclosed, in order to hold Mr. James liable in Panama, for example, a plaintiff must prove that Mr. James influenced the approving body or acted negligently (a score of 1). To hold the other directors liable, a plaintiff must prove that they acted negligently (a score of 1). The prejudicial transaction cannot be voided (a score of 0). If Mr. James is found liable, he must pay damages (a score of 1) but he is not required to disgorge his profits (a score of 0). Mr. James cannot be fined and imprisoned (a score of 0). Direct or derivative suits are available for shareholders holding 10% or less of share capital (a score of 1). Adding these numbers gives Panama a score of 4 on the extent of director liability index.

Ease of shareholder suits index

The ease of shareholder suits index has 6 components:

- What range of documents is available to the shareholder plaintiff from the defendant and witnesses during trial. A score of 1 is assigned for each of the following types of documents available: information that the defendant has indicated he intends to rely on for his defense; information that directly proves specific facts in the plaintiff's claim; any information relevant to the subject matter of the claim; and any information that may lead to the discovery of relevant information.
- Whether the plaintiff can directly examine the defendant and witnesses during trial. A score of 0 is assigned if no; 1 if yes, with prior approval of the questions by the judge; 2 if yes, without prior approval.
- Whether the plaintiff can obtain categories of relevant documents from the defendant without identifying each document specifically. A score of 0 is assigned if no; 1 if yes.
- Whether shareholders owning 10% or less of the company's share capital can request that a government inspector investigate the Buyer-Seller transaction without filing suit in court. A score of 0 is assigned if no; 1 if yes.
- Whether shareholders owning 10% or less of the company's share capital have the right to inspect the transaction documents before filing suit. A score of 0 is assigned if no; 1 if yes.
- Whether the standard of proof for civil suits is lower than that for a criminal case. A score of 0 is assigned if no; 1 if yes.

The index ranges from 0 to 10, with higher values indicating greater powers of shareholders to challenge the transaction. In Greece, for example, the plaintiff can access documents that the defendant intends to rely on for his defense and that directly prove facts in the plaintiff's claim (a score of 2). The plaintiff can examine the defendant and witnesses during trial, though only with prior approval of the questions by the court (a score of 1). The plaintiff must specifically identify the documents being sought (for example, the Buyer-Seller purchase agreement of July 15, 2006) and cannot just request categories (for example, all documents related to the transaction) (a score of 0). A shareholder holding 5% of Buyer's shares can request that a government inspector review suspected mismanagement by Mr. James and the CEO without filing suit in court (a score of 1). Any shareholder can inspect the transaction documents before deciding whether to sue (a score of 1). The standard of proof for civil suits is the same as that for a criminal case (a score of 0). Adding these numbers gives Greece a score of 5 on the ease of shareholder suits index.

Strength of investor protection index

The strength of investor protection index is the average of the extent of disclosure index, the extent of director liability index and the ease of shareholder suits index. The index ranges from 0 to 10, with higher values indicating more investor protection.

The data details on protecting investors can be found for each economy at http://www.doingbusiness.org by selecting the economy in the drop-down list. This methodology was developed in Djankov, La Porta and others (2008).

PAYING TAXES

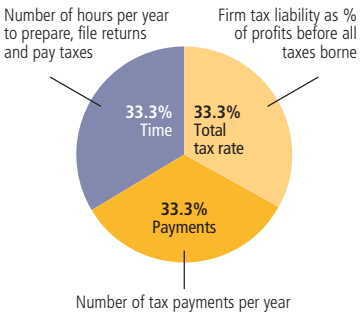
Doing Business records the taxes and mandatory contributions that a medium-size company must pay in a given year as well as measures of the administrative burden of paying taxes and contributions. The project was developed and implemented in cooperation with PwC.[7] Taxes and contributions measured include the profit or corporate income tax, social contributions and labor taxes paid by the employer, property taxes, property transfer taxes, dividend tax, capital gains tax, financial transactions tax, waste collection taxes, vehicle and road taxes, and any other small taxes or fees.

The ranking on the ease of paying taxes is the simple average of the percentile rankings on its component indicators, with a threshold being applied to one of the component indicators, the total tax rate (figure 4.7). The threshold is defined as the highest total tax rate among the top 30% of economies in the ranking on the total tax rate. It will be calculated and adjusted on a yearly basis. This year's threshold is 32.5%. For all economies with a total tax rate below this threshold, the total tax rate is set at 32.5% this year. The threshold is not based on any underlying theory. Instead, it is intended to mitigate the effect of very low tax rates on the ranking on the ease of paying taxes.

Doing Business measures all taxes and contributions that are government mandated (at any level—federal, state or local) and that apply to the standardized business and have an impact in its financial statements. In doing so, *Doing Business* goes beyond the traditional definition of a tax. As defined for the purposes of government national accounts, taxes include only compulsory, unrequited payments to general government. *Doing Business* departs from this definition because it measures imposed charges that affect

FIGURE 4.7 Paying taxes: tax compliance for a local manufacturing company

Rankings are based on 3 indicators



business accounts, not government accounts. One main difference relates to labor contributions. The *Doing Business* measure includes government-mandated contributions paid by the employer to a requited private pension fund or workers' insurance fund. The indicator includes, for example, Australia's compulsory superannuation guarantee and workers' compensation insurance. For the purpose of calculating the total tax rate (defined below), only taxes borne are included. For example, value added taxes are generally excluded (provided they are not irrecoverable) because they do not affect the accounting profits of the business—that is, they are not reflected in the income statement. They are, however, included for the purpose of the compliance measures (time and payments), as they add to the burden of complying with the tax system.

