

SME Competitiveness Outlook 2019

Big Money for Small Businesses

Technical Annexes

Extended version

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ACRONYMS

GDP	Gross domestic product
ICT	Information and communications technology
IMF	International Monetary Fund
ISO	International Organization for Standardization
ITC	International Trade Centre
ITU	International Telecommunications Union
LDC	Least developed country
LLDC	Landlocked developing country
LPI	Logistics performance index
NTM	Non-tariff measure
OECD	Organisation for Economic Co-operation and Development
SIDS	Small island developing State
SME	Small and medium-sized enterprise
SPS	Sanitary and phytosanitary (measures)
TBT	Technical barriers to trade
TRAINS	Trade Analysis Information System
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNPAN	United Nations Public Administration Network
WIPO	World Intellectual Property Organization
WITS	World Integrated Trade Solution

INTRODUCTION

This online document contains a comprehensive description of the methodology underlying the country profiles and the model used to determine the SME-SDG investment gap in the *SME Competitiveness Outlook 2019*. The print version includes an abridged version of this technical annex.

The analytical framework, indicators and data coverage of the country profiles are the subject of Annexes I, II and III respectively. Annex IV describes the investment gap model.

The *SME Competitiveness Outlook 2019* contains 85 country profiles. All countries for which the necessary data is available are included. The country profiles are not directly comparable to the ones published in previous years. This is because in each year the values of all indicators are transformed and normalized with reference to the sample used that year. In addition, the reference level of competitiveness that determines the strengths and weaknesses of each country is defined as a function of GDP per capita, which means that the reference level also changes with the sample considered each year.

To overcome this limitation and be able to assess whether competitiveness is improving or deteriorating, several country profiles published this year include a new feature – an arrow accompanies each indicator to signal whether it has increased, decreased or remained the same between 2007 and 2017. These years were chosen to maximize coverage, taking into account data availability for all indicators, particularly the firm-level information. As many of the indicators used to compute competitiveness are not updated yearly, the closest year available after 2007 and before 2017 is used whenever 2007 and 2017 are not available. Details on the years compared by country and indicator can be found in Table 2.

ANNEX I TECHNICAL NOTES

Key indicators

Key indicators are derived from ITC's Market Analysis Tools and databases of other international institutions (listed in Annex 2). They are expressed in the units indicated alongside the indicator's name. They have not been transformed or undergone any normalization calculations.

SME competitiveness

Concept and motivation

The SME competitiveness grid is a tool to classify indicators of firm competitiveness along two dimensions: how they affect competitiveness (pillars) and where they intervene (levels), summarized in

Table 1 SME competitiveness grid

		Pillars		
		Capacity to compete	Capacity to connect	Capacity to change
Levels	Firm capabilities	Quality certification Bank account Capacity utilization Managers experience	E-mail Firm website	Audited financial statement Investment financed by banks Formal training programme Foreign technology licences
	Business ecosystem	Power reliability Domestic shipping reliability Dealing with regulations Customs clearance efficiency	State of cluster development Extent of marketing Local supplier quality University-industry collaboration in R&D	Access to finance Access to educated workforce Business licensing and permits
	National environment	Getting electricity Ease of trading across borders Applied tariff	ICT access ICT use Government's online index	Ease of getting credit Interest rate spread School life expectancy

		Prevalence of technical regulations		Ease of starting a business
		Faced tariff		Patent applications
		Logistics performance		Trademark registrations
		ISO 9001 certification		
		ISO 14001 certification		
		Governance index		

Source: ITC.

The main motivation behind the SME competitiveness grid is to bridge a gap in existing composite indicators that focus on macroeconomic determinants of competitiveness rather than microeconomic determinants affecting firms and their business ecosystem. The importance of macroeconomic determinants is, however, fully recognized and reflected in the SME competitiveness grid. While the grid was designed with a focus on SME competitiveness, it is independent of scale and can be used to assess the competitiveness of large firms.

Levels of competitiveness include firm capabilities, the business ecosystem and the national environment. These are reflected in the vertical axis of the grid.

- **Firm capabilities** assess whether firms have the ability to manage the resources under their control. Thus, this competitiveness level contains indicators to gauge whether firms follow best practices, such as having bank accounts, using e-mail and fully utilizing production capacities.
- The **business ecosystem** delivers the resources and competencies that help to shape firm competitiveness. This level covers factors that are external to the firm but still within its microenvironment, such as access to electricity, a skilled workforce and the vicinity of a relevant cluster of economic activities.
- The **national environment** establishes the fundamentals of functioning markets. Government actions in particular determine whether firm activities are facilitated. This level encompasses all factors that exist at the national level, such as policies on entrepreneurship and ease of doing business, trade-related policies, governance, infrastructure and resource endowments.

Pillars of competitiveness include the capacity to compete, connect and change, and are reflected in the horizontal axis of the grid.

- The **capacity to compete** refers to the static dimension of competitiveness and is centred on present operations of firms and their efficiency in terms of cost, time, quality and quantity. Examples of drivers include using internationally recognized quality certificates, access to technical infrastructure, such as testing laboratories, and smooth customs procedures.
- The **capacity to connect** centres on gathering and exploiting information and knowledge. At the firm level, this refers to efforts to gather information flowing into the firm (e.g. consumer profiles, preferences and demand) and facilitating information

flows from the firm (e.g. marketing and advertising). At the business ecosystem level, this includes links to sector associations, chambers of commerce and other trade and investment support institutions (TISIs). At the national level, the capacity to connect is predominantly about the availability of information and communications technology (ICT) infrastructure.

- The **capacity to change** centres on the capacity of a firm to execute change in response to, or in anticipation of, dynamic market forces and to innovate through investments in human and financial capital. It incorporates the dynamic dimension of competitiveness. Industry phases, breakthrough or disruptive innovations, increased competition and exchange rate fluctuations are all events that require adaptation strategies. The capacity to change, for example, involves interpreting new market trends, the tactics of rivals, opportunities derived from new infrastructure or technologies and government policies.

SME competitiveness grid summary

The competitiveness grid summary provides an overview of SME competitiveness in the country. The statistics are calculated by aggregating all 39 indicators of the SME competitiveness grid across pillars and levels of competitiveness, using simple (unweighted) averages. Of these 39 indicators, 17 refer to business establishments and are available by firm size.

