D Trade obstacles to SME participation in trade

Section D investigates the major trade-related impediments to SMEs' participation in trade. A key finding in this section is that all types of trade costs, whether they are fixed or variable, adversely affect the ability of SMEs to participate in trade, to a greater extent than large enterprises. Since SMEs are more sensitive to trade barriers than large firms, removing obstacles to trade benefits SMEs disproportionately. It is therefore important to understand what these major obstacles are.

Contents

Some key facts and findings

- Tariffs and non-tariff restrictions affect the ability to participate in trade of SMEs more adversely than that of large enterprises.
- Trade facilitation promotes the entry of SMEs into export markets. Small exporting firms profit relatively more when trade facilitation improvements relate to information availability, advance rulings and appeal procedures.
- Services SMEs are relatively more impacted by barriers on "establishment" than by barriers on "operations", notably when these concern mode 4 trade.
- Logistics tend to cost more for SMEs than for large enterprises. For example, in Latin America, domestic logistics costs can add up to more than 42 per cent of total sales for SMEs, as compared to 15-18 per cent for large firms.
- SMEs face more credit rationing, higher "screening" costs and higher interest rates than larger enterprises. SMEs are also the most credit constrained. It is estimated that half of their requests for trade finance are rejected, compared to only 7 per cent for multinational corporations.
- The benefits from the ICT revolution are particularly high for SMEs. However, there are some unique costs of online trade, such as the costs of accessing ICTs and the need for certainty and predictability in regimes governing global data transfers. Small firms in LDCs only attain 22 per cent of the connectivity score of large firms in LDCs, compared to 64 per cent in developed countries.
- GVCs help SMEs to overcome some of the difficulties they face in accessing international markets. However, lack of skills and technology, together with poor access to finance, logistics and infrastructure costs and regulatory uncertainty make it difficult for SMEs to participate in GVCs.

Section D.1 identifies the obstacles to trade that firms perceive as major challenges for their access to international markets.[1] Sections D.2 and D.3 provide a sense of the magnitude of these barriers to trade and their effects on SMEs, looking at tariff and non-tariff barriers and other trade-related barriers, respectively. Sections D.4 and D.5 explain how SMEs can overcome some of these barriers through trade, particularly online trade and global value chains (GVCs). These subsections also explore the obstacles faced by SMEs as they exploit the opportunities offered by online trade and GVCs to access international markets.

1. SME perceptions of barriers to access international markets

One way to get a sense of the main obstacles to trade for SMEs is through survey data. The United States International Trade Commission (USITC), the European Commission, the World Bank, the International Trade Centre (ITC) and the Organisation for Economic Co-operation and Development (OECD), in conjunction with the WTO, have conducted a number of surveys that allow firms to be classified by their size. The results of these surveys help to identify some of the SME-specific obstacles that are explored in this chapter.

It is important to stress at the outset that the results of surveys are very sensitive to the design of the survey itself. A survey designed to identify trade costs should typically ask the firm surveyed to indicate what costs, out of a predefined set of options, the firm perceives as a major obstacle to trade. If a cost is not included in the predefined multiple choice set of costs, it will not appear as a major trade cost. For this reason, different surveys are not really comparable. However, ranking the listed trade costs in each survey may still help to understand which trade costs are the most and the least significant for firms, and, more importantly for the purpose of this report, which trade costs are relatively more important for SMEs relative to large enterprises.

Most of the information on obstacles to trade as perceived by SMEs in developing countries does not allow a comparison between the relative importance of obstacles to trade between small and large firms, because studies tend to focus on SMEs only.[2] One notable exception is the series of business surveys on non-tariff measures (NTMs) undertaken by the ITC,[3] which suggests that SMEs are more affected by NTMs than large firms.

All these studies point us to some of the major perceived obstacles to trade. Table D.1 offers a review of selected empirical investigations conducted in developing countries. The main obstacles to international trade emerging from this review are:

(i) limited information about the working of the foreign markets, and in particular difficulties in accessing export distribution channels and in contacting overseas customers;

(ii) costly product standards and certification procedures, and, in particular, a lack of information about requirements in the foreign country;

(iii) unfamiliar and burdensome customs and bureaucratic procedures; and

(iv) poor access to finance and slow payment mechanisms.

In order to get a sense of the relative importance of the obstacles to trade for small and large firms in developing countries, the database of the Fourth Global Review of Aid for Trade (OECD and WTO, 2013) is used. This survey looks at a slightly different question: that is, obstacles to enter and move up value chains rather than the obstacles to trade. However, as discussed in Section B, internationalization of SMEs mostly takes place through indirect channels, through the contribution that SMEs make to exports as upstream producers in value chains. Direct exports are almost exclusively done by large firms. In developed and developing countries alike, the top 5 per cent of firms account on average for 80 per cent of exports. Therefore, the perceived obstacles to participating in a supply chain provide important clues into the more general question of what are the major obstacles to trade.

Table D.2 reports the ranking of the major obstacles to enter and move up value chains as perceived by interviewed firms by sectors. In the OECD and WTO (2013) publication, a survey of 122 questions was completed by 524 firms and business associations in developing countries, presenting the binding constraints these firms face in entering, establishing or moving up value chains.[4] In addition, 173 lead firms, mostly from OECD countries, also completed the questionnaire to highlight the obstacles they face in integrating developing country firms into their value chain.[5]

The questionnaire focused on businesses integrated into value chains in five key sectors: agrifood, information and communication technology (ICT), textiles and apparel, tourism, and transport and logistics.[6] The original questionnaire divided responses into five categories: micro firms with less than 10 employees; small firms, with 10 to 49 employees; medium-sized firms, with 50 to 250 employees; large

Table D.1: A review of export barriers as emerging in selected studies on developing countries

Ethiopia	Iran	Jordan	Mauritius	Nigeria	Sri Lanka
Lakew and Chiloane-Tsoka (2015) surveyed nine SMEs based in Addis Ababa producing leather and leather products.	Kabiri and Mokshapathy (2012) surveyed 76 SMEs producing fruit and vegetables in Tehran.	Al-Hyari et al.(2012) surveyed 135 Jordanian manufacturing SMEs.	Dusoye et al.(2013) surveyed 41 SMEs exporters in Mauritius.	Okpara (2009) surveyed 72 manufacturing SMEs in Nigeria	Gunaratne (2009) undertook a postal questionnaire survey of SMEs in Sri Lanka.
MAJOR TRADE BARRIERS					
– Lack of finance – Tariff and non-tariff barriers – Unfamiliar with export procedures – Slow collection of payment from abroad – Foreign distribution – Complex export document – Political instability in foreign markets – Foreign exchange rate	– Exporting procedures/ documentation – Communication with foreign customers – Collection of payments from abroad – Export restrictions – Political instability in foreign markets – Tariff and non-tariff barriers – Unfamiliar foreign business practices – Sociocultural differences – Language – Lack of information on foreign market – Distribution channels – Logistic cost	– Transportation costs – Government regulations and rules – Foreign rules and regulations – Collection of payments from abroad – Cost of capital to finance export – Foreign currencies risk – Insufficient information about overseas markets – Currency fluctuations	– High transportation cost – Cost of establishing an office abroad – Currency fluctuations – Lack of finance – Government bureaucracy – Obtaining reliable foreign representation – Exchange rate policies	– Lack of export market knowledge – Lack of export finance – Difficulty in handling export documentation requirement – Transportation and insurance costs – Language differences	– Lack of finance – Corrupt bureaucratic practices in the home country – Tariff and non-tariff barriers – Language – Lack of reliable data on foreign market – Difficulty in managing advertising and promotion
OECD and APEC countries		**ALADI countries**		**CBI[7] Export Coaching Programmes**	
OECD (2008) surveyed 978 SMEs' perception of the barriers to their internationalization across 47 countries.		A report by the OECD (2005) presents the findings of a study on 30 SMEs in 12 ALADI (Asociación Latinoamericana de Integración – Latin American Integration Association) countries on the barriers to accessing foreign markets perceived by firms in ALADI countries.		Vonk et al. (2015) evaluated five of CBI's Export Coaching Programmes (ECPs). These programmes aim to increase exports from developing countries into Europe. The evaluation was conducted through interviews and questionnaires submitted to selected SMEs. Thirty-three responses were received (24 were Indian firms) indicating "the most important reason for not exporting (more) to the EU".	
TRADE BARRIERS					
– Identifying foreign business opportunities – Limited information with which to locate/ analyse markets – Inability to contact potential overseas customers – Obtaining reliable foreign representation – Lack of managerial time to deal with internationalization – Inadequate quantity of personnel and/or untrained personnel for internationalization – Excessive transportation costs		– Lack of information and requirements – Customs and bureaucratic procedures – Finance and payment mechanisms – Non-tariff barriers – Transportation: costs, frequency, and insecurity; inadequate logistics – Marketing regulations and regional agreements – SPS and heterogeneous technical measures – Asymmetric physical and technological infrastructure of countries – Political and economic instability – Subsidies		– Lack of business contact – Lack of market information	

Notes: These studies looked at obstacles to trade both internal and external to the firm, the table however only reports trade barriers. For example, difficulty in obtaining information on rules and regulations in a foreign market is a barrier to export because it involves extra costs that the firms have to meet in order to export. Lack of personnel to look into the rules and regulation in the foreign market is an internal problem of the firm.

Table D.2: SMEs' top five perceived constraints in entering, establishing or moving up value chains

Agriculture	ICT	Textile
Access to business finance	Access to trade finance	Access to trade finance
Transportation costs	Lack of transparency in regulatory environment	Customs paperwork or delays
Certification costs	Unreliable and/or low band internet access	Shipping costs and delays
Access to trade finance	Inadequate national telecommunications networks	Supply chain governance issues (e.g. anti-competitive practices)
Customs paperwork and delays	Customs paperwork or delays	Other border agency paperwork or delays

Note: The specific question for Agriculture, ICT and Textile sectors is: "What difficulties do you face in entering, establishing or moving up the value chains? Please select up to 5 from the following list."

Source: OECD and WTO (2013).

firms, with more than 250 employees; and multinational firms, with more than 250 employees and operating in more than one country. In Appendix Figures D.1-3, the survey data from large and multinational firms is combined and presented as "large firms" whereas "MSMEs" represents the combined data from micro, small and medium-sized firms.

Access to finance and trade finance, lack of transparency in the regulatory environment and customs paperwork, and delays are among the major obstacles to enter and move up the value chains for SMEs in developing countries. Certification costs for SMEs in agriculture and inadequate telecommunication networks in ICT also prevent SMEs from entering supply chains and upgrading.

Figures D.1 and D.2 show the main perceived obstacles to trade in manufacturing and services based on a survey of US firms (USITC, 2010). The questionnaire concerning the leading impediments to engaging in global trade employs a stratified random sample to survey more than 8,400 US firms. The results are weighted on the basis of the proportion of firms in the overall population and the response rates of various categories of firms. Firms with between 0 and 499 employees in the United States are categorized as SMEs whilst those with 500 or more employees are categorized as large firms. Responding firms rated the severity of 19 impediments on a 1-to-5 scale, with 1 indicating no burden and 5 indicating a severe burden. Figures D.1 and D.2 show responses of 4 or 5 on the 1 to 5 scale, illustrating the share of SMEs and large firms rating impediments as burdensome.[8]

Interestingly, access to a foreign country's distribution network is perceived as the major obstacle by US SMEs in the manufacturing sector. Conversely, this is perceived as a relatively minor obstacle by large firms. Similarly, high tariffs and difficulties in accessing finance and processing payments appear to be relatively more important obstacles for SMEs' trade than for large firms' trade.

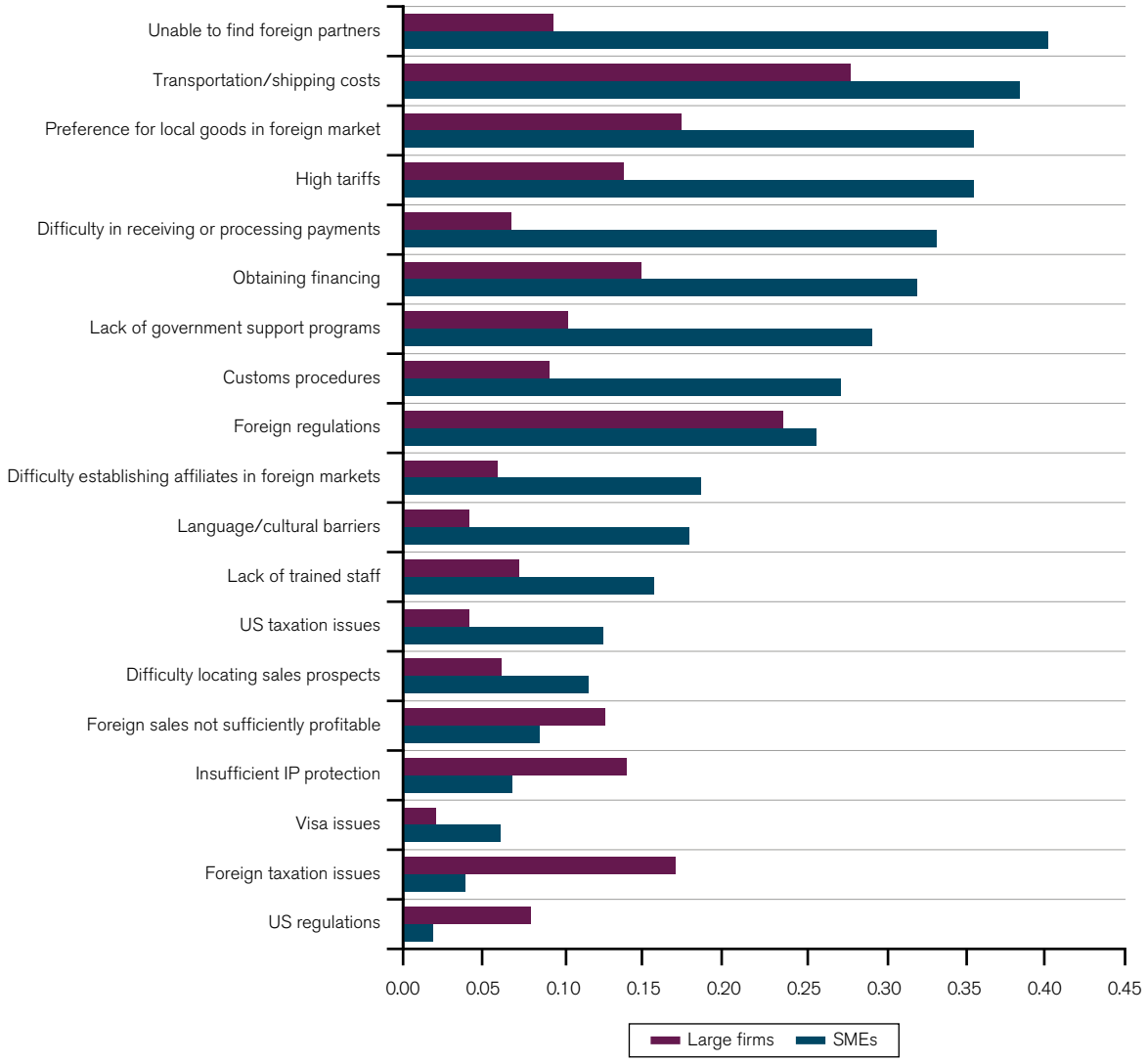
In the services sector, US SMEs reported insufficient IP protection as the major obstacle to export. For example, exporters of film and television programming reported that seeking remedies to IP infringement was often too expensive for SME producers (Independent Film & Television Alliance, 2010).

Figure D.3 from the European Commission's Report *Small and Medium Sized Enterprises and the Transatlantic Trade and Investment Partnership* reports the main obstacles to trade for EU firms exporting to the United States (European Commission, 2014b). The figure presents the results of an online survey of 869 European companies carried out with the support of the Enterprise Europe Network from July 2014 until January 2015.

The companies were asked whether they felt they faced barriers in the US market and to identify the nature of those barriers based on a standard list of non-tariff measures. The respondents included micro firms employing one to nine people, small firms with 10 to 50 employees, medium-sized firms with 51 to 250 employees, and big firms with more than 250 employees. This survey provides a broad view of the issues that are most important for SMEs, such as compliance with regulation and standards, customs procedures, and restrictions on the movement of people and of distribution channels. It also suggests that many of these issues represent larger barriers for SMEs than for larger firms, given that small companies have to spread fixed costs of compliance over smaller revenues than those of larger firms.

