



Trade Facilitation and Global Value Chains: Opportunities for Sustainable Development

Ben Shepherd



International Centre for Trade
and Sustainable Development

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
APEC	Asia Pacific Economic Cooperation
EAC	East African Community
FDI	foreign direct investment
GVC	global value chain
ILO	International Labour Organization
LDC	least developed country
LIC	low income country
LPI	Logistics Performance Index
OECD	Organisation for Economic Co-operation and Development
SME	small and medium-sized enterprise
TFA	Trade Facilitation Agreement
TiVA	Trade in Value Added
TMEA	TradeMark East Africa
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
WTO	World Trade Organization

FOREWORD

Much trade today takes place in the form of global value chains (GVCs). As with any fundamental change, GVCs offer both challenges and opportunities. While the international fragmentation of production processes could prove beneficial for least developed and low-income countries by creating opportunities to participate in tasks and cross-border economic transactions that were previously unattainable, it also raises challenges in terms of generating positive spillovers and upgrading to higher value segments as economies integrate into these highly complex and competitive business networks. In addition, GVCs have not spread evenly across the world and are characterised by diverse governance structures, with implications for policy design and development outcomes.

Trade facilitation, in its broadest sense, encompassing both hard and soft infrastructure as well as customs administration, can have a strong impact on GVC participation through a reduction in trade costs and the smooth operation of business activities. Least developed countries (LDCs) in particular are often burdened by poor quality infrastructure, underdeveloped logistical systems, sub-optimal regulatory frameworks, and inefficient border procedures.

In this paper, Ben Shepherd, Principal of Developing Trade Consultants, explores how trade facilitation programmes can help LDCs realise sustainable development opportunities in the context of fragmented production. The author highlights the importance of well-designed trade policies for GVC participation but also underlines the centrality of complementary policies, such as human capital formation, for dynamic upgrading trajectories in low-income countries. He further analyses and draws policy implications from the potential and the risks associated with GVCs, not least in relation to key aspects of socio-economic development—decent work, inequality, and gender inclusion—and environmental sustainability.

The objective of the ICTSD research series under which this paper has been produced is to provide input into the policy debate on how LDCs can utilise value chains to achieve sustainable and inclusive development. We hope that this paper on trade facilitation and indeed the series will prove to be a useful contribution to researchers and policymakers in this important endeavour.



Ricardo Meléndez-Ortiz
Chief Executive, ICTSD

EXECUTIVE SUMMARY

Global value chains (GVCs) are extending their reach into regions and sectors that have historically been under-involved in this business model. There is considerable interest in the development community as to the complex relationship between GVCs and sustainable development outcomes, including social and environmental issues in addition to economic performance and income generation. This paper analyses that relationship from the specific perspective of trade facilitation - an important set of policies that have been shown to boost GVC involvement in developing countries.

As complex interlinked networks of cross-border and domestic flows of goods, services, and factors of production, GVCs rely heavily on trade facilitation for their effectiveness. Lowering trade costs can help countries join GVCs, and is one factor in enabling them to “move up” to higher value added activities. However, it is well known from trade theory that changing trade costs has implications for producers and consumers across the globe, and can potentially create losers as well as winners—even though the global implications of lowering trade costs are typically positive.

In addition to exploring the links between trade facilitation and GVCs, the paper also unpacks the question from the point of view of sustainable development, combining economic, social, and environmental dimensions. Any increase in GVC activity brought about by improved trade facilitation could have important economic benefits, but is not necessarily positive on all social and environmental fronts. However, there is no simple answer to the question whether or not GVCs are “good” for sustainable development. The relationship is complex, driven by an interplay of economic and institutional factors.

One key insight of the paper is that, as in many questions relating to international trade policy, it is not fundamentally GVCs that drive the sustainable development implications of improved trade facilitation, but rather the extension and intensification of economic activity. GVCs as businesses of course have some particular characteristics that need to be taken into account, in particular the complex relationships among actors in different countries performing different functions. But to ensure that GVCs are consistent with the global commitment to sustainable development most recently embodied in the UN Sustainable Development Goals, the most important priority for low income countries and least developed countries is to develop domestic regulatory infrastructure in areas like environmental and social protection. If appropriate steps are taken to put in place effective and efficient regulations that accord with national preferences, GVC development can in fact be a force for positive change in terms of broader development outcomes. To ensure consistency between the GVC model and the dynamic aim of production upgrading, it is crucial to develop human capital through a strong commitment to education policies in developing countries.

Numerous developing countries have taken significant steps forward in the area of trade facilitation over recent years - a process that is likely to intensify in light of the WTO Agreement on Trade Facilitation. As that process deepens, it is important to keep a broad approach in mind, covering soft (regulatory) infrastructure and hard (physical) infrastructure, in addition to customs and border procedures. The trade facilitation programmes with the greatest potential in lower income countries, such as in East Africa, are firmly grounded in that outlook. If policies are appropriately designed and implemented, there is much that trade facilitation can do to increase GVC involvement, which in turn can have positive implications for sustainable development prospects.

1. INTRODUCTION

Global value chains (GVCs) are complex, interlinked networks of cross-border and domestic flows of goods, services, and factors of production (capital, including knowledge capital, and labour). They rely on the ability to move goods quickly, cost effectively, and reliably across borders.¹ It is no exaggeration to say that trade facilitation is the lifeblood of GVCs: the business model simply cannot work in the presence of long border delays, or other supply chain disruptions. Lead firms in GVCs are crucially concerned with the management of risk, with the aim of ensuring continuous production even when unforeseen problems occur somewhere in the structure. Suppliers and assemblers have an incentive to keep inventories low, so as to avoid carrying costs, which means that stock outs can potentially be very costly to a wide variety of actors. The net result is that the relationship specific investments that drive GVCs will only be made if firms can be reasonably certain that they will be able to coordinate suppliers of all sorts—goods and services, including through movement of qualified professionals and intra-corporate transfers—consistently and with a defined cost profile.

Despite the clear importance of trade facilitation in GVC growth and development, including extension into new markets, there is relatively little analytical and empirical work documenting the ways in which trade facilitation enters GVC production processes. This paper works towards filling that gap by providing a conceptual analysis of the links between trade facilitation and GVCs, focusing specifically on the case of low-income countries (LICs) and least developed countries (LDCs). It also addresses the novel issue of the links between GVC development based in part on improved trade facilitation, and sustainable

development. In the policy literature, there has been some scepticism regarding the capacity of GVCs to be part of an overall commitment by developing countries to promote sustainable development, referring to economic, social, and environmental impacts. It is important to look closely at GVC processes and their relationship to regulatory structures to weigh up these arguments. The approach taken in this paper is an agnostic one: it is possible that GVCs can, in different manifestations, have positive or negative impacts on fundamental economic, social, and environmental variables. Thus, the key is to focus on complementary policies that can both allow GVCs to develop, and ensure that they help countries work towards sustainable development. Linking the issue back to trade facilitation, it follows that trade facilitation can promote GVC activity, which can in turn, if the policy settings are right, help support sustainable development objectives.

The paper proceeds as follows. Section 2 discusses the ways in which low income countries and LDCs connect to value chains, focusing on examples from the emerging empirical literature. Section 3 then moves to a consideration of the relationship between trade facilitation and GVCs, starting from a broad definition of the concept and working towards an operational understanding of the ways in which GVCs rely on trade facilitation. Section 4 examines the potential of GVCs to help promote sustainable development, focusing in particular on the impacts of trade facilitation reforms. Section 5 will conclude with a discussion of policy implications flowing from the paper's analysis, with specific reference to issues like regional integration, aid for trade facilitation, and policy reforms in key markets.

¹ This paper deals exclusively with value chains in goods because of its focus on trade facilitation. However, services GVCs are also becoming increasingly important in a range of countries, in sectors like business process outsourcing and back office functions in finance. The Philippines and India have both been successful in this area, and African countries like Senegal are increasingly looking to develop it as well.

2. HOW DO LICs AND LDCs CONNECT TO GVCs?

The most fundamental concept behind GVCs is trade in tasks. The GVC paradigm is consistent with narrower patterns of specialisation, in which countries become proficient in one or a number of tasks—production of goods or services—needed as inputs for a particular good, but do not necessarily develop full domestic supply chains for full industries. For example, when Korea was developing its transport equipment industry through middle-income status, it developed all parts of the supply chain, from research and development through component production, to assembly, and distribution and marketing. Now, a country like Vietnam takes a radically different approach: it assembles imported knockdown kits, and has more recently moved into production some component parts for Asian automobile value chains.

The GVC paradigm is best known in the case of manufacturing industries like electrical products and transport equipment. But resource-based industries can also operate on the value chain model. Resource extraction is one part of the value chain, but other tasks include shipping and logistics, and of course processing into different forms. This kind of conceptualisation is relevant to agricultural production as well as minerals and ores. Both value chains are of particular importance to LICs and LDCs. Agriculture, in particular, has important implications for sustainable development. Reducing trade costs in that sector would allow developing country farmers to access inputs such as seeds and fertilizers more easily, thereby boosting productivity and potentially promoting production at a larger scale, which could in turn support processing industries. Moreover, increased agricultural productivity and use of improved varieties and other inputs could help support climate change resilience.