All indicator values are colour-coded to facilitate interpretation. Strengths are indicated in green and weaknesses in red. The reference value, which reflects the expected competitiveness score given a country's GDP, and the associated threshold values for strengths and weaknesses are at the bottom of the SME competitiveness grid summary table.

Competitiveness reference level, strengths and weaknesses

The threshold values that define strengths and weaknesses in competitiveness are based on a country-specific reference level. To determine the reference level for each country, the SME competitiveness indicators are averaged by country and regressed on the natural logarithm of country GDP per capita, using the sample of 85 countries over two periods and three classes of firm size. As the dependent variable – the country average of SME competitiveness indicators – is a fractional response variable, this regression uses the methodology proposed by Papke and Wooldridge, which produces predictions bound to the 0-100 interval.¹ The reference level is set to the predicted (fitted) value for log of GDP per capita.

An indicator is considered a strength (shown in bold green text) when it takes a value of 100 or it surpasses a threshold value of 150% of the country's reference level. Conversely, an indicator signals weakness (shown in bold red text) when it falls below a threshold value of 50% of the reference level. In this way, the strengths and weaknesses allow for an easy comparison of individual indicators for a given country to the average value of all indicators in the sample, taking into account the country's GDP per capita.

SME competitiveness grid

SME competitiveness indicators

The SME competitiveness grid presents transformed and normalized scores for all of the competitiveness indicators. The indicators are split into three levels of competitiveness, each in turn split into three pillars. Whenever possible, the grid includes indicators by firm size. The

absolute values of the indicators are available upon request. All indicator values in the tables are colour-coded in black (indicating an average performance), green (indicating strengths) or red (indicating weaknesses).

To allow for cross-indicator, cross-country and cross-time comparisons, indicators are normalized on a 0-100 scale, with a score of 100 representing the best possible outcome. For positive indicators, those in which higher values represent better outcomes, a raw data series X is transformed according to:

$$Y_{(+)} = 100 \frac{X - \min(X)}{\max(X) - \min(X)}$$

For negative indicators, those on an inverse scale in which higher values represent worse outcomes, a raw data series X is transformed according to:

$$Y_{(-)} = 100 \frac{\max(X) - X}{\max(X) - \min(X)}$$

Equivalently, the normalized series for negative indicators may be constructed from:

$$Y_{(-)} = 100 - Y_{(+)}$$

A non-linear transformation (developed by ITC) is then applied over the same [0-100] range to compensate for highly skewed distributions, aimed at bringing the sample median to 50. For an input data series Y , the transformed score Z is defined as:

$$Z = 100 \frac{\ln(1 + aY)}{\ln(1 + 100a)}$$

where

$$a = \frac{100 - 2 \text{ median}(Y)}{\text{median}(Y)^2}$$

and $\text{median}(Y)$ is the sample median. The formula is not defined in the event that the median is already equal to 50; in this case, the second step becomes redundant. It is important to note that the minimum, maximum and median values are determined considering all firm sizes. This implies that an indicator's minimum value, for instance, will be the same for firms of any size. This is consistent with ITC's definition of competitiveness, which reflects a firm's business activities irrespective of its size. It is also important to note that the minimum, maximum and median values are determined considering both time periods in the sample. This is what allows for comparisons across time in the normalized and transformed indicators.

Radar diagrams

The radar diagrams on the right hand side of the SME competitiveness grid convey the statistics indicated in the tables. The solid area plots are colour-coded according to each pillar of competitiveness and represent aggregate indicator values for all firm sizes. The lines of varying patterns identify indicators for small firms (dotted black line), medium firms (solid black line) and large firms (dashed black line). The blue line is the country-specific reference level indicating the expected competitiveness of the country.

ANNEX II DEFINITIONS AND DATA SOURCES

This section presents the title, definition, formula and source for each indicator in the SME competitiveness grid. Whenever the indicator is generated through a survey, this section provides the exact survey question.

Key indicators reflect the most recent data available, with the exception of GDP and population, which rely on the 2018 forecast to ensure that they are based on the same year for all countries. The value of the SME competitiveness grid indicators and their change over time are calculated using the closest available data to 2007 and 2017. Specific dates by country and indicator are listed in Table 2.

Certain indicators contain the phrase 'inverted scale' in the description tag to signal that these indicators are based on raw data measured by an inverted (negative) scale, in which higher values indicate worse outcomes. The transformation and normalization procedures convert these series to a positive scale, in which higher values indicate better outcomes.

Competitiveness

This report follows the definition of competitiveness elaborated in detail in the first edition of the *SME Competitiveness Outlook*.²

Competitiveness is the demonstrated ability to design, produce and commercialize an offer, which fully, uniquely and continuously fulfils the needs of targeted market segments, while connecting with and drawing resources from the business ecosystem, and achieving a sustainable return on the resources employed.

Small and medium-sized enterprises

The definition of the size of a firm is based on the number of full-time employees:

- Micro: 1 to 4 employees
- Small: 5 to 19 employees
- Medium: 20 to 99 employees
- Large: 100 or more employees.

Note that the SME Competitiveness Grid indicators are largely based on the World Bank Enterprise Surveys administered to legally registered small, medium and large firms in manufacturing and services sectors.³ Hence, micro firms, informal entities and agricultural enterprises are not included in the country profiles due to lack of suitable data.

Key indicators

Population

Country population, forecast, measured in millions.

Source: IMF World Economic Outlook, 2018

(<https://www.imf.org/external/pubs/ft/weo/2018/02/weodata/index.aspx>).

GDP

Country gross domestic product, forecast, measured in billion dollars.

Source: IMF World Economic Outlook, 2018

(<https://www.imf.org/external/pubs/ft/weo/2018/02/weodata/index.aspx>).

GDP per capita

Country gross domestic product per capita, forecast, measured in dollars.

Source: IMF World Economic Outlook, 2018

(<https://www.imf.org/external/pubs/ft/weo/2018/02/weodata/index.aspx>).

Share of world GDP

Percentage of country's GDP as a share of world GDP, forecast, expressed in purchasing power parity (PPP) adjusted terms.

Source: IMF World Economic Outlook, 2018

(<https://www.imf.org/external/pubs/ft/weo/2018/02/weodata/index.aspx>).

Current account surplus/deficit

Percentage of current account surplus or deficit as a share of country GDP, forecast.

