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Making Global Value Chains Work for Development

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Global value chains (GVCs) are playing an increasingly important role in business strategies, which has profoundly changed international trade and development paradigms. GVCs now represent a new path for development by helping developing countries accelerate industrialization and the "servicification" of the economy. From a firm perspective, production in the context of GVCs highlights the importance of being able to seamlessly connect factories across borders, as well as protect assets such as intellectual property. From the policy maker perspective, the focus is on shifting and improving access to resources while also advancing development goals, and also on the question of whether entry into GVCs delivers labor-market-enhancing outcomes for workers at home, as well as social upgrading. GVCs can lead to development, but, at the country level, constraints such as the supply of various types of labor and skills and inadequate absorptive capacity remain. GVCs can create new opportunities on the labor demand side, but supply and demand cannot meet if the supply is missing. This potential gap illustrates the importance of embedding national GVC policies into a broader portfolio of policies aimed at upgrading skills, physical and regulatory infrastructure, and enhancing social cohesion.

Global value chains (GVCs) can be thought of as factories that cross international borders.[1] Producing high-quality goods and services in GVCs involves more than simply trading goods and services internationally—it also entails the cross-border movement of know-how, investments, and human capital. When Toyota makes car parts in Thailand, it does not rely on local know-how. Rather, it imports Toyota technology, management, logistics, and any other bits of know-how not available in Thailand since Thai-made parts have to fit seamlessly with parts made in Japan and elsewhere. GVCs, in effect, "unbundle" factories by offshoring firm-specific know-how along the stages of production, and these international flows of know-how are the key difference between GVCs and other types of trade and investment.

Internationally fragmented production is not a new phenomenon. For decades, developing nations have imported parts from countries with more advanced technology, though generally only for the assembly of locally sold goods. Because the goods produced were not part of a global network, requested flows of know-how were less intense. The new characteristic of GVCs from a development perspective is that factories in developing nations have become full-fledged participants in international manufacturing networks. They are no longer just importing parts for assembly for local sales. They are exporting parts and components that are used in some of the most sophisticated products on the planet.

Given the need to integrate production facilities internationally, large multinational corporations (MNCs) seek to improve local innovation, knowledge-based capital, and economic competencies. For example, the Samsung Group—which employs 369,000 people in 510 offices worldwide—worries about shortages of technical and engineering skills in Africa and how this affects their efforts to embed its African workforce in their global production networks. In 2011, to address such shortages, it launched Samsung Electronics Engineering Academies in South Africa, Kenya, and Nigeria. Outstanding

performers are sent to annual "Learnership Programs" in Seoul as part of Samsung's program for young leaders. This initiative serves the company's broader goal to develop 10,000 electronics engineers across the continent by 2015 (ACET 2014).

The new GVC-enabled flow of know-how from developed to developing countries is a key factor in determining the role of GVCs in industrial development. Developing countries can now industrialize by joining GVCs instead of building their own value chain from scratch, as Japan and the Republic of Korea had to do in the 20th century (Baldwin 2012). Developing countries can benefit from foreign-originated intellectual property, trademarks, managerial and business practices, marketing expertise, and organizational models. The result is that the flows of goods, services, people, ideas, and capital are now interdependent and need to be assessed jointly.

Connecting Factories and Protecting Assets When Doing Business Abroad: The Firm Perspective

The international location of new production facilities is ultimately in the hands of GVC lead firms. Conceptually, it is useful to think of the new possibilities created by globalization and the information and communication technology revolution as creating two distinct sets of necessities for firms that countries are asked to address: connecting factories and protecting assets. Since cross-border factories must work as a unit, lead firms within GVCs care about efficiently connecting local factories with the relevant international production network, and about protecting proprietary assets.

The predictability, reliability, and time sensitivity of trade flows are important factors behind firms' location decisions, according to both major trade and competitiveness indexes and case studies (WEF 2013). In many cases, countries are unable to participate in certain portions of GVCs because of requirements for timely production and delivery. In effect, *time is money* in GVCs. A day of delay in exporting has a tariff equivalent of 1 percent or more for time-sensitive products (Hummels 2007). Slow and unpredictable land transport keep most of Sub-Saharan Africa out of the electronics value chain (Christ and Ferrantino 2011). Lead firms and intermediate producers in GVCs need reliable, predictable, and timely access to inputs and final products to satisfy demand on time.