GVCs in different sectors and countries can exhibit differing degrees of vertical integration and horizontal coordination among participants. Many considerations go into organisational structure as an outcome of independent optimisation by individual actors, but a key issue

is the level of transaction costs associated with different organisational models. Related to this factor is the number of actors at different points in the GVC, which can have implications for their ability to coordinate successfully, which in turn influences their bargaining power vis-à-vis other actors.

In principle, resource-based and manufacturing value chains are both potentially of relevance to LICs and LDCs. In practice, however, outside developing Asia, manufacturing activity remains relatively limited, although it is important to stress that it is not non-existent. Important areas in some LICs and LDCs include garment production, and processing of agricultural products (agribusiness). LICs and LDCs with relatively large endowments of unskilled labour likely have comparative advantage in some parts of these value chains, although deficiencies in human and industrial capital, as well as infrastructure—particularly energy and transport—make it difficult to develop these industries.

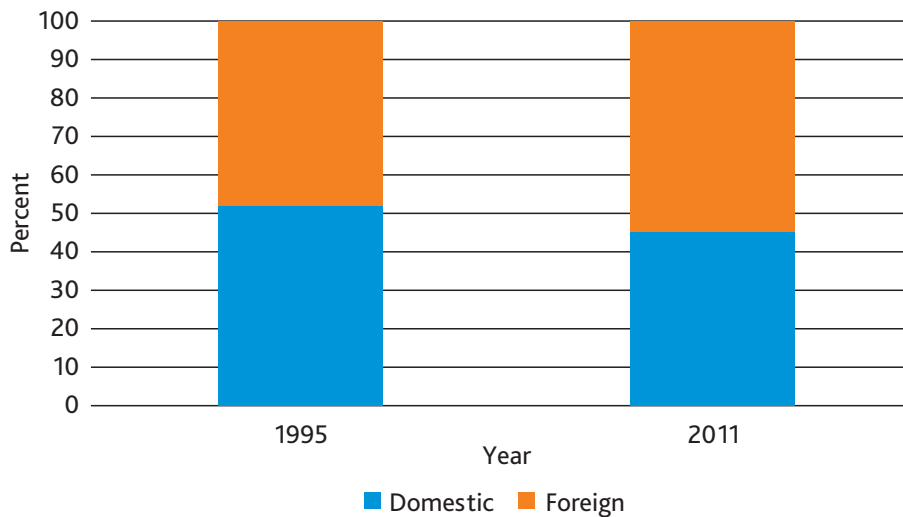
A typical point of entry into a GVC is a low value added activity, such as assembly in the case of manufacturing GVCs, or commodity production in the case of resource-based GVCs. There is a full discussion below of the concept of “moving up” the value chain to higher value added activities, and the implications that process has for development, as well as its relationship to trade facilitation. For the moment, it suffices to say that even low value added activities can have economic benefits for LICs and LDCs compared to a situation of closed markets (i.e. no GVC linkages). There is strong evidence that domestic and foreign value added are complements, so bringing them together through GVCs allows for faster sectoral growth on an overall basis than would otherwise be possible, even when the share of domestic value added in percentage terms falls as a consequence of increased GVC integration. Kowalski et al. (2015) characterise this feature of GVC-based trade as obtaining “a smaller slice of a larger pie.” Figure 1 demonstrates this

using data for the transport equipment sector in Thailand, a well-established example of a successful GVC coordinated by Japanese lead firms. In essence, the point is that letting in foreign value added through imports of goods

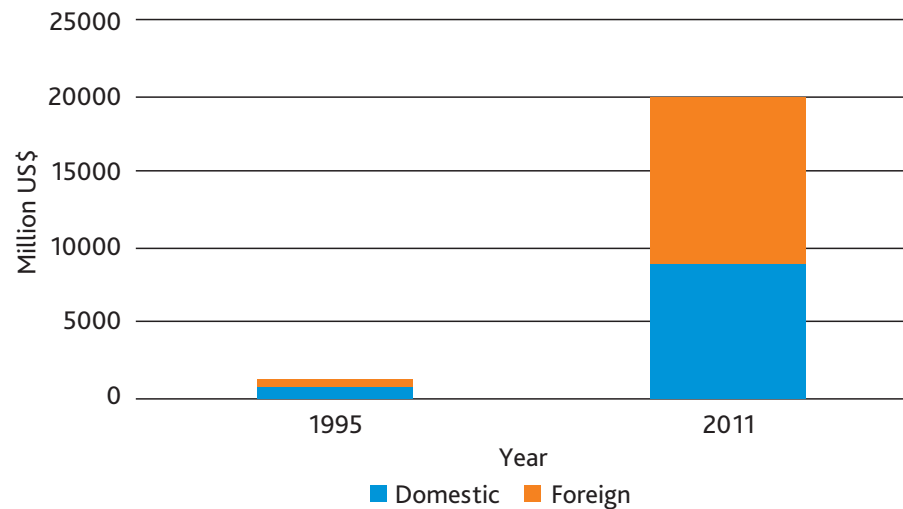
and services (as well as people and ideas) allows domestic value added to grow more quickly than it would under autarky, even though the change in terms of proportions may be less marked, or even move in a different direction.

Figure 1: Complementarity between domestic and foreign value added in Thailand's transport equipment industry

a) Domestic and foreign value added content of gross exports, shares, 1995 and 2011



b) Domestic and foreign value added content of gross exports, million US\$, 1995 and 2011

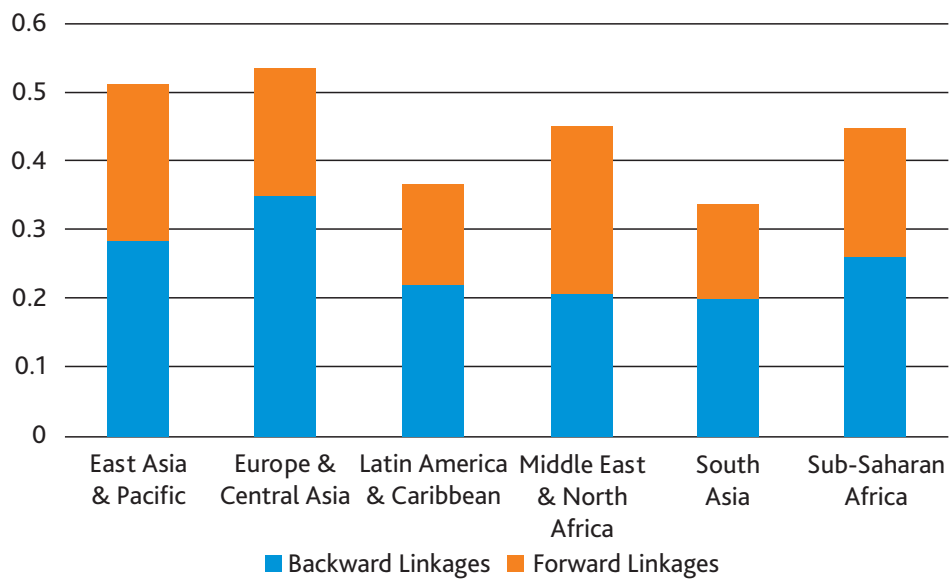


Source: OECD-WTO TiVA.

The OECD-WTO Trade in Value Added (TiVA) database, on which Figure 1 is based, makes it possible to quantify some of the ways in which countries interact with value chains. In particular, gross exports can be broken down into domestic and foreign value added components, as in the Thai example above. It is also possible to create indicators of value chain participation, focusing on the concept of linkages. Backward linkages refer to the use of imported intermediate goods in the production of a country's exports. A higher score on the index is consistent with greater use of imported intermediates, which is one indicator of the extension of GVC activity. A second indicator is the forward linkages index, which captures the share of a country's exported goods and services used to produce exports in another country. Summing the two indices gives an overall indication of a country's degree of value chain participation, and results can be broken down by sector.

The TiVA database focuses on developed countries, and although it includes some developing countries as well, its coverage of LICs and LDCs is quite limited. An alternative source is the Eora database (Lenzen et al. 2012 and 2013). Although not free from concerns over data quality in LICs and LDCs, Eora has been used in applied work, including on the links between trade facilitation and GVC participation (Shepherd 2016). Kowalski et al. (2015) have used Eora to calculate participation indices for a wide range of developing countries, including LICs and LDCs in selected parts of Asia and Africa (Figure 2). Results show that levels of integration in Sub-Saharan Africa and South Asia are typically lower than in East Asia and the Pacific, where GVC activity is better developed. Of course, these results are based on aggregate trade (i.e. summing across all sectors), and differences would likely be observed at a more detailed sectoral level.

