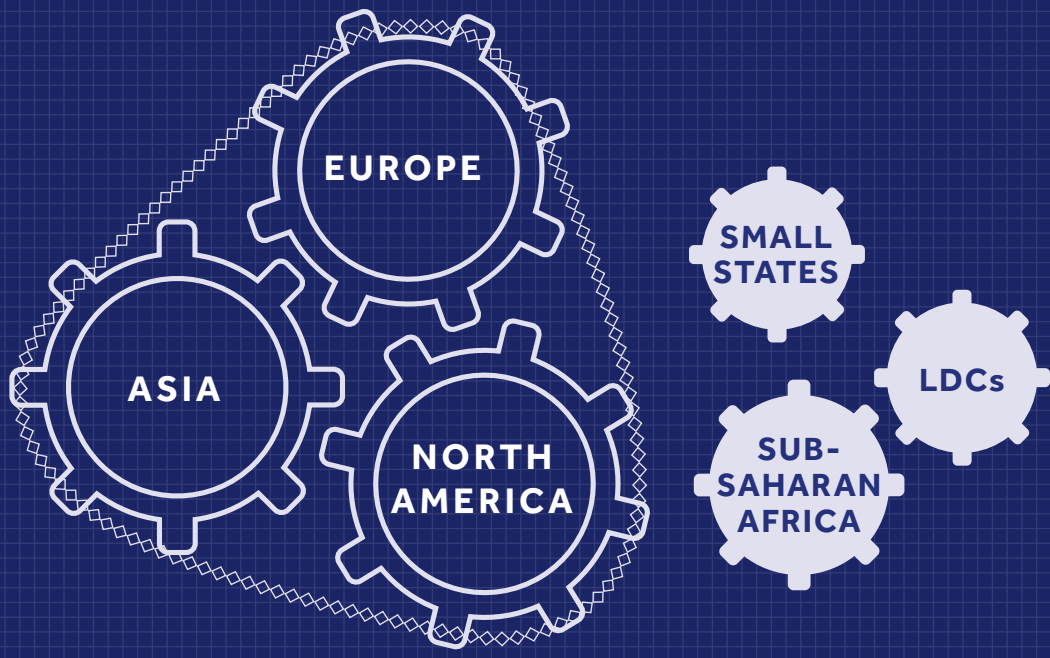
**Future Fragmentation Processes**

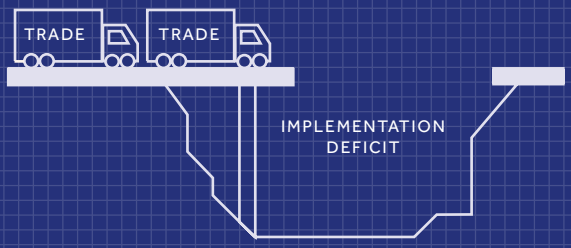
Effectively Engaging with the Ascendency of Global Value Chains

# Section 4: Policy Perspectives



**TACKLING IMPLEMENTATION DEFICIT**

THERE ARE HUGE GAPS IN THE IMPLEMENTATION OF TRADE STRATEGIES AND AGREEMENTS.




**SECURING A TRADE-SUPPORTING GLOBAL ARCHITECTURE**

1. ENSURING ADEQUATE AND EFFECTIVE TRADE CAPACITY BUILDING.
2. FULFILLING INTERNATIONAL COMMITMENTS IN ALL AREAS.
3. IMPROVING MARKET ACCESS.


**SOURCE: COMMONWEALTH TRADE REVIEW (2015)**

The Commonwealth Secretariat's work on international trade includes:

- Policy and global advocacy, including on the changing dynamics arising within the global economy affecting member states, multilateral and regional trade negotiations, the trade-related implementation agenda of the Sustainable Development Goals, emerging trade issues, and trade and development implications of Brexit.
- Technical assistance to member countries for improving their trade competitiveness in global markets, especially through market access, export development strategies, enhancing the development and exports of services, and trade facilitation.
- Long-term capacity-building support to African, Caribbean and Pacific (ACP) countries through the Hubs and Spokes project, which is a joint initiative of the Commonwealth Secretariat, the European Union, the Organisation Internationale de la Francophonie and the ACP Secretariat.

# Executive Summary

## Context

Profound shifts in the trade–growth nexus have occurred in recent years, with implications for conventional trade-led growth models. Since the Great Recession, which began in 2008 after the global financial crisis (GFC), policy-makers around the world have been grappling with the profound implications of the ascendency of global value chains (GVCs) for conventional trade policy-making. This is because the principles and models that have underpinned trade policy-making in the past are based on trade in final goods between separate firms based in sovereign states. However, it is increasingly obvious that is far from the case: new forms of trading relationships are arising as a result of profound technological advances, inducing heightened connectivity to global markets.

The unprecedented synchronised global trade shock of 2008–09 revealed the deeply interconnected nature of global trade, investment and finance. As a consequence, international institutions with a mandate for the oversight and supervision of global trade were charged by the G20 with reaching a better understanding of the mechanisms through which the crisis occurred. The result has been the construction of new quantitative databases that measure trade in value added. By identifying the contribution of imports to final goods trade, these new databases provide a more realistic picture of trade patterns. They also help to improve how we account for growth induced through trade.

However, although these new databases provide constructive insights, it is simply not possible to obtain a complete understanding of the operation of GVCs through one type of research method. Data are missing for many Commonwealth countries. Other information gaps persist, not least in view of the tightly co-ordinated nature of global trade, which has arisen as production has been fragmented and dispersed through the networks of transnational firms. All governments continue to grapple with this reality, which comes with a realisation that many of the conventional tools at their disposal to influence participation, as well as outcomes, have been profoundly altered.

Within the context of the current global trade slowdown, new leverage points and more effective dialogue mechanisms are required to more effectively realise the potential gains from trading within GVCs, which are the new trade reality. Management of the disruptive forces unleashed by new technologies,

avoidance of future financial crises and advancement of public policy objectives in view of the universally adopted Sustainable Development Goals (SDGs) requires reflection on the appropriateness of regulatory frameworks, within as well as across countries.

The potential to further leverage the 'Commonwealth Effect'[1] on contemporary trade and investment flows and linkages requires further reflection on the potential trajectory of future fragmentation processes. New drivers of GVCs are likely to emerge at the regional level and within sectors where firms are just beginning their internationalisation strategies.

In **Section 4** of this publication, three alternative policy perspectives on effectively engaging with the ascendency of GVCs and future fragmentation processes are presented. The first contribution, by **Kaplinsky**, argues for a radical rethinking of conventional industrial policy in the context of GVCs, shifting towards productive-sector policy. The second contribution by **Taglioni, Winkler and Engel** underscores this need. Enhanced automation in many of the entry stages of GVC production in most industries, combined with rising protectionism in advanced countries, means that developing countries' efforts to engage and upgrade in GVCs now face a much more challenging global trading landscape than compared to the past. In relation to trade cost and capability constraints, the challenges of entry into, and participation within GVCs, for many developing Commonwealth and francophone countries are explored further by **Razzaque and Keane**. They question the effectiveness of conventional policy prescriptions intended to bolster entry into and participation in GVCs.

Finally, the contrasting experiences regarding GVC participation and shifts over time are explored in the last sub-section of this report, for Caribbean, Pacific and African countries. Although increasing intra-regional value development is apparent across all three regions, it is strongest in the Pacific (driven by Australia) and Africa (driven by South Africa). Although not conclusive, this snapshot provides us with evidence regarding current participation and, most importantly, changes over time.

## Highlights

Because management of the GVC mechanism has varied across countries, over periods of time, blanket policy prescriptions must be made extremely cautiously. Moreover, they must reflect the fact we now face a very different trading landscape compared to in the past. Given this context, three alternative, but also complementary, policy perspectives are introduced.

## The End of Industrial Policy? Why a Productive-Sector Policy Agenda Better Meets the Needs of Sustainable Income Growth

First, **Kaplinsky** affirms the primacy of economic rents in securing a sustainable growth trajectory. These can be secured across sectors, including in services and agriculture. He moves away from a narrow focus on the manufacturing sector as a driver of sustainable growth and income. This is because productive-sector polices must adapt to the type of GVC within which producers trade. A distinction is made between two major types of GVCs and their specific policy requirements. In vertically fragmented and specialised value chains, the country must deepen its capabilities in order to transition to new ones. In additive chains, the systematic development of linkages between production nodes and between sectors is required.

## Making Global Value Chains Work for Development in the Age of Automation and Globalisation Scepticism

Second, **Taglioni, Winkler and Engel** emphasise how countries which understand the opportunities offered by GVCs and adopt appropriate policies to mitigate some of the risks associated, are more likely to boost employment and productivity. Because flows of goods, services, people, ideas and capital are interdependent, their contribution to upgrading in GVCs depends on how the process has been managed. The imperatives for improved management of GVC engagement and the process of technological development unleashed, are underscored by findings which suggest that while more net jobs may be created through GVC engagement, there may also be lower job intensity.

## Delivering Inclusive Global Value Chains

Concerns regarding the development of firms' technological capabilities and the achievement of social and economic upgrading processes over time through GVC engagement are emphasised by **Razzaque and Keane**. Drawing attention to value chain governance and power dynamics, they note that all governments are grappling with the balance between state and business interests and the appropriate alignment of incentive structures. Competitive incentive schemes to attract GVCs can undermine economic and social objectives in the longer term. While in some cases a focus on trade facilitation measures for both imports and exports is undoubtedly beneficial, an alternative policy narrative is required, focusing on trade costs and capabilities, to induce inclusive and sustainable GVC participation. Small-state support measures may be necessary. Moreover, greater attention should be paid to value chain development led by trade in services in countries with excessive trading costs.

## The Relative Position of the Commonwealth in Global Value Chains: Focus on Africa, Caribbean and the Pacific and Shifts in Trade in Value Added

Finally, some of the main findings arising from analysis of trade in value added in African, Caribbean and Pacific countries are presented, the main highlights of which include:

### Caribbean[2]

- There has been a consistent increase in the proportion of foreign value added embedded within the exports of Barbados, Belize, Guyana and Jamaica between 1995 and 2000.
- The main sectors that experienced an increase in foreign value added in exports (2000–2012) were transport, food and beverages, post and telecommunications, private households, and maintenance and repair.
- The main sectors that experienced a decrease in foreign value added (2000–2012) were mining and quarrying, electrical and machinery, textiles and apparel, fishing, and public administration.
- This suggests declining participation in archetypal GVC sectors, such as light manufacturing and processed fisheries.
- A consistent increase in domestic value added in exports occurred between 1995 and 2012 in the case of Antigua and Barbuda, The Bahamas, and Trinidad and Tobago. However, domestic value added by Caribbean countries as a proportion of global trade in value added (2000–2012) decreased, except in the case of Trinidad and Tobago (driven by the dominance of petrochemical exports).
- Global value added to exports (through imports) increased between 2000 and 2012 by almost 10 percentage points, with a slight decrease in the regional sourcing of value added from other Caribbean partners (0.02%).
- However, individual countries in the region (Guyana, Barbados and Jamaica) have increased their sourcing of regional value added, mostly from Trinidad and Tobago.

### Pacific[3]

- Between 1995 and 2012, Fiji and Papua New Guinea increased the proportion of foreign value added in their exports. Australia and, to a much lesser extent, New Zealand, by contrast, experienced a decrease, and the proportion of domestic value added in their exports increased.

- Globally, the value-added contribution of Australia to world exports has increased dramatically in recent years, while that of New Zealand has decreased.
- Overall, the regional contribution of value added to global exports has increased, from around 3 per cent (2000) to 7 per cent (2012). Australia is the only country that has not increased regional sourcing of value added.
- Each of the individual countries of the Pacific increased their sourcing of value added from Australia between 2000 and 2012.
- The sectors with the largest increases in foreign value added in exports (average percentage point change) were agriculture (4.5); mining and quarrying (2.7); post and telecommunications (1.7); hotels and restaurants (1.5); and construction (0.8).
- The sectors with the largest decreases in foreign value added (and hence where domestic value added may have increased) were financial intermediation and business services (–7.1); petroleum, chemical and non-metallic mineral products (–2.2); education, health and other services (–0.9); wood and paper (–0.5); and retail trade (–0.5).

### Africa[4]

- African countries are highly integrated into GVCs through forward integration; their domestic value added, derived mostly from mining and quarrying, makes a major contribution to global exports, even though the continent's overall contribution to trade in value added is only 2.2 per cent.
- On the other hand, southern African countries have the highest backward integration rates (measured by the proportion of foreign value added in their exports).
- In absolute terms, intra-African trade in value added is dominated by South Africa, Algeria, Nigeria and Angola.
- Many other regional trading partners are integrated into southern African regional value chains: Swaziland and Namibia source 38 per cent and 23 per cent respectively of their imported value added from elsewhere in southern Africa.
- The automobile sector has the highest backward integration rate (42.9%) and this is led mostly by a handful of countries (e.g. Egypt, Morocco, South Africa). Other sectors with high shares of foreign value added include manufacturing of electrical goods and machinery, and textiles and apparel.

# Notes

1 See Commonwealth Trade Review (2015).
2 These findings are based on analysis of Eora-Miro data, a forthcoming GVC Handbook for the Caribbean and Pacific, and finally, a background paper prepared by Mendez-Parra (2016).
3 *Ibid*.
4 These findings are adapted from Davies et al. (2016); we are grateful to the United Nations Economic Commission for Africa (UNECA) for sharing this information.

## Chapter 15

# The End of Industrial Policy? Why a Productive-Sector Policy Agenda Better Meets the Needs of Sustainable Income Growth

*Raphael Kaplinsky*[1]


### Abstract

Sustainable income growth depends on the capacity to generate and appropriate economic rents. The traditional literature on achieving sustainable growth and development argued that this could be achieved through a shift in the structure of the economy to high productivity manufacturing, from low productivity agriculture and non-traded services. This orthodoxy however, is challenged when global trade is organized within GVCs. This is because the evolving structure of GVCs means that high rents are no longer confined to the manufacturing sector. Moreover, many activities in the manufacturing sector are characterised by intense competition and low and declining economic rents. Hence, a transition is required from a narrow traditional industrial policy to a modern productive sector policy which addresses rent generation and appropriation within and across all sectors. The challenge is for countries to develop a dynamic capability building path in response to global competition that allows them to improve their position within the GVCs. The nature of this capability building depends on whether the country exports into a vertically specialized value chain (involving the subcontracted production of intermediates and assembly across borders, much of it occurring in parallel) or an additive value chain (in which processing takes place in sequential steps).


## 15.1 Introduction

The increasing globalisation of the world economy after Second World War was driven by a systematic drive by the major economic powers to reduce barriers to both trade and the flow of investment (but less so labour) across national borders. At the same time, and explicitly linked to the pursuit of trade liberalisation, the legitimacy of state intervention to create and shape markets in domestic jurisdictions was challenged. For many economies, particularly those experiencing the structural adjustment 'remedy', industrial policy was reduced to trade policy, and trade policy was reduced to trade liberalisation.

However, the atmosphere has changed. Industrial policy is now back on the policy agenda. It is increasingly recognised that the state has a role to play not just in fixing market failures but also in making and shaping market structures (Mazzucato 2016). In the USA, across much of Europe, in the Organisation for Economic Co-operation and Development (OECD) and in many of the multilateral agencies, it is no longer anathema to talk about the positive constructivist role of the state (OECD 2014). At the same time, there has been a fundamental change in the structure of industrial production, as global production and trade have increasingly extended through

the medium of global value chains (GVCs). Therefore, notwithstanding the renewed legitimacy of industrial policy, it is necessary to examine what this means for contemporary patterns of global trade.

This paper considers the nature of an optimal policy framework designed to deliver sustainable income growth in an increasingly globalising world. Of course, sustainable income growth in the context of trade openness is only one objective of industrial policy. Other important objectives include employment creation (as a mechanism for spreading gains from industrialisation).[2] In view of the ascendency of GVCs, there is a need for a transition from industrial policy to productive-sector policy.

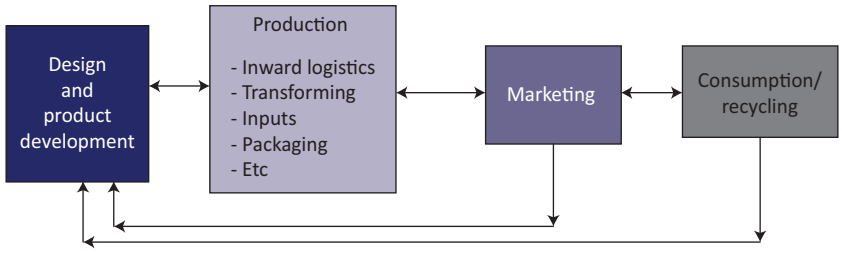
## 15.2 The increasingly prominent role of global value chains in outward-oriented industrialisation

Global value chains have increasingly come to dominate global trade, affecting virtually all sectors and all economies. The value chain comprises the full range of activities that are required to bring a product or service from conception through the various phases of production (involving a combination of physical transformation and the input of various producer services) to delivery to final consumers and disposal after use (see Figure 15.1). Production per se is only one of a number of value-added links. This applies as much to the manufacturing sector (in which physical inputs are transformed into physical outputs) as it does to the service and agricultural sectors, and government services.