Protecting firm assets is necessary because firms export valuable, firm-specific technology and know-how, only part of which can be protected through patents, trademarks, and other forms of intellectual property regulations. The know-how embodied in business and organizational models, managerial practices, production processes, and export processes cannot be patented or trademarked. As global production networks necessarily involve contracting relationships between agents located in countries with heterogeneous legal systems and contracting institutions, "contracts are often neither explicit nor implicit; they simply remain incomplete" (Rodrik 2000).[2] How different national systems deal with contractual frictions and incomplete contracts is an additional dimension driving firms' choice of location, as well as firm boundaries in global sourcing (Antràs and Yeaple 2014).

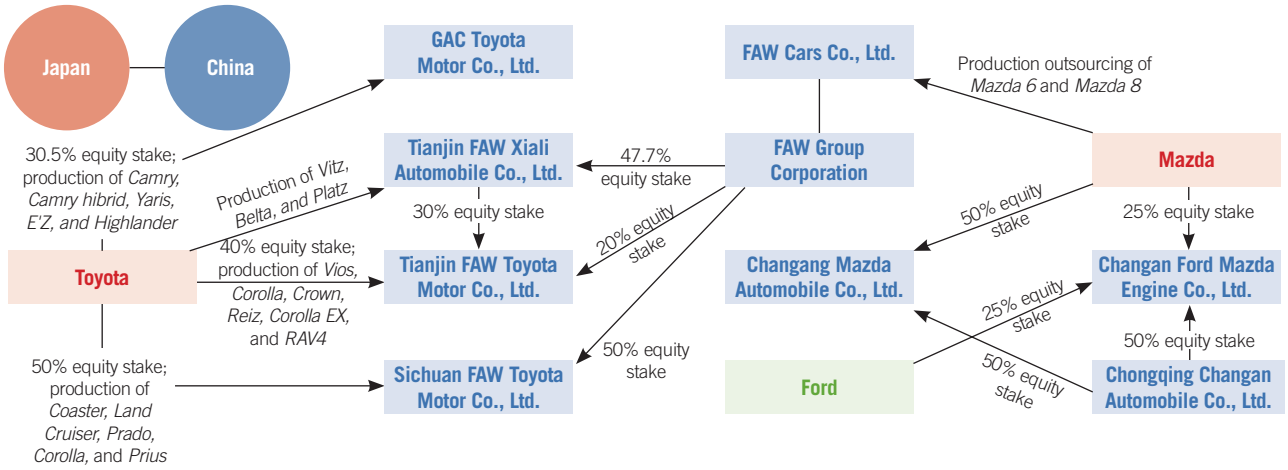
The connectivity of factories and the nature of contracting across countries are therefore key determinants—along with capital intensity—of a firm's decision to make or buy, and whether to do so domestically or internationally. Figure 1 illustrates the above concepts using actual ownership relationships among some of the key firms in the Sino-Japanese auto industry. These relationships move from Japan to China, that is, from the higher-income to the lower-income country. The good connectivity between China and Japan and the proximity of the two countries satisfy the first concern of lead firms: connecting factories. Meanwhile, the correspondence between type of control and strategic importance of assets in the Sino-Japanese automotive sector accurately illustrates the second key concern of global investors: protecting assets. Control of the subsidiary takes place in a variety of ways. The most strategic assets are tied to the lead firm through forms of direct capital control (for example, majority equity stakes). Assets of lower importance (for example, an older technology) are instead just handed over through licensing agreements. Technical cooperation and arm's-length trade signal looser forms of collaboration.

With the dramatic growth of outsourcing practices, competition between companies has shifted from being horizontal (that is, firms compete in the same sector for the same customer base) to being vertical (that is, firms in the same value chain compete to perform specific and specialized tasks). Lead firms compete with first-tier and lower-tier suppliers.[3] In figure 1, the linkages between Mazda, the fifth largest Japanese car manufacturer in terms of production volumes, and China's FAW Car Group (FAW) illustrate the complex nature of vertical competition. While Mazda outsources the production of the Mazda 6 and 8 to FAW, the latter is also a competitor of the former. FAW produces other models, under different brands, using technology from Mazda's competitors, including Toyota, Daihatsu and Volkswagen, and has its own line of luxury cars that directly competes with models from the above-mentioned lead firms.[4]

Creating Linkages to the Local Economy: The Policy Maker Perspective

In the same way that import substitution industrialization strategies gave way to export-oriented industrialization, the latter is now being replaced by efforts to identify an entry point into vertically specialized industries and to upgrade

Figure 1. Inter-Firm Linkages between China and Japan in the Automotive Industry



Source: Japan Automobile Manufacturers Association 2013. Data as of March 31, 2013. Note that the Japan Automobile Manufacturers Association states as follows with regard to this information: "In principle, the tie-ups shown above cover only technical cooperation related to motor vehicle production and exclude sales tie-ups."
Note: Japanese companies are red, while Chinese counterparts are blue. The arrows indicate ownership or other forms of control.

within GVCs. Attracting offshored factories and ensuring domestic firm participation in international GVCs has become a major priority for many policy makers in developing countries.