Source: IMF World Economic Outlook, 2018

(<https://www.imf.org/external/pubs/ft/weo/2018/02/weodata/index.aspx>).

Tariff preference margin

Trade-weighted average difference between the most favoured nation (MFN) duty and the most advantageous preferential duty, taking the perspective of an exporter, expressed as percentage points. Prior to aggregation, all duties are converted to *ad valorem* equivalents. Tariff lines have been excluded when either MFN or preferential duties cannot be expressed in *ad valorem* terms. The weights refer to the importing country's bilateral trade.

Source: ITC Market Analysis Tools, 2018

(<https://marketanalysis.intracen.org>).

Imports and exports (goods and services)

Percentage of imports and exports of goods and services as a share of GDP, most recent year available. Services trade indicators are calculated using the most recent available data and the combined revision of the Balance of Payments Manual (either BMP5 or BMP6). For countries not reporting services trade data, estimated values were used. The year of reference for both goods trade and GDP data matches that of trade services data.

Source: imports and exports of goods and services: ITC Market Analysis Tools, 2008–2017 (www.trademap.org); GDP: IMF World Economic Outlook (www.imf.org/en/data).

Service exports

Percentage of services exports as a share of total exports, most recent year available.

Source: ITC Market Analysis Tools, 2015–2017 (www.trademap.org).

Geographic region

The regional groups are based on the United Nations classification of countries by geographic region (See Annex 3 for the country composition of each geographic region).

Source: United Nations (<https://unstats.un.org/unsd/methodology/m49>).

Development group

Definitions are based on the United Nations classification, including LDCs, LLDCs, and SIDS (See Annex 3 for the country composition of each group).

Source: United Nations (<https://www.un.org/development/desa/dpad/least-developed-country-category/lpcs-at-a-glance.html>).

Income group

Income group by country GDP, based on World Bank classification (low income, lower-middle income, upper-middle income, and high income).

Source: World Bank (<https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>).

SME Competitiveness Grid indicators***Firm capabilities***

Compete

International quality certification

Percentage of firms with an internationally recognized quality certification.

Question: Does this establishment have an internationally recognized quality certification? Some examples include: the ISO 9000 series (quality management systems), the ISO 14000 series (environmental management systems), HACCP (hazard analysis and critical control point) for food, and AATCC (American Association of Textiles Chemists and Colorists) for textiles. Certificates granted only nationally and not recognized in international markets are not included.

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Bank account

Percentage of firms with a checking or savings account.

Question: At this time, does this establishment have a checking or savings account?

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Capacity utilization

Capacity utilization based on comparison of the current output with the maximum output possible using the current inputs.

Question: In the last fiscal year, what was this establishment's output produced as a proportion of the maximum output possible if using all the resources available (capacity utilization)?

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Manager's experience

The top manager's years of experience working in the firm's sector.

Question: How many years of experience working in this sector does the top manager have?

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Connect

E-mail

Percentage of firms that use e-mails to communicate with clients/suppliers.

Question: At the present time, does this establishment use e-mails to communicate with clients or suppliers?

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Firm website

Percentage of firms that have their own website.

Question: At the present time, does this establishment use its own website? (Percentage of firms using a website for business-related activities, i.e. sales, product promotion).

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Change

Audited financial statement

Percentage of firms that have their annual financial statement reviewed by an external auditor.

Question: In the last fiscal year, did this establishment have its annual financial statements checked and certified by an external auditor?

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Investments financed by banks

Estimated proportion of fixed assets purchases financed by bank loans.

Question: Over the last fiscal year, please estimate the proportion of this establishment's total purchases of fixed assets that was financed by each of the following sources:

- Internal funds or retained earnings;
- Owners' contribution or issued new equity shares;
- Borrowed from banks: private and state-owned;
- Borrowed from non-bank financial institutions;
- Purchases on credit from suppliers and advances from customers; or
- Other, moneylenders, friends, relatives, bonds, etc.

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Formal training programme

Percentage of firms that offer formal training programmes for permanent, full-time employees.

Question: Over the last fiscal year, did this establishment have formal training programmes for its permanent, full-time employees?

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Foreign technology licences

Percentage of firms that use technology licensed from foreign companies.

Question: Does this establishment at present use technology licensed from a foreign-owned company, excluding office software?

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Business ecosystem

Compete

Power reliability

Losses due to electrical outages, as percentage of total annual sales (inverted scale).

Question: Please estimate the losses that resulted from power outages either as a percentage of total annual sales or as total annual losses.

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Domestic shipping reliability

Proportion of products lost to breakage or spoilage during shipping to domestic markets (inverted scale).

Question: In the last fiscal year, what percentage of value of products this establishment shipped to supply domestic markets was lost while in transit because of breakage or spoilage?

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Dealing with regulations

Percentage of time spent by senior management in a typical week dealing with requirements imposed by government regulation (inverted scale).

Question: In a typical week over the last year, what percentage of total senior management's time was spent on dealing with requirements imposed by government regulations? [Senior management means managers, directors and officers above direct supervisors of production or sales workers. Some examples of government regulations are taxes, customs, labour regulations, licensing and registration, including dealings with officials and completing forms].

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Customs clearance efficiency

This indicator is the average of two indicators: average number of days to clear direct exports through customs, and average number of days to clear imports from customs (inverted scale).

Average number of days to clear direct exports through customs.

Question: When this establishment exported goods directly, how many days did it take on average from the time this establishment's goods arrived at their main point of exit (e.g., port, airport) until the time these goods cleared customs?

Average number of days to clear imports from customs.

Question: When this establishment imported material inputs or supplies, how many days did it take on average from the time these goods arrived to their point of entry (e.g. port, airport) until the time these goods could be claimed from customs?

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Connect

State of cluster development

Average country cluster development score.

Question: In your country, how widespread are well-developed and deep clusters (geographic concentrations of firms, suppliers, producers of related products and services, and specialized institutions in a particular field)? [1 = non-existent; 7 = widespread in many fields].

Source: World Economic Forum Executive Opinion Survey, 2007–2017 (<http://reports.weforum.org/global-competitiveness-index/downloads/>).

Extent of marketing

Average country marketing extent score.

Question: In your country, to what extent do companies use sophisticated marketing tools and techniques? [1 = not at all; 7 = to a great extent].

