

A

Introduction

Today's increasingly interconnected global economy is transforming not only what is traded and how it is traded, but also who is trading. Large companies continue to dominate international trade, because they have the critical mass, organizational reach and relevant technologies necessary to access and supply foreign markets. But thanks to the Internet, the emergence of new business platforms, and the increasing openness of the global economy, many small and medium-sized enterprises (SMEs) now have the potential to become successful and important global traders as well. The *World Trade Report 2016* examines the participation of SMEs in international trade. In particular, it looks at how the international trade landscape is changing for SMEs, where new opportunities are opening up and old challenges remain, and what the multilateral trading system does to ensure inclusive participation of firms in global markets.



Contents

1. SMEs in domestic economies	14
2. SME participation in trade: opportunities and challenges	20
3. Structure of the report	25



Some key facts and findings

- In every country's population of firms, most are small. Small and medium-sized enterprises – SMEs (excluding micro enterprises, non-employers and informal firms) – account for 93 per cent of enterprises in non-high income, non-OECD countries. Micro firms and SMEs account for over 95 per cent of all enterprises in OECD countries.
- Micro firms constitute the bulk of MSMEs in all countries. On average, 83 per cent of the more than 12 million firms covered by the IFC's MSME Country Indicators are micro firms. Information for five developing countries indicates that, among informal firms, the overwhelming majority (between 80 and 95 per cent) are micro firms.
- Most MSMEs (85 per cent of micro firms and 72 per cent of SMEs) operate in the services sector, and in particular in wholesale and retail trade.
- MSMEs account for around two-thirds of total employment in developing and developed countries alike. Their contribution to GDP is lower, at around 35 per cent in developing countries and around 50 per cent in developed countries; SMEs are 70 per cent less productive than large firms.

The world economy is changing rapidly – for companies, as well as for the goods and services they produce. In the nineteenth and twentieth centuries, scale was often critical to success in international trade. Firms needed to be big in order to create integrated production systems, build global distribution networks, and cover the relatively high transport, communications and border costs associated with international trade. But as the world economy enters the twenty-first century, a number of important changes are diminishing the advantages of scale in international trade, with the result that smaller, nimbler “micro-multinationals” are also beginning to succeed in a global marketplace once overwhelmingly dominated by big multinationals.

One important change is the dramatic lowering of trade costs. Traditionally, trade was often a costly, complex and time-consuming process. This meant that only large businesses – usually manufacturers or primary resource producers – could typically engage directly in global commerce because of the enormous organizational, financial and infrastructural investments required; smaller firms often lacked the resources to advertise in foreign markets, to ship and distribute overseas, and to navigate the complex and costly tariff and regulatory obstacles at the border. But today’s dramatically reduced trade barriers, improved transportation and telecommunications links, and breakthroughs in information technologies now make it possible for smaller companies – from software programmers to precision instrument manufacturers to boutique winemakers – to gain the global reach and market presence of larger companies at a significantly lower cost. This is symbolized by the rise of online marketplaces such as eBay or Alibaba which, by globally linking buyers and sellers, simplifying international payments, and leveraging express delivery systems, has allowed SMEs to enter markets and supply customers almost anywhere in the world.

Another important, and related, change is the disaggregation or “unbundling” of global production. In the past, most trade was in finished goods manufactured by large, vertically integrated conglomerates. But today almost two-thirds of world trade is in intermediate goods and services produced by firms specializing in just one stage of the production process – from components to assembly to back-office services. These value chains extend within countries, as well as between them, meaning that many small and medium-sized businesses are indirectly involved in international trade, even if their products are never directly exported. Not only are the competitive advantages of large-scale industrial integration, bureaucracy and infrastructure diminishing across a number of tradable sectors, but big multinational firms can often be at a disadvantage when fast-changing markets demand rapid innovation and organizational flexibility.

In many ways these changes are only in their infancy. While some SMEs may benefit considerably from access to global markets in general, and niche markets in particular, the reality is that large firms continue to dominate the global trade landscape. SMEs’ direct or indirect penetration of overseas markets is still limited to certain sectors and to a handful of countries. Connecting to world markets is important. SMEs that manage to sell abroad successfully can take advantage of increasing returns to scale, hone their competitive and innovative edge, and thereby increase their productivity – growing, if not into bigger firms, then into even more valuable small ones.

Small businesses continue to face disproportionate barriers to trade, whether in the form of tariffs and non-tariff measures, unnecessary regulatory burdens, customs red tape, financing gaps or information deficits – meaning that there is scope for coherent national and international policy actions that would enhance the ability of SMEs to participate in world markets more effectively. For open trade and global integration to benefit a larger share of the population, it is important to ensure that those SMEs with the potential to succeed – not just large corporations – gain access to the global marketplace.

This report documents SME participation in today’s fast-evolving trading system and contributes to a better understanding of the determinants and consequences of this participation, with the aim of adding to the debate on the role of SMEs in making growth more inclusive.

This introductory section consists of three parts. First, it defines SMEs for the purpose of this report and discusses why they matter in their domestic economies. Second, it explains what this report is about, why it is timely and how it contributes to the debate on the role of SMEs. Finally it presents the structure of the report and highlights some important findings.

1. SMEs in domestic economies

The objective of this section is to assess the contribution of micro firms and SMEs to their domestic economies. In every country, most firms fall in the category of micro, small or medium enterprises (MSMEs). Formally registered MSMEs account for a considerable share of total employment. This fraction becomes even larger if informal firms (which are mostly small) are taken into account. In developing countries especially, small firms can be critical vehicles of social inclusion, for instance, by providing opportunities for women to participate in economic activities. The United Nations’ Sustainable Development Goals emphasize the poverty-reduction dimension associated with micro firms and SMEs, thereby underlining the importance of this issue.

Micro firms and SMEs are, however, less productive than larger firms. Because of their low productivity, and as a result of higher failure rates among them, jobs in MSMEs are less stable and less well remunerated than jobs in large firms. Indeed, most of the jobs that are destroyed are in small firms. Furthermore, only a handful of SMEs engage in innovation, which is the ultimate source of economic growth.

(a) The size and characteristics of the “micro, small and medium enterprise” sector

The acronym SME – “small and medium-sized enterprise” – is used in most contexts as the generic term to qualify all enterprises that are not large. In most instances, the term is not defined precisely in the sense that no upper or lower size thresholds are indicated. In addition, the acronym MSME – “micro, small and medium enterprise” – is used to emphasize the inclusion of the smallest firms. This report follows the customary approach of using the acronym “SME” as the generic term. A distinction between SMEs and MSMEs, where the former concept excludes micro firms and the latter includes them, will only be made where precise definitions are necessary, that is when statistics are used or when the distinction is explicitly made by the source.¹

There is no commonly agreed definition of “micro” enterprises, “small” enterprises and “medium” enterprises. The different definitions used by national governments and international organizations generally set thresholds on the number of employees and/or annual turnover.² In some cases, these thresholds are sector-specific, further complicating comparisons across countries. Inspection of the International Finance Corporation’s (IFC) MSME Country Indicators (MSME-CI) – available for up to 132 economies at different level of economic development and mostly for the years 2007 or 2008

– suggests that the majority of countries use the following definitions:

- Micro enterprises are firms with up to ten employees
- Small enterprises are firms with a number of employees ranging between ten and 50
- Medium-sized enterprises are firms with a number of employees ranging between 50 and 250.^{3,4}

As shown in Table A.1, micro firms constitute the bulk of MSMEs in all countries. On average, 83 per cent of the more than 12 million firms covered by the MSME-CI are micro firms.⁵ The table suggests that there might be a “missing middle” phenomenon for least-developed countries (LDCs), with very few firms classified as “medium-sized” in the population of MSMEs. A recent study by Hsieh and Olken (2014), using microdata on the full distribution of both formal and informal sector manufacturing firms in India, Indonesia, and Mexico, documents, however, that there is no “missing middle”. Medium-sized firms are missing, but large firms are missing too, and the fraction of firms of a given size smoothly declines in firm size. Similar results emerge in Fernandes et al. (2016), who offer evidence of a “truncated top” – i.e. there are relatively more missing large firms than missing middle-sized firms in their sample of firms from 45 countries.