Doing Business uses a case scenario to measure the taxes and contributions paid by a standardized business and the complexity of an economy's tax compliance system. This case scenario uses a set of financial statements and assumptions about transactions made over the course of the year. In each economy tax experts from a number of different firms (in many economies these include PwC) compute the taxes and mandatory contributions due in their jurisdiction based on the standardized case study facts. Information is also compiled on the frequency of filing and payments as well as time taken to comply with tax laws in an economy. To make the data comparable across economies, several assumptions about the business and the taxes and contributions are used.

The methodology for the paying taxes indicators has benefited from discussion with members of the International Tax Dialogue and other stakeholders, which led to a refinement of the survey questions on the time to pay taxes, the collection of additional data on the labor tax wedge for further research and the introduction of a threshold applied to the total tax rate for the purpose of calculating the ranking on the ease of paying taxes (see discussion at the beginning of this section).

Assumptions about the business

The business:

- Is a limited liability, taxable company. If there is more than one type of limited liability company in the economy, the limited liability form most common among domestic firms is chosen. The most common form is reported by incorporation lawyers or the statistical office.
- Started operations on January 1, 2009. At that time the company purchased all the assets shown in its balance sheet and hired all its workers.
- Operates in the economy's largest business city.
- Is 100% domestically owned and has 5 owners, all of whom are natural persons.
- At the end of 2009, has a start-up capital of 102 times income per capita.
- Performs general industrial or commercial activities. Specifically, it produces ceramic flowerpots and sells them at retail. It does not participate in foreign trade (no import or export) and does not handle products subject to a special tax regime, for example, liquor or tobacco.
- At the beginning of 2010, owns 2 plots of land, 1 building, machinery, office equipment, computers and 1 truck and leases 1 truck.
- Does not qualify for investment incentives or any benefits apart from those related to the age or size of the company.
- Has 60 employees—4 managers, 8 assistants and 48 workers. All are nationals, and 1 manager is also an owner. The company pays for additional medical insurance for employees (not mandated by any law) as an additional benefit. In addition, in some economies reimbursable business travel and client entertainment expenses are considered fringe benefits. When applicable, it is assumed that the company pays the fringe benefit tax on this expense or that the benefit becomes taxable income for the employee. The case study assumes no additional salary additions for meals, transportation, education or others. Therefore, even when such benefits are frequent, they are not added to or removed from the taxable gross salaries to arrive at the labor tax or contribution calculation.
- Has a turnover of 1,050 times income per capita.
- Makes a loss in the first year of operation.
- Has a gross margin (pretax) of 20% (that is, sales are 120% of the cost of goods sold).
- Distributes 50% of its net profits as dividends to the owners at the end of the second year.
- Sells one of its plots of land at a profit at the beginning of the second year.
- Has annual fuel costs for its trucks equal to twice income per capita.
- Is subject to a series of detailed assumptions on expenses and transactions to further standardize the case. All financial statement variables are proportional to 2005 income per capita. For example, the owner who is also a manager spends 10% of income per capita on traveling for the company (20% of this owner's expenses are purely private, 20% are for entertaining customers and 60% for business travel).

Assumptions about the taxes and contributions

- All the taxes and contributions recorded are those paid in the second year of operation (calendar year 2010). A tax or contribution is considered distinct if it has a different name or is collected by a different agency. Taxes and contributions with the same name and agency, but charged at different rates depending on the business, are counted as the same tax or contribution.

- The number of times the company pays taxes and contributions in a year is the number of different taxes or contributions multiplied by the frequency of payment (or withholding) for each tax. The frequency of payment includes advance payments (or withholding) as well as regular payments (or withholding).

Tax payments

The tax payments indicator reflects the total number of taxes and contributions paid, the method of payment, the frequency of payment, the frequency of filing and the number of agencies involved for this standardized case study company during the second year of operation (table 4.8). It includes consumption taxes paid by the company, such as sales tax or value added tax. These taxes are traditionally collected from the consumer on behalf of the tax agencies. Although they do not affect the income statements of the company, they add to the administrative burden of complying with the tax system and so are included in the tax payments measure.

The number of payments takes into account electronic filing. Where full electronic filing and payment is allowed and it is used by the majority of medium-size businesses, the tax is counted as paid once a year even if filings and payments are more frequent. For payments made through third parties, such as tax on interest paid by a financial institution or fuel tax paid by a fuel distributor, only one payment is included even if payments are more frequent.

Where 2 or more taxes or contributions are filed for and paid jointly using the same form, each of these joint payments is counted once. For example, if mandatory health insurance contributions and mandatory pension contributions are filed for and paid together, only one of these contributions would be included in the number of payments.