The origins of GVCs are to be found in the adoption of core-competence business strategies, a process that gathered momentum from the early 1970s. This involved firms concentrating on their unique competences, which were valued in the marketplace and were difficult to copy. Activities that were of low value or easily copied were outsourced: backwards to suppliers and forwards to user firms. Initially, this outsourcing involved near-sourcing, but – as global trade barriers fell, containerisation developed in shipping, and information technology (IT) allowed for enhanced digital communication – it rapidly extended to global outsourcing.

Recognising the growing significance of GVCs in trade, the OECD and the World Trade Organization (WTO) have identified the proportion of intermediates in global trade as an indicator of GVC trade. By 2012, more than two-thirds of global exports comprised intermediate products and services (OECD 2014). The WTO estimates that 28 per cent (US$5 trillion out of US$19 trillion) of global trade in 2010 involved double counting; that is, the value of intermediate products traded directly across national borders as well as indirectly, and subsequently incorporated into final products (UNCTAD 2013). For example, the screen in a mobile phone assembled in China is counted both as an export from Korea to China and

Figure 15.1 Four links in a simple value chain




**Source:** Authors

(when incorporated in the assembled phone) as an export from China to the rest of the world.

## 15.3 Two broad families of global value chains

There is great variety in the character of value chains. One key distinction is that which arises between 'vertically specialised GVCs' and 'additive GVCs' (Kaplinsky and Morris 2015). Vertically specialised chains result from the fracturing of value chains as firms specialise increasingly in their core competences and outsource non-core activities. This leads to the fragmentation and slicing up of production into a myriad of sub-processes. In vertically fragmented GVCs these activities can be undertaken in parallel – that is, at the same time – and, since there is little processing loss in production and no degradation of inputs, there is no intrinsic need for the various stages to be co-located. They thus lend themselves to global dispersion.

The well-known example of the Apple iPhone 4 illustrates this well (Xing and Detert 2010). Each device retailed at just under US$500 in the USA. The phones were exported from China – 'made in China' – at a unit price of US$179. However, the value added in China was only US$6.50, with the balance made up of imported components and service payments to Apple in the USA. This reflects a production chain in which parts are sourced from all over the world, assembled under Apple's supervision in China, and then branded and marketed in the USA and other final markets.

Vertically specialised GVCs predominate in the manufacturing sector, where final products are assembled using a variety of components (more than 3,000 in the case of an automobile and 15,000 in the case of an aircraft engine). A reconfiguration of the way in which services are produced also means that these too can comprise a range of 'assembled' activities. For example, call centres are part of a much larger, fragmented chain of production, distribution and after-sales support. This fracturing and global dispersion of services is also increasingly evidenced in higher-knowledge content activities such as in the legal, architectural and health sectors.

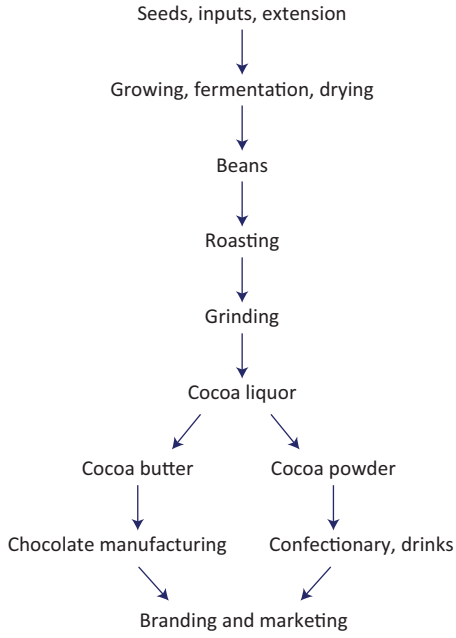
In contrast, additive value chains involve a process of sequentially adding value to each stage of the chain, and in this sense they contrast sharply with the structure of vertically specialised GVCs, in which the various stages of production can occur in parallel. Additive GVCs tend to characterise the resource sector: where the primary input into the final conversion process makes up a large proportion of the total value of the final product; the primary input may be varied as a result of the specific characteristics of the resource; where processing losses may form an important component of overall product value; and finally, where the nature of production means that some processing needs necessarily to be completed before other value adding activities can begin. A typical example of an additive chain is the production and processing of cocoa into chocolate (Figure 15.2). This involves a series of sequential stages that, unlike vertically specialised chains, are difficult to fragment and execute in parallel.

A joint programme between the WTO and the OECD estimated that vertically specialised chains are growing more rapidly than are additive GVCs. However, from the perspective of low-income economies, this balance between chain types takes a different form. In Africa's case, more than 75 per cent of exports involved additive chains, a direct consequence of Africa's specialisation in the resource sector (OECD 2014).

## 15.4 The impact of global value chains on the character of industrialisation

The fracturing of GVCs has posed increasing threats to the capacity of industrialisation to

Figure 15.2 The cocoa additive value chain




**Source:** Authors

provide sustainable incomes. For example, a Dominican Republic firm 'manufacturing' jeans for a large global clothing brand in the early 1990s began with an order offtake of 9,000 jeans per week, at a unit price of US$2.18., Just before the firm was forced into bankruptcy, however, the order offtake had been progressively reduced to 3,000 jeans per week, at a unit price of US$1.87. The explanation for this failing venture was that, following pressure from the Bretton Woods institutions, surrounding economies had devalued competitively in order to increase their comparative competitiveness (Kaplinsky 2005).

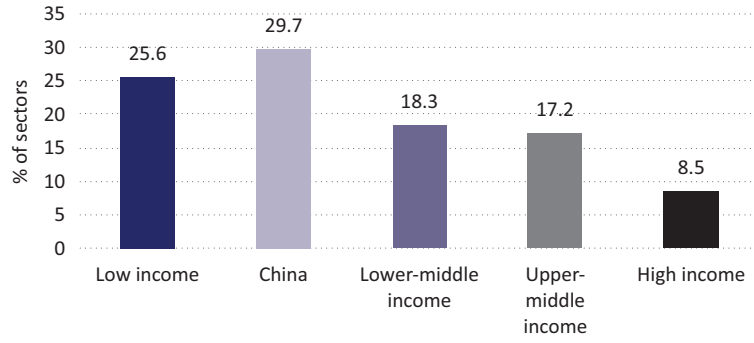
In the cases of both the individual exporting firm and the Dominican Republic's economy as a whole, their vulnerability arose from their position in GVCs. They were unable to offer any distinctive competences in production. The firm (at the micro level) was merely assembling jeans, and domestic content was limited to unskilled labour and utilities; at the macro level, meanwhile, this was mirrored in a large number of enterprises doing similar work in export processing zones (EPZs). The failure of either the jeans manufacturer or the economy as a whole to benefit from any significant barriers to entry meant that they could compete only by lowering incomes (unit prices for the firm; currency exchange rates for the economy). We can describe this process of increasing economic activity with reducing incomes as a form of 'immiserising growth'.

The Dominican Republic's experience shows that manufacturing does not of itself provide the scope for sustainable income growth. This is not a process unique to either the clothing sector or the Dominican Republic, however. In fact, many exporters of manufactures in the South have followed similar growth paths and found themselves in similar circumstances. Focusing on imports of manufactures into the EU between 1988 and 2001 (a period of particularly rapid advance of GVC trade), the likelihood of prices falling was greatest for those sectors in which manufacturing exporters in the South were dominant, with Chinese exports at the forefront of price reduction (Figure 15.3).

Consequently, the structural transformation that is required to provide sustainable income growth in the era of GVCs is no longer one that is provided by manufacturing per se, but one provided by a specific type of manufacturing. Some manufactures benefit from barriers to entry – the rents that provide for sustainable income growth – while others most certainly do not.

Similarly, it is no longer the case that the agricultural sector involves low-technology and low-skill processes, or that it produces easily substitutable products. For example, the export of fresh fruit and vegetables and horticulture from Africa requires considerable control over chain logistics to ensure that the products are as fresh as possible, that they conform to specifications and that they are packed in retailer-specific cartons; furthermore,

Figure 15.3 Percentage of sectors with negative price trends, 1988/1989–2000/2001 by country groupings




**Source:** Kaplinsky (2005)

full traceability is required in case there are any problems with the final product.

Again, in contradiction to the standard argument that, unlike manufactures, services are undifferentiated and benefit from few barriers to entry, this is clearly not the case. In high-tech software, services are unambiguously complex in nature, benefiting from knowledge-based barriers to entry. Yet even low-tech services such as tourism have niches that provide high margins, while low-end, more commodified areas of the tourist industry benefit from technology-intensive IT services similar to those that 'oil' agricultural GVCs.

The mining and metals sector is on the cusp of a major era of automation, with industry leaders pushing autonomous mining, observing that the basic technologies in mining have changed little since the late nineteenth century. Rio Tinto, the world's second-largest mining company, has a three-pronged strategy to automate truck haulage, mine drilling and rail transport in its global operations.

## 15.5 Industrialisation and structural transformation: global value chains challenge received wisdom

A primary rationale for industrialisation is the close association between the contribution of manufacturing to gross domestic product (GDP) and per capita income. This association can be observed both through cross-section analysis (comparing different economies with different manufacturing-to-GDP ratios) and time-series analysis (observing the ratio of manufacturing to GDP in a particular economy). The explanation for this association include the arguments that manufacturing is the primary source of productivity growth in an economy, that it produces income-inelastic products and that it benefits from favourable terms of trade with respect to commodities (the Prebisch–Singer hypothesis).

From this, it is argued that the structural transformation that provides for higher per capita incomes requires a transition from agriculture and simple non-traded services (such as shoe-shining) to manufacturing. Furthermore, it is argued that, within manufacturing, there is a hierarchy of productive sectors (reflecting technological intensity and scale) that provide for so-called 'normal' patterns of industrialisation. This includes sectoral shifts within manufacturing as a route for inter-sectoral structural transformation that will deliver sustained income growth.[3]

However, the advance of GVCs challenges this received wisdom. A snapshot of contrasting economic structures in China and New Zealand is a good demonstration of this. In China,

which has in recent decades specialised in assembly-intensive manufacturing by systematically augmenting the supply of low-wage labour, the contribution of manufacturing to GDP is 30 per cent, and purchasing power parity (PPP) GDP per capita is US$6,600. New Zealand, with a small population and a limited domestic market, has a thriving high-value-added agricultural sector, and manufacturing's contribution to GDP is only 12 per cent; its PPP GDP per capita is US$37,600.

Four primary conclusions follow from this analysis of GVC-led growth. The first is that sustainable income growth arises from the capacity of producers to protect themselves from competition – that is, to benefit from economic rents. Without this, participation in the global economy can be punishing and, at worst, can result in immiserising growth.

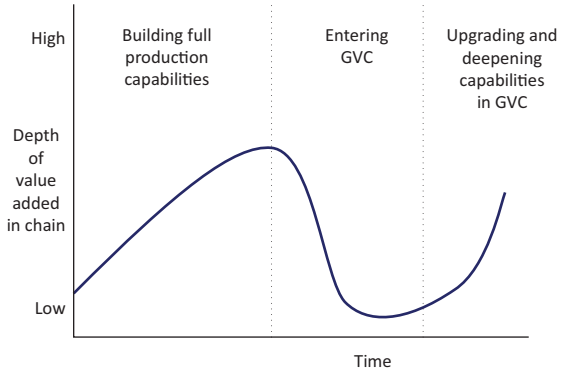
Second, rents are most often realised by an appropriate positioning within particular sectors, rather than by 'marching through the sectors'. For example, a 'simple' product such as a shoe or boot can be exported either as a basic plastic slip-on or as a highly decorated, exclusive designer product made from the highest quality leather. Third, given the critical role played by GVCs in global trade, this positioning has to be achieved in a global context, and this inevitably involves the capacity to negotiate and bargain with the lead firms that dominate and control GVCs. Finally, contrary to received wisdom, many non-industrial sectors – including agriculture and services – are characterised by a variety of economic rent-rich niches.

Self-evidently, not all firms and economies can jump to the technological and competitive frontiers of global competition. Therefore, positioning in GVCs has to be geared to the level of capabilities. However, since the global competitive frontier is continually changing, the challenge is to identify a path for dynamic capability building that not only keeps up with the global frontier but also seeks to allow the firm or the economy to improve its relative position within GVCs.

## 15.6 The character of capability building differs between the two families of global value chains

In vertically specialised chains, the task is to specialise in particular capabilities. These may include assembly capabilities (as in China's special economic zones), software (Bangalore, India), electronic hardware design (Korea), computer-generated imagery (Brighton, UK) and fashion design (Italy). Critically, these capabilities have applications across a range of industrial sectors. Firms and economies specialising in these capabilities typically provide only a very small proportion of the product's final value added. For firms with a history of production in a particular industry, the challenge is to 'thin out' their role, outsourcing any activities where they lack distinctive competences (Figure 15.4). For firms entering an industry for the first time, positioning will involve 'thinning in', beginning with only a small proportion of value added. However, after this initial positioning step, the tasks of deepening the level of capabilities, applying the capabilities developed in the chain

Figure 15.4 'Thinning out' and 'thinning in' in vertically specialised global value chains




**Source:** Authors

to other chains and perhaps transitioning to new capabilities are never-ending challenges if sustainable incomes are to be delivered.

By contrast, providing sustained income growth in additive GVCs implies a capacity to 'thicken out' participation in the chain through the systematic development of linkages. The natural resource sector, which dominates additive GVCs, often provides a route to linkage development. The lead firms in these sectors increasingly seek efficient local suppliers for activities outside their core competences, partly for cost reasons but also because they are under pressure from local communities and civil society organisations in their final markets to spread the benefits from resource extraction.

The resultant linkages may be backwards to suppliers or forwards to users of intermediates. In addition, linkages developed in some sectors may be horizontal, with applications in other resource sectors. The challenge for the host state is to speed up this process of market-led linkage development and, where possible, to begin to stray into the rent-intensive territories inhabited by the lead firms. Poorly designed and implemented policies can of course have the opposite impact of slowing down and shallowing out the process of market-driven linkage development.

## 15.7 The end of industrial policy? If so, what then?

Five major related policy challenges follow from this:

1) The focus of policy must shift from industrial policy (historically conflated with manufacturing[4]) to productive-sector policy. There may be as many realisable opportunities for sustained income growth in agriculture and services as there are in manufacturing. Systemic competitiveness cannot be achieved by an exclusive focus on a particular sector.

2) Particularly in vertically specialised GVCs, the focus of policy must shift from sectors (manufacturing, agriculture or services) to capabilities, and then to the spread of these capabilities to other chains. This is a complex problem, a challenge that is not easily understood and that requires the focused development of national systems of innovation, involving the productive sector, research and technology organisations, and educational institutions.[5]

3) Historically, industrial policy focused on the development of supply capacities. Insofar as productive-sector policies apply to participation in value chains, the focus must shift from the historical obsession with supply to incorporate a much greater recognition of the role played by markets in capability building. For example, the consolidation of the retail sector in the USA in the 1960s played a critical role in the export success of the newly industrialising Asian economies in the 1970s and 1980s, and was facilitated by conversations with the major buyers in the global apparel sector.

4) Productive-sector policy must necessarily develop the capacity to interact and bargain with the lead firms that dominate almost all GVCs. This is not the same as encouraging foreign direct investment (FDI), since in many sectors the major determinants of chain positioning and global competitiveness lie in the hands of global buyers.

5) Without focused policy intervention, standards-intensive production may often exclude small and informal-sector producers from GVCs (they may be unable to afford accreditation and may not have an adequately literate or numerate workforce). Standards-intensive production is a valuable driver of productivity improvement in many sectors.

Obviously, firm- and economy-wide sustainable growth is only one component of a broader set of policy objectives. Others include employment creation, more equitable patterns of value capture and greener trajectories of growth. While inclusive growth interfaces with policies designed to promote the productive sector, it represents a broader, and arguably more important, set of policy challenges.

## Notes

1 Science Policy Research Unit, University of Sussex.
2 A recent paper by Rodrik (2015) casts doubt on the ability of manufacturing to continue to promote employment in the future. This is reinforced by concerns that emerging technologies (robotisation and 3D printing) provide new opportunities for capital–labour substitution in production. However, important as these concerns are, they will not be considered in this policy brief, which focuses on the capacity of industry to provide sustainable income growth.
3 See Haraguchi and Rezonja (2010) for further information.
4 The classification of 'industry' in national accounts statistics includes manufacturing, infrastructure and utilities.
5 The failure to engage with the policy lessons emerging from the research on capability building is evident in the blithe recommendation that all that is required for sustainable income growth in global markets is for 'monkeys to learn to jump to adjacent trees' (Hidalgo et al. 2007).