Figure 2: GVC participation indices, 2011, by developing region



Source: Based on Kowalski et al. (2015).

Note: Excludes high-income countries.

Despite the limitations of the Eora data, the general picture that emerges is consistent with qualitative work on LICs and LDCs, particularly in Africa, which indicates that GVC development is typically at a nascent stage, and specialisation in low value added activities is pronounced. Maur and Shepherd (2015) look at the case of food staples trade in West Africa. They find that value chain development, and in particular movement into higher value added processing and transformation activities, is limited, and typically domestic. Key problems

include the state of domestic and international transport infrastructure, difficulties in contract enforcement that make it challenging to secure a reliable supply of primary materials, and regulatory and enforcement issues that fragment regional markets and keep them relatively isolated from global flows of goods, services, and factors of production. In the remainder of the paper, some of these factors are examined from the point of view of trade facilitation—one broad set of policies that can help promote the inclusion of LICs and LDCs in value chains.

3. TRADE FACILITATION AND GVCs

Before moving to a consideration of the links between trade facilitation and GVCs, it is important to be clear about the term “trade facilitation” itself. It receives different meanings in different contexts. At its narrowest, it refers to improving customs and border procedures with the aim of reducing cost and delay, and increasing reliability. The emphasis in this definition is on simplifying and streamlining procedures, including through the use of technology solutions. The WTO Agreement on Trade Facilitation (TFA) adopts essentially this approach, with the addition of some provisions on transit.

The Asia Pacific Economic Cooperation (APEC) definition lies at the other extreme: trade facilitation refers to all measures that reduce trade costs other than lowering tariffs (Shepherd 2016). This definition arguably sits better with economic theory, where trade costs have a clear interpretation, and their reduction is linked to well-established effects. Trade costs can be of different types, but the concepts of fixed and variable costs encompass most factors that are covered in the literature. Economic models typically account for variable trade costs by allowing for a wedge between the factory gate price received by the producer, and the retail price paid by the final consumer. Variable costs are paid for each unit shipped, and so are well captured by ad valorem equivalents. By contrast, fixed trade costs are paid once only, regardless of the number of units shipped, and are usually interpreted as market entry costs. These kinds of costs need to be recovered by firms, most commonly by charging a markup over the marginal cost of production.

Clearly, the concept of trade costs encompasses many more factors than just border clearance procedures. In their survey, Anderson and Van Wincoop (2004) include factors like distance (as a proxy for international transport costs), policy barriers, information costs, contract

enforcement costs, costs associated with the use of different currencies, legal and regulatory costs, and distribution costs. They use estimates from the literature to produce an all-inclusive estimate of trade costs of 170 percent ad valorem, composed of 74 percent international trade costs, and 55 percent local distribution costs. These numbers are very large, a good order of magnitude larger than tariff barriers in developed countries (to which the trade costs estimate also relates). Subsequent work has confirmed that trade costs are much higher in lower income countries, in services as well as goods (Arvis et al. 2016a; Miroudot et al. 2013).

Many factors lie behind the result that trade costs tend to be higher in lower income countries. Unfavourable geography is one part of the equation, but the set of factors amenable to policy action is also wide, and at least as important as geography in determining the global pattern of trade costs (Arvis et al. 2016a). The most important policy areas that affect trade costs are logistics performance and transport connectivity, both of which encompass hard (physical) and soft (regulatory) infrastructure, as well as private sector development aspects, particularly in backbone services sectors.

In relation to the first aspect, Table 1 shows that there is a clear infrastructure gap between high and lower income countries. Across all areas, infrastructure quality is substantially higher in the former than in the latter. Interestingly, performance is strongest in information and communication technologies, which suggests that lower income countries have made substantial progress in that area. Infrastructure is constantly improving around the world, but Arvis et al. (2016b) find that this dynamic is stronger in higher performing (typically higher income) countries, so important performance gaps persist.

Table 1: Percent of respondents indicating that the quality of trade and transport infrastructure is “high” or “very high,” by type, 2016

	Ports	Airports	Road	Rail	Warehousing and transloading	Information and communications technology
High income	54%	55%	45%	25%	57%	73%
Upper middle income	27%	36%	19%	12%	25%	43%
Lower middle income	24%	28%	18%	18%	17%	34%
Low income	24%	21%	17%	17%	25%	32%

Source: *Logistics Performance Index (2016)*.

In addition to infrastructure, the role of services trade is key in linking lower income countries to world markets. For example, Borchert et al. (2012) show that a significant portion of the economic isolation of landlocked developing countries is in fact due to restrictive services policies that make it harder for their firms to connect to world markets, on the import side as well as the export side. One key area is logistics services like cargo handling and freight forwarding. Logistics professionals are the people who make international trade happen on the ground, and their role is particularly important within GVCs because of heavy reliance on express shipments. Arvis et al. (2016a) show that logistics performance is an important factor determining a country’s level of trade costs, and thus its ability to integrate into GVCs. Saslavsky and Shepherd (2014) conduct more detailed empirical research focusing on the issue of differences in the importance of logistics to trade in intermediate versus final goods. GVCs trade heavily in intermediate goods, and this paper shows that that kind of trade is indeed most sensitive to improvements in logistics performance. Like other services sectors, logistics-related policies are characterised by regulatory barriers that most closely line up with the case of non-tariff measures in goods trade. Although regulations are of course necessary to ensure the proper functioning of services markets, it is important to ensure that they are effective (achieve their objectives) and efficient (do so at minimum economic cost). Differences in logistics performance are in part attributable to regulatory measures that are relatively inefficient, typically by either creating barriers

to entry by new firms, or raising the cost of doing business for all firms in the marketplace.

For analysing the links between trade facilitation and GVCs, it helps to adopt the trade costs point of view. Border clearance is of course an important issue for GVCs, but so too are many of the other factors captured by the broader definition of trade facilitation, particularly legal, regulatory, and institutional issues, as well as other issues now emerging in the literature, like logistics and connectivity. Trade costs are known to be a major determinant of GVC activity and location choices. Lead firms know that their business model relies on the rapid, reliable, and low cost movement of goods across borders, so they tend to invest in countries where trade costs are not too high (among other factors). Upstream and downstream trade costs both matter for GVC production decisions. For example, Ma and Van Assche (2016) show that processing trade in Chinese provinces—one type of GVC activity that is prevalent in lower income countries—is associated with proximity (i.e. lower trade costs) with respect to international suppliers and buyers. I adopt the trade costs approach here in assessing the ways in which improved trade facilitation can help support the extension of value chain activity to include LICs and LDCs.

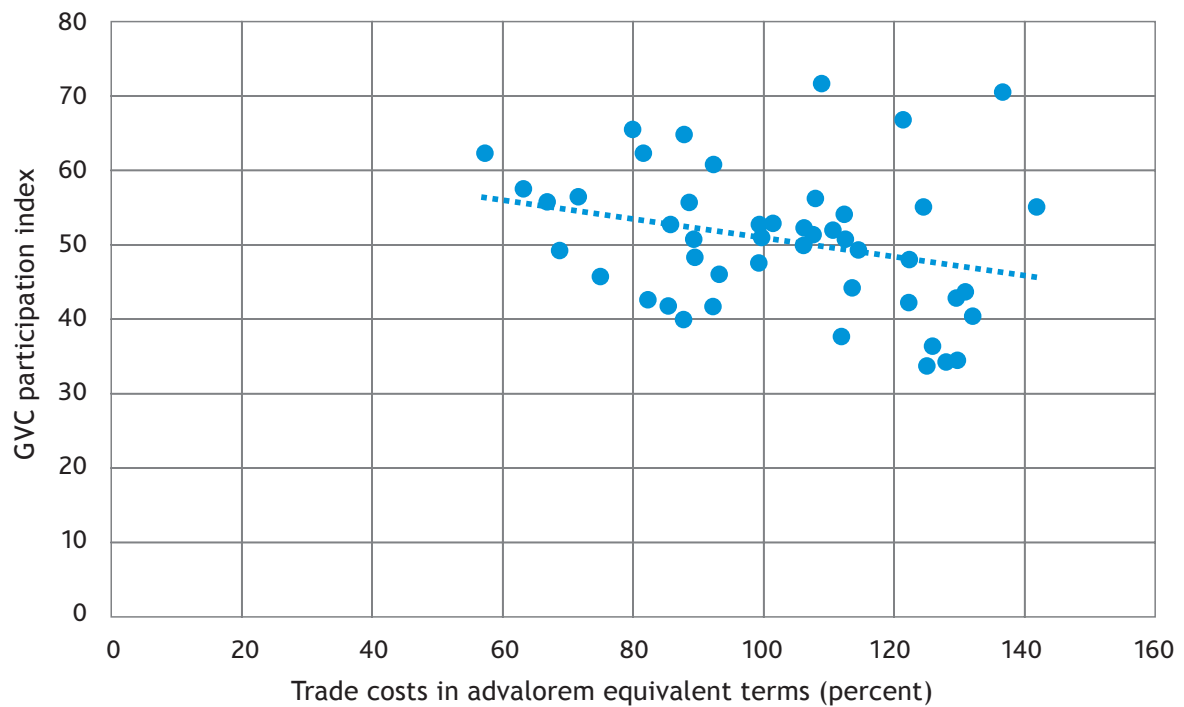
The starting point of the analysis is to recognise that high trade costs are a major reason why GVC activity is more limited in LICs and LDCs compared with middle and high income countries. Arvis et al. (2016a), who present the UNESCAP-World Bank trade costs dataset, show that the cost of moving manufactured goods into and out of low-

income countries is 2.75 times higher than for high-income countries (227 percent ad valorem). Trade costs in agriculture are significantly higher in both groups, but the low-income figure (311 percent ad valorem) is still more than twice as high as that for high-income countries.