In every country’s population of firms, most are small. Criscuolo et al. (2014) shows that micro firms and SMEs account for over 95 per cent of all enterprises in 17 OECD (Organisation for Economic Co-operation and Development) countries⁶ plus Brazil. The share of MSMEs in the total enterprise population can be expected to be even higher in developing countries. Appendix Table 1 in ACCA (Association of Chartered Certified Accountants) (2010) suggests that for 14 non-high income, non-OECD countries,⁷ the average share of SMEs (defined differently across countries) in the total number of enterprises is 93 per cent. These statistics, however, exclude micro enterprises, non-employers and informal firms.

Table A.1: Share of micro, small and medium-sized firms in total number of MSMEs (%)

	% of micro firms	% of small firms	% of medium-sized firms
Developed	87.1	10.7	2.2
Developing	80.5	15.6	3.9
G20 developing	82.1	13.2	4.7
Other developing	80.5	14.9	4.5
LDCs	78.6	20.7	0.6
Total	82.9	13.8	3.3

Note: Country groups defined in Appendix Table B.1 of WTO (2014).

Source: IFC’s MSME Country Indicators.

The distinction between “formal” and “informal” firms is very important in this context. Formal MSMEs are usually defined as being officially registered while informal MSMEs are not. Data on the informal sector is notoriously patchy and hardly comparable across countries. The International Labour Office (ILO, 2015, Figure 2.3) reports that 26 per cent of MSMEs worldwide are formal; the remaining 74 per cent are constituted of informal (non-registered) firms and non-employers (one-person enterprises, either registered or non-registered). If high-income OECD countries are excluded, the share of formal MSMEs worldwide drops to 23 per cent and the share of informal firms and non-employers raises to 77 per cent. As noted by the ILO (2015), however, informality is overstated in these figures, because it includes also formal firms employing only the owner of the firm.

Information contained in the IFC’s MSME-CI for five developing countries (Chile, Ethiopia, Nigeria, Tanzania and Uganda) indicates that, among informal firms, the overwhelming majority are micro firms (80 per cent in Chile and Nigeria, 95 per cent or more in the other three countries). The same dataset also offers some limited insight on the number of informal firms, as opposed to formal ones. For example, in India in 2007, there were fewer than 1.6 million registered MSMEs and 26 million unregistered MSMEs, that is, about 17 unregistered MSMEs for every registered one (Kushnir et al., 2010). In Chile (725,000 registered MSMEs in 2006 and 1.5

million unregistered MSMEs in 2008) and Bangladesh (3 million registered MSMEs and 6 million unregistered MSMEs in 2003), the ratio is about 2. Due to data availability issues, unless explicitly stated otherwise, this report will focus on formally registered firms.

Table A.2 displays the distribution of micro firms (upper panel) and of small and medium-sized firms (lower panel) by country group across four sectors: manufacturing, trade (wholesale and retail), services and agriculture/other. Two major patterns emerge. First, across the 34 countries for which data are available, most MSMEs (85 per cent of micro firms and 72 per cent of SMEs) operate in the trade and services sectors. Eleven per cent of micro firms and 20 per cent of SMEs are in manufacturing; five per cent of micro firms and eight per cent of SMEs are in agriculture/other. SMEs are, therefore, over-represented in labour-intensive sectors characterized by a combination of relatively low entry barriers and relatively low fixed costs of production.

Second, developing countries have larger shares of micro firms and SMEs in agriculture/other sectors. This could be due to higher labour-intensity of agriculture in developing countries (especially in LDCs) as opposed to developed countries, coupled with the fact that small firms tend to be more labour-intensive than large firms, even within the same sector (Cabral and Mata, 2003; Yang and Chen, 2009).⁸

Table A.2: Sectoral distribution of MSMEs (%)				
	Manufacturing	Trade	Services	Agriculture/other
Share of micro enterprises				
Developed	8.0	35.0	56.0	1.0
Developing	11.5	44.3	38.9	5.3
G20 developing	14.0	33.0	40.0	14.0
Other developing	10.0	46.0	40.0	3.0
LDCs	15.0	45.0	31.0	9.0
Total	11.0	43.0	42.0	5.0
Share of small and medium-sized enterprises				
Developed	22.0	25.0	52.0	1.0
Developing	19.9	30.6	41.0	8.5
G20 developing	21.0	31.0	44.0	3.0
Other developing	18.0	32.0	41.0	8.0
LDCs	24.0	23.0	37.0	16.0
Total	20.0	30.0	42.0	8.0

Note: Country groups defined in Appendix Table B.1 of WTO (2014).

Source: IFC’s MSME Country Indicators.

(b) The contribution of SMEs to employment

In the majority of countries, SMEs account for a significant proportion of employment. Ayyagari et al. (2011) use the World Bank Enterprise Surveys⁹ to analyse the contribution of SMEs (defined as enterprises with at least five and at most 250 employees, therefore excluding most micro enterprises) to employment in the formal non-agricultural private economy. In their dataset of 99 emerging and developing countries (one wave per country, with years varying between 1996 and 2010), the median share of employment of the SME size class is 67 per cent. This means that in a majority of the 99 countries, SMEs account for more than two-thirds of formal non-agricultural private employment (see de Kok et al., 2013). Similar, although not strictly comparable, evidence has been found for developed countries. Using a sample of 17 OECD countries¹⁰ plus Brazil that includes micro enterprises, Criscuolo et al. (2014) find that MSMEs account for 63 per cent of total employment. The remaining 37 per cent is accounted for by large enterprises.

To date, there is no comprehensive study on the employment contribution of micro enterprises, especially informal ones, in developing countries. The World Bank (2012) reports that it is the micro and small enterprises subgroup that accounts for the largest share of employment in MSMEs, even in middle-income countries. Moreover, their share is often underestimated because available data rarely cover the informal segment of the economy, where businesses are especially small. Using survey data from 13 Sub-Saharan African countries, Fox and Sohnesen (2012) show that – after the agricultural sector, which accounts for close to 70 per cent of total primary employment – non-agricultural informal enterprises are the second-largest provider, with a share of 15 per cent. Formal enterprises in the non-agricultural private sector (SMEs as well as large enterprises) account for 9 per cent and public enterprises for 4 per cent of total primary employment.