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# Chapter 16

# Making Global Value Chains Work for Development in the Age of Automation and Globalisation Scepticism

*Daria Taglioni, Deborah Winkler and Jakob Engel*[1]

## Abstract

How countries engage with global value chains (GVCs) determines how much they benefit from them. For an effective and sustainable strategy of GVC participation, governments must identify key binding constraints and design the necessary policy and regulatory interventions, including investing in infrastructure and capacity building. Countries that understand the opportunities that GVCs offer and adopt the appropriate policies to mitigate the risks associated with them have the opportunity – through GVCs – to boost employment and productivity in agriculture, manufacturing and services. The new policy framework that allows developing countries to maximise the gains from GVC integration is one in which a 'whole of supply chain approach' must be adopted. This reflects the fact that in a world economy where GVCs play a dominant role, imports matter as much as, if not more than, exports, and the flows of goods, services, people, ideas and capital are interdependent and must be assessed jointly. However, in the context of increased automation in many of the entry stages of GVC production in most industries, as well as rising protectionism in advanced countries, developing countries' efforts to engage and upgrade in GVCs face a more challenging global trading landscape than in the past.

## 16.1 Introduction

Effective global value chain (GVC) engagement can provide countries with the opportunity to leapfrog their developmental processes. This is because developing countries that connect with GVCs in an effective way generally produce more and create better jobs, provide greater opportunities for domestic suppliers to trade, benefit from increased exports, and, finally, experience higher productivity gains. The new GVC-enabled flows of know-how from high-income countries to low- and middle-income countries is a key mediating factor in determining the role of GVCs in industrialisation and development.

From the perspective of a developing country's policy-makers, the critical issue nowadays is how to effectively integrate a GVC-led development strategy into the economy as a whole and therefore how to maximise the benefits from technology transfers, knowledge spillovers and increased value addition. Policy-makers need to put in place appropriate policies to ensure that participation in GVCs benefits domestic society through more and better-paid jobs, better living conditions and social cohesion.

Finally, with increasing automation of GVC production in most industries and products, and rising protectionist forces in advanced countries, developing countries' efforts to engage and upgrade in GVCs face increasing challenges. This contribution reflects on how to more effectively engage with GVCs to make them work for development in a time of increased automation as well as scepticism

regarding the forces unleashed by the globalisation process.

## 16.2 Why global value chains matter for development

Companies used to make things primarily in one country, but nowadays this has all changed. Today, a single finished product often results from manufacturing and assembly in multiple countries, with each step in the process adding value to the end product. As a result, GVCs lower the threshold and costs for industrial development. Low- and middle-income countries can now industrialise by joining GVCs without the need to build their own value chain from scratch, as Japan and the Republic of Korea had to do in the twentieth century.[2] The reductions in thresholds and costs that have arisen enable low- and middle-income countries to focus on specific tasks in the value chain, rather than producing the entire product, while still reaching the scale necessary to produce profitably thanks to the access to the global markets intermediated by the GVC.

Through GVCs, countries trade more than products; they trade know-how, and make things together. The new GVC-enabled flow of know-how from high-income countries to low- and middle-income countries is the single most important reason why GVCs matter for development. Low- and middle-income countries can benefit from foreign-originated patents; trademarks; operational, managerial and business practices; marketing expertise; and organisational models. Large multinational corporations (MNCs) establish highly sophisticated processes and flows where parts and components produced in geographically distant facilities can be seamlessly integrated and customised for different world markets.

To facilitate this integration, MNCs also take an active role in seeking to improve local innovation, knowledge-based capital and competencies. A few examples are illustrative. The Samsung Group – which employs 369,000 people in 510 offices worldwide – worries about shortages of technical and engineering skills in Africa and how those shortages affect its efforts to embed its African workforce in Samsung's global production networks (ACET 2014). Other corporations are investing in building the skill base in low- and middle-income countries too (Dunbar 2013). Lucent Technologies supports education and a range of learning programmes, including promoting educational reform, science and maths, and developing teachers and young leaders, in 16 countries throughout Africa, Asia, Europe and Latin America; Nike and the United Kingdom's Department for International Development run a programme to support access to economic assets for adolescent girls; Microsoft provides support to incorporate information technology (IT) into the daily lives of young people in the Philippines, Poland, the Russian Federation and South Africa; CISCO provides funds, expertise and equipment to create national networks of IT training centres in India, Mexico, Palestine and South Africa, in addition to the work of the Cisco Networking Academy, which has 10,000 academies in 165 countries; and, finally, Nokia enhances the life skills and leadership skills of young people in several countries, including Brazil, China and Mexico.

Countries that understand the opportunities that GVCs offer and adopt the appropriate policies to mitigate the risks associated with them have the opportunity – through GVCs – to boost employment and productivity in agriculture, manufacturing and services. The new policy framework that allows developing countries to maximise the gains from GVC integration is one in which imports matter as much as, if not more than, exports, and in which the flows of goods, services, people, ideas and capital are interdependent and must be assessed jointly.

Job creation and labour productivity growth are sometimes viewed as competing goals,

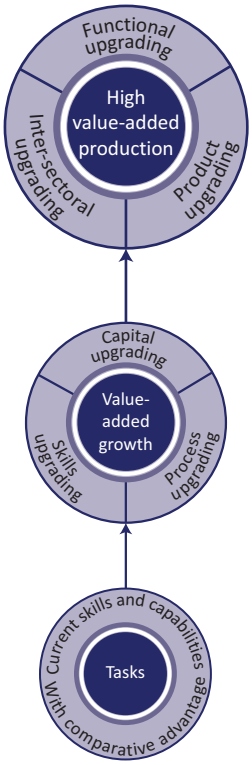
as higher labour productivity enables firms to produce a larger amount of value added without necessarily increasing the number of workers at the same rate (static productivity effects). Research, however, shows that GVC integration leads to more net jobs but lower job intensity (Calì and Hollweg 2015) and has strong potential for productivity gains via several transmission channels (dynamic productivity effects), which go hand in hand with increased labour demand caused by more vertical specialisation and higher output in GVCs.

## 16.3 What upgrading trajectories do we observe?

Drawing on earlier work by Humphrey (2004), Taglioni and Winkler (2016) differentiate between three types of economic upgrading based on productivity, comparative advantage, skills and capabilities: product upgrading, which entails moving into more sophisticated products within an existing value chain; functional upgrading, involving increasing the proportion of value added by moving towards more sophisticated tasks; and intersectoral upgrading, which involves moving into new supply chains with higher proportions of value added (Figure 16.1).

The ability of firms to upgrade is determined by improving the skills of workers (skills upgrading), improving the absorptive capacity and technology of firms (capital upgrading) and increasing productivity in existing tasks (process upgrading). Lead firms can play an important role here by setting detailed specifications and requirements that exceed local norms and create opportunities for improving capabilities, technology and assets. However, this is not always the case: the complexity of GVCs and the power dynamics within their governance structures can often lead to processes of downgrading or stagnation (Rossi 2013, Blažek 2015).

Figure 16.1 Achieving functional, product and inter-sector upgrading through skills, capital and process upgrading




**Source:** Taglioni and Winkler (2016)

While heterogeneity exists in how countries engage and upgrade in GVCs, some regularities in the trajectories of development can be identified. In Table 16.1 we sketch some of these regularities observed from field work and case-study literature. Reflecting their comparative advantage, low-income countries tend to engage in GVCs in industries of limited complexity, such as agriculture and manufacturing. These are also industries in which buyer–seller relations tend to be at arm's length more frequently than in other settings. Firm size is not a constraint, so even small firms can easily engage.

Once countries graduate to middle-income status, they start integrating in GVCs, with functions in advanced manufacturing and/or professional, modern services, including

Table 16.1 Trajectories in GVC engagement

| Income group | Low income | Middle income | High income |
|---|---|---|---|
| **Industry complexity** | Agriculture and light manufacturing | Advanced manufacturing and services | Coordination of manufacturing and services, R&D, branding |
| **Buyer–seller relations** | Market relations | Relational/captive/ hierarchical | Primarily buyer, modular |
| **Firm size** | Small | Large | Lead firms, conglomerates |
| **Mode of competition** | Price-to-quality competitiveness | Increasingly diversified, non-price competitiveness | Highly specialised, technology frontier |

**Source:** Engel and Taglioni (2017)

pre- and post-production high-value-added services. In these GVCs, buyer–seller relations tend to be more relational, captive or hierarchical, as substantial know-how transfer takes place. The size of participating firms tends to be medium to large, particularly in manufacturing (Cusolito et al. 2016), and competition between firms is based on non-price features such as quality, degree of customisation or responsiveness and timeliness in delivery to clients.

Finally, once countries reach high-income status, their engagement in GVCs is predominantly specialised in tasks of co-ordination, and high-value-added services, such as research and development (R&D) and branding. Firms are primarily buyers of inputs and components and sellers to end markets, and/or engaged in modular relationships. These firms' comparative advantage is based on offering highly specialised products, at the technology frontier.

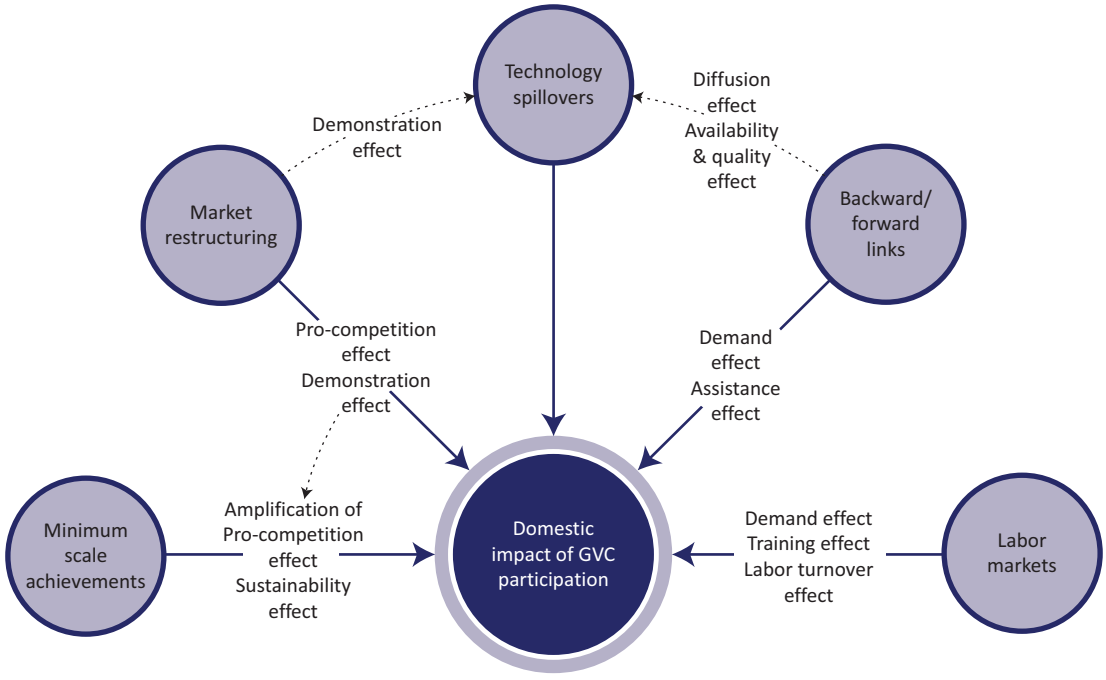
## 16.4 What factors are likely to influence countries' engagement in global value chains?

There is an extensive literature on the factors that are likely to influence countries' abilities to upgrade within GVCs, although this is primarily based on case studies, with few econometric analyses conducted until recently. However, in analysing the empirical relationship between GVC integration and the middle-income trap, it is important to note that, despite some caveats (see Rodríguez-Clare 2007), overall empirical evidence shows that open economies tend to grow faster and have higher income levels than closed economies (Wacziarg and Welch 2008, Gill and Kharas 2015).

Taglioni and Winkler (2016) argue that there are five main transmission channels through which GVC participation could lead to higher output, productivity and value added: backward and forward linkages; the creation of pro-competitive market restructuring effects; technology spillover; minimum scale achievements that amplify pro-competitive effects; and, finally, labour-market effects including demand for skilled workers and their training, as well as turnover when trained workers move to local firms. Figure 16.2 provides an overview of these and shows the complex and frequent intermediating effects that individual channels have on one another. Kummritz et al. (2015) identify three main factors that link value chain integration to productivity. These are the roles of foreign direct investment (FDI), exporting and importing inputs.

In the case of FDI, the impact of spillovers on productivity is not conclusive (Görg and Greenaway 2004, Paus and Gallagher 2008). In the case of the link between exporting and economic upgrading, Bernard and Jensen (1995) demonstrated that exporters outperform non-exporters in the same sector and country in terms of productivity, skills and wages. This led to questions about the role of self-selection

Figure 16.2 Transmission channels from GVC participation to the domestic economy




**Source:** Taglioni and Winkler (2016)

or learning-by-exporting (LBE). In the case of the former, the assumption is that only more productive firms are able to absorb additional trade costs. The LBE literature argues that exporting improves the productivity of firms over time. These findings have been most robust for developing countries and nascent industries. Recent literature has questioned the robustness of early LBE studies (see Clerides et al. 1998), but LBE effects have been found by Lileevea and Treffler (2007) for Canada, and Fernandes and Isgut (2015) for Colombia.

Finally, for the third channel, the role of importing inputs on productivity, there is a breadth of literature, albeit primarily focused on developed countries. There are three main feedback loops through which importing is seen as improving key aspects of competitiveness: productivity, innovation and skills. In the case of productivity, several studies have shown that easier access to imports tends to improve firm productivity. Grossman and Rossi-Hansberg (2008) show that offshoring can entail productivity gains similar to technological progress for offshoring nations through lower input costs. Amiti and Konings (2007) show that a 10 per cent fall in input tariffs leads to a 12 per cent improvement in productivity for importing firms. Bas (2012) demonstrates that, for a sample of Argentinian firms, input tariffs facilitate entry into export markets. In the case of innovation, MacGarvie (2006), drawing on French trade and citation data, and Bøler et al. (2015), using a sample of Norwegian firms, find importers to be more innovative and profitable. Finally, there is an emerging literature showing that skills are relevant for importing and also complementary to it. Koren and Csillag (2011) show that importing more sophisticated machinery requires higher skills to operate it and in turn increases returns to skills.

To actually test the effects of GVC participation in terms of whether this has enabled countries to economically upgrade, Kummritz et al. (2015) use foreign value added in exports and

domestic value added re-exported by third countries as measures of backward and forward GVC integration, respectively, and domestic value added generated by a specific sector as the measure of economic upgrading. Using a standard fixed-effects model, they test the impact of a series of national characteristics that may be associated with economic upgrading via GVC participation, to capture a country's infrastructure, connectivity, investment and trade policy, business climate and institutions, financial and labour markets, skills and education, innovation and product standards, and labour, social and environmental standards.

Using the Organisation for Economic Co-operation and Development's Inter-Country Input–Output (OECD ICIO) database for 61 countries and 34 industries in 1995, 2000, 2005 and 2008–11, they find that overall GVC integration increases a country's domestic value added. Splitting the sample into income groups, they find that this does not substantially change results, although GVC integration as a buyer (i.e. via foreign value added) is more significant for low-income countries and low- and middle-income countries; for upper middle-income countries and high-income countries, selling into GVCs has a greater impact. On the buyer side, airfreight infrastructure and road network quality are of particular importance, while connectivity, education and skills, and the level of standards compliance, are most important for countries selling into GVCs. This leads the authors to conclude that the policy areas hypothesised to be significant for economic upgrading within GVCs do in fact largely have the expected impact.