From a policy perspective, however, the critical issue is how GVCs integrate into the economy as a whole. It is not enough to attract and keep offshored factories. The policy challenge extends to creating and strengthening linkages with domestic firms and to ensuring that the host nation benefits from technology transfers, knowledge spillovers, and increased value addition generated in the country. But it is equally important to ensure that GVC participation benefits domestic society as a whole through more and better paid jobs, better living conditions, and social cohesion. In a nutshell, the key question is: how can developing nations make GVCs work for development?

To systematically explore countries' policy options, Taglioni and Winkler (forthcoming) developed the strategic framework illustrated in figure 2. The framework identifies three focus areas (entering GVCs, expanding and strengthening participation in GVCs, and turning them into sustainable development) and links them with specific objectives, strategic questions, and ensuing policy options.

Joining GVCs: Policy Options to Facilitate GVC Entry

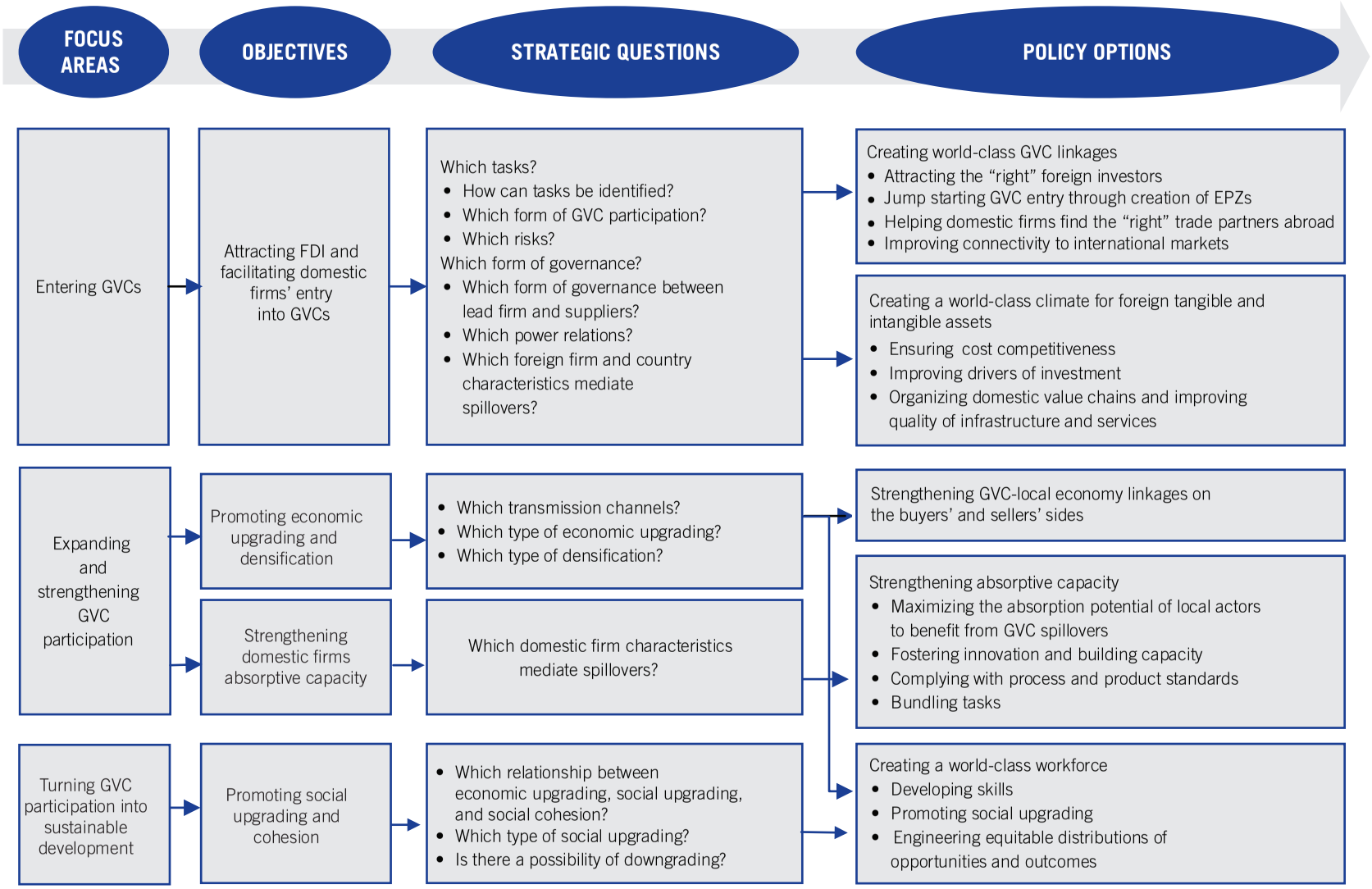
The integration of domestic firms (suppliers and final producers) into GVCs can help developing countries accelerate their industrialization process. Facilitating GVC entry requires creating world-class GVC linkages and a world-class climate for foreign tangible and intangible assets. However, it is important to realize that GVC participation is a necessary but not a sufficient condition for development. While GVCs open doors, they are not magical. Most of the hard work still has to be done at home with domestic pro-investment, pro-skills, pro-jobs, and pro-growth reforms. Creating a demand for high-productivity workers must be matched with a supply of capable workers with the relevant skills. In other words, when thinking about the first step in facilitating GVC entry, policy makers must have a clear roadmap of how it will lead to the ultimate objective of economic and social upgrading. They must keep a keen eye on their workforce's competencies and how these match up with the foreign investment.

