

# **Inclusive Global Value Chains**

**Policy options in trade and complementary areas for GVC Integration by small and medium enterprises and low-income developing countries**

**OECD and World Bank Group**

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This joint report of the Organisation for Economic Co-operation and Development and the World Bank Group has been prepared at the request of Turkey's Presidency of the Group of 20.

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## HIGHLIGHTS

This report responds to a request from Turkey as the G20 Presidency during 2015. It is part of larger multi-year work programs at both the Organization for Economic Cooperation and Development (OECD) and the World Bank Group (WBG), and builds on earlier reports by the two organizations and other international institutions to successive G20 Presidencies.

The focus of the report is on making GVCs more “inclusive” by overcoming participation constraints for Small and Medium Enterprises (SMEs) and facilitating access for Low Income Developing Countries (LIDCs).

Two key facts emerge from this report: participation in GVCs is heterogeneous and uneven, across and within countries; and, available data and survey-based evidence suggest that SME participation in GVCs is mostly taking place through indirect contribution to exports, rather than through exporting directly.

- *Heterogeneity in GVC participation.* LIDCs are under-represented in GVCs, even though their integration has greatly expanded in the course of the past two decades: from 6% to about 11% of the world total. SMEs in LIDCs predominantly operate in the informal economy and their participation in GVCs is concentrated in the agricultural sector and labor-intensive, very low value added manufacturing and services activities, where entry costs are lower and not capital intensive. SMEs in middle and higher income countries are operating in both the low-value added end of the spectrum and in high skilled and specialized niche activities. The increasing importance of knowledge based capital within value chains, coupled with increased international fragmentation of these chains, has opened up new channels to integration through specialization in specific tasks.
- *Participation through indirect contribution to exports.* Most SMEs in developed economies are very well plugged into GVCs as domestic suppliers of exporters. SMEs are vastly under-represented in GVCs when looking at direct exports only.

The report makes the case that policy action, at the national and multilateral level and through G20 leadership, can make a difference in achieving more inclusive GVCs through: a holistic approach to reform spanning trade, investment and domestic policies both in G20 nations and in trade partner countries; and, investment in expanding the statistical basis and analysis of GVCs and in sharing knowledge on best practices on enabling policies and programs. Three broad areas of recommendation are elaborated for G20 consideration:

- Establish a trade and investment action plan for inclusiveness defining clear and achievable objectives on trade and investment policy and identifying the necessary complementary domestic policy actions.
- Complement trade, investment and complementary domestic policy actions by providing the needed political leadership and support to enhanced collaboration across the public and private sector and establishment of global platforms for sharing best practices.
- Provide political support for the establishment of a realistic multi-year plan to expand and upgrade the statistical foundation necessary to increase the capacity of all countries to identify and implement policies that can contribute to stronger, more inclusive and sustainable growth and development, globally.



## *Table of contents*

Executive Summary .....	7
1. Setting the scene .....	14
The opportunities of GVCs for LIDCs .....	17
Importance of SMEs for economic progress and their participation in GVCs .....	20
2. Stylized facts of SMEs in GVCs.....	24
Informality of the economy: A binding constraint.....	25
Participation in GVCs: Direct insertion .....	25
Suppliers of large local and multinational firms: Indirect insertion .....	33
3. Determinants of and challenges to participation by SMEs and LIDCs in GVCs .....	40
Preview of key take-aways .....	40
Internal determinants of SME participation and upgrading in GVCs .....	47
External determinants of SME participation in GVCs .....	53
4. Policies to Promote SME and LIDC Participation in GVCs .....	86
Preview of key take-aways .....	86
Furthering international trade openness .....	88
Ensuring that openness benefits reach beyond large firms and the G-20 to SMEs and LIDCs.....	94
Investment in expanding the statistical basis and technical analysis of participation in GVCs.....	98
References.....	100



## Executive Summary

At the Brisbane Summit in November 2014, the Group of Twenty (G-20) Leaders concluded that trade and competition are powerful drivers of growth, increased living standards and job creation. They also acknowledged that one important way for countries to connect to the global economy and develop is through global value chains (GVCs); a recognition that GVCs provide opportunities to empower the local economy with sophisticated imported technology, know how, and a richer skill-set. G20 leaders at the Brisbane Summit stated that “we need policies that take full advantage of global value chains and encourage greater participation and value addition by developing countries.”

This report is part of larger multi-year work programs by both the Organization for Economic Cooperation and Development (OECD) and of the World Bank Group (WBG) to support countries’ policies on GVC integration with analysis and capacity building for leveraging GVCs for growth and development. It also builds on previous events and assessments promoted by the G20, including the G20 OECD-Turkish Presidency Stocktaking Seminar on GVCs (Paris, June 2 2015), and reports by the two organizations and other international institutions to successive G20 Presidencies on the implications of new measures of trade in value-added terms and the emergence of GVCs for trade, investment and related policies.

The focus of the report is on making GVCs more “inclusive”. Inclusiveness is defined in our report as overcoming participation constraints for Small and Medium Enterprises (SMEs) and facilitating access for Low Income Developing Countries (LIDCs). Emphasis is placed on the constraints to SMEs. The underlying assumption is that most firms in LIDCs are SMEs. And even larger firms in LIDCs are likely to face similar challenges to SMEs, including a less supportive domestic operating environment and weaker institutions that lead to higher fixed costs and challenges to compete on the international markets. In discussing the challenges for SMEs, however, this report recognizes that important differences exist across world regions.

Two key facts emerge from this report. First, participation in GVCs is heterogeneous and uneven, across and within countries. Second, data available for OECD countries and survey-based evidence for LIDCs suggest that SMEs participation in GVCs is mostly taking place through indirect contribution to exports (backward linkages).

- *Heterogeneity in GVC participation.* The report finds that LIDCs are under-represented in GVCs, even though their integration has greatly expanded in the course of the past two decades: from USD 259 billion in 1995 (or 6% of the world total of USD 4.6 trillion), to about USD 1.5 trillion in 2011 (or 11% of the world total of USD 14 trillion), according to OECD-WTO Trade in Value Added (TiVA) database. While LIDCs’ SMEs predominantly operate in the informal economy, their participation in GVCs is challenging, and is concentrated in the agricultural sector and labor- intensive, very low value added manufacturing and services activities, where entry costs are lower and not intensive in tangible capital. On the other hand, SMEs from middle and higher income countries are operating in both the low-value added end of the spectrum, and also in high skilled and specialized niche activities. The increasing importance of knowledge based capital within product value chains, coupled with increased international fragmentation of these chains has opened up new channels to integration through specialization in specific tasks.

- *Participation through indirect contribution to exports.* The report finds that most SMEs are plugged into GVCs as domestic suppliers of exporters. SMEs are vastly under-represented in GVCs when looking at direct exports only. However, in GVCs, the indirect contribution to exports also matters. Survey analysis and case study evidence from the World Bank, and new work at the OECD that links available national data on SMEs with the TiVA database show that the indirect contribution of SMEs is sizable in all OECD countries and significantly greater than what the value of direct exports would suggest.

The report makes the case that policy action, at the national and multilateral level and through G20 leadership can make a difference in achieving more inclusive GVCs. Two coherent sets of action are proposed: a holistic approach to reform spanning trade, investment and domestic policies both in G20 nations and in trade partner countries; and investment in expanding statistical basis and technical analysis of participation in GVCs, and in sharing knowledge on best practices on rules, policies and programs.

### ***Improving the policy environment for more inclusive GVCs***

G20 countries are the key trading partners for LDCs, with around 70% of imports of LDCs originating from G20 countries and close to 80% of LDCs exports directed to the G20. Thus, policy reforms that would lower trade costs in G20 economies and LDCs can have important implications for GVC participation. GVC trade is particularly affected by trade barriers: when goods and services cross borders multiple times, as both imports and exports, trade costs are compounded. This is especially problematic for firms in LDCs and for SMEs, which are less able to absorb these costs. Moreover, foreign direct investment (FDI) is the most common vehicle for countries to participate in global value chains. The US government, for example, estimates that intra-firm transactions constitute close to 50% of US imports and around 30% of US exports. According to UNCTAD, an estimated 80% of global trade now occurs within international production networks of multinational companies. And it is these companies that are responsible for more than 1 trillion dollars of global FDI flows annually. FDI are vital for SMEs, as their natural predisposition is to join GVCs indirectly as upstream supplier to exporters.

The G20 could lead progress in areas of trade and investment policy reforms that require collective action or that would benefit from individual policy actions by G20 members in the context, for example, of their domestic growth strategies, leveraging on the fact that most GVC's lead firms, turnkey suppliers or global buyers are headquartered in G20 countries. The table below provides a detailed list of trade and investment policy actions, distinguishing between national and collective, G20 initiatives.

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#### **Priority areas for trade and investment policy**

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**What:** Establish a trade and investment action plan for inclusiveness defining clear and achievable objectives on trade and investment policy and identify the necessary complementary actions on the domestic agenda

**Why the G20 can help:** The G20 platform could address coordination failures between and within countries through a comprehensive action plan focusing on: treating trade and foreign direct investment, both inward and outward in an integrated framework; giving as much consideration to imports and timeliness as to exports and market access; and by streamlining import tariffs and simplifying export procedure. Systems in place in the G20 finance track can be of guidance.

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<b>Items for consideration to be included in the trade and investment action plan for inclusiveness</b>	<b>National initiative</b>	<b>Collective Action</b>
Further the trade facilitation agenda through completing the ratification process of the WTO Trade Facilitation Agreement (TFA) and by complementary improvements in hard and soft infrastructure, and in logistics services quality	✓	
Better harness the challenges for SMEs to be competitive in GVCs, by relaxing policies such as rules of origin, and by agreeing to bring other policies, such as competition principles or standards, to the international level of policy; and through dedicated funding to aid for trade or through other capacity building efforts supporting SMEs preparedness to comply with regulations	✓	✓
Reform, nationally and in coordination with other G20, business services sectors in key network industries such as logistics, supply chain management services, ICT-related services, e-commerce, and professional services, by removing barriers to entry and improving pro-competitive regulation	✓	✓
Engage GVC lead firms, turnkey suppliers, global buyers, and SMEs in identifying binding constraints and solutions to investment attraction and promotion, for improving investment climate and SMEs absorptive capacity, particularly in sectors known to generate strong upstream and downstream SME linkages, such as services, knowledge based industries, and manufacturing sectors where specialization and branding are important.	✓	✓
Establish a G20 platform for identifying and implementing measures for the reduction of contractual frictions that act as a disincentive to the outsourcing and offshoring of valuable innovative assets. Prioritize minimizing transaction costs for SMEs (both G20 micro-multinationals and investors and LIDCs users of imported IP)		✓
While developing and implementing rigorous IP legislation in G20 countries to protect innovative assets and attract foreign owned technology, minimize transaction costs for SMEs by streamlining procedures and ensuring high-quality examination to increase IP signaling value	✓	✓
Address SMEs and LIDCs competition concerns regarding behavior of large MNEs or anti-SMEs biases in the current functioning of supply chains though establishing a dialogue on inclusiveness in GVCs with the B20	✓	✓
Enhance cooperation and coordination between development partners, at the multilateral, regional, and bilateral level, with a view to making aid work better for trade, investment, and inclusive growth	✓	✓
<b>Jump-start the trade and investment action plan by few concrete actions</b>		
<ul style="list-style-type: none"> <li>• Establish a trade and investment action plan for inclusiveness</li> <li>• Commit to relaxing policies on rules of origin in G20 countries</li> <li>• Define “nuisance tariff level” and commit to their elimination in G20 countries within a set timeline</li> <li>• Aid for Trade and other programs could increase their focus on supporting SMEs preparedness to comply with trade and investment regulations</li> <li>• Establish a collaboration with the B20 to identify key binding constraints and solutions for fostering supplier diversity, focusing on efficiency of logistics services delivery, and MNE-SME linkages</li> </ul>		

G20 governments, individually and collectively, have an important role to play in supporting domestic reforms both at home and in partner countries. The domestic reform agenda is wide-ranging, but priorities for both the G20 and LIDCs include enhancing firms' productivity by building internal capacities of firms and providing access to capital and connectivity, with particular attention to the needs of SMEs. A key requirement in this area is addressing issues related to informality. In LIDCs, many firms operate in the informal sector, and choose to remain so despite their growth potential. This is due to the fact that the marginal benefits from increased production are often outweighed by the marginal increase in costs (regulatory and taxes) that are imposed by going formal. Removing potential barriers to growth and formality in the regulatory and tax framework is required but incentives such as improved access to high-quality services, finance, and other requirements for GVC participation should also be used as channels for fostering formalization, both in LIDCs and in partner G20 countries. Enhancing firm's productivity requires removing regulatory and other barriers to the growth and scaling of SMEs, notably young and innovative SMEs. Doing so can help LIDCs in developing new areas of growth and SMEs in reaching a sufficient size to engage in international markets. For example, promoting the development of innovation ecosystems and moving towards holistic approaches to evaluate creditworthiness that go beyond traditional balance sheet analysis is helpful.

The reform agenda will also need to focus on enhancing productivity through fostering the development of managerial skills and the adoption of better management practices, and through vocational training and lifelong education. Particular attention to ICT and broadband connectivity is needed, including access to and competition in ICT networks, as ICT-enabled business processes are central to participating in GVCs. Producing at world class standards as required by GVCs, finally, means that quality certification and standards are now increasingly important as determinants of competitiveness. Compliance with a multitude of standards and technical regulations may be particularly burdensome for LIDCs firms and SMEs are often below the radar screen of consumers, so that the incentives to comply are lessened. Mutual recognition and convergence of dominant private and public standards would contribute to reducing these costs.

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### Priority areas for capacity building

**What:** Complement trade, investment and complementary domestic policy actions by providing the needed political leadership and support to collaboration across the public and private sector and establishment of global platforms for sharing best practices.

**What role for the G20:** To help SMEs and LIDCs in developing new areas of growth and to engage in international markets, a shared strategic vision and greater collective action to target the major constraints are needed. The G20 can offer the needed political leadership and clout with the private sector to leverage GVCs for a "race to the top" in participating countries.

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#### Addressing informality

Harness the growth potential of dynamic and innovative firms operating in the informal economy by removing the disincentives of going to the formal market, particularly for informal businesses that seem to prevail in the downstream parts of GVCs in LIDCs.

**National  
initiative**

**Collective  
Action**

✓

✓

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**Policies for improving firms' productivity through learning, innovation, skill building, upgrading, and peer exchange**


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Foster the development of managerial skills and the adoption of sound managerial practices, vocational training, and lifelong education.	✓	
Remove regulatory and other barriers to the growth and scaling of SMEs, notably young and innovative SMEs, including barriers to entry, growth and exit of firms.	✓	
Encourage collaboration with lead firms and global buyers to train local staff as a more efficient means of knowledge transfer; information is up-to-date and corresponds to the needs of the lead firms.	✓	
Assist SMEs in the use of freely available technologies or the acquisition of technological licensing agreements.	✓	✓
Ensure that quality certification, technical regulations, standards, and conformity assessment procedures are non-discriminatory and do not create unnecessary obstacles to trade; aid for trade programs could also focus on building capacity in LIDCs and for SMEs for the adoption of standards that lead to quality, productivity, and welfare upgrading; facilitate public and private sector preparedness to standards upgrading; promote convergence of public and private voluntary standards so to reduce costs; inform above processes through national and international guidelines.	✓	✓
<b>Connectivity</b>		
ICT and broadband connectivity: Strengthen broadband networks and improve access and competition. Foster services sector efficiency improvements and collective efforts to facilitate SMEs' and LIDCs' access to ICT networks	✓	✓
Provide assistance to SMEs and firms in LIDCs, including through electronic platforms that help domestic firms acquire foreign technology and commercialize their IP	✓	✓
Physical connectivity and logistics: Assist countries in effectively implementing all aspects of logistics and transport sector reforms; Support capacity building to customize approaches to meet specific needs, operational circumstances, and national connectivity priorities	✓	✓
Provide a continuum of potential support activities for both ICT and physical connectivity, from infrastructure building to logistics and e-commerce performance assessments, to the development of practical implementation plans, to the identification of sources of financing for implementation plans.	✓	✓

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**Financing**


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Enable finance that takes into account intrinsic know-how, pool of talent, distribution channels, business relationships, business models, and access to technology in valuation of repayment ability;




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**Global platforms for capacity building:**


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Establish, or support scaling up of global platforms for sharing best practices, learning, e-learning and exchange; foster private sector involvement on global platforms and use for exchange of goods, services, and for cross-border financing solutions.



Provide holistic, country-focused, multi-stakeholder approach to capacity building, sustained over time, including engagement of local and international private sector (local suppliers, global leads, buyers, advanced consumers) and of development partners and creation of private sector supplier base for advisory services on capacity building




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**Jump-start the domestic complementary measures to the trade and investment action plan by few concrete actions**


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- Establish a collaboration with the B20 to identify key binding constraints and solutions for fostering supplier diversity, starting from addressing challenges in the areas of IP protection and technology transfer, quality, certification, standards, and efficiency of logistics services delivery
  - Support mature local, regional, and global facilities in the dissemination and scaling up of best practices in the public and private sector sharing knowledge
  - Establish an action plan for universal ICT and broadband connectivity and for empowering SMEs to leverage the digital economy
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**Investment in expanding statistical basis and technical analysis of participation in GVCs**

A significant, and often overlooked, way to facilitate successful integration within Global Value Chains, particularly within LIDCS, consists of identifying correctly the constraints, remedial actions, and efficacy of new policy measures. Country and region specific diagnostics, which also differentiate across firm types, are crucial to guide policy. This cuts across the gamut of the statistical information system, including both macro and micro (firm-level) data. Recent statistical initiatives have, importantly, improved our understanding of GVC, allowing estimation of trade flows in value added terms. The OECD-WTO TiVA database is a well-known recent example of macro-level measurement and analysis of trade in value added. Whilst this database currently includes 61 economies, very few LIDCs, particularly in Africa and Central Asia, are included; significant efforts are needed to develop and improve the national statistical building blocks required for inclusion within the TiVA database. Other standard macro-level data collection areas where further investment would be beneficial include: Structural Business Statistics (SBS); Trade by Enterprise Characteristics (TEC), Entrepreneurship Indicators (Business Demography, BD), and Foreign Affiliate Trade Statistics (FATS).

All of these standard collections require good data at the firm-level. Investment in and scaling up of micro-data and existing data-collections and surveys is therefore also a central priority for better policy making. The World Bank Group Enterprise Surveys use standard survey instruments to collect firm-level data on the business environment from business owners and top managers. The surveys account for firm size and cover a broad range of topics including access to finance, corruption, infrastructure, crime, competition, labor, obstacles to growth, and performance measures, but not yet participation in GVCs. Other available datasets include microenterprise, informal, sector-specific, and other surveys, which could also be leveraged. Panel (longitudinal) datasets of survey results are available for many countries. These statistics constitute an excellent basis for expanding available tools to documenting better business relationships taking place in the context of GVCs. This includes collecting firm level information on the links between exporters and foreign buyers, and between local firms and multinational companies integrated in GVCs (backward and forward linkages) as well as information on the internal and external factors facilitating or impeding accession and upgrading of firms in GVCs. The nature of participation in GVCs by firms in LIDCs and different behavior between large and small firms in the adoption of international certification practices and regulatory standards or in usage of ICT and technology, are among the areas that can be better documented through embedding a GVC module in existing enterprise surveys. Impact evaluations of policies that can facilitate sustainable participation and upgrading in GVCs by SMEs and by firms in LIDCs are also necessary to strengthen the evidence base for policy making.

#### Priority areas for expanding statistical basis and analytics

**What:** Provide political support for the establishment of a realistic multi-year plan to expand and upgrade the statistical foundation necessary to increase the capacity of all countries to identify and implement policies that can contribute to stronger, more inclusive and sustainable growth and development, globally.

**Why the G20 can help:** The G20 is ideally placed to foster and support the generation of improved evidence-based analysis and policy advice, at national and multilateral levels, through individual government action and through relevant international and regional organizations.

	National initiative	Collective Action
Investments in strengthening micro-level data collection and analysis of firms in LIDCs and G20 countries, including by leveraging existing tools such as the World Bank Group Enterprise Surveys and the other World Bank Group surveys on microenterprises, on the informal sector, and sector-specific and <i>ad hoc</i> surveys.	✓	✓
Improvement in quality and availability of macro data in line with international standards, including Input-output and supply-use tables for the OECD-WTO TiVA databases well as SBS, FATS, BD and TEC.	✓	✓
Impact evaluations of policy interventions at the firm level	✓	✓

## 1. Setting the scene

### Preview of key take-aways

- Production systems today are very complex, with multi-layered international sourcing networks and fast-evolving technology-enabled business models, which increasingly allow cross-border economic activity to grow.
- Today's global value chains require high levels of explicit coordination that differentiate them from traditional arm's-length trade. More unified global production systems and markets provide countries with greater opportunities to specialize in specific aspects, or stages, of the development and production of goods and services where comparative advantages exist.
- Rather than having to develop and manage the entire and complex production process in-house, GVCs offer opportunities to small and medium enterprises (SMEs) and firms in low income and developing countries (LIDCs). GVCs help overcoming barriers to exporting by accommodating specialisation in narrow business functions and niche activities and they limit dependencies on the degree of industrial development and broader skills set in the country.
- But capitalising on GVCs requires addressing informality in the economy and the right local business environment. The majority of firms in many LIDCs are informal and therefore excluded from GVC participation. Moreover, the lack of a supporting environment can lead to higher production and trade costs. This in turn can result in lower productivity and growth for the economy as a whole, as firms with high-growth potential adopt sub-optimal expansion strategies.
- The challenges of producing at world-class standards as required by GVCs can be moreover harder to overcome for smaller and younger firms, and the market failures constraining their development are greater than those faced by large firms.

Enhancing the integration into global markets of goods, services, investment, and knowledge of small and medium enterprises (SMEs) in low-, middle-, and high-income countries is a policy priority for the Group of Twenty (G-20) countries. It also represents a challenge for growth and job creation in all countries, at all levels of economic development.

Exports play an important role in fostering economic progress. Empirical research shows that firms that are connected to the global economy—through exports, through foreign direct investment (FDI), or as suppliers to exporters—are generally more productive than firms that serve the domestic markets only and typically rank among countries' most prosperous businesses. More productive firms, better equipped to compete in global markets in the first place, benefit from a virtuous circle that captures additional productivity gains through GVCs. Higher productivity is also associated with higher wages and more prosperous communities. In countries for which data are available, workers in firms and sectors with high export intensity typically earn a substantial wage premium and show above-average labor productivity. Similarly, there is both a wage and productivity premium associated with FDI. By implication, communities connected to the global economy through large numbers of export-reliant firms, with both inward and outward FDI, and with a strong domestic supplier base that serves exporters and FDI are more likely to enjoy growing tax bases.

Imports also play an important role in achieving better economic performance not only by making available “world-class” inputs and capital goods but also by providing incentives for firms to innovate as they adopt knowledge, ideas, know-how, and best practices from abroad. Openness allows all countries the opportunity to absorb technologies developed elsewhere and to grow at a faster rate. Investigations of the network of trade in value added reveals that being well integrated on the supply side is of paramount importance (Santoni and Taglioni, 2015). Productivity growth relies on the diffusion of innovation from firms at the global frontier to other firms, which is facilitated by trade openness and participation in GVCs (OECD, 2015). Far from being a handicap, a more open domestic market is a source of competitive strength, especially when complemented by a range of other policies to ensure sustained economic growth and diversification. For SMEs specifically, benefits also accrue in the form of exposure to international best practice, in the absorption of excess production capacity or output, in improved resource utilization and productivity, and in higher wages (Baldwin and Gu 2003).

A structural shift in the international division of labour has taken place with the rise of global value chains (GVCs). The revolutions in information and communications technology (ICT) and transport, coupled with the development of ever more complex products, have allowed firms to establish chains that are geographically dispersed across the globe, and that are as intricate as they are efficient (see Box 1 for a discussion of the deep drivers of GVCs). GVCs have now become a driving force of global economic growth. They also have transformed the terms by which trade is conducted, and countries’ patterns of industrialization. Rather than producing an entire product domestically, countries can now grow and thrive by specializing in specific tasks that allow them to integrate into parts of a value chain and to reach a sufficiently large scale of production.

### **Box 1. Understanding the drivers of GVCs**

Production systems today are very complex, with multi-layered international sourcing networks and fast-evolving technology-enabled business models that increasingly allow cross-border economic activity to grow. The drivers are diverse; while some can be measured, others cannot.

The integration of the People’s Republic of China, the Russian Federation, and India added huge product and labor markets that had been all but outside the multilateral trading system before 1989, nearly doubling the field of play for internationalization (Freeman 2006). Faced with slow growth at home, large enterprises rushed to set up operations in those newly opened markets, especially in China, partly to carve out brand recognition and a market share in rapidly expanding consumer markets but also, through GVCs, to cut costs on goods produced for export to international and home markets. For goods that require shorter supply lines, the countries of Eastern Europe have joined traditional “export processing” locations, such as Mexico and North Africa. Moreover, under pressure from financial markets, large American and European enterprises embarked on a “second unbundling” of corporate functions during the 1990s (Baldwin 2011). In an effort to focus on “core competencies,” nearly every business function deemed “noncore” was subject to consideration for possible external sourcing from more specialized, more competitive, and often less unionized suppliers. \*

Manufacturing functions were among the first to be externally sourced, but services followed very soon after. By the 2000s, the computerization of work and the emergence of low-cost international communications enabled a surprisingly wide range of service tasks to be standardized, fragmented, codified, modularized, and more readily sourced externally and cheaply transported across long distances. Aspects of research and development (R&D) even fell under consideration for external sourcing. As in goods production, the application of information technology to the provision of services

allowed some degree of customization within the rubric of automation and high-volume production, or what Pine (1999) calls “mass customization.”

The rise of industrial capabilities in less developed countries created many more options for relocating work, and new players came onto the field. What previously had to be done within the confines of the multinational enterprise (MNE) could now be externally sourced from newly competent suppliers and service providers with offices and factories around the world (Sturgeon and Lester 2004). The twin trends of external and international sourcing also meant that existing suppliers simultaneously received vast quantities of new work and were pressured to follow their customers to offshore locations (Humphrey 2003). At the same time and for the same reasons, the most efficient suppliers that were based in LIDCs also grew rapidly from being small companies to becoming MNEs in their own right (Kawakami 2011). With the democratization of knowledge and with accelerating technological progress becoming a mainstay of the global economy in the 21st Century (Diamandis 2015), individual entrepreneurs can now start a company and take on functions that would have necessitated the complexity of a large MNE only 20 years ago. That is particularly the case for digital companies, such as Instagram, that have only 13 employees but a D1 billion valuation.

As a result, the character of global production has changed. Large brand-carrying MNEs, such as IBM, Siemens, and Toyota nowadays rely on a complex web of suppliers, vendors, and service providers of all kinds and in multiple locations. At the same time, a set of highly influential global buyers gained scale and influence in the 1990s, including retailers such as Walmart and Tesco and branded merchandisers such as Nike, Zara, and Uniqlo (Feenstra and Hamilton 2006). Building on successful experiments in the 1970s and 1980s by a handful of pioneering retailers such as J. C. Penney and Sears, global buyers began placing huge orders with suppliers around the world without establishing any factories or farms of their own (Gereffi 1999; Ponte and Gibbon 2005). Unlike traditional MNEs, where equity ties link headquarters with foreign affiliates, global buyers link to their suppliers through non-equity external sourcing ties. Often, intermediaries (for example, trading companies such as Hong Kong’s Li & Fung) are used to link buyers to producers in multiple countries.

Peter Dicken (2011, 5) argues that the combination of those changes requires a different term: globalization, defined as “the functional integration of internationally dispersed activities.” Today, GVCs combine the traditional drivers of internationalization (arm’s-length trade and intra-enterprise trade related to FDI) “with external international sourcing” that requires high levels of explicit coordination that differentiate it from arm’s-length trade (Gereffi, Humphrey, and Sturgeon 2005). In essence, external international sourcing arrangements imbue inter-enterprise trade with characteristics similar to intragroup trade: better control from the center, higher levels of bilateral information flow, tolerance of asset specificity, and a harmonization and immediate integration of business processes that increase the potential for foreign activities to substitute for activities performed at home.

It is this last point, in particular, that underscores the opportunities for LIDCs and for SMEs in such countries. Patterns of cross-border investment and trade based on product cycles—where producers from less developed countries receive older, outmoded products from more advanced economies (Vernon 1966, 1979)—are rapidly giving way to more unified global production systems and markets, with different countries specializing in specific aspects, or stages, of the development and production of leading-edge goods and services.

\* See Sturgeon (2002) for a detailed case study of the trend toward external sourcing in the electronics industry.

Policy needs to respond to that new reality by helping low income and developing countries (LIDCs) promoting a business environment that not only makes their country an attractive for location for those tasks but also facilitates creating economic and social development from GVC participation.

Addressing informality in the economy is a core requirement to GVC participation. The majority of firms in most developing countries are informal (Andrade, Bruhn, McKenzie, 2015; and Bruhn and McKenzie, 2014). Therefore, harnessing the growth potential of dynamic and innovative firms operating in the informal economy by removing the disincentives from going to the formal market, particularly for informal businesses that prevail in the downstream parts of GVCs and in LIDCs is a precondition to making GVCs inclusive.

GVCs are especially important for firms in LIDCs, as the unbundling of tasks and business functions typical of value chains increase opportunities to engage in global markets without having to develop complete products and unlock access to (and so benefits from) knowledge and technology by learning from and interacting with other value chain actors in an integrated production process. Some of the opportunities from GVC participation have been seized, as testified by the increased expansion of GVCs in emerging and developing economies. GVCs encourage productivity growth by accelerating learning and innovation and by broadening and deepening the skill set in a country. Overcoming obstacles to GVC participation can pay big dividends if the appropriate supply-side policies are put in place. Developing economies with the fastest-growing GVC participation and pro-competitive policies aimed at addressing supply-side investment and trade expansion in an integrated manner have gross domestic product (GDP) per capita growth rates 2% above average earning.

For policy makers, the question is not only how to connect to GVCs but also how best to derive benefits from GVCs for the economy and society at large. As will be discussed later, opening to international trade and investment is necessary but not sufficient to connect to global value chains and to obtain benefits in employment and income growth. Both public and private investment to improve supply-side capabilities and the ability to exploit new market opportunities are also needed. Investment in people's education and skills is particularly important—and needs to be complemented with effective labor market policies and social safety nets to enable displaced workers to find new jobs. Moreover, strong framework conditions that are aimed at minimizing coordination costs and improving the legal and institutional environment for intellectual property rights and contract enforcement, proactive investment attraction policies, and emphasis on innovation and skills are also needed (Kowalski et al. 2015). That is the case in Costa Rica, for example, which has gradually gained ground as a location for high-end manufacturing in small-scale, high value-added production (for example, medical devices). In short, successful participation in GVCs by SMEs and LIDCs requires a “whole of supply chain” approach that, internally to countries and internationally, moves away from the current silo approach of policy making. The approach needs to have different ministries involved in different parts of policy making relevant to GVCs and to open up discussions—within governments and internationally—across a number of policy areas that matter for value chain performance and that are seldom discussed holistically in international forums.

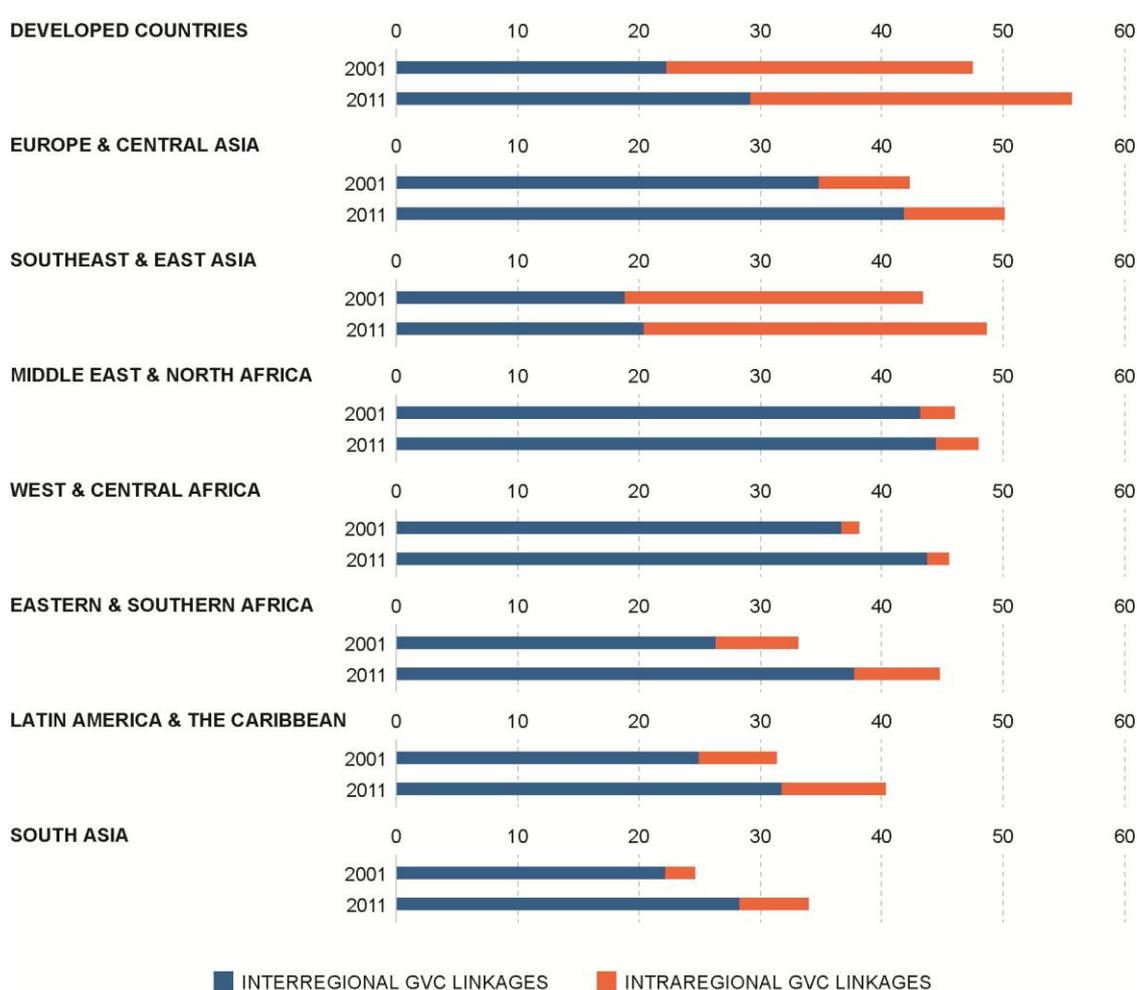
### **The opportunities of GVCs for LIDCs**

Many LIDCs are increasingly involved in GVCs both upstream and downstream, and their participation brings about economic benefits in terms of enhanced productivity, sophistication, and diversification of exports (Kowalski et al. 2015). Developed countries still exhibit, on average, higher participation rates, with European countries leading the way; but a clear trend has emerged, showing growing participation in GVCs beginning in the early 2000s, especially by LIDCs (figure 1). Among developing regions, Southeast Asia (SEA) economies and those in Europe and Central Asia (ECA) show the highest rates of participation, while Middle East and North Africa (MENA) countries also have relatively high participation ratios. In contrast, Latin America and the Caribbean (LAC) and South Asia

(SA), along with regions in Sub-Saharan Africa, trail behind. But even these countries saw their participation grow considerably, notably between 2001 and 2011.

Cross-regional differences are significant also in the way countries integrate into GVCs around the world (Figure 1). SEA—the region where the most comprehensive and deepest regional integration agreements can be found—has the highest average share of intraregional GVC participation. In the rest of the developing world, the share of intraregional GVC participation is lower than that of extraregional links. Still, East and Southern Africa (ESA) and Latin America and Caribbean (LAC) show higher levels of regional integration than do SAS (South Asia), West and Central Africa, or Middle East and North Africa (MENA).