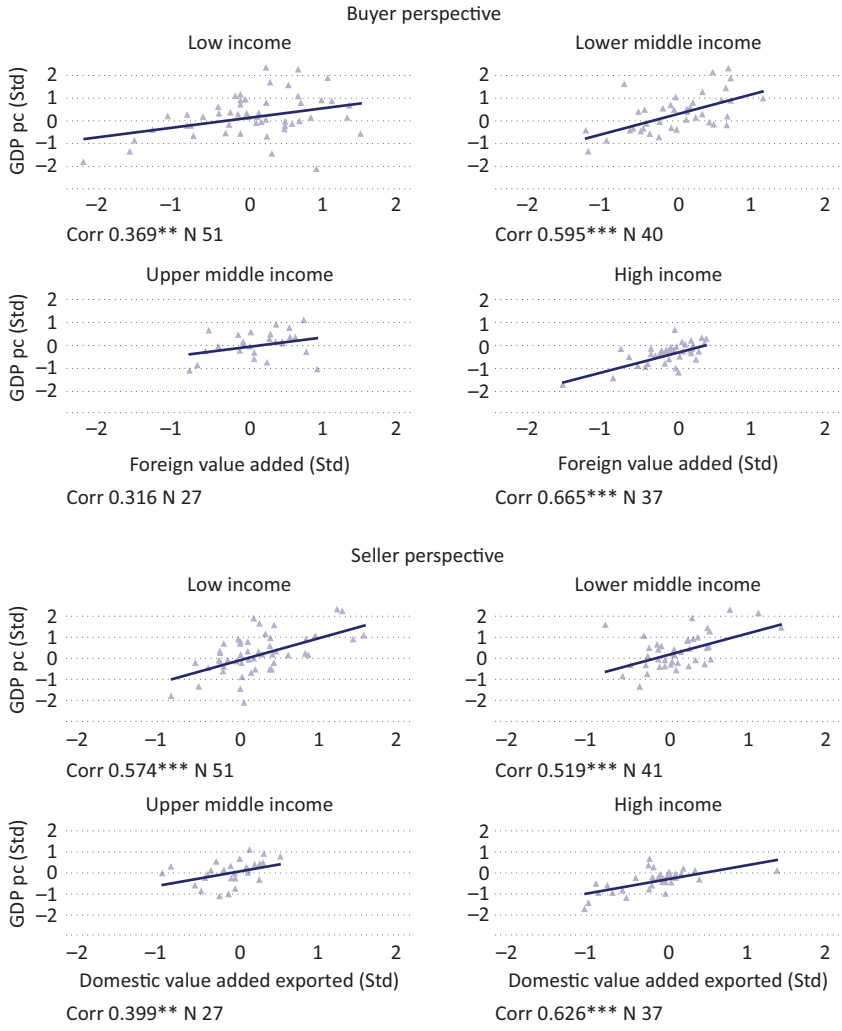
Boffa et al. (2016) build on these findings to focus specifically on the relationship between GVC integration and the 'middle income trap', and – more broadly – on the role of GVC integration in supporting countries to graduate to a higher income level. As can be seen in Figure 16.3, the magnitude of the correlation between GVC integration and gross domestic product (GDP) per capita depends on income status and the type of integration. Moving from these findings of correlation, the authors use a logit (probit) model for income group transitions, and find that GVC integration increases GDP per capita but that gains diminish as income increases. Similarly, growth in output per capita is highest for lower income groups. Certain channels between GVC integration depend on industry similarity, with linkages assumed to be easier when trade is intra-industry. They also find that manufacturing leads to higher GDP gains for buyers, but that for services both types of integration – forward and backward – lead to similar GDP increases.

However, these studies – while providing an important foundation for better understanding what variables are significant for upgrading – suffer from two main limitations. First, due to the lack of value-added trade data prior to 1990, they only allow analysis of the last 20 years, while much of the middle-income-trap literature goes back 50 years and more. Second, the studies provide a helpful overview of what kind of institutions and policies are associated with upgrading and income transitions, but they do not specify the global environment conditions under which specific types of institutions and policies lead to greater gains from GVC participation. While some of these opportunities may have been available 20 years ago, they may no longer be available for new entrants today, or even feasible, given that most late industrialisers nowadays tend to be small both geographically and economically, as well as distant from end markets and the current hubs of global economic activity.

## 16.5 GVC participation in the context of technical progress and globalisation scepticism

As the aforementioned study by Boffa et al. (2016) has pointed out, there is a positive and

## Figure 16.3 Growth of GVC integration and GDP per capita by income category




**Source:** Boffa et al. (2016)

significant relationship between GPD per capita and integration into GVCs, although this correlation diminishes at higher income levels. This points to questions around the gains of GVC trade for workers in countries at the middle–high income threshold. Over the past few years, there has been a proliferation of reports[3] investigating the impact of technological change on production, trade and labour markets. The authors focus particularly on the rapid technological advances in automation, big-data analytics and digitisation, as well as manufacturing responses to climate change and other environmental- and resource-related risks. These responses include transitions towards additive manufacturing through 3D printing technologies and the growth of the circular economy paradigm, which is likely to require manufacturers to design products for several cycles of disassembly and reutilisation.

As Antràs (2015) notes, GVCs are characterised by four features: customised production, sequential production decisions going from the buyer to the suppliers, high contracting costs, and global matching of goods, services, production teams and ideas. All four of these

point to the significant power that MNCs co-ordinating GVCs have in the selection of where geographically to locate individual production tasks. Technological improvements are likely in each of these cases to increase both the sophistication of buyer demands and the level of supplier capabilities required to meet them. A full exploration of these issues is beyond the scope of this chapter, but, given their implications for the relationship between GVC participation and declining economic growth and structural stasis experienced by many middle-income countries, it is worth addressing two aspects of these medium-term developments in the context of the preceding discussion.

First, the workforce skills required to participate in manufacturing of even relatively unsophisticated products are likely to increase substantially, requiring not only higher levels of education but also the 'cross-domain' skills and tacit knowledge necessary for using new equipment and thinking computationally and analytically, as well as high levels of technical and engineering knowledge. For many middle-income countries, this will require a fundamental upgrading of education systems, research institutions and innovation systems. Therefore, the already diminishing advantage that labour-abundant, low-wage countries currently possess for low-skill manufacturing is likely to diminish further.

Second, and related to the previous point, the incentives to 're-shore' production to developed economies given both the need for highly skilled workers and – more importantly – the ability to automate many tasks, is likely to become even greater in coming years, a trend likely to be reinforced by the rapidly growing political backlash against globalisation and rising economic nationalism in many Western countries. Of clients surveyed in a recent study, 70 per cent believe automation and developments in 3D printing will encourage companies to move their manufacturing closer to home, with North America seen as having the most to gain from this trend, while China has the most to lose (Oxford Martin School 2016). World Bank (2016) research has found that, in China and India, the jobs of 77 per cent and 69 per cent of workers, respectively, are at risk due to automation. In this context, trade in data and information, which is rapidly growing in importance, is likely to further increase the modularity of work processes even within production and manufacturing and to bypass all but the most sophisticated middle-income countries.

Collectively, these issues are likely to reinforce trends towards 'premature deindustrialization' (Rodrik 2015), with countries running out of industrialisation opportunities sooner and at lower levels of income than earlier industrialisers – a trend that has hit Latin American middle-income countries particularly hard, both economically and in terms of risk towards political stability and democratisation. Thus, while it was only recently that firms and governments in developed and developing economies were coming to terms with the fact that the 'GVC revolution' required a fundamental rethinking of trade and, more broadly, industrial development, these new, disruptive technological changes will again require new policies and strategies to enable firms and governments to adapt.

This in turn points to the challenges for ensuring that the gains from GVC trade for industrialising countries in fact benefit workers and households. Given the complex political economy of globalisation emerging, particularly for industrialising countries, there is a need for a greater understanding of what automation is, as well as the meaning of globalization itself, given that narratives have profound political consequences. Finally, there is a need for a greater focus on the distributional effects of GVC trade, adjustment costs and displacement. Closer attention must

be paid to the labour-market impacts and to the risks of downgrading within GVCs for certain workers, even as countries overall, upgrade.

## 16.6 Policy frameworks

How countries engage with GVCs determines how much they benefit from them. While policy needs to adapt to a rapidly changing world, it remains valid that, for an effective and sustainable strategy for GVC participation, some areas of policy remain key. Identifying binding constraints and designing the necessary policy and regulatory interventions will help achieve distinct objectives and address country-specific challenges in relation to:

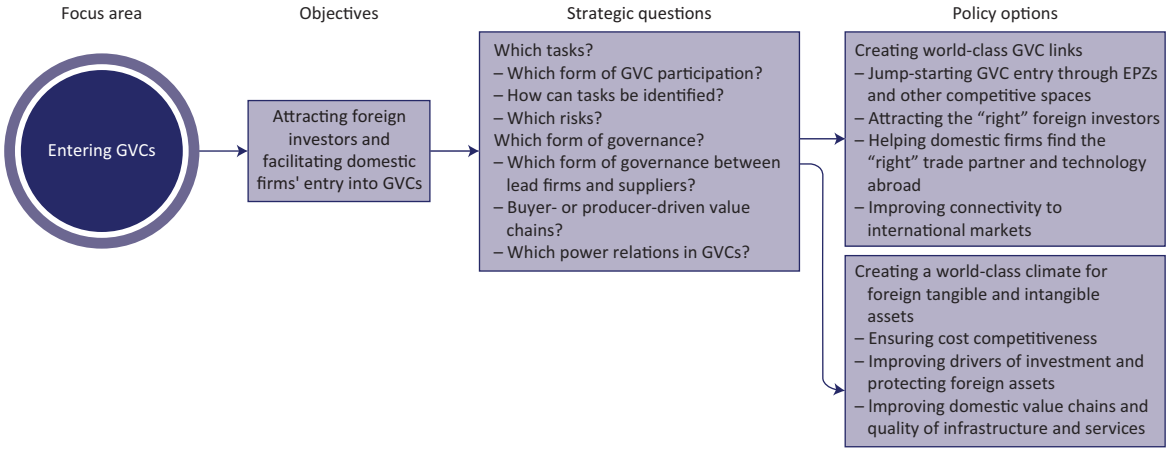
- participating in GVCs, including attracting FDI and facilitating domestic firm entry into GVCs;
- expanding and strengthening existing GVC participation, including promoting economic upgrading and densification, and strengthening domestic firms' absorptive capacity; and
- ensuring sustainability and transforming GVC participation into inclusive growth by fostering economy-wide productivity spillovers, social upgrading and welfare improvements.

By integrating their domestic firms (suppliers and final producers) into GVCs, developing countries can help their economies industrialise, become services-oriented more quickly and move closer to their development goals. Taglioni and Winkler (2016) suggest ways of assessing various aspects of GVC participation (including the rate, strength and consistency across sectors and industries), and thus of identifying key policy needs. They suggest strategic questions and approaches to addressing such policy needs and offer policy options. These are summarised in Figures 16.4–16.6.

Figure 16.4 shows ways for countries to enter global production networks. Those avenues include ways to attract foreign investors, as well as strategies to enhance the participation of domestic firms in GVCs. Suggestions for entering GVCs encompass measures to ensure that the country can offer world-class connectivity to the global economy and create a friendly business climate for foreign tangible and intangible assets.

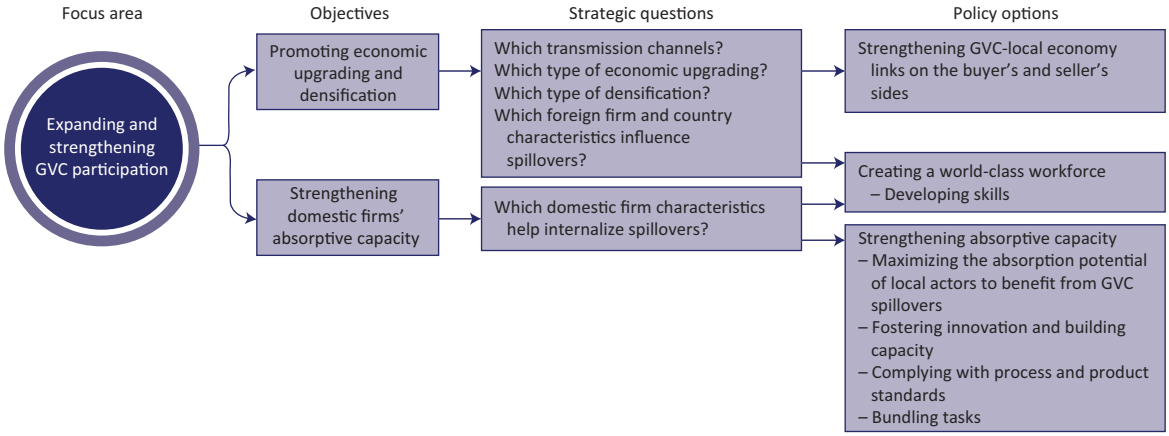
However, GVC participation is a necessary but not sufficient condition for development.

Figure 16.4 A policy framework for entering GVCs




**Source:** Taglioni and Winkler (2016)

Figure 16.5 Policies for strengthening participation GVCs



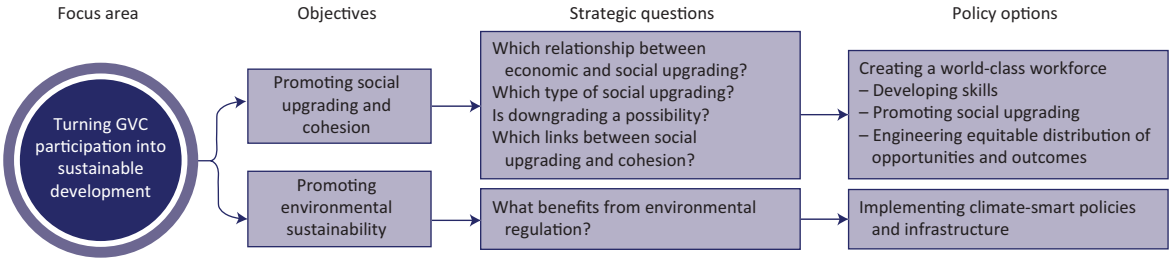

**Source:** Taglioni and Winkler (2016)

Although 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 demand for high-productivity workers must be matched with a supply of capable workers who have the relevant skills. In other words, when thinking about the first step in facilitating GVC entry, policy-makers must have a clear road map of how entry will lead to strengthened and broader participation, and economic and social upgrading. Policy-makers must keep a keen eye on the workforce's competencies and how they match up with foreign investment.

Figure 16.5 shows that expanding and strengthening participation in GVCs require countries to lever their position and enhance domestic production, achieving higher value addition through economic upgrading and densification. The concept of economic upgrading is largely about gaining competitiveness in higher-value-added processes, products, tasks and sectors. Densification involves engaging more local actors (firms and workers) in the GVC network. Raising domestic labour productivity and increasing skills contributes to the overall goal of increasing a country's value added that results from GVC participation.

Finally, countries also need to tackle the challenge of turning GVC participation into sustainable development (Figure 16.6). Three areas of sustainable development are important: macroeconomic sustainability, social sustainability and environmental sustainability. Not only are they important development objectives per se, but they also ensure the sustainability of a GVC-centric approach to development. Labour market-enhancing outcomes for workers at home and more equitable distribution of opportunities and outcomes create social support for a reform agenda aimed at strengthening a country's GVC participation. Climate-smart policy prescriptions can mitigate the challenges for firms from climatic disruptions, as those firms seek to ensure the long-term predictability, reliability and time-sensitive delivery of goods necessary to participate in GVCs. Because climatic disruption can impair firms' ability to access inputs and deliver final products, countries' preparedness is an increasingly critical factor in firms' location decisions.

Figure 16.6 Policies for turning GVC participation into sustainable development




**Source:** Taglioni and Winkler (2016)

## 16.7 Conclusion

This chapter has surveyed and assessed the relationship between GVC participation and economic development. Specifically, we have examined the channels and circumstances through which GVC engagement may assist countries in advancing their economic development objectives. In this context, it is useful restate a few of the key assumptions underpinning this chapter. First, the types of policies and the quality of institutions required for successful GVC participation play an important role in determining economic development. However, 'graduating' to high-income status remains difficult: the types of capabilities, policies, investment decisions and institutional processes are highly complex and interact in unpredictable and dynamic ways. Moreover, they are often unique to the country, sector and product context in question. Emergent technological changes are likely to further complicate the ability of countries to integrate into and upgrade within GVCs.

This in turn informs a series of more specific policy recommendations of how to move towards a less zero-sum view of the emergent paradigm of industrial development in an age of globalised production networks and increasing automation. For one, policy-makers and companies in the digital era – in developed and developing countries alike – will have to focus on the key features of the twenty-first-century economy. These include the interplay between technological (digital) innovation and globalisation (increased connectivity and GVCs), and strengthening an environment conducive to diversification, innovation and productivity in the era of digital innovation.

In this context, policy-makers should consider the following issues as priorities:

- *Investing in digital technologies* – newcomers should not favour manufacturing over services and innovation functions, and early developers and newcomers alike should balance policies that support connectivity infrastructure building and the deployment of leading-edge information and communications technology (ICT) technologies, with those that support the development of the domestic ICT sector (reaching a balance is likely to present a challenge).
- *GVCs and the enabling environment* – to be competitive in the new ICT-dominated environment, countries and companies will need to be part of global production and knowledge networks, upgrade infrastructure and connectivity systems, and ensure regulatory certainty.
- *Human capital* – countries will need to develop the necessary talent through technical skills acquisition and, crucially,

soft skills (managerial skills, strong foreign-language skills, etc.)