Source: World Economic Forum Executive Opinion Survey, 2007–2017 (<http://reports.weforum.org/global-competitiveness-index/downloads/>).

Local supplier quality

Average country local supplier quality score

Question: In your country, how would you assess the quality of local suppliers? [1 = extremely poor quality; 7 = extremely high quality].

Source: World Economic Forum Executive Opinion Survey, 2007–2017 (<http://reports.weforum.org/global-competitiveness-index/downloads/>).

University-industry collaboration in R&D

Average country university-industry collaboration in R&D score.

Question: In your country, to what extent do businesses and universities collaborate on research and development (R&D)? [1 = do not collaborate at all; 7 = collaborate extensively].

Source: World Economic Forum Executive Opinion Survey, 2007–2017 (<http://reports.weforum.org/global-competitiveness-index/downloads/>).

Change

Access to finance

Percentage of firms that identify access to finance as an obstacle to current operations (inverted scale).

Question: To what degree is access to finance an obstacle to the current operations of this establishment? Choices range from 0 (no obstacle) to 4 (very severe obstacle).

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Access to educated workforce

Percentage of firms that identify an inadequately educated workforce as an obstacle to current operations (inverted scale).

Question: To what degree is an inadequately educated workforce an obstacle to the current operations of this establishment? Choices range from 0 (no obstacle) to 4 (very severe obstacle).

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

Business licensing and permits

Percentage of firms that identify business licensing and permits as an obstacle to current operations (inverted scale).

Question: To what degree are business licensing and permits an obstacle to the current operations of this establishment? Choices range from 0 (no obstacle) to 4 (very severe obstacle).

Source: World Bank Enterprise Surveys, 2006–2018 (<http://www.enterprisesurveys.org>).

National environment

Compete

Getting electricity

Doing Business: 'Ease of getting electricity' score.

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 questionnaire divides the process of getting an electricity connection into distinct procedures and solicits data for calculating the time and cost to complete each procedure.

The ranking of economies on the ease of getting electricity is determined by sorting their scores for getting electricity. These scores are the simple average of the scores for all the component indicators (number of procedures to obtain an electricity connection, time required

to complete each procedure, cost require to complete each procedure, reliability of supply and transparency of tariffs).

Source: World Bank *Doing Business*, 2017 (<http://www.doingbusiness.org/data>).

Ease of trading across borders

Doing Business: 'Ease of trading across borders' score (%).

The 'Ease of trading across borders' index measures the time and cost (excluding tariffs) associated with exporting and importing a standardized cargo of goods by sea transport. The index records the time and costs necessary to complete four predefined stages for importing and exporting goods (document preparation; customs clearance and inspections; inland transport and handling; and port and terminal handling). This includes any time, costs and documents associated with processes at inland borders (i.e. for landlocked countries), and those associated with the issuing or advising of a letter of credit (for payments). The time and costs associated with sea transport are not included. Data is compiled from local freight forwarders, shipping lines, customs brokers, port officials and banks, and is made comparable across economies.

The trading across borders indicator is calculated from the simple average of the scores for the time and cost for documentary compliance and border compliance to export and import.

Source: World Bank *Doing Business*, 2017 (<http://www.doingbusiness.org/data>).

Applied tariff, trade-weighted average

Applied tariff rate, trade-weighted mean, all products (%) (inverted scale).

A tariff is a customs duty that is levied by the destination country on imports of merchandise goods. The trade-weighted average tariff is calculated for each importing country using the trade patterns of the importing country's reference group. To the extent possible, specific rates are converted to their ad valorem equivalent rates and included in the calculation of trade-weighted average tariffs. Preferential tariff arrangements (tariff preferences) are taken into account.

Source: Calculations based on ITC Market Analysis Tools data, 2007–2018 (<https://marketanalysis.intracen.org>).

Prevalence of technical regulations

Average number of technical regulations per imported product (inverted scale).

The prevalence of technical regulations is calculated as an average number of technical requirements per imported product (HS 6-digit level):

$$P_i = \frac{\sum_1^p N_{ip} M_{ip}}{\sum_1^p M_{ip}}$$

Where P_i is the prevalence score for each importing country i , N_{ip} is the number of requirements applied by country i to regulate imports of product p , and M_{ip} is a dummy equal to 1 if product p is imported by country i .

Only technical measures applied to all partners alike requirements are included in the calculations: bilateral measures are not considered. Technical measures comprise sanitary and phytosanitary (SPS) requirements and technical barriers to trade (TBT).

Source: Calculations based on ITC Market Analysis Tools data, 2006–2017 (<https://marketanalysis.intracen.org>).

Tariff faced, trade-weighted average

Trade-weighted average tariff faced in destination markets (%) (inverted scale).

The tariff faced is an indicator calculated as the trade-weighted average of the applied tariff rates, including preferential rates that the rest of the world applies to each country. The weights are the trade patterns of the importing country's reference group.

Source: Calculations based on ITC Market Analysis Tools data, 2007–2018, (<https://marketanalysis.intracen.org>).

Logistics performance index

Logistics performance index score.

The logistics performance index (LPI) is a multidimensional assessment of logistics performance that compares the trade logistics profiles of countries and rates them on a scale of 1 (worst) to 5 (best). The six components of the LPI are: (1) the efficiency of customs and border management clearance (speed, simplicity and predictability of formalities); (2) the quality of trade and transport-related infrastructure (ports, railroads, roads, IT); (3) the ease of arranging competitively priced international shipments; (4) the competence and quality of logistics services (transport operators, customs brokers); (5) the ability to track and trace consignments; and (6) the frequency with which shipments reach the consignee within the scheduled or expected delivery time.⁴

Source: World Bank and Turku School of Economics, Logistics Performance Index, 2007–2017 (<http://lpi.worldbank.org/>).

ISO 9001 quality certificates

ISO 9001 Quality management systems: Number of certificates issued (per million people).

The number of certificates issued each year reflects all valid versions of the certification at the time. For example, in 2017 some of the valid certifications met the requirements for the 2008 ISO 9001 standards, whereas others met the requirements for the 2015 version.

Source: ISO Survey of Management System Standard Certifications, 2007-2017 (<https://www.iso.org/the-iso-survey.html>).

ISO 14001 environmental certificates

ISO 14001 environmental management systems: Number of certificates issued (per million people).