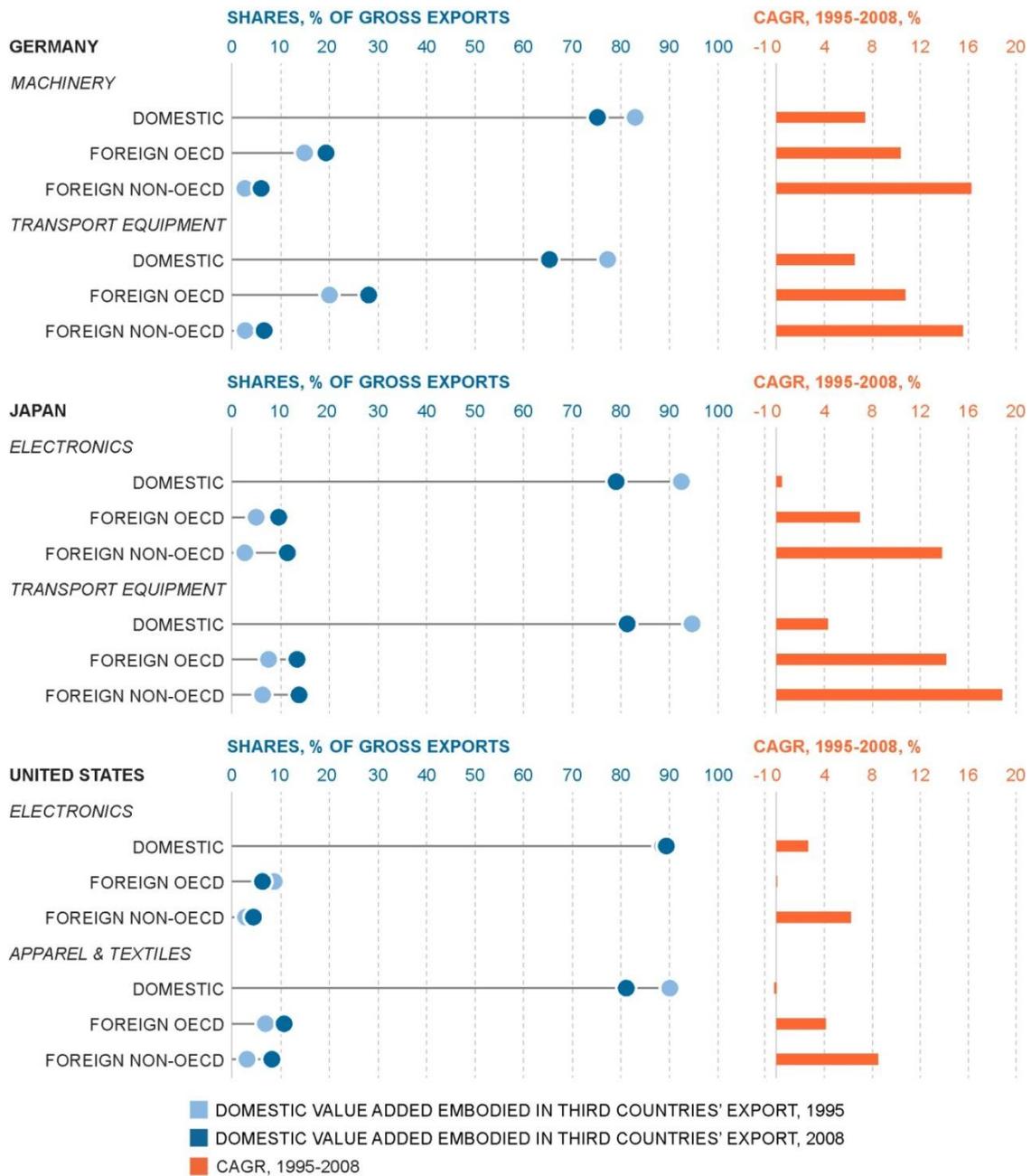
**Figure 1. Average total, intra and extraregional GVC participation across regions in 2001 and 2011, % of gross exports**



*Note:* These figures show the combined GVC participation ratio, which combines the information about the use of foreign goods and services as inputs into country's exports (backward participation) and where firms supply intermediate goods and services for other countries' export activities (forward participation). The ratio is expressed as a share of gross exports.

*Source:* Kowalski et al. 2015.

Figure 2. Domestic value added embodied in third countries' export, market share (%), selected countries, 1995 vs. 2008



Source: World Bank computations using OECD-WTO Trade in Value Added (TiVA) Database.

But there is scope for much larger gains. Take for example the decomposition of gross exports by value added of the source country in the three headquarter economies of GVCs (Germany, Japan, and the United States) for selected sectors of importance (electronics, apparel and textiles, machinery, and transport equipment). Between 1995 and 2008, increasing value-added shares in these countries' exports originate in LIDCs. For example, the shares in US exports of apparel and textiles increased from 3% to 8%. They also increased from 2.8% to 5.1% in US exports of electronics, from 2.7% to 5.9% in German exports of transport equipment, from 2.17% to 4.94% in German exports of machinery, from 2% to 7% in Japanese exports of transport equipment, and from 2.63% to 9.27% in Japanese exports of electronics (Figure 2).

GVCs not only shape relations between developed countries and LIDCs but also affect intra-LIDCs' trade and investment ties. Emerging economies are now important sources of outward FDI. If one looks only at firms from the BRICS (Brazil, Russian Federation, Indonesia and China), their outward direct investment rose from USD 7 billion in 2000 to USD 145 billion in 2012 and USD 200 billion in 2013, that is, almost one-third of global FDI (Gómez-Mera et al. 2015). Although most of those investors are driven primarily by market-seeking considerations (selling products domestically), a subset is export-platform seeking (that is, driven by lowering production cost considerations). For example, the expansion of the Chinese apparel sector to lower-cost locations in Asia or the shifts of manufacturing activities within China are creating opportunities for learning in new territories. Some SMEs and firms in LIDCs have benefited from increasing participation in international production networks, others have increased the density of their production structure, and some have done both.

As stated earlier, one of the more notable aspects of GVCs concerns their potential benefits for smaller providers, both at the level of firms and countries. Whereas size mattered greatly in the traditional concept of trade and investment, which allowed firms to achieve economies of scale and to tap into larger pools of skills and resources, GVCs now offer an opportunity to overcome some of the inherent challenges associated with small size.

GVCs can be especially useful for LIDCs that might otherwise find it difficult to compete in global markets. Through their unbundling of production processes, they can offer less diversified and smaller economies new opportunities for finding their niches in the global economy. Market size still affects firms' decisions on where to base either their manufacturing and service operations or their innovation centers, and the case for investing in a large market tends to be more compelling. Small countries may overcome their size disadvantage through the adoption of new policies, and opening their markets and linking them more closely to other, larger markets are likely to help. One of the principal draws for opening markets is that it allows producers in third countries to treat the smaller, connected country as an export platform.

### **Importance of SMEs for economic progress and their participation in GVCs**

SMEs are the backbone of the economy in several developing countries. Indeed, they account for more than half of all formal employment worldwide (IFC, 2013). A cross country study of 49,370 firms in 104 countries finds that while small and medium sized firms (< 100 employees) have comparable share of aggregate employment as large firms, it is the small firms (<20 employees) with the largest shares of job creation, highest sales growth, and employment growth. (Ayyagari et al., 2014). These findings are also common in OECD countries, where 75% of new jobs are created by SMEs. Over the last several years, however, additional research has revamped the debate, indicating that size is not the relevant measure, but rather it is the age of the firm which determines contribution to net job creation. Evidence for the United States (Haltiwanger et al., 2013), Colombia (Eslava and Haltiwanger, 2013), and Morocco and Tunisia (Freund et al., 2014) show that once firm

age is controlled for, there is no systematic relationship between size and job creation, highlighting the role of start-ups and young firms to contribute to the creation of new jobs. But more evidence is needed to determine what kind of firms play a significant role in net job creation among developing countries.

GVCs likewise operate to the benefit of smaller firms, as they provide opportunities to specialize in tasks within the chain. Whereas SMEs would have found it difficult to compete along an entire line of activities, in the GVC world of today they can more readily participate in those tasks in which they have expertise, as long as market failures that disproportionately affect SMEs are addressed.

Gereffi, Humphrey, and Sturgeon (2005) discuss in some detail the principal actors in GVCs and the power relations between them: MNEs, their affiliates abroad, and independent suppliers in both domestic and foreign markets, including SMEs. Economic transactions within GVCs include intra-firm transactions between headquarters and affiliates, as well transactions between companies and independent suppliers (arm's-length trade and transactions accompanied by specifications on quality, product design, etc.). The distribution of power and the direction of knowledge flows will differ depending on the type of GVC. They may be largely concentrated in the lead firm or MNE or may be shared between lead firms and (upper-tier) suppliers. Factors such as the complexity of transactions, the ability to codify transactions, and the capabilities in the supply bases enter the equation (Gereffi, Humphrey, and Sturgeon 2005), but the business model's intrinsic characteristics matter too (Porter and Kramer, 2011).

Owing to their size and capability to engage in international trade and investment, MNEs tend to be the leading actors in GVCs. But affiliates of cost efficiency seeking FDIs (Dunning 1995) are essential links in GVCs. MNEs organize global production processes across different geographical locations and through a complex network of affiliates (that is, offshoring), as well as through their arm's-length relationships with other companies and suppliers (that is, outsourcing). MNEs dominate exports. In fact, cross-border trade between MNEs and their affiliates—often referred to as intra-firm trade—now accounts for a large share of international trade in goods. And earlier firm-level evidence, based on gross exports data, reveals that exports are driven by a limited number of large, often multinational companies. For example, Mayer and Ottaviano (2007) show that 1%, 5%, and 10% of companies account for no less than 40%, 70%, and 80%, respectively, of aggregate exports in Europe. Similar results are reported for the United States (Bernard et al. 2007), as well as for LIDCs (Cebeci et al. 2012).

Although evidence may show that GVCs is a “big-firm story”, with MNEs as leading actors, those findings underestimate the importance and participation in GVCs of smaller firms, which often supply intermediates to exporting firms in their country and are, as such, integrated, indirectly, into GVCs. Slaughter (2013) finds that the typical US MNE buys more than USD 3 billion in inputs from more than 6,000 US small and medium-size enterprises (SMEs)—or almost 25% of the total input purchased by those firms. Such domestic supplies are not reflected in international trade statistics, which count only direct exports; estimates for the United States show that in 2007 the export share of SMEs increased from approximately 28% (in gross exports) to 41% (in value-added exports), when such indirect exports are taken into account (USITC 2010). To quantify the direct and indirect participation of SMEs to Global Value Chains across countries, Section 2 of this report provides first estimates of SMEs' importance as upstream providers of the exporting sector. Unfortunately such data are only available for the countries of the Organisation for Economic Co-operation and Development (OECD) and further investment in expanding the statistical evidence to cover LIDCs is warranted.

And high-growth potential SME may grow over time to become lead firms in GVCs. Actors and linkages in GVCs may evolve as competitive (smaller) firms upgrade their activities and reinforce their positions. High-growth potential SMEs may see new opportunities to expand their business abroad (OECD 2008), although it is generally difficult for them to reach international markets, with constraints being particularly strong in LIDCs (see for example Farole and Winkler, 2014 for the case of Sub-Saharan Africa). It is normally the SMEs at the forefront of technology or those producing high value-added parts and components that internationalize directly (Farole and Winkler, 2014). Meanwhile, those SMEs whose competitive advantage is based primarily on cost or those specializing in certain types of services that require face-to-face interaction are more likely to participate in GVCs as domestic suppliers of the export sector. The supply base of the automotive industry or of the aerospace industry, for example, is double-tiered, with large firms in the leading positions but also comprising many small specialized (and smaller) global suppliers (that is, second- or even first-tier suppliers) that often produce very specialized and customized parts and components. Often, as car assemblers set up final assembly plants in new locations, they provided support or urged their suppliers to move abroad with them (Van Biesebroeck and Sturgeon 2011). The fragmentation of production together with advances in ICTs is also creating new entrepreneurial possibilities for SMEs to access markets abroad, giving rise to a new category of so-called micro-multinationals, which are small firms that develop global activities from their inception. The Internet and new business models make it possible for those smaller—often service-driven—companies to enter foreign markets at minimum costs (Mettler and Williams 2011).

GVCs, then, hold the promise for SMEs and firms in LIDCs if policy priorities include enabling firms' productivity growth through supporting their ability to build internal capacities and facilitating access to capital and connectivity. External international sourcing can lower barriers to exporting by accommodating specialization in narrow business functions, thus obviating the need for a company to develop a complex production process in-house and lessening its dependence on the degree of industrial development of the home country. Small labor force capabilities can be connected with complementary external capabilities, and small domestic markets can be connected with larger export markets. Those modes of integration share a number of requirements that allow relatively tight coordination and control. At the same time, the existence of GVCs poses specific challenges for SMEs. To start with, the leading role played by large MNEs, have led some to suggest that the emergence of GVCs might be a threat to development of smaller firms in general. For example, the ability of smaller firms to capture value depends to a significant extent on power relationships in the chain, and power depends on several factors: for example, ownership of technology and the competitive situation in different segments of the chain. MNEs that often have proprietary know-how and technology and a multitude of potential supply sources might be in a strong position to dictate contractual conditions to their smaller suppliers. Still, the MNEs, with their scale and access to markets and technology, may be the main channel for SMEs to participate in GVCs either directly or indirectly. Second, the fulfilment of strict requirements with regard to product standards and quality as required by GVCs can be harder to overcome for smaller and younger firms, and the market failures constraining their development differ from those faced by large firms. Smaller firms face specific difficulties that limit their growth and that range from constrained access to credit and insufficient scale to support the costs of adequate R&D and training of personnel, to lack of lobbying power compared with larger firms and limited ability to diversify and absorb local and global shocks. Moreover, the smaller production scale of SMEs typically increases the recovery period of any fixed costs of investment or information acquisition, and the smaller pool of workers restricts the scope to efficiently reallocate the workforce across, or to new, tasks compared with larger firms. Young, innovative and entrepreneurial SMEs may face additional problems, such as lack of access to risk capital, or ill-adapted entry and exit regulations that

prevent firms from experimenting with new technologies or business models (OECD, 2015), and that can prevent them from reaching a sufficient scale to enter global markets.

All in all, the ability of SMEs and firms in LIDCs to be successful in GVCs (i.e. to swiftly adopt new technologies, to learn by doing, to innovate, and to optimize their production) depends more heavily on framework conditions and on externalities from the operating environment. Public goods and externalities that matter are wide-ranging: from world-class logistics and ICT connectivity, to open markets, to the business environment, to the educational and vocational system, to the existence of a well-functioning innovation infrastructure, and efficient forms of financing. Such challenges and how policy can address them are discussed below. And lack of a supporting environment can lead firms with high-growth potential to long-term limitations not only for themselves, but also for the economy as a whole. Entrepreneurs may opt for sub-optimal strategies that do not foster productivity and economic growth. These include seeking loans from friends and family instead of formal sources of capital; limiting investment in technology that would boost productivity and growth; not hiring talent that can help the business grow and thrive over the long term; failing to adopt tools for identifying new market opportunities; and not seeking opportunities for scaling their companies but instead putting the firms on a below-potential growth path.

## 2. Stylized facts of SMEs in GVCs

### Preview of key take-aways

- SMEs participation in GVCs can be achieved by direct participation in exports (of goods and services that feed into third countries' production) or indirect participation by supplying other exporters.
- SMEs direct export participation in the goods sector is limited, based on evidence from both OECD countries and LIDCs.
- The majority of firms in most LIDCs is in the informal economy. Informality is one of the top 5 constraints for small firms in developing countries in doing business.
- Exporting SMEs are significantly underrepresented in (tangible) capital-intensive sectors but compare favourably not only in the service sector but also in heterogeneous manufacturing sectors where specialization and branding may be important.
- Exclusive focus on direct exports underestimates the participation of smaller firms in GVCs. Accounting for SMEs' direct and indirect contribution to exports greatly reinforces their significance. In many OECD countries, for which such data are available, smaller firms account for more than half of the total exports of domestic value added, with much of it channelled through larger firms.
- Data on SMEs' labour productivity show that SMEs may integrate within GVCs at the two extremes of the value chain: in low value-added activities and in high value-added activities. Survey evidence for LIDCs suggests that this is the case also in these countries – with a prevalence at the low value added end of GVCs.
- The degree of upstream integration of SMEs varies widely across countries. Links between MNEs and their local suppliers remain limited and difficult to achieve in LIDCs, even in those cases in which the MNE has a business interest in developing a local supplier base and actively pursues that objective.
- Strong links between MNEs and their local suppliers tend to result in greater diffusion of knowledge, technology, and know-how from foreign investors. Yes, survey evidence suggests that the impact of MNEs presence in LIDCs on domestic firms, including SMEs, is difficult to predict a priori.
  - Short-term opportunities from MNE presence in LIDCs often come from outsourcing non-core activities, many of which are at the low-end of the value chain and likely to be performed by SMEs.
  - Longer-term opportunities may instead exist for SMEs that focus on the upstream end of the value chain.
  - Emphasis of MNEs on certification of quality and standards represents an important area of potential for upgrading for domestic firms. But direct technical assistance appears to be critical for supporting spillovers through product and process upgrading and to build skills that meet the standards and specifications of larger firms.

### Informality of the economy: A binding constraint

GVCs operate in the formal market. Yet, the majority of firms in many developing countries are informal (Andrade, Bruhn, McKenzie, 2015; and Bruhn and McKenzie, 2014). In Sri Lanka, for example, only one fifth of firms operating without paid workers are registered with any government agency. Even among firms employing paid workers, the majority are unregistered with one or more pertinent agencies (McKenzie, Mel, and Woodruff, 2013). According to ILO surveys in 47 developing economies, the share of persons in informal employment is above 50% in a number of countries including Bolivia, Colombia, Ecuador, Egypt, El Salvador, Honduras, India, Indonesia, Liberia, Madagascar, Mali, and Mexico.

While more analysis is needed, World Bank assessments from the institution's Independent Evaluation Group indicate that about 32% of the firms with 10 to 99 employees in a sample of developing countries report informality as one of the top five constraints they face in doing business. Other constraints for this class of firms are power, corruption, the tax rate, and political instability. By way of comparison, for the largest firms (300+ employees) the top constraints are: power, worker skills, transportation, the tax rate, and corruption.

### Participation in GVCs: Direct insertion

Firms' participation in global value chains (GVCs) can be achieved by directly participating in exports (of goods and services that feed into third countries' production) or by indirectly supplying other exporters such as large local firms or multinational companies.

Small and medium enterprises (SMEs) are typically less export oriented than are large firms. In countries members of the Organisation for Economic Co-operation and Development (OECD), for which data on export participation by firm size are available, small and medium-size enterprises (firms with fewer than 250 employees) represent the vast majority of the business population (Table 1). They also account for the majority of employment in all OECD countries.

**Table 1. Percentage of exporters, by number of employees and foreign ownership, mining and manufacturing (ISIC rev 4 5 to 39) 2011**

Country	All firms (1)	Number of employees				Foreign-controlled (6)
		0–9 (2)	10–49 (3)	50–249 (4)	250+ (5)	
Austria	31	19	56	90	97	86
Belgium	24	15	62	84	96	97
Bulgaria	18	7	38	72	77	
Canada	28	14	44	91	100	
Germany	24	17	28	51	52	36
Denmark	30	19	55	83	100	91
Spain	12	6	37	76	86	75
Estonia	42	31	69	79	79	100
Finland	18	11	44	72	89	81
France	12	5	45	83	100	80
United Kingdom	24	14	48	72	77	58

**Table 1. Percentage of exporters, by number of employees and foreign ownership, mining and manufacturing (ISIC rev 4 5 to 39) 2011 (cont.)**

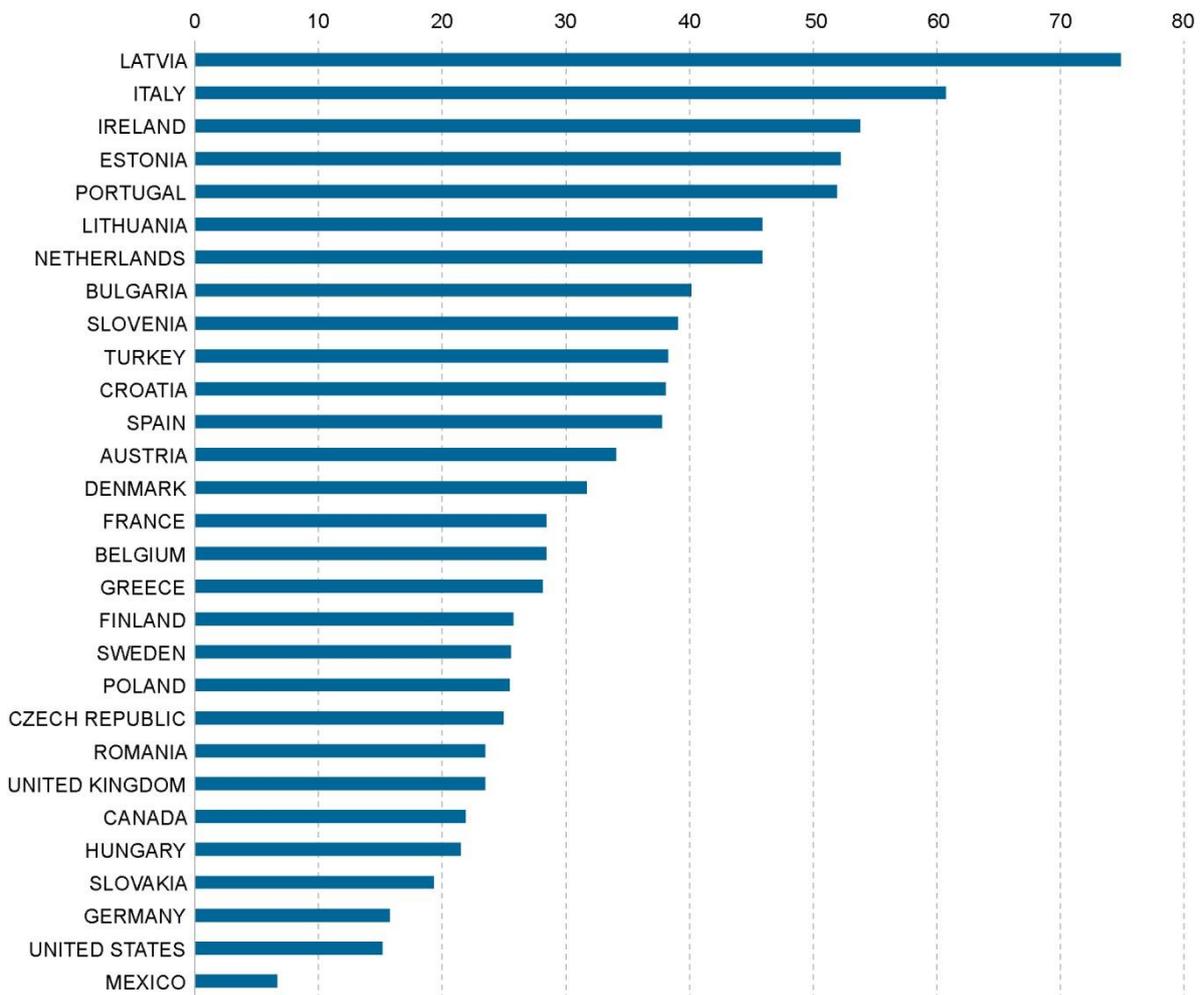
Country	All firms (1)	Number of employees				Foreign-controlled (6)
		0–9 (2)	10–49 (3)	50–249 (4)	250+ (5)	
Hungary	20	11	63	80	87	78
Italy	20	12	53	84	87	71
Lithuania	21	8	61	81	86	
Luxembourg	45	27	71	91	100	
Latvia	31	18	66	83	84	
Poland	14	8	48	65	87	100
Portugal	19	11	53	82	89	57
Romania	15	5	27	63	81	
Slovak Republic	9	4	63	99	100	100
Slovenia	25	19	68	78	90	
Sweden	19	12	65	80	88	78
United States	9	5	16	51	53	

Sources: OECD/Eurostat Trade by Enterprise Characteristics (TEC) Database; OECD Structural and Demographic Business Statistics (SDBS) Database; OECD Activity of Multinational Enterprises (AMNE) Database.

However, despite their significance, SMEs are responsible in most countries for less than half of the value of gross exports (Figure 3). For example, they account for less than 10% of gross manufacturing exports in Mexico. The share of SMEs in exports is larger in small, open economies, such as Ireland, Latvia, or Estonia, or in countries where small and medium-size firms have traditionally dominated the business landscape, such as Italy. But on the whole, large firms dominate, thus reflecting their greater outward orientation (Figure 4). Most large manufacturing firms engage in direct exports, but the percentage of direct exporters among SMEs is, generally, systematically lower across countries and industries, with micro-enterprises in particular rarely exporting directly.

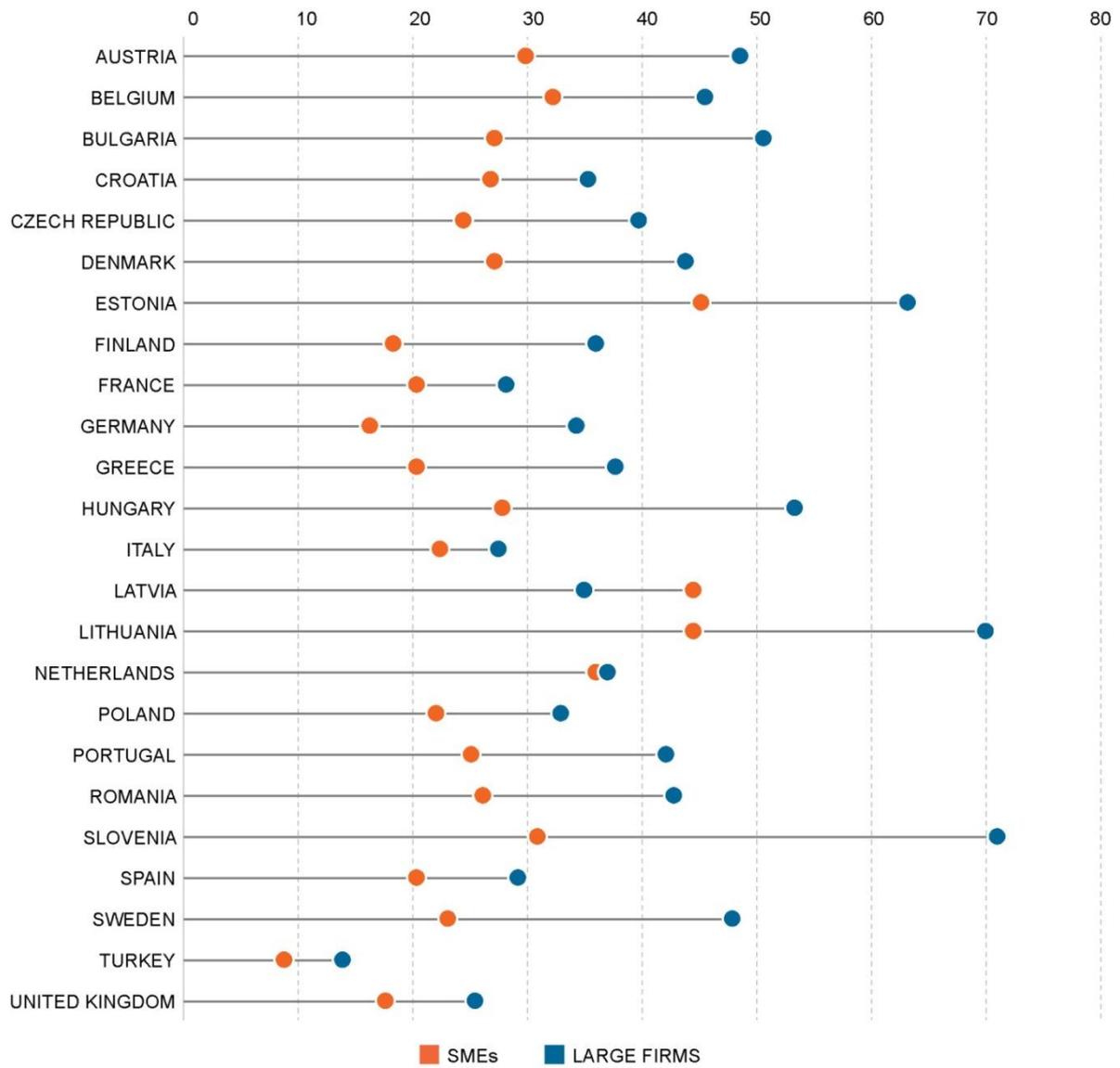
In most countries, only a small proportion of firms (almost exclusively large) account for a disproportionate share of overall exports (Figure 5). This finding is in line with much of the firm-level evidence of export activity from countries worldwide. In most industries, a few big firms account for extremely large shares of output and employment. For example, Mayer and Ottaviano (2007) show that 1%, 5%, and 10% of companies account for no less than 40%, 70%, and 80%, respectively, of aggregate exports in Europe. Cebeci et al. (2012) and subsequent research based on the World Bank Exporter Dynamics Database (which provides measures of exporter characteristics and dynamics across 45 countries of all income levels and geographic regions) confirm that similar trends hold also for LIDCs. They find that the top 5% of firms accounts on average for 80% of exports.

Figure 3. Contribution of SMEs to gross manufacturing direct exports in 2012, %



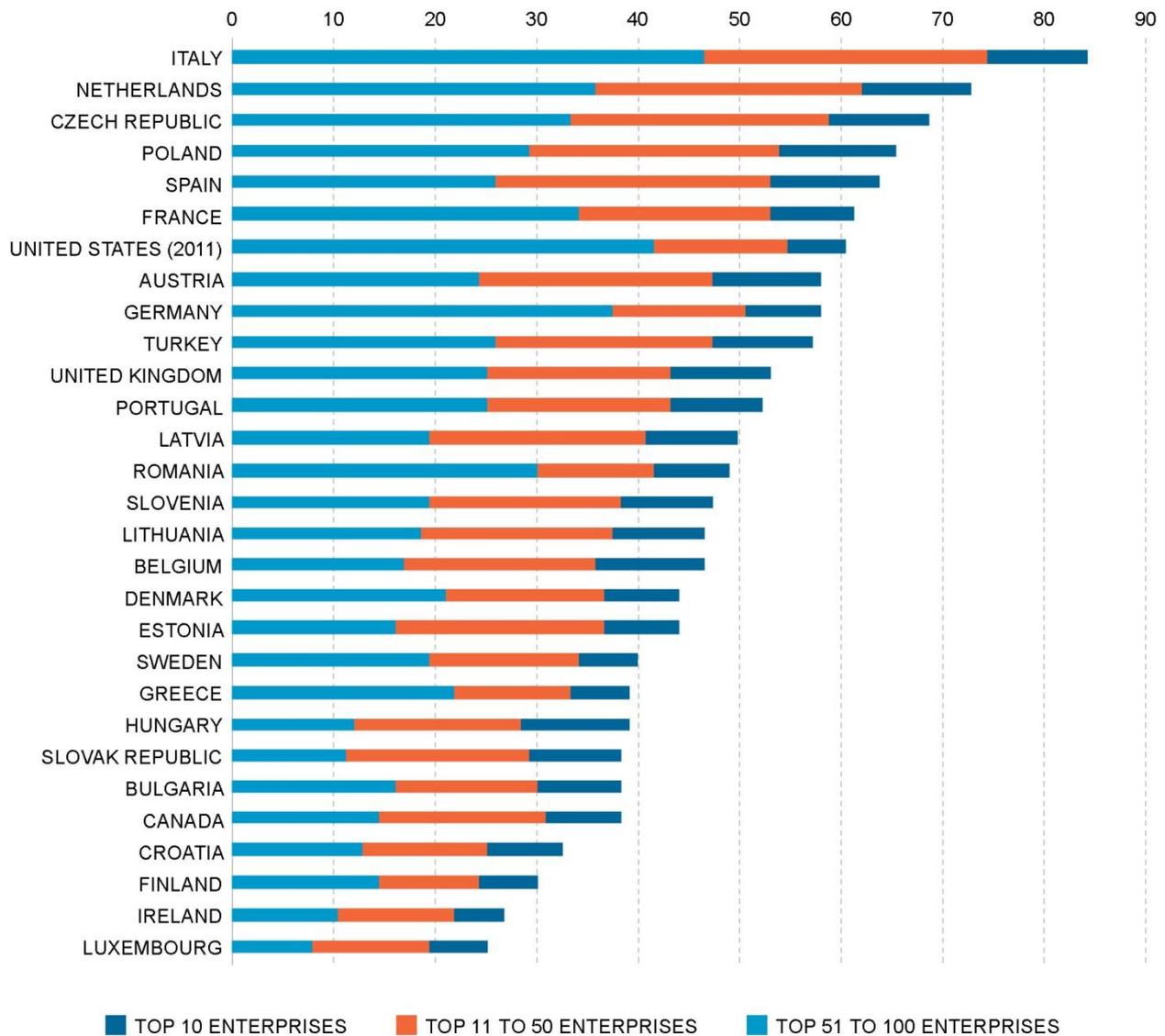
Sources: OECD/Eurostat Trade by Enterprise Characteristics (TEC) Database; OECD Structural and Demographic Business Statistics (SDBS) Database.

Figure 4. Export intensities: Export to turnover ratios in 2012, %



Sources: OECD Entrepreneurship at a Glance, 2015.

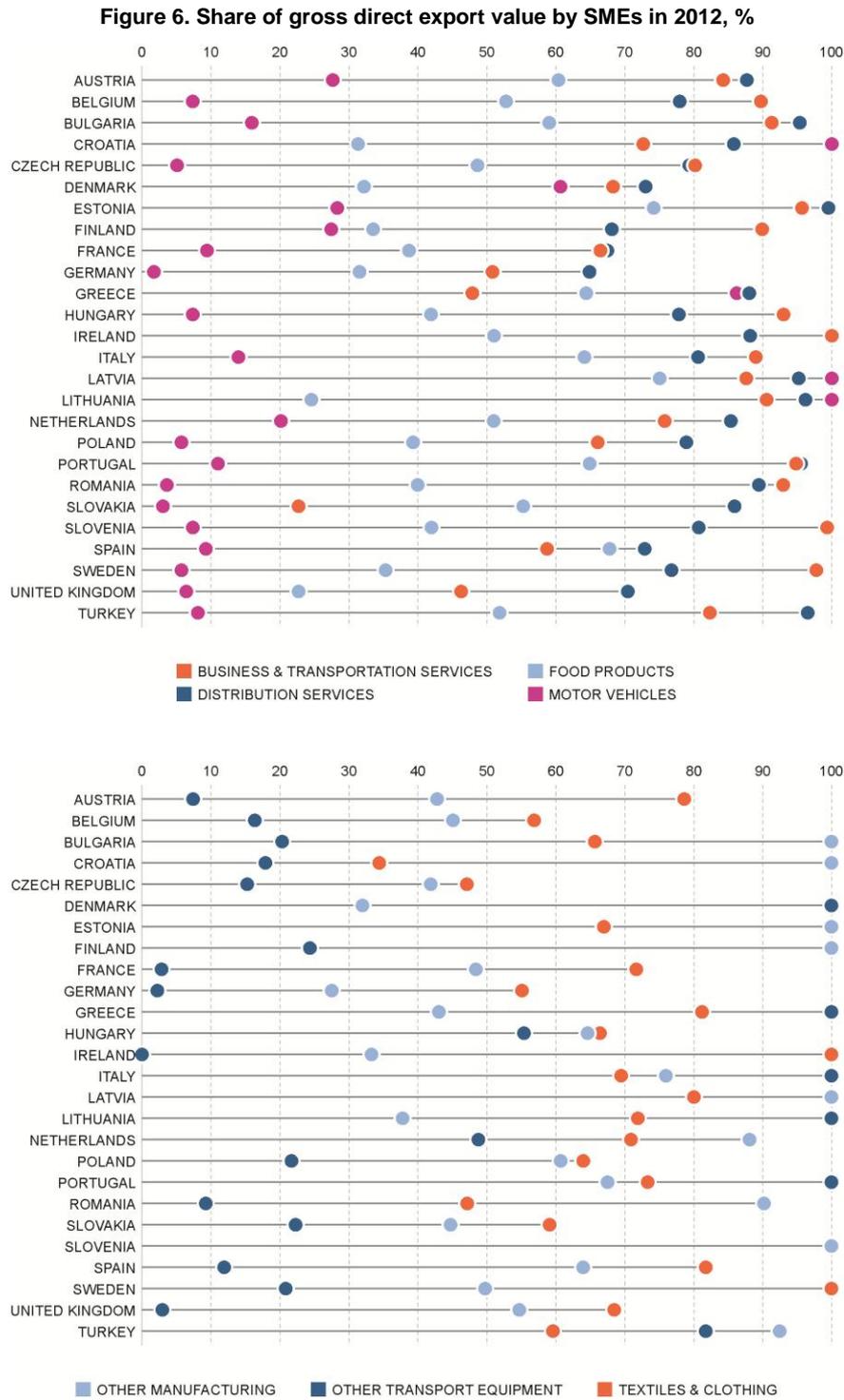
Figure 5. Share of top exporters in total export values in 2012, %



Source: OECD Entrepreneurship at a Glance, 2015.

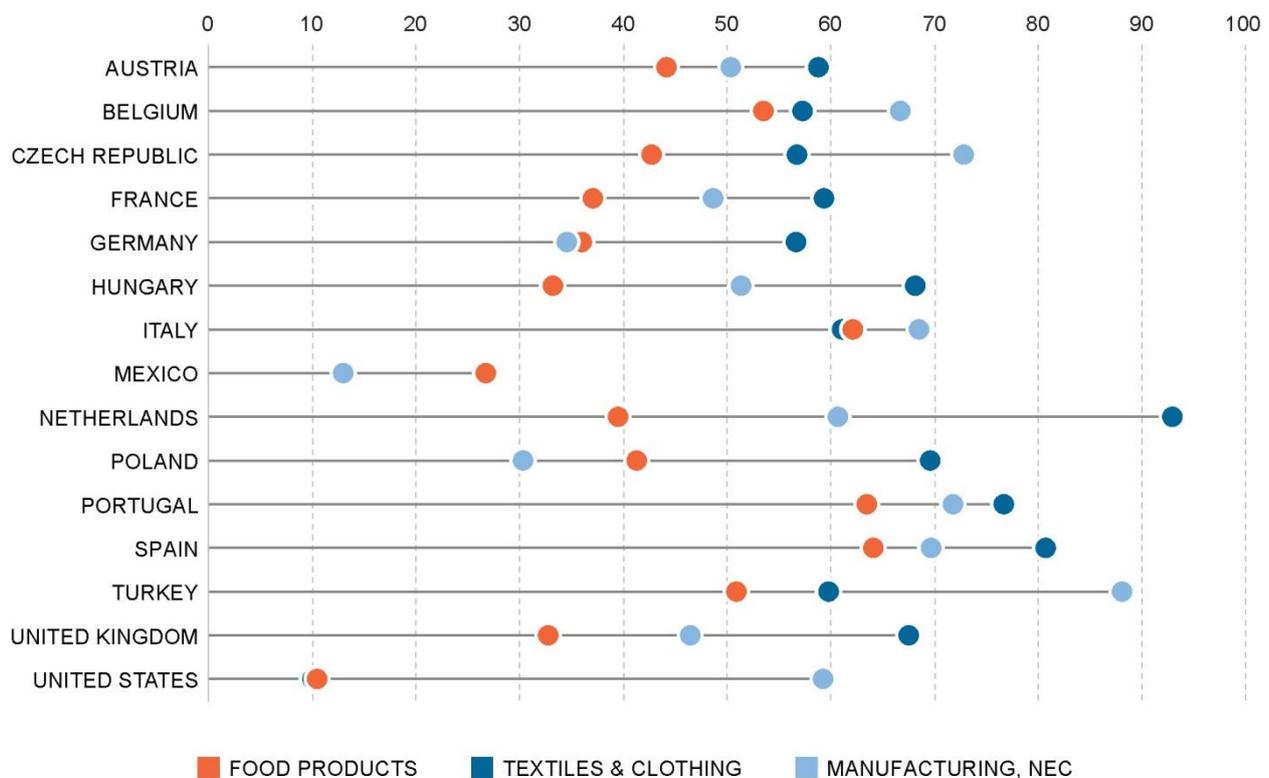
The relatively low weight of SMEs in exports at the total economy level partly reflects compositional effects. Exporting SMEs are significantly underrepresented in (tangible) capital-intensive sectors, such as transport equipment, but they compare favorably in the service sector (Figure 6), where fixed costs of entry are presumably lower. The same holds for heterogeneous manufacturing sectors where specialization and branding may drive export penetration (Figure 7).