Regulations, i.e. sanitary and phytosanitary (SPS) and technical barriers to trade (TBT) measures, are perceived to be the most important obstacle to trade for all firm sizes. More than 50 per cent of firms

Figure D.1: Leading impediments to engaging in global trade in manufacturing, US firms survey

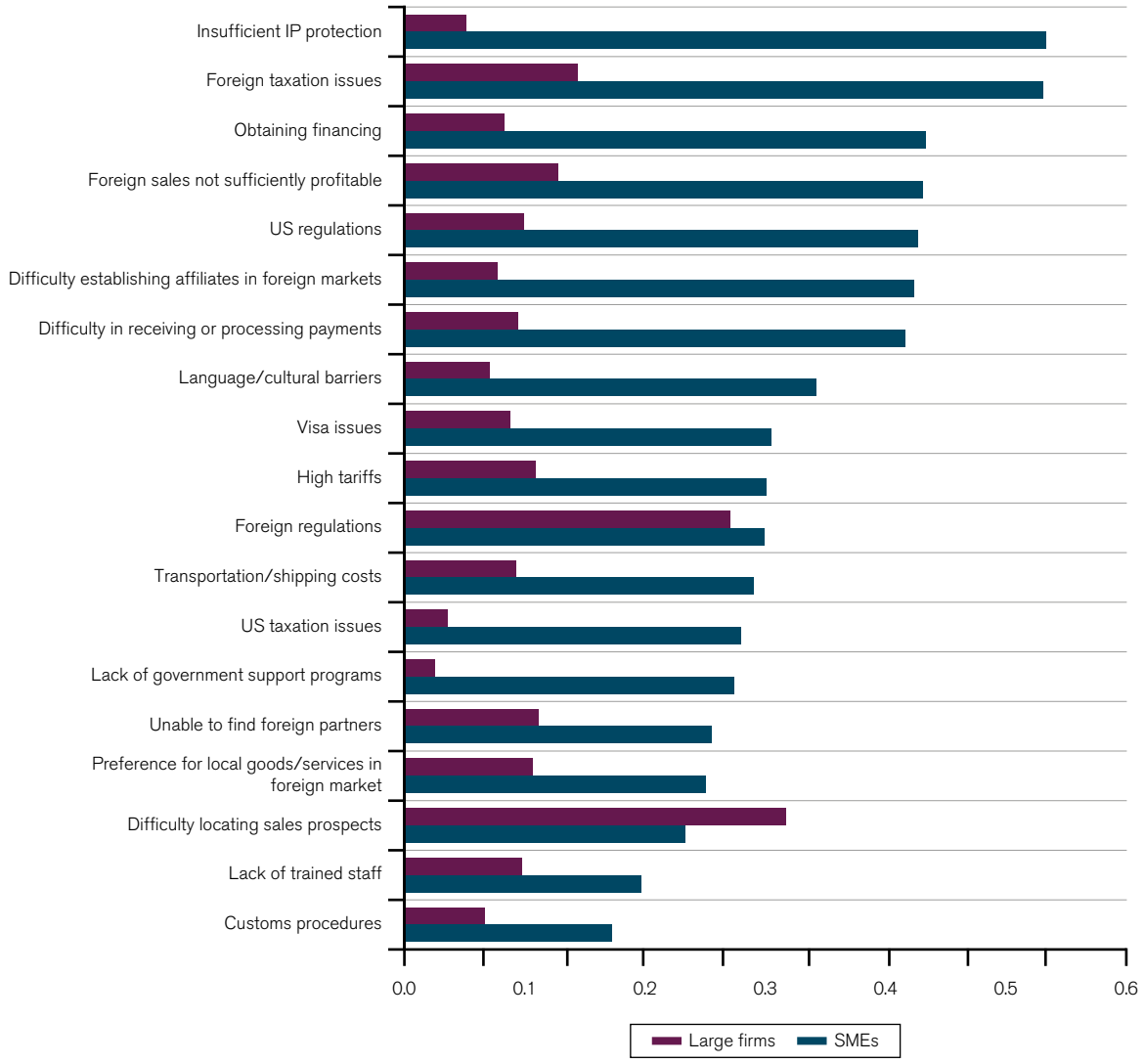


Source: US International Trade Commission (2010).

identified regulation as the main obstacle to accessing foreign markets. Border procedures are next with 30 to 40 per cent of SMEs. Price, licences and quantity controls, as well as measures on competition are next with 20 to 30 per cent of SMEs perceiving these to be major barriers to access the US market. These measures are also relatively more important obstacles for SMEs than for large firms. Interestingly, standards and regulations are also listed by US SMEs as major trade barriers for accessing the EU market according to USITC (2014). The report highlights that the different regulatory approaches, the lack of participation of US firms in development of EU standards, and the costs of compliance with standards and procedures, as well as the lack of national treatment of US certification bodies, are all significant barriers encountered by the US SMEs.

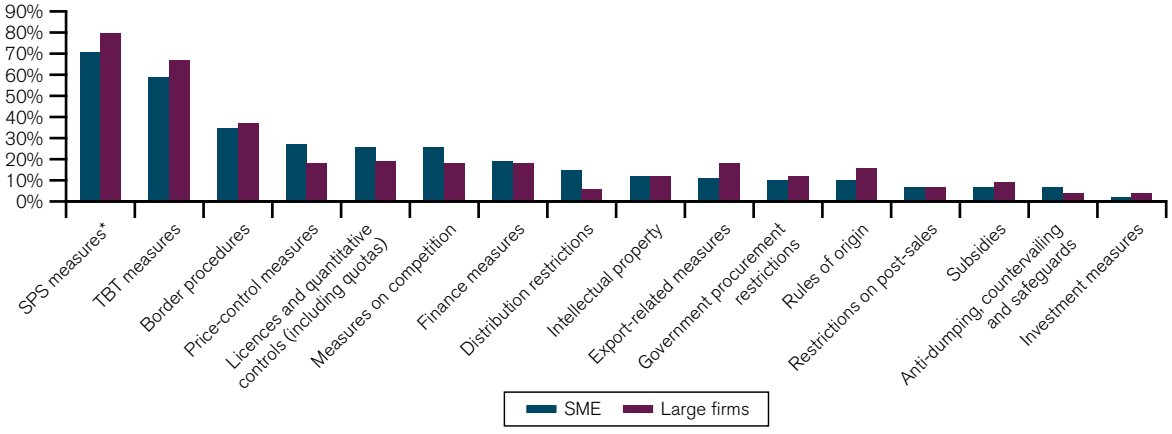
In sum, drawing from the existing evidence, the costs of accessing a foreign distribution network, transportation costs, high tariffs, access to finance and trade finance, customs procedures, and foreign regulations, both in goods and in services, appear to be the major obstacles to trade for SMEs. The next subsections will explore in more depth the reasons why these costs matter particularly for SMEs and how e-commerce and participation in GVCs can help to overcome some of these costs.

Figure D.2: Leading impediments to engaging in global trade in services, US firms survey



Source: US International Trade Commission (2010).

Figure D.3: Trade barriers in accessing US goods markets reported by EU firms by firm size



*Only for exporters of food, drink, animal feed and products that come into contact with food (e.g. packaging, cooking utensils).

Source: Authors' calculation based on European Commission (2014b).

2. Trade policy and SMEs

This subsection looks at tariff and non-tariff obstacles to trade, their magnitude and their effects on SME participation in trade in goods. It also discusses barriers that may be particularly burdensome for SMEs operating in the service sector.

(a) Tariff barriers may matter more for SMEs

As shown in Figure D.1, SMEs in the manufacturing sector consider high tariffs to be a greater obstacle to exporting than large manufacturing firms do. What explains this perception?

One explanation is the effect that higher tariffs have on the participation of SMEs in trade. Higher tariffs in destination markets make it more difficult for firms to profitably export. Only the more productive firms will export in such an environment, whilst smaller and less productive firms will not. As tariffs are reduced, smaller firms progressively enter in the market. Using firm-level information for Ireland, Fitzgerald and Haller (2014) estimate that reducing tariffs from 10 per cent to zero increases participation of medium-sized firms (firms with 100-249 employees) from 11.5 per cent to 14.2 per cent. But they do not find significant effects on firms of smaller size.

A second explanation is provided by the effect that higher tariffs have on the volume of exports of a firm. A growing body of theoretical literature emphasizes how the impact of trade policy depends on firm characteristics such as size and productivity.[9] Small firms are more sensitive to tariff changes because they produce goods whose demand is more sensitive to price changes or they pay lower costs to reach additional consumers than large firms (see Box D.1 for a more detailed explanation).

Heterogeneous effects of tariffs across firms of different sizes can also be explained by the presence of non-*ad valorem* tariffs. Specific tariffs (per unit tariffs) and tariff rate quotas (through the imposition of a quota licence price) act as additive trade costs, that is a cost that is independent of the unit price of the good. An additive trade costs has systematically a different impact between firms that produce low-priced and high-priced good. Clearly, adding a US$ 1 tariff on a good for which the price is US$ 1 is a much more restrictive measure than adding US$ 1 tariff on a good for which the price in the market is US$ 100. If low-priced firm are small firms, the prevalence of additive trade costs can also explain the perceived importance of high tariffs as barriers to trade for small firms (Irarrazabal et al., 2015).[10]

A third explanation behind small firms' perception that tariffs affect them disproportionately could actually be that there is an anti-SMEs-bias in conditions of market access. That is, SMEs face higher tariffs on average in their export market destinations than large firms, and this is why SMEs perceive tariffs to be a major barrier to trade. Political economy provides some arguments that explain this potential outcome.

In a world where governments negotiating agreements are influenced by strong lobbying powers, large firms

Box D.1: Firms' responses to higher tariffs

Spearot (2013) explains the differential effects across firms of a given tariff increase (reduction) with the fact that firms face different demand elasticities. In particular, low revenue goods exhibit a higher demand elasticity. For this reason, the traditional negative effect of higher trade costs on trade flows is amplified for low-revenue varieties (firms with a low value of exports prior to the new restrictive measure).[11] The opposite is true when tariffs are cut. In fact, Spearot finds that after 1994, following the Uruguay Round, for the same tariff cut, US imports of low revenue varieties increased disproportionally more than imports of high revenue varieties. In some cases, imports of high revenue varieties fall after liberalization.

Another study (Arkolakis, 2011) explains the differential impact of higher tariffs between small and large firms on the basis of differences in market penetration costs. Paying higher costs allows firms to reach an increasing number of consumers in a country. But the cost of reaching more consumers increases when a firm has already reached a high volume of sales. That is, reaching more and more consumers becomes increasingly more difficult. In this set-up, all firms lose from an increase in tariffs, but firms differ in their supply response depending on the costs they face in reaching more consumers. These additional costs are large for large firms and small for small firms. Exports of small firms grow more following tariff liberalization than do those of large firms, because small firms face lower costs than large firms to reach additional consumers; and *vice versa*, large firms respond less to tariff increases, because for each unit of export reduction they save more than small firms in terms of the costs to reach consumers.

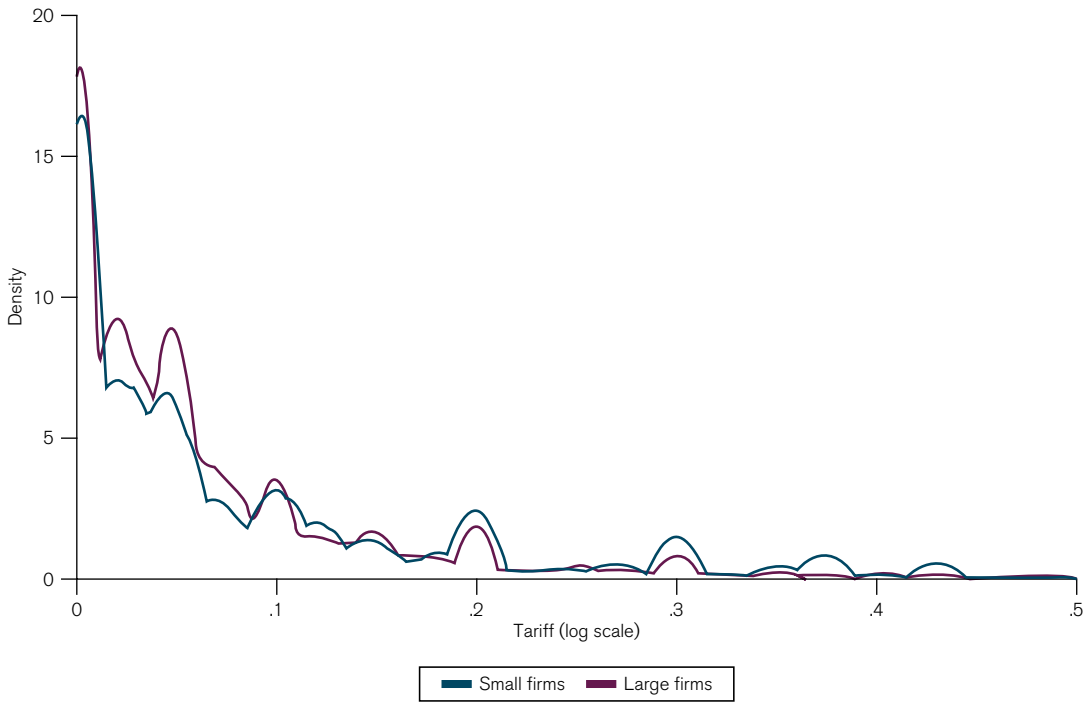
are more likely to engage in lobbying than small firms. Large firms have more resources and are better able than SMEs to engage in lobbying. Moreover, sectors with few large firms are likely to be more effective than sectors with many small firms in influencing trade policy outcomes. Therefore, a country's sectoral tariff profile is likely to depend on the size of firms in that sector. While in a unilateral set-up, this would lead to higher tariffs in sectors dominated by large firms (Olson, 1965; Bombardini, 2008), when tariffs are set in a cooperative environment, export–oriented large firms will lobby for trade liberalization and will succeed in lowering tariffs (Plouffe, 2012).[12] Therefore, to the extent that large firms are present in the same sectors, they are likely also to face lower tariffs.

Available data does not allow for a systematic assessment of tariffs faced by individual firms in their destination market. Ideally, in order to calculate the average tariff faced by small firms, one would need to know what product small firms export in each market and average the tariff faced across markets. This type of data is not publicly available for all countries.

To get a sense of the tariffs firms face in their export markets, Figure D.4 shows the distribution of tariffs faced by French manufacturing exporting firms. Interestingly, the figure shows that (i) the bulk of both small and large firms exporting manufacturing goods from France face tariffs lower than 10 per cent, and that (ii) small firms are more concentrated in sectors facing relatively higher tariffs (the blue line is above the red line in the figure), while large firms are more concentrated in sectors facing relatively lower tariffs. The difference between tariffs faced by small and large firms in France is not all that large and, as discussed in Section C, causality may be reversed. That is, it may actually be the case that firms operating in sectors facing lower tariffs grow faster. Nevertheless, these findings do raise the question of the potential importance for some countries to look at whether tariffs faced by firms in the export market are particularly harsh for SMEs.

One can attempt to get a sense of a potential anti-SMEs bias in tariff profiles for a large sample of countries using firm-level trade flows from the OECD's Trade by Enterprise Characteristics (TEC) database. However,

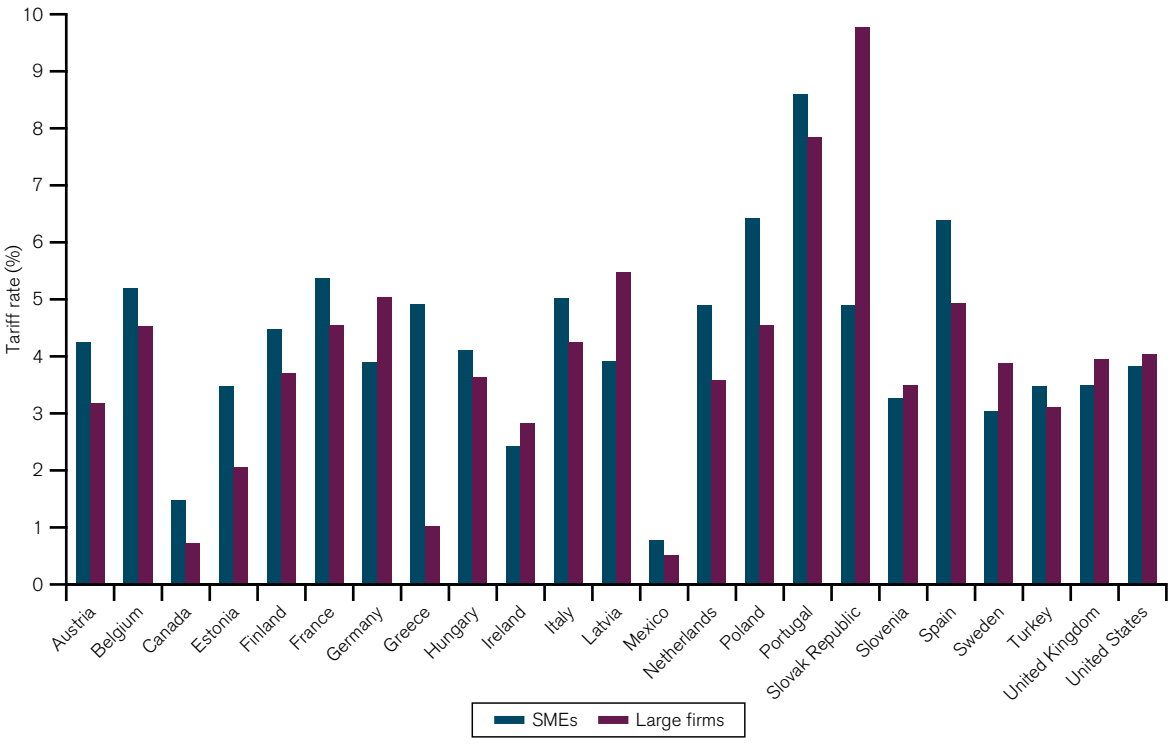
Figure D.4: French firms' distribution by size and tariff faced in the exporting country



Note: Small firms are defined as firms falling below the 25th percentile in terms of their volume of exports. Large firms are those with a volume of export above the 7th percentile.

Source: Extracted from background work in Fontagné et al. (2016).

Figure D.5: Average applied tariff faced by firm size (excluding intra-EU trade), 2011



Note: Trade weighted averages by firm size are calculated aggregating sectoral (firm-size) tariffs across sectors using as weights firm-size level's export distribution across sectors. For EU countries, tariff figures refer to tariffs faced in non-EU markets.

Source: Authors' calculations based on TEC database and UNCTAD's Trade Analysis Information System.

note that the TEC database provides information on total trade flows by firm size (according to five categories: 1-9 employees, 10-49 employees, 50-249 employees, 250+ employees and unknown) and not by individual firm. Furthermore, sectoral information is aggregated at the 2-digit level (ISIC Rev. 4) and trade flows are not simultaneously broken down by sector and partner. This significantly limits the precisions of the estimations of tariff faced by firms' size.