- *Reducing barriers to knowledge* – they will also need to reduce barriers to foreign skilled personnel and individual services. One dimension of this could be mutual recognition arrangements for professional services, which could help to facilitate the movement of global talent into the home country. Reducing barriers to knowledge also involves establishing strong intellectual property rights to attract technology-intensive foreign investors.
- *Focus on workers, as well as jobs and firms* – ensure that the link between productivity and distribution, and that between economic and social impacts, works. This requires ensuring social cohesion through policies that focus on workers and not on jobs (retrain, educate, support mobility and income, perhaps associated with well-targeted and non-distortive vertical interventions), as well as package policies for openness with social, governance and infrastructural support at the regional level (the EU single market is possibly the best example of successful opening and avoidance of the middle-income trap for most members). This also applies to industrialised countries and includes supporting workers who have suffered wage cuts and/or job loss due to technical progress and globalisation.
- *Deep integration agreements with knowledge clusters* – new technologies, new processes and new products require a fair amount of decodification and recodification according to innovative criteria. Therefore, they tend to arise from existing knowledge clusters where the pool of skills and support functions is both deep and broad. The activity of decodification and codification of new processes also implies that such clusters are natural standard-setting bodies. The role of knowledge clusters can therefore be self-reinforcing.
- *Contract enforcement and governance* – cutting-edge digitally powered goods and services are likely to be outsourced based on sophisticated contractual arrangements. This means that areas such as contract enforcement and the rule of law are again important foundational areas.
- *Infrastructure investment* – this can help prevent the digital revolution creating a wedge between the networked (countries, individuals, firms) and the non-networked. Infrastructure (physical, digital and institutional) building that connects global hubs with peripheral countries, and global cities with both smaller centres and rural areas, opens opportunities and ensures that the development potential of digital technologies reaches a large fraction of the world's population. Without infrastructure building, the matching of technologies, services and talents at the global level unleashed by the interplay between digital innovation and globalisation would lead to distributional effects, including shifts in global income towards the networked (countries, individuals, firms) and a task remuneration structure that further tilts away from production functions to services, innovation and core R&D functions.

## Notes

1 World Bank, Washington D.C.
2 See Baldwin (2012) and 'developmental state' literature (Amsden 1992, Wade 1990, Johnson 1995).
3 For example, by Brookings (West 2015), McKinsey (Chui et al. 2015 ) and KPMG (2016), as well as numerous papers (see Autor 2015, Beaudry et al. 2015, Eden and Gaggl 2015, Morikawa 2016, Pikos and Thomsen 2016).

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# Chapter 17

# Delivering Inclusive Global Value Chains

*Mohammad A. Razzaque and Jodie Keane*

## Abstract[1]

This paper evaluates the discourse regarding entry into and participation in global value chains (GVCs) for developing Commonwealth and francophone countries. It critically reviews conventional policy prescriptions – import liberalisation and improved trade facilitation – intended to bolster entry into and participation in GVCs. Several conditions are identified as compromising the ability of many developing Commonwealth and francophone countries to fully integrate into GVCs, even if they followed these policies. This is because trade costs and geographical distance from the dominant hubs of global economic activity still exert major influences on participation. Taking into account also the low and declining proportions of value added at entry-level stages of production, the suitability of a global GVC integration agenda in the absence of effective global economic governance structures is questionable. In addition to receiving disproportionate shares of the gains of actual value added, many developing country members face major challenges in relation to funding, as well as in negotiating upgrading processes with lead firms, who may not wish to relinquish particular economic rents. In this context, entry into and upgrading within regional value chains may be more aligned with trade and development objectives, with a focus on adding value rather than trading it.

## 17.1 Introduction

Fundamental changes are taking place in global trade. The traditional predominant notion of an entire production process being undertaken by one firm, in one country, is being replaced by value-chain-led trade. It involves the cross-border fragmentation of production processes, which entails specialisation in a narrower range of tasks by firms. Given the limited productive capacity of many developing countries, integrating with global value chains (GVCs) may provide new trade opportunities for local firms to gain access to new markets through specialising in a single task. By becoming part of an international production network, attracting foreign direct investment (FDI) and accessing technological know-how in more dynamic export sectors may be more achievable. Given the nature of the tasks involved, GVCs can assist in creating employment-intensive exporting activities, thus helping to achieve the golden nexus of trade, growth and job creation.

Despite the potential of GVCs, however, the growing body of evidence on the nature and impact of GVC participation is mixed. Many poor, small and vulnerable developing countries, including members of the Commonwealth and the Francophonie (CF) have achieved rather limited GVC participation in more dynamic types of trade to date. In other cases, evidence of the beneficial effects of GVC participation continues to be subject to scrutiny.

There is a proliferation of studies and analyses that consider specific policy measures to promote developing countries' participation in GVCs. While a consensus on these policy

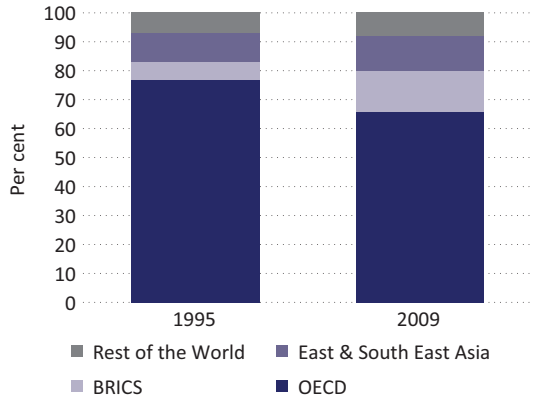
prescriptions appears to exist, in our view the implications arising from certain factors critical for delivering inclusive GVCs have not received adequate attention in the current policy discourse. This paper highlights three areas that deserve further consideration by policy-makers in order to more effectively deliver inclusive GVCs: the inherent structural characteristics of groups of countries that competitively disadvantage participation in certain types of GVCs; the fragmented nature of global governance mechanisms, combined with fragmented production, which can undermine potential developmental gains; and the potential effects of the emerging global trade architecture on future GVC participation.

## 17.2 Global value chain participation and measures to promote it

Since the early 1990s, the world export to GDP ratio has increased from 19 per cent to 31 per cent.[2] This growth in export intensity is partly attributable to the intensification of GVCs. The huge significance of trade in intermediate inputs, estimated to now comprise at least two-thirds of all global trade (OECD 2013), is testimony to this.

However, despite these trends there is strong evidence of highly concentrated GVC participation. It is estimated from OECD-WTO data that almost 92 per cent of the total value added created by GVCs is due collectively to members of the Organisation for Economic Co-operation and Development (OECD), the BRICS countries (Brazil, Russia, India, China and South Africa) and a few Asian nations (Figure 17.1). Measures using a different database, – the UNCTAD (United Nations Conference on Trade and Development) Eora database, as shown in Figure 17.2 – also suggest that global trade remains concentrated in what have been

Figure 17.1 Value-added trade is highly concentrated

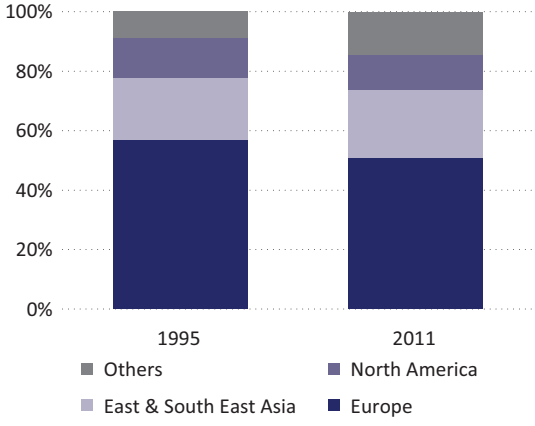



**Source:** Information as provided in Banga (2013) using the OECD-WTO TiVA database

dubbed 'Factory Europe', 'Factory North America' and 'Factory Asia' (Baldwin 2011).

Although limited, there is evidence that some least-developed countries (LDCs) and African countries are beginning to participate in GVCs. 'Transformed exports', including manufactures, semi-manufactures and processed primary products, now include LDC exports (ITC 2013). Africa's GVC integration in primary products is found to be increasing (AfDB 2014). However, given Africa's overall overwhelming

Figure 17.2 Europe, North America and East Asia are three major dominant regions in value-added trade




**Source:** UNCTAD-EORA GVC database

economic dependence on primary commodity exports, the actual extent and nature of GVC participation is not clear. Currently, very little is known about small states' participation in GVCs and this may reflect limited evidence on services GVCs to date.

How countries participate in GVCs and where they are located within GVCs matters. Countries specialising in pre-manufacturing (e.g. R&D, standardisation, design) and post-manufacturing (e.g. logistics, marketing, brand development) activities are able to capture more value in GVCs than countries that specialise in the manufacturing of the products. The value captured by these types of services in GVCs may be considerably more than that attained from manufacturing activities.

It is generally recognised that a large majority of LDCs, small states and sub-Saharan African (SSA) countries have failed to add more value by processing their primary exports and moving up the GVCs within which they specialise. It has been argued that participating in the lower end of a GVC can be counterproductive, and may lead to a 'hollowing-out' of the manufacturing sector. Some commodity exporters may become trapped in captive value chains (Nissanke and Mavrotas 2010; Keane 2012). Developing countries may become stuck exporting low-value-added items with lower gains accruing over time (Banga 2013). This disadvantageous process is also known as immiserising growth (Kaplinsky 2005) – a phenomenon recognised in the case-study GVC literature of the 1990s but ignored by the current GVC discourse.

## 17.3 Current policy prescriptions

In view of the new findings from input–output measures of GVC participation, a number of recent studies discuss options for more effective integration into GVCs. The typical policy considerations include import liberalisation and improved trade facilitation measures to reduce costs of imported inputs, addressing non-tariff barriers, improving the investment climate, investing in infrastructure development and linking GVCs to industrial development policies. These are of course important issues for promoting competitiveness and inducing trade responses in developing countries.

However, overcoming all exclusionary barriers to effective GVC participation within the same set of policy prescriptions is simply unrealistic. Moreover, there is a need to more carefully distinguish between interventions designed to, on the one hand, assist small and medium-sized enterprises (SMEs) in entering into GVCs and new relationships with lead firms and, on the other, assist countries in beginning GVC participation through inviting FDI and the relocation of production units from abroad.

There are inherent structural characteristics that can result in the systemic exclusion of some countries from GVCs given the competitiveness effects of economic geography. Even when countries are integrated with GVCs, they might not be participating in a gainful way, in part because of a failure to align value chain governance with developmental objectives, nationally as well as globally. Much of the current GVC literature, and its resultant policy implications, is reminiscent of the 1990s liberalisation agenda. Although understanding of the complex relationship between trade, growth and the achievement of economic structural transformation has improved in recent years, these lessons do not seem to have been heeded. Finally, the evolving global trade architecture arising from the emergence of mega-regionals and the advent of developing countries as serious players in global trade are likely to be determining factors in future GVC participation. The resultant implications of these issues must be actively considered in the context of promoting inclusive, development-oriented GVCs.

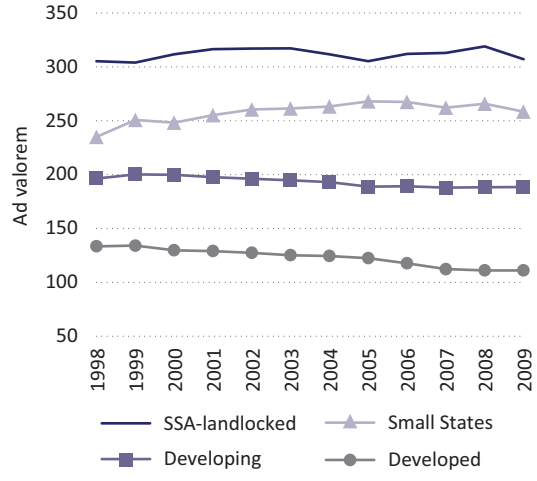
## 17.4 Economic geography and value chain trade

A large number of CF countries suffer from the small size of their domestic markets in conjunction with their unfavourable geographical locations, at very long distances from the global centres of commercial activities. This inflicts serious disadvantages in terms of excessive trade costs. This cost disadvantage must be considered in the context of the low proportions of value added available at the entry-level stages of GVC participation. Firms and production units in these countries are mostly SMEs with limited productive capacity.

### 17.4.1 Evidence of trade cost disadvantages

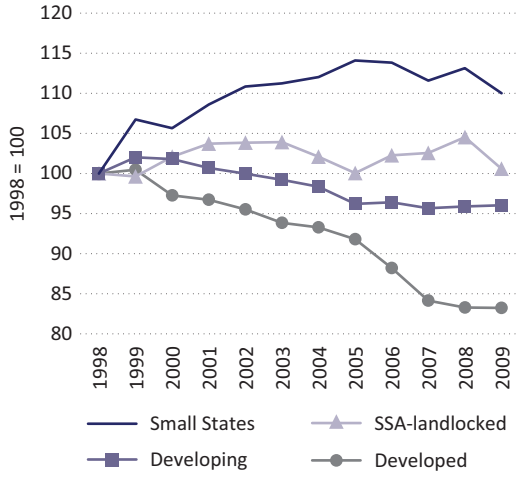
Analysis of data from a pioneering World Bank-UNESCAP project confirms the severe competitive cost disadvantages faced by many landlocked SSA countries and small states (Figure 17.3). Measured in *ad valorem* equivalent terms, the average trade costs for the group of small states and landlocked SSA countries identified are much higher than those of other country groups.[3] While developed countries have experienced considerable reductions in trade costs and developing countries show a general trend towards reductions, this is not the case for small states (Figure 17.4).

Figure 17.3 Trade costs are much higher for small states and landlocked SSA countries




**Source:** Authors' computation using World Bank-UNESCAP data. Calculations are based on bilateral costs with 10 largest global importers.

Figure 17.4 Trade costs for small states and landlocked SSA countries, unlike those for other countries, have not been declining

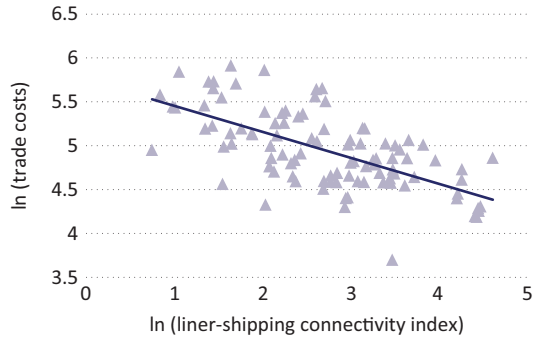



**Source and note:** Authors' calculation. Ad valorem equivalent trade costs are converted into index number with 1998 = 100.

While geographical distance between bilateral trading partners exerts the largest impact on trade costs, other factors, such as liner shipping connectivity, are also shown to have an important influence (Arvis et al. 2013). Indeed, the liner shipping connectivity index (a high value indicates better connectivity) and trade costs are strongly and inversely correlated (Figure 17.5). Even with improvements in shipping connectivity, unfavourable geographical location combined with small consignments may indicate limited trade gains (Figure 17.6).

These excessive costs have serious implications for trade in general and participation in GVCs in particular. A 10 percentage point increase in transport costs is found to reduce

Figure 17.5 Trade costs are negatively related to improved shipping connectivity

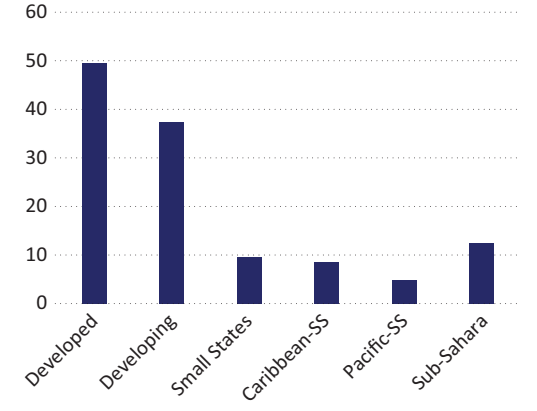



**Source:** Authors' illustration with liner-shipping index data from UNCTAD and trade costs data from World Bank-UNESCAP. Log of trade costs used.

trade volumes by about 20 per cent (Limao and Venables 2001). Moreover, country *ad valorem* transport costs of 20 per cent on both final output and intermediate goods reduce domestic value added (including wages and profits) by 60 per cent when intermediate goods account for 50 per cent of costs. The implication is that because of geographical location foreign firms might be reluctant to move or relocate their production to these countries even when wages are low (Redding and Venables 2001).