The data also reveal a correlation between firm size and presence in more distant markets. For example, in 2011, European SMEs accounted for 37% of intra-European Union (EU) exports but for only 28% of extra-EU exports. In line with the findings from the literature on firm heterogeneity (Bernard et al. 2003), SMEs in most countries typically export disproportionately more to neighbouring countries than do larger firms.



Source: OECD/Eurostat Trade by Enterprise Characteristics (TEC) Database.

Figure 7. Share of gross direct export value by SMEs in 2009, %



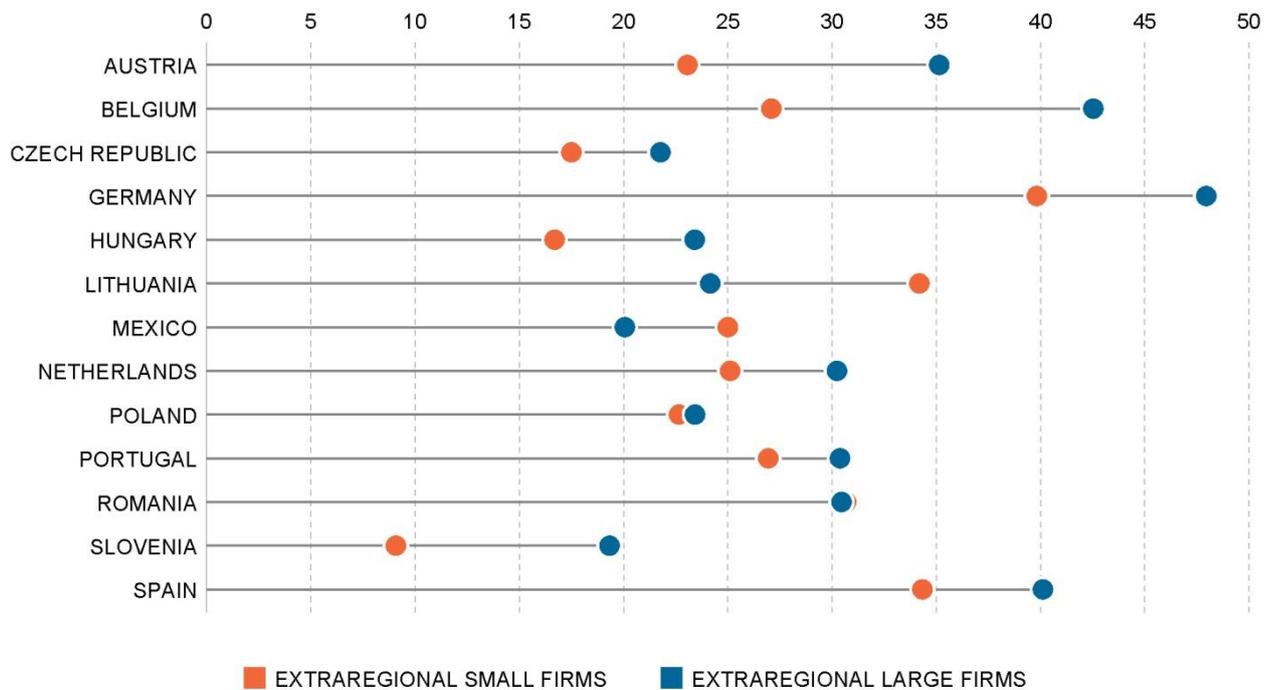
Source: OECD/Eurostat Trade by Enterprise Characteristics (TEC) Database.

Figure 8 illustrates that for most countries, where data are available, this finding holds. In Mexico, where “extraregional” reflects exports to the world, excluding the United States, the data show that SMEs typically have a higher share of their direct exports going to the rest of the world than to the United States. This fact may reflect, in part, the significant processing *maquiladora* relationships developed with US firms. In many Eastern European economies, the share of exports outside the EU is particularly small for both large and small firms. The structure of European GVCs, whereby Germany plays the role of hub for final goods, may be at the origin of those results. Small firms in Germany have managed to diversify their export markets (exporting outside the EU) to a greater extent than have many large enterprises in other European economies, thereby confirming the strength of the German *mittelstand* and possibly a very effective business supporting environment.

Although the participation in exports is lower for SMEs, opportunities exist to exploit high value-added niches in GVCs, particularly in market segments in which input costs are low. One such case is organic agriculture production (Staritz and Reis 2013). An industry that began retailing in the 1980s and that is driven by high demand, it also receives high premiums over conventionally produced crops. For example, organic blueberries earn more than a 100% premium (USDA 2011). A study by Farnworth and Hutchings (2009) that surveyed organic production in Bangladesh found that firms in this segment had (a) greater decision power over buyers, (b) improved positions within the value chain, and (c) greater access to inputs and markets for organic products than for traditional products. The fact that those staples do not use pesticides decreases key input costs, and the fact that they are produced in small plots reduces the constraints from scale. Another case study of female-owned

Ugandan SMEs that export organic fruits and vegetables further reveals the significant premiums paid for organic products. This access to low-cost capital provides opportunities for both product and process upgrading, as well as for increased productivity.

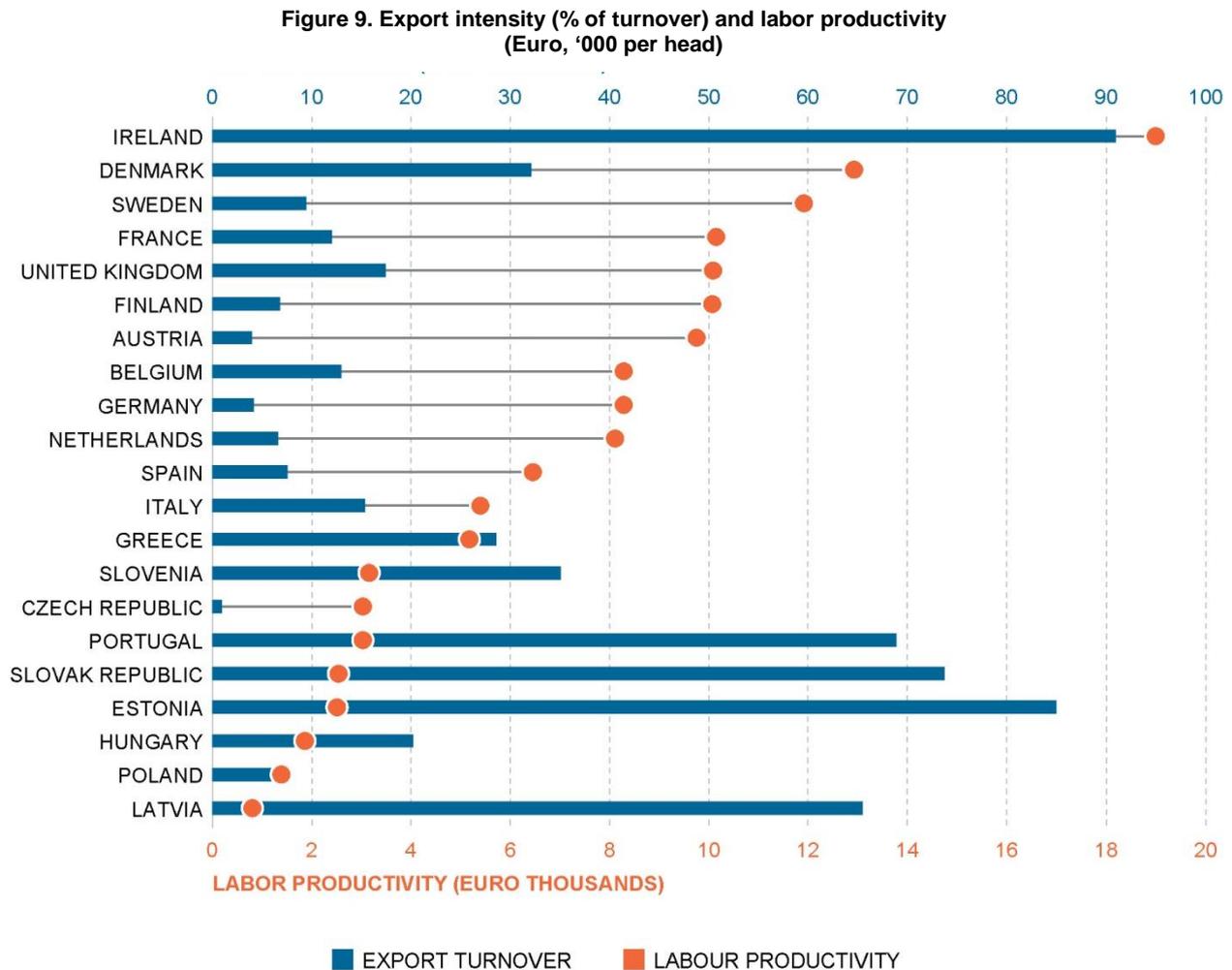
**Figure 8. Share of gross direct export value of small and large firms by destination in 2009, %**



Source: OECD/Eurostat Trade by Enterprise Characteristics (TEC) Database.

Moreover, statistical evidence shows that some SMEs outperform large firms (with respect to the share of their output destined for export markets) in some market segments, partly reflecting their involvement in tasks at the higher end of the value chain—such as R&D, design, and branding—that drive higher relative labor productivity. Case study literature also indicates that SMEs may be more agile than are large firms in intersectorial upgrading, whereas start-ups (which tend to be SMEs) may contribute substantially not only to innovation but also to employees' training in innovative sectors.

Data for OECD countries in the “other manufacturing” sector, for example, reveal that the average export intensity of a country's SMEs is high when average productivity is low or when the latter is high (Figure 9), thus illustrating the scope for integration through high value-added niches in GVCs and not just through cost-saving models.



Source: OECD/Eurostat Trade by Enterprise Characteristics (TEC) Database.

### Suppliers of large local and multinational firms: Indirect insertion

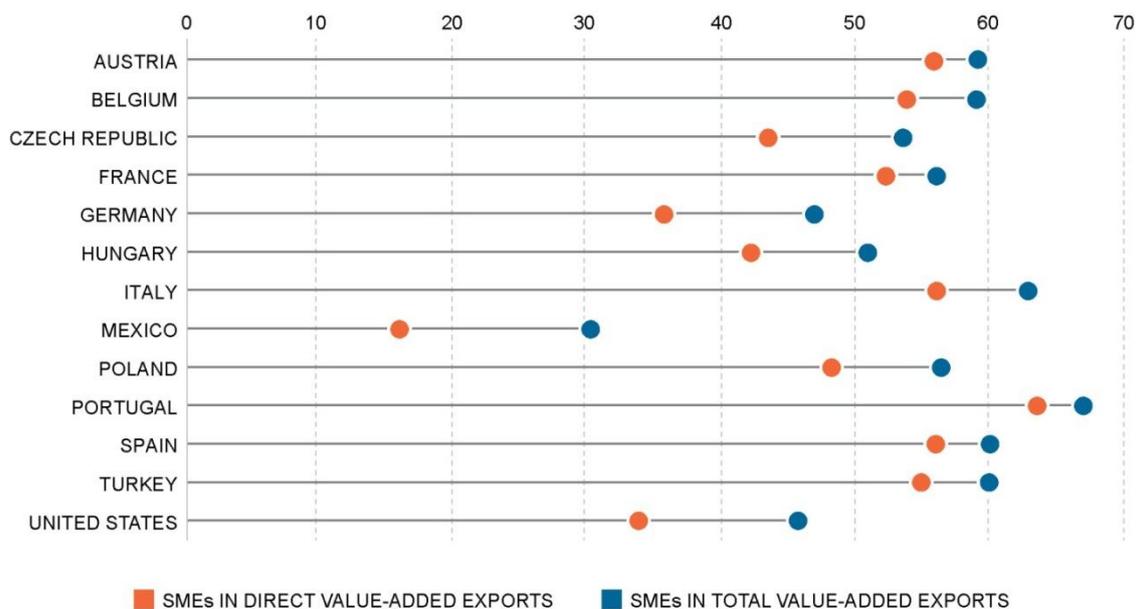
The earlier findings—on direct participation—underestimate the participation in GVCs of smaller firms, which often supply intermediates to exporting firms in their country and are, as such, relatively more integrated in the domestic value chains. Slaughter (2013) calculates that the typical US multinational enterprise (MNE) buys more than USD 3 billion in inputs from more than 6,000 US small and medium-size enterprises—or almost 25% of the total input purchased by those firms. Those domestic supplies are not reflected in international trade statistics, which count only direct exports. Estimates for the United States show that in 2007 the export share of SMEs increased from approximately 28% (in gross exports) to 41% (in value-added exports), when such indirect exports are taken into account (USITC 2010).

Exploratory work shown below links national data on SMEs within the Inter-Country Input–Output tables developed for the OECD–World Trade Organization Trade in Value Added initiative. It shows that the indirect contribution of SMEs is several times greater than the direct participation in all countries for which data were available. When one also accounts for the contribution that SMEs make to exports as upstream producers, in the majority of cases, SMEs account for more than half of the total exports of domestic value added (trade in value added) (Figure 10). The effect of including the

contribution of upstream SME suppliers is particularly large in those countries, such as Mexico, where the share of SMEs in direct value-added exports is lower. At the total economy level, for example, the contribution of SMEs nearly doubles from around 16% to about one-third of total exports of domestic value added.

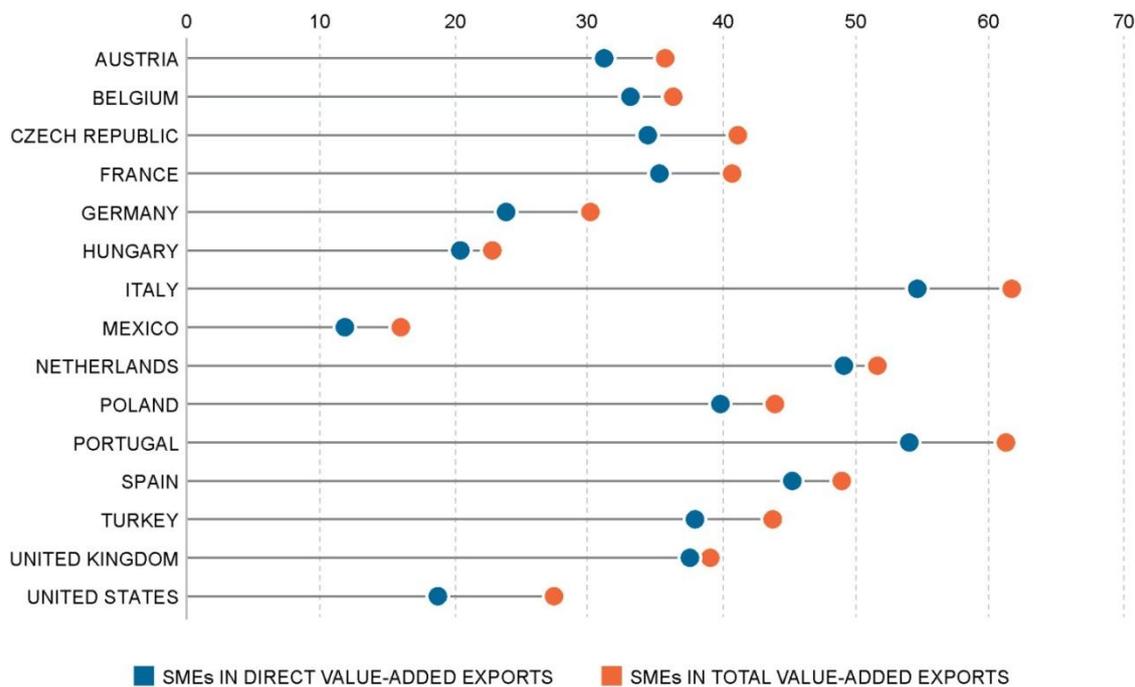
But despite the higher integration within countries, significant differences remain across countries when one looks at the scale of integration, a picture that is reinforced when looking at specific sectors. For example, SMEs' contribution to total exports of manufactured goods remained relatively low in 2009 in Mexico and Hungary even after including upstream inputs (from both manufacturing and services SME upstream suppliers) (Figure 11). With relatively high foreign ownership (either directly through foreign investment or indirectly through operational control of production chains) in both Mexico and Hungary, the relatively low contribution of SMEs (coupled with the relatively high foreign content of exports) points to principal “controlling” firms that use foreign upstream suppliers, resulting in fewer spillovers to the SME sector. That finding suggests that improved upstream integration in both countries could be achievable through upgrading of the SME population to meet the quality standards, requirements, and specifications of the exporting (larger) firms. But more broadly, it may also require a consideration of the informal sector, especially if one notes that self-employment rates are around one-quarter of the workforce in Mexico.

Figure 10. Share of SMEs in exports 2009: total economy, %



Sources: OECD/Eurostat Trade by Enterprise Characteristics (TEC) Database; OECD Structural and Demographic Business Statistics (SDBS) Database; OECD Intercountry Input-Output Trade in Value Added (ICIO/TiVA) Database.

Figure 11. Share of SMEs in exports, 2009: Manufacturing



Sources: OECD/Eurostat Trade by Enterprise Characteristics (TEC) Database; OECD Structural and Demographic Business Statistics (SDBS) Database; OECD Intercountry Input-Output Trade in Value Added (ICIO/TIVA) Database.

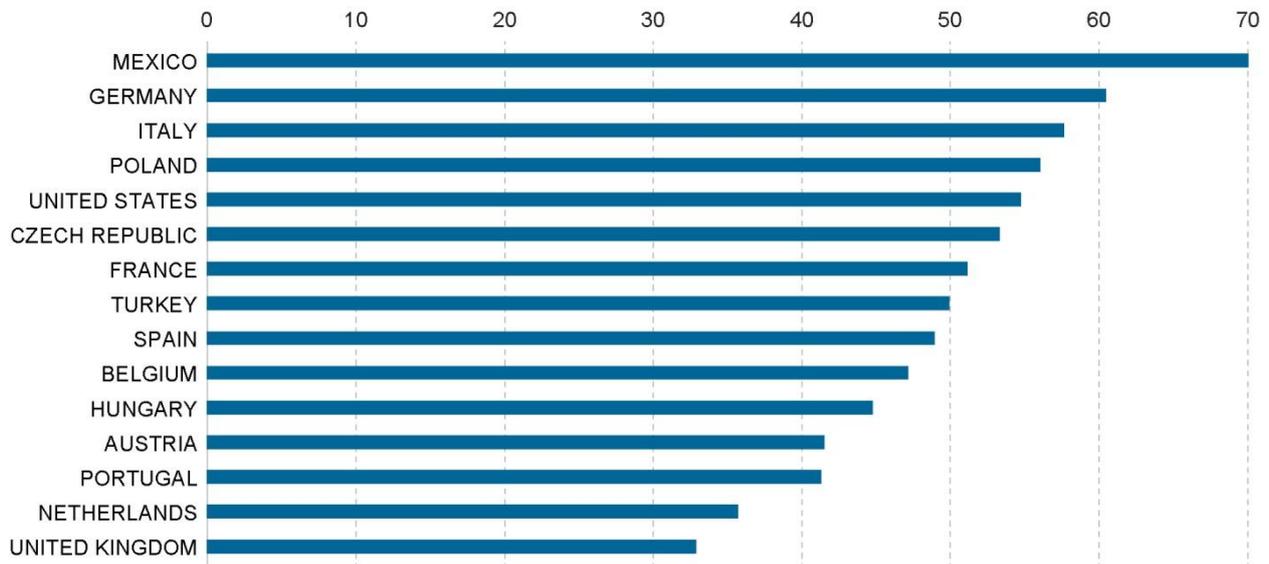
SMEs tend to channel their value added for exports through large firms rather than through other SMEs (Figure 12). Integration of SMEs through larger enterprises within GVCs varies across countries but it is significant in all cases, thereby representing over half of total exports of value added by SMEs in the Czech Republic, France, Germany, Italy, Mexico, and Poland; the case of Mexico largely reflects the relatively low direct exports made by SMEs.

Noteworthy is the fact that even in those sectors where the direct contribution of SMEs may be marginal (for example, the motor vehicles sector), the contribution of SMEs to total domestic value added that is embodied in the exports of motor vehicles can be significant from both upstream material input suppliers and upstream SME service suppliers (Figure 13).

In many OECD countries, SMEs are the main exporters of business services. Including the upstream contribution made by other SMEs reinforces their significance (Figure 14). In 2009, for example, one-third of the total domestic value-added content of exports in the business services sector in the United States originated in direct exports by business service SMEs. But when one accounts for upstream inputs in other service (distribution) sectors and upstream manufacturers, the overall contribution of SMEs to domestic value added that is embodied in service exports was greater than half.

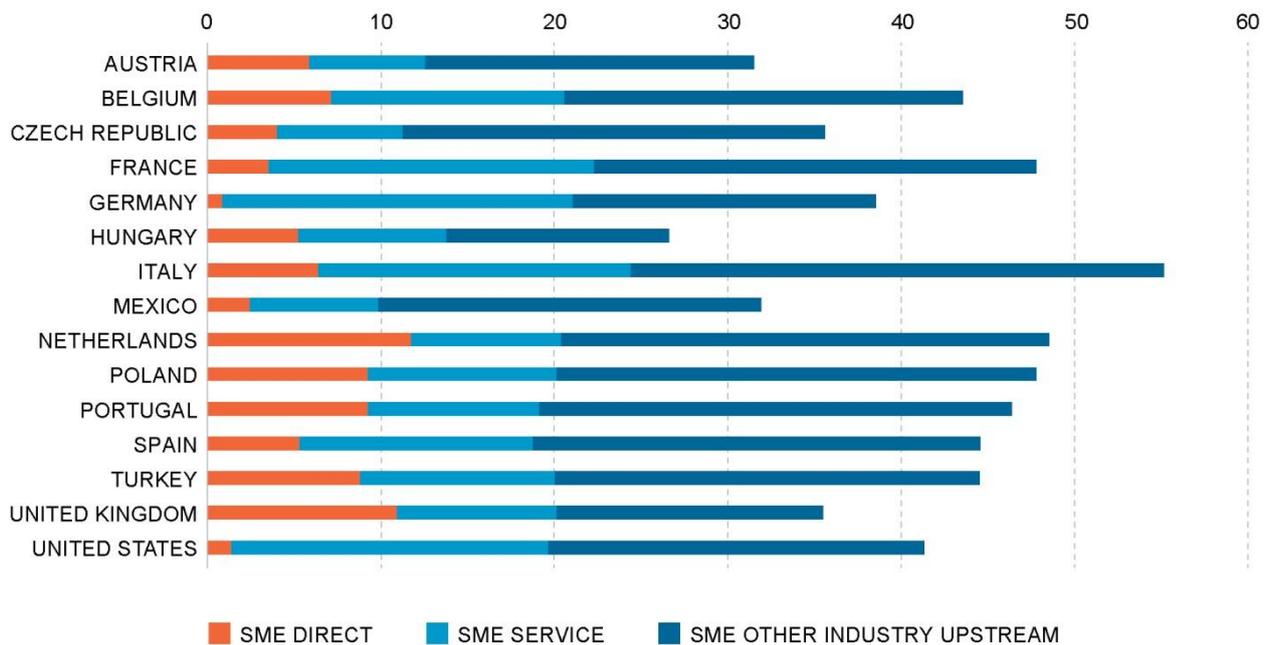
Finally, SME services contribute significantly to domestic value-added exports in manufacturing (Figure 15), and more generally their contribution to downstream industries (see also Figure 12) is significant across all countries.

**Figure 12. Upstream exports of SMES through large firms, share of total exports of value added by SMEs, 2009: Whole economy**



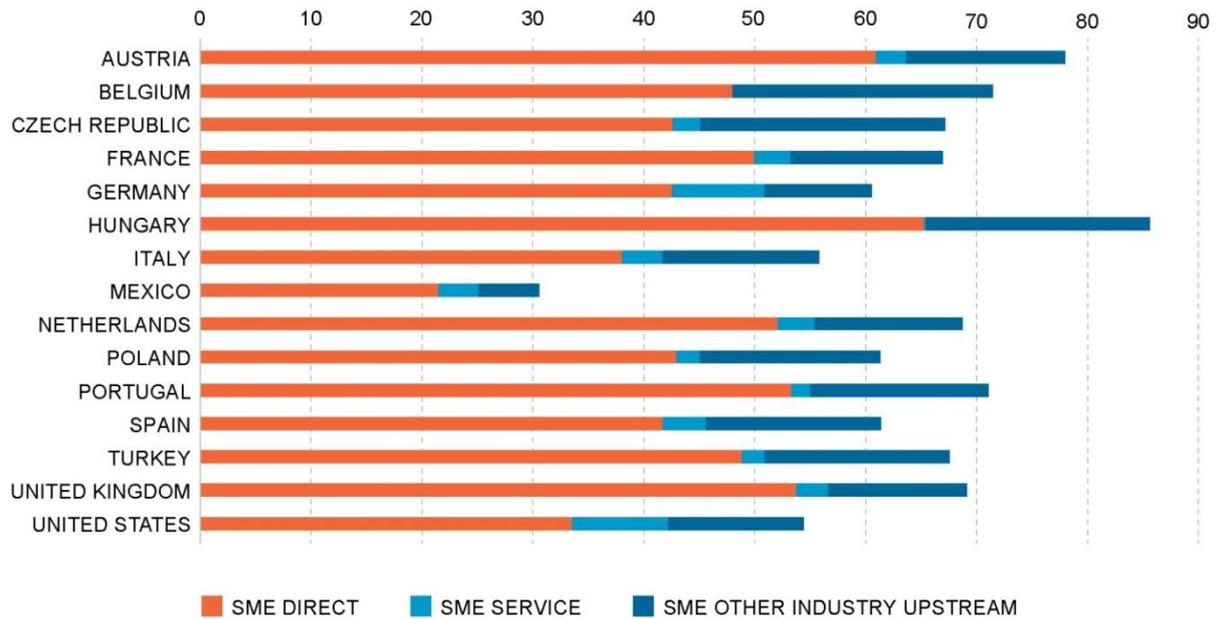
Sources: OECD/Eurostat Trade by Enterprise Characteristics (TEC) Database; OECD Structural and Demographic Business Statistics (SDBS) Database; OECD Intercountry Input-Output Trade in Value Added (ICIO/TiVA) Database.

**Figure 13. SME share of total domestic value added of exports of motor vehicles, 2009**



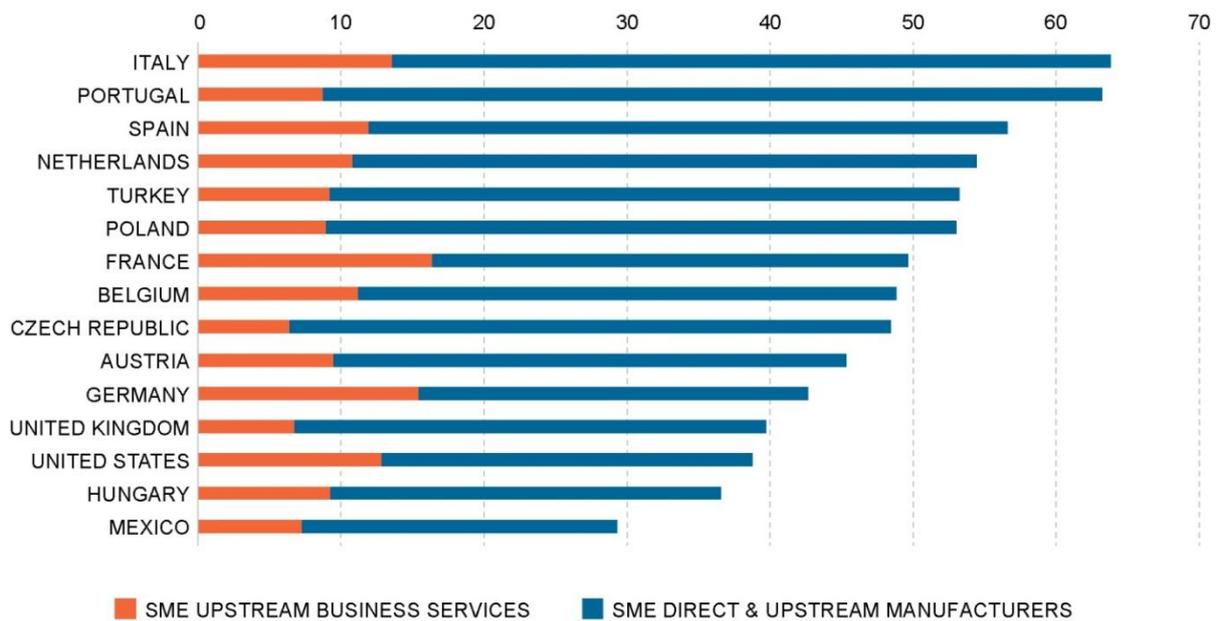
Sources: OECD/Eurostat Trade by Enterprise Characteristics (TEC) Database; OECD Structural and Demographic Business Statistics (SDBS) Database; OECD Intercountry Input-Output Trade in Value Added (ICIO/TiVA) Database.

Figure 14. SME share of total domestic value added of exports of business services, 2009



Sources: OECD/Eurostat Trade by Enterprise Characteristics (TEC) Database; OECD Structural and Demographic Business Statistics (SDBS) Database; OECD Intercountry Input-Output Trade in Value Added (ICIO/TIVA) Database.

Figure 15. SME share of total domestic value added of exports: manufacturing, 2009



Sources: OECD/Eurostat Trade by Enterprise Characteristics (TEC) Database; OECD Structural and Demographic Business Statistics (SDBS) Database; OECD Intercountry Input-Output Trade in Value Added (ICIO/TIVA) Database.

### ***Links between MNEs' investments and SMEs' Performance***

Strong links between MNEs and their local suppliers tend to result in greater diffusion of knowledge, technology adoption, and know-how from foreign investors. GVCs, through backward value-chain links, generate demand and assistance effects in the host countries that in turn translate into diffusion of knowledge and technology in the supplier industry and in increases in the availability and quality of inputs in the buyer industry: lead firms tend to require more and better inputs from local suppliers and assist them through knowledge and technology sharing, advance payments, and other types of assistance. In this way, local suppliers receive incentives to upgrade their technology, and they may also diffuse knowledge to local firms. In addition, MNEs may provide higher-quality inputs to domestic clients. Competition between local firms may increase, and local firms may try to imitate the MNEs' products and practices. In addition, knowledge embodied in labor can transmit from foreign to local firms through labor turnover and MNE employees turning entrepreneurs and creating their own start-ups.

Local sourcing is the critical channel for delivering positive spillovers. Supply chains, particularly backward links through local sourcing, appear to offer the most direct channel for short- and long-term gains from foreign direct investment (FDI) spillovers. They also tend to be the most visible and easiest to quantify, which increases their importance for policy makers. For example, in a World Bank survey of the mining sector, Farole and Winkler (2014) find that one-third of all surveyed local suppliers of foreign investors in Ghana and 42% in Chile started to export directly as a result of supplying foreign investors. And behaviour within the supply chain matters: assistance of foreign investors to local supply chain partners has an important impact on spillover outcomes so policies oriented to attract foreign investment are relevant to integrate SMEs in GVCs. Some of these policies include opening services sectors to private investment, removing investment incentives against local sources, and financing capacity building to help SMEs get the quality standards required by foreign firms. Although in some cases lead firms resist integration with a local supplier base, in other cases, they have an economic interest in developing a local support industry in producing countries, and they actively pursue such objective. That suggests that it is possible to build meaningful links over time. A clear finding from the surveys in the World Bank's Enterprise Surveys Database is that foreign investors would much prefer not to have to rely on importing goods and services where cost effective scope exists for domestic suppliers to compete and upgrade skills and standards, in order to benefit from face-to-face interactions and more responsive supply chains. Samsung, a company that has recently invested substantially in Viet Nam, is actively attempting to grow a local supply base. In 2013, the company was one of the largest foreign investors in the country with USD 9 billion invested to date, and an additional USD 3 billion smartphone factory under development. With a shortage of local suppliers,<sup>1</sup> Samsung has attempted to grow its Vietnamese supply base by organizing workshops in which it trains workers on the components it would like to make locally and audits the quality of specific suppliers. Samsung's next planned step is to organize a workshop in which it will invite its tier suppliers from other countries to meet with local firms to see if they can integrate them at a lower level in the supply chain (World Bank field interviews).

Despite the fact that in some industries, and in particular in some complex and sophisticated ones, MNEs have economic interests in creating linkages, productivity spillovers to the domestic economy of low-income developing countries (LIDCs) from FDI remains limited. Farole and Winkler (2012) used a cross-section of more than 25,000 manufacturing firms in 78 low- and middle-income countries from the World Bank's Enterprise Surveys Indicator Database to find evidence of overall

1. Out of the 61 suppliers servicing its factories in the country, only four are Vietnamese (*Việt Nam News* 2014).

negative FDI spillovers. They found, however, that when an important share of FDI output is sold domestically and a larger share of local inputs is used, higher productivity spillovers for low- and medium-productivity domestic firms arise.

This evidence suggests that the impact of MNEs' local presence on SMEs and firms in LIDCs is difficult to predict *a priori*. If SMEs' insertion is concentrated in low-technology or labor-intensive tasks, the potential for spillovers may be limited. Moreover, foreign investors are less likely to give assistance to local suppliers when supply contracts are ad hoc (rather than formalized and long-term). It is also the case that global trends toward global supply chain management in companies are reducing opportunities for local supply participation at the high value-added end too. With the most strategic and high-value purchases being coordinated on a global or regional level, for most LIDCs these impose significant limits on spillovers through domestic supply links.

Nevertheless, there are also opportunities that SMEs in LIDCs may be the first to reap. Short-term opportunities often come from outsourcing noncore activities, many of which are likely to be performed by SMEs. For example, according to the survey by Farole and Winkler (2014), in Lesotho and Swaziland, the most common activity provided by domestic suppliers was security services—beyond those were cleaning, basic maintenance, and catering. Longer-term opportunities may instead exist for SMEs that focus on the upstream end of the value chain. For example, according to Farole and Winkler (2014), in Sub-Saharan Africa, the provision of assistance to local suppliers was much more likely when the goods and services they provided were core parts of the upstream value chain. In the agribusiness sectors, local firms that are most likely to receive assistance are those providing raw materials for agri-processing, and in the apparel sector, they are the cut-make-trim subcontractors. Limited series specialized orders are also more likely to be efficiently delivered by smaller firms.

MNEs' efforts to provide assistance to local suppliers are often concentrated on their specific needs. For example, financial support would focus on meeting short-term working capital to avoid delays in production and delivery, but not on longer-term, patient, engaged types of finance, which would enable suppliers to invest in improving productivity and embedding spillover benefits.

Emphasis of MNEs on quality and standards represents an important area of potential for upgrading domestic firms, but support tends to be linked to compliance issues, such as health, safety, environment, and quality. However, even when quality and standards are firm specific, they are often built on global foundations and have the potential to upgrade the capacities of local suppliers, enabling them to serve other investors or to start exporting. Although setting standards is important, direct technical assistance appears to be critical for supporting spillovers. Survey evidence indicates that demand effects alone—for example, requiring local suppliers to make specific changes to products or processes—may have a limited impact on spillovers in LIDCs. Instead, technical assistance, with or without corresponding requirements of suppliers, resulted in greater spillovers. That finding suggests that while the proliferation of global standards within GVCs may create an opportunity for firm upgrading, most firms in LIDCs will require active support in order to take advantage of the opportunity.

The next section will investigate in depth the challenges and constraints of participation in GVCs for SMEs.