Notwithstanding these limitations, Figure D.5 shows the weighted average effectively applied tariff that SMEs face in their export markets for a subset of OECD countries. In order to calculate the average tariff faced by firms by size, data on firm-level trade flows from the TEC database were combined with tariff data from UNCTAD's Trade Analysis Information System (TRAINS). Data from 2011 are used because of better data availability for this year. The figure does not show a clear monotonic trend between size and tariffs, but in 17 out of the 23 countries in the sample, large firms face lower average tariffs than at least one of the other three categories of firms of smaller size (micro, small or medium enterprises).

(b) Non-tariff measures hinder SMEs trade in goods

NTMs are perceived to be a major obstacle to trade by both small to medium and large firms,[13] and appear to be the most relevant obstacle for EU firms wanting to access the US market (Figure D.3), as well as being a major obstacle for US firms (Figure D.1). According to a study by the ITC (International Trade Center (ITC), 2015c), small firms in developing countries appear to be hit the hardest. The ITC survey, based on responses from 11,500 exporters and importers in 23 developing countries, shows that small firms are perceived to be most affected by NTMs. Conformity and pre-shipment requirements in the export market, and weak inspection or certification procedures at home, appear to be the major hurdles. In agriculture, certification costs are among the hardest obstacles to move up the value chain in developing countries, particularly for SMEs (Table D.2). Box D.2 provides some examples – drawn from the CBI technical assistance experience – of what type of obstacles SMEs face in dealing with non-tariff barriers.

Box D.2: SMEs and non-tariff barriers: the importance of transparency and predictability

Each year, the CBI (Centre for the Promotion of Imports from developing countries, part of the Netherlands Enterprise Agency and commissioned by the Ministry of Foreign Affairs of the Netherlands) provides trade-related technical support to over 700 SME exporters in developing countries. An important lesson from SMEs in CBI programmes concerns the predictability and transparency of standards and regulations.

In Kenya's tea sector, for example, CBI has supported the product and market diversification into value-added teas with special flavours and processed into tea bags. As CBI Expert Phoebe Owuor says: "Whereas market access barriers in the EU markets are often high and costly to comply with for the tea-exporting SMEs, the exports to regional and emerging markets have proved more difficult as a result of lack of information about actual conditions".

CBI's experience in company-level technical assistance has shown that exporting SMEs from developing countries increasingly invest in staff skills and knowledge pertaining to market access requirements. Increasingly, exporting SMEs also establish clear internal processes and guidelines to ensure compliance with domestic as well as internationally agreed regulations.

Conducting market research is key for SMEs wishing to target new markets, by looking at worldwide and local demand, competitors, and market access conditions (including both tariff and non-tariff barriers). Useful tools include paid services (often with a sector focus), as well as "global public goods" such as those offered by ITC Market Access tools (including Trademap, Macmap and Standardsmap), as well as BI's Market Intelligence platform on the European markets, which contains content based on a combination of quantitative and qualitative research, including inputs from 24 sectoral sounding boards consisting of experts and entrepreneurs from European importing industries (www.cbi.eu/market-information). But SME exports continue to be hampered by changing regulations, lack of clarity, and unpredictability.

Source: Schaap and Hekking (2016).

Very few studies provide an indication as to how NTMs affect exporters of different sizes. Yet, the trade impact of SPS/TBT measures is likely to depend on the size of the exporter. NTMs are commonly regarded as having an important fixed cost component, which significantly differentiates them from tariffs. For example, a large initial investment may be required for a firm to comply with a certain foreign standard, but once the new technology is acquired there may be no additional variable costs.[14] Similarly, a qualification or certification requirement for service-providing personnel may involve an initial cost of obtaining the qualification or certification, but no additional variable costs. Fixed costs, independent of the volume/value of trade, are relatively more burdensome for SMEs because they represent a higher share of their volume of affairs.

Evidence shows that tighter TBT/SPS measures are particularly costly for smaller firms. Focusing on the electronics sector, Reyes (2011) examines the response of US manufacturing firms to the harmonization of European product standards to international norms. He finds that harmonization increases the entry of non-exporting firms to the EU market, and that the effect is stronger for US firms that already export to developing countries but not to the EU. These firms are on average smaller than firms exporting to the EU. Focusing on Senegal, Maertens and Swinnen (2009) show that vegetable exports to the European Union have grown sharply between 1991 and 2005 despite increasing SPS requirements, resulting in important income gains and poverty reduction. But tightening food regulation has induced a shift from small farmers to large-scale integrated estate production.

When a new restrictive SPS measure is introduced in a foreign market, smaller exporting firms are those exiting the foreign market as well as those that lose more in terms of volumes of trade. The paper by Fontagné et al. (2016) is the only one to provide some evidence on how markets adjust to the introduction of more restrictive SPS measures. Using individual export data on French firms provided by the French Customs, Fontagné et al. find that restrictive SPS measures (as measured by specific trade concerns) negatively affect both small firms' *participation* in trade and their *volume* of trade. In particular, they estimate that restrictive SPS measures that have triggered the exporting country to raise a concern at the WTO SPS Committee, reduce on average a firm's probability to export by 4 per cent. The mean effect of a restrictive SPS measure on the value of exports (the intensive margin) is approximately 18 per cent. However, this negative impact of restrictive SPS is reduced for larger players.

As shown in Fontagné et al. (2016), larger firms lose less than smaller firms from the introduction of restrictive SPS measures into the export market because they are able to absorb part of the higher costs.[15] Prices increase follow the introduction of a restrictive measure in the export market, but this is less the case for larger firms. This is because large and potentially more efficient firms are likely to comply with more stringent requirements more easily and at lower cost. Large exporters with higher market shares and lower demand elasticities also pass less of the cost increase on to the consumer.

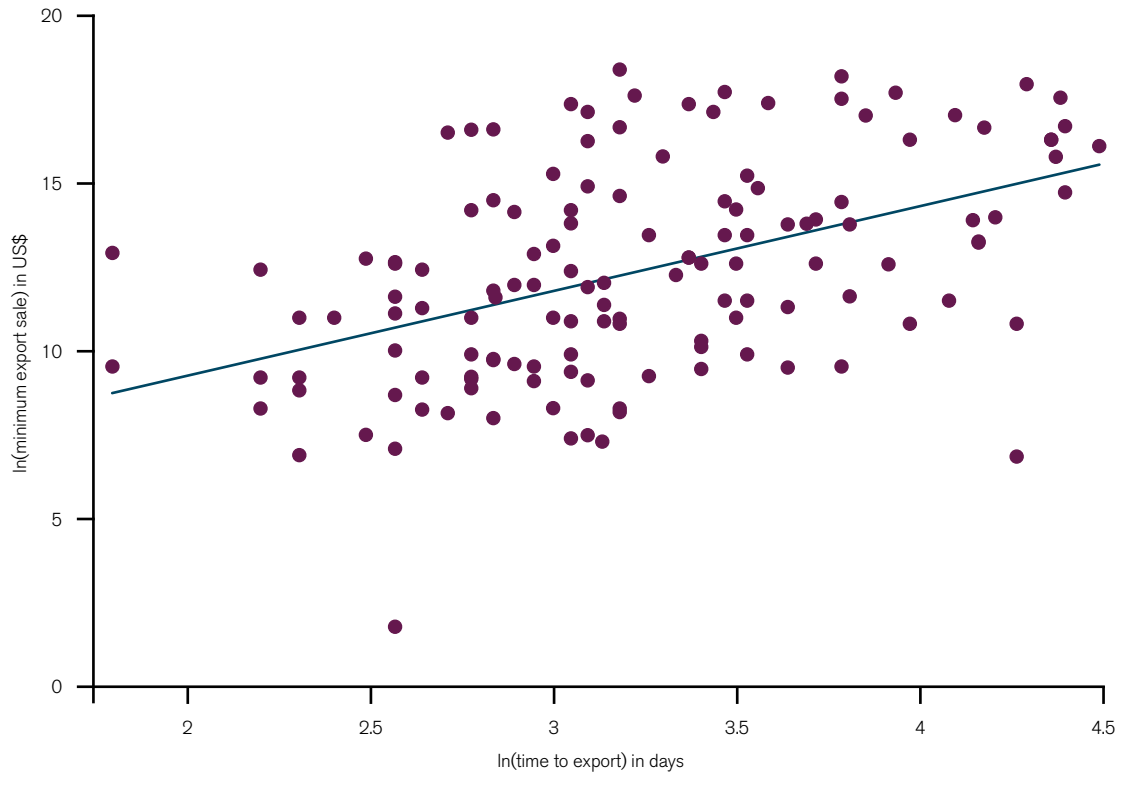
There is also some case-specific evidence that the impact of NTMs on trade depends on the size of the exporters. The impact of certification on the sourcing strategy of firms in asparagus exports from Peru is an example of the potential negative impact that NTMs can have on small firms. Peru is the largest exporter of fresh asparagus worldwide and the sector has significantly increased in the last decade both in terms of volumes of exports and number of exporters. This happened at the same time that the number of private standards in the sector multiplied. This success story, however, goes together with the evidence that the proliferation of private standards has affected the sourcing strategy of firms, at the expense of small producers. Certified export firms currently source less from smallholder producers (1.5 per cent) than do non-certified firms (25 per cent). Before becoming certified (in 2001), instead, export firms sourced more from smallholder producers (20 per cent) (Maertens and Swinnen, 2015).

(c) Customs procedures

Gains from trade facilitation are likely to be larger for SMEs. As trade costs fall, more and more firms, increasingly less productive, will start to export (see Section C). Trade facilitation can, therefore, promote the entry of SMEs into export markets. The simple correlation between the minimum size of exporting firms by country and export time support this possibility. As shown in Figure D.6, the lower time to export is associated with smaller exporting firms. But empirical evidence on the heterogeneous effect of trade facilitation on trade by firm size is limited.

Existing econometric evidence on the impact of trade facilitation on exports at the firm level supports the view that both large firms and small firms benefit from

Figure D.6: Relationship between minimum export sale (per country) and time to export



Source: WTO (2015).

trade facilitation, and that, in particular, small firms benefit the most in term of exports, when the effect of trade facilitation on fostering the entry of new firms in the export market is also taken into account. Using the World Bank Enterprise Surveys database, Han and Piermartini (2016) show that the effect of trade facilitation on trade depends on a firm's size. When both exporting and non-exporting firms are included in the sample of analysis, micro, SMEs profit more than large firms from reduced time to export. Han and Piermartini estimate that trade facilitation measures that reduced export time for all firms at the median regional level may boost the share of SME exports by nearly 20 per cent and that of large firms by 15 per cent. This is because small firms are more likely to start exporting. When only exporting firms are taken into account, (Hoekman and Shepherd, 2015) find, however, that reduced time to export does boost firms' export shares, but it does this equally for small and large firms.

There is also evidence that different provisions of the Trade Facilitation Agreement affect small and large firms differently. Using the firm-level customs data of French exports, and looking at the effects on a firm's export of improving trade facilitation in the importing country rather than in the exporting country itself, Fontagné et al. (2016) show that while, in general, all exporting firms gain from improved trade facilitation in the importing country, the relative effects on small and large firms vary according to the type of facilitation measure.

The study finds that small exporting firms profit relatively more when trade facilitation improvements relate to information availability, advance rulings and appeal procedures. For example, if all East Asian and Pacific countries adopted the region's best practices in measures that improve information availability, small exporting firms would export 48 per cent more than they currently do and medium-sized firms would export 25 per cent more (there would be no significant effect for big firms). Large exporting firms profit relatively more when the importing country's facilitation reforms relate to the simplification of formalities. One possible explanation, provided by the authors, is that the simplification of formalities reduces corruption at the border and that this, in turn, has a positive effect on the propensity of large firms to trade. Large firms are, in fact, empirically found to be more sensitive than small firms to corruption.

(d) Trade policy and services SMEs

Assessing which trade barriers are particularly burdensome for SMEs' services exports presents a number of challenges. First, services trade as defined in the GATS is multimodal: it encompasses not only cross-border transactions (mode 1), but also consumption of a service in a foreign territory (mode 2) and the movement of the supplier abroad, either to establish a commercial presence (mode 3) or in person (mode 4).[16] Most services may be traded via more than one mode of supply. As such, the impact of barriers to trade in one particular mode is likely to depend on whether or not the mode in question is a service supplier's preferred export avenue. Second, there are no theoretical analyses and few empirical studies directly addressing this question. Third, little is known about the characteristics of services exporting SMEs, and what information exists is largely based on experiences in developed countries.

Nevertheless, available empirical literature on the export behaviour of services SMEs (Lejárraga and Oberhofer, 2013) provides a useful background against which to assess this question. Service SMEs that export employ relatively more highly skilled workers, pay higher wages and are more innovative, but are not necessarily always larger. The positive relationship between firm size and export likelihood is in fact inconclusive in the case of services, whereas it is firmly established for manufacturing.

Using firm-level data for France, Lejárraga and Oberhofer (2013) find that firm size has a positive effect on the export probability for suppliers of financial, ICT and professional services, but no impact for travel service providers, for instance. Importantly, as already discussed in Section B.1 and evidenced by the survey results presented in Section D.1, the one element that emerges strongly from available research is the substantial heterogeneity in traders' characteristics across services industries (Lejárraga et al., 2015). Drawing firm conclusions about "service-exporting SMEs" as one monolithic category is, therefore, rather difficult.

In terms of how to export, services SMEs' choice of mode of supply depends on the comparative cost and expected revenue involved. They may choose one mode, or may wish, or need, to rely on several modes to serve foreign markets. Mode 1 trade in ICT services, for instance, will be facilitated by associated mode 4 movements that enable the supplier to be physically close to its customers. Moreover, not all modes are equally feasible ways of exporting services: hotel services can be supplied essentially via mode 2 only, for instance, while exports of construction services are hardly possible cross-border.

Persin (2011) argues that service SMEs tend to lean towards "soft" forms of internationalization, because of size constraints, and export essentially via mode 1 and mode 4. Kelle et al. (2013) analyse firms' choices of exporting across borders or through the establishment

of a commercial presence. Relying on firm-level data for Germany, they empirically confirm SMEs' preferences for mode 1. In a study by Henten and Vad (2001), Danish SMEs are also found to export services by relying more on cross-border trade than on the establishment of a commercial presence, except in the case of financial services.

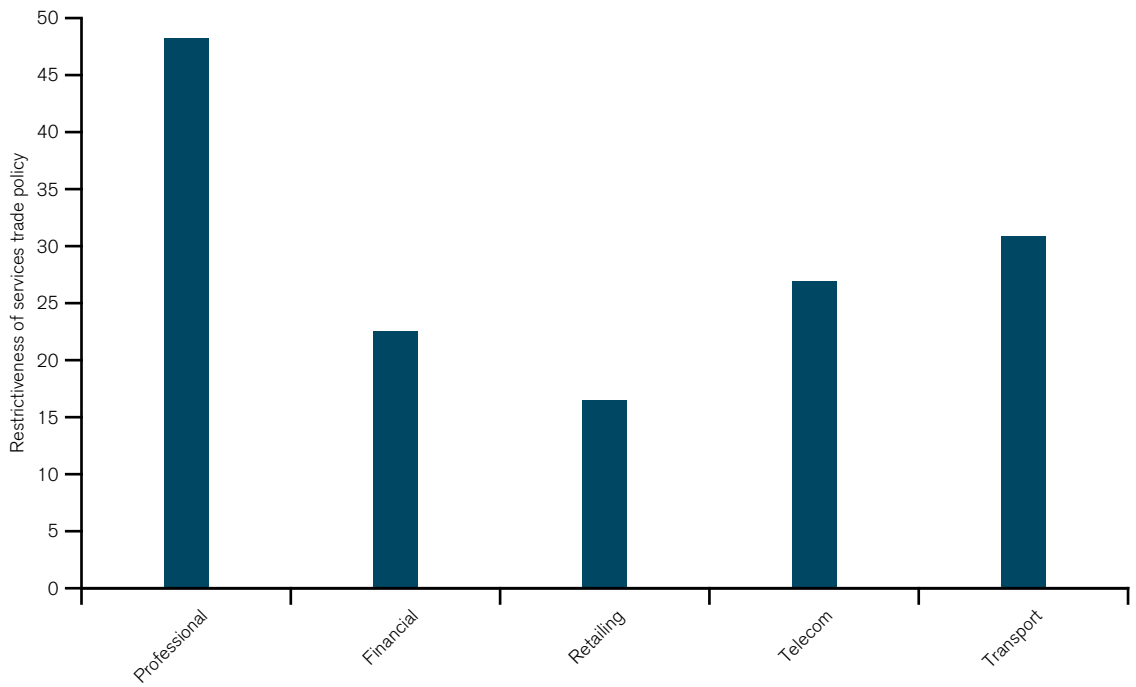
In addition to direct exports, SMEs have recourse also to indirect forms of internationalization. These include indirect exports through intermediaries, which were discussed as part of the GVC analysis in Section B.2, technological cooperation with foreign enterprises or non-equity contractual modes such as franchising and licensing. Nordås (2015) observes that manufacturers often rely on franchises with services SMEs, such as car dealerships, petrol stations, pubs or hairdressers, to distribute their goods.

Barriers to services trade are virtually all of a regulatory nature, but some are likely to affect SMEs more than others. A useful distinction in this sense is between measures that affect firms' ability to enter or become established in a foreign market ("establishment" measures), and those that have an impact on their operations once they are present in that market ("operation" measures) (see WTO, 2012 for a fuller discussion). As the former usually designate fixed costs, whereas the latter are more likely to imply variable costs, it may be assumed that, for SMEs, "establishment" measures will be relatively more burdensome (Deardorff and Stern, 2008).