To see that trade costs are a major determinant of value chain activity, Figure 3 shows the association between trade costs as measured by the UNESCAP-World Bank dataset, and an index of value chain integration taken from the OECD-WTO TiVA Database. The index measures the proportion of a country's imports made up of intermediate goods, and the proportion

of its exports that are then incorporated in another country's exports, which represents two key dimensions of value chain activity. There is a clear negative association between the two variables, which means that countries with higher trade costs tend to have lower rates of GVC participation. Of course, the figure is based on the TiVA Database, so coverage of low-income countries is limited and it is necessary to extrapolate. Nonetheless, based on the twin observations that trade costs in LICs and LDCs are high and GVC participation is in most cases quite low, it seems reasonable to conclude that there is indeed a connection for the countries of primary interest for this paper.

Figure 3: Association between trade costs in manufacturing and GVC participation, latest available year



Source: OECD/WTO (2015).

The connection between trade facilitation in the broad sense and GVC activity is supported by research using more formal methods. As previously mentioned, Saslavsky and Shepherd (2014) show that exports of parts and components—a key value chain activity—are more strongly influenced by logistics performance than are exports of final goods. This finding, based on an econometric model of international trade, suggests that improving the trade facilitation environment can help countries, including LICs and LDCs, engage

more fully with GVCs. Importantly, subsequent research has shown that the trade promoting effects of such improvements are not limited to large firms, but also extend to small and medium enterprises (SMEs). Hoekman and Shepherd (2015) show that improving trade facilitation in African countries can increase exports in the same way for SMEs that it does for larger firms. The point is significant in light of the suggestion that has been made in some quarters that advances in the area of trade facilitation, including the new WTO

Agreement on Trade Facilitation, are designed to support large businesses only (e.g. Barrientos et al. 2011; Bernhardt and Milberg 2011; and Gereffi 2013, 2014).

Designing measures to improve a country's trade facilitation environment is a complex undertaking, which is highly specific to individual circumstances. A detailed diagnostic exercise, like the World Bank's Transport and Trade Facilitation Assessment, is a starting point. Part of the complexity of reform lies in the fact that improvements in infrastructure, regulation, procedures, and private sector capacity all interact to produce the final outcome. Moving forward rapidly in one area without paying adequate attention to the others can lead to a situation where gains are not fully realised because of bottleneck effects. For example, upgrading a port facility without addressing possible regulatory impediments

to increased efficiency will not deliver its full potential impact in terms of reducing trade costs. It is therefore important to ensure reasonably balanced progress across all areas. One potential downside of the WTO Agreement on Trade Facilitation Agreement is that it shifts the focus heavily to border and transit procedures—which are important, but not the only ingredient required to improve the trade facilitation environment. Progress on that front is of course to be encouraged, but it will be important to embed the Agreement in a broader programme of Aid for Trade Facilitation that also covers regulatory reform, infrastructure development including economic corridors, and building of private sector capacity. This kind of Aid for Trade has considerable scope to reduce trade costs and promote GVC development (OECD/WTO, 2015). It has been emerging in practice over recent years, and is likely to intensify in the future.

4. CAN FACILITATING TRADE FOR GVCs HELP PROMOTE SUSTAINABLE DEVELOPMENT?

The term “sustainable development” can, like “trade facilitation,” take on different meanings in different contexts. One approach is that which is embodied in the United Nations Sustainable Development Goals, including aspects of economic, social, and environmental sustainability. It is indeed important that all three aspects be considered, as development cannot truly be sustainable if one of the three main pillars is unduly neglected. This section therefore examines the potential for GVCs to help promote development that is sustainable economically, socially, and environmentally. There is clear scope for trade facilitation to promote the extension and intensification of the GVC business model, as shown above, so this section looks at the economic, social, and environmental implications of such a policy choice.

The discussion below focuses on economic analysis—including economic analysis with respect to social and environmental outcomes—but GVCs can also be looked at from different perspectives. For example, sociologists studying value chains focus on issues like governance and power dynamics (Gereffi et al. 2005). These issues are important from a holistic perspective, but economic analysis typically covers similar ground in different ways. For present purposes, the crucial issues include identifying key actors and their location, in developed and developing countries, discussing issues of competition and bargaining power at different points in the chain, and factors that can promote mobility into different parts of the production process. From a sustainable development point of view, perhaps the most important dynamic that will be analysed relates to the ability of consumers in developed countries to drive, at least in some cases, sourcing decisions by lead firms, with possible implications for social and environmental rules. Of course, developed countries cannot directly give their own labour or environmental rules extra-territorial application, but pressure from consumers

is one way in which the GVC model can be leveraged to promote upgrading in distant locations. The “fast fashion” GVC model associated with lead companies like H&M and Zara is one industry where pressure by developed country consumers on lead firms has led to important sustainability initiatives. Both companies now publish annual sustainability reports, which increase transparency, and make it possible for civil society to monitor practices much more closely than in the past. Within this framework, these lead firms have undertaken to increase use of renewable energies, reduce greenhouse gas emissions, and source inputs (like cotton) in sustainable ways. Although many feel that important progress remains to be made, this process has also led to improvements in conditions for many developing country workers. That issue has increased prominence in light of the Rana Plaza collapse in Bangladesh, covering issues from safety through to remuneration. Clearly, this approach has considerable potential to support sustainable development objectives within the GVC framework.

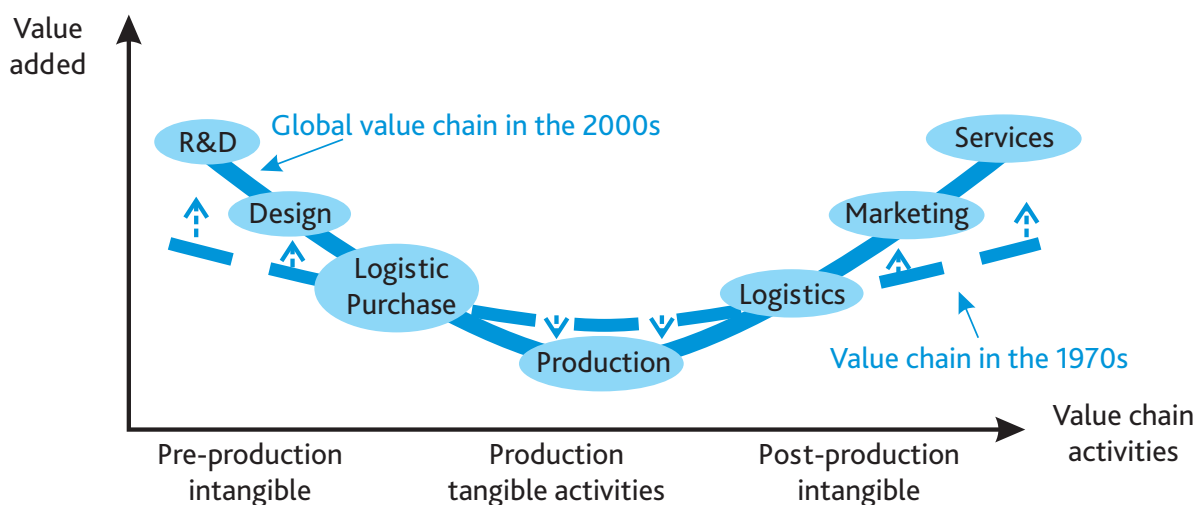
An additional issue relates to the design of trade facilitation initiatives. In most cases, the analysis of trade facilitation improvements passes through the mechanism of their effect on trade and production, including through GVCs. By analysing the dual linkage, first from trade facilitation to GVC development, then from GVC development to sustainable development, it is possible to look at issues like the implications of trade facilitation for inequality, environmental protection, and gender, in addition to purely economic aspects. In a limited set of cases, the nature of the trade facilitation intervention is important more directly from a sustainable development perspective. For example, improving border procedures has implications for women informal cross border traders, who play an important economic and social role in porous border regions, particularly in Africa. Improved trade facilitation shifts demand away from

them and towards formal operators, whose costs become lower. These women often have few other perspectives for earning money income. It is important to be cognizant of these kinds of implications so that appropriate support policies—social safety nets, even if rudimentary, and retraining and reskilling programmes—can be put in place to help them. Trade facilitation is typically a beneficial proposition on a global basis, but that does not mean that it does not create winners and losers at a finer level of disaggregation.