Time

Time is recorded in hours per year. The indicator measures the time taken to prepare, file and pay 3 major types of taxes and contributions: the corporate income tax, value added or sales tax, and labor taxes, including payroll taxes and social contributions. Preparation time includes the time to collect all information necessary to compute the tax payable and to calculate the amount payable. If separate accounting books must be kept for tax purposes—or separate calculations made—the time associated with these processes is included. This extra time is included only if the regular accounting work is not enough to fulfill the tax accounting requirements. Filing time includes the time to complete all necessary tax return forms and file the relevant returns at the tax authority. Payment time considers the hours needed to make the payment online or at the tax authorities. Where taxes and contributions are paid in person, the time includes delays while waiting.

Total tax rate

The total tax rate measures the amount of taxes and mandatory contributions borne by the business in the second year of operation, expressed as a share of commercial profit. *Doing Business 2012* reports the total tax rate for calendar year 2010. The total amount of taxes borne is the sum of all the different taxes and contributions payable after accounting for allowable deductions and exemptions. The taxes withheld (such as personal income tax) or collected by the company and remitted to the tax authorities (such as value added tax, sales tax or goods and service tax) but not borne by the company are excluded. The taxes included can be divided into 5 categories: profit or corporate income tax, social contributions and labor taxes paid by the employer (in respect of which all mandatory contributions are included, even if paid to a private entity such as a requited pension fund), property taxes, turnover taxes and other taxes (such as municipal fees and vehicle and fuel taxes).

TABLE 4.8 What do the paying taxes indicators measure?

Tax payments for a manufacturing company in 2010 (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 mandatory 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

The total tax rate is designed to provide a comprehensive measure of the cost of all the taxes a business bears. It differs from the statutory tax rate, which merely provides the factor to be applied to the tax base. In computing the total tax rate, the actual tax payable is divided by commercial profit. Data for Norway illustrate (table 4.9).

Commercial profit is essentially net profit before all taxes borne. It differs from the conventional profit before tax, reported in financial statements. In computing profit before tax, many of the taxes borne by a firm are deductible. In computing commercial profit, these taxes are not deductible. Commercial profit therefore presents a clear picture of the actual profit of a business before any of the taxes it bears in the course of the fiscal year.

TABLE 4.9 Computing the total tax rate for Norway

Type of tax (tax base)	Statutory rate r	Statutory tax base b NKr	Actual tax payable a = r x b NKr	Commercial profit* c NKr	Total tax rate t = a/c
Corporate income tax (taxable income)	28.1%	20,612,719	5,771,561	23,651,183	24.4%
Social security contributions (taxable wages)	14.1%	26,684,645	3,762,535	23,651,183	15.9%
Fuel tax (fuel price)	NKr 4 per liter	74,247 liters	297,707	23,651,183	1.3%
Total			9,831,803		41.6%

* Profit before all taxes borne.
Note: NKr is Norwegian kroner. Commercial profit is assumed to be 59.4 times income per capita.
Source: Doing Business database.

Commercial profit is computed as sales minus cost of goods sold, minus gross salaries, minus administrative expenses, minus other expenses, minus provisions, plus capital gains (from the property sale) minus interest expense, plus interest income and minus commercial depreciation. To compute the commercial depreciation, a straight-line depreciation method is applied, with the following rates: 0% for the land, 5% for the building, 10% for the machinery, 33% for the computers, 20% for the office equipment, 20% for the truck and 10% for business development expenses. Commercial profit amounts to 59.4 times income per capita.

The methodology for calculating the total tax rate is broadly consistent with the Total Tax Contribution framework developed by PwC and the calculation within this framework for taxes borne. But while the work undertaken by PwC is usually based on data received from the largest companies in the economy, *Doing Business* focuses on a case study for a standardized medium-size company.

The data details on paying taxes can be found for each economy at http://www.doingbusiness.org by selecting the economy in the drop-down list. This methodology was developed in Djankov, Ganser and others (2010).

TRADING ACROSS BORDERS

Doing Business measures the time and cost (excluding tariffs) associated with exporting and importing a standardized cargo of goods by ocean transport. The time and cost necessary to complete every official procedure for exporting and importing the goods—from the contractual agreement between the 2 parties to the delivery of goods—are recorded. All documents needed by the trader to export or import the goods across the border are also recorded. For exporting goods, procedures range from packing the goods into the container at the warehouse to their departure from the port of exit. For importing goods, procedures range from the vessel's arrival at the port of entry to the cargo's delivery at the warehouse. The time and cost for ocean transport are not included. Payment is made by letter of credit, and the time, cost and documents required for the issuance or advising of a letter of credit are taken into account. The ranking on the ease of trading across borders is the simple average of the percentile rankings on its component indicators (figure 4.8).

Local freight forwarders, shipping lines, customs brokers, port officials and banks provide information on required documents and cost as well as the time to complete each procedure. To make the data comparable across economies, several assumptions about the business and the traded goods are used.

Assumptions about the business

The business:

- Has at least 60 employees.
- Is located in the economy's largest business city.
- Is a private, limited liability company. It does not operate in an export processing zone or an industrial estate with special export or import privileges.
- Is domestically owned with no foreign ownership.
- Exports more than 10% of its sales.