### 3. Determinants of and challenges to participation by SMEs and LIDCs in GVCs

#### Preview of key take-aways

- Informality is one of the top 5 constraints for small firms in developing countries in doing business. It is also a binding constraint to integrating GVCs.
- Turning to the formal economy, the broad key challenge for suppliers that want to integrate in GVCs or that want to strengthen and upgrade their participation in GVCs is to increase productivity and to access the necessary knowledge and technology to compete in international markets and to upgrade to higher value added activities. Broadening the skill set, innovating, and accessing foreign technology allow GVC suppliers both to increase productivity and to upgrade processes, products, functions covered, and within sectors, i.e. by entering in new, higher value added sectors.
- **Key factors internal to the firm** that facilitate participation in GVCs include:
  - *Managerial and workforce skills.* Firms in LIDCs and some SMEs are plagued by weak managerial and workforce skills and inefficient organization. Those weaknesses are reflected in low levels of productivity, a suboptimal use of their workforce, and waste of materials and inputs that prevent the firm from supplying intermediate inputs at world-competitive prices.
  - *Technology adoption.* Firms have also much to gain by adopting new technologies. Technology adoption and knowledge absorption are particularly important priorities for SMEs and firms in LIDCs, as the acquisition and use of existing knowledge are less costly and less risky than creating new processes or products. Yet, too small production scales and narrow profit margins of firms plugged at the low-end of the value chain lengthens the recovery period of any fixed costs of investment and/or information acquisition.
  - *Innovation.* Innovation is seen by SMEs as one important requirement for their successful participation in global value chains (OECD 2008). Process and organizational innovation increases firm productivity by reducing production costs. Product innovation generates new and upgraded products, while marketing innovation differentiates a firms' products from those of competitors, helping to increase market share.
- But internal capabilities alone are not sufficient. The ability of SMEs and of firms in LIDCs to swiftly adopt new technologies, to learn by doing, to innovate, and to optimize their production depends more heavily on the operating environment, since the latter determines the costs of producing, exporting, and importing.
- External factors that matter are wide-ranging. For suppliers from LIDCs, access to trade finance, transportation and shipping costs, inadequate infrastructure, and regulatory uncertainty (often tied to a complex business environment) are major obstacles according to surveys. Access to information about export opportunities and procedures and access to finance have emerged instead as the areas in which SMEs would value improvement most.
  - *Trade policy.* Trade policy remains a strategic policy area for ensuring success in GVCs. GVCs magnify the costs of protectionist measures, and trade costs fall disproportionately on SMEs and LIDC firms, given their often lower revenue base and structural market features. Good and cheap access to imports matters as much as access to foreign markets. Tariffs on inputs are particularly costly, because they are used directly in production and drive up costs. Market access on services in the international marketplace is very restricted for a number of services that act as essential enablers in the geographic dispersion of GVCs. Such services include ICT, supply chain

management services (to reduce inventories, shorten lead times, and enable faster customer response), and improved logistic services.

- *Trade-infrastructure, connectivity, and trade facilitation measures.* Geography, good connectivity, and streamlined procedures for imports and exports are important determinants of countries' ability to join and strengthen participation in GVCs and they are a key factor in determining the costs of sourcing from and supplying to global markets. Getting to the border is one of the most pervasive constraints for exports of firms in LIDCs while the costs of logistics services are disproportionately high for SMEs. Improving logistics is also where LIDCs have the most potential to reduce trade costs, according to recent survey. Finally, well-functioning trade facilitation measures enable GVC trade by reducing the time, cost, and uncertainty involved in importing and exporting.
- *Access to ICT networks.* Better access to ICT, including the Internet and mobile telecommunications is an effective way for internationalizing, in particular for firms engaged in digital trade. The Internet dramatically reduces the cost of finding buyers, both globally and domestically and ICT services enable SMEs to outsource some costly activities, reducing their costs and barriers to trade. Technology-enabled SMEs and firms in LIDCs are much more likely to export, to export to more destinations, and to survive in the marketplace.
- *Business environment and conditions that enable SMEs to reach scale.* Excessive regulations can affect firm dynamics (such as entry, firm growth and exit) and GVC participation by inducing an inefficient allocation of resources across firms and lowering productivity. Administrative burdens (red tape) and product market regulations can serve as barriers to entry, limiting the entry of young innovative SMEs and restricting competition in the market. Policies that affect firm exit matter too. Subsidies to incumbents and other policy measures that delay the exit of less productive firms can stifle competition and slow the reallocation of resources from less to more productive firms. Examples include regulations that are less stringent for incumbents or fiscal measures that favour well-established firms over newcomers.
- *Quality and product certification and international standards.* Certification of quality and products and compliance with international standards are also another relevant challenge for SMEs and for firms in LIDCs to participate in GVCs. Competitive pressures in global markets require firms to produce at world-class standards of quality and consumers are increasingly attentive to production conditions. Low labour and production costs are increasingly insufficient as a motivation for lead firms to invest and source from LIDCs.
- *Access to finance.* Access to external sources of funding is critical to finance SMEs and trade finance is one of the top perceived constraints by firms in LIDCs. Size and the intangibility of assets play against the creditworthiness ratings of many SMEs. Trade finance to SMEs in GVCs and firms from LIDCs are also likely to be constrained to engage in enhancing productivity, as informational asymmetries (for example, adverse selection and moral hazard problems) create a gap between the private innovation rate of return and the cost of capital when the innovation investor and financier are different entities. Access to risk capital is an additional constraint for innovative SMEs that are seeking to grow and achieve a sufficient scale.

Informality is one of the top 5 constraints for small firms in developing countries in doing business. It is also a binding constraint to integrating GVCs. Turning to the formal economy, the broad key challenge for suppliers that want to integrate into global value chains (GVCs) or that want to strengthen and upgrade their participation in GVCs is to increase productivity and to access the necessary knowledge and technology to compete. These firms, which include not only small and medium enterprises (SMEs) and larger firms in low-income developing countries (LIDCs) but also many SMEs from rich countries, are often suppliers of either low or high value-added intermediate products (see Section 2), which they sell on the international markets. Productivity is key to selling at world-competitive prices (OECD 2008; OECD, 2015).<sup>2</sup> And broadening the skill set and innovating and accessing foreign technology allow both SMEs and firms in LIDCs to increase productivity and to upgrade.

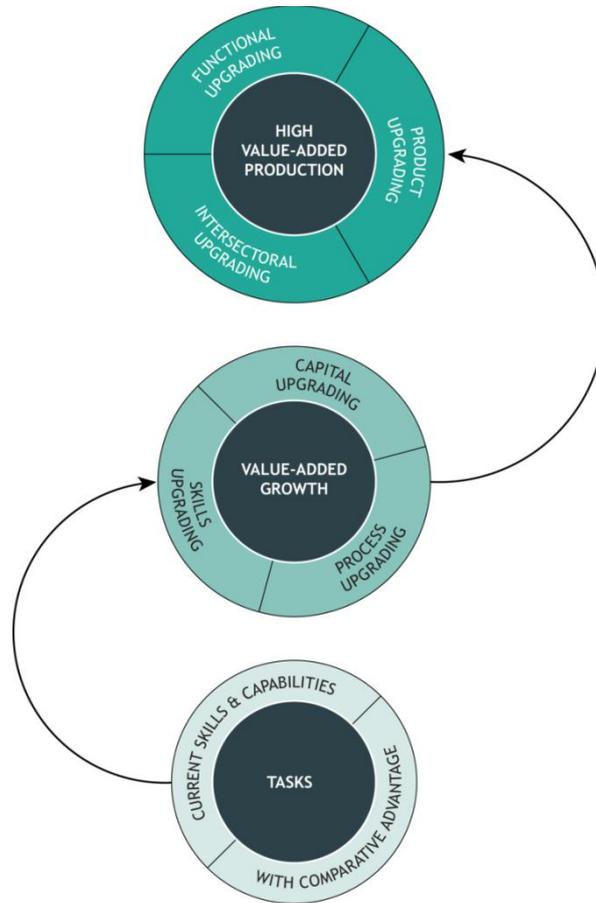
This upgrading takes several forms, as illustrated in Figure 16. Starting from the tasks in which firms in a country have a comparative advantage, based on current skills, capabilities, and capital endowments, a country can achieve higher value added (and hence both productivity growth and economic growth) through a variety of channels (OECD 2013a). First, it can increase productivity in the current tasks of comparative advantage. And it can do so by *process upgrading*. Process upgrading is the manner through which firms acquire capabilities to process tasks with significantly higher efficiency and lower defect rates. *Product upgrading* takes place when firms acquire capabilities to supply higher value-added goods compared with those provided by rivals. That result occurs through the adoption of cutting-edge technologies, investments in R&D, and vertical and horizontal innovation. *Functional upgrading* occurs instead when firms acquire capabilities in more technologically sophisticated, more human capital rich, or more integrated functions and segments of a GVC, which are associated with higher value added. Functional upgrading is to be distinguished from *intersectoral upgrading*, which occurs when firms acquire capabilities, often leveraging the knowledge and skills acquired in the current chain, to participate in new GVCs, producing higher value-added products or services (see Figure 17 for an example of intersectoral upgrading).

It is worth recalling that firms—not countries or governments—are the main actors in value chains. They participate in GVCs first and foremost to make a profit, and do so when it is in their business interest. The theory of comparative advantage teaches us that firms can obtain gains from GVCs through specialization. And that does not necessarily require producing more sophisticated or technology-intensive products. Value chains offer the opportunity of inserting into increasingly fragmented segments of production an array of products, tasks, or functions that are needed; this is where SMEs can engage in fruitful participation. Determining which segments of the value chain will be profitable is a matter of both the characteristics of the production process and the relative skills and resource endowments of firms (that is, the comparative advantage) (OECD 2015).

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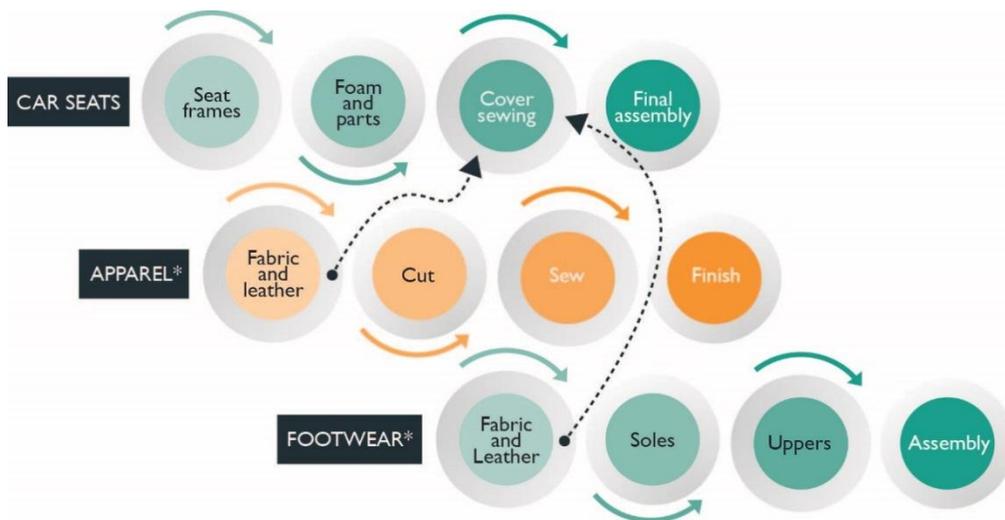
2. As Paul Krugman (1994, 11) famously claimed, “Productivity isn’t everything, but in the long run it is almost everything. A country’s ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker.”

Figure 16. What types of economic upgrading?



Source: Taglioni and Winkler (2015).

Figure 17. Example for possible intersectoral upgrading in Nicaragua



\*Industry value chains that are currently active in Nicaragua.

Source: Taglioni and Winkler 2015.

Recently, and perhaps mistakenly, the concept of upgrading has therefore been seen as the need to capture a growing share of a product's value.<sup>3</sup> However, this narrow view of upgrading may miss the point: the *volume* of the activity matters just as much, or more, as the share of the product. For example, although it is indeed true that the manufacture of garments is a relatively labour-intensive process that amounts to a small share of the total value of the final product (relative to the design and commercialization segments), it is also true that important benefits can be derived by SMEs from specializing in such manufacturing activities and aiming at performing them on a larger scale.

The case of specialization in electronics in Asia is illustrative of this. Several firms have become assemblers of electronic devices par excellence and have attracted clients that include Apple, Dell, Amazon, Nokia, and Samsung. When considering the total value of products made by those lead firms, a share of 5% of the value adds up to a relatively large sum. Although those assemblers could have instead launched a new mobile phone to rival the larger smartphone producers (as an alternate business development strategy), thereby seeking to enter the higher end of the smiley curve to capture larger shares of the value of the final product, they would have had to capture a significant market share from the established electronic device producers to succeed. From this perspective, it is therefore important to recognize the economic value that is created by the activities of the assembling or manufacturing firm, and not simply focus on the share that the firm occupies in the value of the final product. Similarly, SMEs in LIDCs should aim to move up the value chain by seeking to enhance their productivity and grow their volume of activities.

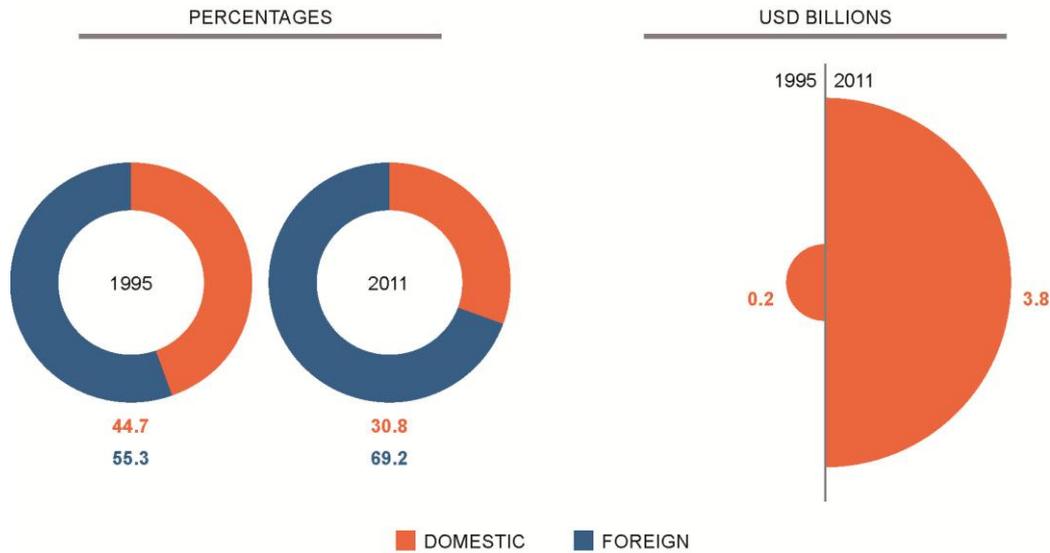
A good illustration of some of the pitfalls associated with defining upgrading relative to the share rather than the value added to a product is the case of Viet Nam's production of electrical and optical equipment. As can be seen in Figure 18, the domestic content of Viet Nam's electrical and optical equipment exports fell from 44.7% to 30.8% between 1995 and 2011, but the volume of domestic value added embodied in exports increased more than twenty-fold. Although certainly other developments in the Vietnamese and global economies not accounted for in the figure may have played a role, these figures provide evidence that firms operating in Viet Nam have increased the foreign content of their products while multiplying their overall sales, profits, and the wage bill for the workers they employ.

Lessons can also be learned from looking at the determinants of movements along the value chain (OECD 2015 and Taglioni and Winkler, 2015). Positive changes in foreign sourcing are associated with positive changes in the per capita domestic value added in exports, which suggests that a greater use of foreign inputs is complementary to a growing per capita domestic value added in exports. Similarly, countries' value chain activity (in terms of the share of foreign value added in exports) is linked to growing sophistication and diversification of exports as is the use of more sophisticated inputs. This, *a priori*, suggests that SMEs should benefit from policies that reduce the costs of accessing foreign intermediate goods so that tariff reductions and other accompanying policy measures aimed at reducing trading costs (such as trade facilitation and development of national infrastructure) are likely to matter for SMEs in LIDCs.

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3. This idea is partly spurred by the oft-cited iPad case study, which highlights the low share of value added that assembly occupies in the production process—less than 5% of the sale value of the iPad remains in China. This example has been used to justify policy objectives that seek to increase the *share* of the firm's value added in a given product.

**Figure 18. Enjoying a smaller share of a larger pie:  
Electrical and optical equipment in Viet Nam**



Source: OECD-WTO TiVA Database, 2015 update.

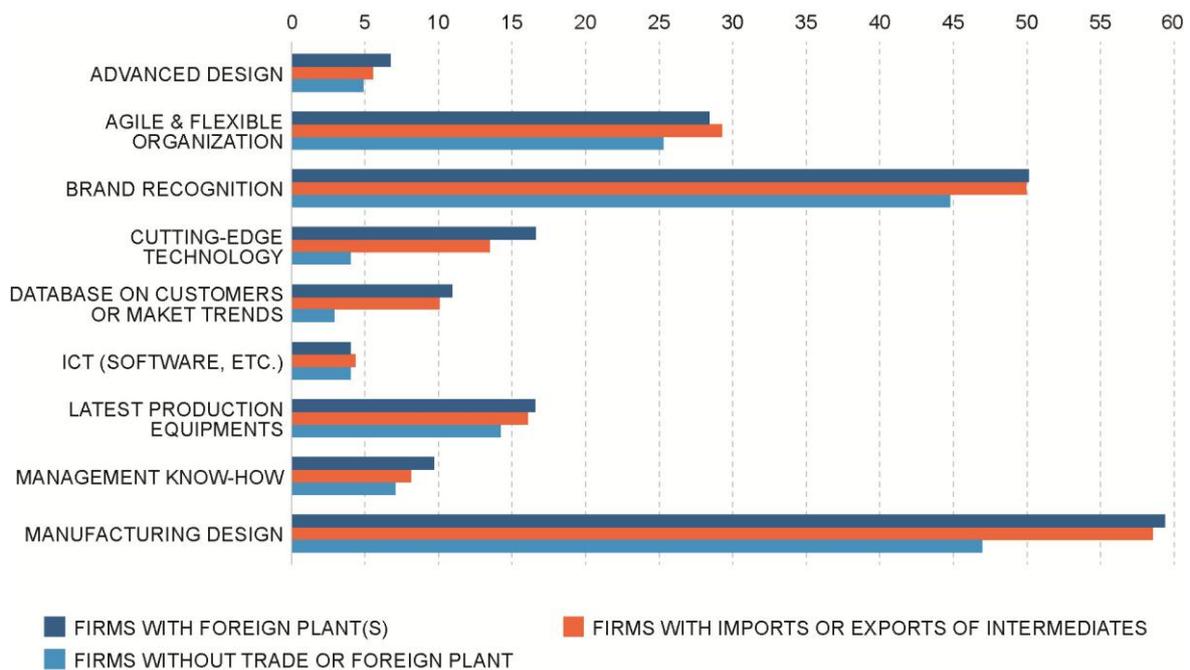
A particularly important driver for upgrading in GVCs is investment in knowledge-based capital (KBC). The highest level of value creation in a GVC is often found in certain upstream activities, such as new concept development, design, R&D, or the manufacturing of key parts and components, as well as in certain downstream activities, such as marketing, branding, or customer service. Such activities involve tacit, non-codified knowledge in areas such as original design, the creation and management of cutting-edge technology, and complex systems, as well as management or organizational know-how.

Investments in KBC not only drive productivity growth, they also determine the extent to which the final product of a value chain can be differentiated in consumer markets, which in turn determines the total value the GVC can create. For example, much of the success of recent Apple products is due to design features. The value that a firm creates within a GVC also depends on the difficulty for rivals to supply similar or substitutable products. When a product is easy to replicate, for example, when it is not tacit or not protected by intellectual property rights (IPRs), rival firms can easily develop substitutes for the inputs that a firm provides to a GVC.

Different types of KBC play a role in GVCs, and there are three main categories (OECD, 2013b): (a) computerized information (software and databases); (b) innovative property (R&D and non-R&D innovative expenditures, including copyrights, designs, and trademarks); and (c) economic competencies (brand equity, firm-specific technological and managerial skills, networks, and organizational structures). A recent survey of Japanese firms, for example, emphasizes the importance of economic competencies for competitiveness, notably “manufacturing skills,” “brand and customer recognition,” and “agile and flexible organization” (Figure 19). The Japanese firms that are the most engaged in GVCs—those with exports or imports of intermediate goods and those that own offshore plants—consider such competencies more important than firms without trade or foreign plants. These firms also put greater emphasis on cutting-edge technology and “big data” as sources of competitive advantage than firms oriented toward the domestic market.

Further, compliance with international standards is also another relevant challenge for SMEs to enter into GVCs. Consumers and final-good producers around the world increasingly demand products and services that are simultaneously good for the economy, for the environment, and for society—the triple bottom line of sustainable growth. Indeed, low labour and production costs are often insufficient motivation for lead firms to invest and source from SMEs in LIDCs. The ability to adhere to environmental, labour, and quality standards matters greatly, especially for SMEs, which typically face more difficulty in meeting them than large companies and for firms in LIDCs, which typically face more difficulties in meeting them than firms in rich countries.

**Figure 19. The relevance of various forms of KBC to the competitiveness of Japanese manufacturing firms**



*Note:* The shares do not add up to 100% because firms are allowed to select multiple forms of KBC that they consider essential. The figure shows the share of firms that indicate the form of KBC concerned to be essential to competitiveness.

*Source:* Ministry of Economy, Trade and Industry (Japan) 2012.

The World Bank Group is working to strengthen our global partnerships with governments, businesses, consumer and labour groups, and other international organizations in order to help SMEs to comply with those standards. An inclusive partnership approach opens the door to the best insights and most successful models from those with experience raising standards, improving productivity, developing skills, and spreading prosperity through participation in GVCs.

**The Better Work program:** A partnership between the World Bank Group’s International Finance Corporation and the International Labour Organization—exemplifies how partnerships can make an impact. Better Work began in 2007 in response to demand from consumers and multinational firms for better standards in garment factories. Today, the program has helped improve the lives of more than one million garment workers in eight countries by helping management and labour work together to provide safe, clean, and equitable working environments.

But apart from standards, in general terms, there are internal and external factors that help SMEs overcome those challenges and participate in GVCs. Internal factors affect SMEs’ capabilities to

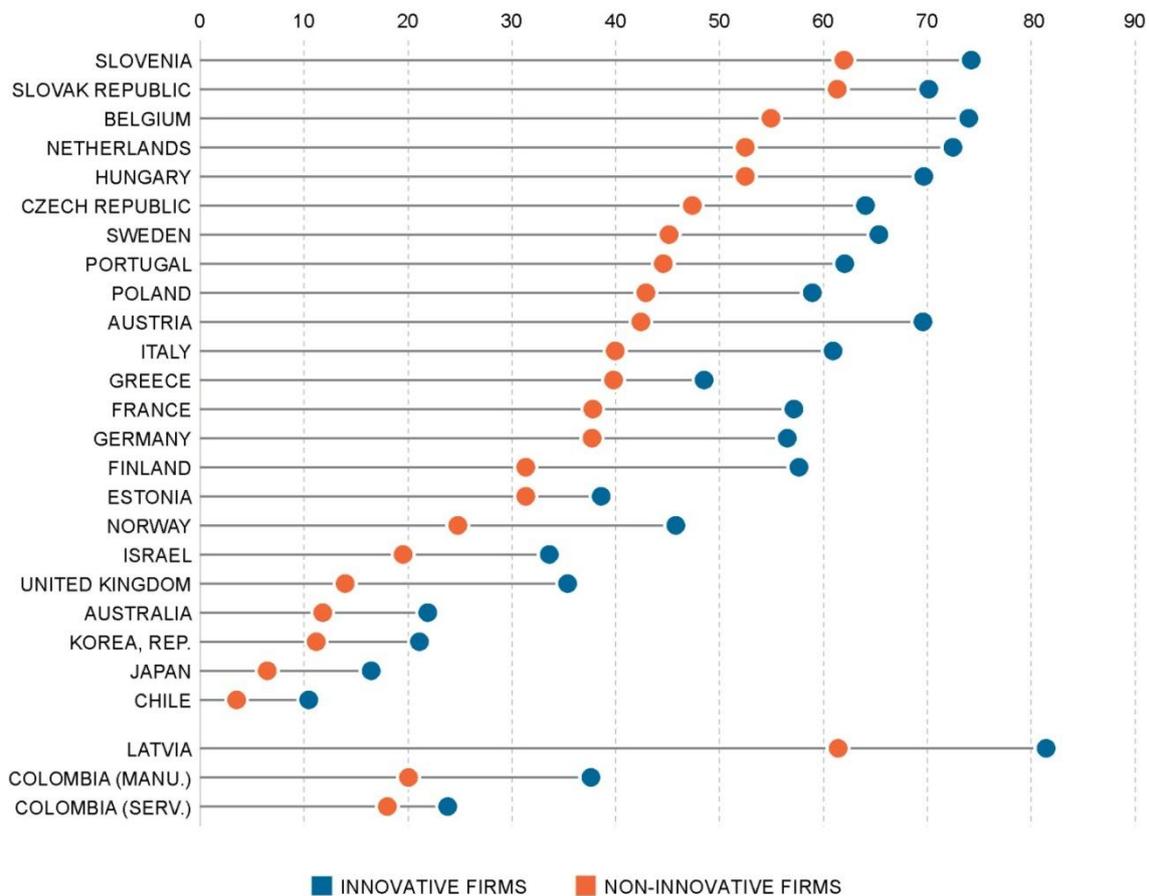
supply both low and high value-added intermediate products at low costs, including innovation, technology adoption, managerial capacity, and workforce skills. External factors involve trade issues, business environment, and investment climate. Although both sets of drivers are very important, the focus of this report is on identifying areas for collective policy action. For this reason, we will provide a brief account of internal determinants and focus the discussion on external determinants.

## Internal determinants of SME participation and upgrading in GVCs

### *Innovation and technology adoption*

Innovation is seen by SMEs as one important requirement for their successful participation in global value chains (OECD 2008). Process and organizational innovation increases firm productivity by reducing production costs and allowing firms to achieve the minimum level of efficiency required to cover fixed exporting costs. Product innovation creates learning-by-doing effects and helps SMEs offer new and upgraded products, while marketing innovation and innovative branding strategies allow SMEs to differentiate their products from those of their competitors and gain market share in GVCs. Innovative SMEs are more likely to participate in international markets than other firms (Figure 20).

**Figure 20. SMEs participating in international markets by innovation status from 2010 to 2012, % of firms in the relevant group**



*Note:* International comparability may be limited because of differences in innovation survey methodologies and country-specific response patterns. European countries follow harmonised survey guidelines with the CIS.

*Source:* OECD (2015), Science, Technology and Industry Scoreboard 2015, based on Eurostat Community Innovation Survey (CIS-2012) and national data sources, June 2015.

One particularly important dimension related to innovation is the ability of SMEs to protect their intellectual assets (OECD 2011b). IPRs are instrumental for SMEs for a number of reasons: (a) to protect their innovations; (b) to position themselves competitively *vis-à-vis* larger enterprises in global markets; (c) to signal current and prospective value competitors and partners, which can help enhance access to finance; (d) to access knowledge markets and networks; (e) to open up new commercial pathways; and (f) to segment existing markets.

Given their lack of internal financial resources, IPRs are particularly attractive to SMEs for the role they can play in facilitating access to finance. That role can arise through three channels: (a) as a signalling device for financial markets, (b) as collateral to obtain financing, and (c) as a direct source of finance through licensing. Indeed, a survey of firms undertaken by the European Patent Office indicates that SMEs are much more likely to patent for financial reasons, rather than as means to protect against imitation (Rassenfosse 2011). Indeed 40% of the SMEs surveyed had strong “monetary motivations” to apply, that is, attracting investors or licensing. By contrast, that proportion is as low as 15% for large applicant firms. This finding indicates that lowering transaction costs for IPRs and increasing their signaling value (that is, by encouraging high-quality examinations) are likely to be particularly valuable for SMEs. See OECD (2015) for a discussion.

Governments that are keen on generating development from GVC participation tend to pass rigorous IPR legislation, while at the same time they provide assistance to SMEs; for example, through e-learning tools that help domestic firms commercialize their intellectual property. They also assist them in the use of freely available technologies or the acquisition of technological licensing agreements. For example, Morocco provides such assistance through the *Office Marocain de la Propriété Industrielle* in the framework of its Horizon 2015 program (Taglioni and Winkler 2015).

Further, firms also have much to gain by adopting new technologies. Technology adoption and knowledge absorption are particularly important priorities for SMEs in LIDCs. The acquisition and use of existing knowledge are less costly and less risky than is the creation of new processes or products, while the productivity rewards can be substantial. Cooperation with foreign partners upstream and downstream is critical in this respect and can improve firm efficiency, because SMEs can obtain substantial benefits with regard to information flow, technology transfer, learning opportunities, and imitation or demonstration effects that occur in the context of interactions with suppliers and clients. Cooperation with universities or other knowledge institutions can be helpful too and associated with greater diffusion of foreign technologies (OECD, 2015).

For example, the technologies that foreign companies frequently use are not always available in domestic markets. Domestic firms sometimes imitate foreign technologies to increase production efficiency and supply intermediate goods at a lower price (Blomström and Kokko 1998). Alternatively, they use the new technology to produce high-quality products at low costs. Formal or informal contact with affiliates of foreign firms also provides information about the pros and cons of using particular technologies and creates productivity spillovers (Javorcik 2004; Rodríguez-Clare 1996; Wang and Blomström 1992). In addition, demonstration externalities help SMEs acquire the knowledge needed to use more efficient production techniques. These effects are most prominent in tightly organized supply chains, where the local supply base is large and fragmented. Foreign investors have an incentive to promote demonstration effects when providing individual technical assistance is prohibitive or inefficient. This approach is most apparent in the agribusiness value chain, where foreign investors actively promote demonstration effects by supporting the upgrading of their suppliers through establishment of demonstration plots and nucleus farms. But spillovers from demonstration are constrained by limited collaboration between foreign investors and domestic firms

in the same sector. Findings from survey work in Sub-Saharan Africa (Farole and Winker 2014) indicate that in most countries in the region, sector collaboration is weak, particularly between foreign-owned and domestic firms. Of the three sectors studied by Farole and Winkler, only agribusiness showed any significant levels of collaboration between foreign firms and the domestic sector, particularly through links with national training centers and research institutes.

Fostering innovation and technology adoption is not always easy and—to a large extent—success depends on structural features of individual GVCs. In an attempt to facilitate innovation and technology adoption from foreign direct investment (FDI) in the automotive sector to local firms, Invest in Macedonia, the investment agency of the Former Yugoslav Republic of Macedonia, has tried to encourage FDI in the automotive sector to bring tier 2 and tier 3 suppliers to FYR Macedonia as well. The idea is that tier 1 global suppliers might guarantee their smaller suppliers a significant amount of work through long-term contracts in return for co-locating. These firms in exchange might be more open to forming strategic partnerships with the local automotive cluster, also composed predominantly of SMEs. However, small suppliers generally do not have the resources or market incentives to internationalize production. Moreover, suppliers of basic inputs (such as chemicals, semiconductors, wire, metals, and plastics) tend to be large and serve a broad customer base, but they have capital-intensive production facilities with very high minimum scale requirements. As a result, they tend to supply customers regionally and globally from a handful of production locations.

### ***Managerial skills and workforce capacity***

SMEs in LIDCs are generally plagued by weak managerial skills and inefficient organization. Those weaknesses are reflected in low levels of productivity, a suboptimal use of their workforce, wasting of materials and inputs, and poor efficiency at the level of the production floor (Iacovone and Qasim, 2013). Management can itself be thought of as a technology (Bloom, Sadun, and Van Reenen 2013), with empirical evidence suggesting that raising managerial quality could significantly raise productivity (Andrews and Criscuolo 2013; Figure 20). A competitive and open business environment tends to favour the adoption of superior managerial practices and reduces incentives for maintaining inefficient business structures (e.g. via inheritance tax exemptions that may prolong the existence of poorly managed family-owned firms), thus facilitating within-firm productivity improvements (OECD, 2015).

Specifically, the ability and capacity of the entrepreneur to implement a business plan largely determine the success or failure of a firm at creation and during growth. Further, a skilled workforce is also a relevant determinant of firm productivity. Acquiring the right mix of skills, ideas, and talents is a challenge for entrepreneurs, especially in markets where the required skills are scarce or expensive. Even where available, ensuring that the right mix of skills is matched to an entrepreneurial venture requires reducing information asymmetry about skill sets and effective contracting mechanisms that guarantee the efficient allocation of skills and talent across firms (Iacovone and Qasim 2013). Relatively high rates of skills mismatch in many countries point to rigidities in labour market matching that reduce resource re-allocation and also constrain the growth of young and innovative SMEs (OECD, 2015).

Foreign investors make relatively greater use of local skilled staff than they do of local suppliers in LIDCs, but that varies significantly across countries. In Chile's mining sector, for example, 70–80% of workers in skilled positions are local, whereas across surveyed African countries, the share ranges from 30% to 50%. In agribusiness, 75–85% of management, supervisory, and technical workers in Kenya and Viet Nam are local, whereas the figures were 10–1 percentage points lower in Ghana and

Mozambique. Finally, in apparel, although more than two-thirds of management and technical staff are local in Kenya, fewer than 20% are local in Swaziland.

Localizing skilled positions is constrained by supply. Survey results from several LIDCs indicate that by far the biggest constraint perceived by foreign investors to hiring more local staff in technical and managerial positions was the lack of skilled labour. Field interviews of GVC firms in Viet Nam, for instance, suggest that the local education system is poorly suited to the modern international business environment. Education in foreign languages and *soft* business skills (presentations, team work, and business planning, as well as sales and marketing) were found to be critical deficiencies. Branding, marketing, and retail services are necessary for brand development, in apparel production, for example. LIDCs that target upward graduation in this sector will need to enhance a firm’s capacity in branding, marketing, and retail services, for the domestic market and overseas markets as well. The problem is particularly severe for SMEs. Within these firms, branding and marketing are generally performed in-house with few resources invested in those activities. And for most, they comprise “merchandising teams,” which are responsible for organizing orders from clients, rather than “sales and marketing teams.”

**Figure 20. Managerial quality differs across countries with important implications for productivity**



*Note:* The overall management score is an average of responses to 18 survey questions that are designed to reveal the extent to which firms: (i) monitor what goes on inside the firm and use this information for continuous improvement; (ii) set targets and track outcomes; and (iii) effectively utilise incentive structures (e.g. promote and rewarding employees based on performance). The estimates in the right panel are calculated from the difference in management score between each country and the United States and the estimated coefficient on the management score term in a firm level regression of sales on management scores, capital and employment. The sample is based on medium-sized firms, ranging from 50 to 10 000 employees.

*Source:* Andrews and Criscuolo 2013, based on the management scores and estimated coefficients in Bloom et al. 2012.

The lack of foreign-language skills in many LIDCs is also a serious impediment to GVC-driven growth. Take again the case of Viet Nam. Japan is an increasingly important software outsourcing market for Viet Nam. In fact, Viet Nam recently overtook India as the second-largest exporter of software services to Japan. However, Japanese-language skills are very scarce in Viet Nam. Future growth will depend in part on the availability of Vietnamese with Japanese-language skills. A similar, if less severe problem exists with the US market, which requires English-language skills.

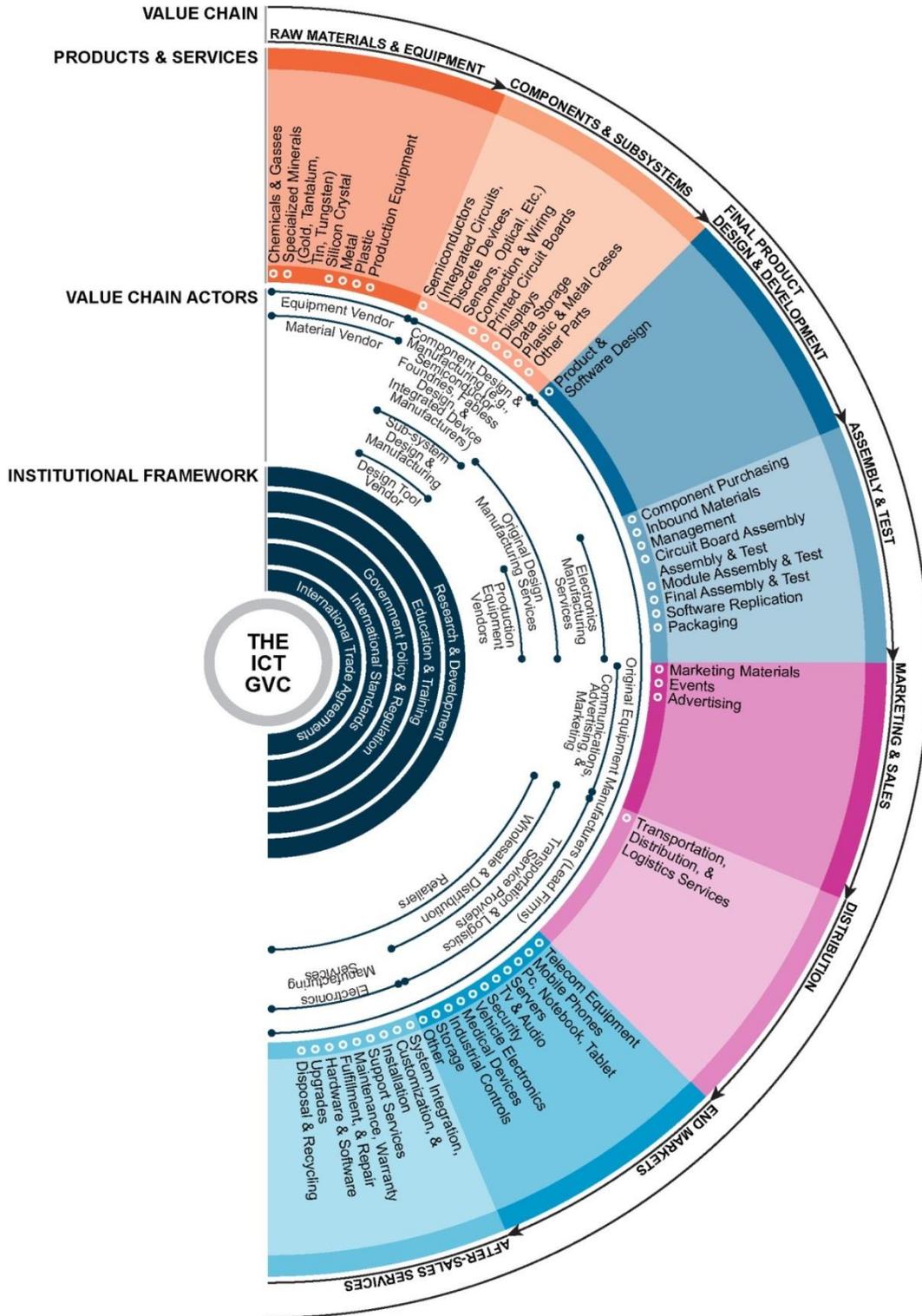
Localizing skilled positions may, sometimes, also be hindered by FDI corporate culture. Foreign investors also continue to reserve certain functions for foreign workers and suppliers that co-locate with them, for reasons of corporate culture; when there is a significant language gap between the host country and the foreign investors; or when the costs of supporting foreign workers and suppliers (including relocation costs) are relatively low. The Nigerian oil industry, for example, failed over the years to provide significant employment for local populations. The lack of job opportunities combined with the demise of fishing—because of pollution from the oil industry—translated into increased poverty and, eventually, social unrest.