Beyond their share in total employment, an important question is how, and how much, SMEs contribute to employment growth. The focus is on net job creation¹¹ because, if on the one hand new firms are born small,¹² and therefore jobs in new firms are overwhelmingly in SMEs, on the other hand the probability of exiting the market is higher for newly established firms (Haltiwanger et al., 2013). The evidence is mixed in this regard. Using World Bank Enterprise Survey data for 104 (mostly developing, a few high-income) countries, Ayyagari et al. (2014) show that more than 50 per cent of total net employment creation can be attributed to the smallest size classes of firms, i.e. enterprises with 5 to 99 employees. Data from the European Union analysed by de Kok et al. (2011) show that 85 per cent

of net employment creation is attributable to SMEs with between one and 250 employees.¹³

For the United States, Neumark et al. (2011), using data encompassing firms in the private sector from 1992 to 2004, find an inverse relationship between net growth rates and firm size. Their analysis also indicates that small firms contribute disproportionately to net job growth, contrary to Gibrat's Law.¹⁴ Haltiwanger et al. (2013), however, show that once firm age is controlled for, there is no systematic inverse relationship between net employment growth rates and firm size. What contributes most to both gross and net job creation is the birth of new firms, which, as explained above, tend to be SMEs. They therefore argue that any systematic inverse relationship between firm size and net employment growth rates is entirely attributable to most new firms being classified in small size classes. Similar results emerge in Rijkers et al. (2014), who analyse job creation in Tunisia over the period 1996–2010. In particular, the authors find a strongly negative correlation between firm age and growth, with young firms growing the fastest and contributing the most to net job creation, in spite of their higher exit rates. Accordingly, post-entry it is large firms, not SMEs, that contribute most to job creation (Rijkers et al., 2014).

Beyond size and age, other firm characteristics that have been found to correlate significantly (and positively) with employment growth are: i) a firm's export orientation, as well as the export's orientation of the sector in which the firm operates (see also Section C on this point); ii) product and process innovation; iii) capital intensity; iv) the level of skilled labour; v) foreign ownership; and vi) the age of the owner of the firm (de Kok et al., 2013, Table 4).¹⁵ Several characteristics of the business environment in which they operate also affect SMEs employment growth rates. In particular, access to finance, the quality of infrastructure (reliability of the power network) and the simplicity of business regulations positively affect employment growth rates firm (de Kok et al., 2013, Table 4).

A number of recent papers (Haltiwanger et al., 2010; Hurst and Pugsley, 2011; Mazzucato, 2013) suggest that successful start-ups and high-growth firms (HGFs) should be the focus of the job creation discussion. HGFs are defined as firms with at least 10 employees in the start year (not necessarily SMEs, but very likely so) and annualized employment growth exceeding 20 per cent over a three-year period (Eurostat and OECD, 2007). Daunfeldt et al. (2013) show that the 6 per cent of fastest-growing firms in the Swedish economy contributed to 42 per cent of the jobs created in Sweden between 2005 and 2008. According to the ILO (2015), HGFs are responsible for the creation of a quarter of all new jobs among SMEs in developing economies.

(i) *The quality and inclusiveness of employment in SMEs*

There is a perception that job quality is lower in several respects for employees of SMEs as compared with employees of larger firms. First, it is often claimed that SMEs pay lower wages than larger firms. For developing countries, the empirical evidence is quite limited in this respect. For 24 Sub-Saharan African countries, La Porta and Shleifer (2014) fail to find a clear correlation between size and wages.¹⁶ Conversely, Falco et al. (2011) find that, in the urban labour markets in Ghana and in Tanzania, there exists a firm-size wage gap. In other words, it is the size of the firm that determines the level of earnings of a worker, with earnings rising with firm size for workers with similar characteristics. Importantly, this result holds both for workers in the formal and in the informal sector.

In the case of developed countries, there is stronger evidence that employees in SMEs tend to receive lower wages than employees in large enterprises.¹⁷ As explained by de Kok et al. (2011), the factors explaining this firm size wage premium are: large firms' higher labour productivity; their larger financial resources; their lower monitoring ability (which increases efficiency wages); and the higher incidence of family ownership, which is seldom associated with performance-related pay systems, in smaller firms. However, the relationship between wages and firm size is non-linear within the class of MSMEs, with micro enterprises paying on average higher wages than small firms (see Butani et al., 2006 for the United States; de Kok et al., 2011 for the European Union).

A second important aspect of job quality in SMEs concerns job stability. Empirical evidence shows that MSME employees (especially those working in micro firms) have less stable and secure jobs compared to employees in larger enterprises. Third, in developed and developing countries alike, SMEs are less likely to offer training to their workers than larger firms.¹⁸

Finally, there is evidence that female entrepreneurship is skewed towards SMEs. For developing countries, the IFC (2011) estimates that there are 8 to 10 million formal SMEs owned by women, which represents 31 to 38 per cent of all formal SMEs in emerging markets. This implies that MSMEs can be vehicles of income generation and social inclusion for women. Female entrepreneurship, however, is concentrated in micro firms. A third of very small enterprises, and only 20 per cent of medium-sized enterprises, are owned by women (IFC, 2011). Since, as argued above, there is a negative correlation between firm size and the probability that the firm operates in the informal sector, it could be expected that female entrepreneurs are more likely to

operate in the informal economy. The evidence in this regard is scant. World Bank estimates reported by the ILO (2015) show that globally more than 30 per cent of women in the non-agricultural workforce are engaged in self-employment in the informal economy. This figure can be as high as 63 per cent in African economies.

(c) *The contribution of SMEs to GDP and economic growth*

The available data do not provide a full picture of the contribution of SMEs to GDP. The most comprehensive study to date is Ayyagari et al. (2007). They use a sample of 76 countries (33 developed, 43 developing), with data averaged over the 1990-99 period. Their sample only includes formal SMEs, mostly in the manufacturing sector, and excludes micro enterprises. The median GDP contribution of SMEs in Ayyagari et al. (2007) is 45 per cent (49 per cent in developed countries, 35 per cent in developing countries). Very similar descriptive statistics are obtained with a completely different dataset combining information from the following sources: ACCA (2010), the Economist Intelligence Unit (EIU) (2010), the Asian Development Bank (ADB) (2013), the Edinburgh Group (2013) and the European Commission (2013). In the resulting sample of 33 countries (10 developed, 23 developing), the median GDP contribution of SMEs is equal to 45 per cent (55 per cent in developed countries, 35 per cent in developing countries).

Two important caveats apply to the interpretation of these data. First, as highlighted above, the contribution of micro enterprises (both formal and informal) to GDP is not included. Second the contribution of SMEs operating in the informal sector is not accounted for. Ayyagari et al. (2007) also collect data on the share of the informal sector in GDP for 55 countries (29 developed, 26 developing). The median share of the informal sector in GDP is equal to 20 per cent (14 per cent in developed countries, 34 per cent in developing countries). If, in a given country, SMEs account for x per cent of the informal sector, the contribution of SMEs to overall (formal plus informal) GDP, relative to the contribution to formal GDP, will raise by x times the share of the informal sector in GDP.

Even with these caveats in mind, it can be noted that the median GDP contribution of SMEs, roughly equal to 45 per cent, is lower than their median share of employment, which, as argued above, is roughly equal to two-thirds. At least part of the explanation for this has to do with the fact that SMEs are, on average, less productive than large firms (Maksimovic and Phillips, 2002; Banerjee and Duflo, 2005; Bartelsman et al., 2013). Baldwin et al. (2002) provide the illustration of Canadian manufacturing plants. They show that output per employee in plants with 100 or fewer employees

makes up 62 per cent of the industry average, while output per employee in plants with more than 500 employees makes up 165 per cent of the industry average. Table A.3 displays total factor productivity (TFP) differentials between firms of different sizes in developing countries.¹⁹ There is a clear gap between productivity in large firms and SMEs (firms with at least five and at most 250 employees). As shown in Appendix Table A.1, this descriptive evidence is further confirmed by econometric analysis.