Assumptions about the traded goods

The traded product travels in a dry-cargo, 20-foot, full container load. It weighs 10 tons and is valued at $20,000. The product:

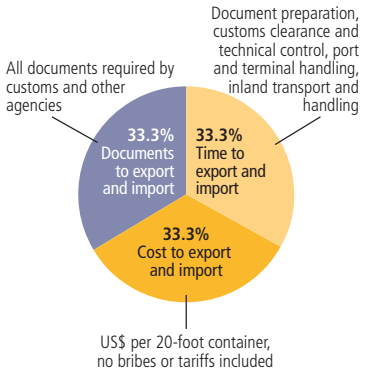
- Is not hazardous nor does it include military items.

TABLE 4.10 What do the trading across borders indicators measure?

Documents required to export and import (number)
Bank documents
Customs clearance documents
Port and terminal handling documents
Transport documents
Time required to export and import (days)
Obtaining all the documents
Inland transport and handling
Customs clearance and inspections
Port and terminal handling
Does not include ocean transport time
Cost required to export and import (US$ per container)
All documentation
Inland transport and handling
Customs clearance and inspections
Port and terminal handling
Official costs only, no bribes

FIGURE 4.8 Trading across borders: exporting and importing by ocean transport

Rankings are based on 3 indicators



- Does not require refrigeration or any other special environment.
- Does not require any special phytosanitary or environmental safety standards other than accepted international standards.
- Is one of the economy's leading export or import products.

Documents

All documents required per shipment to export and import the goods are recorded (table 4.10). It is assumed that the contract has already been agreed upon and signed by both parties. Documents required for clearance by government ministries, customs authorities, port and container terminal authorities, health and technical control agencies, and banks are taken into account. Since payment is by letter of credit, all documents required by banks for the issuance or securing of a letter of credit are also taken into account. Documents that are renewed annually and that do not require renewal per shipment (for example, an annual tax clearance certificate) are not included.

Time

The time for exporting and importing is recorded in calendar days. The time calculation for a procedure starts from the moment it is initiated and runs until it is completed. If a procedure can be accelerated for an additional cost and is available to all trading companies, the fastest legal procedure is chosen. Fast-track procedures applying to firms located in an export processing zone

are not taken into account because they are not available to all trading companies. Ocean transport time is not included. It is assumed that neither the exporter nor the importer wastes time and that each commits to completing each remaining procedure without delay. Procedures that can be completed in parallel are measured as simultaneous. The waiting time between procedures—for example, during unloading of the cargo—is included in the measure.

Cost

Cost measures the fees levied on a 20-foot container in U.S. dollars. All the fees associated with completing the procedures to export or import the goods are included. These include costs for documents, administrative fees for customs clearance and technical control, customs broker fees, terminal handling charges and inland transport. The cost does not include customs tariffs and duties or costs related to ocean transport. Only official costs are recorded.

The data details on trading across borders can be found for each economy at http://www.doingbusiness.org by selecting the economy in the drop-down list. This methodology was developed in Djankov, Freund and Pham (2010) and is adopted here with minor changes.

ENFORCING CONTRACTS

Indicators on enforcing contracts measure the efficiency of the judicial system in resolving a commercial dispute. The data are built by following the step-by-step evolution of a commercial sale dispute before local courts. The data are collected through study of the codes of civil procedure and other court regulations as well as surveys completed by local litigation lawyers and by judges. The ranking on the ease of enforcing contracts is the simple average of the percentile rankings on its component indicators (figure 4.9).

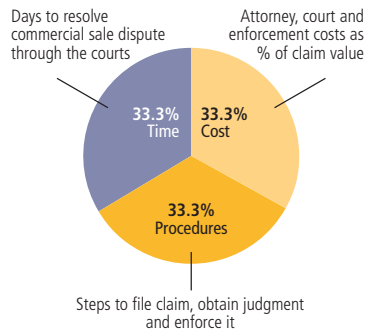
The name of the relevant court in each economy—the court in the largest business city with jurisdiction over commercial cases worth 200% of income per capita—is published at http://www.doingbusiness.org/ExploreTopics/EnforcingContracts/.

Assumptions about the case

- The value of the claim equals 200% of the economy's income per capita.
- The dispute concerns a lawful transaction between 2 businesses (Seller and Buyer), located in the economy's largest business city. Seller sells goods worth 200% of the economy's income per capita to Buyer. After Seller delivers the goods to Buyer, Buyer refuses to pay for the goods on the grounds that the delivered goods were not of adequate quality.
- Seller (the plaintiff) sues Buyer (the defendant) to recover the amount under the sales agreement (that is, 200% of the economy's income per capita). Buyer opposes Seller's claim, saying that the quality of the goods is not adequate. The claim is disputed on the merits. The court cannot decide the case on the basis of documentary evidence or legal title alone.
- A court in the economy's largest business city with jurisdiction over commercial cases worth 200% of income per capita decides the dispute.
- Seller attaches Buyer's movable assets (for example, office equipment and vehicles) before obtaining a judgment because Seller fears that Buyer may become insolvent.
- An expert opinion is given on the quality of the delivered goods. If it is standard practice in the economy for each party to call its own expert witness, the parties each call one expert witness. If it is standard practice for the judge to appoint an independent expert, the judge does so. In this case the judge does not allow opposing expert testimony.
- The judgment is 100% in favor of Seller: the judge decides that the goods are of adequate quality and that Buyer must pay the agreed price.
- Buyer does not appeal the judgment. Seller decides to start enforcing the judgment as soon as the time allocated by law for appeal expires.
- Seller takes all required steps for prompt enforcement of the judgment. The money is successfully collected through a public sale of Buyer's movable assets (for example, office equipment and vehicles).