Creating world-class GVC linkages

Countries can join GVCs either by facilitating domestic firms' entry or by attracting foreign direct investment (FDI). The FDI option includes more direct access to foreign know-how and technology. Nations like Costa Rica and Thailand have managed to attract FDI and turn it into sustainable GVC participation in very different ways. In all cases, however, it is necessary to provide a set of conditions that include excellent infrastructure, streamlined export procedures, and a tariff-friendly environment. One effective way to jumpstart this process, particularly for countries with poor national infrastructure and high import tariffs, is to create export-processing zones (EPZs)—rapidly built sites equipped with excellent infrastructure, streamlined procedures, and favorable tax conditions (such as tariff drawbacks on imports of intermediates). In many lower-income countries, exports come overwhelmingly from EPZs. The critical second step is then to connect the EPZs to the rest of the economy (Milberg and Winkler 2013).

EPZs are a special case. Governments can also facilitate domestic firms' GVC participation through arm's-length trade by helping them find "the right" trading partners abroad, which can include setting up firm directories, offer-

Figure 2. Strategic Policy Framework



Source: Taglioni and Winkler forthcoming.
Note: FDI = foreign direct investment.

ing practical advice, and promoting exports and imports more generally. In the long run, however, GVC entry requires the improvement of a country's connectivity with international markets. Bad connectivity means high costs, low speed, and high uncertainty. Thus, successful participation in GVCs requires policy makers to not just address barriers at the border, but also increase the connectivity of domestic markets and enhance the resilience and efficiency of the domestic segment of the supply chain.

Barriers at the border refer to traditional trade barriers, such as preferential market access, domestic tariffs, and the like. For GVCs, the focus expands from traditional export barriers to also include import barriers: a country's competitiveness and ability to participate in GVCs depends as much on its capacity to efficiently import world-class inputs as on its capacity to export processed or final goods. Customs efficiency can be another obstacle at the border, particularly in developing countries, where delays add to the speed and uncertainty of buying or selling in GVCs. Several developing countries have managed to improve their logistics performance index (LPI) score by improving customs efficiency, for example, Morocco combined border management reform with port investments, and the Lao People's Democratic Republic provides information on customs procedures via an electronic platform.

Domestic market connectivity is as important as international connectivity. The benefits of efficient transportation and logistics at the border could be undermined by inefficient domestic links (for example, the unreliability or high cost of domestic transportation, lack of cool chains for fresh products, and so forth) as well as regulatory bottlenecks. Foreign investors evaluate the ease of access to efficient services and infrastructure in the host country, including access to cheap and reliable energy, finance and trade support, telecommunications (for example, for e-commerce or electronic transfers), and transport (Cattaneo et al. 2013). Indonesia, for example, managed to reduce vessel dwell time by reforming storage fees, which improved the country's LPI score.

In addition, there are several other dimensions beyond connectivity that need to be considered when designing policies to attract FDI and facilitate domestic firms' participation, such as the ecosystem of firms in the host economy, the design of investment promotion policies, and the type of industrial policy.