The number of certificates issued each year reflects all valid versions of the certification at the time. For example, in 2017 some of the valid certifications met the requirements for the 2004 ISO 14001 standards, whereas others met the requirements for the 2015 version.

Source: ISO Survey of Management System Standard Certifications, 2007-2017 (<https://www.iso.org/the-iso-survey.html>).

Governance index

Governance index.

The governance index is the average score of six governance indicators: voice and accountability; political stability and absence of violence; government effectiveness; regulatory quality; rule of law; and control of corruption.

Source: World Bank Worldwide Governance Indicators, 2007–2017 (<http://info.worldbank.org/governance/wgi/index.aspx#reports>).

Connect

ICT access

ICT access score.

The ICT access sub-index is the first sub-index of the ICT Development Index of the ITU. The composite index weights five ICT indicators (20% each): (1) fixed-telephone subscriptions per 100 inhabitants; (2) mobile-cellular telephone subscriptions per 100 inhabitants; (3) international Internet bandwidth (bit/s) per Internet user; (4) percentage of households with a computer; and (5) percentage of households with Internet access.

Source: ICT Development Index and ITU Measuring the Information Society, 2007–2017 (<https://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2017.aspx>) (<https://www.itu.int/net4/ITU-D/idi/2017/index.html>).

ICT use

ICT use score.

The ICT use sub-index is the second sub-index of the ICT Development Index of the ITU. The composite index weights three ICT indicators (33% each): (1) percentage of individuals using the Internet; (2) fixed (wired)-broadband subscriptions per 100 inhabitants; and (3) wireless-broadband subscriptions per 100 inhabitants.

Source: ICT Development Index and ITU Measuring the Information Society, 2007-2017 (<https://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2017.aspx>) (<https://www.itu.int/net4/ITU-D/idi/2017/index.html>).

Government's online service

Government's online service index.

The online service index (OSI) is a composite score derived from an online service questionnaire. To arrive at a set of online service index values for 2018, researchers assessed each country's national website in the native language, including the national portal, e-services portal and e-participation portal, as well as the websites of the ministries of education, labour, social services, health, finance and environment, as applicable.

The survey assessed a number of topics in one or more of three dimensions: the availability of information on that topic, the existence of certain features related to the topic and the ability to do certain things related to the topic on the website. Topics covered include questions

related to key services across the Sustainable Development Goals (SDGs), including health, education, social protection, gender equality, and decent work and employment, as well as through the SDG principles highlighted in Goal 16, including effectiveness, inclusion, openness, trustworthiness and accountability. Selected or proxy themes related to e-government and sustainable development have also been analysed, including open government data, e-participation, mobile-government and whole-of-government approach. The assessment was done following a citizen-centric approach, taking into account not only the supply side of e-services but also what is demanded or needed by target users. Accordingly, user uptake plays an important role in the survey.

Source: UNPAN e-Government Survey, 2008-2016
(<https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2018>).

Change

Ease of getting credit

Doing Business: 'Ease of getting credit' score.

Doing Business measures the legal rights of borrowers and lenders regarding secured transactions through one set of indicators and the sharing of credit information through another. The first set of indicators measures whether certain features that facilitate lending exist within the applicable collateral and bankruptcy laws. The second set measures the coverage, scope and accessibility of credit information available through credit reporting service providers such as credit bureaus or registries. The ranking of economies on the ease of getting credit is determined by sorting their scores for getting credit. These scores are the sum of the scores for the strength of legal rights index (range 0-12) and the depth of credit information index (range 0-8).

Source: World Bank *Doing Business*, 2017 (www.doingbusiness.org).

Interest rate spread

Interest rate spread score (inverted scale).

The interest rate spread is the interest rate charged by banks on loans to private sector customers minus the interest rate paid by commercial or similar banks for demand, time or savings deposits. The terms and conditions attached to these rates differ by country, however, limiting their comparability.

Source: World Bank, based on IMF data, international financial statistics and data files, 2007–2017 (<http://data.worldbank.org/indicator/FR.INR.LNDP/countries>).

School life expectancy

School life expectancy, primary to tertiary education.

Total number of years of schooling that a child of a certain age can expect to receive in the future, assuming that the probability of his or her being enrolled in school at any particular age is equal to the current enrolment ratio for that age.

Source: UNESCO Institute for Statistics, 2007–2017 (<http://data.uis.unesco.org/>).

Ease of starting a business

Doing Business: 'Ease of starting a business' score.

Doing Business measures the number of procedures, the time and cost for a small and medium-sized limited liability company to start up and formally operate. To make the data comparable across economies, *Doing Business* uses a standardized business that, among other things, is 100% domestically owned, has start-up capital equivalent to 10 times income per capita, engages in general industrial or commercial activities, and employs between 10 and 50 people within the first month of operations.

Source: World Bank *Doing Business*, 2007-2017 (<http://www.doingbusiness.org/data>).

Patent applications

Resident patent applications (per million people), equivalent count by applicant's origin.

Patent filings made by applicants at their home office (national or regional), also called domestic applications. Applications at regional offices are equivalent to multiple applications, one in each of the state members of those offices. Therefore, each application is multiplied by the corresponding number of member states, except for the European Patent Office and for the African Regional Intellectual Property Organization, for which designated countries are not known. In the latter case, each application is counted as one application abroad if the applicant does not reside in a member state; or as one resident and one application abroad if the applicant resides in a member state.

Source: WIPO, 2007–2016 (http://www.wipo.int/ipstats/en/statistics/country_profile/).

Trademark registrations

Resident trademark registrations (per million people), equivalent class count by applicant's origin.

A trademark is a distinctive sign distinguishing certain goods or services of one undertaking from those produced or provided by other undertakings. The holder of a registered trademark has the legal right to exclusive use of the mark in relation to the products or services for which it is registered. The owner can prevent unauthorized use of the trademark, or a confusingly similar mark, used for goods or services that are identical or similar to the goods and services for which the mark is registered.

Depending on different legal systems, one trademark application may specify several classes. Technically, that trademark turns into several marks linking to different goods or services. For international comparability, it is necessary to look at the count of classes to counter systemic differences between countries.

Source: WIPO, 2007–2016 (<https://www3.wipo.int/ipstats/index.htm>).

Data availability

Databases used in calculating the SME Competitiveness Grid are presented in Table 2. Cells indicate the two years compared for each indicator. Not available data is indicated with a dash symbol (-).