The lower productivity of SMEs is often attributed to their inability to take advantage of economies of scale, the difficulties they face in getting access to credit or investment, the lack of resources in terms of skilled labour, and the informality of their contracts with clients and suppliers (Alvarez and Crespi, 2003). Conversely, large firms are more efficient in production because they can use more specialized inputs (including through outsourcing), coordinate their resources better, invest more in machinery and skilled workers and enjoy the advantages of economies of scale (Alvarez and Crespi, 2003; ILO, 2015). In developing countries, the presence of a large informal sector populated by micro enterprises exacerbates the productivity differential across firms of different sizes. For 24 Sub-Saharan African countries, La Porta and Shleifer (2014) report a productivity gap of 120 per cent on average between unregistered firms and registered SMEs. This gap is still equal to 80 per cent when the comparison is between unregistered firms and registered firms in the micro sample (which includes 62 per cent of firms with fewer than five employees).

Innovation is the main way in which firms can increase their productivity (see Love and Roper, 2015; Zanella et al., 2015). In principle, SMEs enjoy flatter organizational structures and faster communication channels than large firms. These can be an advantage with respect to innovation when it comes to quickly responding to changes in customer needs and in the business environment (Rogers, 2004). However, given the fixed

costs associated with research and development (R&D), innovation based on R&D is only profitable if the results can be applied to sufficiently large production. Large firms, exploiting economies of scale, can more easily pay for such fixed costs than small firms. Moreover, small firms often lack the external financing sources for R&D investment and purchase of advanced technology. Therefore, in the vast majority of cases, SME innovation tends not to be based on R&D (Edler et al., 2003) and consists of minor adaptations to existing products, innovation in designs, modes of delivering services or management and marketing practices (Fernandez-Ribas, 2010). Overall, the literature shows that large firms exhibit, on average, faster innovation rates than small firms.²⁰

There is abundant evidence of the positive impact of innovation for SMEs that engage in it in developed countries. Engel et al. (2004) find a positive effect of innovation on sales growth for small firms in craft-dominated sectors of the German economy. Lumiste et al. (2004) find that innovation helped Estonian SMEs improve their performance in terms of market share and diversified range of goods and services. Coad and Rao (2008) show that innovation is of crucial importance for a handful of fast-growth firms in high tech sectors in the United States.²¹ The evidence for developing countries is more limited, but qualitatively similar. In a survey of 79 Indian SMEs, NKC (2007) reports that innovation in terms of new products, new processes and new services accounts for more than half of the increase in market share, competitiveness, profitability and reduction in costs. Donner and Escobari (2010) review 14 studies on the use of mobile telephony by micro and small enterprises in the developing world (mostly African economies and India). These studies generally point to significant benefits of mobile use, accruing mostly (but not exclusively) to existing rather than new firms.²²

Involvement in clusters of economic activity can allow SMEs to increase their productivity through knowledge spillovers. Romer (1986), Lucas (1988; 1993) and Grossman and Helpman (1991) have established that

Table A.3: Statistics on firm-level total factor productivity (TFP) in developing countries

	Large firms (+250 employees)		SMEs (<250 employees)	
	Average TFP	Observations	Average TFP	Observations
Developing	1.04	2,706	-0.12	21,455
G20 developing	1.06	1,226	-0.12	9,631
Other developing	1.03	1,123	-0.12	8,873
LDCs	1.03	357	-0.11	2,951

Notes: TFP is computed as the residuals of a firm-level regression of log(sales) on capital input, labour input and country-sector fixed effects from the World Bank Enterprise Surveys (last available survey per country).

Sources: World Bank Enterprise Surveys (last available survey per country), own calculations.

knowledge spillovers are an important mechanism underlying economic growth. Geographical proximity through clusters matters in transmitting knowledge by reducing the cost and commercialization of innovation (Autant-Bernard, 2001a; Autant-Bernard, 2001b; Orlando, 2000). Clusters may also enhance the productivity of a firm through its proximity to other firms that innovate (including through adopting Internet, as shown by Paunov and Rollo, 2016). While a number of studies have found that clusters enhance the probability of entry, survival, and growth of new firms (Beaudry and Swann, 2001; Dumais et al., 2002; Rosenthal and Strange, 2005; Pe'er and Vertinsky, 2006), other studies indicate that location in a cluster decreases the survival chances of new firms through hyper-competition for resources and personnel among firms (Beaudry and Swann, 2001; Sorenson and Audia, 2000; Folta et al., 2006).

As it will be argued further in Section C, involvement in value chains is another way for SMEs to increase their productivity. First, division of production based on comparative advantage can improve technical efficiency (Yang and Chen, 2009). Second, knowledge spillovers travel through global value chains (GVCs) (Piermartini and Rubínová, 2014). In developing countries, for instance, large exporting firms are typically the primary mechanisms from which technologies are transmitted from abroad to local industries. Outsourcing represents an important path to knowledge transfer and the acquisition of foreign technologies.

Finally, the contribution of SMEs to industry dynamics (the process of entry and exit) can have positive aggregate effects on productivity, through the impact on innovation by incumbents. It was argued above that newly established firms are born small and that they are the most likely to exit the market. The entrants that manage to survive demonstrate productivity growth rates that are usually higher than those of incumbents. This is because they tend to adopt the newest technologies (Leung et al., 2008). Incumbents are therefore stimulated to improve their productivity in order to preserve their market shares. This should contribute to aggregate productivity growth for the economy (Luttmer, 2007).

2. SME participation in trade: opportunities and challenges

The objective of this subsection is to explain what the *World Trade Report 2016* is about, why it is timely and how it contributes to the SME debate. The subsection is in three parts. The first argues that, despite the emergence of new opportunities for SMEs to connect to world markets, SME participation in trade remains

relatively limited. The second lists the main benefits of SME participation in trade. The third focuses on the challenges faced by SMEs in connecting to world markets and explains how trade policy-related costs impede SME participation in trade and how international cooperation can help the most efficient SMEs to harness the trade engine and benefit from the new opportunities offered by e-commerce and GVCs.

(a) New opportunities for SMEs to connect to world markets

E-commerce and more generally ICT-enabled services offer new opportunities to access international markets and help circumvent obstacles to trade. In recent years, digital technology and the Internet have provided many more avenues for SMEs to reach customers in both domestic and global markets. As will be shown in Section D, the benefits from the ICT revolution are particularly high for SMEs. First, access to telecommunications infrastructure is essential to reduce information and distribution costs, foster trade, improve market efficiency and keep pace with a changing business landscape. Recent research looking at exports of goods traded through eBay shows that e-commerce reduces the costs associated with physical distance between sellers and consumers by providing both confidence and information at a very low cost (Lendle et al., 2016). Online search costs are not necessarily correlated with how remote markets are and online technology increases importer trust in exporters (e.g. through seller-rating mechanisms). Second, through online platforms, smaller and less productive businesses can connect with distant customers. Indeed, and as noted by Lendle and Olarreaga (2014), firms that conduct business on eBay are smaller on average than traditional offline firms. These authors also find that e-commerce offers growth opportunities to SMEs which appear significant for developing countries.