With respect to conditions in the host economy, the sophistication and competitiveness of domestic firms are key factors. Countries that are home to large and competitive companies have an advantage in attracting FDI and in fostering domestic firms' participation through arm's-length trade, since the domestic firms can act as turnkey suppliers. Some of these firms also have the potential to become lead firms themselves. Countries in which firms are predominantly small and medium enterprises (SMEs) find it more difficult to enter GVCs, unless its SMEs are part of a well-established and integrated industrial cluster, such as the Italian industrial districts (for example, Becattini [1990] and Porter [1990]).

In designing investment promotion measures, there are various important factors for policy makers to consider, particularly those that explicitly target FDI. Policy makers should, however, ensure that they do not discriminate against domestic investors. Moreover, governments need to identify and attract "the right" foreign investors. This includes assessing the nature of investment and the motivations of potential FDI (for example, efficiency-seeking/export platform, resource-seeking, or market-seeking) as well as their technology contribution and the technology gap with domestic firms. Investment promotion should not only focus on lead firms in GVCs, but also target turnkey global suppliers and possibly important lower tier suppliers (Farole and Winkler 2014).

Meanwhile, a light-handed industrial policy can help foster both participation in GVCs and linkages with the domestic economy by overcoming market failures or capturing coordination externalities. An analogy can be made with urban policy: if individual initiatives are completely uncoordinated, the result can be over-congested cities that fail in the basic goal of improving the lives of residents. At that other extreme, government control of every investment decision can stifle growth and innovation and thus also fail to improve lives. A key difference between GVC-led development and other avenues of development is that government coordination needs to take place at the microlevel. Nevertheless, it is not necessary to pick a sector as the "winner," but rather, to help plan and encourage both entry into the appropriate tasks and, consequently, densification of GVC participation that has already begun.

Creating a world-class climate for firms' assets

Low wages may be a way for countries to enter GVCs, and low-wage industrial jobs can be a big productivity step up from subsistence agriculture, underemployment, and low-skill service jobs. The goal, however, should be higher labor productivity so that the country can remain cost-competitive despite rising wages and living standards. What matters are unit labor costs, not wages per se. Chinese labor, for example, remains cost-effective despite rising wages because labor productivity is also rising. Moreover, low unit labor costs alone are not sufficient—the capacity to meet production requirements must also be taken into consideration (Cattaneo et al. 2013). Put simply, low labor costs will not attract GVC-linked FDI without the right infrastructure or capacity building. Hence, labor policies aimed at attracting FDI should be matched by other initiatives, including packages of infrastructure expenditures and public-private vocational training initiatives.

Secondly, removing restrictions and barriers to foreign investment, as well as increasing the protection of foreign assets, is key to attracting FDI. This implies policies such as allowing more foreign equity into domestic companies,[5] facilitating the movement and employment of key personnel, relaxing domestic content rules when their role and purpose is not clearly defined, relaxing rules on foreign exchange and repatriation of benefits, and strengthening investor protection and the right to challenge domestic regulations and decisions, among others.

Completing the Firms' Ecosystem: Policy Options to Expand Development beyond the Initial GVC Enclave

After entering GVCs, the next set of policy considerations must aim at ensuring that GVCs are as integrated as possible into the domestic economy. The logic here is that strong linkages with the domestic economy should result in greater diffusion of knowledge, technology, and know-how from foreign investors. The problem is that foreign investors do not actively pursue—and sometimes resist—such integration for several reasons ranging from economic constraints to technological and quality gaps with domestic suppliers to shortages in specialized workers and skills.

For policy makers, economic upgrading and "densification" are key to turning GVC participation into sustainable development. The concept of economic upgrading is largely about gaining competitiveness in higher value-added processes and raising domestic labor productivity and skills. GVC densification involves the creation of more and better domestic jobs, fostering spillovers from FDI, and engaging more local firms in the supply network. Part of this effort should include understanding how the potential for FDI spillovers differs across firms, sectors and tasks, and to the design of investment attraction policies that do not discriminate against domestic players.[6]

Finally, it is also important to ask what economic upgrading through GVCs means for average living standards—employment, wages, work conditions, economic security—or to wider social upgrading—distributional concerns and nonmaterial factors such as democracy, labor rights, human rights, gender equality, environment, cultural issues, respect for minority rights, and more.