Difficulties notwithstanding, broadening the skill set in a country is possible. Some countries managed to leverage their initial low-cost advantage to retool their workforce toward higher skills, using public institutions. That is, for example, the case for Costa Rica and FYR Macedonia. The latter—with an unemployment rate of 30% and a large segment of the labour force suited for basic production work without extensive training—initially attracted FDI because of its cheap labour. According to World Bank field interviews, one company, assessing the opportunity to locate in the country, had concerns about the quality of the labour force. Before its full commitment, it met with the faculty of electrical and mechanical engineering at the University of Skopje, which it found was open to collaborating with the company. A program has been established since then to allow students the opportunity to spend their senior year on a curriculum that teaches skills relevant to the company's in-country activities. The company has worked closely with the university in other ways as well, financing one of its laboratories and creating a scholarship program to finance studies for some engineering students. A 10- to 12-week summer internship is another part of that collaborative effort. The program offers students summer employment and full-time permanent employment upon graduation if they have satisfied the program's requirements. Following the example of this first company, other FDI established similar programs too. As a result, availability of high technical skills is now considered one of the factors of attractiveness of FYR Macedonia.

### ***Creating shared value in LIDCs and SMEs***

Not all GVCs are accessible to LIDCs and SMEs. Globalized industries, with cutting-edge technology may not be the best entry point for the poorest among LIDCs to integrate GVCs. Gold, tantalum (also commonly referred to as *coltan*), tin, and tungsten—four minerals with a large production base in Sub-Saharan Africa—are necessary to the functionality or production of products, including integrated circuits, assembled products, and evaluation boards, which, depending on the product, contain one or more of these minerals (see red box in the top-left corner of Figure 21). The imports of these minerals are very concentrated: China and Malaysia cover more than 80% of the total world imports of tin, and China, the United States, Thailand, and Hong Kong, China cover more than 90% of the global imports of tantalum. The process of bringing such metals to an exploitable form usually includes mining, separation, refining, fabrication of alloys, and final manufacturing in the components.

Figure 21. The ICT GVC



Source: Sturgeon, Gereffi et al. 2013.

Building the capacity to create more local content from the industries exploiting these minerals may therefore be very difficult for countries that lack the skills to process such minerals and that are subject to frequent power outages. Although costly, the economic return of such endeavour is also very difficult to predict. With demand growing well above supply and because of the high concentrated nature of the market for these minerals, alternative technologies and innovation are being pursued by the big manufacturers of the end-use high-tech applications. Recycling and engineering out the use of such materials in valuable industries, such as the consumer electronics and the auto sectors, are part of the efforts of large companies such as Mitsubishi, Hitachi, and General Electric.

Meanwhile, focusing on creating domestic value in areas closer to the technology frontier of the producing country may have higher payoffs in terms of spillovers to the domestic economy and to a broad base of domestic producers is more likely. That objective can be reached in several ways, including by improving the quality of products and production in sectors of comparative advantage, by identifying market-based mechanisms and business models that foster more local value creation, and by strengthening the domestic absorptive capacity and diversifying the local supply.

- With the risk of disruptive innovation less likely and the technological innovation and capabilities necessary for upgrading at closer reach, the efforts to upgrade Rwanda's production of coffee is a case in point. Coffee is a key export crop of Rwanda. In 2003, an aggressive strategy was developed to increase total exports of coffee and move the industry into high-quality, specialty end markets. Major efforts put in place included participation in international exhibitions, demonstrations, contests, and above all strict quality control. Two long-term, donor-funded projects helped producers develop buyer–seller relationships and helped growers raise quality. Aid projects have also helped farmers form cooperatives to meet the requirements of “fair trade” coffee and to experiment with organic and shade-grown coffees, all of which command a substantial premium over ordinary coffee. Increased access to washing stations increased the farmers' income by up to 55%. Washing and grading the coffee cherries have made it possible to obtain prices for products of higher quality, giving farmers an incentive to increase quality. Regulatory reform has also allowed individual Rwandese cooperatives and private owners to negotiate directly with specialty rosters in the United States and Europe, enabling them to sell at more than twice the market rate (Nielsen 2008).
- Identifying market-based mechanisms and business models that by construction create more value in producing countries is also a paying strategy. An ongoing World Bank project in Haiti is supporting ten local development teams with capacity-building and specific financing tools. The objective is to create “shared value alliances” of local farmers or small manufacturers and international logistic companies to increase their share of value in mango, avocado, coffee, and garment GVCs.
- Strengthening the domestic absorptive capacity, including through a well-targeted supplier program is also likely to help. The Czech Supplier Development Program was designed by the World Bank Foreign Investment Advisory Services in 1999. The first round of the Czech program was implemented by CzechInvest using pre-accession European Union Phare funding of USD 4 million in 2000–02. The program aimed to connect Czech suppliers to global value chains and increase local content in the electronics sector in the first phase. Later phases focused on the automotive and aerospace sectors. The first phase of the program involved 32 multinational companies and 48 SMEs that received training and intensive consultancy

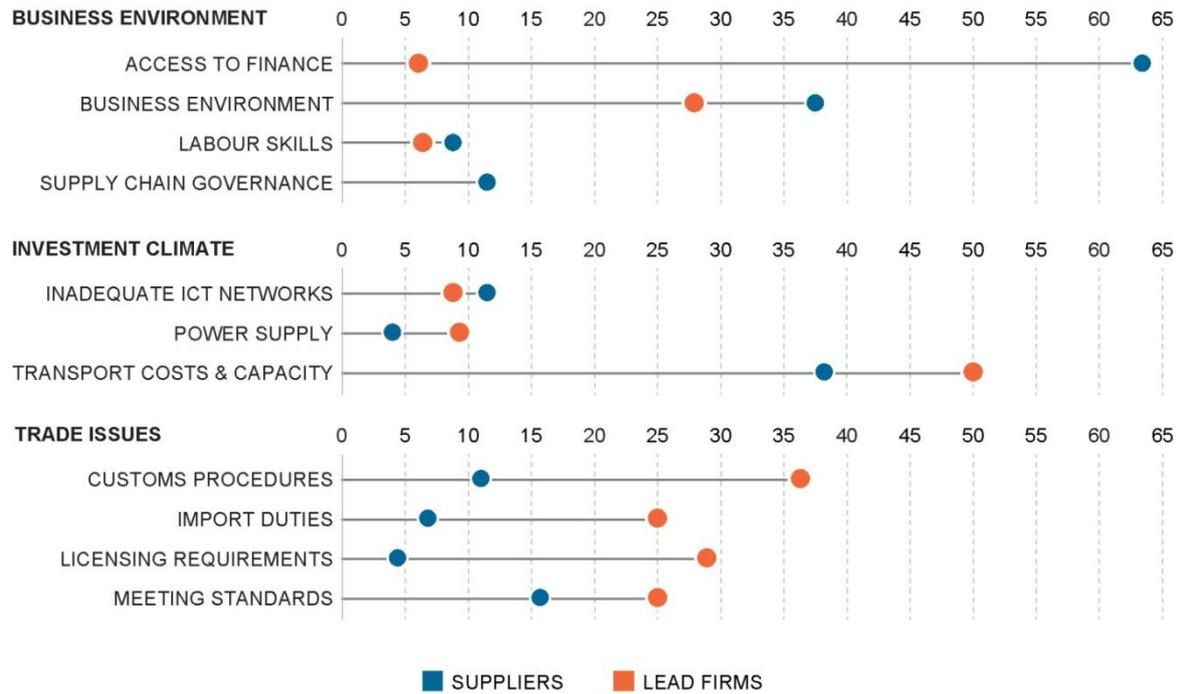
services. An independent evaluation undertaken 18 months after the end of the pilot showed that 15 companies had gained new business that they attributed to the program, with those contracts worth USD 18 million annually in 2003. Four companies had also found new companies abroad, and three companies had obtained contracts with a higher value-added content. The World Bank teams have used their experience advising the government of Costa Rica, developing a loan project in Kazakhstan, and providing technical assistance to FYR Macedonia.

### External determinants of SME participation in GVCs

Although firm capabilities are crucial to determine SMEs' participation in GVCs, external conditions are equally relevant, as they can facilitate or impede GVCs' participation. Understanding the determinants of GVC participation is a first step in unravelling how governments can target their policies to better spread the gains of GVC participation to the wider population. These determinants can be subsumed into two broad categories: (a) factors that are not easily influenced by policy, at least in the short to medium-term, and (b) factors that can be reflected in measures such as trade and investment openness. Importantly, since structural characteristics differ widely across countries, one cannot simply compare the level of participation across countries and say that a country with higher participation is "doing better" in GVCs. Larger countries, for example, tend to have lower rates of participation, which is attributed to the fact that they have larger domestic markets from which to draw their intermediate goods and services.

Market size, level of development, industrial structure, and location are some of the main determinants of aggregate GVC participation, but trade and other policies can also play a significant role. Low import tariffs, both at home and faced in export markets; engagement in regional trade agreements (RTAs); inward FDI openness; trade facilitation; logistics performance; infrastructure; intellectual property protection; and the quality of regulations and institutions can all facilitate GVC engagement (Kowalski et al. 2015).

As far as firms' perception is concerned, a survey on Aid for Trade conducted jointly by the OECD and the WTO in 2013 shows that for suppliers from LIDCs, access to finance (in particular trade finance) is the main obstacle preventing them from entering, establishing, or moving up value chains (Figure 22). They also cited transportation and shipping costs, inadequate infrastructure, and regulatory uncertainty (often tied to a complex business environment) as major obstacles, together with a lack of labor force skills. Among lead firms, customs procedures ranked high as a particular obstacle to bringing suppliers in LIDCs into their value chains, as well as standards compliance issues. Informal practices and payment requests were also cited as of particular concern in their relationships with suppliers.

**Figure 22. Barriers faced by firms in entering value chains: Private sector views**

Note: LIDC suppliers in bold, as compared to lead firms.

Source: OECD-WTO (OECD and WTO 2013).

#### **Access to external sources of funding<sup>4</sup>**

Access to external sources of funding is critical to finance SMEs that want to participate in GVCs. However, this implies overcoming several obstacles. The first obstacles have nothing specifically to do with value chains, but they make banks and many financial institutions reluctant to lend to SMEs. The way banks, in particular, approach credit underwriting and portfolio management makes SMEs expensive and difficult to acquire as clients, and equally expensive and difficult to serve. SMEs' business is too small to support the heavy hand-holding approach banks use for corporate finance, and they don't have the Bloomberg screen-ready third party rating and other information corporate bankers need to see, nor audited accounts (nor any decent accounts, in many cases).

In most emerging markets (and in many OECD markets) SMEs and their entrepreneurs have no credit report, because they've never borrowed from a formal financial institution. Further, size and the intangibility of assets, in particular for young, innovative SMEs, play against the creditworthiness ratings of many SMEs. Creditworthiness is indeed still mostly based on the evaluation of a company's assets and liabilities recorded on its balance sheet. Routinely, banks rely on past performance, current turnover, and liquidity of the firm as predictors for repayment ability. For the most part, company valuations based on a company's balance sheet do not include potential for future earnings in their decision-making processes. They fail to take into account the intrinsic worth of the firm's know-how, pool of talent, distribution channels, business relationships, business model, access to technology, and

4. The authors would like to thank the inputs provided by Matthew Gamser, Chief Operations Officer from the World Bank Group.

so forth. This is increasingly an archaic measure of the true intrinsic value of a firm, particularly for service-oriented firms, start-ups, and GVC suppliers.

Limitations to securing movable assets in financial transactions pose a fundamental obstacle to value chain finance development in many countries, including many G20 nations. The Financial Stability Board designated the World Bank's ICR standard as the UNCITRAL Legislative Guides as best practices for protecting creditor rights. However, many G20 nations fall short of best practice standards in this area. Some G-20 countries still use document registration, requiring delivery and recording of pledge agreements (and sometimes other documents) at the registry, instead of the recommended "notice" system. Other countries don't use a centralized registry or single registry for all types of movable assets. Some European Union countries still require physical appearance by one or both parties before the registry in order to register security interests. Even within the European Union and other regional economic entities there has been little harmonization of practice to date in this area. Given the limitations of G20 and developed country regimes, it is small wonder that few emerging market countries present encouraging environments for using movables as collateral.<sup>5</sup>

Banks and other financial institutions' comfort with supply chain financing will increase as they gain greater information on transactions in those chains, reducing information asymmetries in the SME market. This necessitates access to such non-conventional financial/credit information – not always supported in countries' credit information regimes, particularly in countries which have a dominant central registry operated by a government agency. This agency, often the central bank, can face political obstacles as it seeks to add new supply chain data which may fall under the purview of a different ministry (Industry and Trade, Economy, or Commerce, for example). Even in countries where private credit information aggregators are present, new, post-Snowden regulations have been tightening conditions for data access. While consumer privacy rights must be protected, care should be taken to ensure an appropriate balance between this protection and the economic/employment benefits of greater SME access to financing.

The implementation of Basel II/III, which already caused a ripple in trade finance systems before the European Union Capital Requirements Directive IV allowed for more appropriate credit conversion factors, will pose additional challenges to banks looking to increase supply chain financing. The World Bank Group's February-March, 2015, survey of 53 emerging markets regulators for the Basel Consultative Group found that most believe the Basel II revisions on credit risk will have an adverse influence on lending to SMEs. The regulators felt that treatment of SME exposures not qualifying for inclusion in retail portfolios one of the main areas worthy of rethinking and possible revision.<sup>6</sup>

Regardless of the outcome of Basel II/III implementation, which is some years away in many emerging market countries, few supervisory regimes recognize movable assets in determining lending reserve requirements. This ignores the practical utility of realizing securities in movables-based

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5. Data in this section taken from 2 reports from the World Bank Group. G20 analysis is from a report to the Global Partnership for Financial Inclusion and the Investment and Infrastructure Working Group, 23 April 2015. EU findings are from a World Bank presentation to the European Commission with regard to its Green Paper on Capital Markets Integration, 30 January 2015.

6. World Bank Survey March 2015, Basel II – Proposed Revisions to the Standardised Approach to Credit Risk. See also GPFi/SME Finance Forum, Small and Medium Enterprise Finance: New Findings, Trends and G-20/Global Partnership for Financial Inclusion Progress, Washington, DC: August 2013.

financing discussed earlier—particularly in receivables financing done on electronic payments platforms—and discourages bankers from considering alternative movables-backed financing options.

All these inhibiting factors can be overcome. A number of specialized non-bank financial institutions have entered the supply chain financing market. From Alibaba in the east, to OnDeck Capital, Kabbage and others in the west, they are a recognized and growing presence in this area. They can ignore many of the regulatory and supervisory issues, and can adjust their business practices to minimize other obstacles, while they maximize access to the growing electronic data streams that underlie their lending models. At the same time, as non-banks they are constrained in many markets in fundraising, and in all markets in the range of financial products and services they can offer. Policymakers should strive to improve their enabling environments to remove barriers for banks wishing to compete in supply chain finance, particularly if they want to see longer-term financing based on supply chain relationships. Such longer term financing will be critical to SMEs' abilities to increase productivity and efficiency (including resource and energy efficiency), which are vital to keeping up with raising quality and sustainability standards in global supply chains.

SMEs in GVCs are likely to be credit constrained for one more reason. They are likely to engage in productivity-enhancing activities and innovate. Innovation is intended in the broad sense. It includes not only evolutionary and revolutionary advances in technology, process, or product offering but also new approaches, new business models, new channels, new value propositions, and new marketing and branding strategies, that is, the broad range of activities pursued by firms willing to find an insertion point in GVCs and to upgrade their participation.

There are financial market reasons for innovation underinvestment even in the absence of externality-induced underinvestment.<sup>7</sup> These reasons are related to informational asymmetries (such as adverse selection and moral hazard problems) that create a gap between the private innovation rate of return and the cost of capital when the innovation investor and financier are different entities. Adverse selection occurs because banks don't know the default risk of a particular borrower; they can base the price of a loan only on the average default risk. As a result, low-risk borrowers face higher interest rates than they would if there was perfect information, and they may choose not to seek a loan. Moral hazard emerges when banks cannot perfectly monitor the activities of the innovator after the loan has been approved. Consequently, an innovator may be tempted to take on a more risky project than what had been originally agreed, since in case of success he or she gets all of the upside, while in case of failure the loss is capped. Informational asymmetries are typically a more relevant problem for start-ups and SMEs than for large companies; exacerbating the R&D underinvestment

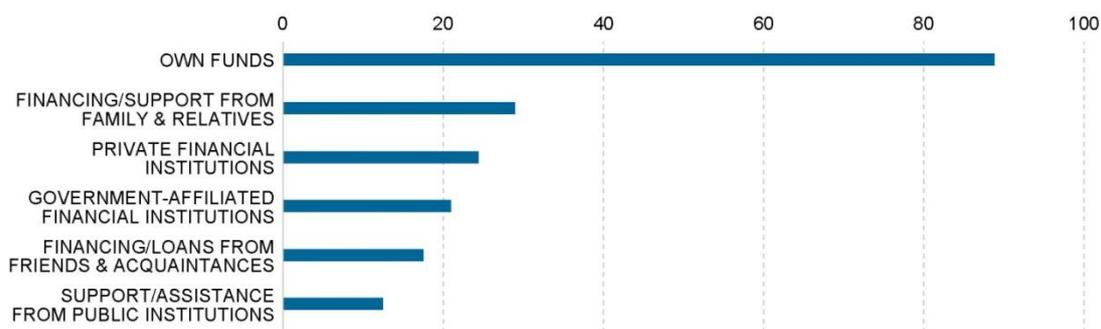
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7. Externality-induced underinvestment. The idea that innovation is difficult to finance in a freely competitive marketplace dates back to the articles of Nelson (1959) and Arrow (1962). In particular, two characteristics of the innovation process make innovation finance more difficult: (a) innovation produces an intangible asset, and (b) the returns to innovation investment are highly uncertain. See Hall and Lerner (2009) and Kerr and Nanda (2014) for a review. Intangible assets do not typically constitute accepted collateral to obtain external funding. Much of the knowledge created in innovation processes is tacit rather than codified and embedded in the human capital of a firm's employees (who can leave) and its organizational capital. Even when this knowledge is codified and registered—for instance, in the form of a patent—its value is hard to measure. Further, the distribution of returns is highly skewed. There is a large probability of failure and a small probability of huge success. Then, since quantifying the probability of success and failure is typically impossible, the expected return to that investment cannot be estimated. This uncertainty creates significant problems for standard risk adjustment methods used by funding providers. Two types of uncertainty are typically present—technological uncertainty and market uncertainty—and the mixture of them can vary a lot (Bravo-Biosca et al., 2015).

problem as it is widely documented in the role that these firms play in fostering innovation (Acs and Audretsch 1987; Ewens and Fons-Rosen 2013).

Markets provide in general less finance for small and medium-size companies willing to grow and innovate than is socially desirable. As a result, nonmarket or informal forms of financing are used mostly by start-ups and SMEs. A survey of Japanese SMEs and start-ups (Mitsubishi UFJ Research & Consulting 2012) finds that, in fewer than 25% of the cases, funds are borrowed from private financial institutions. The founder's own funds and financing and support from family and relatives are by far the two most popular sources of capital (Figure 23).

Most sources of financing fall in at least one of three categories of investors: (a) emotional investors, (b) strategic investors, and (c) financial investors. In the first category are those who invest out of personal emotional relationship, so investments tend to be nonmarket based. Strategic investors base their decision on some nonfinancial objective, such as access to R&D or a supplier–buyer relationship. GVC buyers or lead firms may act as strategic investors. Finally, financial investors are primarily or exclusively driven by a return on investment. Market failures in financing for SMEs that can be addressed by policy intervention fall mainly in the latter category.

**Figure 23. Support for start-ups and SMEs in Japan**



Source: "Mitsubishi UFJ Research & Consulting 2012.

Although there are many different sources of capital (banks, finance companies, leasing companies, public government lending programs, trade credits, private investors, venture capital, intermediaries), the sources fall mainly into two categories: (a) debt financing, which essentially means the firms borrows money and repay with interest, and (b) equity financing, whereby the investors are rewarded with part ownership.

- Debt financing is accessible to SMEs mostly through banks after the start-up phase. As lending policies were made stricter in the wake of Basel III, banks have become a lot stingier with financing for SMEs. This is true both in developed countries (see OECD's SME Finance Scorecard) and in LIDCs.
- Equity is another external source of finance for SMEs, and is particularly important for the more innovative SMEs. SMEs tend to prefer debt financing over equity financing, as issuing new equity dilutes an entrepreneur's control of the firm and can become a source of conflict if disagreements among shareholders emerge. Moreover, access by SMEs to equity finance is sometimes constrained by demand-side weaknesses, such as lack of "investment readiness." The latter means that SME owners are unwilling to seek external equity finance or that those who are willing to do so do not understand what equity investors are looking for and do not know how to sell their business propositions in a way that is attractive to potential investors

(Mason and Kwok 2010). The advantages of equity financing over debt financing for SMEs are however that it increases risk sharing and gives the entrepreneur access to the investors' networks and expertise.

Acting directly on the entrepreneur is only one way to support financing of entrepreneurial activity. A common form of intervention in SME credit markets is represented by partial credit guarantee (PCG) schemes. The main objective of PCGs is to reduce the net losses that commercial banks may incur in case of default by SME borrowers. However, PCGs can potentially play a more important role, especially in countries with weak institutional environments, by improving the information available on borrowers in coordination with credit registries, and by building the credit origination and risk management capacity of participating banks. Moreover, PCGs can also play an important countercyclical role, providing support to small businesses during a downward economic cycle when a credit crunch is likely to set in.

Results from a recent survey carried out by the Italian government seeking to promote the internationalization of SMEs (SIMES 2012) offer insights as to the needs for overcoming bottlenecks to the financing of GVC participation by SMEs. The ingredients of the approach suggested by the Italian agency SIMES include (a) promoting a policy that has regional connectivity, (b) connecting more than one region together (an LIDC and a non-LIDC region), and (c) forming a public–private partnership to fix all the objectives and responsibilities that defines eligibility criteria, cross-border projects and sectorial coverage, entry, and exit.

Many countries have recently taken action to enhance access to equity financing, notably for young and innovative firms. Most measures are on the supply side, as these are perceived as being more direct. These range from grants, loans and guarantee schemes to tax incentives and equity instruments (Wilson, 2015). In OECD countries, there has been an increase in the use of equity instruments, but the focus has shifted from government equity funds investing directly to more indirect models such as co-investments funds and fund-of-funds. These later approaches seek to leverage private investment and a number of OECD countries are experimenting with different incentive structures. While supply side interventions have increased, there is little evidence of the impact of these instruments and whether or not they crowd out private investors.

The demand side is also critical to success of seed and early stage financing, and can include both human and social capital development. Specific programmes such as incubators, accelerators, business angel networks and matchmaking services have become increasingly popular. Initiatives to create a more entrepreneurial culture are also vital. In many countries the fear and cost of failure is higher than perceived opportunities and/or the perceived skills to pursue those opportunities.

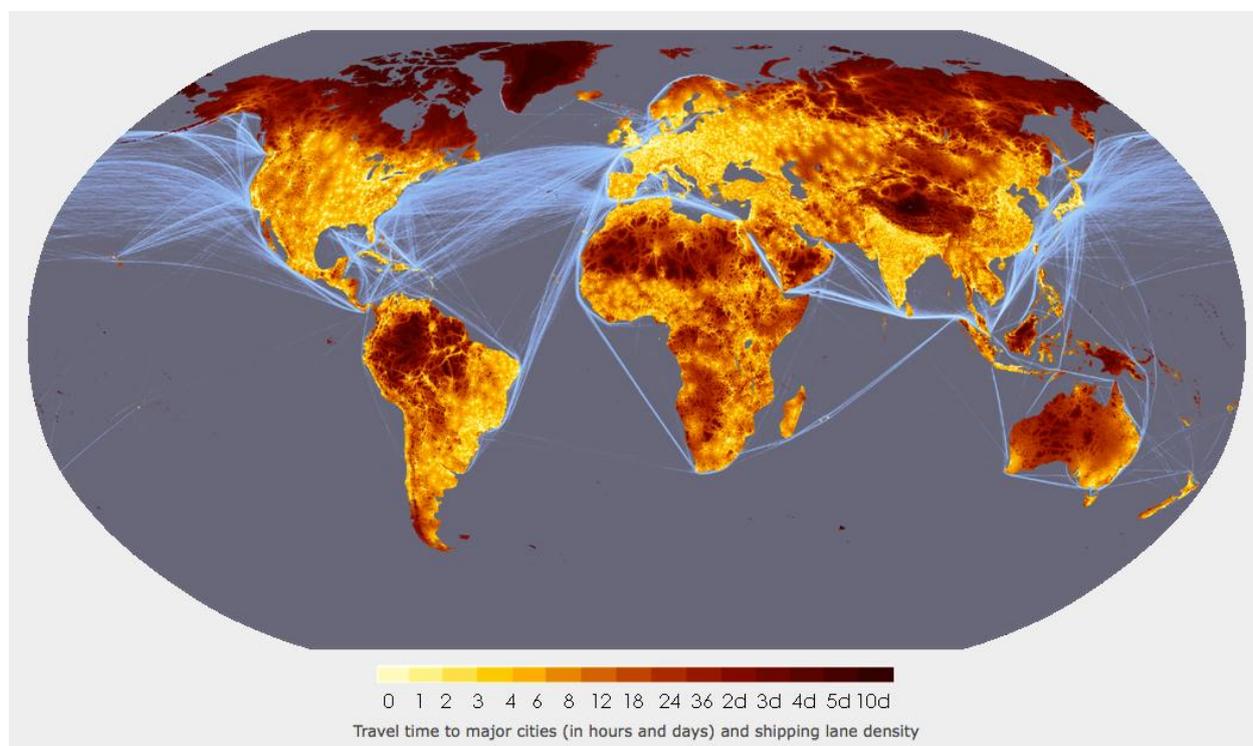
Despite these policies, the business environment in a country has perhaps the most impact on the provision of seed and early stage finance. The development of financial markets and exit opportunities, whether through IPOs on a stock exchange or mergers and acquisitions by other firms, directly influences the development of seed and early stage financing. Bankruptcy regulations, labour market restrictions and other framework conditions also impact firm dynamics as well as the creation, financing growth of innovative firms. Regulatory barriers and administrative burdens on institutional investors, venture capital funds, angel investors and high growth firms can have a direct result on the provision of seed and early stage finance. In particular, securities legislations and more stringent capital requirements on institutional investors could reduce the supply of investment in venture capital from banks, pension funds and insurance companies, traditionally three of the largest types of private institutional investors.

### ***Bottlenecks in Infrastructure***

Geography is an important determinant of countries' ability to join GVCs (OECD 2012, Kowalski et. al. 2015). Nevertheless, the trade accessibility of countries is driven by more than the geographic distance from their trading partners. As Figure 24 shows, major transport routes (for example, the shipping lanes depicted in light blue) effectively reduce remoteness for major urban areas with good trade and travel infrastructure. Indeed, the ability of firms and countries to participate in GVCs is greatly affected by the quality of physical infrastructure, such as roads, ports, and airports, as well as the efficiency of the procedures followed in the operation of those facilities. Getting to the border is one of the most pervasive constraints to SMEs' and LIDC firms' exports.

In a world where just-in-time delivery is now the norm, and in which transit is rapid and storage is expensive, time is quite literally money. For products ranging from electronics (which can quickly become obsolete) to fruits and vegetables (which are perishable) to apparel (which is seasonal and subject to the whims of fashion), a day's delay is equivalent to a tariff of 1% or more. That is evidenced by the willingness of traders to pay more for faster airfreight than they do for slower water freight (Hummels Lugovsky, and Skiba 2007), even when shipping costs are significantly higher than tariffs or other trade costs. In their study of Africa's exports, Freund and Rocha (2010) conclude that, of all the variables responsible for delays in the production chain—transit, documentation burdens, ports, and customs delays—the most important was transit delays. Reducing inland transit time by one day would increase exports by 7%; such a reduction is equivalent to a 1.5% decrease in the tariff of all of Africa's importing trading partners. The effect is more important for time-sensitive goods, such as perishable food products.

**Figure 24. Travel time to major cities**



*Note:* The figure represents travel time to more than 8,000 cities by land, air, and water for 2000. In developed countries, only 15% of people lived more than one hour from a major city, while in LIDCs the share was 65%.

*Source:* Nelson, 2008.

The ability of firms and industries in LIDCs to engage in trade is determined much more by the quality of their port facilities (sea and air) than by the types of preferential access that they might enjoy in major industrialized markets. Reliable and cost-competitive infrastructure facilitates both trade linkages and FDI attraction. Significant gaps in the provision of infrastructure hold back competitiveness and the expansion of production in LIDCs. Limão and Venables (2001) estimate that transport costs for the median landlocked country are 46% higher than equivalent costs in countries with direct access to the coast. Similar conclusions are found in studies that measure the effects of multiple types of infrastructure together to examine the collective impact on trade. For example, Piermartini and Nordas (2004)—looking at the quality of ports, the density of airports with paved runways, and the density of Internet users and of mobile phone subscribers—find that port infrastructure matters for all sectors, whereas timeliness and access to telecommunication matter more in the clothing and automotive sectors. Limão and Venables (2001) show that landlocked countries face higher transport costs since their ability to trade depends also on the infrastructure of the neighbouring transit countries. For example, in East Africa, goods bound for landlocked countries face the time equivalent of at least three clearance processes of coastal countries. “Poor infrastructure accounts for 40% of predicted transport costs for coastal countries and up to 60% for landlocked countries.” Furthermore, for landlocked countries, they calculate that improvements in their own infrastructure from the 25th%ile to the 75th%ile would effectively overcome more than half the disadvantage of being landlocked (Limão and Venables 2001).

Telecommunications infrastructure is also important, not only to support value chains of physical goods but also to enable the creation and trade of digital services that account for a growing share of total international trade.

Infrastructure development is therefore an important element in enabling LIDCs to participate in GVCs. Whereas telecommunications links are crucial for participation in all GVCs, but notably in offshore services GVCs, transportation and energy infrastructure play a particularly important role in manufacturing and extractive GVCs. These economies therefore need to invest more in infrastructure, but above all, they need to improve the effectiveness of public infrastructure policies.

One example of a country that successfully invested in infrastructure to reduce congestion and improve connectivity is Morocco. The country’s historical port, Casablanca, remains the main port for imports and exports. The major constraint of the port is that it is located in the city, which reduces the potential for expansion and imposes additional constraints on the land transportation of goods. But ports in Morocco have seen important changes in recent years. Tanger-Med started operations in 2007 and is one of the largest regional development projects. The port container terminal had an initial capacity of 3.5 million containers and is expected to handle 8 million containers this year. The free zone of Tanger-Med is managed by the company operating the Dubai free zone, and the container terminal concessions were awarded to reputable international companies (Maersk for the first container terminal and MSC for the second one). The Moroccan government is currently planning another major portcentric development region, Nador West Med, consisting of a deep-sea port with transshipment capacity and focusing on the energy sector and a large industrial platform. The port is expected to be in service in 2019 with an initial capacity of 3 million containers, 25 million tons of hydrocarbons, and 7 million tons of coal.

Another example of how to heal the infrastructure bottlenecks constraining connectivity in LIDCs is the Indonesian port of Jakarta. In 2008, the World Bank Group suggested ways to improve operations at Tanjung Priok, which handles two-thirds of Indonesia’s international trade and has seen a rapid rise in container traffic. A main goal of the port initiative was to reduce dwell time—the

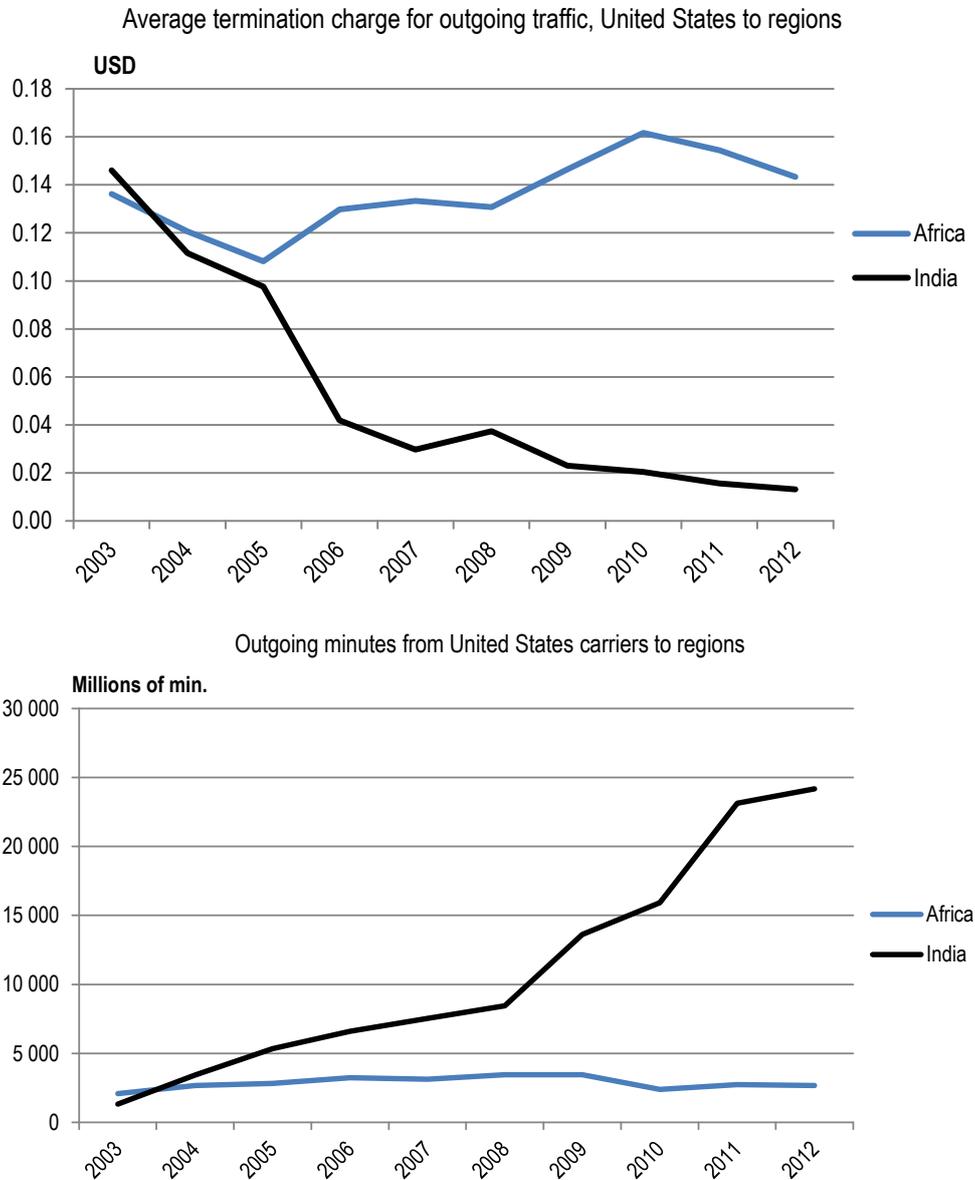
average time it takes containers to clear the port. In 2011, Tanjung Priok's dwell time was six days, longer than Indonesia's regional peers (Singapore one day, Malaysia four days, Thailand five days). To reduce dwell time, the port operator raised storage fees (to discourage shippers from leaving containers for long periods) and introduced a new information technology system (to better monitor and direct port traffic). A scheduled expansion of the port is expected to double its container capacity by 2017.

But building infrastructure alone without changes in policies to improve the efficiency of its use will not necessarily lead to lower transport prices. Arvis, Mustra et al. (2010), using the World Bank's Logistics Performance Index, show convincingly that "logistics or trade services is more important for limiting the costs of being landlocked than investing massively in infrastructure and neglecting the functioning of logistics services." They point out that more than half of the time it takes to transport cargo from the port to the hinterland is spent in ports. Dwell times in Africa average more than two weeks. Those dwell times are long for several reasons: volumes are low, facilities are not operated competitively, logistics are poorly organized, storage facilities are inadequate, charges for storage are high, and port management (usually a government agency) does not have adequate incentives to speed up the process (see Raballand et al. 2012). Coordination and effectiveness of public infrastructure policies are key.