Given how heterogeneous traders are across services industries, differences in the openness of regimes in different sectors need to be considered. Figure D.7, which is based on the World Bank's Services Trade Restrictiveness Index (WB STRI), provides information about the restrictiveness of services policies across five sectors. It shows that the steepest barriers are found in professional services and transportation and, to a slightly lesser extent, in telecommunication services.

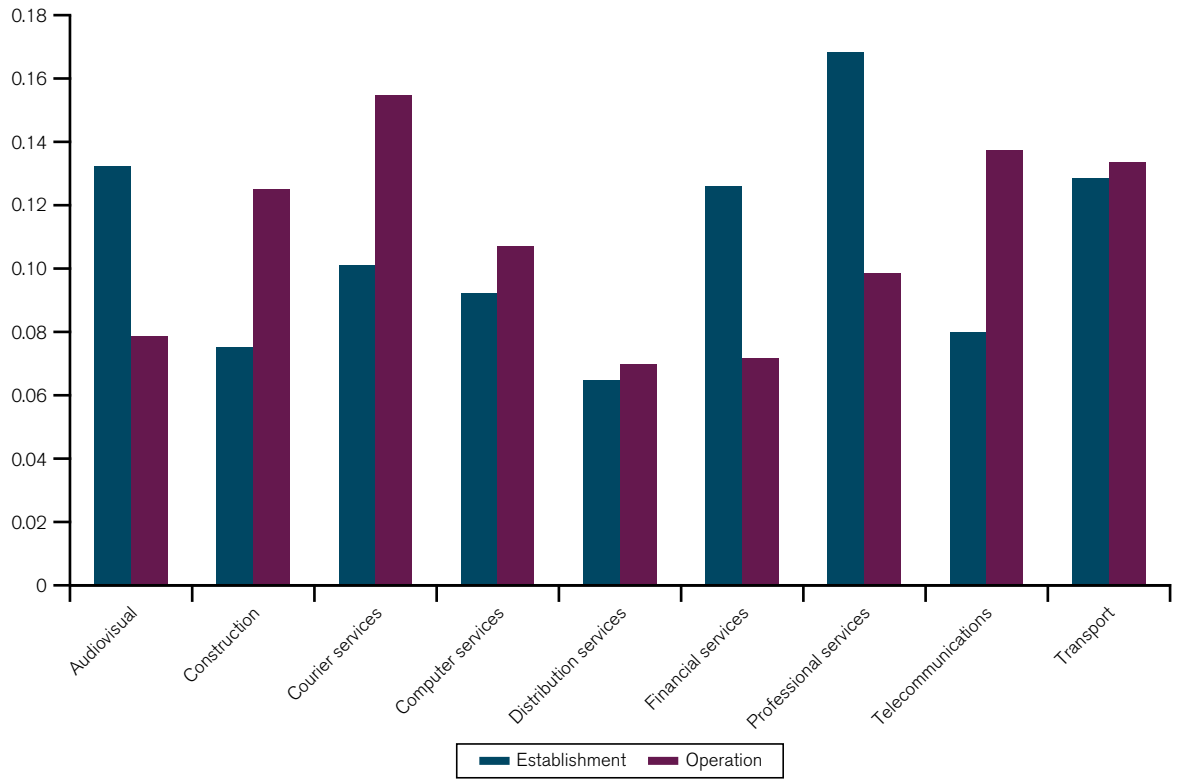
In light of the discussion above, it is useful to differentiate further, across different sectors, between measures that restrict firms' ability to establish in a foreign market and those that affect their operations once abroad. Using the data underlying the OECD Services Trade Restrictiveness Index (OECD STRI), Figure D.8 presents the relative importance of such

Figure D.7: Restrictiveness of services trade policy by sector, 2009



Source: Authors' calculations based on World Bank STRI data for 2009.

Figure D.8: Average OECD STRI by type of measure, by sector, 2015



Note: The value of the OECD STRI ranges from 0 to 1, where 0 is completely open and 1 is completely closed.

Source: Author's calculations based on the OECD STRI data for 2015.

measures for the sectors and economies covered by the index in 2015. It should be noted that, although the titles of the World Bank and OECD indices are the same, the two are different in scope, methodology and country coverage. The OCED STRI is more recent and covers a greater number of sectors, while the World Bank STRI is much wider in terms of country coverage but does not offer a ready-made distinction between "operation" and "establishment" measures.[17]

As Figure D.8 illustrates, "establishment" barriers are most important for professional services, followed by audiovisual, transport and financial services. This would suggest that, in these sectors, SMEs will find it relatively more challenging to export.

Trade barriers impact the mode(s) of supply which firms rely on to serve foreign markets. As discussed, SMEs depend more on certain modes than on others. Although no empirical analysis exists that can disentangle the specific impact of trade policies on SMEs' choice of export mode, obstacles in those modes clearly affect SMEs' participation in services trade more severely, relative to large companies in the same situation.

Still, one may assume that, as least as far as small and micro enterprises are concerned, mode 3 would not be viable even in the absence of any meaningful restrictions, in light of the significant costs involved in establishing a commercial presence abroad. Barriers to mode 3 may therefore affect the smallest firms relatively less than barriers to other modes of supply. Indeed, most of the discussion of the measures that affect the export ability of services SMEs focuses on trade via modes 1 and 4, and, to a much more limited extent, mode 3 (see, for instance, Adlung and Soprana, 2012; Nordås, 2015).[18]

When it comes to mode 3, SMEs are impacted in particular by measures that prescribe commercial presence in the form of a subsidiary. As it is cheaper and administratively less burdensome if firms are allowed to become established through representative offices or branches, SMEs are likely to be significantly more impacted by requirements to be locally incorporated. Other measures that can be assumed to have similar effects include minimum capital requirements, training obligations, residency requirements and the granting of subsidies to domestic SME suppliers only.

The most relevant barriers, as far as mode 1 is concerned, are measures requiring firms to establish a commercial presence in the host market in order to supply cross-border services. Similarly, measures imposing data localization requirements in foreign markets are bound to impose a higher burden on SMEs.

Finally, barriers to mode 4 trade would appear to be of particular relevance for SMEs. For starters, the mode 4 category of "independent professionals" (i.e. self-employed individuals supplying a service abroad) concerns SMEs by definition. As such, all barriers to the movement of independent professionals impose a burden wholly, and solely, on SMEs. This is especially crucial when considering the relevance that mode 4 is likely to have for exports from these "ultra-micro" enterprises, and in view of the higher probability that, given their relatively more highly skilled workforce, smaller services firms may be contracted to supply services internationally.

Barriers applicable to the mode 4 category of "contractual service suppliers" can also be particularly burdensome for SMEs. Contractual service suppliers are employees of a service firm who enter the export market pursuant to a contract concluded between their employer and a local consumer. Similarly to independent professionals, services exported by contractual service suppliers are not contingent on the establishment of a commercial presence, and are, therefore, less costly to provide. Therefore, market access limitations such as quotas or economic needs tests, as well as any relevant discriminatory measures such as residency requirements, non-eligibility under subsidy schemes, discriminatory tax treatment or obligations to train domestic workers that are applicable to these two mode 4 categories, disproportionately affect SMEs.

There are a number of other services measures that, although not trade barriers *per se* (i.e. not falling under the six measures that are defined as market access limitations under the GATS and not violating the GATS national treatment disciplines), may nevertheless restrict trade opportunities for SMEs in particular. Amongst these are licensing and qualification requirements and procedures, and technical standards, to the extent that these are particularly costly or administratively complex to fulfil and, as such, significantly increase the fixed cost of entering a foreign market. It should be noted, however, that, provided that these measures are non-discriminatory, their effect is not only felt only by foreign SMEs, but also by domestic ones. By raising the cost of serving the domestic market, such measures disproportionately affect small firms of any origin.

Still, it is true that, for those firms that export, domestic regulatory measures are a cost to be borne in each individual foreign market. SMEs are therefore less likely than larger firms to export to multiple markets, thus potentially reducing the extensive margin of trade. This seems to be corroborated by empirical research. Lejárraga and Oberhofer (2013) and Lejárraga et al. (2014) find that SMEs' export decisions are very persistent, i.e. firms which enter a foreign market are likely to continue to export services to that market over the years. Their research also shows that, once they sell abroad, services SMEs tend to export a higher share of their total output compared to larger firms. As such, they are disproportionally affected by trade-restricting measures.

Lack of recognition of foreign work experience, education or qualifications is also likely to prove a relatively more burdensome hurdle for SMEs wishing to export regulated services. In the absence of recognition arrangements that "fast-track" the authorization to supply a service in a foreign market, suppliers of regulated services are required to embark in costly and lengthy processes to demonstrate that they are qualified to supply the service in question. Again, suppliers will need to so for every market they wish to enter. To the extent that firms have the resources to set up a commercial presence abroad, they may obviate this obstacle by hiring locally qualified professionals, but this is likely to prove prohibitively expensive for SMEs.

Visa and work permit requirements and procedures can also be assumed to impose a relatively higher burden on SMEs, in light of the greater relevance mode 4 has for their exports. This is likely to be especially true for developing country SMEs, as their employees (who are usually nationals) tend to be subjected to comparatively more stringent visa requirements, particularly so when they are seeking to access other developing country markets.[19] The introduction of programmes to streamline entry formalities for businesses accredited as "premium visa traders", i.e. usually large concerns, is also likely to put SMEs at further relative disadvantage compared to bigger firms.

3. Other major trade-related costs

This section focuses on those firm-perceived obstacles to trade identified in Section D.1 that go beyond the strict definition of trade policies (tariff, non-tariff and regulatory barriers discussed in Section D.2). Many of the trade costs discussed in this section are those arising from the services needed to do trade, such as distribution costs, transportation costs and cost to finance trading activity. In this respect, the analysis here differs from the discussion in Section D.2(d), which discussed obstacles to trade in services and not

the costs related to the use of services necessary to the trading activity.

(a) Information and distribution channels

Beyond market access and regulatory barriers for goods and services, additional trade costs that are higher for SMEs can be identified in relation to information and distribution channels. There are intermediary companies, besides producers and consumers of goods and services, which participate in creating the structure of a distribution network, with a specific function to fulfil. Distribution channels can, therefore, take various forms: (i) direct sales of producers to clients; (ii) sales through a retailer; (iii) sales through wholesaler(s) and retailer, or (iv) sales using an agent working on a commission basis (who can eventually bridge gaps between producers and wholesalers/retailers or clients). There are also some important functions that support an efficient distribution network which may or may not be fulfilled by these intermediaries, e.g. market analysis, advertising, transport/logistics or after-sales services.

For SMEs, having access to distribution networks may be a crucial component to develop their business, in particular for diversifying their customers within a region or worldwide. As shown in Section D.1, reaching clients in other economies may be challenging for SMEs without access to relevant distribution channels and related functions. This is reflected in the high proportion of responses citing trade-related impediments for SMEs in Figure D.1 ("Unable to find foreign partners" and "Transportation/shipping costs") for the goods trade. For services, this can to a certain extent be illustrated by the number of responses citing "Difficulty establishing affiliates in foreign markets" in Figure D.2, which reflects the need in many cases for proximity with the client given the intangibility of the products being traded and, in some instances, adapt to the culture/language of the destination market. Access to information by potential SME exporters on distribution channels and destination markets can, therefore, also be related to all that is described above.

Items in the distribution channel that can be identified as hurdles for SME exporters are: having and choosing goods or services fit for the export market, whether targeting specific countries, regions or worldwide; making their products known to potential clients; delivery of products and associated risks (e.g. transport and physical delivery of goods and services; online delivery of products, ensuring that eventual property rights are not at threat). In that context, it is important to note that some intermediaries, such as those engaged in e-commerce, may themselves be SMEs. In addition, SME exporters also need to face the cost of gathering market information, as well as access to regulatory information in export destinations.

A firm that wants to export goods or services needs to know about the regulations in the economy to which it intends to export (for example, technical regulations about the characteristics that a product needs to meet, rules and regulations relating to trade). That firm also needs information about export opportunities in the destination market. Lack of knowledge about regulations could result in the product not complying with the importing country regulations, which, in turn, could cause the firm to face the costs of the product's rejection at the border of the target country. Lack of knowledge about the demand in the export market may also induce profit losses. Gathering information is costly. Anderson and van Wincoop (2004) estimate that approximately 6 per cent of total trade barriers are information costs. These are broadly defined to include information flows generated by migration networks Rauch and Trindade (2002), volume of telephone traffic and number of branches of the importing country's banks located in the exporting country.

Gathering information is a crucial factor in determining export decisions, but it bears a cost. This cost is to a large extent independent of how much a firm will export. Therefore, it is a cost that affects especially small firms that are less capable than large firms of spreading information costs across output. A recent survey by the Conférence permanente des chambres consulaires africaines et francophones (CPCCAF), asking "When exporting, what are the main types of information you need?", shows that trade contacts and business opportunities are the most significant information barrier faced by small firms in Africa, followed by information on relevant regulations, and on export support measures (see Table D.3).

Delivery and logistical aspects are also an issue in trade, in particular for SMEs, whether as producers or intermediaries. SMEs often have to rely on existing solutions to have their products delivered to clients. These include services offered by postal systems, express delivery services, cloud services, or

Table D.3: Main information barriers faced by SMEs in Africa

Information on	Average %
Trade contacts and business opportunities	69
Relevant regulations	41
Export support measures	41
Target markets	34
Others	2

Source: Adapted from WTO and ITC (2014), based on CPCCAF survey data.

downloading platforms through licensing arrangements. For this reason, it is important to ensure that an effective solution is chosen. Alternatively, SMEs may decide to be creative. For example, in e-commerce "while larger businesses like the online retailer Ozon.ru may choose to build their own distribution networks, this option is out of reach for micro and small businesses that may need to explore other innovative solutions, e.g. the motorbike delivery system used in Viet Nam. Out-of-home delivery – involving collection points, delivery at work, parcel lockers and in-store pickup – is one option to increase the attractiveness of e-commerce in developing countries" (UNCTAD, 2015).

The support of intermediaries in a distribution channel is most often used by companies that cannot sell products by themselves. Although direct contact with clients helps to establish prices, the participation of an intermediary ensures that the product will be provided more efficiently by means of their networks, contacts, experience, specialization or lower costs borne by the intermediary. For example, some intermediaries hold directories of potential clients and/or (specialized) distribution firms, conduct in-country market research, help to address language barriers (e.g. via translation services), or offer assistance for travel arrangements or follow-up support. For SMEs, direct contact with clients has traditionally been seen as more effective than use of intermediaries in the distribution channel, and this is particularly true for services, with which exclusive distribution strategies, a single product, clearly defined clients and episodic sales are the rule. When it comes to exporting its products, this "direct" model may be more difficult to implement for SMEs, in particular if they want to reach a wider set of clients. For SMEs, using go-between services reduces the portion of tasks that they would do themselves if they decided not to use such intermediaries.[20] It also reduces part of the associated risks or clients' fears, by providing advice/interactivity, trust with payments, or the perception that purchases are not so complex. In addition, using intermediaries may be a lighter solution for SMEs than establishing affiliates in services (or eventually goods) export markets, unless the size of business is big enough to justify such an establishment.

In the context of distribution networks, marketing through the Internet (e.g. through the use of search engines) or email, social networking platforms (e.g. Facebook) and e-commerce have had an important role in recent years. Whether using the direct channel (i.e. direct sales of producers to clients) or indirect means (i.e. intermediaries), these distribution network instruments have enabled a greater participation of SMEs in international trade by increasing the visibility of their products and allowing the establishment of links with clients in potential overseas markets (see Section D.4 below). They have also helped enterprises, in particular SMEs, to obtain information more easily on foreign markets (e.g. analytical solutions such as those offered by search engines or e-commerce companies), as well as to access information on regulatory matters or standards. Finally, these distribution networks have assisted SMEs to obtain information on the network itself, to understand how best they can approach clients (i.e. via the ideal agent/dealer/distributor, payment systems, marketing resources, shipping and receiving logistics, etc.).

(b) Transport and logistics

Trade logistics goes beyond shipping goods across borders; it covers a wide range of services from the pick-up of goods, consolidation of shipment, procurement of transportation, customs clearance, warehousing and distribution, to the delivery of goods to final consumers. SMEs often lack international freight shipment experiences, and their cargos are usually smaller and of more irregular frequency. SMEs' imports and exports therefore rely on services provided by logistics providers.

Compared to big firms, SMEs face particular logistics challenges arising from higher logistics costs and the inability of accessing efficient logistics services, which are two sides of the same coin. This is even more the case for SMEs in developing countries, due to poor logistics infrastructure and underdeveloped logistics markets. The World Bank Logistics Performance Index consistently shows that logistics costs in low-performance countries (mainly developing countries) are higher than in high-performance countries (mainly developed countries). Logistics challenges constitute an important impediment to SMEs' participation in trade.

SMEs trade smaller quantities than big enterprises do. This implies that fixed trade costs, including logistics costs, often make up a greater share of the unit cost of their goods when compared to rivals exporting larger volumes. In other words, logistics tend to cost more for SMEs than for large enterprises. For example, in Latin America, domestic logistics costs, including stock management, storage, transport and distribution, can add up to more than 42 per cent of total sales for SMEs, as compared to 15-18 per cent for large firms. In Nicaragua, logistics costs for small beef producers, from farm to abattoir, are more than double of what they are for large producers. For a small exporter to move a kilogramme of tomatoes from a Costa Rican farm to the final point of sale in Managua, Nicaragua, transport represents the main cost, at almost a quarter of the total cost (23 per cent), followed by customs (11 per cent) and taxes (6 per cent). In contrast, for large exporters,

the main costs are customs (10 per cent), followed by transport (6 per cent) and taxes (5 per cent) (OECD, 2014). Hence, reducing logistics costs is crucial for the improvement of SMEs' trade opportunities.