Transmission channels for economic and social upgrading

To efficiently target policy efforts, it is useful to identify the main transmission channels for achieving economic and social upgrading, which include:

- Forward linkages, that is, sales of GVC-linked intermediates to the local economy, thus spurring production in various downstream sectors;
- Backward linkages, that is, GVC-linked purchases of local inputs, thus spurring production in various upstream sectors;
- Technology spillovers, that is, improved productivity of local firms in the same or related downstream or upstream sectors as a result of GVC production;
- Skills demand and upgrading, similar to technology spillovers, but transferred through the training of and demand for skilled labor; and
- Minimum scale achievements, for example, GVC participation may stimulate investments in infrastructure that would otherwise not be profitable and that may spur local production in other sectors.

These transmission channels enable GVCs to support development and industrialization efforts in four ways (summarized in figure 3):[7]

First, GVCs—through forward and backward supply chain linkages—generate a demand and an assistance effect in the host country:

- Demand effect: Lead firms tend to require more or better inputs from local suppliers.
- Assistance effect: Lead firms can assist local suppliers, for example, through sharing knowledge/technology, advance payments, and other types of assistance.

In turn, the forward and backward linkages generate technology spillovers, thereby improving the productivity of local firms through two mechanisms:

- Diffusion effect: The assistance effect leads to diffusion of knowledge and technology in the suppliers' industry.
- Availability and quality effects: GVC participation increases the availability and quality of inputs.

Second, GVC participation can translate into procompetitive market restructuring effects that are not limited to GVC participants, but extend also to nonparticipants. Specifically:

- Pro-competition effect: GVC participation leads to increased competition for limited resources in the country (between MNCs and local firms, but also between participants and nonparticipants in GVCs), increasing overall average productivity in the medium run.
- Demonstration effect: Knowledge and technology spillovers arise from direct imitation or reverse engineering by local firms (both GVC and non-GVC participants) of GVC products, business models, marketing strategies, production processes or export processes, among others.

Third, minimum scale achievements have a twofold impact:

- Amplification effect: Minimum scale achievements amplify pro-competition effects. They stimulate investment in infrastructure and backbone services, which would not be realized without the scale of activity generated by GVCs. Once the infrastructure is in place, it is likely to spur local production in other sectors and in the non-GVC economy.

- Sustainability effect: Minimum scale achievements also strengthen the ability of the country to sustain GVC participation over time. GVC literature is rife with examples of the key role of improvements in backbone infrastructure and services, such as logistics, to improve timeliness and reliability in transporting goods, parts and components, and therefore enable countries to successfully vertically integrate into GVCs (see WEF [2013]).

Finally, GVCs also benefit labor markets through the following three mechanisms:

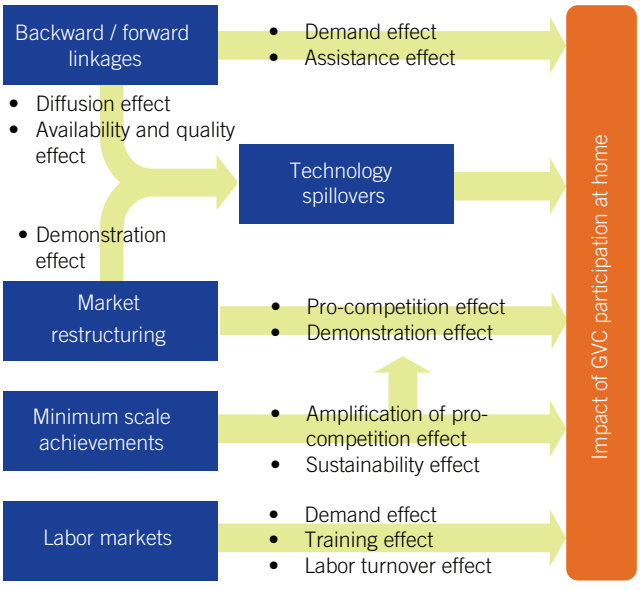
- Demand effect: GVC participation is characterized by higher demand for skilled labor from MNCs or other GVC participants. Multinationals may temporarily bid away human capital by paying higher wages or offering enhanced employment benefits. This effect tends to dim, however, as soon as the productivity of domestic firms is also raised or the market adjusts to the tightening labor supply.
- Training effect: Local firms participating in GVCs are more likely to receive training (for example, from MNCs or their international buyers).
- Labor turnover effect: Knowledge embodied in the workforce of participating firms (for example, MNCs or their local suppliers) moves to other local firms.