For telecommunications too, the issue is not just about infrastructure, but also about access and pricing. Infrastructure—which provides the foundation for global value chains, new business models and e-commerce—needs to be of high quality, accessible to all and available at competitive prices. With competition in the digital economy being challenged by several major shifts including technical convergence and the integration of business models among telecommunication providers as well as new Internet players, governments around the world must engage in efforts to protect competition, lower artificial barriers to entry, and strengthen regulatory coherence (OECD, 2015). Once infrastructure is in place, countries must implement and monitor open access policies to ensure that international connectivity routes, which often require significant investment, are provided by a sufficient number of market players.

Notwithstanding broad commitments to expand connectivity and reduce prices, some countries are still applying policies that restrict connectivity, increase prices and reduce options for consumers. This is the case of certain Asian and African countries, such as Ghana or Pakistan. In Pakistan, for example, the government set up a cartel to set prices for incoming international calls, raising rates from USD 0.02 to USD 0.088. As result, traffic fell from over 2 billion minutes to 500 million. This in turn generated no increase in revenue, but rather resulted in a huge loss in consumer welfare. These policies contrast with those of other developing countries, such as India, where dramatic cuts in international termination rates, together with strong domestic competition, have seen traffic increase dramatically (Figure 25; OECD, 2015).

**Figure 25. Average termination charge for outgoing traffic, United States to regions (top), outgoing minutes from United States carriers to regions (bottom)**



Source: OECD (2015), *Digital Economy Outlook*.

Coordination between different agencies in charge of infrastructure policies is essential for overcoming multiple gaps, including coverage, access, and costs. And when infrastructure projects are driven by the private sector, governments in LIDCs should seek to direct investments in such a way that domestic firms are able to reap the benefits associated with GVC participation.

Successful infrastructure building also relies on the effectiveness of public infrastructure policies. That can be problematic, as many LIDCs face resource and capacity constraints to providing high-quality infrastructure throughout the entire economy. A crucial element of success in reducing the infrastructure gap of LIDCs is good governance on infrastructure-related capital expenditures, including the quality of budgetary execution and effectiveness in negotiations for concessions.

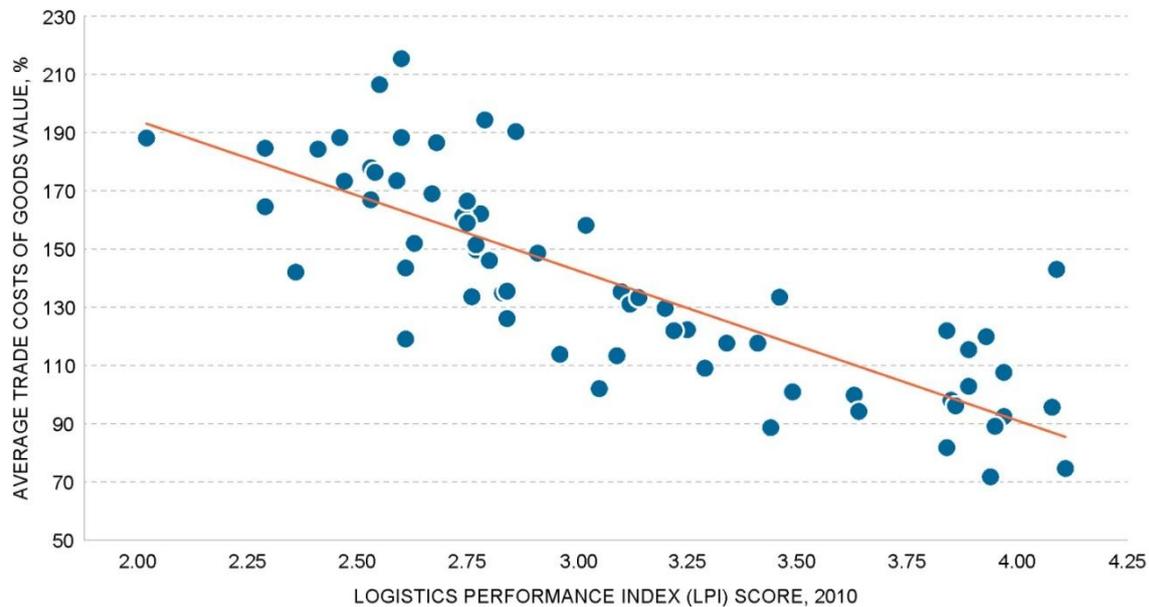
- The quality of budgetary execution reflects the extent to which actual expenditure matches intended expenditure. Poor budget implementation is a major constraint for some countries. Budgetary predictability in capital expenditure is particularly weak in Central America and the Caribbean, South Asia, and Africa. More than 30% of African and South Asian countries, and close to 25% of countries in Central America and the Caribbean, execute less than 80% of their budgeted capital expenditure. For instance, Angola historically underperforms in budget execution, having spent only 34% of its budgeted capital expenditure in 2010. In Kiribati, a least-developed country in the Pacific, budget execution in 2009 was only 20%. International Monetary Fund and World Bank assessments confirm that low-income countries suffer from particularly weak budget execution (Allen and Last 2007). That does not mean that infrastructure financing should not increase, but additional financing will fail to reduce infrastructure gaps unless budget execution rises. The good execution of concession contracts also matters.

Latin America's experience with concessions in the transport sector reveals a history of numerous and costly renegotiations. Governments have applied the model of concessions to the development of airports, roads, railways, seaports, and multimodal terminals, first in the late 1980s and early 1990s in Argentina, Chile, and Mexico and later in Brazil, Colombia, Peru, and Central America and the Caribbean. Difficulties in the execution of concession contracts led some policy makers to question the model. In the 1990s, close to 50% of transport concessions were renegotiated in Argentina, Brazil, Chile, Colombia, and Mexico. In Chile, the average concession was renegotiated four times between 1993 and 2007. Nearly a quarter of investment in concessions derived from renegotiations. Today, 40% of existent road concession contracts have been renegotiated in Latin America. Fifty out of the 60 road concessions in Chile, Colombia, and Peru were renegotiated up to 2010 (Bitran et al. 2013). The additional fiscal costs amount to 50% of the initial value of the contracts.

### ***Trade logistics***

Infrastructure building and well-managed infrastructure policies do not guarantee better connectivity, if delinked from a wider logistics strategy. Indeed, inefficient logistics raises the costs of trading and reduces the potential for trade (Figure 26 and Figure 27). For example, Morocco's Logistics Performance Index (LPI) rank jumped from 113 in 2007 to 50 in 2012, partially reflecting that the country has implemented a comprehensive strategy to improve logistics and connectivity and has taken advantage of its proximity to Europe. Combining border management reform with the previously mentioned large physical investments in the Tanger-Med Port, the strategy fostered the emergence of Morocco's just-in-time exports to Europe (especially textiles, electronics, and automotive components). Morocco's fast rise in the LPI highlights the payoffs of such a comprehensive approach. In 2011, for example, Morocco established an agency for logistics development. Banking on its location and on the success of its investment in the trans-shipment port at Tanger-Med, the country is pursuing a policy to develop freight and logistics facilities and services that reach beyond its own economy—to North Africa, Southern Europe, and West Africa.

Figure 26. Supply chain bottlenecks are the primary cause of trade costs



Source: World Bank, Logistics Performance Index (2010).

Poor logistics is a major constraint to trade in LIDCs. Improving logistics performance and the efficiency of the supply chain is at the core of policies to bolster competitiveness and to boost trade integration. Recent trade research shows that improving logistics is where LIDCs have the most potential to reduce trade costs. The lower the trade costs, the more competitive, as well as globally and regionally integrated, a country is.

Bilateral trade costs capture the separation between countries or the friction in international trade networks. They are formally defined as the ad valorem equivalent of all factors that drive a wedge between the price of goods at the factory or farm gate in the exporting country and the price paid by a consumer in the importing country. Trade costs depend on given or intangible factors, such as geographical distance, language, or historical connections, as well as factors that can be targeted by policy interventions, such as supply chain connectivity and tariff or nontariff barriers. The UNESCAP–World Bank bilateral trade costs database gives trade costs by country pair for manufacturing and agriculture. Arvis, Shepherd et al. (2013) provide an estimate of the sources of trade costs. As expected, distance is a major source of trade costs, but logistics performance and connectivity are at least as important, and more so than tariffs. And as LIDCs face much higher trade costs, partly because of the importance of policy in addressing their sources, policy measures can do much to reduce them while boosting trade integration, especially through measures that improve connectivity and logistics.<sup>8</sup>

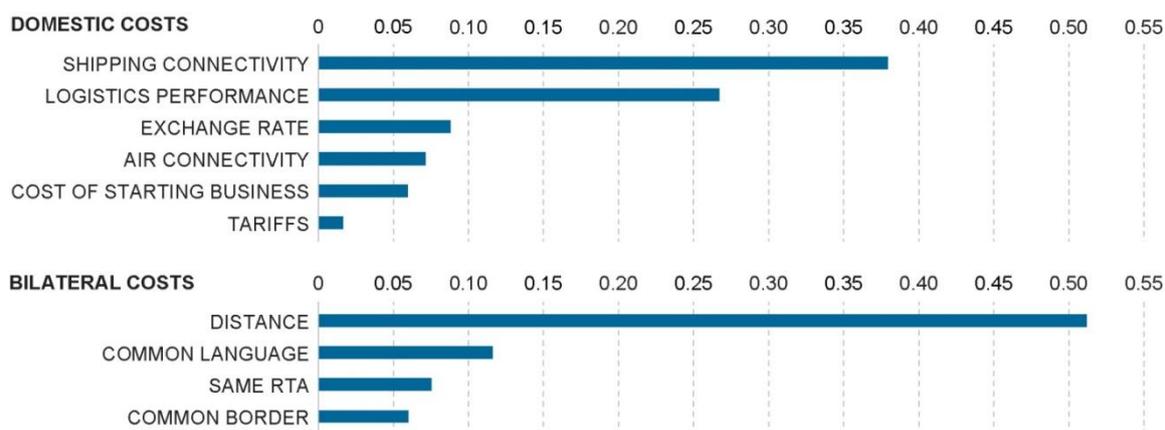
Exogenous determinants of trade such as geography are outside of a country's control, but policy decisions are not. Connectivity including logistics performance can be addressed by a series of policy interventions. Supply chain service delivery is affected mainly by three areas: customs, infrastructure, and logistics services quality. All three constitute areas for policy regulations and should be tackled with a comprehensive approach. They are important because they affect the cost incurred by firms to move goods. Logistics costs include three categories: administrative, transport,

8. World Bank Trade Cost Dataset web page, <http://data.worldbank.org/data-catalog/trade-costs-dataset>.

and inventory costs. Differences in logistics costs are primarily associated with the reliability of supply chains, rather than with transportation costs (Figure 28). Logistics costs therefore reflect logistics performance, with clear differences across countries that are driven by their efficiency in handling logistics services.

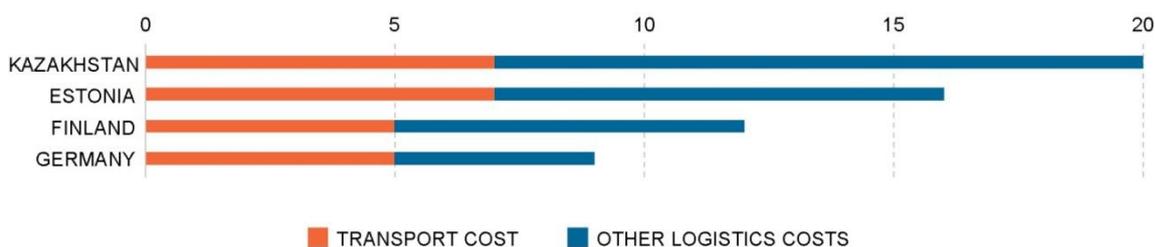
Inventory costs are the consequence of a lack of reliability of the supply chain in many LIDCs. Firms willing to enter global manufacturing value chains encounter a double penalty with extra logistics costs on both inputs and exports. The causes of unreliability are rarely found in deficient physical infrastructure but rather in inefficient clearance processes, especially at land borders and in ports, and with the performance of services available to traders, such as truck services, forwarding, or customs agents. As data from the 2007 and 2014 editions of the Logistics Performance Index show, overall logistics performance has improved, but some factors have moved faster than others, with the quality of logistics services rising more slowly than the quality of trade- and transport-related infrastructure and the performance of border agencies. This is especially true for low-income and lower-middle-income economies (Figure 29).

**Figure 27. Logistics performance and connectivity**

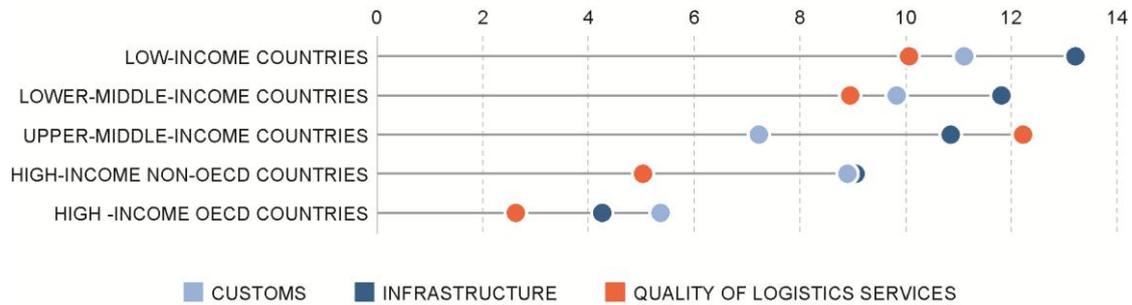


Note: RTA = Regional Trade Agreement.  
Source: Arvis, Duval et al. 2013.

**Figure 28. Firm-level logistics expenditures as% of sales in 2011-2012**



Sources: For Germany: TU Berlin; for Finland and Estonia: Turku School of Economics; for Kazakhstan: World Bank.

**Figure 29. Percentage change in LPI scores, by LPI component and income group, 2007-2014**

Source: Logistics Performance Index 2007, 2010, 2012, and 2014.

SMEs are even more vulnerable to supply chain inefficiencies than large firms, and they typically face doubled logistics costs. The first reason is pure economics. Smaller firms have fewer economies of scale in their inventory (through a higher inventory ratio) and hence higher inventory costs, which can be punitively high in LIDCs with poor logistics performance. Size is also a disadvantage in several other respects. Small exporters tend to be more affected by a lack of transparency in clearance processes and depend more on independent services to move goods or clear them with border agencies. Logistics services may not be friendly to small shipments and services not available or affordable, forcing SMEs to consolidate their goods in single containers to reach their destination market. Consolidation services can be very expensive or not available at all. Non-traditional exports of fresh produce, for instance, are impossible without a cold chain and refrigerated containers. Lastly, the lack of continuity of logistics services beyond the main gateway puts SMEs in remote regions at a disadvantage to reach markets. Interisland trade in Indonesia provides a telling example. The high cost of transporting high-quality goods such as shrimp from eastern Indonesia to processing centres in Java makes them too expensive to export, or similarly it is cheaper to import oranges from China than to ship them from Kalimantan to Java.

Data from a 2012 study on trends and strategies in logistics support the notion that many SMEs encounter disproportionately high logistics costs (Straube et al. 2013). Industrial firms with fewer than 250 workers on average have logistics costs of 14.7% of overall revenue for the business unit. In contrast, industrial firms with more than 1,000 workers reported logistics costs of only 6.7% of overall revenue, which was in line with logistics costs as a share of the overall revenue reported by industrial firms with 250 to 1,000 workers (6.4% of overall revenue).

The survey covered 113 industrial firms in various world regions. Breaking up the results by region or country confirmed the overall results. SMEs in China reported logistics costs of 15% of overall revenue, while firms with more than 1,000 workers reported only 5.2%. For South America, the numbers were 15.3% for SMEs and 9.4% for large industrial companies with more than 1,000 workers.

### **Trade facilitation**

Trade facilitation enables GVC trade by reducing the time, cost, and uncertainty involved in importing and exporting. Trade facilitation improves and streamlines the processing of trade by border agencies, including customs, ministries of trade, and standards (for example, sanitary and phytosanitary standards). Trade facilitation initiatives cover a broad range of measures. They go from coordinating procedures and controls across border agencies under integrated border management to the automation of customs procedures and extension to other procedures under single-window systems (Box 2). They also include introducing risk management practices to reduce the incidence of

physical inspection of traded goods; an authorized economic operators regime, whereby importers with a track record of compliance benefit from expedited procedures, including *ex post* auditing; and trade portals, where comprehensive and updated information on requirements for all product (tariff and nontariff requirements) are easily accessible.

### Box 2. Implementing a single-window system in Lao PDR

Delays at customs are problematic in many LIDCs, adding to the time and unpredictability of trading and inhibiting the export competitiveness of many LIDCs as well as their participation in global value chains. One innovative approach to border processing and clearance is the establishment of national single-window systems. Such systems allow traders to submit all information required by regulatory agencies through a single electronic gateway, instead of submitting separate information to multiple government entities using a variety of paper, electronic, or other interfaces.

Establishing a single window involves significant challenges and complexity, requiring the cooperation of multiple government agencies, many of which must engage in significant institutional reform. Recent World Bank experience suggests that a number of preconditions are needed to launch a single-window program, including (a) the building of a strong business case, (b) careful assessment of risks and capabilities, (c) a strong government mandate supported by political will and stakeholder buy-in, (d) agreement among government agencies on the structure of governance and leadership, and (e) a work program with key milestones linked to appropriate resources and accountability for all participants.

Given government commitment, even the poorest countries can make progress in this area. A good example is the World Bank Group's work in the Lao People's Democratic Republic. With support provided by the World Bank and others, the government developed a National Trade Facilitation Strategy and established a National Trade Facilitation Secretariat to provide for the implementation of the strategy. With support from the World Bank, Lao PDR has established a Trade Information Portal that allows traders to access all relevant trade rules, regulations, procedures, fee schedules, and forms from all border management agencies through a single user-friendly website. The Trade Information Portal is an important first step in establishing a full electronic single-window system.

The World Bank Group is currently engaged in a preparatory project to support Lao PDR in making informed decisions going forward with regard to the single-window system. This project includes technical support on legal and regulatory frameworks, fee models, and governance structures, as well as development of a comprehensive capacity-building and transition strategy.

*Source:* McLinden 2013.

Trade facilitation matters for small businesses more than for large companies since costs are fixed regardless of a firm's size or revenue. Integrating SMEs and firms in LIDCs in value chains requires addressing their two main sources of disadvantage: (a) the lack of economies of scale and (b) excessive bureaucracy, uncertainty, and lack of transparency with trade-related procedures.

SMEs often face higher obstacles to engage in international trade than large enterprises. For this reason, SMEs are often forced to confine their business activities to the geographical area close to their production site. Difficulties in exporting stem—at least partly—from high costs of transporting their small shipments and from greater bureaucracy.

Of all the trade facilitation measures, key initiatives to level out the playing field for SMEs include tackling information failures, improving the effectiveness of clearance processes, and introducing initiatives for creating awareness around key constraints.

- Delays in passing through customs have often been singled out as the villain in border delays. In fact, more often than not, it is the combination of other agencies—health, agriculture, quarantine, police, immigration, and standards—that gets systematically worse rankings in the World Bank’s Logistics Performance Index. Non-customs agencies are concerned more about their parochial risk management objectives than in speeding goods across the border; they frequently lack the reform blueprints and technical guidelines built from international experience to implement reforms that are found in the customs world. They have not embraced automation or risk-based management systems that have allowed many customs agencies to speed their processing times and improve reliability.
- Despite reforms in many customs agencies, facilitated procedures are naturally geared toward larger firms. For example, having small flows and fewer operations, SMEs face difficulties accessing fast-track programs like authorized economic operators programs. Although SMEs can benefit from working with logistics operators that have those regimes in place, they nevertheless remain disadvantaged.

Hence, SMEs will benefit even more than large companies from measures facilitating the clearance of goods or improving logistics services. Reducing the asymmetry of information vis-à-vis public operators will increase transparency in clearance processes and other measures, including automation; single windows and trade portals will facilitate information, speed up border procedures, and reduce costs; and better coordination and cooperation between public agencies will reduce coordination costs for the firm. Public–private dialogue initiatives are also important, as they too contribute to improving access to information and creating awareness within nationwide trade facilitation initiatives, thereby helping bring down the cost of trading across borders for SMEs.

The principles of successful trade facilitation are well documented and have recently been codified in the WTO Agreement on Trade Facilitation (Box 3). Implementation of that agreement will contribute to addressing some of the bottlenecks mentioned above.

### **Box 3. WTO Agreement on Trade Facilitation**

After more than nine years of negotiations, World Trade Organization members reached consensus on a Trade Facilitation Agreement at the Ministerial Conference held in Bali, Indonesia, on December 7, 2013. The final agreement builds on the now 50-year-old trade rules covered by Articles V, VIII, and X of the General Agreement on Tariffs and Trade and contains provisions for faster and more efficient customs and border management procedures. The key measures include commitments on publishing and making available information for traders, as well as adopting modern approaches to customs and border management. The principles include the following:

- Operational standards by customs agencies in terms of risk management for clearance postaudit;
- Transparency measures, such as transparency of new legislation, appeals against administrative decisions, and advance rulings;
- Improved cooperation between government agencies, such as in implementing national single-window systems; and

- Guidelines for streamlining international transit procedures.

The new agreement brings many of the standards and best practices enshrined in other international instruments under the formal auspices of the World Trade Organization. In many respects, the Bali agreement spells out only minimum common standards. The full benefits of trade facilitation will be fully realized only if countries are prepared to go beyond it, for example, with regionally integrated facilitation frameworks similar to the European Union's.

Other, less traditional, initiatives help too. There are positive experiences of collective actions and innovative solutions to counterbalance the lack of economies of scale in logistics. A successful example of trade facilitation measures helping SMEs participate in trade value chains by reaching international markets is the export of fresh mangoes from Mali to Europe. The export program, supported by international donors, was able to overcome several challenges, including transport and logistics problems, lack of market information and investment on the production level, and a nonconducive regulatory environment for exporters. By designing interventions along the whole value chain, including harvest and transport, Malian exporters were able to access the market in Europe, benefiting small-scale growers in Mali (Sangho, Labaste, and Ravry 2010). Another successful example is the *Exporta Fácil* program in Brazil, Peru, Uruguay, and Colombia (Box 4). These programs bear important lessons, including the following. For SMEs, costs and administrative burdens are the main impediments to trade. Cutting them is thus key. Using large physical networks to implement the reform is necessary to achieve success. Improvements in the producing country must be matched by efforts in destination and transit countries, and all stakeholders in the supply chain need to be involved in the implementation of a reform, since capacity development targeting only exporting SMEs is not sufficient. More generally, export processes should address all three dimensions of the export business: (a) physical handling of export items, (b) data exchange and processing, and (c) facilitation of financial transactions.

#### **Box 4. The *Exporta Fácil* Program in Latin America**

The *Exporta Fácil* program in Brazil, Peru, Uruguay, and Colombia was based on an initiative of Brazil's public postal operator in the early 2000s, which continued a series of measures by the Brazilian government aimed at fostering exports by SMEs. Using the postal network's 8,000 outlets, SMEs could export goods at much lower costs and with less bureaucracy than before. Thanks to cooperation between the government, the postal service, and customs, the number of documents needed to dispatch parcels under 30 kilograms with a value of less than USD 10,000 (later raised to USD 50,000) was vastly reduced. The postal service also acted as a precursor of a single-window system, removing the need for SME exporters to interact with customs, health, and environment agencies; export agencies; and others separately.

The Brazil initiative was successful in raising SME exports and had demonstration effects. The Initiative for the Integration of Regional Infrastructure in South America (IIRSA) designed a similar project for Uruguay, Peru, Colombia, and Ecuador in 2007. The explicit purpose was to enhance SME competitiveness in IIRSA member states so that they could access regional and international markets. Cost savings during the export–import process for SMEs were achieved not just through the low cost of the designated operator (the postal service), they were achieved also because costs previously associated with trade disappeared, for example, exporters' trips to major cities, contracting of customs officers or foreign trade specialists, training, or certificates of origin. The cost of the pilot program in four countries was USD 2.7 million. The

results with regard to export volume have been very positive: In Brazil, export volumes using the *Exporta Fácil* program grew from USD 160,000 in 1999 to around USD 250 million in 2010. In Peru, export volumes using the program grew from USD 72,500 in 2007 (third quarter only) to USD 718,000 in 2010 (third quarter only). In Brazil, *Exporta Fácil* raised SMEs' competitiveness and facilitated their access to international trade. A greater variety of Brazilian products was exported to more destinations. Using the service, between 2002 and 2008, overall about 10,000 businesses that had never exported before were able to engage in international trade. One in ten Brazilian exporters would have been unable to export without the program in 2005. The service proved to be particularly suited to the objectives of international development, as economic analysis showed that it was more widely used in poorer, less service-oriented communes.

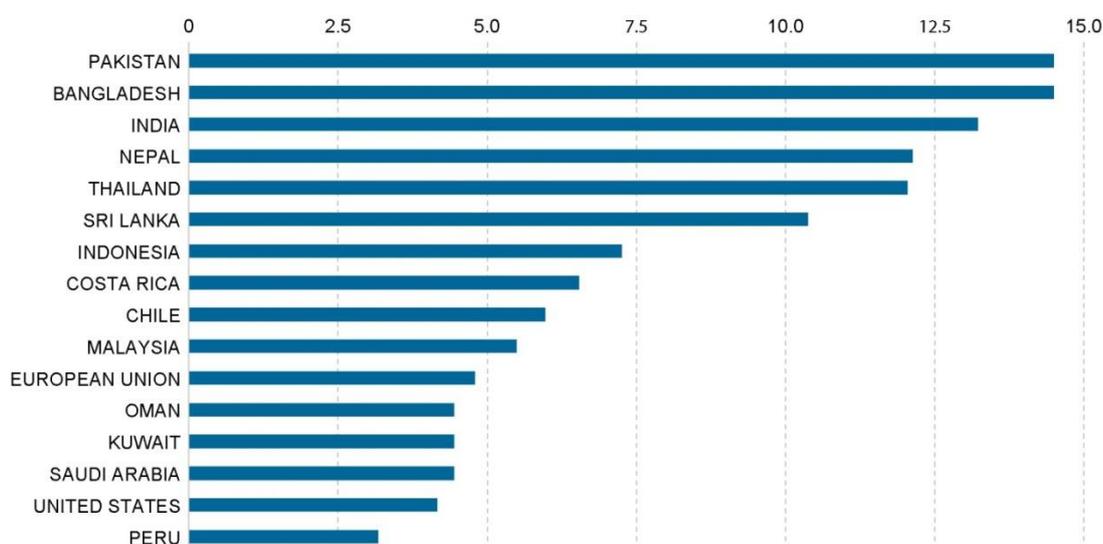
Among the lessons learned from the *Exporta Fácil* program are the following. First, for SMEs, costs and administrative burdens are the main impediments to trade. Cutting them is thus key. Using the postal service as a customs broker can help with both. Second, a large physical network such as the international post (660,000 branches worldwide) is required. Third, easy export solutions at the national level must be complemented by similar efforts in destination and transit countries to ensure effectiveness. Fourth, a joint effort by all stakeholders and covering all actors in the supply chain is required. That includes coordination within the government. Capacity development targeting only exporting SMEs is not sufficient. The customs administration and logistics companies should also be supported to provide easy and effective solutions. Fifth, easy export processes should address all three dimensions of the export business: (a) physical handling of export items, (b) data exchange and processing, and (c) facilitation of financial transactions.

### **Trade policy**

Trade policy per se may figure less prominently in the GVC-led global economy than it did in past generations, but nonetheless it remains a critical part of the policy mix. The way that trade policy is conceived, however, requires some reordering. Policy makers must now give as much consideration to imports as they traditionally have to exports, and they must value time as much as tariffs (OECD, 2013c). The previous sections clearly indicated that time is a priority since participation in geographically fragmented GVCs frequently requires often quick and inexpensive movement of goods over borders, and delays in those movements can be deadly to the aspirations for upgrading and strengthening GVC participation of an economy.

Reducing both import tariffs and export procedures should be a priority for competitively engaging in GVCs, and one doesn't substitute for the other. Tariffs are an additional cost imposed on imports. Not surprisingly, countries in South Asia, which have high average import tariffs compared with the global average, also post low integration rates in manufacturing GVCs, compared with countries from Southeast Asia that are well integrated in GVCs (Figure 30). For example, a country such as Pakistan—with an average tariff 300% higher than the average tariff prevalent in some countries in Southeast Asia, Latin America, or the Gulf Cooperation Council and highly distortionary ad hoc regulations or statutory regulatory orders—is one of the least integrated in GVCs, despite a good manufacturing base and the ability of Pakistani firms to produce and export world-class products, such as, according to Adidas, the high-end *Laguiole* knives and the *Adidas Brazuca*, the official football for the 2014 World Cup as well as for the national championships of countries such as Argentina, Colombia, Germany, Korea, Paraguay, Portugal, and Bolivarian Republic of Venezuela.

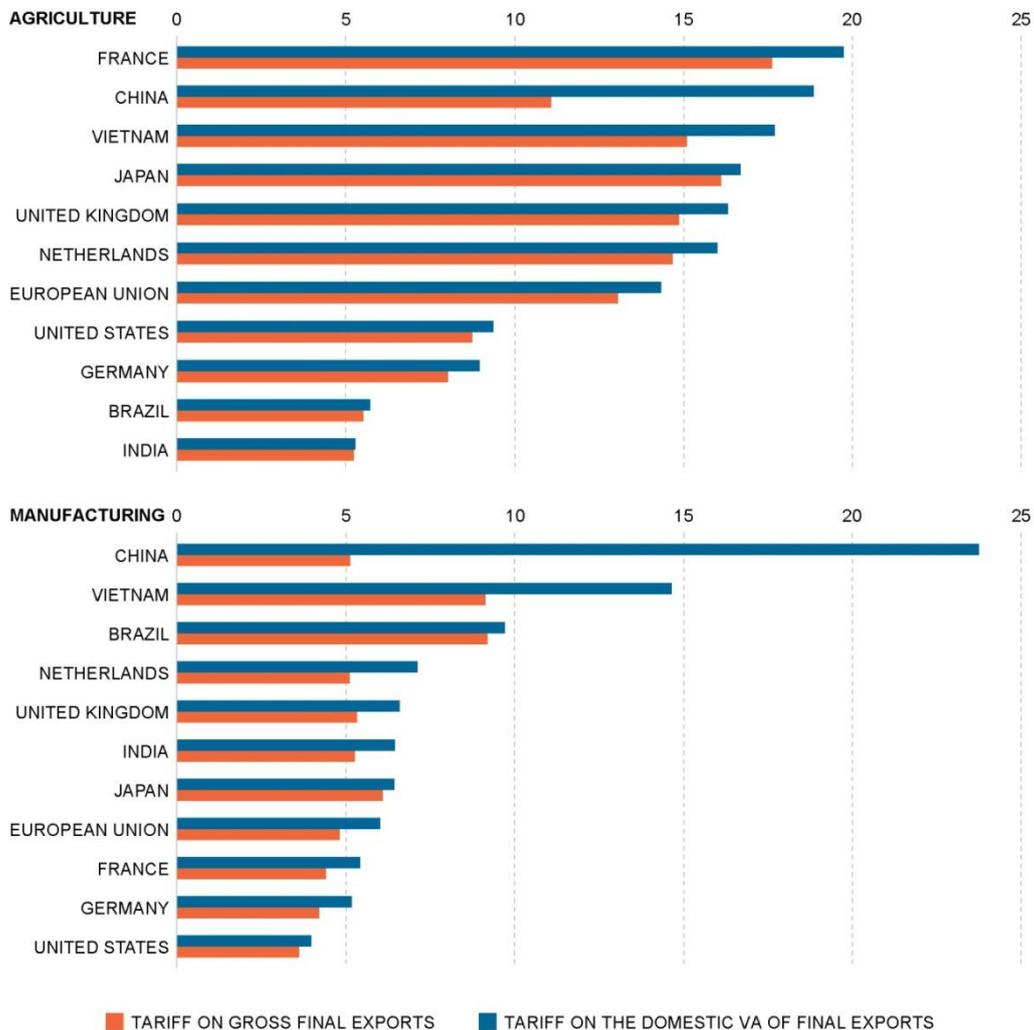
Figure 30. Simple average tariffs, selected countries, 2014



Source: World Bank computations, using WITS and national information sources.

Tariffs on inputs are particularly costly because they are used directly in production and drive up costs. Tariffs on inputs not only affect the competitiveness of domestic producers, they also affect their ability to participate in GVCs (OECD, WTO, and UNCTAD 2013; OECD, WTO, and World Bank 2014). The intricate structure of GVCs can multiply the effects of even nuisance-level rates of duty (Figure 31). In one example, a disk drive is assembled in Thailand, which acts as a hub for a supply network involving 43 components from ten other countries and ten components produced in Thailand (Baldwin 2006; Hiratsuka 2005). The disk drive is then sent to China, which serves as a similar hub for the assembly of a laptop computer, which is finally sent to the United States. Koopman et al. (2010) calculate so-called tariff-magnification ratios for manufacturing products and show that taking into account tariffs along all stages of the supply chain raises significantly the effective tariff protection.<sup>9</sup> Indeed, empirical evidence shows that this magnification effect is particularly important in sectors characterized by long value chains with several production stages, such as communications and electronics, motor vehicles, basic metals, and textiles. Driven by such mechanisms, cross-country studies of the effects of tariffs on growth of GDP consistently find that higher tariffs in general are associated with lower growth rates, and tariffs on intermediate inputs are particularly important. For example, Estevedeordal and Taylor (2009) find strong evidence that liberalizing tariffs on imported capital and intermediate goods raises growth rates by about 1 percentage point annually in the liberalizing countries, whereas the effects of reducing tariffs on final goods was less important.

9. The study found that in 2004 the effective tariff rate was 17% higher than the nominal rate in the United States, 46% higher in Korea and as much as 116% and 171% higher in China and Mexico, respectively because of multiple border crossings in trade.

**Figure 31. Tariffs on the gross value and the domestic value-added of exports, 2009**

Notes: Applied AVE tariffs, weighted by the share of each sector and destination market in the country's agricultural or manufacturing exports. For EU countries, tariffs are calculated on extra-EU exports.

Source: OECD, WTO, and UNCTAD 2013.

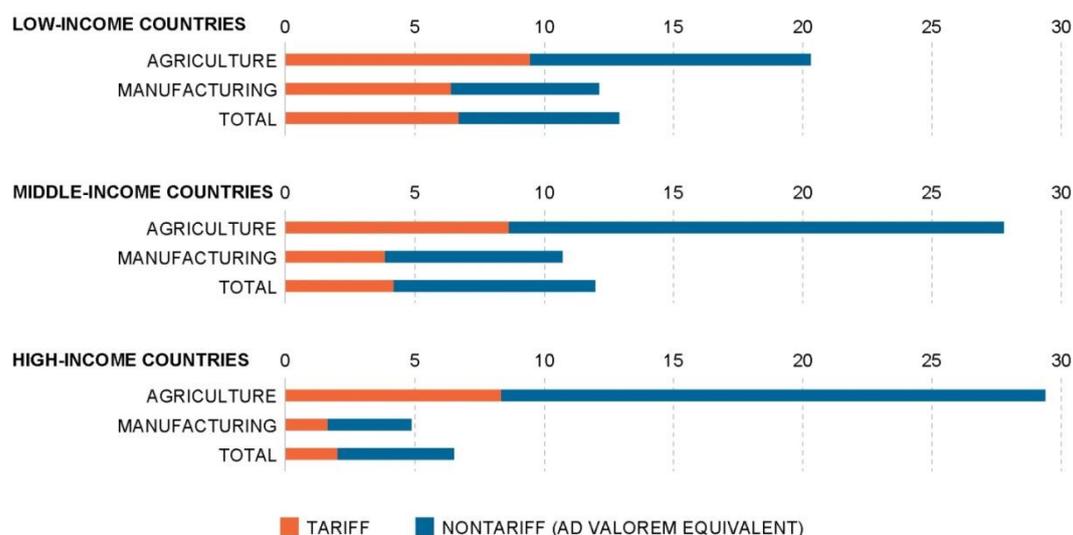
Research highlights the adverse effect of intermediate input tariffs on both industry structure and trade. For instance, a recent OECD study (Johansson and Olaberría 2014) suggests that if tariffs on electronics were to be reduced in a country where such tariffs are high (for example, Brazil) to the median level in the sample of countries included in the analysis, electronic exports could increase by 26% (Johansson and Olaberría 2014). Furthermore, intermediate input tariffs not only affect exports in the same industry, they also have a sizable negative effect on exports of downstream industries (Safadi 2014). For instance, if a country with high tariffs on textiles (for example, South Africa) were to reduce them to the median level in the sample of countries included in the analysis, exports of clothing from this country, whose inputs embed more than 40% of textile products, could increase by more than 30%.<sup>10</sup>

10. These effects may appear large, but it should be noted that the tariff reductions in the example are sizable, around 10 percentage points.