Table 2 Data availability for the SME competitiveness grid

Country	IMF indicators	Exports of services over total exports (%)	Trade over GDP (%)	Average preference margin	WB Enterprise Survey	ISO 9001	ISO 14001	ITU ICT access	ITU ICT use	Faced tariff rate, weighted mean (%)	Applied tariff rate, weighted mean (%)	Prevalence of technical regulations	School life expectancy	Government online service	Getting electricity	Trading across borders	Getting credit	Starting a business	Logistics performance index	Interest rate spread	State of cluster development	Extent of marketing	Local supplier quality	University-industry collaboration in R&D	Governance indicator	Resident trademark registrations	Resident patent applications	
Albania	2018	2017	2016	2017	2013	2017	2017	2017	2017	2017	2017	-	2017	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016	2016
Angola	2018	2017	2015	2017	2010	2017	2017	2017	2017	2017	2016	-	2010	2016	2017	2017	2017	2017	2016	2016	2014	2014	2014	2014	2017	-	-	-
Argentina	2018	2017	2017	2017	2010, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2016	2007, 2016	2008, 2016	2017	2017	2017	2007, 2017	2007, 2016	2007, 2016	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2016	2007, 2016
Armenia	2018	2017	2016	2017	2013	2017	2017	2017	2017	2017	2017	-	2015	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016	2016
Azerbaijan	2018	2017	2016	2017	2013	2017	2017	2017	2017	2017	2015	-	2017	2016	2017	2017	2017	2017	2014	2016	2017	2017	2017	2017	2017	2016	2016	2016
Bangladesh	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2016	-	2017	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016	-
Benin	2018	2016	2015	2017	2016	2017	2017	2017	2017	2017	2017	2014	2016	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	-	-	-
Bhutan	2018	2017	2016	2017	2015	2017	2017	2017	2017	2017	2015	-	2013	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2013	2013	2013
Bolivia	2018	2017	2016	2017	2010, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2016	-	2008, 2016	2017	2017	2017	2007, 2017	2007, 2016	2007, 2016	2007, 2016	2007, 2016	2007, 2016	2007, 2016	2007, 2016	2007, 2017	2007, 2016	2016
Bosnia and Herzegovina	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2017	-	-	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016	2016
Botswana	2018	2017	2017	2017	2010	2017	2017	2017	2017	2017	2017	-	2007	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016	2014

Bulgaria	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2017	-	2016	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Burundi	2018	2016	2015	2017	2014	2017	2017	2017	2017	2017	2016	-	2017	2016	2017	2017	2017	2017	2016	-	2017	2017	2017	2017	2017	-	-
Cambodia	2018	2017	2017	2017	2016	2017	2017	2017	2017	2017	2016	2015	2007	2016	2017	2017	2017	2017	2016	-	2017	2017	2017	2017	2017	2014	-
Cameroon	2018	2016	2016	2017	2016	2017	2017	2017	2017	2017	2014	2015	2016	2016	2017	2017	2017	2017	2016	2007	2017	2017	2017	2017	2017	-	-
Chad	2018	2015	2015	2017	2009, 2018	2012, 2017	2012, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2016	-	2008, 2014	2008, 2016	2017	2017	2017	2007, 2017	2007, 2016	2007	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	-	-
Chile	2018	2017	2017	2017	2010	2017	2017	2017	2017	2017	2017	2016	2016	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Colombia	2018	2017	2017	2017	2010, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2016	2007, 2017	2008, 2016	2017	2017	2017	2007, 2017	2007, 2016	2007, 2016	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2016	2007, 2016
Croatia	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2013	-	2016	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Côte d'Ivoire	2018	2016	2015	2017	2016	2017	2017	2017	2017	2017	2017	2012	2016	2016	2017	2017	2017	2017	2016	2016	2016	2016	2016	2016	2017	-	2012
Czechia	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2017	2016	2016	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Democratic Republic of the Congo	2018	2016	2016	2017	2013	2017	2017	2017	2017	2017	2014	-	2013	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	-	-
Dominican Republic	2018	2017	2017	2017	2016	2017	2017	2017	2017	2017	2017	-	2016	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Ecuador	2018	2017	2016	2017	2010, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2016	2012, 2015	2008, 2016	2017	2017	2017	2007, 2017	2007, 2016	-	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2016	2016
Egypt	2018	2017	2017	2017	2016	2017	2017	2017	2017	2017	2017	-	2016	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
El Salvador	2018	2017	2017	2017	2016	2017	2017	2017	2017	2017	2017	2016	2016	2016	2017	2017	2017	2017	2016	-	2017	2017	2017	2017	2017	2016	2016
Estonia	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2017	2016	2016	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Eswatini	2018	2017	2016	2017	2016	2017	2017	2007	2007	2017	2017	-	2013	2016	2017	2017	2017	2017	-	2016	2017	2017	2017	2017	2017	-	-
Ethiopia	2018	2016	2016	2017	2015	2017	2017	2017	2017	2017	2015	2015	2008	2016	2017	2017	2017	2017	2016	2007	2017	2017	2017	2017	2017	-	-