Strengthening absorptive capacity

The degree to which local firms and workers benefit from knowledge and technology spillovers ultimately depends on the absorptive capacity of domestic actors. This is the area of GVC-spillover policy in which governments play their most important role, particularly in helping local firms and workers access opportunities. Building the absorptive capacity of local firms requires both general and industry-specific investments to upgrade technical capacity and, most importantly, achieve quality standards. Both industry-specific and general education policy are critical to sustaining long-term spillovers.

An important part of absorptive capacity is bolstering productivity, production and innovation capacities, including human capital and other resources, for example, by (i) developing public-private partnerships aimed at research and development collaboration; (ii) increasing the supply of sufficiently qualified researchers in local universities; and (iii) efforts to align higher education curricula and training specializations with local economic activities. Second, policy makers should help domestic firms comply with process and product standards. Such public, private, or voluntary standards need to be respected throughout the entire value chain, because every stage of production can affect the quality of the final product or service, which could affect the lead firm's reputation. Finally, a country cannot offer a single task, but must offer a bundle of tasks. Diversification into services tasks and promotion of services exports offer a largely untapped income potential for many developing countries (Cattaneo et al. 2013).

Figure 3. GVC Participation Transmission Channels



Source: Taglioni and Winkler forthcoming.

Creating a world-class workforce and engineering equitable distributions of opportunities and outcomes

Developing skills is a key element of competitiveness and of the ability to participate in GVCs and achieve economic and social upgrading within GVCs. Economic upgrading requires the availability of new skills and knowledge either by increasing the skill content of a country's activities (and thus workforce), or by developing competencies in niche market segments (Humphrey and Schmitz 2002). In other words, economic and social upgrading are linked and dependent on each other. There are indeed strong incentives for lead firms to train their workforces to comply with their standards. Beyond private initiatives, there is a strong case for public investment in skills development to meet the needs of international trade and participation in GVCs (Cattaneo et al. 2013).

Empirical evidence suggests that economic upgrading may drive social upgrading, but this is not automatically the case. There is a role for complementary policies to promote social upgrading and maximize the sustainable development impact of GVC activities. Social policies are needed to create an equitable distribution of opportunities and outcomes. Without social cohesion and policies that ensure all segments of society benefit from GVC participation, development would indeed be unsustainable. Social upgrading can be supported through labor regulation and monitoring, such as occupational safety, health, and environmental standards in GVC production sites. Well-functioning labor markets are also important, because the process of integrating into GVCs requires a reallocation of resources.

For social upgrading to translate into social cohesion via better living standards, countries must ensure equal opportunities and outcomes, which strengthen social cohesion by creating a sense of belonging and active participation, promoting trust, offering the opportunity of upward social mobility, and fighting inequality and exclusion. Equal access to jobs (including for women or minorities) is the most important opportunity in the context of GVCs. Access to widely advertised information about job vacancies and practical advice on how to get these jobs is a precondition (for example, through job search assistance). But workers also need to be informed about their rights. Farmers, self-employed, or informal workers in particular are often unaware of their rights in relation to landowners, traders or employers, despite the important role this segment of the labor market plays in developing countries. Cooperatives, associations, and trade unions can be effective channels of information.

But these information channels require that freedom of association and collective bargaining rights already exist in the country. These provisions encourage pro-active social dialogue that can address tensions before they lead to conflict. In addition, facilitating access to jobs for excluded or disadvantaged groups helps economies tap a largely idle segment of the workforce with productive potential and leads to increased social cohesion. Antidiscrimination laws and mandatory or voluntary affirmative action programs, such as proactive measures for hiring women, minorities, or other groups, are an important prerequisite to more equality of opportunities (OECD 2011; World Bank 2013).

Conclusion

Participation in GVCs can be linked to development outcomes. By joining GVCs and expanding their GVC participation, domestic firms (suppliers and final producers) can help developing countries accelerate their industrialization process. To do so, firms must be able to seamlessly connect factories across borders while simultaneously protecting strategic proprietary assets. That is, both connectivity and legal stability are keys to increased GVC participation. For development objectives to be truly achieved, however, firms' priorities must be balanced with the goal of policy makers to industrialize through GVCs in a sustainable way that promotes prosperity for the entire society. This includes not just bringing jobs to a host nation, but improving living conditions, strengthening social cohesion, and generating knowledge spillovers. The strategic framework on GVC participation developed in this note, which maps focus areas for policy with relevant objectives, strategic questions, and policy options, can be a helpful guide for policy makers in achieving this balance.