FIGURE 4.9 Enforcing contracts: resolving a commercial dispute through the courts

Rankings are based on 3 indicators



Procedures

The list of procedural steps compiled for each economy traces the chronology of a commercial dispute before the relevant court. A procedure is defined as any interaction, required by law or commonly used in practice, between the parties or between them and the judge or court officer. This includes steps to file and serve the case, steps for trial and judgment and steps necessary to enforce the judgment (table 4.11).

The survey allows respondents to record procedures that exist in civil law but not common law jurisdictions and vice versa. For example, in civil law jurisdictions the judge can appoint an independent expert, while in

TABLE 4.11 What do the enforcing contracts indicators measure?

Procedures to enforce a contract through the courts (number)
Any interaction between the parties in a commercial dispute, or between them and the judge or court officer
Steps to file and serve the case
Steps for trial and judgment
Steps to enforce the judgment
Time required to complete procedures (calendar days)
Time to file and serve the case
Time for trial and obtaining judgment
Time to enforce the judgment
Cost required to complete procedures (% of claim)
No bribes
Average attorney fees
Court costs, including expert fees
Enforcement costs

common law jurisdictions each party submits a list of expert witnesses to the court. To indicate overall efficiency, 1 procedure is subtracted from the total number for economies that have specialized commercial courts, and 1 procedure for economies that allow electronic filing of the initial complaint in court cases. Some procedural steps that take place simultaneously with or are included in other procedural steps are not counted in the total number of procedures.

Time

Time is recorded in calendar days, counted from the moment the plaintiff decides to file the lawsuit in court until payment. This includes both the days when actions take place and the waiting periods between. The average duration of different stages of dispute resolution is recorded: the completion of service of process (time to file and serve the case), the issuance of judgment (time for the trial and obtaining the judgment) and the moment of payment (time for enforcement of the judgment).

Cost

Cost is recorded as a percentage of the claim, assumed to be equivalent to 200% of income per capita. No bribes are recorded. Three types of costs are recorded: court costs, enforcement costs and average attorney fees.

Court costs include all court costs and expert fees that Seller (plaintiff) must advance to the court, regardless of the final cost to Seller. Expert fees, if required by law or commonly used in practice, are included in court costs. Enforcement costs are all costs that Seller (plaintiff) must advance to enforce the judgment through a public sale of Buyer's movable assets, regardless of the final cost to Seller. Average attorney fees are the fees that Seller (plaintiff) must advance to a local attorney to represent Seller in the standardized case.

The data details on enforcing contracts can be found for each economy at http://www.doingbusiness.org by selecting the economy in the drop-down list. This methodology was developed in Djankov and others (2003) and is adopted here with minor changes.

RESOLVING INSOLVENCY (FORMERLY CLOSING A BUSINESS)

Doing Business studies the time, cost and outcome of insolvency proceedings involving domestic entities. *The name of this indicator set was changed from closing a business to resolving insolvency to more accurately reflect the content of the indicators. The indicators did not change in content or scope.* 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. The ranking on the ease of resolving insolvency is based on the recovery rate (figure 4.10).

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

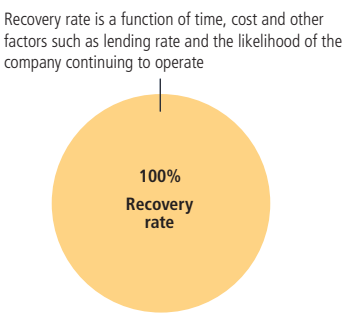
Assumptions about the business

The business:

- Is a limited liability company.
- Operates in the economy's largest business city.
- Is 100% domestically owned, with the founder, who is also the chairman of the supervisory board, owning 51% (no other shareholder holds more than 5% of shares).
- Has downtown real estate, where it runs a hotel, as its major asset. The hotel is valued at 100 times income per capita or $200,000, whichever is larger.
- Has a professional general manager.
- Has 201 employees and 50 suppliers, each of which is owed money for the last delivery.
- Has a 10-year loan agreement with a domestic bank secured by a universal business charge (for example, a floating charge) in economies where such collateral is recognized or by the hotel property. If the laws of the economy do not specifically provide for a universal business charge but contracts commonly use some other provision to that effect, this provision is specified in the loan agreement.
- Has observed the payment schedule and all other conditions of the loan up to now.
- Has a mortgage, with the value of the mortgage principal being exactly equal to the market value of the hotel.

FIGURE 4.10 Resolving insolvency: time, cost and outcome of bankruptcy of a local company

Rankings are based on 1 indicator



Note: Time and cost do not count separately for the rankings.

Assumptions about the case

The business is experiencing liquidity problems. The company's loss in 2010 reduced its net worth to a negative figure. It is January 1, 2011. There is no cash to pay the bank interest or principal in full, due the next day, January 2. The business will therefore default on its loan. Management believes that losses will be incurred in 2011 and 2012 as well.