The Internet is creating new opportunities for SMEs to engage in international trade, yet enterprise size is still a strong determinant of the use of e-commerce, with SMEs in most countries lagging behind their larger counterparts in online buying and selling (ITC, 2015c; UNCTAD, 2015). The Internet is sometimes portrayed as a global market place that knows no borders, where entrepreneurs can find customers globally. This, however, does not represent the whole story. Capturing a global niche market remains challenging. Some of the frictions that occur offline persist online as well. SMEs tend to find it harder than large firms to keep up with technological change, notably because they employ fewer technical specialists and because of the financial resources needed to continually upgrade technology. Micro and small enterprises face various

barriers to the adoption of e-commerce, such as lack of skills in identifying their e-commerce needs, the potential benefits they can draw from e-commerce, and how to engage in it (Sandberg and Hakansson, 2014). UNCTAD (2015) shows that small businesses still face barriers when attempting to leverage international e-commerce platforms and solutions. In LDCs, simple information and communications technology (ICT) solutions, such as access to the Internet or the creation of a business website, often represent a significant challenge for SMEs.

The ICT revolution has not only allowed for the development of e-commerce. Together with the lowering of trade barriers, it has also changed production and trade more deeply, leading to the rise of international production networks and to trade in GVCs – the exchange of intermediate goods and services along the vertical production chain. The emergence of GVCs also holds the potential to facilitate the internationalization of SMEs. GVCs allow companies to specialize in a small part of the supply chain, giving SMEs more opportunities to engage in international trade (Lim and Kimura, 2010; Arudchelvan and Wignaraja, 2015). While SMEs find it difficult to compete in an entire chain of activities, they can more readily integrate in GVCs by performing tasks in which they have a comparative advantage. Through GVCs, SMEs can overcome knowledge gaps, find customers and reduce the uncertainties and risks associated with operating in foreign markets (Terjesen et al., 2008). An SME that operates in a GVC may find it easier to access information on foreign markets or to locate customers abroad. For firms in developing countries, inclusion in a GVC not only provides new markets for their products, but also plays a growing and crucial role in access to knowledge and enhanced learning and innovation (Pietrobelli and Rabellotti, 2011). For small firms in LDCs, participation in value chains is a critical means of obtaining information about the type and quality of products and technologies required by global markets and of gaining access to those markets.

Despite the new opportunities to trade created by the ICT revolution, available evidence does not yet show clear signs of an increase in SME participation. This may in part be due to the fact that SME participation in trade – and, in particular, indirect forms of trade in the context of GVCs – is neither well documented nor well understood. As discussed in Section B, measuring SME – or, even more so, MSME – participation in trade and comparing it across countries raises serious difficulties. First, there is no consistent definition of MSMEs or SMEs. Second, there is a general lack of internationally comparable data. And, third, SME participation in trade through GVCs has not been adequately measured. Evidence based on traditional trade statistics, which

suggests that trade and GVCs mostly involve large firms, underestimates the participation in GVCs of smaller firms, which often supply intermediates to exporting firms in their country and are thus indirectly integrated into GVCs.

Subject to this caveat, available evidence suggests that in all economies – developing or developed – the participation of SMEs in international trade is low compared to that of large firms and to their share of employment. In developing economies, the direct participation of SMEs in international trade is far from commensurate with their importance at the domestic level. According to WTO estimates based on World Bank data, in developing countries, SMEs' direct exports represent on average just 7.6 per cent of total manufacturing sales, compared to 14.1 per cent for large manufacturing firms. As regards indirect SME participation in trade, data on SME trade taking place in GVCs is scarce. Estimates suggest that manufacturing SMEs in developing economies are not actively engaged in GVCs. SMEs' indirect exports in the manufacturing sector are estimated at only 2.4 per cent of total sales. Overall, in developing economies, the participation of SMEs in manufacturing exports – direct and indirect – is estimated at only 10 per cent of total sales compared to some 27 per cent in larger firms. In services, SMEs' share of indirect exports is estimated to be somewhat higher than that of direct exports, but overall SME participation in services exports (direct and indirect) remains marginal, at less than 4 per cent of total services sales. In developed economies, too, the share of SMEs in exports is relatively small. Direct exports of SMEs typically account for less than half the value of total exports. As for indirect exports, no general conclusion can be drawn from available evidence.

Along the same lines, the little evidence available on SME participation in trade through e-commerce does not show a clear picture. Data confirm that e-commerce is offering SMEs new opportunities to export and that it could potentially revolutionize SME participation. It does not, however, allow for any quantification of the effect that e-commerce has already had on SME export activities.

(b) Benefits from connecting to world markets

The relatively limited participation of SMEs in trade has attracted the attention of policy-makers because SMEs are seen as holding growth and employment potential and participation in trade is envisaged as one of the keys that could help unlock the potential of SMEs. Indeed, trading – directly or indirectly – is associated with higher productivity, higher wages and more innovation.²³

The main reason for the positive correlation between productivity and participation in trade, however, is that only the more productive firms can export. This is because exporting firms have to bear extra costs due to, among other factors, market research, adaptation of products to local regulations, or transport costs, which only the more productive firms can afford to pay. An important implication of the fact that higher productivity is more a determinant than a consequence of participation in trade is that there is no reason to expect the participation of SMEs to reach the same level as that of larger firms. As mentioned previously, SMEs are on average less productive than large firms, which explains their lower level of participation and, in any case, many of them are local by nature.

At the same time, though, there are good reasons to believe that exporting can improve firm productivity and growth. Engaging in international trade can certainly enhance firm performance and help SMEs through a number of mechanisms. Export participation enlarges the size of a firm's market, allowing it to exploit economies of scale, to absorb excess production capacity or output. It exposes firms to international best practices, promotes their learning, stimulates technology upgrading, or encourages the development of different or higher quality products (Baldwin and Gu, 2003). SME participation in GVCs can offer similar benefits (Avendano et al., 2013).

More specifically, economies of scale seem to be significant in explaining the productivity gap between exporters and non-exporters. Access to a larger market allows firms to sell more of their products and to spread the fixed cost of production over a larger number of units. In developing countries in particular, constraints in conducting business, such as credit constraints and contract enforcement problems, prevent firms that only produce for the domestic market from fully exploiting scale economies (Van Biesebroeck, 2005).

Innovation and exporting go hand in hand and together they can promote SME growth. Evidence suggests that SMEs that are familiar with innovation prior to internationalization are more likely to export, more likely to export successfully, and more likely to generate growth from exporting than non-innovating firms (see Section C). One study on Spanish firms captures a number of these factors and examines the complementarity between innovation and exporting as drivers of SMEs growth. The evidence provides strong support for the reinforcing impacts of innovation and exporting on SME growth and the potential for a "virtuous circle" in which innovation drives exports, and the external knowledge gained from export markets drives further innovation and growth (Golovko and Valentini, 2011). Along the same lines, it has been

shown that the reallocation of market share towards exporters following trade liberalization in partner countries can create an incentive for firms to adopt the latest technology in order to stay competitive (Bustos, 2011).