4.1 Economic Development

GVCs involve a wide range of tasks, with different associated levels of value added or rent capture. Analysts typically see the distribution of value added by processing stage as following a “smile curve” (Figure 4). Upstream and downstream activities are typically relatively high value added, whereas mid-range activities—assembly is an example in manufacturing—are relatively low value added.

Figure 4: Value added distribution by task and processing stage in GVCs



Source: Adapted from OECD (2013).

In policy discussions, there is sometimes a subtext in which GVC participation is only seen to be economically beneficial if it takes the form of high value added activities. But economists have long been at pains to point out that international trade can be beneficial for countries regardless of the level of value added associated with their product or task specialisation. Paul Krugman’s “pop internationalism” remains alive in discussions of GVCs in developing countries (Krugman 1993). To be perfectly clear, a developing country can benefit economically relative to a closed economy from joining a GVC in a low value added activity, such as assembly in manufacturing or the supply of raw materials in commodity-based value chains. Concretely, these activities provide employment in

countries where formal labour markets often suffer from structural deficiencies in demand in the face of growing, young populations. They provide formal sector income that can then flow back into the economy through the purchase of goods and services, and can serve as a tax base for the government, which can then provide at least some public goods that are underprovided by market forces alone. The prospect of engaging, at least initially, in low value added activities should not be a deterrent to LICs and LDCs from seeking to increase GVC activity within their borders.

Of course, the above analysis does not mean that it makes no difference to a country whether it specialises in low or high value added activities. The comparison in the

previous section was between a closed economy and an open one. But it is also important to recognise that once the economy is opened, the rate of productivity growth—which is the most reliable long-term driver of increases in per capita income—depends on the type of activities a country specialises in. Moving up in value chains to higher value added activities means that sectoral productivity is increasing, which in turn can provide the basis for higher per capita incomes—the core component of economic development. In addition, some high value added activities such as research and development or design have significant spillovers, which mean that their economic benefits go beyond the organisations that directly undertake them. Again, they can fuel growth in the manner of the class of endogenous growth models associated with Romer (1994).

From an economic development perspective, the dynamic process of “moving up” is therefore of real importance to LICs and LDCs. Over time, they want to shift into higher value added activities. It is important to stress, however, that this aim does not support the widespread use of distortionary policies that artificially move economic resources into particular sectors. Although “industrial policy” has come back into vogue in some circles, it is notable that such policies have typically under-performed in countries that today are LICs and LDCs. One factor in that under-performance has been institutional weaknesses that lead to capture of the policymaking process by vested interests, typically incumbent firms. The result of this dynamic is that competitive pressures are lessened, and firms have little incentive to upgrade performance to meet the demands of the world market. Moreover, international markets are relatively more important to today’s LICs and LDCs than they have been historically, and investment decisions by lead firms are closely tied to economic performance and upgrading capacity. As a result, the environment is less welcoming to large-scale distortionary approaches to supporting particular industries than in the past—a factor that should give considerable pause to policymakers in LICs and LDCs.

The above analysis of the prospects of industrial policy puts considerable weight on governance failures in LICs and LDCs. But there is also the reality of market failures. Issues in the GVC context include network externalities and coordination costs. There is certainly a case for regulatory interventions to correct them, but in keeping with good regulatory practice, the appropriate place to start is with a “light touch.” Issues of coordination, for example, can be handled well with the use of standards, but in developed economies most standards are now private, not public, and voluntary, not mandatory. The public sector has an important role to play in terms of developing national quality infrastructure—the set of institutions that support standardisation, testing, certification, and other activities that help firms join GVCs. But the private sector can, in cases other than core issues of safety, health, and consumer protection, take the lead on developing the standards to be followed. Interoperability, for example, is a key issue in the electrical goods industry, but is handled almost exclusively through private means.

An alternative approach to correcting market failures within the limits posed by governance difficulties in LICs and LDCs, which could perhaps be termed “industry policy” rather than industrial policy, emphasises putting in place a business environment that is conducive to private sector upgrading and development of higher value added activities in a way that is sustainable over the medium to long term. There are many elements of such a policy, including macroeconomic stability, a stable and predictable investment climate, well-functioning financial markets, and openness to international flows of goods, services, and factors of production (labour and capital). The right mix depends on country circumstances, but these elements represent a significant part of the enabling environment for moving up. Importantly, getting these kinds of policies in place encourages lead firms to make relationship specific investments in their GVC partners. Once such investments are made, they tend to be relatively resilient even to large shocks, as Shepherd and Cattaneo (2014)

show for cases like the Global Financial Crisis, the Thai floods of 2011, and the Great Tohoku Earthquake. These kinds of investments are important because they blunt the criticism that GVC investment is easily reversed, to the detriment of local workers. Developing longer-term relationships is part of the process of upgrading, and can support a strong backward linkage structure with the domestic economy, avoiding “enclave” effects.

Of course, this kind of industry policy is not enough on its own to ensure that moving up in fact takes place. Another major issue is the development of human capital. Moving from low value added activities, like assembly to higher value added activities like design or research and development (upstream) or marketing and distribution (downstream), requires a stock of trained professionals. Education policy is therefore crucial. Even to take part in low value added activities, it is important to get basic education right, meaning primary and secondary. For higher value added activities, tertiary education becomes increasingly more important. Developing countries that have seen notable successes in GVC-based development, like China and Vietnam, have made significant and profitable investments in education. From an economic development perspective, that area remains a crucial priority for LICs and LDCs looking to put in place a basis for joining and then moving up within GVCs.

In the context of moving up, it is important to be alive to the differences between manufacturing and resource-based GVCs. Developing countries in East and Southeast Asia have primarily relied on manufacturing GVCs in leveraging international integration for economic development. There are clear prospects for moving up within such value chains, and tasks are relatively mobile in a geographical sense, according to emerging patterns of comparative costs. Resource-based GVCs are different, because a developing country’s position in the GVC is strongly determined by its resource endowments, for example minerals or arable land. Changing the relative resource endowment by investing heavily in human capital is even

more important in this context. Moving up in resource-based value chains is heavily focused on activities like processing or research and development, both of which require the kind of industry policy referred to above, as well as a strong base of human capital, in order to be sustainable. Moving up in resource-based value chains is certainly possible, although experience suggests it is more difficult than in the case of manufacturing. Differing experiences between Southeast Asia (manufacturing) and Latin America (resources) are suggestive of such difficulties (Shepherd 2015), although even in the latter case some economies like Chile have made major strides towards high-income status.

It is important to be frank about the limits of these kinds of industry policies. Although changes in the business environment and investment climate can sometimes be achieved in the short term, other areas like development of human capital are very much medium to long term policies. Not all LICs and LDCs are well positioned to join GVCs or move up to higher value added activities because of their current endowments in terms of resources and human capital. Of course, the process of development itself is not amenable to short term fixes, so any set of policies that purports to lead to sustainable increases in per capita income is likely to take some time to achieve its full potential. Perhaps the most crucial part of the equation, given that GVCs are private sector organisations, is the development of private sector capacity, so that firms themselves can identify opportunities and relationships that offer real perspectives. Aid for Trade programmes devote substantial resources to developing productive capacities, and it will be important to continue down that road within a broader context of developing industry and human capital policies that set the stage for medium term growth and development.

Another issue that arises in the context of moving up is rent distribution. One way of looking at value chains is in terms of bargaining among different actors over the division of rents that accrue at some points in the production process. It can certainly be the case that some

value chain actors are able to enjoy rents (see the examples cited by Maur and Shepherd 2015, in the case of food staples trade in West Africa). It can therefore appear that bargaining power is a crucial issue determining the ability of some actors, including producers in LICs and LDCs, to be fairly remunerated. From an economic point of view, however, the important point is to analyse the factors that support the continued existence of rents (i.e. a lack of competition somewhere in the chain). Typically, the answer will be related to barriers to entry. Some barriers stem from the nature of the activity, for example the need to achieve a certain scale in agro-processing in order to be efficient. Others are related to policy, such as restrictions on international road transport that reserve domestic markets for domestic carriers.

The answer economic analysis provides to the existence of rents is competition-promoting reforms. Lowering barriers to entry can encourage new firms to enter the market, which helps limit or eliminate rents. Sensible regulatory reform keeps important social objectives in sight, but seeks to achieve them at minimum economic cost. Importantly, introducing greater competition at chokepoints in value chains can have benefits for producers and consumers alike: the wedge between producer and consumer prices falls, so both groups of people win from these reforms (e.g. the analysis in Porto et al. 2011). In addition, a result of greater competition is that value chain actors receive remuneration that is closer to their marginal product. Although low productivity of workers in LICs and LDCs means that this level of payment might be low compared with high-income country wages, formal sector income can nonetheless be an important factor in supporting economic development goals.