Geographical distance clearly affects SMEs' participation on export. Evidence shows that, compared to large firms, SMEs are discouraged from entering distant markets. For instance, research conducted on French firms indicates that small firms export on average 3.7 per cent less to export destinations that are 10 per cent further away from France. For those SMEs exporting to distant markets, the average shipments per product and per firm are greater in order to overcome the transportation costs.

According to a study undertaken by the USITC (USITC, 2014), the low reliability and high costs of shipping represent significant barriers for US-based SMEs' exporting to the European Union. Cost and reliability problems of EU postal systems have forced companies to use private couriers for shipping, which results in higher costs that are harder for small businesses to absorb. Shipping costs are also a major obstacle for EU SMEs' exports to the United States, "because of the distance to the US market, business owners are concerned that the cost of transportation will increase the price of their products to a point where they can no longer compete with products manufactured locally" (UPS, 2014).

In order to reduce logistics costs, firms (especially big manufacturers or big retailers) tend to outsource logistics functions (transport, warehousing, inventory management, freight forwarding, etc.) to specialized providers, i.e. providers of "third-party logistics" (3PL). "Outsourcing in logistics is a sign of strong logistics performance and of a mature logistics market, and is often a direct marker of logistics sophistication" (World Bank, 2014). Partnerships with 3PL providers not only allow firms to focus on their core business; it also means access to advanced logistics services and supply chain management. Advanced logistics services are ICT-intensive and adapt quickly to new technologies, which often require the integration of supply chain management platforms with customers' internal systems. Due to resource constraints, SMEs often lag behind in adapting to technological advances and are reluctant to tap into the 3PL market. The small size of their businesses is also a disadvantage for SMEs wishing to negotiate affordable contracts with 3PL.[21]

SMEs face disproportionally high logistics costs (Straube et al., 2013). For manufacturing firms with less than 250 employees, on average their logistics costs account for 14.7 per cent of their overall revenue. Conversely, firms with more than 1,000 employees state that the logistics costs only account for 6.7 per cent of their total revenue. This figure is similar for firms with 250 to 1,000 workers, which report that logistics costs account for 6.4 per cent of their total revenue. The research includes 113 industrial firms across the world, and the break-up figures on regional or national levels affirm the above findings. For example, in China, SMEs reported spending 15 per cent of their overall revenue on logistics costs, whereas large firms (more than 1,000 workers) reported spending only 5.2 per cent. In South America, SMEs reported spending 15.3 per cent of overall revenue and large firms reported spending 9.4 per cent (OECD and World Bank, 2015).

(c) Financing difficulties

International activities are more dependent on external capital than domestic activities. Moreover, credit constraints are particularly reflected in access to trade finance. This subsection discusses access to finance for firms that are involved in trade, with a focus on trade finance in the second part.

(i) Access to finance

Selling to foreign markets involves specific fixed and variable costs: developing marketing channels, adapting products and packaging to foreign tastes, and learning to deal with new bureaucratic procedures. The time lag from production to the realization of the corresponding revenues is longer for international than for domestic sales. Moreover, international sales contracts are more complex, more risky and less enforceable, thus often requiring some forms of external credit insurance. For all these reasons, exporters are more likely to need external credit.

Lack of, or insufficient access to, finance can strongly inhibit formal SME development, regardless of the level of per capita income of countries. Lending to SMEs, especially for longer maturity dates, is often inhibited by informational problems and transaction costs, including the absence of records of firm's past performance (required when requesting a loan), lack of collateral, and high fixed costs of financial transactions, all of which often translate into higher lending costs and greater risks for financial institutions, and hence higher interest rates and fees for SMEs than for larger firms. Indeed, recent research found that market failures, notably in financial markets (due to either financial crises or "information asymmetries"), fall disproportionally on SMEs, resulting in more credit rationing, higher "screening" costs and higher interest rates from banks than for larger enterprises (Stiglitz and Weiss, 1981; Beck and Demirguc-Kunt, 2006).

Financial exclusion, by forcing small firms to rely exclusively on their own resources to meet their

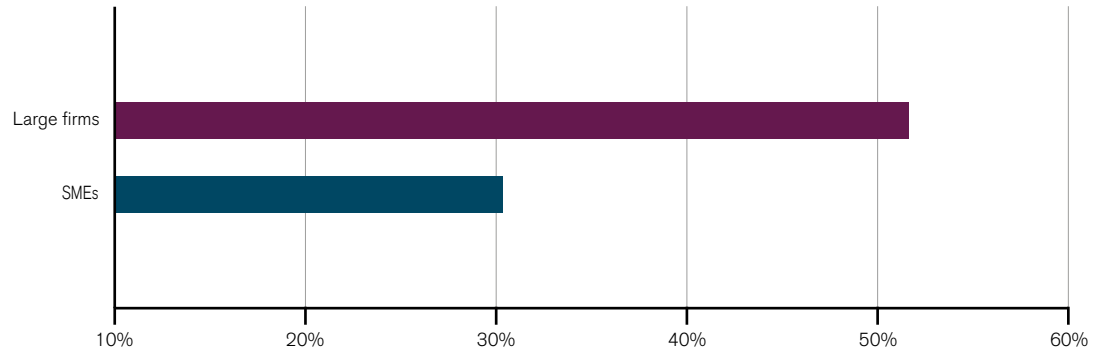
financial needs, reduces economic opportunity. Beck et al. (2008) find that small firms use less external finance, especially bank finance. SMEs rely more on trade credit and informal sources and less on equity and formal debt than large firms. Availability of external finance is positively associated with the number of start-ups – an important indicator of entrepreneurship – as well as with firm dynamism and innovation; and allows existing firms to exploit growth and investment opportunities, and to achieve larger equilibrium size.

Figure D.9 provides some indicators of the degree to which SMEs are able to access formal financial systems.

Poor access to finance affects the structure of international trade. Beck (2002) explored, from a theoretical and empirical point of view, the link between the level of financial development and the structure of international trade. The empirical exercise (estimation from a 30-year panel with 65 countries) gives support to the predictions of the model, namely that countries with a higher level of financial development (measured by credit to the private sector by deposit money banks and other financial institutions as a share of GDP) have higher shares of manufactured exports in GDP and in total merchandise exports and have a higher trade balance in manufactured goods.

Barriers in access to finance also inhibit SMEs' ability to use the Internet to engage in international trade. In fact, one of the most difficult barriers to overcome when selling abroad relates to the difficulty or impossibility of processing online payments. Box D.3 discusses barriers to online payments and the e-payment alternatives to bank cards that have emerged worldwide.

Figure D.9: Firms with a bank loan/line of credit (percentages)



Note: SMEs are defined based on local banking context. If there is no local definition, the World Bank Group definition may be used as a guideline. The World Bank Group defines a firm as an SME if it meets two of the following three requirements: (i) it has less than 300 employees, (ii) it has less than US$ 15 million in assets, and (iii) it has less than US$ 15 million in annual sales. As some financial institutions are unable to report data based on any of these three criteria, loan size is also used as a proxy. In that case, a firm is considered an SME if the size of its outstanding loan from a financial institution is less than US$ 1 million.

Source: World Bank Group Enterprise Surveys, data refer to the most recent year available for each country.

Box D.3: Barriers to the internationalization of SMEs: the case of online payments

A 2009 survey of 9,480 SMEs in 33 European countries found that only 28 per cent of firms' websites allow for orders to be placed online and only 14 per cent of SMEs have websites that allow online completion of the entire transaction, including payments (European Commission, 2010). Another survey of 352 SMEs across the European Union (ECommerce Europe, 2015) revealed that 25 per cent of merchants considered online payments a problematic area.[22] When asked for concrete examples of persistent barriers linked to online payments across the European Union, online merchants specifically mentioned outdated regulations impeding the roll-out of innovative online payment methods, high costs (e.g. burdensome interchange fees and processing fees of banks and third-party payment providers), the lack of a uniform electronic identification system of consumers, thus obliging consumers and merchants to go through burdensome authentication and identification processes, and complicated check-out processes, prompting consumers to leave the process prematurely when authorization and authentication requires too many steps.

Box D.3: Barriers to the internationalization of SMEs: the case of online payments *(continued)*

The situation is not different in other regions. For example, the vast majority of payments for online retail in ASEAN countries are still made offline, in methods such as cash-on-delivery. A survey conducted in 2013 found that only 2 to 11 per cent of digital buyers use online payments in ASEAN countries, with the exception of Singapore, where, according to the CIMB ASEAN Research Institute (CARI, 2015), the rate of online payment use stands at 50 per cent. Financial exclusion (i.e. concerning the large "unbanked" population), concerns about data security and burdensome know-your-customer processes are usually cited as the root causes of deficient online payment penetration.

Many e-payment alternatives to bank cards have emerged worldwide and are now widely, although not yet universally, accessible to Internet users, such as PayPal, Amazon Payments, and Alipay (CARI, 2015). Mobile banking, i.e. the use of mobile phones to send and receive payments and conduct other banking transactions, has been soaring throughout Africa. Kenya is at the forefront of Africa's mobile money market, due to the success of M-PESA, a mobile banking system launched in 2007 by the country's leading mobile service provider, Safaricom. Mobile banking is even acquiring a cross-border dimension. Last year, for example, Vodafone (Safaricom's largest shareholder) launched M-PESA services between Kenya and Tanzania. Cross-border mobile solutions like this one might contribute to financial inclusion and provide a low-cost option for SMEs engaging in international trade.

(ii) Trade finance

Difficulty in accessing affordable trade finance is one of the most cited constraints for SMEs engaging in international trade, affecting small businesses in both developed and developing countries.

Regarding developed countries, the 2010 USITC survey, covering 2,350 SMEs and 850 large firms, concluded that 32 per cent of SMEs in the manufacturing sector and 46 per cent of SMEs in services sectors considered the process of obtaining finance for conducting cross-border trade "burdensome". Only 10 per cent of large firms in the US manufacturing sector and 17 per cent in the services sector experienced the same difficulties.

The USITC study also revealed that, for SMEs looking to start exporting or expanding into new markets, the lack of access to credit was the number one constraint for manufactured firms, and number three for services firms, out of 19 constraints listed in the survey. Sectors which generally show significant levels of creditworthiness and collateral (such as transport equipment, information technology and professional services) considered that securing trade finance was as "acute" a problem for them as for other sectors.

Finally, the survey highlights that while US banks considered the SME market segment as having a large potential for profitability, SMEs were not their preferred borrowers in view of the higher transactional and informational costs of dealing with such companies (relative to larger corporations). In turn, US-based SMEs complained about bank's "excessive" oversight, failure to meet their specific borrowing needs, and lack of flexibility regarding the use of alternative sources of finance, rather than the proposed ones.

One may also mention the OECD-APEC study on *Removing Barriers to SME Access to International Markets*, surveying SMEs' perception of the barriers to their internationalization (OECD, 2008). The shortage of working capital to finance exports is ranked as the number one constraint to the internationalization of SMEs. Surveys and studies found similar results in Europe and Japan. In a study covering data on 50,000 French exporters, it was found that, during the financial crisis of 2008-09, credit constraints on smaller exporters were much higher than on larger firms, to the point of reducing the range of destination for business or of leading the SME to stop exporting altogether (Bricongne et al., 2012). It was found that in Japan, SMEs are also more likely to be associated with troubled banks, and hence exporting SMEs are as a result more vulnerable in periods of financial crises (Amiti and Weinstein, 2011). In general, credit-constrained firms, mostly likely to be found among SMEs, are also less likely to export (Bellone et al., 2010; Manova, 2013).

Access to trade finance tends to be the most difficult in developing countries. Part of the problem lies with the fact that local banks may lack the capacity, know-how, regulatory environment, international network and foreign currency to supply import and export-related finance. Equally, traders may not know the products available to them, or how to use them efficiently. Banks in some developing countries may be more risk-averse, in view of their smaller capital base and ability to handle international trade-related credit risk.

According to a recent study by the Asian Development Bank (ADB, 2014), small and medium-sized enterprises (SMEs) are the most credit-constrained; it is estimated that half of their requests for trade finance are rejected, compared to only 7 per cent for multinational

corporations. With 68 per cent of surveyed companies reporting that they did not seek alternatives for rejected transactions, trade finance gaps appear to be exacerbated by a lack of awareness and familiarity among companies – particularly smaller ones – about the many types of trade finance products and innovative options which exist on the market (such as supply-chain financing, bank payment obligations and forfaiting). A large majority of firms stated that they would benefit from greater financial education.

Other obstacles in developing countries include banking or country risks, particularly in the context of regional and global financial crises; exports from Asian countries, in particular during the Asian financial crises, which led in certain cases to interruptions of imports and exports when confirming banks did not trust letters of credit issued in crisis-stricken countries (Auboin and Meier-Ewert, 2004). More recently, exports from Sub-Saharan and other low-income countries have been particularly affected by the global financial crisis because they are more dependent on bank-intermediated finance than other regions (German Development Institute, 2015).

The high level of concentration of global trade finance markets may not help SMEs either. A recent study by DiCaprio et al. (2015) revealed that a large share of international trade finance is supplied by a relatively small group of globally active international banks. This group of about 40 banks accounts for some 30 per cent of trade finance supplied internationally, with local and regional banks supplying the rest of the market. In a seminal paper, Amiti and Weinstein (2011) demonstrate that the health of banks influence the trade finance conditions offered to companies and hence the export growth of these companies. Hence, the availability of trade finance is largely influenced by the strength of international banks at any point in time (Auboin and Engemann, 2013; DiCaprio et al., 2015).

The main trade finance banks are also dominant in other segments of financial services. As a result, financial crises originating in other segments of these banks, changes in prudential rules, and any recalibration of their balance sheets have a direct impact on the provision of trade finance globally and locally. For example, the largest banks maintain some presence in more than 100 countries, and several hundreds of correspondent banks on which they are prepared to confirm letters of credit. Since the end of the 2009-10 financial crisis, some global banks have reduced their size as well as their presence internationally, in particular in the poorest countries (Auboin and Engemann, 2013). In other words, the downsizing of global banks after the financial crisis is likely to have had a negative effect on the ability of SME traders in developing countries to receive credit, have their letters of credit confirmed, and have access to US dollars, the most used currency in international trade (DiCaprio et al., 2015).

Box D.4 contains a case study illustrating the difficulties faced by SME traders in new "frontier" countries for trade. It describes in a nutshell the challenges mentioned above: the limited appetite of international banks to approach new and promising markets, the lack of ability and know-how in local banks to support new traders, and the obligation to resort to second-best solutions that either maintain producers and traders downstream or carry significant costs in terms of opportunity.

Box D.4: Lack of trade finance as an obstacle to trade in Myanmar

Myanmar is a new "frontier" country for trade. According to the local garment industry association, two new garment factories financed by an array of local, Chinese and Indian investors open each day. New export-oriented investors have also appeared in the agro-food and consumer products sectors. Nevertheless, SMEs face difficulties in financing their imports and exports, resulting in lost trading opportunities. They are symptomatic of constraints found in countries with similar levels of development. Such constraints may include a reduced capacity for the local banking sector to support the trade sector, a dearth of information about trade finance products offered by the local banking sector, and a lack of awareness about appropriate regulation for trade finance products.

In such a difficult environment, Myanmar's main traders have resorted to second-best solutions, mainly by paying for imports via bank accounts located overseas, or by opening letters of credit through brokers in offshore centres such as Singapore and Hong Kong, China. Even so, only the largest companies can afford to resort to such solutions. New small garment exporters do not hold off-shore cash reserves with which to pay their suppliers, nor do they have sufficient credit records for brokers to find foreign banks to open letters of credit. They can only rely on Myanmar's local banks, which have limited risk management capacity, still charge a US$ 1,500 fee for opening letters of credit, and require a minimum of 30 per cent collateral. No open account facility is available in Myanmar, and trade credit insurance is not allowed.

Box D.4: Lack of trade finance as an obstacle to trade in Myanmar *(continued)*

The lack of efficient and affordable trade financing tends to relegate new exporters of garment and food products to downstream operations that do not require purchase of imports or credit on export receipts. The Government of Myanmar is reform-minded. Reforms in the financial sector are gradual, and it might indeed take some time for trade finance regulation to change, as well as for local banks to take more risks and propose a wider range of competitive trade finance products to local clients. International banks are increasingly allowed to operate locally, although they are confined to providing services only to foreign-owned companies operating in the country.

Myanmar currently receives technical assistance on upgrading its trading and financial systems from the international community. Recently, the diagnosis for trade finance has improved, with joint missions and reports by several international organizations, including the International Trade Centre, the World Bank and the WTO, the latter taking place in the context of the Enhanced Integrated Framework.

4. ICT-enabled trade: benefits and challenges for SMEs

As shown in Section B.3, information and communication technologies (ICTs), such as the Internet, have provided more avenues for SMEs to internationalize. The benefits from the ICT revolution are particularly high for SMEs, especially if they can integrate in online commercial platforms that enhance buyer information and trust. 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). Recent research looking at exports of goods traded through eBay confirms that e-commerce reduces the costs associated with physical distance between sellers and consumers by providing both trust and information at a very low cost (Lendle et al., 2016). Moreover, online platforms can provide ready-made marketing and infrastructure, vastly lower the costs and technical obstacles to establishing an online presence (compared with stand-alone websites), and make it possible to offer integrated fulfilment, hosting, translation, customer services and data analytics.

For rural, geographically remote and less productive sellers, online sales can significantly reduce trade costs associated with distance and allow connecting with distant customers. Lendle and Olarreaga (2014) find that firms conducting business on eBay are smaller on average than traditional offline firms. These authors also note that e-commerce offers growth opportunities to SMEs which appear significant for developing countries. Furthermore, selling through digital channels can produce productivity gains that the McKinsey Global Institute (2013) has estimated at between 6 and 15 per cent.