The amount outstanding under the loan agreement is exactly equal to the market value of the hotel business and represents 74% of the company's total debt. The other 26% of its debt is held by unsecured creditors (suppliers, employees, tax authorities).

The company has too many creditors to negotiate an informal out-of-court workout. The following options are available: a judicial procedure aimed at the rehabilitation or reorganization of the company to permit its continued operation; a judicial procedure aimed at the liquidation or winding-up of the company; or a debt enforcement or foreclosure procedure against the company, enforced either in court (or through another government authority) or out of court (for example, by appointing a receiver).

Assumptions about the parties

The bank wants to recover as much as possible of its loan, as quickly and cheaply as possible. The unsecured creditors will do everything permitted under the applicable laws to avoid a piecemeal sale of the assets. The majority shareholder wants to keep the

company operating and under its control. Management wants to keep the company operating and preserve its employees' jobs. All the parties are local entities or citizens; no foreign parties are involved.

Time

Time for creditors to recover their credit is recorded in calendar years (table 4.12). The period of time measured by *Doing Business* is from the company's default until the payment of some or all of the money owed to the bank. Potential delay tactics by the parties, such as the filing of dilatory appeals or requests for extension, are taken into consideration.

Cost

The cost of the proceedings is recorded as a percentage of the value of the debtor's estate. The cost is calculated on the basis of questionnaire responses and includes court fees and government levies; fees of insolvency administrators, auctioneers, assessors and lawyers; and all other fees and costs.

Outcome

Recovery by creditors depends on whether the hotel business emerges from the proceedings as a going concern or the company's assets are sold piecemeal. If the business keeps operating, no value is lost and the bank can satisfy its claim in full, or recover 100 cents on the dollar. If the assets are sold piecemeal, the maximum amount that can be recovered will not exceed 70% of the bank's claim, which translates into 70 cents on the dollar.

TABLE 4.12 What do 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
Recovery rate for creditors (cents on the dollar)
Measures the cents on the dollar recovered by creditors
Present value of debt recovered
Official costs of the insolvency proceedings are deducted
Depreciation of furniture is taken into account
Outcome for the business (survival or not) affects the maximum value that can be recovered

Recovery rate

The recovery rate is recorded as cents on the dollar recouped by creditors through reorganization, liquidation or debt enforcement (foreclosure) proceedings. 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 (1 cent for each percentage point of the value of the debtor's estate). Finally, the value lost as a result of the time the money remains tied up in insolvency proceedings is taken into account, including the loss of value due to depreciation of the hotel furniture. Consistent with international accounting practice, the annual depreciation rate for furniture is taken to be 20%. The furniture is assumed to account for a quarter of the total value of assets. The recovery rate is the present value of the remaining proceeds, based on end-2010 lending rates from the International Monetary Fund's *International Financial Statistics*, supplemented with data from central banks and the Economist Intelligence Unit.

No practice

If an economy had zero cases a year over the past 5 years involving a judicial reorganization, judicial liquidation or debt enforcement procedure (foreclosure), the economy receives a "no practice" ranking. This means that creditors are unlikely to recover their money through a formal legal process (in or out of court). The recovery rate for "no practice" economies is zero.

This methodology was developed in Djankov, Hart and others (2008) and is adopted here with minor changes.

EMPLOYING WORKERS

Doing Business measures flexibility in the regulation of employment, specifically as it affects the hiring and redundancy of workers and the rigidity of working hours. Since 2007 improvements have been made to align the methodology for the employing workers indicators with the letter and spirit of the ILO conventions. Only 4 of the 188 ILO conventions cover areas measured by *Doing Business*: employee termination, weekend work, holiday with pay and night work. The *Doing Business* methodology is fully consistent with these 4 conventions. The ILO conventions covering areas related to the employing workers indicators do not include the ILO core labor standards—8 conventions covering the right to collective bargaining, the elimination of forced labor, the abolition of child labor and equitable treatment in employment practices.

Since 2009 the World Bank Group has been working with a consultative group—including labor lawyers, employer and employee representatives, and experts from the ILO, the OECD, civil society and the private sector—to review the employing workers methodology and explore future areas of research.[8]

The guidance of the consultative group has provided the basis for several changes in the methodology. The calculation of the minimum wage ratio was changed to ensure that no economy can receive the highest score if it has no minimum wage at all, if the law provides a regulatory mechanism for the minimum wage that is not enforced in practice, if there is only a customary minimum wage or if the minimum wage applies only to the public sector. A threshold was set for paid annual leave and a ceiling for working days allowed per week to ensure that no economy benefits in the scoring from excessive flexibility in these areas. Finally, the calculation of the redundancy cost and of the annual leave period for the rigidity of hours index was changed to refer to the average value for a worker with 1 year of tenure, a worker with 5 years and a worker with 10 years rather than the value for a worker with 20 years of tenure.

A full report with the conclusions of the consultative group is available at http://www.doingbusiness.org/methodology/employing-workers.

This year *Doing Business* collected additional data on regulations covering worker protection. The data will serve as a basis for developing a joint analysis of worker protection by

the World Bank Group and the ILO and for developing measures of worker protection.