In addressing the links between GVC expansion and economic development from a trade facilitation perspective, it is also important to address a serious misconception that circulated in some quarters (e.g. South Center 2011) to

the effect that improving trade facilitation in LICs and LDCs would cause imports to rise more quickly than exports, with supposed negative implications for these countries. Firstly, this concern is largely mercantilist, and is not based on a standard understanding of the gains from trade. Moreover, Hoekman and Shepherd (2015) use firm-level data to show that trade facilitation in fact has very similar impacts on exports and imports and, if anything, is stronger for the former than the latter. In line with a standard view of the determinants of the balance of payments, of which the trade balance is part, it is therefore safe to conclude that improving trade facilitation is unlikely to lead to a surge of imports relative to exports in LICs and LDCs.

On a dynamic basis as well as on a static one, there is clear potential for engagement with GVCs to support economic development in LICs and LDCs. Of course, potential is not the same as certainty. It is also possible for a country to become “stuck” in low value added tasks that do not support sustained increases in per capita income, or generate economy-wide spillovers. Although that situation is still more than likely preferable to what would pertain under a closed economy, it is not consistent with the requirements of sustainable development. It is therefore important that LICs and LDCs put in place the right policy settings to support joining GVCs, and then moving up into higher value added activities. A necessary starting point is a stable and predictable industry policy—not to be confused with the industrial policies of the past—combined with significant investments in human capital. There are clear examples of countries enjoying sustained increases in per capita income in part thanks to their engagement with GVCs, particularly in East and Southeast Asia. The constraints on value chain activity are significant in other regions like South Asia and Sub-Saharan Africa, but it remains nonetheless true that GVC engagement offers the perspective of gains from an economic development perspective.

4.2 Social Development

The previous section focused on the strictly economic dimensions of engagement with GVCs in LICs and LDCs, specifically income and growth effects. But in the context of sustainable development, it is important to consider a wider range of factors that can be subsumed under the heading of social development. It is impossible to be comprehensive in relation to this very broad area, the contours of which are still being debated in policy forums, so the approach taken here is selective. I focus on three key dimensions: decent work, inequality, and gender inclusion. Of course, each of these dimensions is affected by the economics of GVC participation, so the discussion here is necessarily linked to that in the previous section. My intention is to focus on economic mechanisms that can affect social development objectives, and to link those mechanisms to the GVC landscape in LICs and LDCs.

4.2.1 Decent Work

The first aspect of social development under consideration is decent work. The core of that concept relates to employment creation, social protection, rights at work, and social dialogue. It is fair to say that there is at least some scepticism within the labour community as to the potential for GVCs to help promote decent work (e.g. ILO 2016). Incidents such as factory fires and structural collapses in the garment industry are pointed to as examples of GVC-driven manufacturing activity being associated with unsafe and unfair working conditions. On the other hand, the economic mechanisms discussed in the previous section make clear that GVC expansion offers employment opportunities, including potentially to people not previously involved in the formal labour market, such as women. This is one element of the decent work agenda, but of course not the only one.

In addition to employment creation, it is also important to consider wage levels. Economists have conducted extensive quantitative research on wage levels in exporting firms, including those involved in GVCs. The consensus is that

such firms in fact pay higher wages than firms that serve the domestic market only. For example, Frias et al. (2009) conduct a detailed evaluation of the Mexican case, and find that exporters pay higher wages than other firms, even after taking account of different skill compositions. Shepherd and Stone (2013) analyse data from a range of developing countries and similarly find that internationally engaged firms employ more workers, pay higher wages, and employ more skilled workers than firms that serve the domestic market only. Of course, these research results do not mean that wages paid in export industries in LICs and LDCs are at all comparable to those paid in developed countries. But that difference is due to macroeconomic factors like the price level, as well as large differences in productivity. In looking at the capacity of GVCs to create decent work, it is important to have the right counterfactual in mind: based on the available research, of which Shepherd and Stone (2013) is an example, the relevant counterfactual of relying on domestic investment to drive export oriented activities would in fact result in fewer jobs and lower wages than allowing foreign investment, including by GVC lead firms, in export-oriented sectors. Moreover, LICs and LDCs are relatively capital scarce, so relying on domestic rather than foreign investment imposes a relatively low upper limit on the rate of industrial development—with attendant job growth and wage income—they can attain.

Does economic analysis have anything to say about the periodic factory disasters in developing countries, or more broadly about labour standards there, including the right to organise? Fundamentally, these issues relate to the state of domestic institutions. There is a clear economic case for basic labour protections, such as limitations on working hours and building safety codes, although differing implicit values of life and health mean that standards will likely differ from one country to another, just as they have differed across development levels dynamically within countries. This aspect of the decent work agenda primarily requires domestic regulatory action, including the development of inspection and enforcement

capacity. However, there are two areas in which there are particular interactions with GVCs. The first is the possibility of a “race to the bottom” as countries seek to lower labour costs in order to attract low value added tasks within GVCs, using inappropriate relaxations of labour laws as one way of achieving that objective. Such concerns are not without foundation, although research on labour and environmental standards typically finds no clear evidence of such an effect in fact taking place (see Drezner 2006 for a review). The second area in which there is a specific connection with GVCs pulls in the opposite direction to the race to the bottom hypothesis: through their global scope, GVCs empower consumers in developed countries to demand that lead firms ensure their developing country suppliers respect core labour standards. Anecdotal evidence for the apparel industry suggests that there is some empirical content to this mechanism. In countries like Bangladesh, a major source for global “fast fashion” firms, it seems quite likely that firms engaged in at least some GVCs are more attentive to workers’ rights than those firms that serve the domestic economy only, where consumer pressure is largely absent. Of course, the North-South dynamic created by this mechanism is not without its problems on a political and political economy level, but the point remains that the structure of GVCs can, under the right circumstances, be consistent with upwards pressure in the area of labour rights.

4.2.2 *Inequality*

Income inequality has become a salient issue in developing and developed countries alike in the aftermath of the Global Financial Crisis. Does engaging with GVCs risk worsening inequality in LICs and LDCs? Economic analysis can again be of use in answering this question, although empirical work suggests that the response is not necessarily clear-cut.

According to basic trade theory, opening to international markets tends to raise the relative wage of the factor used relatively intensively in export production. Of course, more sophisticated theories put many nuances on this insight, but

it is an appropriate starting point. The question is then whether LICs and LDCs getting involved in GVCs will see an increase in relative demand for skilled or unskilled labour. On the one hand, the typical entry point into GVCs is through low value added tasks that are typically intensive in unskilled labour, which could in fact tend to reduce inequality. However, the empirical evidence referred to in the previous subsection showed that firms that are part foreign owned and engage in export or import activity—some of the hallmarks of GVC participation—tend to use more skilled workers than firms that serve the domestic market only. That factor could aggravate inequality. Indeed, recent empirical work using Brazilian data suggests that opening to trade, including through engagement with GVCs, can indeed be associated with worsening inequality, which suggests that the export wage and skill premium mechanism may dominate (Helpman et al. Forthcoming).

If GVC engagement can indeed lead to worsening inequality, does that mean that LICs and LDCs should be wary of allowing the expansion of this mode of production? Two answers are possible. First, in a dynamic setting, some degree of income inequality may have important beneficial effects by encouraging young people to study to a higher level, acquire skills, and thereby enjoy the wage premium associated with skill intensive export production. Of course, the degree of inequality that is optimal in that sense is a matter of social choice for individual countries, and some may have a greater degree of tolerance of it than others. Moreover, such an argument is unlikely to respond to the concerns of activists who see any increase in inequality as socially undesirable. To answer those critics, it is important to recall that perhaps the most powerful tool available to governments to keep income inequality within manageable bounds is the tax and redistribution system. Progressive income taxation, a tool that is used in nearly all developed countries, can have significant social benefits by limiting the degree of income inequality produced by the labour market if it is seen as socially undesirable. Of course, development of income taxation systems in many LICs and LDCs is in its infancy, and some

countries lack the regulatory and administrative infrastructure to successfully implement such a policy. Nonetheless, governments in all but the weakest institutional surroundings have some taxation capacity, which means that they also have some redistribution capacity. These tools can be used to boost the incomes of poorer citizens, as well as providing public goods like education that help reduce inequality through market mechanisms over time. As was the case for part of the decent work analysis, the conclusion for inequality is that GVCs may well pose a challenge in this regard to LICs and LDCs, but the appropriate response is not to close markets and shy away from GVCs—doing so risks losing important economic benefits, discussed above—but to develop an appropriate domestic fiscal stance, so that market-related inequality can be limited to a level considered socially desirable.