Despite the promise, data show that SMEs continue to be less well represented online than larger enterprises. Online markets supplying goods and services depend on the affordability of, and access to, communications infrastructure. The underlying communications means that contribute to this phenomenon include fixed networks for Internet and private networks, mobile telephony and Internet and satellite networks. Without connectivity, however, there is a lower likelihood of reducing information and distribution costs, increasing participation in trade, improving market efficiency and, consequently, increasing export revenues.

(a) ICT infrastructure and access – the first hurdle

In order for SMEs to more fully realise the benefits of online trade, an ICT infrastructure needs to be in place, the quality of services offered needs to be adequate and the prices must be affordable for SMEs. Such issues are generally referred to as connectivity and access. The introduction of competition in the telecommunications sector, which is nearly a global phenomenon, combined with the introduction of ICT, rendering communication both more efficient and more global, have reduced prices and increased penetration levels. However, this section shows that significant gaps persist between developed and developing economies and, within economies, between small and large firms.

Key ICT indicators on mobile and fixed-line technologies are illustrated in Table D.4. Regions such as Africa, the Middle East, and Asia and the Pacific, have low levels of fixed telephone access (at 1.2, 7.3 and 11.3 per cent respectively), but relatively high levels of mobile phone penetration (73.3, 108.2 and 91.6 per cent). Fixed broadband access is correspondingly low, given the low levels of fixed-line access. However, in many of these regions, mobile phones, rather than desktop computers, may well become the principle means of access to the Internet. With regard to mobile broadband, there is still a gap across countries at different levels of development, with nearly 87 per cent access in developed countries

Table D.4: Key ICT indicators, 2015 (penetration rates)

	Fixed telephone subscriptions	Fixed broadband subscriptions	Mobile cellular telephone subscriptions	Mobile broadband subscriptions	Households with Internet access at home	Individuals using the Internet
World	14.5	10.8	96.8	47.2	46.4	43.4
Developed	39	29	120.6	86.7	81.3	82.2
Developing	9.4	7.1	91.8	39.1	34.1	35.3
Africa	1.2	0.5	73.5	17.4	10.7	20.7
Middle East	7.3	3.7	108.2	40.6	40.3	37
Asia-Pacific	11.3	8.9	91.6	42.3	39	36.9
Commonwealth of Independent States (CIS)	23.1	13.6	138.1	49.7	60.1	59.9
Europe	37.3	29.6	120.6	78.2	82.1	77.6
The Americas	25.4	18	108.1	77.6	60	66

Notes: Estimates per 100 inhabitants.

Source: ITU World Telecommunication/ICT Indicators database.

compared with 39 per cent the average in the developing world. Africa, at 17.4 per cent, is well below the average for mobile broadband penetration in developing countries. However, as noted in an ICT report, although Africa lags behind, its continuing advances in mobile telephony may to some extent offset the larger gap in fixed broadband connections, and mobile telephone adoption is rising rapidly in some countries. Moreover, a number of African countries recently initiated fixed broadband development programmes (ITC, 2015a).

The *SME Competitiveness Outlook 2015* (ITC, 2015b) provides a perspective based on firm size. The report finds that the biggest gap between small and large firms performance is in "e-connectivity". The connectivity gap between small and large firms is especially large is least-developed countries (LDCs). Small firms in LDCs only attain 22 per cent of the connectivity score of large firms in LDCs, compared to 64 per cent in developed countries.

Broadband access to the Internet, and other data networks, has now become nearly essential. The significance of broadband technologies is that they offer the higher speeds needed to take advantage of newer technologies, such as cloud computing, and to use or offer services that require the transfer of large files or quantities of data. The quality of connections is particularly critical for SMEs supplying, for example, business process outsourcing services in business-to-business (B2B) markets. Even in countries such as the United States where access to fixed-line Internet and computers is high, the advent of smartphones and high broadband mobile networks has led to a significant shift toward using mobile phones for e-commerce (McKinsey Global Institute, 2015). Research has shown that increases in broadband Internet access can increase openness to international trade. According to one analysis:

> "… large increases in broadband use translate into increases in trade-to-GDP ratios equal to several percentage points. The model suggests that the historical growth in broadband use between 2000 and 2011 *did increase* the countries' openness to trade (measured by the ratio of their total trade to their GDP) by 4.21 percentage points on average, with larger effects in the high income countries (a 10.21 percentage point increase on average) than in the developing countries (a 1.67 percentage point increase on average). The increases in broadband users that we project through 2016 suggest that the countries' trade-to-GDP ratios *will increase* by an additional 6.88 percentage points on average in the high income countries and by an additional 1.67 percentage points on average in the developing countries". (Riker, 2014, emphasis added).

As noted above, pricing is nearly as important as access, once services are available. However, mobile broadband is also an area in which developing countries remain further behind the developed countries than in other forms of ICT access. As shown in Tables D.5 and D.6, even in regions such as Africa, the Commonwealth of Independent States (CIS), the Middle East and Asia, where mobile phone penetration is impressive compared

Table D.5: Fixed broadband prices as a percentage of GNI per capita, by region, 2014

	Average	Standard deviation	Minimum	Maximum	Median
Europe	1.3	0.7	0.5	3.5	1.1
Commonwealth of Independent States (CIS)	3.6	2.9	0.7	10.7	3.2
Americas	7.4	11.8	0.4	63.5	4.5
Middle East	9.2	17.5	0.3	71.3	2.8
Asia-Pacific	16.0	39.1	0.3	221.7	4.4
Africa	178.3	398.3	1.4	2194.2*	39.2

Notes: Based on 165 economies for which 2013 data on fixed-broadband prices were available.

*The high maximum value for Africa is due to a few outliers.

Source: ITU (2015).

Table D.6: Average mobile broadband prices and ranges by region, as a percentage of GNI per capita, 2014

	Post-paid handset-based 500MB			Prepaid handset-based 500MB			Post-paid computer-based 1GB			Prepaid computer-based 1GB		
	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
Europe	0.09	1.99	0.81	0.14	2.62	0.82	0.16	3.99	0.90	0.16	17.46	1.56
CIS	0.45	16.44	3.35	0.45	16.44	3.70	0.57	16.44	4.83	0.57	16.44	4.92
Americas	0.85	32.80	4.55	0.59	32.80	4.39	0.37	32.80	4.88	0.49	32.80	6.24
Asia-Pacific	0.17	30.54	4.39	0.26	27.99	4.28	0.35	68.60	7.53	0.49	55.99	6.77
Middle East	0.23	37.81	5.15	0.30	37.81	5.22	0.23	56.71	7.93	0.38	37.81	6.07
Africa	1.43	58.60	15.77	1.43	58.60	15.20	0.82	172.86	30.33	1.43	172.86	29.50

Notes: Based on 149 countries for which price data for all mobile-broadband services were available.

Source: ITU (2015).

with fixed services, prices remain significantly higher than in Europe, where the cost is less than 1 per cent of gross national income (GNI) for pre or post-paid service. Prices are at between 4 and 5 per cent of GNI in the CIS, the Americas, the Middle East, and Asia and the Pacific, and over 15 per cent in Africa. The proportion of GNI of the cost of fixed broadband is substantially higher than for mobile broadband in most of these regions, except the CIS, compared with Europe where, at 1.3 per cent, the cost is roughly similar to mobile broadband. Tables D.5 and D.6 also illustrate, by showing minimum and maximum price levels, that the averages belie large differences in affordability at the national level.

(b) Other obstacles and trade costs SMEs face in ICT-enabled trade

SMEs participating or hoping to engage in online trade face most of the same obstacles as any other businesses, whether online or offline. In addition, however, there are some unique costs, aside from the costs of gaining access to ICTs, which become relevant. One example concerns access to online e-commerce platforms. The platform providers may restrict the geographic scope of sellers or of buyers. Constraints on countries in which bank accounts are accepted also restrict access to, and participation in, online trade. In some cases, the full range of associated platform services is not available to sellers in all countries. Listings that viewers can access may be limited to sellers or products for which delivery is available in their country. The need to invest in consumer trust mechanisms and tools is another example. Concern about cybercrime and data breaches among consumers and client businesses is global, but may hamper developing countries more acutely.

According to the ITC, for countries where there is a lack of reliable information about the identities and activities of companies, or where the cost of obtaining such information is high, many of the international firms that issue trust or security tools are unable or unwilling to provide their services (ITC, 2015a). Another example is where legal frameworks do not adequately

deal with issues related to electronic transactions and contracting, e-signatures, online consumer and intellectual property protection, or where they restrict data flows, increasing the cost of processing and acquiring data. There is cross-country evidence that significant firm-level benefits are to be had from free or marginal cost pricing in this area, with SMEs benefiting most from less expensive data (OECD, 2015). Uncertainty in these respects imposes costs on firms and can hamper the growth of e-commerce in general, but impact SMEs in particular, as they are less capable of bearing the costs of associated risks if problems arise.

In a study on digital trade, USITC (2014) identified a number of measures which surveyed US companies said could pose obstacles specific to global trade online. These included measures such as data or firm localization requirements, data privacy and protection requirements, intellectual property rights (IPR) infringement, uncertain legal liability rules and censorship, as well as issues common to online and offline trade, such as market access conditions and customs procedures. The results also showed some variation in perceived obstacles to digital trade by firm size:

> "Large firms in digital communications and SMEs in finance had the highest percentages that viewed localization, data privacy and protection, uncertain legal liability and censorship as 'substantial or very substantial' obstacles to digital trade. Large firms and SMEs in the retail sector had the largest portions that viewed customs requirements as 'substantial or very substantial' obstacles. By contrast, large firms in the content sector and SMEs in digital communications had the highest percentages that viewed IPR infringement as a 'substantial or very substantial' obstacle." (USITC, 2014).

Further developed-country evidence of business perceptions of obstacles to online trade is provided by an EU survey on "ICT usage and e-commerce in enterprises". This survey identifies obstacles enterprises face in selling online through a website. For 2013, Table D.7 shows the percentage of enterprises by size among those selling online via websites. One-fifth of small and medium-sized enterprises in the European Union deem their products not suitable for online trading. This implies that 80 per cent of these enterprises possess products that can potentially be traded online or are already traded. However, the survey identifies a number of obstacles related to infrastructure. Logistics, payment systems, data protection and the legal framework are named. Entry costs to online trading or e-commerce are also mentioned by SMEs. Table D.8 refers to enterprises that do not have their own websites, i.e. potential traders in e-commerce platforms. Here, the share of enterprises that consider entry costs to be an important obstacle is twice as high as for enterprises that already own a website. More importantly, of the surveyed enterprises, around 60 per cent do not consider their products suitable for online trading.

In developing countries, SMEs cannot always realize the full potential of e-commerce-enabling technologies and services because of a combination of factors such as lack of awareness, unavailability of funds or local restrictions on the international transfer of funds. E-commerce support services such as cloud-based solutions for analysing web traffic and targeting customers, facilitating product listings on multiple e-commerce sites, and general business tools for customer relationship and financial management may sometimes be inaccessible if payment methods are not available to the entrepreneur. For example, although many cloud-based solutions are initially free of charge, they may still require either a credit card to register for the free version, or payment for the more advanced applications (ITC, 2015a).

A survey of Tunisian SMEs conducted by ITC (2015a) identified the following common difficulties in relation to e-commerce, in descending order of magnitude:

- promoting awareness of goods and services internationally;
- receiving international payments;
- paying value-added tax (VAT) and custom duties in export markets;
- sending goods internationally;
- managing the return of goods internationally, and storing goods internationally; and
- domestic payments.

Some of the obstacles to online trade cited by SMEs are related to doing business in general, but a significant number of them involve government measures contributing to a supportive framework for SME internationalization through e-commerce, or the lack thereof. For instance, a study by the ITC noted that in the case of the "Cadenas Productivas" programme offering online services for SMEs and run by the national development bank (NAFIN) in Mexico (ITC, 2015b), the existence of a supportive legal and regulatory environment – brought by electronic signature and security laws, and favourable taxation treatment – was critical in bringing a secure and Internet-based reverse factoring platform to SME suppliers.

Table D.7: Obstacles that limit/prevent enterprises from selling via a website, 2013 (percentage of enterprises with web sales)

	The enterprise's goods or services are not suitable – enterprises selling via website	Problems related to logistics (shipping of goods or delivery of services) – enterprises selling via website	Problems related to payments – enterprises selling via website	Problems related to ICT security or data protection – enterprises selling via website	Problems related to the legal framework – enterprises selling via website	The costs of introducing web sales too high compared to the benefits – enterprises selling via website
Small enterprises (10-49 persons employed)						
European Union (28)	20	15	14	10	9	13
Iceland	29	13	12	12	7	12
Norway	31	17	18	11	9	22
The Former Yugoslav Republic of Macedonia	8	14	29	24	18	22
Medium-sized enterprises (50-249 persons employed)						
European Union (28)	20	13	12	9	9	12
Iceland	27	3	13	13	6	14
Norway	35	15	13	8	7	16
The Former Yugoslav Republic of Macedonia	14	8	14	4	4	13
SMEs (10-249 persons employed)						
European Union (28)	20	14	14	10	9	13
Iceland	28	11	12	12	7	12
Norway	32	16	17	10	9	21
The Former Yugoslav Republic of Macedonia	9	13	27	21	16	21

Source: EU survey on "ICT usage and e-commerce in enterprises", http://ec.europa.eu/eurostat/statistics-explained/index.php/E-commerce_statistics

Another important factor is the ease with which companies can electronically access government services (often referred to as e-government) that are needed by traders. Another significant policy issue includes the need for certainty and predictability in regimes governing global data transfers, which touch on all forms of online trade in goods and services. Such measures will, inevitably, need to strike a balance between traders' interests – i.e. the business costs involved, particularly for cost-sensitive SMEs – and legitimate policy concerns for dealing effectively with cybercrime, the protection of privacy and intellectual property rights.

5. SME access to GVC-enabled trade

As discussed in previous sections of this report, SMEs may connect to international markets either by exporting directly or by integrating into GVCs and by exporting indirectly through other firms. This subsection examines how GVCs may make it easier for SMEs to connect to international markets and how certain policy-related obstacles may impede SMEs from seizing this opportunity.

Table D.8: Obstacles that limit/prevent enterprises from selling via a website, 2013 (percentage of enterprises without web sales)

	The enterprise's goods or services are not suitable – enterprises not selling via website	Problems related to logistics (shipping of goods or delivery of services) – enterprises not selling via website	Problems related to payments – enterprises not selling via website	Problems related to ICT security or data protection – enterprises not selling via website	Problems related to the legal framework – enterprises not selling via website	The costs of introducing web sales too high compared to the benefits – enterprises not selling via website
Small enterprises (10-49 persons employed)						
European Union (28)	59	26	19	17	16	26
Iceland	49	18	10	9	8	25
Norway	60	30	24	19	17	36
The Former Yugoslav Republic of Macedonia	43	25	25	20	14	24
Medium-sized enterprises (50-249 persons employed)						
European Union (28)	65	25	17	16	15	24
Iceland	57	26	12	13	11	15
Norway	67	28	18	13	15	27
The Former Yugoslav Republic of Macedonia	44	24	23	19	13	23
SMEs (10-249 persons employed)						
European Union (28)	60	26	18	17	16	26
Iceland	50	19	10	9	8	23
Norway	61	30	23	19	17	35
The Former Yugoslav Republic of Macedonia	43	24	24	20	14	24

Source: EU survey on "ICT usage and e-commerce in enterprises", http://ec.europa.eu/eurostat/statistics-explained/index.php/E-commerce_statistics

(a) GVCs increase the opportunity for SMEs to trade

GVCs benefit SMEs because they allow finer specialization and allow trade in tasks that require less fixed capital. While it is difficult for SMEs to export in capital-intensive sectors, such as transport equipment, or in sectors that require significant branding, SMEs are well represented in services sectors characterized by low fixed costs of entry. In fact, in many OECD countries, SMEs are the main exporters of business services. In low-income countries, SMEs produce labour-intensive products, low-value added manufactures and low-entry-cost and non-capital-intensive services activity. They often operate in the informal sector. In middle- and higher-income countries, SMEs are found operating in both the low-value and highly skilled niche activities (OECD and World Bank, 2015).

The opportunities for SMEs to exploit high value-added niches in GVCs arise particularly in situations where the input costs are low. An example is organic agriculture production (Staritz and Reis, 2013). In these markets, the fact that pesticides cannot be used decreases key input costs, and the fact that production often takes place in small plots reduces the disadvantage of small-scale production.

GVCs not only favour SMEs' participation in trade because they provide a market for what SMEs can do better, they also provide a channel for SMEs to overcome some of their major obstacles to trade. For example, a major obstacle to trade that the analysis in the previous sections has highlighted is the difficulty for SMEs to make contact with local distributors in foreign markets. Accessing foreign distribution networks and facing the necessary costs for marketing their products abroad can be too costly for SMEs. GVCs provide SMEs with distribution networks and brand names. This significantly reduces SME's distribution costs, thus making exporting profitable for SMEs that become suppliers of a GVC.