Doing Business 2012 does not present rankings of economies on the employing workers indicators or include the topic in the aggregate ranking on the ease of doing business. The report does present the data on the employing workers indicators. Detailed data collected on labor regulations are available on the *Doing Business* website (http://www.doingbusiness.org).

The data on employing workers are based on a detailed survey of 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.

Assumptions about the worker

The worker:

- Is a full-time, male, nonexecutive employee
- Earns a salary plus benefits equal to the economy's average wage during the entire period of his employment.
- Has a pay period that is the most common for workers in the economy.
- Is a lawful citizen who belongs to the same race and religion as the majority of the economy's population.
- Resides in the economy's largest business city.
- Is not a member of a labor union, unless membership is mandatory.

Assumptions about the business

The business:

- Is a limited liability company.
- Operates in the economy's largest business city.
- Is 100% domestically owned.
- Operates in the manufacturing sector.
- Has 60 employees.
- Is subject to collective bargaining agreements in economies where such agreements cover more than half the manufacturing sector and apply even to firms not party to them.
- Abides by every law and regulation but does not grant workers more benefits than mandated by law, regulation or (if applicable) collective bargaining agreement.

Rigidity of employment index

The rigidity of employment index is the average of 3 subindices: the difficulty of hiring index, rigidity of hours index and difficulty of redundancy index. Data and scores for Benin are provided as an example (table 4.13).

All the subindices have several components. And all take values between 0 and 100, with higher values indicating more rigid regulation.

The difficulty of hiring index measures (i) whether fixed-term contracts are prohibited for permanent tasks; (ii) the maximum cumulative duration of fixed-term contracts; and (iii) the ratio of the minimum wage for a trainee or first-time employee to the average value added per worker.[9] An economy is assigned a score of 1 if fixed-term contracts are prohibited for permanent tasks and a score of 0 if they can be used for any task. A score of 1 is assigned if the maximum cumulative duration of fixed-term contracts is less than 3 years; 0.5 if it is 3 years or more but less than 5 years; and 0 if fixed-term contracts can last 5 years or more. Finally, a score of 1 is assigned if the ratio of the minimum wage to the average value added per worker is 0.75 or more; 0.67 for a ratio of 0.50 or more but less than 0.75; 0.33 for a ratio of 0.25 or more but less than 0.50; and 0 for a ratio of less than 0.25. A score of 0 is also assigned if the minimum wage is set by a collective bargaining agreement that applies to less than half the manufacturing sector or does not apply to firms not party to it, or if the minimum wage is set by law but does not apply to workers who are in their apprentice period. A ratio of 0.251 (and therefore a score of 0.33) is automatically assigned in 4 cases: if there is no minimum wage; if the law provides a regulatory mechanism for the minimum wage that is not enforced in practice; if there is no minimum wage set by law but there is a wage amount that is customarily used as a minimum; or if there is no minimum wage set by law in the private sector but there is one in the public sector.

TABLE 4.13 What do the employing workers indicators measure?

	Data for Benin	Score for Benin
Rigidity of employment index (0–100)		**29.66**
Simple average of the difficulty of hiring, rigidity of hours and difficulty of redundancy indices		39 + 10 + 40
***Difficulty of hiring index** (0–100)*		**39**
Fixed-term contracts prohibited for permanent tasks?	No	0
Maximum duration of fixed-term contracts	4 years	0.5
Ratio of minimum wage for trainee or first-time employee to value added per worker	0.58	0.67
***Rigidity of hours index** (0–100)*		**10**
Restrictions on night work and weekend work?	No	0
Allowed maximum length of the workweek in days and hours, including overtime	6 days	0
Fifty-hour workweeks permitted for 2 months due to an increase in production?	Yes	0
Paid annual vacation days	24 days	0.5
***Difficulty of redundancy index** (0–100)*		**40**
Redundancy allowed as grounds for termination?	Yes	0
Notification required for termination of a redundant worker or group of workers?	Yes	2
Approval required for termination of a redundant worker or group of workers?	No	0
Employer obligated to reassign or retrain and to follow priority rules for redundancy and reemployment?	Yes	2
Redundancy cost (weeks of salary)		**11.66**
Notice requirements, severance payments and penalties due when terminating a redundant worker, expressed in weeks of salary	Yes	11.66

Source: Doing Business database.

In Benin, for example, fixed-term contracts are not prohibited for permanent tasks (a score of 0), and they can be used for a maximum of 4 years (a score of 0.5). The ratio of the mandated minimum wage to the value added per worker is 0.58 (a score of 0.67). Averaging the 3 values and scaling the index to 100 gives Benin a score of 39.