Gambia	2018	2017	2017	2017	2006, 2018	2009, 2017	2017	2007, 2017	2007, 2017	2007, 2017	2007, 2013	2013	2008	2008, 2016	2017	2017	2017	2007, 2017	2007, 2014	2007, 2014	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2015	-
Georgia	2018	2017	2016	2017	2013	2017	2017	2017	2017	2017	2016	-	2017	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Ghana	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2017	-	2017	2016	2017	2017	2017	2017	2016	-	2017	2017	2017	2017	2017	2016	-
Guatemala	2018	2017	2017	2017	2010, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2015	2016	2007, 2015	2008, 2016	2017	2017	2017	2007, 2017	2007, 2016	2007, 2016	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2014
Guinea	2018	2016	2016	2017	2016	2017	2017	2017	2017	2017	2017	-	2014	2016	2017	2017	2017	2017	2016	-	2017	2017	2017	2017	2017	-	-
Honduras	2018	2017	2016	2017	2016	2017	2017	2017	2017	2017	2015	2016	2015	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Hungary	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2017	2016	2016	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Indonesia	2018	2017	2017	2017	2015	2017	2017	2017	2017	2017	2017	2015	2017	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Kazakhstan	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2017	2017	2017	2016	2017	2017	2017	2017	2016	-	2017	2017	2017	2017	2017	2016	2016
Kenya	2018	2017	2016	2017	2013	2017	2017	2017	2017	2017	2016	-	2007	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2015	2016
Kyrgyzstan	2018	2017	2016	2017	2013	2017	2017	2017	2017	2017	2017	2017	2017	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Lao People's Democratic Republic	2018	2016	2016	2017	2016	2017	2017	2017	2017	2017	2017	2015	2017	2016	2017	2017	2017	2017	2016	2007	2017	2017	2017	2017	2017	-	-
Latvia	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2017	2016	2016	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Lesotho	2018	2017	2015	2017	2016	2017	2017	2017	2017	2017	2017	-	2015	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	-	-
Liberia	2018	-	-	2017	2009, 2017	2008, 2017	2017	-	-	2007, 2017	2012, 2014	-	-	2008, 2016	2017	2017	2017	2007, 2017	2007, 2016	2007, 2016	2012, 2017	2012, 2017	2012, 2017	2012, 2017	2007, 2017	-	-
Lithuania	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2017	2016	2016	2016	2017	2017	2017	2017	2016	2007	2017	2017	2017	2017	2017	2016	2016
Madagascar	2018	2016	2016	2017	2013	2017	2017	2017	2017	2017	2017	-	2016	2016	2017	2017	2017	2017	2016	2015	2017	2017	2017	2017	2017	2016	2008
Malawi	2018	2016	2011	2017	2014	2017	2017	2017	2017	2017	2016	-	2007	2016	2017	2017	2017	2017	2014	2015	2017	2017	2017	2017	2017	2016	-

Romania	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2017	2016	2016	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Russian Federation	2018	2017	2017	2017	2012	2017	2017	2017	2017	2017	2017	2016	2016	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Rwanda	2018	2017	2017	2017	2011	2017	2017	2017	2017	2017	2016	-	2017	2016	2017	2017	2017	2017	2016	2015	2017	2017	2017	2017	2017	2016	2012
Senegal	2018	2016	2016	2017	2014	2017	2017	2017	2017	2017	2017	2012	2017	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	-	-
Serbia	2018	2017	2016	2017	2013	2017	2017	2017	2017	2017	2017	-	2017	2016	2017	2017	2017	2017	2016	2014	2017	2017	2017	2017	2017	2016	2016
Sierra Leone	2018	2016	2016	2017	2009, 2017	2012, 2017	2017	-	-	2007, 2017	2010	-	-	2008, 2016	2017	2017	2017	2007, 2017	2007, 2016	2007, 2015	2012, 2017	2012, 2017	2012, 2017	2012, 2017	2007, 2017	2012, 2014	-
Slovakia	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2017	2016	2016	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Slovenia	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2017	2016	2016	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2008	2007
Tajikistan	2018	2017	2017	2017	2013	2017	2017	2007	2007	2017	2017	-	2013	2016	2017	2017	2017	2017	2016	2015	2017	2017	2017	2017	2017	2016	2009
Timor-Leste	2018	2017	2016	2017	2015	-	-	2017	2017	2017	2016	-	2009	2016	2017	2017	2017	2017	2007	2016	2014	2014	2014	2014	2017	-	-
Turkey	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2017	-	2016	2016	2017	2017	2017	2017	2016	-	2017	2017	2017	2017	2017	2016	2016
Uganda	2018	2017	2016	2017	2013	2017	2017	2017	2017	2017	2016	-	-	2016	2017	2017	2017	2017	2016	2015	2017	2017	2017	2017	2017	2016	-
Ukraine	2018	2017	2017	2017	2013	2017	2017	2017	2017	2017	2017	-	2014	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
United Republic of Tanzania	2018	2017	2016	2017	2013	2017	2017	2017	2017	2017	2016	-	2013	2016	2017	2017	2017	2017	2016	2015	2017	2017	2017	2017	2017	2007	-
Uruguay	2018	2017	2017	2017	2010, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2016	2007, 2015	2008, 2016	2017	2017	2017	2007, 2017	2007, 2016	2007, 2016	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2007, 2017	2008, 2015	2007, 2015
Venezuela	2018	2016	2016	2017	2010	2017	2017	2017	2017	2017	2017	-	2008	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2011	2011
Viet Nam	2018	2017	2017	2017	2015	2017	2017	2017	2017	2017	2017	2015	-	2016	2017	2017	2017	2017	2016	2016	2017	2017	2017	2017	2017	2016	2016
Yemen	2018	2015	2008	2017	2013	2017	2017	2007, -	2007, -	2017	2017	-	2008	2016	2017	2017	2017	2017	2014	2013	2017	2017	2017	2017	2017	2016	2016

ANNEX III LISTED COUNTRIES AND COMPOSITION OF REGIONS

This section lists all 90 countries included in the calculations of the SME competitiveness grid, grouped following the United Nations' definition of geographic regions⁵. It also shows whether countries are least developed countries (LDCs), landlocked developing countries (LLDCs), small island developing States (SIDS), and belong to the Organisation for Economic Co-operation and Development (OECD).

The SME competitiveness sample does not cover all countries in the five regions due to the paucity of data. For example, in Europe, the data is mainly available for countries in Central and Eastern Europe; in the Americas, the sample covers Latin America and the Caribbean; in Asia, the sample does not include Japan or the Republic of Korea. Data for Oceania is not available.

Africa

Table 3 Countries covered in Africa

Country	Group
Angola	LDC
Benin	LDC
Botswana	LLDC
Burundi	LDC, LLDC
Cameroon	
Chad	LDC, LLDC
Côte d'Ivoire	
Democratic Republic of the Congo	LDC
Egypt	
Ethiopia	LDC, LLDC
Gambia	LDC
Ghana	
Guinea	LDC
Kenya	
Lesotho	LDC, LLDC
Liberia	LDC
Madagascar	LDC
Malawi	LDC, LLDC
Mali	LDC, LLDC
Mauritania	LDC
Namibia	
Nigeria	
Rwanda	LDC, LLDC
Senegal	LDC
Sierra Leone	LDC
Swaziland	LLDC