Another major obstacle for SMEs to access foreign markets highlighted in existing surveys is the cost of acquiring information on the global markets requirements in terms of products, processes, technology and standards (Pietrobelli and Rabellotti, 2011). GVCs offer SMEs a better position to overcome the complexity and heterogeneity of the adoption of international standards. Normally firms in GVCs tend to set and transmit information on standards and enforce their application as a condition of purchase, and often have a role in their formulation. Affiliation with a GVC with local knowledge provides advantages for firms that plan to explore oversea markets. Furthermore, GVCs are a powerful channel for technology transfer, as foreign outsourcing firms are more willing to transfer the know-how and technology required for an efficient production of the outsourced input because they will eventually be the consumer of that input and because they need to assure compatibility with their own production processes.[23]

As discussed in the *World Trade Report 2014* (WTO, 2014), this information is so valuable that local firms striving to become suppliers to multinational corporations in GVCs often enter into loss-making contracts initially with those multinationals. During these initial contracts, they learn to produce to the specifications of the multinational. This type of investment in capabilities yields two pay-offs: (i) productivity gains, allowing the local firm to produce at lower prices (Blalock and Gertler, 2008); and (ii) the positive reputation effects of being a preferred supplier to a well-known multinational, which facilitates the establishment of other business relationships (Sutton, 2012). These investments in capabilities naturally require capital while not generating tangible collateral. Consequently, it is not surprising that availability of financing is perceived as a main obstacle to GVC integration by many firms.

Besides distribution networks, access to information, and credit, smaller firms encounter other difficulties that prevent their development. The insufficient scale of SMEs can hardly support the costs of research and development and of staff training; the lack of lobbying power compared with larger firms may give SMEs a disadvantage in certain situations; their limited ability to diversify and absorb local and global shocks make SMEs more vulnerable. SMEs' small scale usually increases the period for recovery of investments in the fixed cost or in information acquisition, as well as restricting their scope to reallocate the labour force among their operations compared with larger firms. Entering GVCs can also at least partially help SMEs address these internal constraints.

Although SMEs' participation into GVCs can provide great opportunities for SMEs to access global markets and development, a key issue in the assessment of the potential gains for SMEs of GVC participation is how gains are distributed along the supply chain. The share of gains for SMEs depends on the relative bargaining power of leading and supplying firms, and the degree of competition at different points in the chain. The relative bargaining power in turn depends on how rare the capabilities of the supplier are and whether the transaction can easily be shifted to a different supplier.

If the task that the supplier performs can be codified and it is not very complex, suppliers operate in fierce competition with each other, leading to large gains by lead firms vis-a-vis SME suppliers. Multinational enterprises often benefit from a stronger bargaining position than small suppliers, because they have proprietary know-how and technology and they face a multitude of potential suppliers. Improving income distribution along the supply chain is therefore key to reducing barriers to entry in certain segments of the chain.

(b) What are the challenges and constraints of participation in GVCs for SMEs?

SMEs face a number of challenges with regard to participating in GVCs or moving up the value chain. These challenges may be related to factors internal to the SMEs (such as lack of skills and technology) or external factors (such as access to finance, standards and infrastructures) (see Box D.5).

According to a survey conducted for the Fourth Global Review of Aid for Trade (OECD and WTO, 2013) (see Table D.2), access to finance and trade finance, customs paperwork, and transport costs (airport and shipping costs for tourism and apparel and textile, respectively) and inadequate telecommunication infrastructure (in the ICT sector) are among the major obstacles for SME suppliers to enter and move up a value chain.

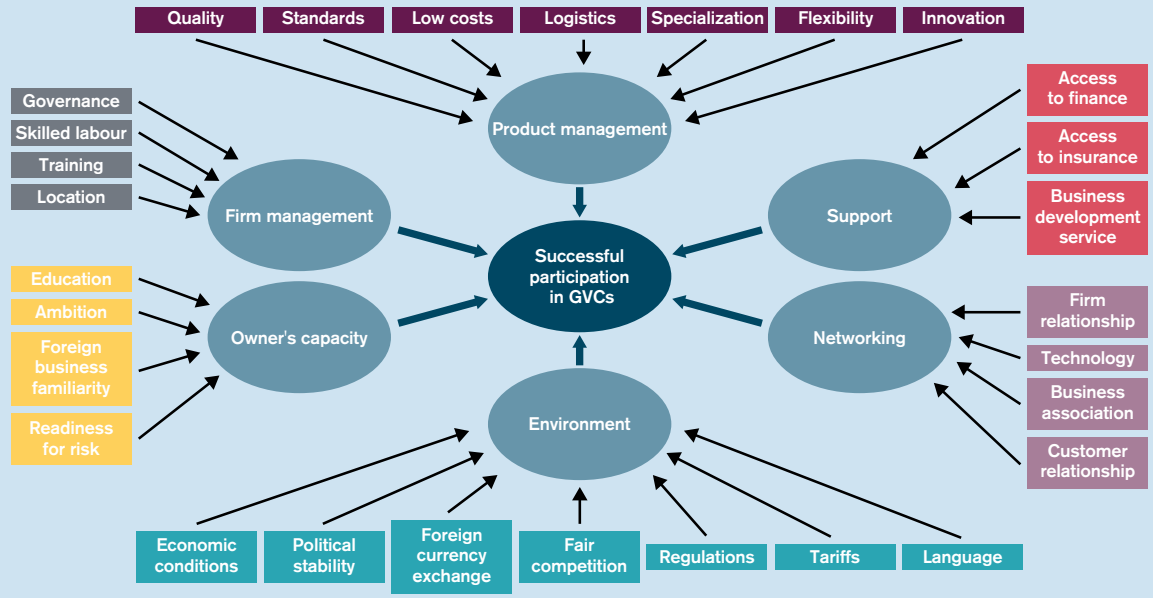
Meanwhile, the survey also shows that from the perspective of the lead firms that want to bring new suppliers into GVCs, customs procedures, compliance with the international standards and quality, and logistics are major difficulties highlighted by the leading firms in four sectors (see Table D.9). Research conducted by the ADB (ADB, 2015) stressed four major factors affecting SME participation in GVCs. These are the quality of the products and services they are able to provide, education, economic conditions in the market, and access to finance.

Empirical evidence supports these factors. When the production of a good relies intensively on imported intermediate inputs, the timely delivery and reliability of these inputs are essential. Lanz and Piermartini (2016) show that countries with better institutions and trade

Box D.5: Factors affecting SME participation in GVCs

In the context of a study project to outline the main drivers of SMEs integration into GVCs, in 2014-15 the Asian Development Bank (ADB) and the Asian Development Bank Institute (ADBI) launched a survey of enterprises in four Asian developing economies (Kazakhstan, Papua New Guinea, the Philippines and Sri Lanka) (see Arudchelvan and Wignaraja, 2015). The results are summarized in Figure D.10, which shows that a long series of factors drive the participation of SMEs in GVCs, which mainly relate to capability, competitiveness, international business facilitation and macro-economic policies and conditions.

Figure D.10: Factors affecting SME participation in GVCs



Source: Arudchelvan and Wignaraja (2015).

facilitation measures (better infrastructure, reduced time to export and timely delivery) tend to specialize in supply chains. In fact, institutional environment and trade facilitation matter more than capital and labour in determining exports within supply chains. As discussed above, poor transport and logistic infrastructure makes it particularly hard for SMEs to participate in GVCs.

Trade policy is a strategic area for ensuring the success of SMEs within GVCs. Low import tariffs, the implementation of trade facilitation and the enforcement of property rights are key to GVCs' participation in GVCs. Since SMEs, especially those from developing countries, often operate in the low value-added segment of the production chain, trade restrictions (especially if additive) are disproportionately applied to them, because they represent a larger percentage of the value of the output. By the same token, the barriers to export identified above are also obstacles to the participation of SMEs in GVCs.

Table D.9: Firms' top five perceived difficulties in bringing new suppliers from developing or LDCs into their supply chain(s)

Agriculture	ICT	Textile	Tourism
Inadequate airport, maritime or transport capacity or links	Lack of transparency in regulatory environment	Customs procedures	Access of suppliers to finance
Transportation costs and delays	Export or import licensing requirements	Export or import licensing requirements	Business environment
Customs procedures	Inadequate telecommunications networks	Inability of suppliers to meet order delivery times	Insecurity
Export or import licensing requirements	Customs procedures	Border procedures	Inadequate sanitary or quality controls of local food suppliers
Irregular supply and/or or inconsistent quality	Import duties	Shipping costs and delays	Visa regimes for foreign tourists

Notes: Question: "What are the most typical difficulties that you face in bringing new suppliers from developing or LDCs into your supply chain(s)? Please select up to 5 from the following list."

Protection of IPR is important because it is one factor that increases the attractiveness of a market for franchising arrangements. Franchisors typically contact local services for marketing and selling products. Hairdressers, management consulting and real estate are just some examples where franchises are common in services. Car dealers operating for a carmaker or a gas/oil stations operating for an oil company are examples within the manufacturing sector. Franchises are important channels in which SMEs can participate in international markets. They provide market solutions for some barriers that SMEs face when entering foreign markets, such as access to supplier networks and access to finance and know-how. But a franchiser's main asset is its brand. This needs to be adequately protected for the franchiser to be of interest in an arrangement with a local supplier (Nordås, 2015).

Finally, one additional obstacle to the participation of SMEs, especially from developing countries, in GVCs that is worth mentioning is the difficulty for multinational enterprises of locating SME suppliers. This is particularly difficult in developing countries where SMEs often operate in the informal sector. The process of identifying suppliers involves specific local knowledge that may not be easily available to foreign firms. There is evidence that FDI affiliates with joint domestic and foreign ownership face lower costs than wholly foreign-owned firms in identifying local suppliers (Javorcik and Spatareanu, 2008). SME participation in GVCs could be facilitated by the provision of such information. Both business associations and specific government agencies could be of assistance with this.

6. Conclusions

Obstacles to trade are particularly burdensome for SMEs. Evidence suggests that a lack of information about foreign distribution networks, border regulations and standards represent the main obstacles to trade for SMEs.

Unexpectedly, SMEs also perceive high tariffs as a more significant obstacle to trade than large firms. This section has shown two reasons why this may be true. First, SMEs' trade flows are more sensitive (elastic) to tariff changes. Second, SMEs appear to be relatively more concentrated in sectors facing higher tariff barriers than large firms.

Non-tariff barriers are also particularly burdensome for SMEs. Large firms can more easily adapt to new costly requirements, but small firms are driven out of business if a new restrictive standard is introduced into a market. Lack of transparency and differences in standards across markets and costly certification procedures are also major hurdles for SMEs.

Finally, cumbersome customs procedures stop SMEs from exporting. Trade facilitation, while fostering trade for both large and small firms, particularly boosts the entry into the export market of small firms that would otherwise only sell in the domestic market. The Trade Facilitation Agreement has been shown to remove a major obstacle to trade for SMEs, that of lack of information on rules and regulation in the foreign market.

E-commerce and GVC participation are two ways by which SMEs can partially overcome these barriers and improve their participation in global trade. E-commerce allows SMEs to match with their customers at much lower costs. GVCs give SMEs a way to access foreign distribution networks and exploit some economies of scale they could not otherwise access. Yet, SMEs face specific obstacles in exploiting these opportunities. Problems related to the logistics of shipping a good or delivering a service, ICT security, data protection and payment-related problems are major issues SMEs face with regard to web sales. Logistics and infrastructure costs, regulatory uncertainty and access to skilled labour are among the major challenges for SMEs wishing to join production networks.

Endnotes

1 SMEs' challenges to access international market include a poor business environment, poor labour skills, a lack of bargaining power, restricted access to market data, difficulties in accessing technology and limited access to finance beyond high trade costs (see WTO document WT/COMTD/AFT/W/53).

2 See Leonidou (2004) and Narayanan (2015).

3 The ITC Business Surveys on NTMs are available at http://ntmsurvey.intracen.org/publications/itc-series-on-ntms

4 Detailed results are available in Appendix Figures D.1, D.2 and D.3.

5 Results from the questionnaire completed by firms in OECD countries are available in Appendix Figures D.4, D.5, D.6 and D.7.

6 Only three sectors are reported in Table D.2 and in Appendix Figures D.1-3 because there is no equivalent question on trade barriers to enter and move up the value chain for tourism and transport services.

7 CBI is the Centre for the Promotion of Imports from developing countries, an agency of the Ministry of Foreign Affairs of the Netherlands.

8 The "Unable to find foreign partners" category implies that a firm lacks the resources and business networks to find a reliable local representative, business partner, or distribution agent in the foreign market, whilst the "Difficulty in receiving or processing" category includes foreign law and enforcement practices that do not adequately ensure payment for delivered goods and services. The "Obtaining finance" category, on the other hand, implies difficulties in securing trade finance, particularly pre-shipment financing to cover large exports, and in obtaining working capital for daily operations and expansion into new business areas.

9 Traditional economic theory predicts an identical effect of a tariff increase (decrease) on the volume of export for small and large firms (Melitz, 2003). An increase in tariffs decreases the total value of exports (across all firms). At the firm level, on the one hand higher tariffs will tend to reduce exports. On the other hand, the exit of small firms from the export market will lower competition and increases export of firms staying in the market. The effect on the average value of export per firm is ambiguous, but equal across firms of different size.

10 Other works that study firm-level responses to price shock (rather than tariff changes) also find that firms change their import/export behaviour depending on their size. Berman et al. (2015b) and Gopinath and Neiman (2014) find that firm-level elasticity depends negatively on the size of the firm. Berman et al. (2015a) explain the heterogeneous effect by firm size, showing that large firms absorb part of the shock by reducing price mark-ups rather than the volumes of trade. Gopinath and Neiman (2014) explain the reduced responsiveness of large firms trade to price shocks by showing that large firms reduce but do not stop importing intermediate inputs. Therefore, firms of different sizes experience a different change in unit costs.

11 Also see Feenstra and Weinstein (2010).

12 Levy (1994) makes a similar argument for export-oriented sectors in a set-up where export subsidies are prohibited.

13 This perception is confirmed by the evidence. On average, NTMs almost double the overall level of trade restrictiveness imposed by tariffs, thus meaning that they are on average as important as tariffs. In several countries, though, the contribution of NTMs to the overall level of trade restrictiveness is actually higher than that of tariffs (WTO, 2012).

14 Fixed costs are independent of the amount produced or exported, while variable costs increase with the level of production or exports.

15 Analysing firms export decisions from 42 developing countries in response to pesticide standards in 63 importing countries, Fernandes et al. (2015) show that restrictive importing countries' standards deter firms, especially small firms, from entering new markets.

16 Mode 4 of the General Agreement on Trade in Services (GATS) only covers the temporary presence of foreign natural persons to supply services.

17 The OECD STRI covers 42 countries (OCED members plus Brazil, China, India, Indonesia, Latvia and the Russian Federation), while the World Bank STRI comprises 102 economies (24 OECD countries and 78 developing and transition economies).

18 It is quite reasonable to discard mode 2, as, with the exception of education and health services, there are, in practice, very few restrictions to this mode of supply.

19 Although focused only on tourist visas, the World Tourism Organization's 2015 *"Visa Openness Report"* (UNWTO, 2015) notes that 89 per cent of country pairs do not request a visa of each other's nationals if the countries involved are both advanced economies. By contrast, this share drops to 21 per cent for relationships between emerging and advanced countries and to a mere 10 per cent if both countries are emerging economies.

20 See http://web.alt.uni-miskolc.hu/als/cikkek/2010/ALS4_p130_136_Urbanska.pdf

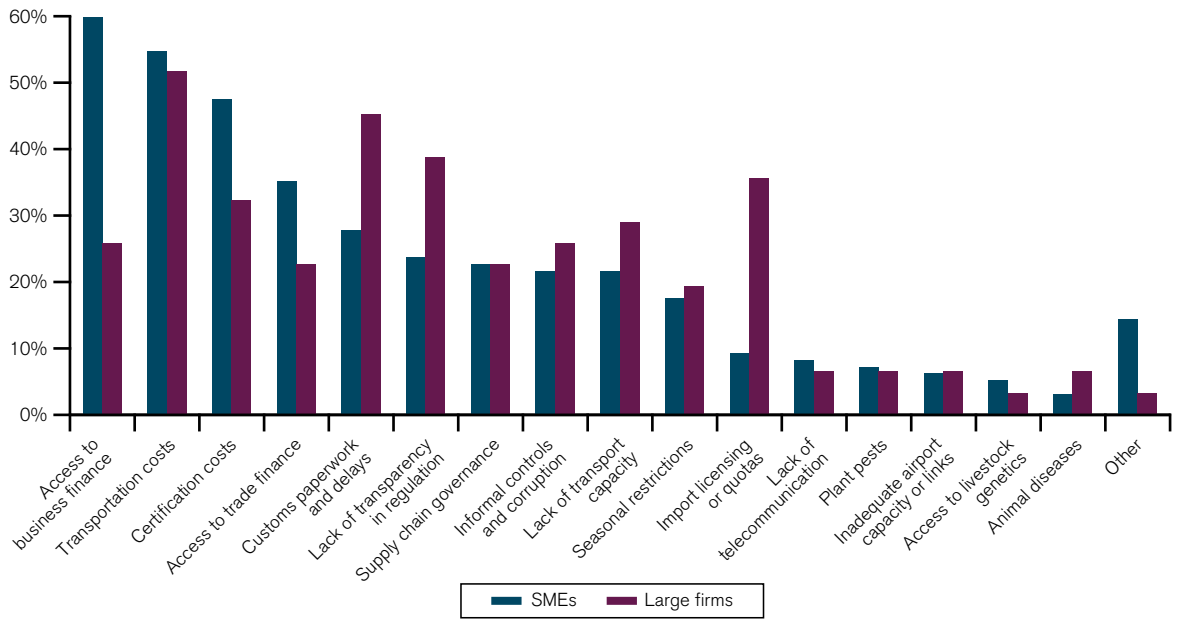
21 Some large, well-established 3PL providers (e.g. FedEx, UPS, DHL) have launched small business logistics solutions which may provide export assistance to SMEs.

22 Ecommerce Europe is an association representing 25,000+ companies selling products and/or services online to consumers in the European Union.