4.2.3 Gender Inclusion

GVC activity that can be promoted by improved trade facilitation has a very visible gender implication in many LICs and LDCs, as the garment industry is frequently an early step along the path to industrialisation, and it uses female labour relatively intensively. Fast fashion GVCs use manufacturing plants in developing countries with heavily female workforces, although many supervisory and management functions are still carried out by men. Nonetheless, expansion of this kind of GVC activity can increase the demand for female labour, and can bring significant numbers of women into the formal labour market. Earning money and having an activity outside the home are both positive from the perspective of gender inclusion and, in a dynamic sense, can have further positive impacts by altering the structure of family relations over time.

From an economic point of view, the question of whether this type of effect is generalised or limited to the specific case of countries with comparative advantage in garment production is an empirical question that depends on resource endowments and established industries. There is relatively little evidence on the topic, as indeed is true for the broader issue of trade

and gender. Nonetheless, Shepherd and Stone (2013) use firm-level data from a variety of developing countries and industries to show that firms with international linkages tend to employ higher proportions of female workers. Their results suggest that there is indeed some general potential for GVCs to promote gender inclusion in LICs and LDCs. It is important to introduce some nuance, however, by looking at the question of wages of female workers. Here, the evidence is split. On the one hand, Black and Brainerd (2004) show that increased competition from trade can boost women's wages by reducing employers' power to discriminate. However, Busse and Speilman (2006) examine the case of special economic zones—an issue of particular resonance in the GVC context—and find that the prevalence of female workers can reduce their bargaining power and negatively affect wages. (Shepherd and Stone, forthcoming, provide a review of the literature.)

Again, the issue of gender inclusion is less about the specifics of GVCs and more about the interaction between that business model and embedded labour market institutions. Legislating and enforcing anti-discrimination measures is an important priority for helping close the gender wage gap, which is evident in all countries, even the most developed. In the LIC and LDC context, however, it is important to remember that a common default activity for women not involved in the formal labour market is subsistence farming, where income is very low, and their bargaining power within the household is weak. Wage labour has significant potential advantages over this model, so any increase in demand for female labour stemming from increased involvement in GVCs has the potential to improve the lot of significant numbers of developing country women, taking account of their realistic counterfactual.

4.3 Environmental Sustainability

Perhaps the most obvious challenge to the GVC paradigm from the sustainable development point of view relates to the environment. On the one hand, there is a fear of a race to the bottom in terms of environmental protections

(as in the case of labour standards) as countries seek to lower costs and attract GVC activity. As noted above, however, the empirical content of this argument seems to be limited, even though the mechanism could be important in theory. More fundamentally, though, GVC expansion into LICs and LDCs is part of a general expansion of the market economy that draws in natural resources as inputs, and affects the environment through externalities like land use and atmospheric pollution, including CO₂ emissions. Clearly, if GVC expansion due to trade facilitation increases the strain on resources in LICs and LDCs, it has the potential to be associated with negative environmental impacts, and unsustainable practices. This point is true of manufacturing value chains, but perhaps even more so of resource-based value chains, where extraction of natural resources is a core activity. A final aspect, related to this one, is that improved trade facilitation and associated growth of value chains increases the demand for transport services, and potentially leads to goods being transported internationally by sea or, increasingly, by air, which is a source of CO₂ emissions that poses difficulties in terms of the world community's commitment to battle climate change.

Proponents of trade facilitation and GVCs need to take these concerns seriously. It is important to note, however, that the types of environmental issues raised by GVC expansion are not, in fact, peculiar to GVCs as a form of business organisation, but instead relate to most extensions of economic activity. Perhaps the most distinct aspect from the GVC perspective is the transport question, as GVCs use cross-border transport services particularly intensively. Transportation contributed around 14 percent of global greenhouse gas emissions in 2010,² but only part of that is due to international (as opposed to domestic) transport. The exact split is difficult to establish, but one guide comes from the fact that shipping contributed 3 percent of the world's CO₂ emissions, and this activity is primarily international in nature. Although more data are required, it

seems plausible that international transport is perhaps a lesser contributor to greenhouse gas emissions than domestic transport. Drawing such a conclusion is not to minimise the problem, simply to recognise that it relates to all forms of economic activity, which rely on transport services; the problem is not solved by closing markets to GVC activity.

How does trade facilitation fit into this equation? On the one hand, improved trade facilitation can be expected to increase international transport flows in particular as GVCs expand to include new market nodes, and cross-border flows of parts and components increase. However, a contrary effect is also at work. In many LICs and LDCs, particularly in Africa, poor trade facilitation contributes to long delays at land border crossings, with trucks often idling or moving slowly for long periods. Poor trade facilitation thus has negative environmental consequences, and improving performance could improve road transport speed and efficiency. The balance between these two effects is unclear—no direct evidence appears to be available as yet—but the existence of the mechanisms at least suggests that the links between trade facilitation, GVCs, and the environment are not simple or unidirectional.

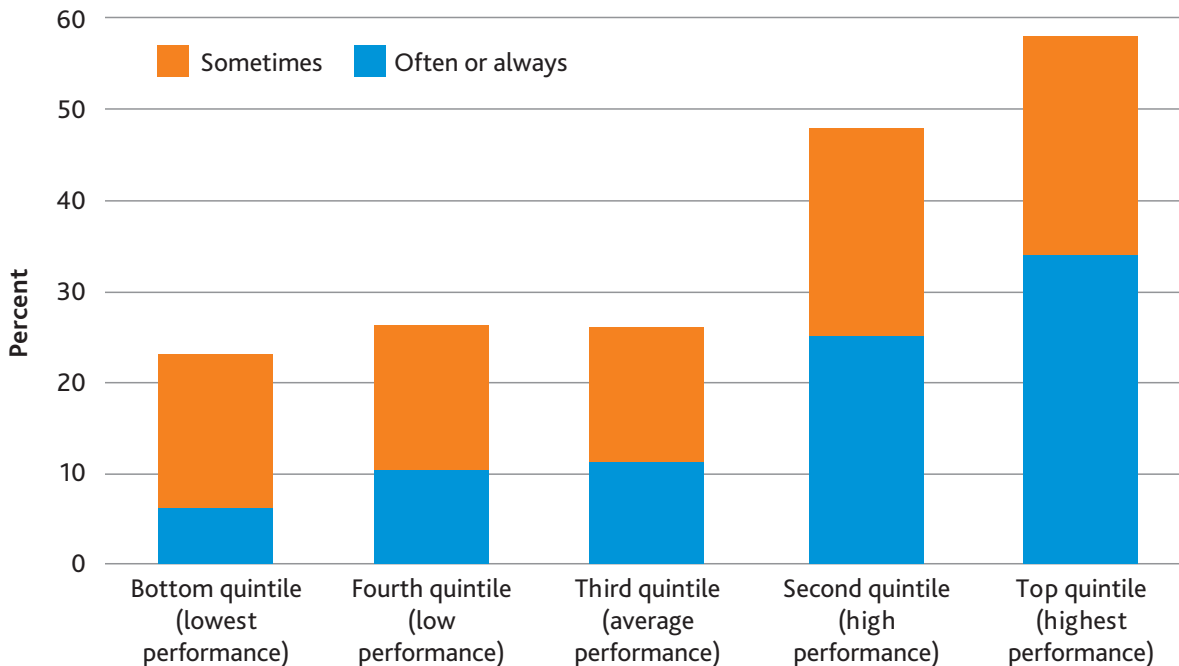
A second way in which the relationship becomes more complicated is demand for “green logistics.” Many of the world's leading logistics firms—the private sector suppliers of trade facilitation services—have adopted environmentally more friendly shipping methods, in areas like packaging and vehicle power source. A World Bank survey of logistics professionals (Arvis et al. 2016b) clearly shows that demand for green logistics services is much stronger in countries where logistics performance is rated highest—typically high income countries, rather than LICs and LDCs. Allowing the expansion of global logistics providers into new markets through relaxing restrictions on inward Foreign Direct Investment (FDI) could help this model spread to new markets. Income effects and preferences are

2 <https://www3.epa.gov/climatechange/ghgemissions/global.html>.

clearly at play, but there is nonetheless some potential for the introduction of green logistics methods in LICs and LDCs to both promote

GVC activity and limit negative impacts on the environment, and make the business model more sustainable.

Figure 5: Percentage of Logistics Performance Index (LPI) survey respondents indicating that shippers asked for environmentally friendly shipping options, by LPI performance quintile



Note: The figure shows the share of the respondents answering often, always, or sometimes to the question "How often do shippers ask for environmentally friendly options (for example, in view of emission levels, choice of routes, vehicles, schedules, and so on) in shipping to country x?" The economies are grouped by LPI quintiles. Source: Arvis et al. (2016b) with data from Logistics Performance Index (2016).