Although the evidence of learning-by-exporting is not large, the results of recent studies on African firms are consistent with this hypothesis. Atkin et al. (2014), focusing on rug producers in Egypt and adopting a careful empirical strategy to isolate causal effects, find evidence that exporting improves technical efficiency, with positive effects on profits and productivity. Using data on manufacturing firms in four African countries (Cameroon, Ghana, Kenya and Zimbabwe) over the period 1992-1995, Bigsten et al. (2004) show that, consistent with the learning-by-exporting mechanism, exporting impacts positively on productivity and argue that, in their sample, there is little direct evidence for self-selection hypothesis. Finally, in a panel of manufacturing firms in nine African countries,²⁴ Van Biesebroeck (2005) finds evidence consistent with both self-selection and learning-by-exporting. Exporters have higher productivity levels before entry, but also exhibit higher post-entry rates of productivity growth. In particular, exporting is found to raise productivity by between 25 per cent and 28 per cent.

The quality of SME products can also benefit from involvement in international trade. This effect can be driven by consumer preferences for higher quality when exporting to high-income countries. Goods are differentiated in quality, and consumers differ in income and hence in willingness to pay for product quality across countries, meaning that an exporting firm from a given poor country may produce higher-quality goods for export than for the domestic market. Indeed the literature has identified a positive relationship between quality and per capita income of trading partners (Hallak, 2010; Verhoogen, 2004; Kugler and Verhoogen, 2008).

Access to foreign intermediate inputs can also increase firms' efficiency, as it allows them to use more diverse and higher quality inputs (Bas and Strauss-Kahn, 2014). If importing increases productivity, it might help firms bear the entry cost of entering export markets and lead them to start exporting, and help them export more varieties and more generally improve their success in export markets (Kasahara and Lapham, 2006; Bas and Strauss-Kahn, 2014).

There is also empirical evidence of a positive correlation between imports and productivity, documented by a significant productivity differential between firms that import and firms that do not trade internationally (Vogel and Wagner, 2010). Another study using firm-level

data on Chile (Kasahara and Rodrigue, 2008) finds that switching from being a non-importer to being an importer of foreign intermediates can improve a firm's productivity by between 3.4 and 22.5 per cent. Further evidence shows that internationalization favours the import of higher quality intermediates, allowing SMEs to raise their productivity via learning, variety and quality effects (Amiti and Konings, 2007) or to upgrade the quality of their exports (Bas and Strauss-Kahn, 2012). The positive effect of sourcing imports of intermediate products abroad contributes to explaining the observation that two-way traders are the most productive firms on average (Castellani et al., 2010; Halpern et al., 2005; Muûls and Pisu, 2009).

The analysis performed for this report shows that exporting firms have a higher propensity to use foreign inputs. The hypothesis that exporters source more imports was tested using the Enterprise Survey dataset from the World Bank, which covers over 75,000 firms in 80 countries. The analysis examined whether exporting SMEs use imported intermediate goods and if so, whether their usage of inputs differs from that of other firms. The results suggest that being an exporter is positively and significantly associated with imports for all firm sizes. Indeed exporting firms use 14 per cent more foreign inputs than non-exporting ones on average, and exporting SMEs use 12 per cent more foreign inputs than non-exporting SMEs. This interaction between importing and exporting is interesting in relation to GVCs in the sense that integration into the global economy through both imports and exports can be seen as a feature of participation in GVCs. From this perspective, the results suggest that participation in GVCs might help SMEs increase their productivity compared to non-exporting SMEs but also to exporting firms, large and small, that do not take advantage of foreign inputs.

Beyond the efficiency benefits on the supply side that have been discussed so far, there are also a number of other benefits from SME participation in trade. Consumers, for example, may benefit from increased SME participation in trade due to the wider variety of available goods. In addition, SME production has more scope for artisanship and custom-made production. Sophisticated consumers are expected increasingly to prefer products tailored to their specific needs and made by small artisan companies, rather than mass-produced goods.

Last but not least, there is a strong belief that improving the performance of SMEs will improve the distribution of income. As reflected in the United Nation's Sustainable Development Goals (SDGs) and their targets (in particular targets 8.3 and 9.3), for example, the formalization and growth of SMEs are to be encouraged, as they are expected to play a key

role in "promoting sustained, inclusive and sustainable growth, full and productive employment and decent work for all" (Goal 8).

The question of whether SMEs play a major role in the creation of new jobs and the reduction of poverty in developing and emerging economies has not yet received a final answer (see subsection A.1 and de Kok et al., 2013). Moreover, even if it were clear that SMEs play a major role in job creation and poverty reduction, the question as to how their growth should be encouraged would arise. As discussed in Section E, the case for policy intervention in support of SMEs is predicated on the view that certain market failures, such as for example credit market imperfections, affect SMEs more adversely than others, and require public intervention, which means that policy interventions should be targeted at addressing those market failures. Therefore, actively promoting SME participation in trade may not be the most direct way to reduce poverty.

Nevertheless, eliminating the obstacles that prevent productive SMEs from participating in trade should allow more SMEs to start trading. Once they start trading, firms can enter a virtuous circle in which trade raises productivity and facilitates growth, which in turn increases the benefits from trade. If direct participation in trade is beyond the reach of many developing country firms, indirect participation in the form of integration in a value chain may be an option. In many developing countries, the domestic production sector has become increasingly "dual", with little interaction between, on the one hand, a limited number of internationally competitive companies and, on the other hand, a large number of SMEs that produce for the domestic market and face profound challenges to competition. Reinforcing the linkages between the SME sector and the large exporting firms would allow the benefits of being connected to world markets to be spread to a larger part of the economy.

An increase in SME participation in trade may promote formalization and create better paid jobs. For those SMEs that can connect to international markets, trade means enhanced productivity and growth, which in turn means higher wages. It may also mean higher quality jobs. As argued above, in many developing countries, three-quarters or more of workers are employed in MSMEs, and a large majority of those MSMEs are informal. Low levels of productivity and informality often coexist with poor working conditions. In many countries, the most significant determinant of access to social security for SME workers is whether they are employed in the formal or the informal economy. At the same time, informal jobs are often the last resort in the absence of social safety nets. SMEs that connect to international markets and grow are more likely to formalize.

Participation in a GVC does not automatically translate into improved working conditions and higher quality jobs. However, the new social and environmental requirements of consumers, governments, international organizations and non-governmental organizations on firms outsourcing their activities have led a growing number of multinational corporations to adopt voluntary codes of conduct and programmes for sustainable supply chain management. These codes of conduct and programmes regulate supplier performance in areas such as health and safety, labour rights, human rights and anti-corruption practices or pollution (Lennson et al., 2006).

It is also worth noting that, as mentioned earlier in this section, many SMEs are owned and operated by women, and the internationalization of those SMEs would multiply some of the above-mentioned benefits even further. Encouraging female entrepreneurship is key to tackling inequalities and poverty. Some of the benefits entailed by SME participation in trade could be magnified where SMEs are owned by women. For instance, it has been shown in a number of studies that jobs that bring more household resources under women's control lead to greater investments in health and education (see, among others, Korinek, 2005).

To conclude this subsection, an important note of caution is in order. If higher participation in trade is achieved through a reduction of trade costs, standard trade models (Melitz, 2003) predict that this may not only open new opportunities for the most productive SMEs, but may also increase import competition and put pressure on the least efficient SMEs. In other words, provided that adjustment costs are not too high, a reduction of trade costs would at the same time improve efficiency and improve distribution – replacing low-quality, low-paid jobs with more formal and higher-wage jobs. This is not only a theoretical possibility. It has been shown for example that agricultural productivity is enhanced when developing countries are integrated into GVCs, with a positive effect on reducing poverty (Maertens et al., 2011).