23 There is evidence that there are productivity gains associated with supply chains. Javorcik (2004) finds productivity gains for Lithuanian firms that provide inputs to foreign multinationals. Newman et al. (2015) provide evidence of productivity gains both for firms that provide inputs to, and firms that source inputs from, foreign firms located in Viet Nam. Piermartini and Rubínová (2014) show that supply chains can work as a channel for knowledge transfers, but the scope of spillovers depends on the type of relationship between the knowledge exporter and knowledge importer in the supply chain.

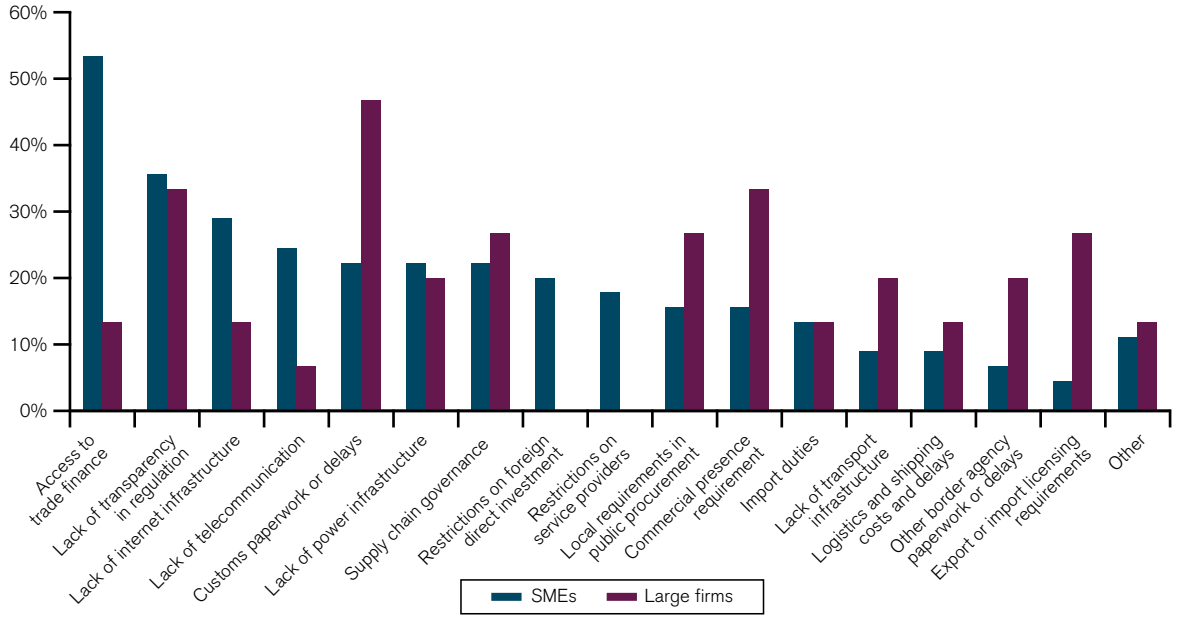
Appendix Figures

Appendix Figure D.1: Difficulties in entering, establishing or moving up agrifood value chains



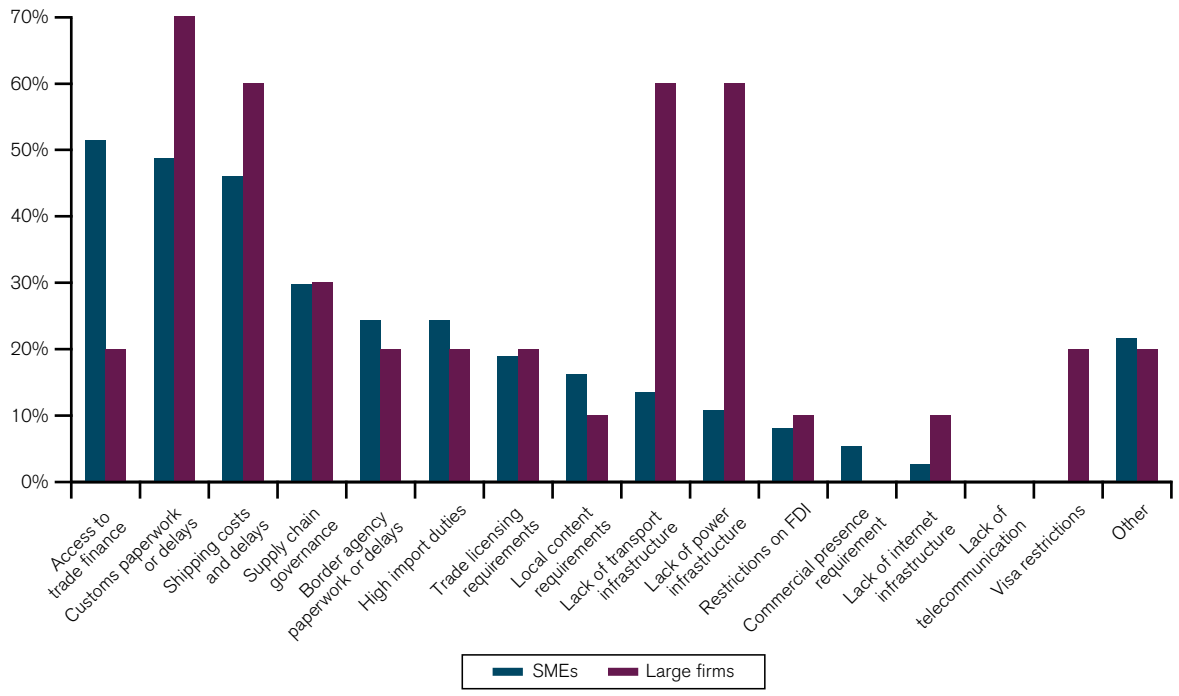
Note: Question No. 15 in the Fourth Global Review of Aid for Trade (OECD and WTO, 2013) survey: "What difficulties do you face in entering, establishing or moving up agrifood value chains? Please select up to 5 from the following list.".

Appendix Figure D.2: Difficulties in entering, establishing or moving up information and communications technology value chains



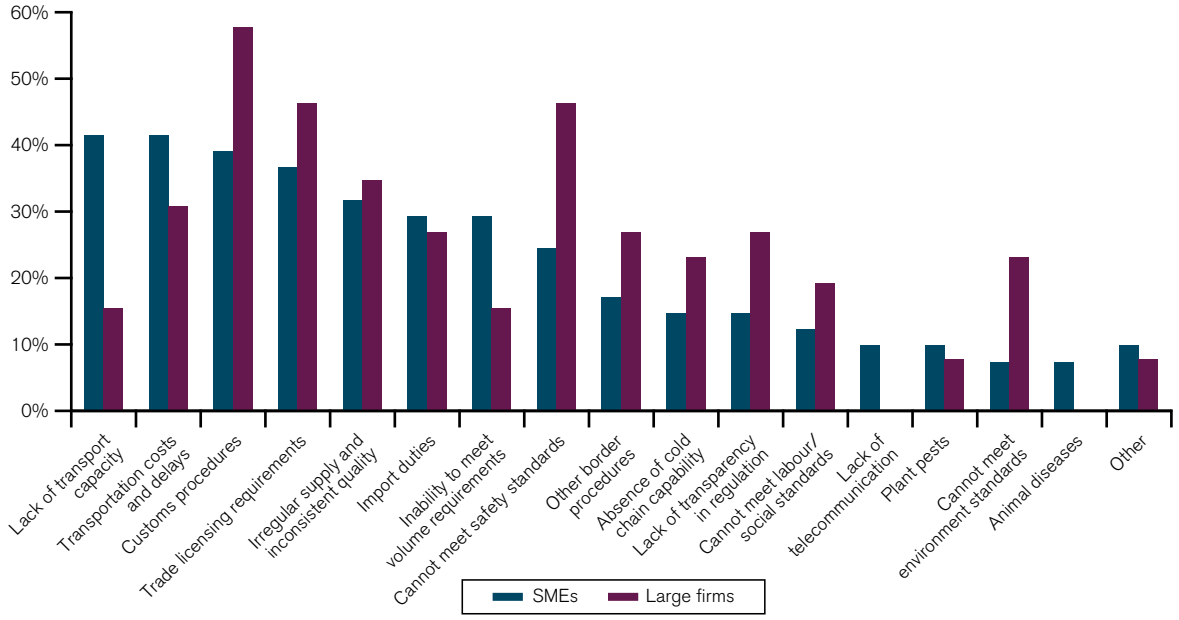
Note: Question No. 35 in the Fourth Global Review of Aid for Trade (OECD and WTO, 2013) survey: "What difficulties do you face in entering, establishing or moving up ICT value chains? Please select up to 5 from the following list."

Appendix Figure D.3: Difficulties in entering, establishing or moving up textiles and apparel value chains



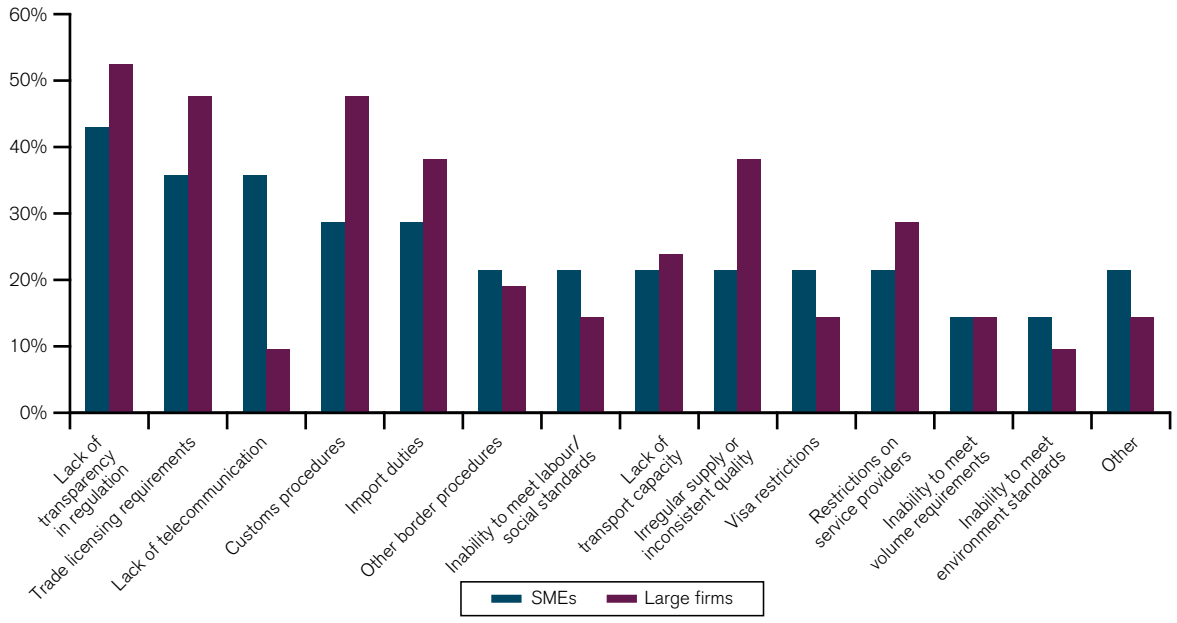
Note: Question No. 56 in the Fourth Global Review of Aid for Trade (OECD and WTO, 2013) survey: "What difficulties do you face in entering, establishing or moving up textiles and apparel value chains? Please select up to 5 from the following list."

Appendix Figure D.4: Difficulties in bringing new suppliers from developing countries or LDCs into supply chains – agriculture



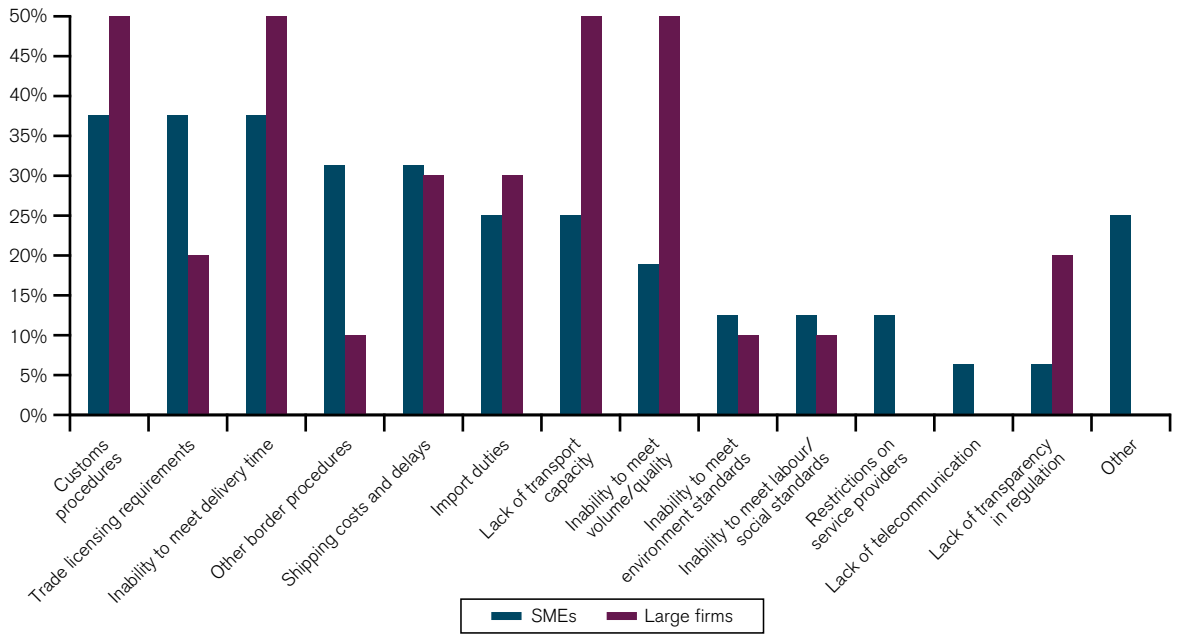
Note: Question No. 22 in the Fourth Global Review of Aid for Trade (OECD and WTO, 2013) survey: "What are the most typical difficulties that you face in bringing new suppliers from developing countries or LDCs into your supply chain(s)? Please select up to 5 from the following list."

Appendix Figure D.5: Difficulties in bringing new suppliers from developing countries or LDCs into supply chains – information and communications technology



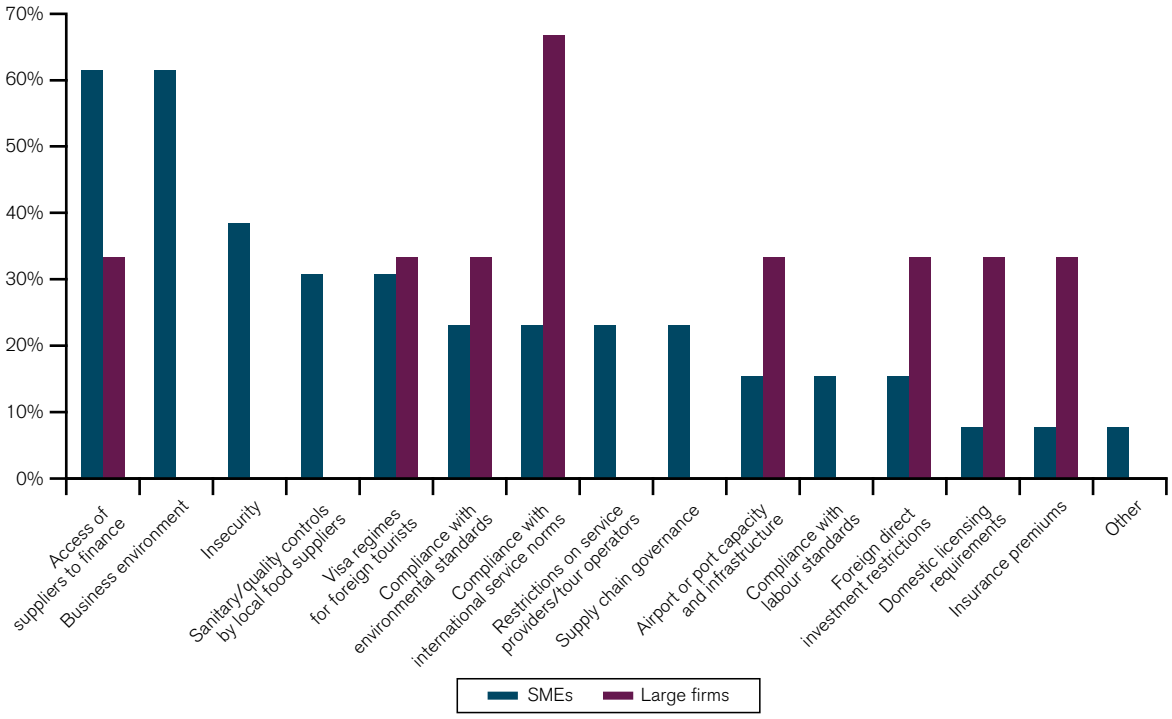
Note: Question No. 43 in the Fourth Global Review of Aid for Trade (OECD and WTO, 2013) survey: "What are the most typical difficulties that you face in bringing new suppliers from developing or LDCs into your supply chain(s)? Please select up to 5 from the following list."

Appendix Figure D.6: Difficulties in bringing new suppliers from developing countries or LDCs into supply chains – textiles



Note: Question No. 63 in the Fourth Global Review of Aid for Trade (OECD and WTO, 2013) survey: "What are the most typical difficulties that you face in bringing new suppliers from developing or LDCs into your supply chain(s)? Please select up to 5 from the following list."

Appendix Figure D.7: Difficulties in bringing new suppliers from developing countries or LDCs into tourism product value chains



Note: Question No. 84 in the Fourth Global Review of Aid for Trade (OECD and WTO, 2013) survey: "What are the most typical difficulties that you face in bringing new suppliers from developing or LDCs into your tourism product value chain(s)? Please select up to 5 from the following list."