The typical policy prescription of liberalising trade, ensuring good domestic policies and

Figure 17.6 Small states and SSA countries have much lower liner shipping connectivity index scores




automatically attracting FDI and value-chain-led trade is therefore likely to be unhelpful in these circumstances. It has been argued that distance matters more in supply chains and, even with today's information and communications technology revolution, global production networks are likely to remain concentrated in low-wage nations that are near, or even contiguous with, high-technology nations (Baldwin 2011). This reality poses a major challenge to the current GVC narrative. The fragmentation process of the future will be different from that of the past and is likely to be at a much lower level of disaggregation. This is something policy-makers must be more sensitive to. Others point out that the fragmentation process of services has hardly begun yet.[4] These future developments are likely to be of particular interest to many Commonwealth small states.

## 17.5 Value creation and distribution: effective governance of global value chains

Longstanding concerns of CF developing members regarding the highly asymmetric distribution of value within GVCs remain unaddressed. Effective value chain governance requires the alignment of incentive structures for firms taking into account public policy and developmental objectives. There are risks of advancing a GVC integration agenda without effective global economic governance structures.

As GVCs have been fragmented across countries, they have also become more tightly co-ordinated by lead firms; this process is reflected in a movement from arms-length relations towards closer inter- and intra-firm relations.[5] New estimates by UNCTAD (2013) suggest that 80 per cent of global trade occurs within networks co-ordinated by multinational enterprises (MNEs) and that around 30 per cent of this is in the form of intra-firm trade.

Developing countries may have begun to trade more, and more recently have increased trade in value added, but they may not necessarily be gaining more from this trade (UNCTAD 2002, 2013). This is because lower-value-added activities are either outsourced or offshored by lead firms, while higher-value-added activities are retained. Manufacturing stages of production have simply become less valuable over time for producers locked into this stage of production.[6] We summarise some of the relevant findings from the case-study-based GVC literature below:

- **Coffee:** it is estimated that the farm-gate price of coffee, which is subsequently divided up among traders, producers and labourers, equates to around 10 per cent of the final retail price of coffee sold on supermarket shelves. This is compared with the 22 per cent that accrues directly to retailers, or 51 per cent if prepared own-brand coffee is marketed by the retailers (Fitter and Kaplinsky 2001).[7] Because of the collapse of the International Coffee Agreement in 1989, the liberalisation of coffee marketing systems and the entrance of new actors trading more virtually, local producers and traders in coffee-exporting countries are bearing the full brunt of low and increasingly unstable coffee prices.[8] Considering a major coffee-exporting SSA country, Uganda, where 90 per cent of the population is involved in subsistence farming, with around 1.5 million households associated with coffee-related activities, there is evidence to suggest that Uganda trades within a captive value chain.[9]
- **Garments:** in terms of the distribution of value added within the apparel sector, 70 per cent of the retail price is retained by lead firms in the United States, while manufacturing activities, including sourcing of raw materials from third countries and the shipping costs involved, account for the remaining 30 per cent.[10] In the process, factory workers in an LDC such as Bangladesh, with an official minimum monthly wage of US$68, receive just 1 per cent of the total value of the finished product. The sector is a major employer of women.
- **Horticulture:** in terms of value distribution for the average firm it is estimated by Hortiwise (2012) that Kenyan growers receive 15 per cent (US$0.11) of the total retail value, compared with the 64 per cent (US$0.74) retained by retailers. This is around the same level reported by Dolan and Humphrey (2000) for the horticulture sector, and by Kaplan and Kaplinsky (1998) for the deciduous canned fruit sector. Like the garment sector in Asia, the horticulture sector in Africa is a major employer of women.

It is fair to say that many CF developing countries remain trapped in low-value-added segments of GVCs, and highly asymmetric power relations between chain actors are not conducive to advancing desired social and developmental objectives. As argued by Kasente (2012), there is a great need for gender equality issues to be integrated into all stages of coffee production and marketing – referred to as 'value chains' – if women are to realise prosperity from their labour and move up the value chain as active participants and decision-makers. Buyers and lead firms are becoming more demanding, but they do not always provide support or transfer knowledge and capabilities (Pietrobelli 2008), or offer higher price margins to incentivise economic and social upgrading. Even leaving aside the issue of distribution, the low proportions of value added now available in the entry-level stages of GVCs further emphasise the formidable challenges faced by CF members with amplified trade costs due to economic geography considerations.

Based on the available evidence from GVC case-study analysis, it is becoming clear that

increasing and sustaining value addition and upgrading processes over time may not be possible unless public and private governance structures and public/private actor incentive structures are aligned. This obviously becomes much more challenging in the context of globalised firms operating without effective global governance structures.

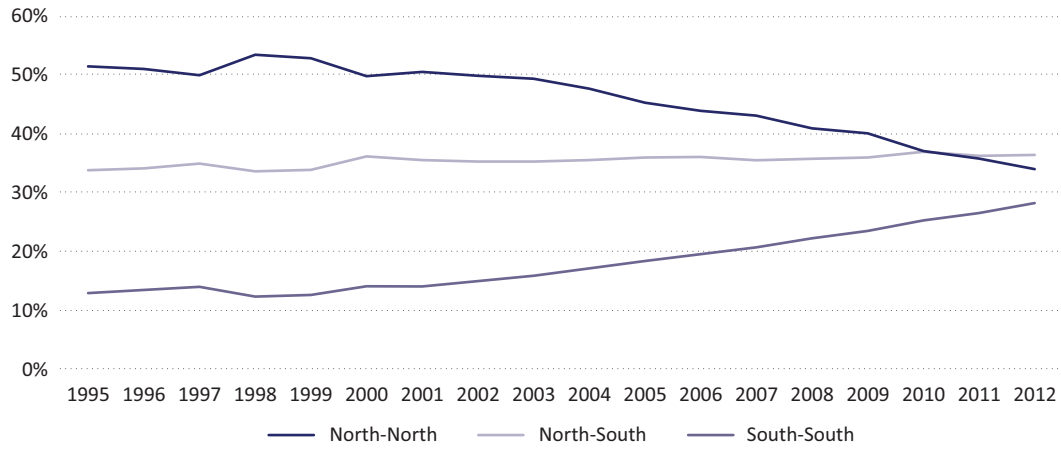
Simply reducing trade costs at the border (e.g. in the way of improved trade facilitation) is unlikely to alter the existing highly unequal distribution of value added. Cutting trade costs across the board could actually result in increased competition among developing countries in a race to bottom and engagement with the low-value-added components of supply chains. It has been suggested that whether or not to actively promote GVCs is a strategic choice for policy-makers (OECD-WTO-UNCTAD 2013). However, the viability of existing global governance in managing value chains has not been given due consideration to date. Given the very real forces of convergence and divergence in operation within the global economy, there are concerns that the ascendency of GVCs might actually accentuate these processes (Keane and Basnett 2015).

## 17.6 The rise of developing countries in global trade: new demand drivers

The rising significance of developing countries within global trade is another factor that is likely to exert a strong future influence on GVC development. Almost half of global merchandise exports and about 40 per cent of world GDP is now attributable to developing countries. An important feature of this development is the rapidly expanding trade between developing countries: the average annual growth of South–South trade since 2000 has been 17 per cent, compared with world trade growth rate of 10 per cent. This has caused the relative significance of trade between developed countries (i.e. North–North trade) to decline from about 53 per cent in the late 1990s to just 34 per cent in 2012 (Figure 17.7).

Trade with fast-growing developing countries offers new opportunities for specialisation, efficiency gains, investment and export-market diversification. Some of the BRICS members, particularly China and India, now provide improved market access to LDCs. They have also become important sources of technical and financial assistance. Nevertheless, there

Figure 17.7 The relative significance of South–South trade rising rapidly




**Source:** Razzaque and Gosset (2014)

are concerns that increased South–South trade has bypassed a large number of SSA countries and small states. The nature of trade patterns with emerging economies indicates that SSA countries and small states predominantly export primary commodities and largely import manufactured items. There is apprehension about this nature of specialisation within South–South trade.

However, the growing significance of developing countries within global trading flows offers new opportunities for forming regional supply chains. It is widely recognised that most production networks and supply chains are regional in nature. For example, studies have identified the potential for developing regional supply chains in SSA and South Asia in such sectors as textiles and clothing, leather and leather products, and agroprocessing (Commonwealth Secretariat and UNCTAD 2013). As much as 40 per cent of intra-SSA trade takes place in manufacturing, indicating significant scope for developing regional production networks.

Another important aspect of the rise of developing countries is empirical evidence suggesting that new markets and growth centres are closely related to growth in neighbouring countries (e.g. Redding and Venables 2001, Moore 2015b). The growth of such countries as Nigeria and South Africa is thus likely to have a positive impact for neighbouring countries in SSA (Moore 2015b). Delivering inclusive regional value chains may therefore be a more achievable objective than the pursuit of GVCs, in some cases. For small economies and firms, regional value chains linking neighbouring countries may offer more sustainable growth opportunities and more manageable scales than global markets (Gereffi and Luo 2014).

## 17.7 Charting the way forward and concluding remarks

As the discussion in this paper has made clear, advancing an inclusive GVC agenda faces a number of formidable challenges. In this regard, there is a need for a more nuanced approach and greater consideration of the unique development challenges faced by CF states. Ensuring more inclusive GVC participation requires greater consideration of the heterogeneity of capacity-constrained CF states. The development of a more appropriate global trade support architecture must be considered in the context of a rapidly changing global trading landscape.

### 17.7.1 Adapting to the new global trading landscape

The rise of the global South offers opportunities for developing regional supply chains, as a result of the emergence of new growth poles and hubs of commercial activities. While the current international specialisation in which SSA and small states largely supply primary commodities to emerging Southern partners is of concern, there is some evidence of the potential to develop regional supply chains involving the manufacturing and agroprocessing sectors. Delivering inclusive regional value chains may be a more achievable objective than the pursuit of GVCs, in some cases, and deserves more attention (Kamau 2009, Brandt and Thun 2010, Navas-Alemán 2011, UNCTAD 2013).

### 17.7.2 Delivering more targeted aid for trade

The Aid for Trade support initiative has assisted many developing countries with their enhanced regional integration and improved trade facilitation efforts. However, the existing support mechanism needs to duly recognise the special and unique development challenges faced by small states. While there is evidence that Aid for Trade is effective in promoting trade facilitation, its impact on productive capacity (i.e. in generating export response from tradable sectors) is not clear.[11] Given the distinct characteristics of small states, support measures that are required to address similar

challenges elsewhere may not be suitable for them. For example, improving regional connectivity by building cross-border road and rail networks invariably has limited relevance for small island states. The following points should be noted:

- A narrow focus on trade facilitation measures, although necessary, will not be sufficient to induce more inclusive GVC development. A strong case can be made for small-state-specific support measures in addition to innovative changes to existing mechanisms.
- The potential for value chain development led by trade in services needs to be explored for countries with excessive trading costs.

### 17.7.3 Effectively governing global value chains

The governance of GVCs, including the relationships between lead firms and local suppliers, is an area that needs to be better understood in order to secure more inclusive GVC development; this encompasses the inclusion of firms in higher-value-added activities within GVCs, as well as increasing domestic value added from existing GVC participation. The current pattern of highly unequal distribution of value added along GVCs, combined with declining value added for particular functions, is not conducive to the design of more inclusive approaches.

- There are concerns regarding the development of local firms' technological capabilities and the achievement of social and economic upgrading processes over time, and the empirical evidence is mixed and highly context specific.[12]
- All governments are grappling with the balance between state and business interests and the appropriate alignment of incentive structures.
- Unless Aid for Trade is better targeted at increasing bargaining power within GVCs, there are concerns that potential benefits may flow to those with power within the chain, not the intended beneficiaries (Mayer and Milberg 2013).
- In the absence of effective global governance mechanisms, there are concerns about the creation of competitive incentive schemes, which can undermine, rather than promote, social upgrading processes.

## Notes

1 This paper was prepared as part of the 2015 annual Commonwealth and Francophonie dialogue with the G20, convened by the Secretariats of the Commonwealth and La Francophonie, together with Turkey as G20 President and Chair of the G20 Development Working Group. It was presented on 14 April 2015 at the International Monetary Fund, Washington DC.

2 Authors' estimates based on UNCTADstat data.

3 This paper uses the Commonwealth Secretariat definition of small states. These are defined as independent states with populations of up to 1.5 million, with a few exceptions. This definition follows the World Bank small states classification, with some exclusions of countries that are classified as 'developed' by UNCTAD. This sample includes 49 countries, 31 of which are Commonwealth members.

4 Lanz and Maurer (2015) also point out that advances in statistics by enterprise characteristics and by mode of supply (i.e. taking into account the movement of labour and capital) are required in order to better understand trends.

5 For example, UNCTAD (2013) draws attention to equity and non-equity modes of international production.

6 Kraemer et al. (2011) found that for every US$299 iPod sold in the USA, the value captured from these products through assembly in China was around US$10, i.e. 3.3 per cent of the total value of the final product.

7 See also Gibbon and Ponte (2005) and Oxfam (2005).

8 According to Newman (2009), international coffee markets have become financialised, with firms dealing in physical commodities as well as other financial services and hence coming to resemble financial holding companies.

9 Keane (2012, 2014) argues that the coffee GVC in Uganda now resembles a captive value chain, given low supplier competence in the face of increasingly complex transactions and a transactional dependence on lead firms.

10 Report by Moongate Associates available at: http://tppapparelcoalition.org/

uploads/021313_Moongate_Assoc_Global_Value_Chain_Report.pdf (accessed 20 March 2015).

11 For example, see Commonwealth Secretariat-supported analytical studies on Aid for Trade such as Razzaque and Te Velde (2013).

12 Barrientos et al. (2010) developed a conceptual framework to analyse economic and social upgrading across comparative GVC studies as part of their work under the research consortium Capturing the Gains (http://www.capturingthegains.org/about/).

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# Chapter 18

# The Relative Position of the Commonwealth in Global Value Chains: Focus on Africa, Caribbean and the Pacific and Shifts in Trade in Value Added

## 18.1 Introduction[1]

In the following section, with reference to the available knowledge on GVC participation, as defined, we present a snapshot of the current participation of African, Caribbean and Pacific (ACP) countries, particularly Commonwealth members. First, some of the major caveats regarding the use of these data are outlined. Second, we summarise what the available data tell us about current participation and, most importantly, changes over time.

## 18.2 Interpreting results

The Eora Multi-Regional Input–Output database (Eora-MRIO) is a good effort to compile and harmonise input–output tables from several countries using different sectoral classifications. It is one of the major data sources used to calculate trade in value added. Although, in the process of preparing this data set, some assumptions and adjustments to the data were made,[2] it has the best country coverage in terms of availability across Commonwealth members.

In using this database, it is important to understand some of the caveats. These include the fact that, although in aggregate terms the Eora-MRIO can help to calculate the value-added content of exports and other production variables, when the analysis is performed at disaggregated levels, some inconsistencies may appear. The distinction between intermediates and final products blurs in the summation of overall trade in value added, but it is logical to assume that an increase in foreign value added equates to a greater use of imported intermediates (Cheng *et al.* 2015).

The reported figures for trade in value added may differ substantially from those associated with gross merchandise trade. This is not only because the value of imported intermediate goods used in production is omitted but also because, as trade in value added is decomposed, the services sector gains in weight once its overall contribution is acknowledged. Overall, 26 'sectors' are included in the database, but for the purposes of our analysis we exclude some, such as 're-export and re-import' as well as 'others'. The inclusion of 'private households' features given the important role of remittances for many Commonwealth members.

The use of input–output tables to distinguish between trade in value added between domestic and foreign sources. It means that the value added generated through local or foreign transport or financial services, for example, are embedded in both exported services and goods. Consequently, the structure of trade in value added tends to be more closely similar to the structure of domestic production rather than the value of goods trade. This is precisely one of the main objectives of the exercise undertaken to calculate trade in value added – to address the imbalance between the measurement of gross trade compared with the value added data used to measure gross domestic product.

In order to measure participation in global and regional value chains, two different definitions of integration are nowadays used. These terms, introduced by Koopman et al. (2010), are 'forward' and 'backward' participation, or integration, with value chains. Foreign value added that a country further exports as a proportion of its total exports is called 'backward' integration. In comparison, 'forward integration' rate refers to the proportion of domestic value added that the country in question exports, which is then further exported by the partner country. Invariably, the data are extremely sensitive to the size of economies. Larger economies will present smaller participation indexes as indicated by proportions of foreign value added. This is simply because of their more diversified productive structure, which permits the domestic sourcing of a greater range of products. In addition, the greater availability of workers, land and resources, necessarily implies a higher proportion of domestic value added in production. In brief, therefore it is the changes over time in these indexes that are far more revealing. We explore these shifts for those Commonwealth members for which data are available in the African, Caribbean and Pacific regions.