Some actions that countries take to facilitate the import of inputs are much less comprehensive and effective than the elimination of tariffs through either multilateral or regional agreements. They may, for example, offer special treatment to imports in competitive spaces, special economic zones (SEZs) or related programs, which can take on a variety of forms; examples include *maquiladoras* in much of Latin America or foreign trade zones in China or the United States. Within the framework of GVCs, SEZs and other competitive spaces have a clear rationale, but empirical research also shows that they deliver mixed results. Creating SEZs can help attract GVC activities that are highly responsive to tariffs, and thus may feature as a strategy for insertion. There is, however, a risk that SEZs may remain isolated pockets of production, and that host countries may become too vulnerable to changes in the strategies of MNEs. SEZs do not necessarily help create the spillovers and linkages that facilitate upgrading among domestic firms if participating firms engage in little more than processing activities. MNEs that locate facilities within SEZs may do so as part of a cost-reduction strategy, and may therefore be less likely than domestic firms to prioritize functional upgrading or R&D investments. Once wages and costs in the host country increase above a certain threshold, those activities may move to an economy that offers lower costs as MNEs have become increasingly footloose. Furthermore, SEZs or duty drawback systems do not allow second-tier domestic suppliers to join GVCs. High and escalating tariffs act as a kind of “currency overvaluation,” pricing out domestic suppliers. The risk is particularly acute for small economies where access to the domestic market or local knowledge is of limited importance to MNEs’ location decisions. Responding to this risk requires combining integration in GVCs with strengthening domestic capabilities to enhance productivity and innovation.

Nontariff measures (NTMs) raise specific concerns for GVC participation (OECD, 2013d). NTMs consist of any policies (other than ordinary customs tariffs) that influence trade flows, and they can block the efficient operation of supply chains. Although NTMs should not have protectionist intent, they nevertheless can have an impact on trade costs that is of a much larger magnitude than tariffs (Figure 32).

Figure 32. Average level of restrictiveness imposed on imports



Focusing on NTMs in G-20 economies (OECD 2011a) finds that the trade cost impact of NTMs is more important than prevailing tariff rates in obstructing trade. That is true even in the more sensitive, and hence tariff-protected industrial sectors, such as motor vehicles and processed foods. Most NTMs are put in place to ensure that imported products comply with the same standards and regulations as domestic products. Trade costs and trade frictions arise from differences in regulations and their implementation, and obviously a “reduction to zero” is not a feasible option for those NTMs; a certain amount of trade costs related to those measures will always exist. Hence, in the OECD (2011a), the focus is on the portion of NTM-related trade costs that is actually “reducible” and finds significant positive overall income and employment effects of reducing them. The highest potential gains are observed when countries engage in their own reforms, including in African and Asian LIDCs, which underscores the importance of domestic policy reforms for tapping into the potential of GVCs.

One form of trade barrier that appears to be on the rise is local content requirements (LCRs) (Stone et al. 2015). LCRs have been used in a number of cases by governments that have established domestic policies supporting the generation of electricity from renewable energy, especially wind energy and solar photovoltaic (PV) energy, leading to several high-profile trade disputes (Box 5). Within the context of GVCs, policy measures aimed at protecting domestic solar PV and wind-turbine manufacturers may hinder downstream investment in renewable energy-based power generation by raising the cost of inputs, which can result in increased installation costs and reduced demand for renewable energy. That in turn could lead to suboptimal levels of international and domestic investment throughout the solar PV and wind energy GVCs, while increasing investment risk by raising the prospects of trade disputes.

#### **Box 5. Trade and investment barriers: The case of LCRs affecting renewable energy**

Trade and investment barriers are particularly challenging in renewable energy, as they may hamper the optimization of emerging global value chains (GVCs) in the production of solar photovoltaic (PV) energy and wind energy. The manufacture of solar PV panels, wind turbines, and intermediate components is increasingly spread across countries and integrated within GVCs, accounting for a growing share of international trade of intermediate products (especially solar PV panels).

Over the past decade, governments from developed countries and emerging economies have provided substantial support to solar PV and wind energy that has been crucial in stimulating both domestic and international investment. Since 2008, however, the perceived potential of green energy to serve as a lever for growth and employment has led several governments, in a post crisis recovery context, to design incentive measures aimed at (a) supporting domestic solar PV and wind-turbine manufacturers, notably through granting preferential access to financing (for example, through low-cost loans or loan guarantees); (b) improving the export performance of solar PV and wind energy component manufacturers through targeted measures; (c) encouraging domestic and foreign firms to purchase solar or wind-turbine equipment manufactured locally (for example, by imposing local content requirements (LCRs) as a precondition for benefiting from a feed-in tariff or to win a public tender); or (d) restricting imports (for example, through tariffs).

The majority of those measures aim at developing a domestic manufacturing base in solar and wind energy or protecting domestic manufacturers against the alleged use of trade-distorting subsidies by countries seeking to support their own exporting producers. OECD research shows that LCRs for solar or wind energy have been planned or implemented at national or subnational levels in at least 15 developed countries and emerging economies, for the most part since 2008. Several countries have also used direct financial transfers and tax credits to provide preferential access to finance for domestic solar PV or wind-turbine producers. Other policy impediments to international trade and investment exist, such as limits

on foreign ownership, but remain relatively limited in OECD countries. More research is needed to assess the importance of technical barriers to trade (for example, divergent standards) and operational obstacles (for example, preferential access to the grid or to land).

The widespread use of LCRs in solar and wind energy has resulted in several World Trade Organization (WTO) disputes—5 out of a total of 63 WTO disputes since September 2010. The alleged use of dumping or harmful subsidies has resulted in an escalation of domestic trade remedies involving solar PV and wind energy. Since 2012, several large developed and emerging economies have launched investigations into alleged dumping and subsidizing, leading to the imposition of anti-dumping duties, countervailing duties, or both, on a variety of products associated with solar PV and wind energy.

Sources: Stone, Messent, and Flaig 2015 and the chronological list of disputes cases on the WTO's website at [http://www.wto.org/english/tratop\\_e/dispu\\_e/dispu\\_status\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/dispu_status_e.htm).

Issues affecting trade in services are similar to, but in some ways distinct from, those affecting trade in goods. Restrictions on market access to services in the international marketplace can have a direct impact on manufacturing, agriculture, and mining. That is particularly true for services that act as essential enablers in the geographic dispersion of GVCs. Such services include information and communications technology (ICT), which reduces the cost of coordination for GVCs and is an important enabler of trade in services; supply chain management services (to reduce inventories, shorten lead times, and enable faster customer response); and improved logistic services, including real-time monitoring of physical assets worldwide through the “Internet of Things” (OECD, 2015). High-quality professional, technical, and financial services also enable GVCs and help firms create value in GVCs through differentiation and customization (USITC 2013a, 2013b). The quality of services supporting GVCs in a given country depends not only on market access for qualified foreign providers but also on a robust national education system to train local entrants.

The openness of national markets to foreign service providers varies widely across countries.<sup>11</sup> There are significant restrictions on entry, ownership, and operations, and licensing procedures remain highly discretionary in many countries. In both industrial and LIDCs, professional and transportation services are among the most protected industries, whereas retail, telecommunications, and even finance tend to be more open. Nonetheless, there are significant niches for LIDC provision of services in support of GVCs. After the Great Recession of 2008–09, cost pressures on multinationals led to increased outsourcing of business processes, knowledge processes, and information technology to LIDCs (Gereffi and Fernandez-Stark 2010).

### ***Certification and compliance with international standards***

Sustainable management of global value chains has become an area of increased focus for companies because of competitive pressures triggered by increasing demands for quality and product certification, as well as for sustainable use of resources and sustainable environmental, labor, and social conditions of production. Consumers around the world increasingly demand products and services that are simultaneously good for the economy, for the environment, and for society—the triple bottom line of sustainable growth. Incorporating sustainability standards into the global value chains has become critical for companies to meet several objectives, including (a) ensuring minimum standards in management practices, including in such areas as health and safety of workers and

11. See the OECD Services Trade Restrictiveness Index, <http://www.oecd.org/trade/services-trade-restrictiveness-index.htm>.

minimum working age; (b) reducing business costs while maintaining sustainability of business operations; and (c) sourcing materials that are environmentally and social sustainable. These trends are therefore leading many companies to incorporate environmental, social, and governance requirements based on sustainability standards into contractual relationships with local suppliers. Suppliers able to meet those standards are more likely to enjoy increased demand and competitive pricing for their products.

The rising number of quality and safety standards is, in part, driven by concerns about information, coordination, and traceability, which are more acute in a world dominated by GVCs. For firms in LIDCs, meeting standards of global buyers and lead firms is often a necessary condition for being competitive. Compliance with sanitary and phytosanitary regulations is important, for example, for being competitive in agricultural trade. LIDCs have more than tripled their exports of high value-added foods—fruits and vegetables, fish, meats, and spices since 1980 (Jaffee 2006). Jaffee (2006) estimates that rejections at the border affect about 1% of agro-food trade. But far more inhibiting than border rejections for international trade are the myriad measures that preclude producers' countries from entering global markets at all. Disdier et al. (2008) find that technical regulations in agricultural trade significantly retard trade in some subsectors, but at the same time, well-designed regulations and conformity assessment procedures can facilitate trade (van Tongeren, Beghin, and Marette 2009; van Tongeren et al. 2010). Standards can also facilitate trade if they can provide information to potential suppliers and overcome problems of informational asymmetry that would otherwise stifle exports.

One of the most important issues is about assessing the costs of complying with international standards as compared with the opportunity cost of serving regional markets. This is the case because adopting higher standards involves greater difficulties and challenges for SMEs and LIDCs than for larger firms and rich countries. Increases in production and trade costs can originate from the required compliance with a multitude of standards and technical regulations. For this reason, Cadot and Malouche (2012) suggest that sequencing may be important. They suggest that LIDCs and SMEs may first need to expand into the regional market to gain scale and learning economies and then adopt stringent international standards. Jensen and Keyser (2012) further argue that international standards would be counterproductive if applied to milk products in the East African Community where small-scale producers account for the bulk of production; they argue that a better strategy is for each country to apply its own standards, work toward establishing mutual recognition to spur trade, and progressively improve regional standards as the industry reaches scale and consumers demand higher quality.

The costs for SMEs and firms in LIDCs are due to the complexity and heterogeneity of international standards to adopt. Private firms in GVCs—whether as part of intra-firm trade, captive suppliers, or modular trade—increasingly set and transmit information about private standards, enforce their application as a condition of purchase, and often have a role in their formulation. Firms in countries seeking to enter foreign markets will have an advantage if they can affiliate with a GVC with native leadership in that foreign market. Nevertheless, in the most tightly controlled GVCs, standards constitute an important barrier to new competition that can be surmounted only through affiliation with a competing chain. Moreover, the multiplication of environmental and social sustainability standards can also pose a barrier to entry to GVC participation by SMEs, even in those cases in which standards are voluntary in the country of end-product retail. The voluntary adoption of such standards by retailers with major market share applies a *de facto* obligation up the supply chain (for example, Walmart's commitment to sell 100% MSC-certified fish products). To complicate

matters further, private standard setting has gone beyond specifications for products to include production processes—often as firms have had to respond to concerns of consumers about labor conditions in factories. Brand-name companies have found themselves susceptible to considerable reputational risk unless they ensure that their suppliers provide decent working conditions. For example, consumer protests led Nike to establish the Nike Code of Conduct aimed at improving its contract factories. By 2005, the company disclosed its entire list of suppliers and in 2007, it made public its auditing tools (Mayer and Pickles 2010). More recently, Apple found itself under criticism for poor working conditions at Foxconn in China, one of the country’s largest employers and a sole supplier of iPads; Apple took swift action to address the critiques, and Foxconn changed many of its practices governing overtime work and wages (see Fair Labor Association 2012). Those experiences and several studies point to the fact that private standards have been most effective when a lead firm with a differentiated consumer product can exert power over its supply chain (Mayer and Gereffi, 2010). The World Bank Group’s experience in supporting LIDCs (for example, Bangladesh and Cambodia) to comply with standards suggests that a holistic approach, country focused and sustained over time, is necessary (Box 6).

At the international level, convergence of both public and private voluntary standards, through national or international guidelines, could help. Upstream firms supplying components to several destinations may have to duplicate production processes to comply with conflicting standards, or incur burdensome certification procedures multiple times for the same product. In food value chains, process standards adapted to one country’s requirements may render exporting to another country infeasible. Promoting the convergence of standards and certification requirements and encouraging mutual recognition agreements can go a long way toward alleviating the burden of compliance and enhancing the competitiveness of small-scale exporters. That is true for environmental and social sustainability standards as well as for quality and safety standards.

#### **Box 6. The World Bank Group engagement in Bangladesh**

The World Bank and the International Finance Corporation have been engaged with Bangladesh on improving social, labour, and environmental performance in the textile sector since 2005. The experience gathered over the past few years has reaffirmed the importance of having a broad program based on a number of targeted interventions. The World Bank Group’s approach was based on driving reform through five key actions: (a) engaging at the firm-level, (b) strengthening the services market (supplier base), (c) improving infrastructure, (d) improving the business environment, and (e) creating platforms for public–private dialogue. Specific interventions included, for example, the Partnership for Cleaner Textiles, the Textile Competitiveness Project, and multiple initiatives focused on environmental and social issues within special economic zones. Each of those projects harnessed the World Bank Group’s expertise across a number of areas, especially in developing stakeholder engagement and fostering public–private collaboration. As a result, progress has been made, and demonstration effects are becoming visible within and across GVCs. Bangladesh thus offers important lessons to other producer countries on the challenges of reform, including (a) how to encourage and incentivize firms to join initiatives and take action, (b) how to nurture domestic service providers, (c) how to develop capacity in banks to provide greater access to finance, (d) how to design projects with social inclusivity at their core, and (e) how to create mechanisms to sustain reform over the longer term.

### ***Conditions that enable SMEs to scale***

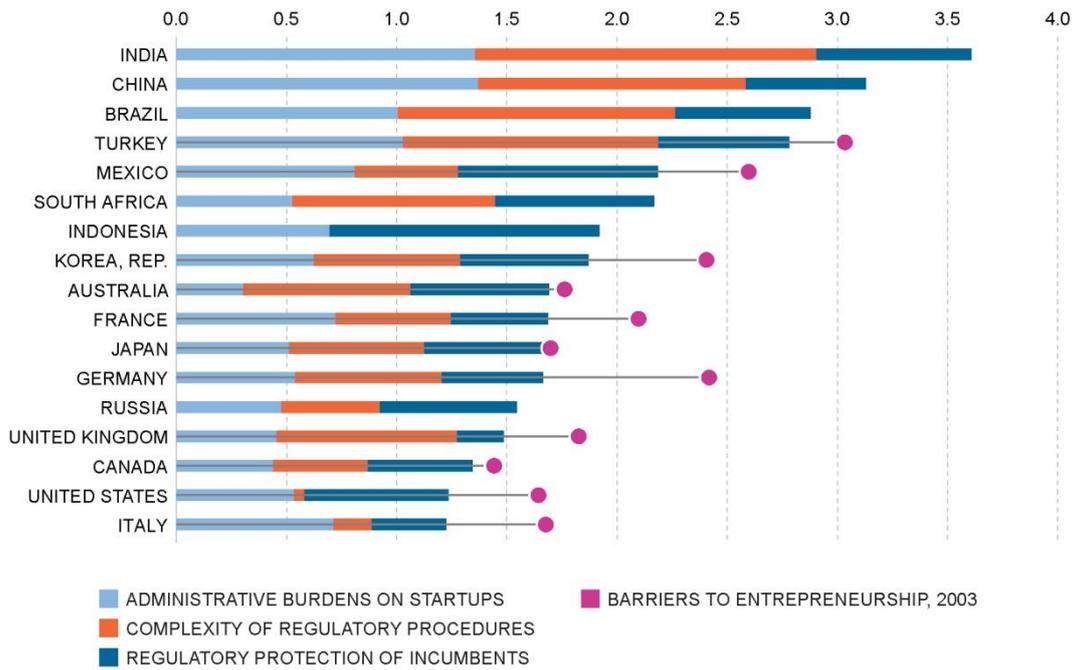
A range of external framework conditions also affects SMEs' capacity to participate in GVCs by affecting their ability to reach a sufficient minimum scale. SMEs often face higher obstacles to engage in international trade than large enterprises; and for this reason SMEs are often forced to conduct their business activities to the geographical area close to their production site. Restrictions to labor mobility and immigration constraints are one of the factors that affects the ability of entrepreneurs to enter international markets, scale-up their production, and exploit economies of scale. While some programs exist at the bilateral or regional levels to facilitate entrepreneurs' mobility internationally, no such schemes exist at the global level. Examples of ongoing initiatives include "APEC business travel card" that provides fast and efficient travel for business people within the APEC region, contributing to APEC's goal of free and open trade and investment. According to the APEC Policy Support Unit study on "The Impact of Business Mobility in Reducing Trade Transaction Costs in APEC", the ABTC scheme reduced transaction costs for ABTC holders by 38% between March-July 2010 and March-July 2011, representing a total savings of USD 3.7 million.<sup>12</sup> Total at-the-border immigration time savings experienced by ABTC holders for the period March-July 2010 through March-July 2011 was 62,413 hours, corresponding to a monetary value of USD 1.9 million. Another initiative is the UK program that allows non-EU entrepreneurs, who show the ability to invest at least 200,000 British pounds and have a business plan to create at least two jobs to obtain a temporary visa. In addition, a number of Canadian provinces launched programs to attract foreign investors, who are willing to invest substantial sums of money to create a new business, similar to America's Immigrant Investor visa program.

One other area where policy matters concerns firm entry. Lower entry barriers for new SMEs imply that new entrants can start off at a smaller size as they have more room for experimentation. For example, administrative burdens (red tape) and product market regulations can serve as barriers to entry and entrepreneurship, limiting the entry of young SMEs and restricting competition in the market. In addition, access to finance and capital market failures may particularly affect entrants and young firms and will also affect the future growth of firms through a less efficient selection of firms at entry (Andrews and Cingano 2014). While barriers to entrepreneurship have been lowered in many G20 countries over the past decade, they remain relatively high in several (Figure 33; OECD, 2015).

Recent work at the OECD shows that in many OECD and emerging economies, young SMEs (that is, start-ups) do not reach a sufficient scale. Figure 34 shows differences across countries in the extent to which young firms grow after their entry in the market. Although there are some differences across countries in the size of start-ups at entry, those differences are not particularly striking. However, the situation is markedly different when considering older businesses. For instance, on average, an older manufacturing business in France is half the size of one in the United States, even though start-ups in France are larger than those in the United States. In some countries, such as Italy and Japan, there is only a small difference between the size of start-ups and that of mature firms.

12. <http://www.apec.org/About-Us/About-APEC/Business-Resources/APEC-Business-Travel-Card.aspx>.

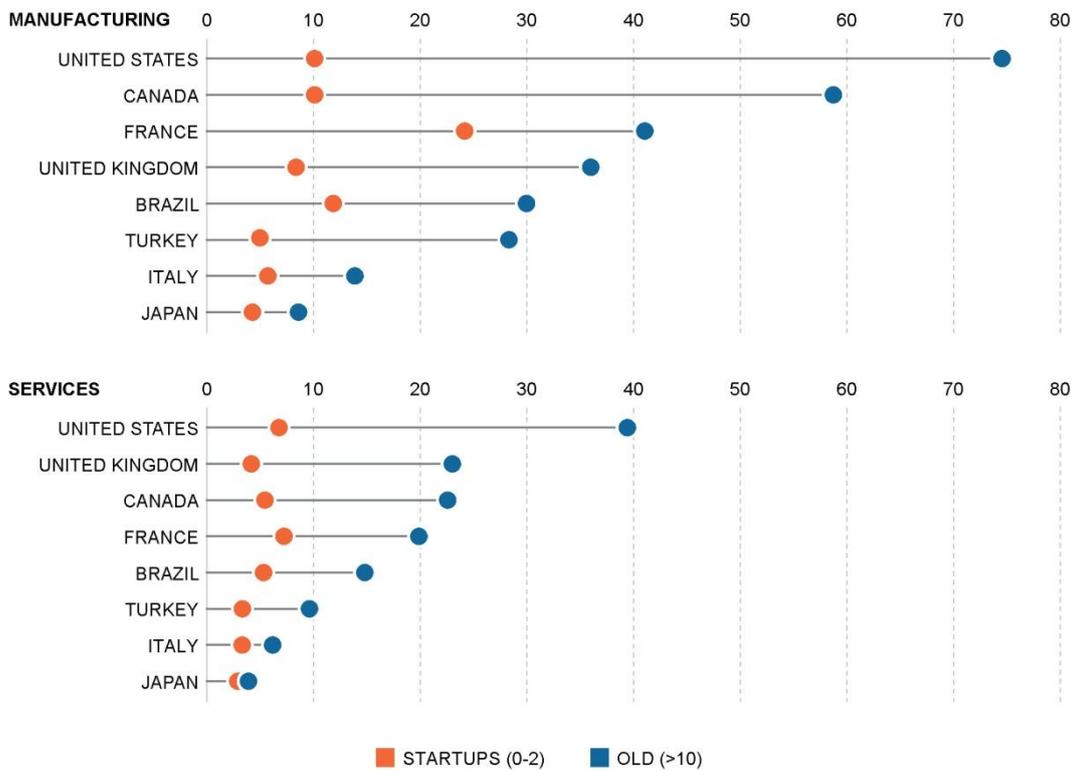
Figure 33. Barriers to entrepreneurship, 2013



Scale of 0 to 6 from least to most restrictive.

Source: OECD, Product Market Regulation Database, [www.oecd.org/economy/pmr](http://www.oecd.org/economy/pmr), June, 2015.

Figure 34. Average size of start-up and old firms across industries and across countries



Source: Criscuolo et al. 2014 and country submissions.

Policies that affect firm exit matter too, also because they limit the ability of entrepreneurial firms to wind down their activities and start again. Subsidies to incumbents and other policy measures that delay the exit of less productive firms can stifle competition and slow the reallocation of resources from less to more productive firms. Examples include regulations that are less stringent for incumbents relative to entrants (for example, the so-called new source bias in environmental and health safety regulations) and support measures that are more generous for more established firms (for example, R&D tax credits that do not have carry-forward provisions). Perhaps most important, bankruptcy legislation that excessively penalizes failure is likely to reduce incentives for the efficient exit of less productive firms, which would otherwise free up resources for more productive uses. Enabling firms that are not successful to exit more easily might also contribute to stronger growth prospects for very productive and successful businesses.

Although entry and exit are clearly important, post entry growth is even more critical for the potential scale that new SMEs can reach. Policies that (unwittingly) constrain the growth of young innovative SMEs should be assessed with particular care. Examples include both “sticks” (that is, regulations that affect only those firms above a certain size) and “carrots” (that is, support mechanisms for which only smaller firms are eligible). Further, policies that introduce distortions in factor (labor and capital) and product prices also affect post entry growth, imposing constraints on the reallocation of resources toward more efficient firms. Those economic distortions, which reflect the presence of heterogeneous policy treatment of firms in the same industry, can impose significant barriers to firm growth. In this context, resources can be “trapped” in small and inefficient firms, serving as a drag on productivity growth and innovation at the firm and sectoral level (Crisciuolo et al. 2014).

Thus, focusing on the conditions that enable start-ups to scale—if successful—or close down if not successful is therefore important for a more dynamic, innovative, and global SME sector, as it can help generate more SMEs that are able to compete in international markets. An important difference is the extent to which some countries are more successful than others in channelling resources toward innovative and high-productivity SMEs that have the best opportunities to engage with foreign markets in GVCs.

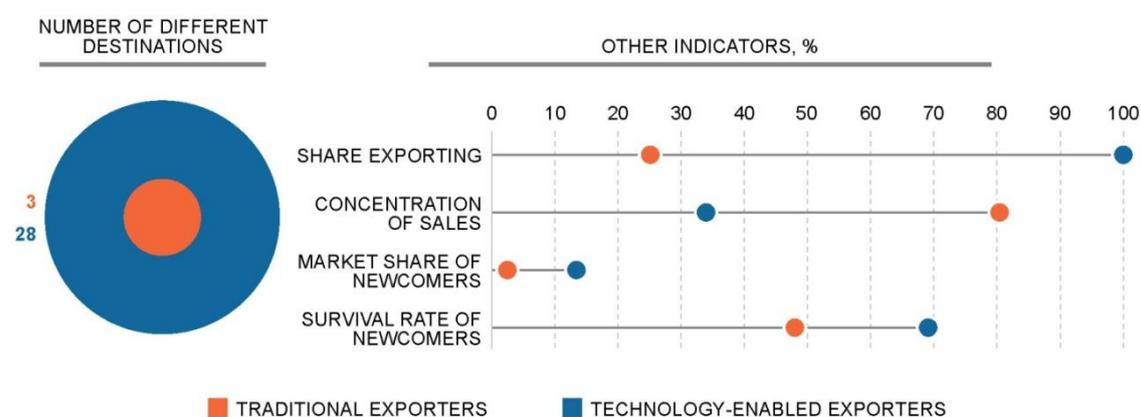
### ***Access to ICT Networks***

Although engagement of SMEs in GVCs remains difficult, there are signs that some SMEs are managing to internationalize thanks to better access to ICT, including the Internet and mobile telecommunications. The Internet dramatically reduces the cost of finding buyers for SMEs, both globally and domestically. Technology-enabled firms in LIDCs are much more likely to export, to export to more destinations, and to survive in the marketplace. Similarly, SMEs and new firms are likely to have a larger role in the export mix for technologically enabled trade than for traditional trade. Figure 33 shows comparisons between technologically enabled trade and digital trade for Jordan (eBay 2014); similar results are obtained for Chile, India, Indonesia, Peru, South Africa, Thailand, and Ukraine.

There is even some evidence on the emergence of so-called micro-multinationals, that is, small and young firms that are global from their inception. New ICT tools can facilitate cross-border e-commerce and participation in global markets for smaller and new entrants (for example, Skype for communications, Google and Dropbox for file sharing, LinkedIn for finding talent, PayPal for transactions, and eBay and Amazon for sales). Evidence shows that an increasing number of producers in LIDCs are selling using the Internet, either through their own websites or through web portals such

as eBay and Alibaba. Business-to-consumer e-commerce<sup>13</sup> reached USD 1.5 trillion globally in 2014 and is growing at 25% per year, even more rapidly in the Asia-Pacific and Middle East and North Africa regions (Table 2).<sup>14</sup> Business-to-business e-commerce may be even larger. Much of this trade is export trade. By 2020, global online sales will amount to USD 10 trillion, with annual growth of 20% for business-to-consumer and 7.7% for business-to-business transactions. Much of that growth will originate in emerging markets, where adoption of digital technology continues to rise rapidly.

**Figure 35. Jordan: Performance of technology-enabled vs. traditional exporters**



Source: eBay 2014, 33.

**Table 2. Global B2C E-Commerce Marketplace in 2012-17 (in billions of USD and average annual growth), by region**

	2012	2013	2014	2015	2016	2017	CAGR (%)
Asia-Pacific	301.2	383.9	525.2	681.2	855.7	1052.9	50
North America	379.5	461.0	482.6	538.3	597.9	660.4	15
Western Europe	277.5	312.0	347.4	382.7	414.2	445.0	12
Central & Eastern Europe	41.5	49.5	58.0	64.4	68.9	73.1	15
Latin America	37.6	48.1	57.7	64.9	70.6	74.6	20
Middle East & Africa	20.6	27.0	33.8	69.5	45.5	51.4	30
Worldwide	1,058	1,215	1,505	1,771	2,053	2,357	25

Source: eMarketer, cited in Suominen 2014.

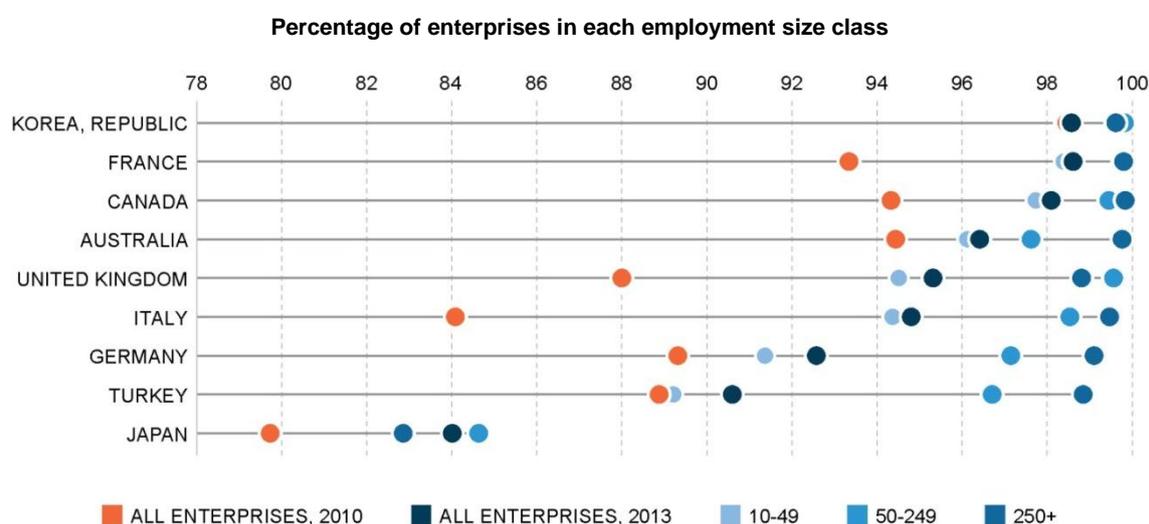
13. The terms *e-commerce*, *e-trade*, and *digital trade* are used interchangeably in this report.

14. See eMarketer, cited in Suominen (2014).

Enhancing access to ICT networks and enabling SMEs to engage in e-commerce can be an effective way for small firms to go global and even grow across borders where they can become competitors in niche markets. And some are already taking advantage of those approaches. For example, M-Pesa, a Kenyan mobile-money service is now active across Africa, but also in South Asia and Eastern Europe. This way, it is connecting Kenyan jewelry artisans and fashion designers to customers around the world through mobile phones and an online marketplace. In Nepal, Young Innovations develops mobile apps, software solutions, and data analysis tools, thus engaging in the services trade.<sup>15</sup> In Serbia, the Farmia exchange leverages the Internet to bring farmers and buyers of livestock closer together, in an innovative matchmaking, information exchange, and transport solution.<sup>16</sup> Innovations such as these, along with the many SME exporters using global platforms like eBay, Amazon and Alibaba, are able to substantially enhance their global reach and reduce the transaction costs of trade.

Thus, enhancing access of small firms to broadband networks can enable them to reach foreign markets more easily. Data and statistics available for OECD countries reveal a few important facts. In the Republic of Korea and France, almost all small and medium-size firms now have such access (Figure 36), but access is still below 90% in Turkey (for small firms, 10–49 employees) and in Japan. More important is the use that different firms make of such networks that matters, that is, on whether they are being used to engage in value chains or to outsource certain activities. In Italy, almost 40% of firms with 10–49 employees used cloud computing services in 2014, compared with 10% or fewer in France, Germany, and Korea. In Germany, almost 20% of firms with 10–49 employees in 2014 used supply chain management tools that automatically linked their business process to those of their suppliers, their customers, or both. In Italy, that number was almost 14%, but only around 10% of small firms in France and the United Kingdom used such tools.

Figure 36. Broadband connectivity, by size of firm, 2010 and 2013



Source: OECD 2014.

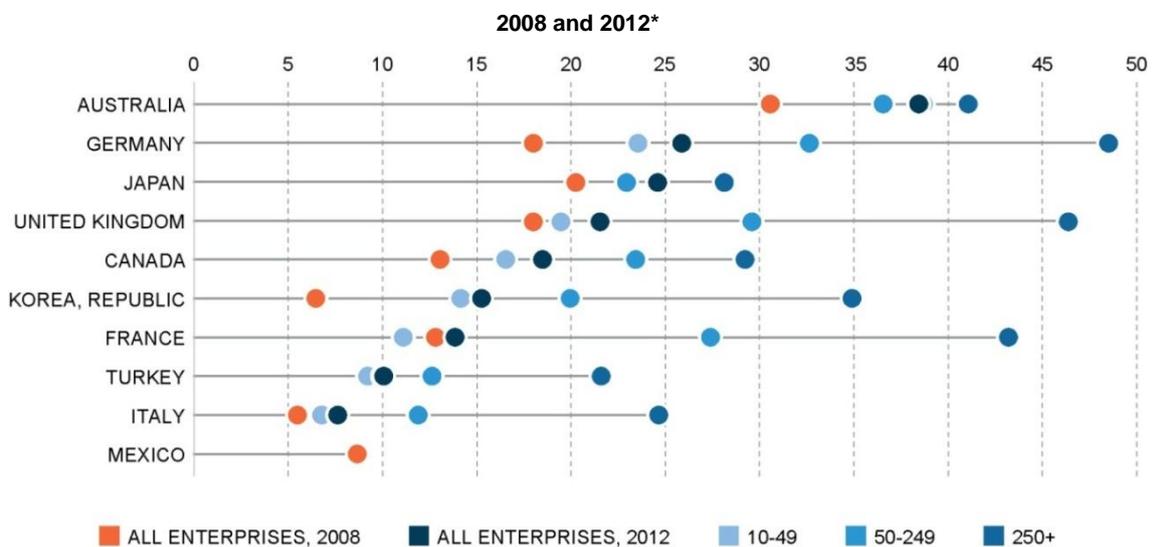
15. Young Innovations website, <http://younginnovations.com.np/>.

16. Farmia website, <http://farmia.co/>.

Access to ICT networks is key to enable small firms to engage in electronic commerce, a low-cost way for firms to engage in trade, either to buy or sell. In Australia, almost 40% of small firms (with 10–49 employees) are engaged in electronic commerce, compared with fewer than 10% of such firms in Italy and Turkey (Figure 37). Such engagement can contribute substantially to turnover; for example, in Korea, firms with 10–49 employees derived more than 28% of their turnover from electronic commerce in 2012, compared with only just over 2% in Italy. Increasingly, electronic commerce crosses borders, sometimes going beyond the closest neighbours. For example, out of all firms in Italy engaged in electronic commerce, 56% had sold to other EU countries and 38% to countries outside the European Union. In the United Kingdom, 34% of all firms engaged in electronic commerce had sold to countries outside the European Union, and some 24% of such firms in France and Germany (OECD, 2014). Such commerce goes beyond business-to-business transactions and also involves consumers. For example, over 60% of Canadian consumers had ordered goods or services over the Internet from partner countries in 2013, mostly from the United States, though 20% had also bought from the rest of the world. In Turkey, only 4% of consumers had bought from partner countries, and only 2% from the rest of the world (OECD 2014).

The high cost of ICT adoption and a lack of adequate financing help explain why smaller firms are less likely to adopt the technologies (OECD 2013a). Recent research points to a set of additional challenges: (a) reluctance of managers to technological change, possibly because of a lack of knowledge, time, or mistrust; (b) consideration of the Internet’s potential for cutting cost rather than for expanding commercial opportunities; (c) costs of ICT infrastructure; (d) lack of ICT skills and expertise; and (e) lack of motivation or resources to train employees or to recruit specialists (Consoli 2012).

Figure 37. Enterprises engaged in sales via e-commerce by employment size



\* As a percentage of enterprises in each employment size class.

Source: OECD 2014.

The Internet—and ICT more generally—lowers important barriers for SMEs and entrepreneurship, but many potential gains could be lost without changes to the basic framework conditions facing SMEs. One important component concerns the regulatory burden. The administrative burden generated by governments for starting and running companies can be significant, but online government portals for information on business creation and registration can help lower the burden. There are also still barriers that limit competition that need to be addressed in order for economies to fully benefit from the Internet. Regulatory and trade barriers persistently inhibit entrepreneurs from accessing domestic and foreign markets.

For firms in LIDCs, further challenges exist, as there are significant impediments to the ability of SMEs to fully exploit the Internet for exporting. Over 60% of the world's population is still offline, inhibited by shortcomings in infrastructure, lack of basic and digital literacy, low incomes and high costs of going online, and weak incentives (McKinsey & Co. 2013). Infrastructure issues include access to electricity and building the Internet backbone—submarine cables and satellites, Internet exchange points, and “last-mile infrastructure” (Schumann and Kende, 2013; OECD, 2015). In middle-income countries, many SMEs have Internet access but do not have websites through which they can do business, or they have limited understanding or capability of how to leverage the Internet as part of their business plan. For example, mobile application developers in Nepal struggle trying to launch their products in global app stores. According to studies from Sri Lanka, India, South Africa, Egypt, Argentina, and China, there are also a number of systemic and cultural barriers to digital trade—an important enabler of GVC participation, particularly in the services sector, faced by entrepreneurs. These barriers include, among others, (a) inadequate or costly telecom infrastructure, including Internet access; (b) lack of digital literacy and skills, resulting in an unqualified labour force and uninformed consumers; (c) unclear legal and regulatory systems and standards; (d) difficulties with accessing electronic payment systems; (e) complex and unreliable logistics and distribution networks; and (f) lack of “one-stop shop” facilities to ease digital trade. With regard to cultural barriers, digital trade can be hampered by (a) a lack of face-to-face bargaining or social interactions, (b) distrust of online businesses and concerns about privacy and fraud, (c) low use of e-commerce by competitors and supply chain partners, (d) unclear benefits from e-commerce, (e) language barriers, and (f) perception of e-commerce as a costly and impractical way to do business.

Reducing existing barriers to digital trade, and thus improving access to global markets, will take a holistic approach. Multilateral organizations are working with clients to improve regulatory clarity, invest in digital literacy and entrepreneurship skills, identify digital economy opportunities in export markets, improve payment systems, and integrate SMEs into value chains.