Uganda	LDC, LLDC
United Republic of Tanzania	LDC
Zambia	LDC, LLDC
Zimbabwe	LLDC

Americas

Table 4 Countries covered in Americas

Country	Group
Argentina	
Bolivia	LLDC
Chile	OECD
Colombia	
Dominican Republic	SIDS
Ecuador	
El Salvador	
Guatemala	
Honduras	
Mexico	OECD
Nicaragua	
Panama	
Paraguay	LLDC
Peru	
Uruguay	
Venezuela	

Asia

Table 5 Countries covered in Asia

Country	Group
Armenia	LLDC
Azerbaijan	LLDC
Bangladesh	LDC
Bhutan	LDC, LLDC
Cambodia	LDC
Georgia	
Indonesia	
Kazakhstan	LLDC
Kyrgyzstan	LLDC
Lao People's Democratic Republic	LDC, LLDC
Mongolia	LLDC
Myanmar	LDC
Nepal	LDC, LLDC
Pakistan	
Philippines	
Tajikistan	LLDC
Timor-Leste	LDC, SIDS
Turkey	OECD
Viet Nam	
Yemen	LDC

Europe

Table 6 Countries covered in Europe

Country	Group
Albania	
Bosnia and Herzegovina	
Bulgaria	
Croatia	
Czech Republic	OECD
Estonia	OECD
Hungary	OECD
Latvia	OECD
Lithuania	
Montenegro	
Republic of North Macedonia	LLDC
Poland	OECD
Republic of Moldova	LLDC
Romania	
Russian Federation	
Serbia	
Slovakia	OECD
Slovenia	OECD
Ukraine	

ANNEX IV SME-SDG INVESTMENT GAP MODEL

This annex outlines the methodology used to estimate the additional annual SME financing needed to maximize the contribution of SMEs to the Sustainable Development Goals.

The methodology can be applied to estimate the SME financing needed to achieve each of the SDGs. However, there are synergies between the goals. For example, financing that helps SMEs achieve the job targets in SDG 8 can also help achieve environmental and health objectives set in other goals. Adding up each of the financing estimates for each goal would thus entail double counting. Yet it is not possible to measure all these connections to quantify the degree of overlap.

Taking an estimate of the financing needed to achieve just one of the goals is a feasible alternative. This modest approach investigates how much financing SMEs need to maximize their contribution to the goal they influence the most. Taking an average of the financing needed to attain the two most relevant goals further balances the figure.

There are qualitative and quantitative reasons that investment in small businesses is likely to have the strongest impact on SDGs 8 and 9. The qualitative analysis presented in chapter 1 of this report, as well as the count of the targets in each goal affected by SMEs in Figure 3, underscore that SMEs have the strongest impact on SDGs 8 and 9. Econometric analysis using the data described below affirms the statistical strength of the relationship between SME finance and country-level achievements on these goals. The method used here is based on the financing needed to attain SDGs 8 and 9.

The method used in this report mirrors that proposed by the IMF to quantify the SDG finance gap for SDG 3 (*Good Health and Wellbeing*) and SDG 4 (*Quality Education*).⁶ The IMF's approach places countries into peer groups and calculates how much extra financing is needed to catch up to the best performers within that group.

The methodology used in this report follows four steps:

1. For each country i , an average of the SDG 8 and SDG 9 score is calculated.
2. For each country i , a peer group is defined based on their GDP per capita.
3. For each peer group, the top five SDG performers are identified, and their average SME credit supply (as a share of GDP) is set as the benchmark (BM).
4. The finance gap for country i can then be calculated. It is defined as the difference between the benchmark SME credit supply and the current SME credit supply of country i .

$$Finance\ Gap_i = SME\ Credit\ Supply_{BM} - SME\ Credit\ Supply_i$$

Data

- SDG performance is measured using the latest available data from the Bertelsmann Stiftung and the Sustainable Development Solutions Network, which have produced the SDG Index and Dashboards Report annually since 2016.⁷ SDGs data analysed in these reports measure all countries' SDG performance for all SDGs and for each SDG individually.⁸
- SME credit supply is measured using data from the IFC and OECD. IFC provides developing country data on SME credit supply for 2016.⁹ OECD SME Finance Scorecards provide developed countries and selected emerging markets SME credit supply data for the same year.¹⁰
- GDP and GDP per capita are measured considering World Development Indicators for 2016.

If a country has both IFC and OECD data, the highest estimate is used. SME credit supply for countries with no data is predicted based on a simple linear regression of SME credit supply (% of GDP) and GDP per capita.

Results

The results indicate that developing countries need \$1 trillion of additional yearly SME credit to reach their SDG 8 and SDG 9 performance frontiers. They are consistent with an average increase in SDG 8 and SDG 9 performance of between 15 to 20 points.

As other forms of finance, such as equity, are not included in the analysis (because the available data is limited to credit), the total required SME-SDG investment gap may be higher than \$1 trillion. However, most SME finance in developing countries takes place through credit.

END NOTES

¹ Papke, Leslie E., and Jeffrey M. Wooldridge. "Econometric Methods for Fractional Response Variables with an Application to 401(K) Plan Participation Rates." *Journal of Applied Econometrics* 11 (1996): 619–32

² See Chapter 9 in ITC, "SME Competitiveness Outlook 2015: Compete, Connect and Change for Inclusive Growth." for a more elaborate discussion on the definition of firm competitiveness.

³ World Bank. "Enterprise Survey and Indicators Surveys - Sampling Methodology." Washington, D.C.: The World Bank, 2009.

⁴ Details of the survey methodology used to construct the LPI can be found in Arvis et al., *Connecting to Compete 2014: Trade Logistics in the Global Economy* (The World Bank, 2014).

⁵ UN definition of regional groups is available at <https://unstats.un.org/unsd/methodology/m49/#geo-regions>

⁶ IMF. "Fiscal Policy and Development. Human, Social and Physical Investment for the SDGs.," Washington, D.C.: International Monetary Fund, 2019.

⁷ Sachs et al., "SDG Index and Dashboards Report," New York, 2018.

⁸ Lafortune et al., "SDG Index and Dashboards—Detailed Methodological Paper," New York, 2018.

⁹ IFC, "MSME Finance Gap : Assessment of the Shortfalls and Opportunities in Financing Micro, Small, and Medium Enterprises in Emerging Markets." Working Paper. Washington, D.C.: International Finance Corporation, 2017.

¹⁰ OECD, *Financing SMEs and Entrepreneurs 2017: An OECD Scoreboard*. Paris: Organisation for Economic Co-operation and Development, 2017.