## 18.3 Caribbean

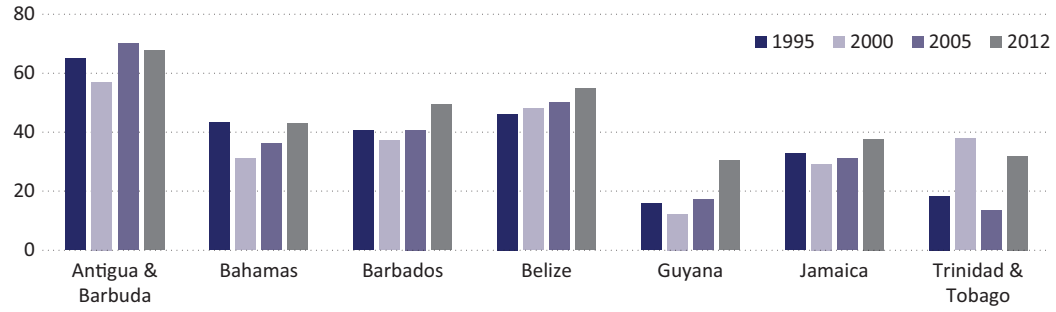
- There has been a consistent increase in the proportion of foreign value added embedded within the exports of Barbados, Belize, Guyana and Jamaica between 1995 and 2000.
- The main sectors that experienced an increase in foreign value added in exports (2000–2012) were transport, food and beverages, post and telecommunications, private households, and maintenance and repair.
- The main sectors that experienced a decrease in foreign value added (2000–2012) were mining and quarrying, electrical and machinery, textiles and apparel, fishing, and public administration.
- This suggests declining participation in archetypal GVC sectors, including light manufacturing and processed fisheries.
- A consistent increase in domestic value added in exports occurred in Antigua and Barbuda, The Bahamas, and Trinidad and Tobago between 1995 and 2012.
- However, domestic value added by Caribbean countries as a proportion of global trade in value added (2000–2012) decreased, except in the case of Trinidad and Tobago (driven by the dominance of petrochemical exports).
- Global value added to exports (through imports) increased between 2000 and 2012 by almost 10 percentage points, with a slight decrease in regional sourcing of value added from other Caribbean partners (0.02%).
- However, individual countries in the region (Guyana, Barbados and Jamaica) increased sourcing of regional value added, from Trinidad and Tobago.

### 18.3.1 Shifts in value added: aggregate level

Figure 18.1 presents the results of an analysis of changes in the proportion of foreign value added over time between 1995 and 2012 in Caribbean countries. There has been a consistent increase in the proportion of foreign value added embedded within the exports of Barbados, Belize, Guyana and Jamaica. In the case of Antigua and Barbuda, The Bahamas, and Trinidad and Tobago, there has been an increase in the proportion of domestic value added embedded in exports over the period between 1995 and 2012.

In terms of the contribution of domestic value added by the Caribbean to global trade

Figure 18.1 Proportion of foreign value added (%) embedded in exports (backwards participation index)




**Source:** Adapted from Mendez-Parra (2015) based on Eora-MRIO

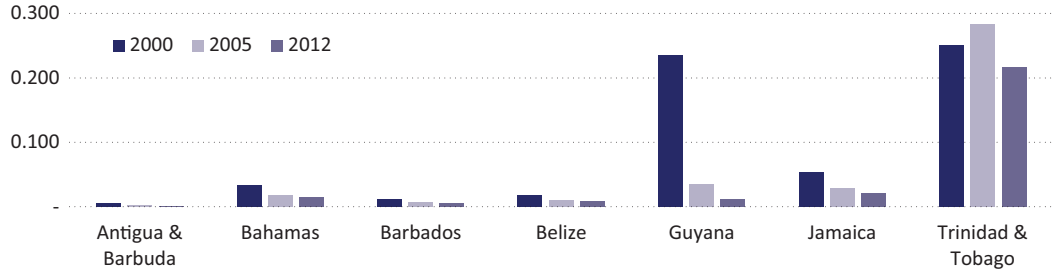
in value added (Figure 18.2), the proportion contributed to other countries' exports by Trinidad and Tobago is extremely high (driven by the dominance of petrochemical exports). There have clearly been decreases in the cases of the other countries, including Jamaica, The Bahamas, Belize and Barbados, as well as, more recently, Guyana.

### 18.3.2 Shifts in value added: regional picture

Table 18.1 presents the regional contribution of value added to exports in 2000 and 2012. Figure 18.3 presents these shifts visually. The main findings can be summarised as follows:

- Between 2000 and 2012, the sourcing of global value added to exports (through imports) has increased on average for the region by almost 10 percentage points; there has been a slight reduction in the regional sourcing of value added in the Caribbean (0.02%).
- However, this average result can be contrasted with country-specific results for Guyana, Barbados and Jamaica, which all increased their sourcing of regional value added, from Trinidad and Tobago (with Belize also featuring as an increasing source of intra-regional value added for Jamaica).
- Generally, for the region, the increase in global sourcing of value added has resulted mostly in a reduction in domestic value added, as opposed to the replacement of regional value added in exports.
- Trinidad and Tobago is the only country in the region that increased domestic value added to exports between 2000 and 2012, with a resultant decrease in the sourcing of regional and global value added.

Figure 18.2 Caribbean countries' contribution of value added to world exports (%)




**Source:** Adapted from Mendez-Parra (2015) based on Eora-MRIO

Table 18.1 Origin of value added in exports in 2000 and 2012 (%)

| | Antigua and Barbuda | Bahamas | Barbados | Belize | Guyana | Jamaica | Trinidad and Tobago | Average |
|---|---|---|---|---|---|---|---|---|
| **2000** | | | | | | | | |
| **Antigua and Barbuda** | 42.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.13 |
| **Bahamas** | 0.1 | 68.9 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 9.87 |
| **Barbados** | 0.2 | 0.0 | 62.8 | 0.1 | 0.1 | 0.0 | 0.0 | 9.03 |
| **Belize** | 0.0 | 0.0 | 0.0 | 52.0 | 0.0 | 0.0 | 0.0 | 7.43 |
| **Guyana** | 0.2 | 0.0 | 0.2 | 0.1 | 87.8 | 0.2 | 0.3 | 12.69 |
| **Jamaica** | 0.1 | 0.0 | 0.2 | 0.1 | 0.1 | 70.9 | 0.1 | 10.21 |
| **Trinidad and Tobago** | 0.3 | 0.0 | 0.5 | 0.1 | 0.8 | 0.4 | 62.1 | 9.17 |
| **Rest of the world** | 56.2 | 31.0 | 36.3 | 47.5 | 11.3 | 28.3 | 37.4 | 35.43 |
| ***Total Caribbean*** | *0.9* | *0.11* | *0.89* | *0.45* | *0.92* | *0.79* | *0.5* | 0.65 |
| **2012** | | | | | | | | |
| **Antigua and Barbuda** | 32.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.61 |
| **Bahamas** | 0.0 | 57.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 8.17 |
| **Barbados** | 0.2 | 0.0 | 50.6 | 0.0 | 0.1 | 0.0 | 0.0 | 7.27 |
| **Belize** | 0.0 | 0.0 | 0.0 | 45.2 | 0.0 | 0.1 | 0.0 | 6.47 |
| **Guyana** | 0.1 | 0.0 | 0.1 | 0.0 | 69.6 | 0.1 | 0.0 | 9.99 |
| **Jamaica** | 0.1 | 0.0 | 0.2 | 0.1 | 0.0 | 62.3 | 0.1 | 8.97 |
| **Trinidad and Tobago** | 0.2 | 0.1 | 0.7 | 0.1 | 1.2 | 0.6 | 68.1 | 10.14 |
| **Rest of the world** | 67.1 | 42.8 | 48.3 | 54.5 | 29.0 | 36.8 | 31.8 | 44.33 |
| ***Total Caribbean*** | *0.6* | *0.1* | *1.0* | *0.3* | *1.3* | *0.9* | *0.2* | 0.63 |

**Source:** Adapted from Mendez-Parra (2015) based on Eora-MRIO

### 18.3.3 Shifts in value added: sectoral level

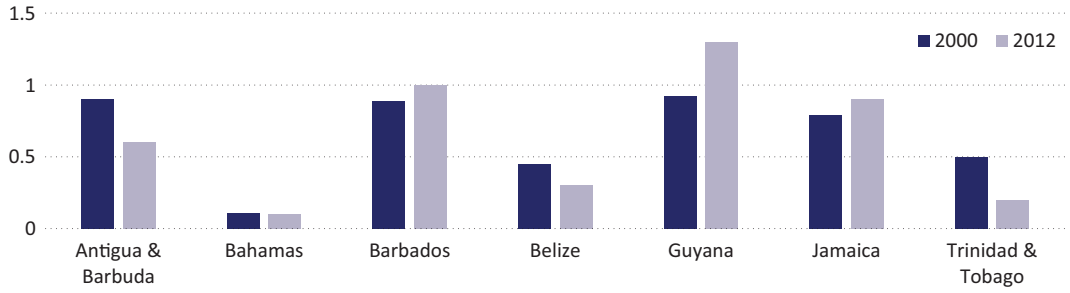
Table 18.2 presents the sectoral breakdown of foreign value added embedded in exports for the Commonwealth Caribbean. The main results for the region as a whole (average percentage point change) in terms of where the largest increases in foreign value added[3] have been embedded in exports are as follows:

- transport (25.2);
- food and beverages (14.6);
- post and telecommunications (11.8);
- private households (11.7);[4] and
- maintenance and repair (11.4).

For each individual country in the region, the sectors where the major increases in foreign value added have accrued are as follows:

- **Antigua and Barbuda:** private households (3.1); maintenance and repair (2.4); and education, health and other services (1.6).
- **The Bahamas:** financial intermediation and business services (2.5); petrochemical and non-metallic mineral products (1.9); and education, health and other services (1.6).
- **Barbados:** transport (19); education, health and other services (3.3); and post and telecommunications (2.50).

## Figure 18.3 Proportion of regional value added in exports (%) in 2000 and 2012




Q1

**Source:** Data from Eora-MRIO
**Note:** Percentage point change between 2000 and 2012.

## Table 18.2 Foreign value added in exports (percentage point change) between 2000 and 2012

| | Antigua and Barbuda | Bahamas | Barbados | Belize | Guyana | Jamaica | Trinidad and Tobago |
|---|---|---|---|---|---|---|---|
| **Agriculture** | –0.7 | –2.4 | –0.1 | 2 | 5 | –1.4 | 0 |
| **Fishing** | –1.9 | –7.8 | –1.5 | –0.1 | 0.3 | –1.4 | 0.1 |
| **Mining and quarrying** | –6.7 | 0.5 | 0.4 | 0 | 7.2 | –0.4 | –32.1 |
| **Food and beverages** | 0.6 | 1.4 | –3.1 | –7.6 | 16.5 | 5 | 1.8 |
| **Textiles and apparel** | 0.3 | 0.2 | –3.1 | –5.6 | 0.9 | –9.1 | –0.4 |
| **Wood and paper** | –0.7 | 0.9 | –3 | –1.2 | 1.9 | 0.4 | –0.3 |
| **Petroleum, chemical and non-metallic mineral products** | 1 | 1.9 | 1.9 | 0.8 | –2 | –4.4 | 11.8 |
| **Metal products** | 0.8 | 0 | –2 | –0.9 | 3.2 | 1.1 | 1.1 |
| **Electrical and machinery** | –0.8 | 0.9 | –17.1 | –4 | –1.1 | 1.7 | –1.1 |
| **Transport equipment** | –0.3 | –4.5 | –1.3 | –1.1 | –1.8 | 1 | –0.8 |
| **Other manufacturing** | –1.1 | –0.6 | –0.5 | –0.2 | –0.1 | –0.2 | –0.4 |
| **Recycling** | –0.9 | 0 | –0.7 | –0.6 | 0.6 | –0.8 | 0.1 |
| **Electricity, gas and water** | –0.8 | 0.3 | –0.2 | –0.4 | –2.3 | –0.1 | –0.1 |
| **Construction** | 0.5 | 0.7 | 1.1 | 1.9 | –1.7 | 0.6 | 0.5 |
| **Maintenance and repair** | 2.4 | 0.6 | 1.1 | 3.2 | 3.4 | 0.4 | 0.3 |
| **Wholesale trade** | n/a | 0.5 | n/a | n/a | n/a | n/a | n/a |
| **Retail trade** | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Hotels and restaurants** | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Transport** | n/a | 1.2 | 19 | 2.4 | –2.7 | 5.3 | n/a |
| **Post and telecommunications** | 1 | 0.9 | 2.5 | 1.9 | 1.4 | 0.9 | 3.2 |
| **Financial intermediation and business activities** | –0.4 | 2.5 | –0.3 | –0.4 | –8.5 | –0.5 | –0.4 |
| **Public administration** | 1.5 | 1.3 | 0.7 | 1.4 | –14.8 | 0.3 | –0.1 |
| **Education, health and other services** | 1.6 | 1.6 | 3.3 | 2.1 | –5.3 | 1.2 | 4.5 |
| **Private households** | 3.1 | 0.5 | 1 | 3.6 | 2.9 | 0.4 | 0.2 |
| **Others** | –0.9 | –0.1 | –0.4 | –0.4 | –0.1 | –0.1 | –0.1 |
| **Re-export and re-import** | 3 | 0 | 0.1 | 3.7 | 9.2 | 0.5 | 0.2 |

**Source:** Eora-MRIO

- **Belize:** private households (3.6); maintenance and repair (3.2); and education, health and other services (2.1).
- **Guyana:** food and beverages (16.5); mining and quarrying (16.5); and agriculture (5).
- **Jamaica:** transport (5.3); food and beverages (5); and electrical and machinery (1.7).
- **Trinidad and Tobago:** petroleum, chemical and non-metallic mineral products (11.8); education, health and other services (4.5); and post and telecommunications (3.2).

In comparison, the main sectors within the region with decreases in foreign value added (and hence where domestic value added may have increased) are as follows:

- mining and quarrying (–31.1);
- electrical and machinery (–21.5);
- textiles and apparel (–16.8);
- fishing (–12.3); and
- public administration (–9.7).

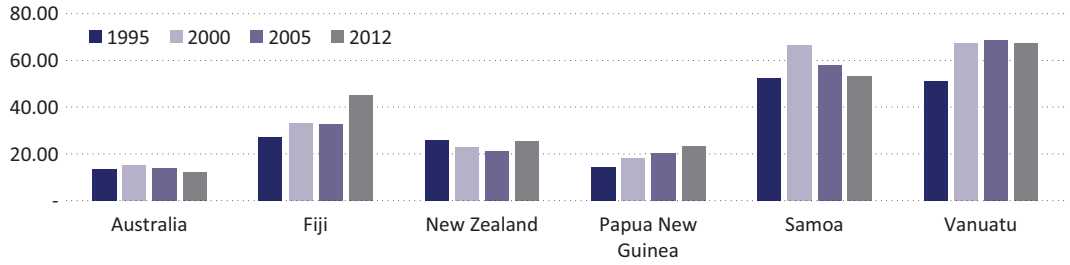
For each individual country within the region, the sectors where the major decreases in foreign value added have accrued (and hence where domestic value added may have increased) are as follows:

- **Antigua and Barbuda:** mining and quarrying (–6.7); fishing (–1.9); and other manufacturing (–1.1).
- **The Bahamas:** fishing (–7.8); transport equipment (–4.5); and agriculture (–2.4).
- **Barbados:** electrical and machinery (–17.1); food and beverages (–3.1); and textiles and apparel (–3.1).
- **Belize:** food and beverages (–7.6); textiles and apparel (–5.6); and wood and paper (–1.2).
- **Guyana:** public administration (–14.8); financial intermediation and business activities (–8.5); and education, health and other services (–5.3).
- **Jamaica:** textiles and apparel (–9.1); petroleum, chemical and non-metallic mineral products (–4.4); and agriculture and fishing (both –1.4).
- **Trinidad and Tobago:** mining and quarrying (–32.1); electrical and machinery (–1.1); and transport equipment (–0.8).

## 18.4 Pacific

- Between 1995 and 2012, Fiji and Papua New Guinea increased the proportion of foreign value added in their exports. Australia and, to a much lesser extent, New Zealand, by contrast, experienced a decrease, and the proportion of domestic value added in their exports increased.
- Globally, the value-added contribution of Australia to world exports has increased dramatically in recent years, while that of New Zealand has decreased.
- Overall, the regional contribution of value added to global exports has increased, from around 3 per cent (2000) to 7 per cent (2012), except in the case of Australia.
- Each of the individual countries of the Pacific increased their sourcing of value added from Australia between 2000 and 2012.
- The sectors with the largest increases in foreign value added in exports were agriculture (4.5); mining and quarrying (2.7); post and telecommunications (1.7); hotels and restaurants (1.5); and construction (0.8).
- The sectors with the largest decreases in foreign value added (and hence where domestic value added may have increased) were financial intermediation and business services (–7.1); petroleum, chemical and non-metallic mineral products (–2.2); education, health and other services (–0.9); wood and paper (–0.5); and retail trade (–0.5).