## 4. Policies to Promote SME and LIDC Participation in GVCs

### Preview of key take-aways

- With determinants of success in international markets ranging from productive capacity to infrastructure and services, to the business environment, to the assurance of efficient trade and investment flows and good connectivity overall, the scope of policy initiatives that can be helpful in addressing the challenges of GVC integration managerial skills and inefficiency for SMEs and firms in LIDCs is broad.
- Problems of human capital, including weak organization of production, can be addressed by policies that combine high-quality initial education with lifelong learning opportunities for all to help ensure that workers are well prepared for the future. Other useful approaches include (a) developing and implementing global platforms for sharing best practices and e-learning, with attention to vocational training and to all functions (including sales, marketing, knowledge of languages); (b) leveraging buyers to train local staff as an efficient means of knowledge transfer; and (c) harnessing informal entrepreneurship, particularly the informal businesses that seem to prevail in the downstream parts of GVCs in LIDCs and by SMEs; (d) reducing skills mismatch and facilitating resource allocation across the economy.
- Innovation and technology adoption involve product innovation, process and organizational change, and even marketing and branding strategies. With SMEs standing to face the most severe challenges, policies should include a number of complementary elements: from developing and implementing rigorous intellectual property legislation to providing assistance to SMEs and firms in LIDCs through electronic platforms that help domestic firms acquire foreign technology and commercialize their intellectual property and assisting SMEs in using freely available technologies or the acquisition of technological licensing agreements. Strengthening collaboration with universities and multinational firms within the national economy can also enhance access to knowledge and technology.
- Trade and trade-related policies remain important as GVCs magnify the cost of protectionist measures, and trade costs fall disproportionately on SMEs. Reordering priorities in trade policy, giving as much consideration to imports, upstream services, and timeliness as to exports and market access is important. That includes prioritizing import tariff streamlining and simplifying export procedures, which ensure a more level playing field for SMEs. The swift and effective ratification and implementation of the WTO Trade Facilitation Agreement and the improvement of services sector efficiencies are key priorities. Generally speaking, it is important to design reforms as coherent packages of hard and soft infrastructure of domestic and international initiatives.
- Efficient logistics is also important, with costs for SMEs estimated to be double the costs for large companies and structural difficulties for SMEs in remote areas of LIDCs in serving global markets with high-value products, such as fresh agri-produce. Effective approaches require assisting countries in designing and implementing customized solutions that are able to meet specific needs, operational circumstances, and national connectivity priorities, and providing a continuum of potential support activities, including logistics performance assessments, development of practical implementation plans, and identification of sources of financing for implementation plans. Domestic initiatives need to be matched with supporting initiatives in transit and destination markets to be effective, as some successful experience from Latin America has shown. Hence, international

cooperation and dialogue are important in guiding effective reform of logistics system and global physical connectivity.

- Beyond physical connectivity, ICT connectivity is also important and requires investment in infrastructure and policies to ensure access at competitive prices. Services sector efficiency improvements and collective efforts to establish global online platforms and facilitate SMEs' and LIDCs' access to ICT networks go a long way in (a) helping those firms internationalize; (b) fostering the emergence of "micro-multinationals" (that is, small and young firms that are global from their inception); and (c) leveraging ICT.
- With increased public and private focus on certification of quality and products and standards for the sustainable management of global value chains, but high costs of compliance for SMEs, there is a large role to be played by collective action. Mutual recognition and convergence of dominant private and public standards would reduce the costs and burden of certification and compliance for SMEs and firms in LIDCs. Moreover, a holistic, country-focused, multi-stakeholder approach to capacity building sustained over time is necessary. Global platforms for sharing best practices and learning are likely to be useful instruments for identifying solutions that maximize productivity and economic growth while supporting certification and compliance with standards.
- As markets provide in general less financing for SMEs willing to grow and innovate than socially desirable because of their smaller size and greater intangibility, innovative financial instruments are necessary to support young and innovative SMEs and firms in LIDCs in participating in GVCs. Financing that takes into account intrinsic know-how, pool of talent, distribution channels, business relationships, business model, and access to technology in valuation of repayment ability is important. For that reason, forms of equity financing and bank guarantees are likely to be better adapted to the needs of SME and LIDC suppliers to GVCs than traditional debt financing based on balance sheet data, past performance, current turnover, and liquidity as predictors of repayment ability. Promoting policies that include regional connectivity between LIDCs and non-LIDCs, public-private partnerships and engagement, creation of a private market for financial services provision, cross-border projects, and sectoral coverage is likely to help.
- Finally, a significant, and often overlooked, barrier to successful integration within Global Value Chains, particularly within LIDCS, is a poor statistical capacity, which prevents identifying correctly constraints, remedial actions, and their impact. Investment in better statistics across the gamut of the statistical information system, including both macro and, crucially, micro (firm-level) data is desirable.

The opportunities for small and medium enterprises (SMEs) and firms in low-income developing countries (LIDCs) to integrate within global value chains (GVCs); to increase productivity and upgrade products, processes, and functions within GVCs; and to transition to more productive activities and sectors depend not only on the types of GVCs in which they operate but also on external and internal factors that affect firms through their life cycle.

As emphasized in previous analyses submitted to the Group of Twenty (G-20) (see, in particular, OECD, WTO, and UNCTAD 2013; OECD, WTO, and World Bank 2014), openness to trade and investment, efficient services regulations, and open access to information flows through, inter alia, efficient telecommunication services are a precondition for success in international markets; however, alone they are insufficient. External constraints may also originate from an unfriendly business environment, the firm's access to capital, labor, technology, and other inputs.

Internal constraints also matter a lot, including the capabilities of the entrepreneur to innovate and adopt new technologies, the management and the organization of the firm, and the capacity of the firm to tap into relevant networks. In short, for the wider private sector to thrive from countries' participation in GVCs, appropriate policy frameworks are needed that allow countries and firms to capitalize on their existing productive capacities and to create spillover benefits from foreign investment, knowledge, and innovations. What follows builds on the previous two reports to the G-20 and focuses in addition on elements of critical importance to SMEs and LIDCs.

Successful GVC participation by firms from LIDCs and SMEs from rich countries and LIDCs alike requires that reforms are implemented as coherent packages. It also requires a sustained, coordinated, and long-term approach, based on the design of incentive mechanisms that are tailored to the specific needs of countries, types of firms, and value chains. Two sets of concurrent actions are necessary: furthering openness and ensuring that the benefits trickle down (to SMEs) and across (to LIDCs), while also building the necessary supporting measures for maximizing dynamic gains.

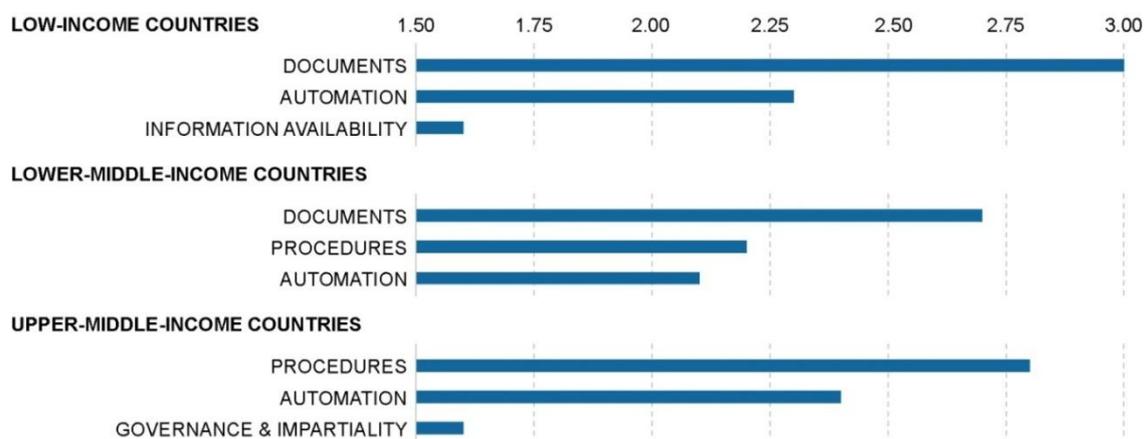
### Furthering international trade openness

Trade-related reforms have been at the center of the agenda of G-20 trade ministers in recent years. But much still needs to be done and—for many countries—that includes reordering priorities on trade policy. Facilitating imports and ensuring timeliness in the two-way flows of goods are as important as facilitating exports and market access. Improving trade-related infrastructure and streamlining border management are obvious priorities, but for many economies, improving the efficiency of the services sector, increasing competition in the domestic economy, and addressing nontariff measures that unnecessarily raise the price of imported inputs are equally important.

#### Trade facilitation

Trade facilitation has become central to the economic agenda of every world region. Tackling some of the key barriers that saddle traders in LIDCs with high trade costs and long delays will result in increased bilateral trade, greater export diversification, enhanced foreign investment, and improved national competitiveness.

Figure 38. Trade facilitation measures: Potential cost reduction in goods trade, %



The Organisation for Economic Co-operation and Development (OECD) has developed a set of trade facilitation indicators that identify areas for action and enable the potential impact of reforms to be assessed. These indicators cover the full spectrum of border procedures, from advance rulings to transit guarantees, for 133 countries across income levels, geographical regions, and development stages. Analysis shows that trade facilitation measures can benefit all countries in their role as exporters, as well as importers, allowing better access to inputs for production and greater participation in GVCs. Analysis of the indicators also shows that comprehensive trade facilitation reform is more effective than isolated or piecemeal measures (Figure 38). The potential reduction in trade costs of all the trade facilitation measures adds up to almost 15% for low-income countries, 16% for lower-middle-income countries, 13% for upper-middle-income countries, and 10% for OECD countries.

The Trade Facilitation Agreement (TFA) reached in Bali in 2013 by the members of the World Trade Organization (WTO) is an important step toward facilitating trade. The TFA allows WTO members to customize implementation of the agreement according to their capacities and technical assistance needs, along with a better support structure to help target, monitor, and coordinate implementation. To date (May 2015), only Singapore, Hong Kong, the United States, Mauritius, and Botswana have lodged their ratification protocols with the WTO. The WTO TFA will come into force when two-thirds of WTO members have lodged their protocol of ratification. The target is the WTO Ministerial Conference in Kenya in December 2015. That is an ambitious target, but with the European Union (EU) likely to ratify the agreement soon, there will be a big boost toward the two-thirds needed.

An early implementation of the TFA is not only a sign that the implementation objective of the G-20's 2015 agenda has been achieved but also a "win-win" situation for all countries, with the benefits falling disproportionately to LIDCs as their traders typically face significantly higher costs that reduce their capacity to compete in regional and international markets (as demonstrated by evidence in Figure 31). For this reason, the World Bank Group has been a major supporter of trade facilitation for many years and has financed more than 120 projects and many technical assistance activities that are closely aligned with the measures included in the TFA. The World Bank Group's current trade and integration portfolio totals USD 13.3 billion with over half devoted to trade facilitation. Results have been aimed at improvements in areas such as customs and border management, streamlined documentary requirements, trade infrastructure investment, port efficiency, transport security, logistics and transport services, regional trade facilitation and trade corridors, transit, and multimodal transport. This type of concrete, practical assistance is critical to improving the national competitiveness of the poorest countries in the world.

Although all measures covered by the TFA offer genuine benefits to the trading community, experience suggests that regionally integrated facilitation frameworks similar to the EU are also necessary. Moreover, early efforts to strengthen stakeholder coordination through the establishment of national trade facilitation committees can have a very positive impact on building and sustaining reform momentum. The OECD finds that in the Philippines and Indonesia, for example, reforms in border agency cooperation rendered clearance processes less opaque, enabling traders to plan more confidently, supporting just-in-time processes, and reducing the costs associated with uncertainty (OECD, WTO, and World Bank 2014). More in general, stakeholder coordination has proved critical to supporting implementation of complex, long-term, projects, such as establishing trade information portals and single-window regimes. In line with this thinking, the World Bank Group is focusing increased attention on establishing appropriate national governance and coordination mechanisms and on the design phase of projects to ensure appropriate sequencing of reforms.

The international community, multilateral organizations, and the G-20 can do a lot to support LIDCs and their SMEs to maximize benefits from ongoing trade facilitation efforts. The international community can help by supporting LIDCs in taking an active role in the multilateral and regional negotiations, as well as by assisting LIDCs in effectively implementing all aspects of trade facilitation agreements in ways that ensure genuine trade facilitation benefits for the trading community. It can help in the following ways:

- Implement trade facilitation reforms as coherent packages of hard and soft infrastructure. The international community can further foster strategies designed to assist countries in effectively implementing all aspects of multilateral and regional trade facilitation agreements in ways that ensure genuine trade facilitation benefits for the trading community, rather than mere compliance with the legal text. Development institutions should respond as rapidly as possible to demand from LIDCs, with customized approaches to meet specific needs, operational circumstances, and national trade facilitation priorities, providing a continuum of potential trade facilitation support activities, aligned with the principles of the agreements. Those include on-the-ground gap assessments to validate needs, project design assistance to support the development of practical implementation plans, and, where appropriate, identification of sources of financing for implementation projects; support for establishing and strengthening national trade facilitation committees; provision of short- to medium-term technical assistance and capacity-building support to implement specific measures and build implementation momentum; and support for regional solutions to support and facilitate regional integration.
- Facilitate information on costs, benefits, and implementation challenges and provide practical guidelines on establishing technical support and capacity building for reform, which are an important and concrete way to help LIDCs and SMEs. That includes providing countries with practical guidelines on establishing a technical support mechanism for negotiators in agreements; including real-time analysis and advice on content and cost implications of proposals tabled (see, for example, the *Trade Facilitation Support Guide* developed by the World Bank Group). It also includes providing practical information to countries and their firms on potential costs and implementation challenges of different agreements (see, for example, the in-country assessments by the World Bank Group, International Monetary Fund, and World Customs Organization).
- Enhance cooperation and coordination between development partners, at the multilateral, regional, and bilateral level to avoid duplications and to support regional activities of trade facilitation and programs integrating both national and regional aspects. Ongoing efforts in these areas include the World Bank Group support to regional bodies, including the West African Economic and Monetary Union (UEMOA), Central African Economic and Monetary Community, Common Market for Eastern and Southern Africa, and Economic Community of West African States in Africa and the Association of Southeast Asian Nations in East Asia. In the case of UEMOA, support started with a TFA needs assessment of each of the eight member states. In turn, this new program will drive a series of technical assistance activities at the regional and national levels. Regional activities are particularly useful if directed toward improving the efficiency of gateway ports, streamlining and harmonizing land border-crossing procedures, revision of legislation, and—given the importance of efficient transit arrangements to landlocked LIDCs—improving the operation of transit regimes through regional integration and trade corridor projects.

- Identify practical means for harnessing private sector contributions to the implementation process of trade facilitation initiatives. This may include partnering with major industry associations to identify and support trade facilitation–related initiatives that provide a strong demonstration effect. It also means contributing to forums, such as the Global Facilitation Partnership for Trade and Transport that bring together international and regional organizations as well as private sector associations and companies interested in facilitating trade.
- Conduct analytical work for monitoring and evaluating the performance and design of policy. The OECD heralds such work with a variety of tools. The World Bank Group prepares the Logistics Performance Index and the Doing Business survey, which provide focused analytical tools, indicators, and data sets to assist both national policy makers and development partners in identifying and tackling key trade facilitation bottlenecks. These tools are used to guide efforts in the design and implementation of targeted trade facilitation projects.

### ***Logistics infrastructure and services and policies affecting their use***

As the discussion above evidences, trade facilitation alone cannot lead to an effective and substantial strategy of participation in higher value-added trade and investment attraction, particularly by SMEs and firms in LIDCs. It can be only an element of a wider strategy. Needs for infrastructure and ancillary services also need to be developed. Infrastructure needs cover areas as diverse as the development of ports, roads, cargo-handling facilities, and broadband and other information and communications technology (ICT) systems. Experience shows the complementarities between hard and soft interventions, especially in low-income regions. For example, improvements in trade facilitation are implemented more easily with physical investment to develop or rehabilitate international transport infrastructures, such as road or rail corridors.

Logistics infrastructure and efficiency are now high on the agenda of policy makers, private firms, and international organizations. In this case, as in the case of trade facilitation, reforms must be implemented as coherent packages, and they require sustained, long-term attention. There is not one unique institutional arrangement for countries to implement logistics-related reforms. Policy making is a responsibility shared among government agencies in charge of transportation policies and investment, commerce, industry, and customs and border management. No country has a ministry for logistics. Instead, a collective framework that includes the private sector is important for consistent implementation. Canada, China, Finland, Germany, Malaysia, and Morocco have all introduced councils or similar coordination mechanisms.

The focus and leadership of logistics reforms depend on local circumstances. In advanced and emerging economies, transportation agencies have often led the coordination, increasingly with an environmental focus. In LIDCs, the agencies in charge of commerce and economic development have also played a major role in promoting the facilitation and logistics agenda.

Also in this area, the international community, multilateral organizations, and the G-20 can help with a combination of hard and soft interventions, including the following:

- Information on costs, benefits, and implementation challenges and practical guidelines on establishing technical support and capacity building for reform.
- Assistance to countries in effectively implementing all aspects of logistics and transport reform in ways that ensure genuine benefits for the trading community and for SMEs. This implies customizing approaches to meet specific needs, operational circumstances, and national

connectivity priorities, providing a continuum of potential support activities, including (a) logistics performance assessments, (b) development of practical implementation plans, (c) identification of sources of financing for implementation plans, and (d) support for the chosen domestic institutional arrangement to implement logistics-related reforms.

- Cooperation and coordination between development partners, including multilateral institutions, regional development banks, donors, and other stakeholders to ensure effective coordination and to minimize the possibility of needless duplication.
- Identification of practical means for harnessing private sector contributions to the implementation process of reform initiatives in the logistics sector, including partnering with major industry associations and key players in logistics.
- Analytical work for monitoring and evaluating the performance and design of policy is also important and should continue to be developed.

### **Trade policy**

Trade policy matters. Along with domestic reform, it is a powerful engine of GVC integration, provided that it responds rapidly and effectively. “Trade policy as usual” needs some adjustments when thinking about GVCs and participation in the latter by SMEs and LIDCs.

GVCs are a new lens that underscores the importance for policy makers to appreciate fully the importance of the synergies between the core areas of trade and investment regulation and well-tailored complementary measures. In most countries, agencies with a role in setting and enforcing regulation that may affect value chain and supply chain efficiency are many. They also often legislate and implement regulation in an uncoordinated manner. That happens because regulators set policies with domestic regulatory objectives in mind. As a consequence, international coordination in these matters is not necessarily able to foster GVCs’ production and supply chain trade. Fear that international coordination conflicts with domestic regulatory objectives may explain why existing trade agreements, investment agreements, and similar forms of international cooperation are rarely designed to foster GVC participation (Hoekman 2014).

The G-20 and the multilateral organizations can help in identifying and lifting the key binding constraints by advocating for a multistakeholder and pragmatic approach to trade policy reform that tackles the so-called deep issues. But efforts are needed also in the traditional trade policy issues. In the absence of multilateral reductions in tariffs, LIDCs should seek trade agreements on tariffs, tariff escalation, and standards harmonization with other LIDCs. Previously, LIDCs focused on securing trade agreements with developed-country markets. Today, the trade of intermediate goods in regional and global chains is often between LIDCs, and emerging economies are becoming important end markets. Import and export tariffs between these countries continue to be relatively high, and these countries are also plagued by a variety of nontariff measures, including quantitative restrictions, technical barriers to trade, and difficulties in allowing harmonization, mutual recognition, and low compliance costs. They sometimes restrict trade unnecessarily and in these cases, simplification and liberalization should be a priority.

Many relevant trade- and investment-related actions to foster participation in GVCs are of a domestic nature. Hence, unilateral action is crucial. Fortunately, most GVC-enhancing reforms will also have a positive impact on non-GVC trade, and on overall competitiveness and economic development more generally. But international cooperation matters greatly too.

Advancing cooperation at the international level requires addressing the regional versus multilateral dimension. Regional trade agreements are important ways to push forward deep integration agendas that are particularly beneficial to SMEs and LIDCs. The OECD (2012) provides abundant “case story” examples of the importance of regional trading initiatives. For example, the Greater Mekong Subregion undertook to enhance trade by constructing bridges and roads in conjunction with its Cross-Border Transport Agreement (CBTA) in 2006 among Viet Nam, Lao PDR, and Thailand. The CBTA covered nearly all aspects of goods and services flows—including customs inspections, transit traffic, and road and bridge design. As a consequence, average trade value rose by more than 50%—to USD 142 million in 2006–07 from USD 93.5 million in 1999–2000. Average travel times were cut by half along the corridor. Time spent crossing selected borders also fell by 30–50%, and the average number of vehicle crossings per day increased. Finally, in June 2009, a CBTA allowed issuance of licenses for some 500 trucks to operate along the corridor without trans-shipment fees. Brühlhart and Hoppe (2012) recount a case where potential regional trade has not yet materialized, precisely because of the absence of CBTA-type collaboration. Kinshasa-Brazzaville is the third-largest urban agglomeration in Africa and is destined to be the largest by 2025. But it has a river border running through it. Republic of Congo imports from the Democratic Republic of Congo are a mere 1% of its total, and daily cross-river passenger travel is only 20% of the volume of passenger traffic through the Berlin Wall in 1988. The authors calculate that the transit costs would be equivalent to charging Californians commuting from Oakland to San Francisco (about the same distance) USD 1,200–USD 2,400 per trip.

More recent regional trade agreements often contain provisions on government procurement, arrangement of business conditions for investment, or the protection of intellectual property rights. They can facilitate closer cooperation and continuous exchange between public officials from the countries involved to reduce barriers to commerce. These provisions often have a higher payoff in trade expansion than simply removing tariffs. Jensen and Tarr (2011), using CGE (computable general equilibrium) prospective analysis, found that mutual reductions in tariffs as part of a comprehensive free trade agreement between Armenia and the EU would provide some gains for Armenia, but these were dwarfed by actions that would liberalize services, reduce border costs, and harmonize standards. What is critical to emphasize in our present context is that regional trade agreements should serve as a means of achieving deeper integration while continuing to move forward at the multilateral level.

Other important areas of international cooperation include promoting coherence between preferential trade agreements (PTAs) and the WTO and enabling LIDCs’ GVC participation through Aid for Trade. Priority areas for the latter include financing investment in trade-related infrastructure; reducing standards compliance costs, in particular for SMEs; improving customs operations and border crossings; and enhancing regulatory capacity, particularly in the services sector.

Possible tensions in the international arena are however possible. Different interests may arise, as some countries seek either to preserve their domestic value added or to enact policies of indigenization. Areas of tension may include tariff escalation policies, subsidies, export restrictions, local content requirements, intellectual property rights, competition policy and regulations on state-owned enterprises, and level of appropriate standards. Moreover, as GVCs move forward to the next generation, responding to the push of “next generation” technologies, additional problematic issues may arise. For example, they may include the balance between privacy and data trade opening, the rules on intellectual property protection and diffusion of new technologies, or cross-border spillovers of domestic regulations. An example of the latter is provided by the recent French law allowing

extraterritoriality in the prosecution of crimes committed by French corporations in their supply chain abroad.

### ***The services liberalization agenda***

The shift in manufacturing worldwide determined by the increasing dominance of GVCs has been accompanied by important changes in the services sector too, underscoring the importance of the nexus of goods, services, and foreign direct investment (FDI) (section 1). Service trade and the role of services in boosting the economy as a whole have increased: more than 60% of the current stock of global FDI is in services. The composition of services has also changed, with modern services gaining in importance at the expense of traditional services. FDI is also a main engine of growth for service trade. Mode 3 (delivery through foreign affiliates) covers about 50% of overall service trade (Saez et al. 2015). Not only has service trade increased over time, but services have also increased their importance as a determinant of competitiveness in the economy as a whole, and SMEs integrate GVCs predominantly as service providers (Section 2). Countries with a higher content of services in the downstream economy are also those producing more complex goods (Saez et al. 2015).

The explosion of services and service trade is due to falling trade and investment barriers as well as new digital technology, which have reduced costs for service delivery across borders and transformed many goods into services (Taglioni and Winkler, forthcoming) The deregulation in air and road transport, the abolition of antitrust exemptions for maritime liner transport, the privatization of ports and port services, and the divestiture and breakup of telecommunications monopolies are, according to Hoekman (2014), the main examples of regulatory measures that have reduced the cost of service delivery across borders. However, substantial barriers remain in some of the services sector that act as essential enablers in the geographic dispersion of GVCs. Liberalization of those services that allow connecting competitively to the world economy and that allow more efficient access to resources is a priority. Such services include ICT, supply chain management services (to reduce inventories, shorten lead times, and enable faster customer response), and improved logistic services.

The policy agenda in services should emphasize the relevance of services liberalization for competitiveness in trade and GVCs as well as focus on regulations and requirements pertaining to areas critical to successful GVC participation, such as the following:

- Cross-border transfer of data and money
- Costs of telecommunication services
- Competitiveness and costs of port and logistics services
- Air transport regulations

### **Ensuring that openness benefits reach beyond large firms and the G-20 to SMEs and LIDCs**

Many reforms that are essential to raising global welfare will need to take place in some of the world's poorest countries. The G-20 ministers' discussion provides an excellent opportunity to consider how trade-related reforms can lead to benefits in economies outside the G-20 and how this can trickle down to SMEs both at home and in input-supplying countries. There are a number of measures that G-20 and the multilateral cooperation can foster and promote.

### **Quality and product certification and compliance with international standards**

Mutual recognition or convergence of both public and private voluntary standards, through national or international guidelines, could help. Upstream firms supplying components to several destinations may no longer incur burdensome certification procedures multiple times for the same product or have to duplicate production processes to comply with conflicting standards. In food value chains, for example, process standards adapted to one country's requirements may render exporting to another country infeasible. Promoting the convergence of standards and certification requirements and encouraging mutual recognition agreements can go a long way toward alleviating the burden of compliance and enhancing the competitiveness of small-scale exporters. That is true for environmental and social sustainability standards as well as for quality and safety standards.

Improving standards requires much more than simply adopting and enforcing new rules. It requires long-term commitment and the incentives and mechanisms tailored to the particular needs of specific countries and specific value chains. The international community should foster or trigger a “race to the top” by developing a common approach for upward graduation through standards implementation. That will require a holistic, country-focused, multi stakeholder approach to capacity building, sustained over time, including the following:

- Engagement of the private sector (local suppliers, global leads, and buyers)
- Creation of a local supplier base for advisory services
- Improvement of infrastructure
- Improvements in the business environment.

Acting at those many levels requires the active involvement of many actors:

- *Partnerships.* The G-20 could work to strengthen global partnerships with governments, businesses, consumer and labor groups, and international organizations. An inclusive partnership approach opens the door to the best insights and most successful models from those with experience in raising standards, improving productivity, developing skills, and spreading prosperity through participation in GVCs. The Better Work program—a partnership between the World Bank Group's International Finance Corporation and the International Labor Organization—exemplifies how partnerships can make an impact. Further, the G-20 could provide support to B-20 initiatives geared to strengthen SMEs' ability to comply with international standards. For example, providing support to set a MNE working group within the B-20 Trade or SME & Entrepreneurship Task Force with the objective of elaborating a blueprint on responsible and inclusive GVCs with pledges to provide SMEs the tools and knowledge required to their successful compliance with international standards could be very useful.
- *G-20 countries.* These countries are showing increasing interest in helping LIDCs identify growth and development opportunities from meeting high international standards for goods and services. But it is their knowledge, as much as their financial assistance that can make the difference. Many of their governments have experience to share on how to establish regulatory measures and policies that support higher standards and foster productivity and shared value in GVCs. Being home to many of the world's leading firms, enhancing the capacity to comply throughout global production chains helps all parties. Being home to the largest consumer markets, they also have a role to play in ensuring transparency and awareness on challenges faced by SMEs and LIDCs in joining GVCs and leveraging them for economic and social development.

- *LIDCs*. Increasingly aware of the triple bottom line of sustainable growth, many countries have adopted legislation to protect workers and the environment and are working to strengthen the enabling environment. But enforcement offices generally have limited resources; they need the know-how, the skills, and the capacity to phase in adherence to internationally recognized standards. The process can be self-perpetuating as the likelihood of countries to comply with standards increases with greater revenues. Prioritizing attraction of GVCs whose business models allow greater value-added growth may help, by generating the economic space to implement standards.
- *Private sector and civil society*. Lead firms' emphasis on quality and standards represents an important area for potential spillovers in the domestic market. Many of these firms are already providing technical assistance to local suppliers and producers to improve activities along production chains—the business case is strong. But their focus is often on the legal coverage and a narrow gamut of issues. Meanwhile, civil society's advocacy campaigns and technical assistance help mainstream sustainable practices and adherence to international standards. These organizations also help by providing innovative solutions to difficult problems, especially in bringing transparency and in monitoring and evaluating progress. The G-20 could help by endorsing initiatives by non-state actors.

### ***Addressing credit constraints***

Although production in GVCs is taking place at international and often global scale, financing economic activity is still largely done at national scale, and in a fragmented way with little continuity across financial service providers and along the value chain. Moreover, SMEs face specific challenges. Size and intangibility play against their creditworthiness. Markets provide in general less financing for SMEs willing to grow and innovate than socially desirable, while routinely banks rely on balance sheet data, past performance, current turnover, and liquidity as predictors of repayment ability.

Because of these constraints and challenges, policy action may be helpful. This report, for example, highlights the need for financing that takes into account intrinsic know-how, pool of talent, distribution channels, business relationships, business model, and access to technology in valuation of repayment ability. Forms of engaged, patient equity financing and bank guarantees are likely to be preferred to traditional debt financing. Finally, promoting policies that have a multipronged approach may also be helpful. Results from a recent survey carried out by the Italian government seeking to promote the internationalization of SMEs (SIMES 2012) offer insights as to the needs for overcoming bottlenecks to the financing of GVC participation by SMEs. The ingredients of the approach suggested by the Italian agency SIMES include (a) promoting a policy that has regional connectivity, (b) connecting more than one region together (an LIDC and a non-LIDC region), and (c) forming a public-private partnership to fix all the objectives and responsibilities and that defines eligibility criteria, cross-border projects, and sectorial coverage, entry, and exit.

### ***Maximizing dynamic gains through the broader set of productivity-enhancing policies***

Although the policies mentioned before create the necessary framework conditions for SMEs and LIDCs to participate in GVCs, their effects may not be sufficient to ensure that firms in LIDCs will be successful in participating in GVCs, as the broad key challenge for suppliers that want to integrate GVCs or that want to strengthen and upgrade their participation in GVCs is to increase productivity.

Fostering productivity growth is, however, challenging and requires interventions in multiple areas simultaneously to address both internal and external constraints to firm-level efficiency (OECD,

2015). These interventions are geared to have a positive impact on the *within* and *between* components of productivity growth. The within component is related to individual firms becoming more productive, that is, increasing the amount of output they produce with a constant amount of input, by strengthening their internal capabilities; whereas the between component is associated with the reallocation of factors of production, such as labor and capital, toward more efficient firms, forcing inefficient firms to exit the market and creating the right market conditions for productive firms to thrive. Recent OECD work points to three areas that are particularly important for productivity growth (OECD, 2015): (i) fostering innovation at the global frontier and facilitate the diffusion of new technologies to firms at the national frontier; (ii) creating a market environment where the most productive firms are allowed to thrive, thereby facilitating the more widespread penetration of available technologies; and (iii) reduce resource misallocation, including skill mismatches. Reviving diffusion and improving resource allocation has the potential to not only sustain and accelerate productivity growth but also to make this growth more inclusive, by allowing more firms, notably SMEs, to reap the benefits of the knowledge economy.

Productivity-enhancing policies, which are crucial to make the SMEs involved in GVC activities resilient to external shocks, are frequently part of the national agenda. However, coordinated efforts at the regional level can pay significant rewards as GVCs are usually a regional phenomenon. A key policy that increases firm productivity is fostering innovation. Given its cross-cutting and systematic nature (OECD, 2015), the innovation agenda requires coordinated interventions both nationally and regionally, with multiple actors, ministries, and agencies participating in the policy making and implementation of reforms. It also needs organizational and institutional change to be successful (Fagerberg et al. 2009).

Policies oriented toward promoting innovation should focus on building comprehensive innovation ecosystems and should operate at different levels: (a) improving framework conditions by, for example, promoting product market competition, strengthening intellectual property rights systems, and financing innovation (including seed and venture capital funds; (b) building innovation capacity and innovation skills through, for example, creating research and technology organizations, quality and technology transfer systems, and training centres; and (c) facilitating connectivity and system articulation by, for example, supporting public-private collaborations for innovation, articulating actors in the technology transfer process, facilitating venture acceleration networks, and promoting the creation of clusters and knowledge spillover effects.<sup>17</sup>

Improving access to digital networks is of particular importance, given its dual role in enhancing productivity and strengthening SMEs' access to global markets. Although considerable progress has been made in strengthening access of emerging and developing economies to communications infrastructure, being connected is only the first step (OECD 2013a; OECD, 2015). A reliable and competitive offer has to be available in markets before the Internet economy can truly take root, which requires policies focused on competition and access. Emerging economies can benefit from new technological developments, however, such as mobile and cloud computing, that can help overcome lack of resources and infrastructure at the domestic level. However, access to cloud resources requires the build-up of domestic infrastructure as well as policy frameworks, for example, to ensure privacy and security. Standardization is also key to the further deployment of cloud services

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17. A successful example of a regional initiative oriented toward fostering business innovation is the Western Balkans Enterprise Development & Innovation Facility, funded by the EU and implemented in cooperation with the World Bank Group, OECD, European Bank for Reconstruction and Development, and European Investment Bank, with the purpose of improving access to finance for innovative SMEs in the region.

in emerging and LIDCs. Finally, ICT skills adapted to the new dominant technologies have to be developed. They include not only hard-core technical skills but also soft skills and the ability to navigate the complex and ever-growing opportunities, open-source technologies and services, and information available at the global scale.

Given the range of policies that affect innovation across the government, close coordination and appropriate governance mechanisms are essential too, as is monitoring and evaluation to ensure a process for policy improvement and learning over time (OECD 2015).

Further, the productivity agenda should also focus on facilitating access to talent at both the managerial and workforce levels. SMEs in LIDCs are frequently plagued by weak managerial capacities and inefficient organization. Those weaknesses are reflected in low levels of productivity, a suboptimal use of their workforce, waste of materials and inputs, and low efficiency at the level of the production floor. These firms also suffer from the lack of a skilled workforce, thus they are incapable of conducting both simple and complex GVC activities at competitive prices. Policies oriented toward addressing both issues include interventions geared to improving managerial skills and fostering a long-term entrepreneurial view, increasing the supply of skilled workers in sectors where there is excess demand, and improving workforce skills while reducing skill mismatch. General business education and training programs are the most popular components of entrepreneurship support programs to foster firm productivity. Vocational training, direct financial assistance to local initiatives aimed at fostering work-based learning, facilitation of public–private dialogue to incorporate private sector needs into vocational training and university curricula, and support for the development of sector skills councils that help match firms with employees also contribute to reducing the skills mismatch and enhancing firm productivity.

Finally, the agenda should also consider the elimination of economic distortions in factor and product prices, which affect firms' optimal input choices and end up facilitating the survival of large and inefficient firms. These distortions, which reflect heterogeneous policy treatment of firms within a sector, create significant dispersion of firm performance, even within very narrowly defined sectors. Firm productivity dispersion, a measure of allocative inefficiency, negatively affects aggregate productivity at the sectorial and economy levels, diminishing the impact of productivity-enhancing policies, such as those aimed at fostering product market competition to ignite innovation or promoting exports through the reduction of fixed costs, when these policies target the average firm.

### **Investment in expanding the statistical basis and technical analysis of participation in GVCs**

A significant, and often overlooked, way to facilitate successful integration within Global Value Chains, particularly within LIDCs, consist in identifying correctly constraints, remedial actions, and in assessing the efficacy of new policy measures. This cuts across the gamut of the statistical information system, including both macro and, crucially, micro (firm-level) data. The OECD-WTO TiVA database is one of the well-known recent examples of statistical initiatives to provide country and sector level evidence for supporting GVC analysis. Whilst this database currently includes 61 economies, very few LIDCs, particularly in Africa and Central Asia, are included and significant efforts are needed to develop and improve the national building blocks required for inclusion within the TiVA database. Needed improvements include: national supply-use and input-output tables of better quality; and more granularity for trade in services data, developed in line with international accounting standards – the System of National Accounts and the Balance of Payments and International Investment Position Manual. Other standard macro-level data collections areas where further investment would be beneficial include: Structural Business Statistics (SBS); Trade by Enterprise Characteristics (TEC), Entrepreneurship Indicators (Business Demography, BD), and Foreign Affiliate Trade Statistics (FATS).

All of these standard collections require good data at the firm-level. Investment in and scaling up of micro-data and existing data-collections and surveys is a central priority for better policy making. The World Bank Group Enterprise Surveys use standard survey instruments to collect firm-level data on the business environment from business owners and top managers. The surveys account for firm size and cover a broad range of topics including access to finance, corruption, infrastructure, crime, competition, labor, obstacles to growth, and performance measures, but not yet participation in GVCs. Other available datasets include microenterprise, informal, sector-specific, and other surveys. Panel (longitudinal) datasets of survey results are available for many countries. These statistics constitute an excellent basis for expanding available tools to documenting better business relationships taking place in the context of GVCs. This includes collecting firm level information on the links between exporters and foreign buyers, and between local firms and multinational companies integrated in GVCs (backward and forward linkages) as well as information on the internal and external factors facilitating or impeding accession and upgrading of firms in GVCs. The nature of participation in GVCs by firms in LIDCs and different behavior between large and small firms in the adoption of international certification practices and regulatory standards or in usage of ICT and technology, are among the areas that can be better documented through embedding a GVC module in existing enterprise surveys. Impact evaluations of policy interventions that can facilitate access and upgrading of participation in GVCs by SMEs and by firms in LIDCs is also necessary to help prioritise interventions, strengthen the evidence base for policy making, and coordinate actions among actors, often from different countries.

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