As was the case for labour issues, part of the environmental aspect of GVC expansion relates to the role of rules and standards in individual countries. It is legitimate that environmental standards should differ across countries according to factors like income levels, population density (relative availability of unused land), and preferences, including discount rates with respect to future costs of polluting activity today. Within the GVC context, there is again a role for developed country consumers to play in exerting pressure on lead firms to ensure that their developing country suppliers comply with appropriate environmental standards during the production process. Firms not engaged in GVCs (i.e. serving the domestic market only) are not subject to that pressure; thus there is the same potential as in the case of labour for GVC-linked firms to in fact act in more sustainable ways than other firms in LICs and LDCs. Again, the politics and

political economy of this dynamic are not without their difficulties, but it is important to be clear about the potential for consumer led action on the environmental front.

In the case of LICs and LDCs, there is a clear need to develop an appropriate regulatory structure to deal with the environmental consequences of economic activity, including GVC-related production and transport. There is nothing particular about GVCs that requires special regulation to ensure sustainability: the question is rather a general one of ensuring that the twin aims of economic development and environmental sustainability can be pursued in tandem, without one unduly undermining the other. Of course, this issue is a real challenge in LICs and LDCs. Given that lead firms in GVCs have considerable power to impose standards on developing country suppliers, it is plausible that greater involvement in GVCs could

actually be a positive force for environmental protection in LICs and LDCs, in the absence of effective government action to ensure that externalities are properly dealt with through regulation and taxation.

International transport is a special case because it falls outside national regulatory jurisdictions. Although a limited effort was made to impose additional taxes on international air travel in the early 2000s, only a small number of countries apply the measure; and in any case, proceeds from the tax are directed to health causes rather than environmental ones. The problem with the negative environmental effects of international transport, including that linked to GVCs, is a symptom of the broader issue of the absence of an international price for carbon. Again, the issue is in no way peculiar to GVCs. There are good economic arguments for using tax policy to internalise the negative externalities associated with CO₂ emissions, but action has proved politically difficult. The issue also arises in the case of energy: appropriate energy pricing based on appropriate carbon

pricing could, with lower trade costs, support the development of competitive industries in countries that have energy sources with relatively low carbon footprints, including hydro-electric power. Some LICs and LDCs are developing that capacity (Ethiopia is an example) and movement forward on the pricing issue could help promote GVC activity there.

The question for LICs and LDCs considering greater involvement in GVCs is whether they are prepared to deal with the resulting environmental problems in a context where effective global regulation has proved impossible to achieve. Given that the environment is one of the three pillars of sustainable development, there is a strong argument to the effect that the economic benefits are of particular importance in the context of low-income economies, and indeed increases in per capita income may be associated with stronger demand for environmental protection. Nonetheless, this choice in part reflects social preferences, and needs to be undertaken in a transparent, democratic way in individual countries.

5. CONCLUSION AND POLICY IMPLICATIONS

GVCs have been spreading across the developing world, and in many ways offer a new paradigm for economic and social development. Whereas it was once necessary to develop full supply chains, countries can now specialise in narrowly defined tasks and coordinate across borders with other similarly specialised countries to produce the final product. Lead firms assume an important role in this model, providing sourcing and coordination services for the entire network. As stated at the outset, GVCs are simply not practical in environments with weak trade facilitation performance, as it is impossible to move goods, including parts and components, across borders quickly, reliably, and at a reasonable cost. Improving the trade facilitation and logistics environment is one major way in which developing countries, including LICs and LDCs, can expand their engagement with GVCs.

It is clear in the literature that better trade facilitation has the potential to boost GVC activity. What is less clear is the relationship between that link and the broad objective of sustainable development, taken to include economic, social, and environmental dimensions. The discussion in this paper has teased out those issues and explored the ways in which the economic mechanisms underpinning GVC expansion interact with factors like employment, wage levels, gender inclusion, and labour and environmental standards. It is, of course, impossible to give any general answer of the form that GVCs are either “good” or “bad” for sustainable development. The reality is complex and many-faceted, and contains numerous trade-offs that individual countries will need to grapple with through democratic processes. All that can be said is that in a number of important cases, there is clear potential for GVC activity to be at a minimum consistent with sustainable development objectives, and perhaps even an active factor in their promotion.

How does this nuanced picture translate into policy implications? Clearly, it is difficult to be comprehensive, as country realities differ, and value chains can be highly sector specific. Nonetheless, it is possible to offer some broad

findings that may be of use to policymakers. First, from a policy point of view, GVCs do not require a paradigm shift when it comes to their relationship to sustainable development. Improving trade facilitation can expand GVC activity, including in LICs and LDCs, but the core mechanism at work is just an extension and intensification of economic activities that are already underway. As such, the issues that arise—decent work, gender inclusion, economic effects, and environmental sustainability—are not qualitatively different from those that policymakers already face on a day-to-day basis.

Second, and flowing from the first point, the most important thing policymakers can do to ensure that GVC activity is consistent with sustainable development is to put in place appropriate domestic regulatory structures. Examples include core labour standards, environmental regulations, and anti-discrimination laws.

Third, policymakers need to leave room for the operation of private norms and standards in areas like labour and the environment. GVC lead firms are responsive to the demands of developed country consumers, who are increasingly expressing preferences for ethical sourcing, at least in some market segments. As a result, there is a clear scope for GVC supplier standards to be driven higher than the level prevailing in the rest of the domestic market, and that process needs to be facilitated, as it is a step along the path to gradually improving standards more generally. Many LICs and LDCs lack domestic standards infrastructure—an issue that hampers them in their trade relations more generally (Shepherd 2014). Development of standards, and increasing private sector familiarity with them are part of the process of upgrading that GVCs can potentially facilitate.

Fourth, although the discussion here has focused on GVCs, most value chains in fact have a significant regional dimension. Indeed, the emergence of the business model was first seen in the transport equipment and electrical products industries in East and Southeast Asia, with Japanese companies playing the lead role,

and other economies at various development levels also participating. Indeed, Shepherd (2016) shows that regional connectivity is an important determinant of value chain integration, in the sense that infrastructure quality in neighbouring countries is relevant to the degree to which a given country's firms can integrate into global markets. This finding reinforces the need for attention to be given to economic corridors in the context of Aid for Trade, and more generally makes a case for coordination of infrastructure policies—and potentially other factors that reduce trade costs—on a regional basis. Global institutions working to reduce trade costs need to work collaboratively with Regional Economic Communities and development banks, as well as private sector actors, to support this process.

Taking into account all these points, is it possible to point to examples of good practice in developing regions that can potentially form the basis for South-South knowledge sharing? Indeed, there are many such examples. ADB and UNESCAP (2013) consolidate lessons learned from experience in the Asia-Pacific. Although the material presented in that report is of interest to all countries, it is important to highlight that approaches need to be tailored to regional income levels. For LICs and LDCs, a particularly instructive example of how to move forward comprehensively on trade facilitation comes from East Africa. Supported by TradeMark East Africa (TMEA), the East African Community has been taking concrete steps to improve the trade facilitation environment in the region. TMEA itself is funded by a multi-donor facility mobilising Aid for Trade resources in the amount of US\$590 million over seven years. On the one hand, TMEA is working actively with the Kenyan Ports Authority to upgrade the port of Mombasa, the principal entry and exit point for traded goods in the region with respect to the world market. The programme includes infrastructure upgrading, as well as legal and regulatory work—the combination of hard and soft infrastructure referred to in the preceding sections. In addition, TMEA has supported work to improve border procedures (narrow sense trade facilitation) in East African countries, including development of One Stop Border Posts, and other measures

like Single Window Implementation, which are important in light of the WTO Agreement on Trade Facilitation. Importantly, however, TMEA's focus is broader than customs procedures and transit, and extends to other sources of trade costs. An important example is non-tariff measures, including product standards. TMEA is actively supporting the East African Community (EAC) in its programme of standards harmonisation, which can reduce trade costs by streamlining the norms producers need to meet in order to serve the regional market. There is much promise in the TMEA-EAC approach to trade facilitation, and should their goals be met, East Africa will be better positioned to take part in GVC activities, including in emerging sectors like horticultural products. There is considerable scope for South-South knowledge sharing that arises out of this programme, in addition to lessons for donors in terms of coordination and focus in the development of Aid for Trade Facilitation initiatives.

Finally, leveraging GVCs to promote sustainable development requires more than just good trade facilitation and appropriate complementary regulations dealing with labour, environment, and taxation issues. It is also important that the business environment be conducive to relationship-specific investments by lead firms. Macroeconomic stability, a predictable investment climate, and strong institutions of governance and contract enforcement are also vital. Together, they can be considered a new industry policy, as distinct from old and highly distortionary forms of industrial policy.

Improved trade facilitation—in the broad sense of lowering trade costs—has much to recommend it as a policy for LICs and LDCs. Boosting GVC integration is one significant benefit. There is little doubt that GVCs can bring real economic gains, as evidenced by the experience of countries in East and Southeast Asia. The question of sustainable development—which also includes social and environmental goals—is more complex. However, there is still good reason to believe that a strong government with the right policy settings can leverage GVCs and international integration to promote sustainable development over the long term.

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