(c) Challenges faced by SMEs in connecting to world markets

Given the relatively weak participation of SMEs in trade despite the emergence of new opportunities, and the benefits that can be expected from the connection of SMEs to world markets, the question of the determinants of their internationalization arises. This report aims to contribute to a better understanding of the determinants of SME internationalization and in particular of the role played by international trade rules in this context. Because there are many ways for firms to internationalize and many factors that affect this

process, however, the report focuses on trade policy-related factors that affect SMEs' direct or indirect participation in trade.

Multiple factors determine a firm's participation in trade or GVCs, but the firm's productivity is the key to a successful connection to world markets. The determinants of SME participation in trade or GVCs may be either internal or external to the firm. Among the main internal factors that affect the level of productivity and that facilitate participation in trade or GVCs are formality, managerial skills and workforce capacity, and the capability to adopt new technologies and to innovate (OECD and World Bank, 2015). While it is important to keep in mind that productivity is the key to participation in trade and that it depends on multiple factors, a full-fledged discussion of the factors explaining SME productivity and of productivity-enhancing policies falls beyond the scope of this report.

External factors that determine the participation of SMEs in trade and GVCs range from trade policy – tariffs and non-tariff measures – to access to finance and ICT networks, and they include a variety of trade costs. Relatively little is known about how trade policy or other trade costs affect the participation of SMEs in trade and GVCs. This report reviews available evidence on these effects and discusses the opportunities and challenges associated with e-commerce and GVCs. It sheds some light not only on the various obstacles to SME participation, but also on why and how they affect SMEs more than larger firms. What seems to be clear is that trade policy and, more generally, trade costs tend to affect small firms more than the larger ones. This is obviously the case with costs that do not depend on the size of shipments – the so-called “fixed” costs – such as the cost of identifying a foreign partner or of certifying a product. More surprisingly, however, the report suggests that this is also the case with certain variable costs such as transport or logistics costs, or even with tariffs.

From a WTO perspective, an important question is how international trade rules and cooperation affect government policies that determine SME participation. As mentioned above, most trade and trade-related policies – tariffs and non-tariff measures – may affect SME participation, even if it is not their primary purpose. At the same time, however, governments also pursue “SME policies” which typically aim at improving the efficiency of SMEs or at addressing distribution issues, for instance by levelling the playing field for smaller versus larger firms. Trade agreements impose disciplines on governments' trade and trade-related policies, and they may also affect SME policies. The report examines how regional trade agreement (RTA) provisions and the multilateral trading system

affect trade costs through their effect on policies and, ultimately, whether these make it easier or more difficult for SMEs to participate in trade.

While the report also provides an inventory of flexibilities afforded to governments to pursue SME policies, its focus is on how trade agreements affect trade costs that penalize SMEs disproportionately. It shows that, while multilateral rules rarely mention SMEs explicitly, they may *de facto* affect the trade costs they face. It also shows that explicit references to SMEs have only become more frequent in RTAs in recent times. The report also describes the programmes, aimed at encouraging SME participation in trade, in which most international organizations active in the trade area are engaged.

3. Structure of the report

Section B of this report examines all available evidence on the various forms of SME participation in trade and how it has evolved in recent years, exploring in particular how it has been affected by new technologies (in particular ICT) and the development of GVCs. It provides an inventory of the main sources of information on SME participation in trade and a comprehensive characterization of this participation and its evolution over recent years. The inventory reveals important information gaps, in particular regarding participation in GVCs, while available evidence suggests that, overall, the share of SMEs in exports is relatively low.

Section C next considers how, when and why SMEs decide to export or to internationalize and how this affects their productivity and growth. It provides a comprehensive review of the economic literature on the determinants and consequences of SME participation in trade. It shows that only the more productive firms participate in trade but that, at the same time, participation in trade has a number of positive effects.

Section D explores the various obstacles that continue to impede the participation of SMEs in international trade, and in particular those which prevent SMEs

from seizing the new opportunities offered by the development of e-commerce and GVCs. This inventory and the analysis of trade policy-related determinants of SME participation suggest that trade costs are generally higher for SMEs than for larger firms. They nevertheless show that access to information about foreign distribution networks, border regulations and standards are among the main obstacles to SME participation in exports. More specifically, the main issues SMEs face with regard to web sales relate to: (i) the logistics of shipping a good or delivering a service; (ii) ICT security and data protection; and (iii) payments. On the other hand, the major challenges SMEs face in joining production networks are: (i) logistic and infrastructure costs; (ii) regulatory uncertainty; and (iii) access to skilled labour.

Finally, Section E examines how regional and multilateral trade disciplines and initiatives and international organizations affect policy-related obstacles to SME participation in trade. A systematic analysis of all provisions, including explicit references to SMEs in all RTAs notified to the WTO, shows that such provisions have been incorporated into an increasing number of RTAs; that the number of detailed SME provisions included in a given RTA has increased in recent years; and that the most frequent SME provisions are those which encourage cooperation between governments with regard to SMEs on the one hand, and which provide flexibilities for governments to pursue SME-friendly policies on the other. This analysis also shows that, although SMEs are not always specifically mentioned in WTO agreements, multilateral rules have *de facto* the effect of reducing trade costs that hinder SMEs from entering foreign markets. Other findings are that the rules provide flexibility for national governments to take measures to remedy market failures that prevent SMEs from participating in international trade, and that the WTO's work in the area of capacity-building, which tries to expand trading opportunities of its developing country members, includes significant components relevant to the internationalization of SMEs.

Endnotes

1 Section B of this report uses two different datasets to establish stylized facts about participation in international trade for firms in developed and in developing countries, respectively. While the OECD Trade by Enterprise Characteristics (TEC) database – used for developed countries – includes micro firms (classified as having between zero and nine employees), the World Bank Group

Enterprise Surveys – used for developing countries – exclude micro enterprises (classified as having between zero and four employees). Nevertheless, firms with at least five employees are included in the World Bank Group Enterprise Surveys. That is, not all “micro” firms are excluded, if one defines “micro” using the TEC definition.