Acknowledgments

This note introduces topics and concepts more widely discussed in the forthcoming publication "Making Global Value Chains Work for Development" (Taglioni and Winkler forthcoming), which aims to provide concrete tools for policy makers in developing countries to ensure that GVC participation helps accelerate industrialization and development. Both publications are part of a broader, multiyear work program of the World Bank's International Trade Unit, which offers both a strategic framework and analytical instruments to systematically assess a country's competitiveness and performance potential in GVCs, and also provides policy guidance to make GVCs work for development. The authors are grateful to Richard Baldwin for his valuable expertise and consultation. They would also like to thank Olivier Cattaneo, Thomas Farole, Michael Ferrantino, Gary Gereffi, Mariem Malouche, and William Milberg for discussions and useful perspectives on the topic, as well as Amir Fouad for editorial help and the Japan Automobile Manufacturers Association for permission to use their material.

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Notes

1. The phenomenon has been called vertical specialization by Balassa (1967) and Findlay (1978), slicing up of the value chain by Krugman (1995), and many other names by other economists, including international fragmentation of production (Arndt and Kierzkowski 2001), transnational production (Feenstra 1998), and global production networks (Ernst and Kim 2002; Henderson et al. 2002). Vertical specialization identifies a production structure where tasks and business functions are spread over several companies that are globally or regionally dispersed. "Tasks," rather than sectors, define the specialization of countries in the value chains, as indicated by Grossman and Rossi-Hansberg (2008).

2. Antràs (2013) lists a range of reasons for incomplete contracting in international settings, including: the limited amount of repeated interactions; lack of collective punishment mechanisms associated with international transactions; and natural difficulties in contract disputes involving international transactions, such as determining which country's laws are applicable to the specific contract. Finally, even when it is clear which laws are relevant to the contract in question, local courts may be reluctant to enforce a contract involving residents of foreign countries.

3. The extent of vertical competition varies depending on the power relations within the specific value chain (see, for example, Milberg [2004]). Interestingly, both horizontal and vertical competition are driven by similar forces: the interplay between traditional cost advantages, institutional factors, and proximity to the final consumer, which together determine what tasks are more profitable in given locations (Cattaneo et al. 2013).

4. Daihatsu licenses the Terios SUV technology (an older technology phased out in the Japanese domestic market) to FAW (Paultan.org). The latter engages in the manufacture and sale of passenger cars and related accessories. FAW offers its products under three different brand names: Benteng, Mazda6/Atenza, and Hongqi. Some of the Benteng cars are produced using old models of the Mazda Sedan, and others using the second generation Volkswagen Jetta. Meanwhile, the company also produces the Mazda 6/Atenza for both the Chinese and Japanese markets. The production and commercialization of this model is outsourced by Mazda Japan, a competitor of Daihatsu. The advantage for Mazda is that it can focus on models that are more strategic from a corporate point of view, such as Premacy and Familia. Finally, FAW has its own brand: the Hongqi luxury car (FAW corporate Web site http://www.faw.com/). Hongqi cars have been manufactured since 1958, with the original models reserved for the high-ranking party elite. They remained in production until 1981 (*The Economist*, "The Home Team," November 13, 2008, www.economist.com). The current Hongqi fleet includes the H7, which is an executive car based on the Toyota Crown platform. This intricate system of collaboration and business relationships is an excellent example of the degree of vertical competition in the automotive sector.

5. China has been effective in attracting FDI even with restrictions on joint ventures. However, this is largely due to China-specific conditions: a large domestic market and a large pool of low-cost but well-trained workers. Countries that do not have specific factors to attract investors, or to use as leverage, will have less space for maneuvering when dictating joint venture conditions with foreign investors.

6. Understanding the spillover potential of different FDI at the microlevel is likely to become an important policy priority in the coming years. And this is not only the case for small and lower-income countries that rely increasingly on FDI and have a limited pool of resources to devote to attracting foreign investors, but also for large countries. Another important priority in designing FDI-related policy should be ensuring that the incentives used to attract foreign investors do not create a bias against local integration. Moreover, policy makers need to leverage investment incentives to actively promote spillovers, including local supplier development, provision of technical assistance, training of workers, joint research, and more. The spotlight should be on value addition rather than in-country ownership. Instead of rigid local content requirements, the focus should be on collaborative development of flexible localization plans where investors come up with their own proposals on how they will deliver spillovers to the local economy. It is also important to incentivize foreign investors to collaborate with local universities, research institutes, and training institutes (Farole and Winkler 2014).

7. The discussion on mechanisms triggered by GVC participation partially evolves from the taxonomy introduced by Farole, Staritz, and Winkler (2014).

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