The rigidity of hours index has 5 components: (i) whether there are restrictions on night work; (ii) whether there are restrictions on weekly holiday work; (iii) whether the workweek can consist of 5.5 days or is more than 6 days; (iv) whether the workweek can extend to 50 hours or more (including overtime) for 2 months a year to respond to a seasonal increase in production; and (v) whether the average paid annual leave for a worker with 1 year of tenure, a worker with 5 years and a worker with 10 years is more than 26 working days or fewer than 15 working days. For questions (i) and (ii), if restrictions other than premiums apply, a score of 1 is given. If the only restriction is a premium for night work or weekly holiday work, a score of 0, 0.33, 0.66 or 1 is given, depending on the quartile in which the economy's premium falls. If there are no restrictions, the economy receives a score of 0. For question (iii) a score of 1 is assigned if the legally permitted workweek is less than 5.5 days or more than 6 days; otherwise a score of 0 is assigned. For question (iv), if the answer is no, a score of 1 is assigned; otherwise a score of 0 is assigned. For question (v) a score of 0 is assigned if the average paid annual leave is between 15 and 21 working days, a score of 0.5 if it is between 22 and 26 working days and a score of 1 if it is less than 15 or more than 26 working days.

For example, Benin does not impose any restrictions either on night work (a score of 0) or on weekly holiday work (a score of 0), allows 6-day workweeks (a score of 0), permits 50-hour workweeks for 2 months (a score of 0) and requires average paid annual leave of 24 working days (a score of 0.5). Averaging the scores and scaling the result to 100 gives a final index of 10 for Benin.

The difficulty of redundancy index has 8 components: (i) whether redundancy is disallowed as a basis for terminating workers; (ii) whether the employer needs to notify a third party (such as a government agency) to terminate 1 redundant worker; (iii) whether the employer needs to notify a third party to terminate a group of 9 redundant workers; (iv) whether the employer needs approval from a third party to terminate 1 redundant worker; (v) whether the employer needs approval from a third party to terminate a group of 9 redundant workers; (vi) whether the law requires the employer to reassign or retrain a worker before making the worker redundant; (vii) whether priority rules apply for redundancies; and (viii) whether priority rules apply for reemployment. For question (i) an answer of yes for workers of any income level gives a score of 10 and means that the rest of the questions do not apply. An answer of yes to question (iv) gives a score of 2. For every other question, if the answer is yes, a score of 1 is assigned; otherwise a score of 0 is given. Questions (i) and (iv), as the most restrictive regulations, have greater weight in the construction of the index.

In Benin, for example, redundancy is allowed as grounds for termination (a score of 0). An employer has to notify a third party to terminate a single redundant worker (a score of 1) as well as to terminate a group of 9 redundant workers (a score of 1), although the approval of a third party is not required in either of these cases (a score of 0). The law does not mandate any retraining or alternative placement before termination (a score of 0). There are priority rules for termination (a score of 1) and reemployment (a score of 1). Adding the scores and scaling to 100 gives a final index of 40.

Redundancy cost

The redundancy cost indicator measures the cost of advance notice requirements, severance payments and penalties 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 used to assign the score. If the redundancy cost adds up to 8 or fewer weeks of salary and the workers can benefit from unemployment protection, a score of 0 is assigned, but the actual number of weeks is published. If the redundancy cost adds up to 8 or fewer weeks of salary and the workers cannot benefit from any type of unemployment protection, a score of 8.1 is assigned, although the actual number of weeks is published. If the cost adds up to more than 8 weeks of salary, the score is the number of weeks. One month is recorded as 4 and 1/3 weeks.

In Benin, for example, an employer is required to give an average of 1 month's notice before a redundancy termination, and the average severance pay for a worker with 1 year of service, a worker with 5 years and a worker with 10 years equals 1.68 months of wages. No penalty is levied and the workers cannot benefit from any type of unemployment protection. Altogether, the employer pays the equivalent of 11.66 weeks of salary to dismiss a worker.

The data details on employing workers can be found for each economy at http://www.doingbusiness.org by selecting the economy in the drop-down list. The Doing Business *website provides historical data sets adjusted for changes in methodology to allow comparison of data across years. This methodology was developed in Botero and others (2004) and is adopted here with changes.*

NOTES

1. The data for paying taxes refer to January–December 2010.
2. Because the ease of doing business index now includes the getting electricity indicators, procedures, time and cost related to obtaining an electricity connection were removed from the dealing with construction permits indicators.
3. The ranking is based on a straight average of points from the strength of legal rights index and depth of credit information index.
4. The scoring on this aspect was revised this year to bring it into line with UNCITRAL (2004, 2007) and World Bank (2011a).
5. This question is usually regulated by stock exchange or securities laws. Points are awarded only to economies with more than 10 listed firms in their most important stock exchange.

6. When evaluating the regime of liability for company directors for a prejudicial related-party transaction, *Doing Business* assumes that the transaction was duly disclosed and approved. *Doing Business* does not measure director liability in the event of fraud.
7. *PwC* refers to the network of member firms of PricewaterhouseCoopers International Limited (PwCIL), or, as the context requires, individual member firms of the PwC network. Each member firm is a separate legal entity and does not act as agent of PwCIL or any other member firm. PwCIL does not provide any services to clients. PwCIL is not responsible or liable for the acts or omissions of any of its member firms nor can it control the exercise of their professional judgment or bind them in any way. No member firm is responsible or liable for the acts or omissions of any other member firm nor can it control the exercise of another member firm's professional judgment or bind another member firm or PwCIL in any way.
8. For the terms of reference and composition of the consultative group, see World Bank, "Doing Business Employing Workers Indicator Consultative Group," http://www.doingbusiness.org.
9. The average value added per worker is the ratio of an economy's GNI per capita to the working-age population as a percentage of the total population.