- 2 For instance, in the definition used in the European Union, there are employment thresholds (less than ten employees for micro firms, between ten and 50 for small firms, and between 50 and 250 for medium-sized firms) and turnover/balance sheet thresholds (a turnover or balance sheet of less than € 2 million for micro firms, a turnover or balance sheet of between € 2 and € 10 million for small firms, and a turnover of between € 10 and € 50 million, or a balance sheet of between € 10 and € 43 million, for medium-sized firms). See Table 1 in European Commission (2013).
- 3 The size bin up to ten employees for the definition of "micro" enterprises is used in 80 of the 121 countries for which this information is available. The size bin between ten and 50 employees for the definition of "small" enterprises is used in 63 countries. Finally, the size bin between 50 and 250 employees for the definition of "medium-sized" enterprises is used in 38 countries. In 27 other countries, the upper threshold for defining a firm as "medium-sized" is 100 employees.
- 4 See Gibson and van der Vaart (2008) for an overview of the definition of SMEs used by international organizations.
- 5 As explained by Kushnir et al. (2010), one has to be cautious when comparing these shares across countries, because of the different definitions used.
- 6 The 17 OECD countries included in the dataset are: Austria, Belgium, Canada, Finland, Italy, France, Hungary, Luxembourg, Japan, Netherland, Norway, New Zealand, Portugal, Spain, Sweden, the United Kingdom and the United States. The period covered is generally 2001-2011.
- 7 China; Ghana; Hong Kong, China; India; Indonesia; Malaysia; Mauritius; Pakistan; Russia; Singapore; Sri Lanka; Trinidad and Tobago; Ukraine; the United Arab Emirates.
- 8 The inclusion of informal enterprises would most likely increase the share of micro firms in agriculture.
- 9 World Bank Enterprise Surveys are firm-level surveys of a representative sample of an economy's private sector. Formal (registered) companies with five or more employees are targeted for interview. The sampling is stratified random sampling. The strata are firm size, business sector, and geographic region within a country. Firm size levels are 5-19 employees (small), 20-99 employees (medium), and 100+ employees (large). Since, in most economies, most firms are small and medium-sized, Enterprise Surveys oversample large firms (see <http://www.enterprisesurveys.org/methodology>).
- 10 The 17 OECD countries included in the dataset are: Austria, Belgium, Canada, Finland, Italy, France, Hungary, Luxembourg, Japan, Netherland, Norway, New Zealand, Portugal, Spain, Sweden, the United Kingdom and the United States. The period covered is generally 2001-2011.
- 11 Net job creation is defined as the difference between the jobs created by new or existing enterprises and the jobs destroyed either through contraction of existing enterprises or through business closures (ILO, 2015).
- 12 The literature has identified two main reasons why new firms are small. First, the entry process is surrounded with uncertainty (Nelson and Winter, 1978; Nelson and Winter, 1982; Jovanovic, 1982; Hopenhayn, 1992; Ericson and Pakes, 1995). Entrepreneurs may not know *a priori* how well they will perform in the market. Even if this imposes higher average costs, it may be rational to start out small to limit losses related to sunk costs in case of low performance, and to invest more after gathering information on the potential performance. Second, entrants may start out small because of capital market imperfections (Taymaz, 2005).
- 13 De Kok et al. (2011) also show that SMEs are less resilient to economic crises. During the Great Recession of 2007-09, the number of jobs in SMEs fell by an average of 2.4 per cent annually, as opposed to 1 per cent in large enterprises.
- 14 Gibrat's law states that the proportional rate of growth of a firm is independent of its absolute size.
- 15 Furthermore, informal SMEs tend to grow more slowly than do their formal counterparts. An empirical study for Côte d'Ivoire (Sleuwaegen and Goedhuys, 2002) found that formal status has a positive effect on firm growth, after controlling for the size, age and efficiency of firms.
- 16 Unregistered firms, however, consistently pay lower wages than small registered firms. On average, wages are 1.96 times per capita income in unregistered firms and 3.32 times per capita income in registered firms (La Porta and Shleifer, 2014).
- 17 The large amount of evidence that exporters pay higher wages than non-exporters (e.g. Bernard et al., 2007 report a 6% wage gap for US firms) is also in line with the idea that large firms pay higher wages than SMEs, since, as documented in Section B, the latter participate less in trade than the former.
- 18 See de Kok et al. (2013) for a review of the literature on stability and security of work and on employees training in SMEs.
- 19 Total factor productivity (TFP) is a measure of the efficiency of all inputs into a production process. In this case, for reasons of data availability, two inputs are considered: capital and labour.
- 20 See Pagano and Schivardi (2003) and the literature cited therein. Even the oft-made argument that, within the universe of SMEs, start-ups are more innovative than established firms does not rest on firm empirical evidence. Criscuolo et al. (2012) compare the innovative abilities of UK start-ups with those of a matched sample of established firms for the period 2002-04. Their results indicate that only in services do start-ups have an advantage over established firms. In manufacturing, start-ups are less likely to introduce innovative products than established firms.
- 21 See also Hoffman et al. (1998) for a survey of studies on UK SMEs. In a sample of Italian SMEs covering the period 1995-2003, Hall et al. (2009) find that both process and product innovation have a positive impact on firm's productivity, especially process innovation. Similar conclusions are drawn by Colombelli et al. (2016) for young French companies (aged five years or less). The authors find that such firms exhibit higher survival rates when they engage in innovation, particularly in the form of process innovation. Using a sample of Spanish firms for the period 2004-12, Coad et al. (2016) show that young firms face larger performance benefits from innovation (measured by R&D investment) at the upper quantiles of the growth rate distribution, but face larger decline at the lower quantiles. R&D investment by young firms (which are SMEs), therefore, tends to be riskier than R&D investment by more mature firms.
- 22 Other studies on the benefits of SME innovation in developing countries include Bala Subrahmanya et al. (2010) and Egbetokun et al. (2012), respectively for India and Nigeria.

23 Aw and Hwang (1995), Roberts and Tybout (1997), Clerides et al. (1998) and Bernard and Wagner (1997) show that exporting firms are on average more productive than non-exporting firms. López González et al. (2015) show that GVC participation is associated with higher productivity. See also the discussion in Section C.

24 Burundi, Cameroon, Côte d'Ivoire, Ethiopia, Ghana, Kenya, Tanzania, Zambia and Zimbabwe.

Appendix Table

Subsection A.1 presents descriptive evidence showing total factor productivity (TFP) differentials between firms of different sizes in developing countries. This descriptive evidence is further confirmed by econometric analysis. Appendix Table A.1 shows the results of five regressions of TFP on firm size bins. The coefficients should be interpreted as the log difference in TFP between firms in a given size bin (10-50, 51-250 and more than 250 employees) and firms with at least five and less than 10 employees (the comparison group). TFP increases with firm size both in the overall sample of developing countries (column (1)) and in each country-group sub-sample.

The transformation $\exp(\beta) - 1$ gives the percentage difference in TFP between firms in a given size bin and

firms with less than 10 employees (the comparison group). To provide an example, the coefficient 0.739 on the 10-50 employees size bin in column (1) of Appendix Table A.1 implies that firms with 10-50 employees are 109 per cent more productive than firms with less than 10 employees.

The estimates of a regression of TFP on a dummy equal to one if a firm is an SME (less than 250 employees) further suggest that SMEs are 70 per cent less productive than large firms. All these results are qualitatively unaffected if a threshold of 100 employees is used to define SMEs, and they cannot be driven by compositional effects, since the coefficients are identified across firms within each country-sector combination.

Appendix Table A.1: TFP regressions on firm size groups, by income groups

	(1) Overall	(2) G20 developing	(3) Other developing	(4) LDCs
10-50 employees	0.739*** (0.027)	0.802*** (0.041)	0.762*** (0.039)	0.564*** (0.078)
51-250 employees	1.743*** (0.03)	1.885*** (0.044)	1.671*** (0.045)	1.517*** (0.108)
251+ employees	2.171*** (0.404)	2.270*** (0.06)	2.158*** (0.058)	1.932*** (0.126)
Observations	23,965	10,761	9,925	3,279
R ²	0.233	0.2315	0.249	0.207

Notes: Robust standard errors in parentheses. *p<.10, **p<.05, ***p<.00. Country-sector fixed effects included in all regressions. The transformation $\exp(\beta) - 1$ gives the percentage difference in TFP between firms in a given size bin and firms with less than 10 employees (the comparison group).

Source: World Bank Enterprise Surveys (last available survey per country), own calculations.