Figure 18.4 Proportion of foreign value added embedded in exports (backwards participation index)




**Source:** Adapted from Mendez-Parra (2015) based on Eora-MRIO

### 18.4.1 Shifts in value added: aggregate level

Figure 18.4 presents the results of an analysis of changes in the proportion of foreign value added over time between 1995 and 2012 for Pacific countries. Fiji and Papua New Guinea increased the proportion of foreign value added in their exports over this period. Australia and, to a much lesser extent, New Zealand, by contrast, have seen a reduction in the proportion of foreign value added in their exports, which indicates an increase in domestic value added.[5] In the case of the smaller economies of Vanuatu and Samoa, almost 70 per cent of the value added embedded in exports is imported (foreign value added).

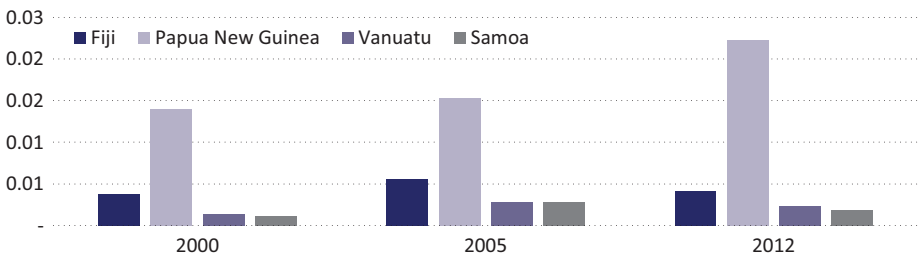
The contributions of the economically smaller members of the Pacific are presented in Figure 18.5. These results indicate that, in 2012, world exports included slightly more than 0.02 per cent of value added generated in Papua New Guinea – a country that has consistently increased its contribution of value added to world exports over the period from 2000 to 2012. In comparison, the contribution of the other Pacific island countries – Fiji, Samoa and Vanuatu – increased between 2000 and 2005 but then decreased in 2012.

The value added contribution of Australia and New Zealand to world exports is analysed in Figure 18.6. From this, it is clear that Australia's contribution has increased dramatically in recent years, while that of New Zealand has decreased. This is explained by the rise in the price of minerals observed in the last decade but also by the use of other Australian inputs into global exports.

### 18.4.2 Shifts in value added: regional picture

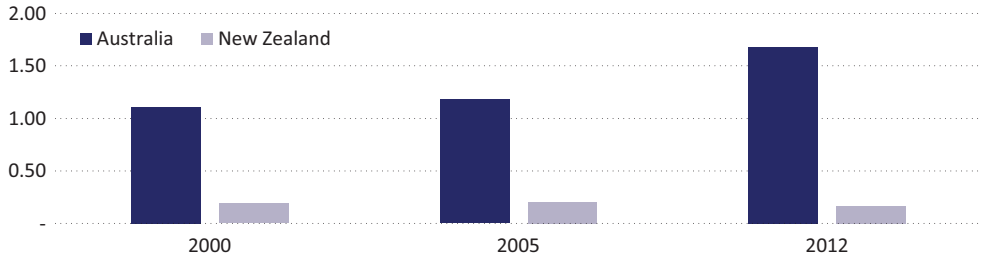
Table 18.3 presents the origin of value added from within the region, as well as the rest

Figure 18.5 Pacific island countries' contribution of value added to world exports (%)




**Source:** Adapted from Mendez-Parra (2015) based on Eora-MRIO

Figure 18.6 Australia and New Zealand's contribution of value added to world exports (%)




**Source:** Adapted from Mendez-Parra (2015) based on Eora-MRIO.

of the world, in 2000 and 2012. Looking at Australia, the domestic contribution of value added to exports increased between 2000 (86%) and 2012 (88%). This process reduced the contribution of value added to exports from other regional partners in the Pacific, as well as the rest of the world. Overall, the regional contribution of value added has increased to a greater extent compared with other global partners, from around 3 per cent (2000) to 7 per cent (2012).

Each of the individual countries of the Pacific increased their regional sourcing of value added, with the exception of Australia (Table 18.4). While Samoa increased its domestic value added as well as foreign value added from the Pacific region, the contribution from the

Table 18.3 Origin of value added in exports in 2000 and 2012 (%)

| | Australia | Fiji | New Zealand | Papua New Guinea | Samoa | Vanuatu | Rest of the world | Average |
|---|---|---|---|---|---|---|---|---|
| **2000** | | | | | | | | |
| **Australia** | 85.66 | 3.97 | 4.42 | 3.26 | 1.37 | 2.38 | 1.11 | 14.60 |
| **Fiji** | 0.01 | 69.52 | 0.01 | 0.02 | 0.08 | 0.11 | 0 | 9.96 |
| **New Zealand** | 0.68 | 2.15 | 77.67 | 0.41 | 0.67 | 0.93 | 0.19 | 11.81 |
| **Papua New Guinea** | 0.07 | 0.02 | 0.02 | 83.7 | 0.06 | 0.06 | 0.01 | 11.99 |
| **Samoa** | 0 | 0.01 | 0 | 0 | 36.02 | 0.03 | 0 | 5.15 |
| **Vanuatu** | 0 | 0.01 | 0 | 0 | 0.03 | 36.12 | 0 | 5.17 |
| **Rest of the world** | 13.57 | 24.32 | 17.87 | 12.6 | 61.77 | 60.38 | 98.68 | 41.31 |
| ***Total Pacific*** | *0.77* | *6.16* | *4.46* | *3.7* | *2.21* | *3.5* | *1.32* | 3.16 |
| **2012** | | | | | | | | |
| **Australia** | 88.15 | 9.48 | 7.57 | 7.59 | 7.73 | 8.4 | 1.69 | 18.66 |
| **Fiji** | 0.01 | 57.65 | 0.04 | 0.02 | 0 | 0.08 | 0 | 8.26 |
| **New Zealand** | 0.48 | 3.51 | 74.84 | 0.49 | 0.25 | 0.52 | 0.17 | 11.47 |
| **Papua New Guinea** | 0.07 | 0.03 | 0.04 | 78.08 | 0.03 | 0.05 | 0.02 | 11.19 |
| **Samoa** | 0 | 0.01 | 0 | 0 | 47.57 | 0.02 | 0 | 6.80 |
| **Vanuatu** | 0 | 0.01 | 0 | 0 | 0.01 | 35.22 | 0 | 5.03 |
| **Rest of the world** | 11.29 | 29.3 | 17.51 | 13.81 | 44.41 | 55.71 | 98.12 | 38.59 |
| ***Total Pacific*** | *0.57* | *13.05* | *7.65* | *8.11* | *8.02* | *9.07* | *1.88* | 6.91 |

**Source:** Adapted from Mendez-Parra (2015) based on Eora-MRIO

Table 18.4 Shifts in regional value added

| | Australia | Fiji | New Zealand | Papua New Guinea | Samoa | Vanuatu | Rest of the World | Average |
|---|---|---|---|---|---|---|---|---|
| **Percentage point change 2000 and 2012** | | | | | | | | |
| **Australia** | 2.49 | 5.51 | 3.15 | 4.33 | 6.36 | 6.02 | 0.58 | 4.06 |
| **Fiji** | 0 | –11.87 | 0.03 | 0 | –0.08 | –0.03 | 0 | –1.71 |
| **New Zealand** | –0.2 | 1.36 | –2.83 | 0.08 | –0.42 | –0.41 | –0.02 | –0.35 |
| **Papua New Guinea** | 0 | 0.01 | 0.02 | –5.62 | –0.03 | –0.01 | 0.01 | –0.80 |
| **Samoa** | 0 | 0 | 0 | 0 | 11.55 | –0.01 | 0 | 1.65 |
| **Vanuatu** | 0 | 0 | 0 | 0 | –0.02 | –0.9 | 0 | –0.13 |
| **Rest of the world** | –2.28 | 4.98 | –0.36 | 1.21 | –17.36 | –4.67 | –0.56 | –2.72 |
| **Total Pacific** | –0.2 | 6.89 | 3.19 | 4.41 | 5.81 | 5.57 | 0.56 | 3.75 |

**Source:** Adapted from Mendez-Parra (2015) based on Eora-MRIO

rest of the world decreased. Fiji, on the other hand, experienced a decrease in domestic value added to exports and an increase in foreign value added, from the rest of the world as well as from other Pacific countries (Figure 18.7).

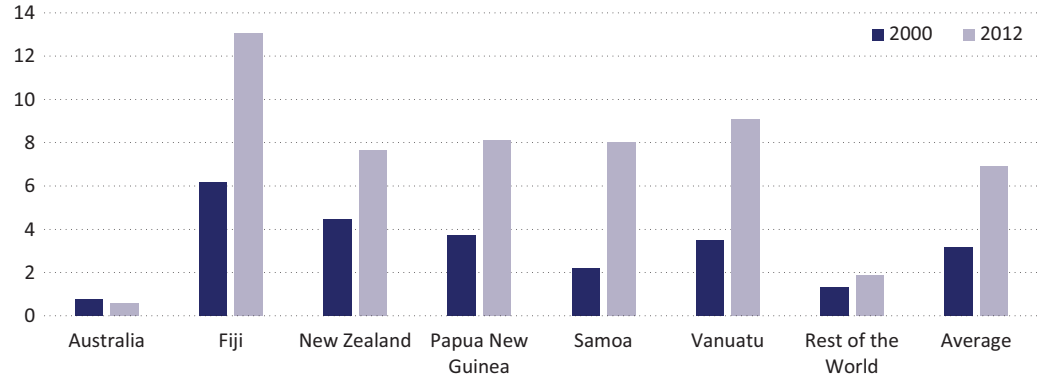
### 18.4.3 Shifts in value added: sectoral level

Table 18.5 presents the sectoral breakdown of foreign value added embedded in exports for the Commonwealth Pacific. The main results for the region as a whole (average percentage point change) in terms of where the largest increases in foreign value added[6] have been embedded in exports are as follows:

- agriculture (4.5);
- mining and quarrying (2.7);
- post and telecommunications (1.7);
- hotels and restaurants (1.5); and
- construction (0.8).

For each individual country in the region, the sectors where the major increases in foreign value added have accrued are as follows:

Figure 18.7 Proportion of regional value added in exports (percentage point change) between 2000 and 2012




**Source:** Data from Eora-MRIO
**Note:** Percentage point change between 2000 and 2012

Table 18.5 Shifts in value added in exports between 2000 and 2012 by sector (percentage point change each year)

| | Australia | Fiji | New Zealand | Papua New Guinea | Samoa | Vanuatu |
|---|---|---|---|---|---|---|
| Agriculture | –1 | 6.8 | 1.3 | 8.3 | 0.5 | 12.4 |
| Fishing | 0 | 0.9 | 0.2 | 0.3 | 0.2 | 1.6 |
| Mining and quarrying | 10.3 | –0.6 | –0.3 | 7.2 | 0 | –0.4 |
| Food and beverages | –0.2 | 0 | 3.4 | –0.5 | –1.1 | n/a |
| Textiles and apparel | 0.5 | 0 | –0.9 | –0.2 | –0.5 | –0.5 |
| Wood and paper | –0.2 | –1.6 | 1.6 | –0.5 | –0.9 | –1.1 |
| Petroleum, chemical and non-metallic mineral products | –0.3 | –4.9 | –0.5 | –2.1 | –1.3 | –3.8 |
| Metal products | 2.2 | 0.3 | 0.4 | –1.2 | –0.4 | –0.8 |
| Electrical and machinery | 2.1 | 0 | –1.9 | –0.1 | –0.1 | –1.2 |
| Transport equipment | 0.1 | 0.1 | –0.5 | 0 | –0.7 | 0.5 |
| Other manufacturing | 0.1 | 0.1 | 0 | –0.1 | –0.4 | –0.4 |
| Recycling | 0 | 0 | 0.1 | 0 | –0.1 | 0 |
| Electricity, gas and water | –0.2 | –1.7 | 0.1 | 0.9 | –0.2 | –1.3 |
| Construction | –0.1 | –0.3 | –0.7 | 0.5 | 5.9 | –0.8 |
| Maintenance and repair | –0.2 | 0.5 | n/a | 0 | 1 | 0.7 |
| Wholesale trade | –1.3 | 0.2 | –2 | –1 | 2.4 | 1.8 |
| Retail trade | –5 | n/a | n/a | n/a | n/a | 1.9 |
| Hotels and restaurants | 0.7 | 1.7 | n/a | 0.2 | 2.7 | 3.6 |
| Transport | 0 | 2 | 1 | –0.7 | n/a | 0.2 |
| Post and telecommunications | –0.8 | 2.9 | –0.2 | –1 | 5.1 | 4.2 |
| Financial intermediation and business activities | –5.3 | –6.9 | 1.3 | –9.3 | –9.2 | –13.1 |
| Public administration | –0.5 | 0.9 | –1.1 | 0 | –0.9 | –0.3 |
| Education, health and other services | –0.9 | 0.1 | –1 | –0.5 | –2 | –1.1 |
| Private households | 0 | 0.2 | 0 | 0 | –0.1 | –0.1 |
| Others | 0.1 | –0.5 | –0.2 | –0.3 | –0.4 | –0.5 |
| Re-export and re-import | 0 | 0 | 0 | 0 | 0 | 0 |

**Source:** Adapted from Mendez-Parra (2015) based on Eora-MRIO

- **Australia:** mining and quarrying (10.3); metal products (2.2); electrical and machinery (2.1); hotels and restaurants (0.7); and textiles and apparel (0.5).
- **Fiji:** agriculture (6.8); post and telecommunications (2.9); transport (0.2); public administration (0.9); and fishing (0.9).
- **New Zealand:** food and beverages (3.4); wood and paper (1.6); agriculture (1.3); financial intermediation and business services (1.3); and metal products (0.4).
- **Papua New Guinea:** agriculture (8.3); mining and quarrying (7.2); electricity, gas and water (0.9); construction (0.5); and fishing (0.3).

- **Samoa:** construction (5.9); post and telecommunications (5.1); hotels and restaurants (2.7); wholesale trade (2.4); and agriculture (0.5).
- **Vanuatu:** agriculture (12.4); post and telecommunications (4.2); hotels and restaurants (3.6); retail trade (1.9); and wholesale trade (1.8).

In comparison, the main sectors within the region with decreases in foreign value added (and hence where domestic value added may have increased) are as follows:

- financial intermediation and business services (–7.1);
- petroleum, chemical and non-metallic mineral products (–2.2);
- education, health and other services (–0.9);
- wood and paper (–0.5); and
- retail trade (–0.5).

For each individual country within the region, the sectors where the major decreases in foreign value added have accrued (and hence where domestic value added may have increased) are as follows:

- **Australia:** financial intermediation and business activities (–5.3); retail trade (–50); wholesale trade (–1.3); agriculture (–1); and education, health and other services (–0.9).
- **Fiji:** financial intermediation and business activities (–6.9); petroleum, chemical and non-metallic mineral products (–4.9); electricity, gas and water (–1.7); wood and paper (–1.6); and mining and quarrying (–0.6).
- **New Zealand:** wholesale trade (–2); electrical and machinery (–1.9); public administration (–1.1); education, health and other services (–1).; and textiles and apparel (–0.9).
- **Papua New Guinea:** financial intermediation and business activities (–9.3); petroleum, chemical and non-metallic mineral products (–2.1); metal products (–1.2); post and telecommunications (–1); and transport –0.7).
- **Samoa:** financial intermediation and business activities (–9.2); education, health and other services (–2); petroleum, chemical and non-metallic mineral products (–1.3); food and beverages (–1.1); and both wood and paper, and public administration (–0.9).
- **Vanuatu:** financial intermediation and business activities (–13.1); petroleum, chemical and non-metallic mineral products (–3.8); electricity, gas and water (–1.3); electrical and machinery (–1.2); and each of the following: wood and paper, and education, health and other services (–1.1).

## 18.5 Africa[7]

- African countries are highly integrated into GVCs through forward integration; their domestic value added, derived mostly from mining and quarrying, makes a major contribution to global exports, even though the continent's overall contribution to trade in value added is only 2.2 per cent.
- Southern African countries have the highest backward integration rates (measured by the proportion of foreign value added in their exports).
- In absolute terms, intra-African trade in value added is dominated by South Africa, Algeria, Nigeria and Angola.
- However, Swaziland and Namibia source 38 per cent and 23 per cent respectively of their imported value added from Africa.
- The automobile sector has the highest backward integration rate (42.9%) and this is led mostly by a handful of countries (e.g. Egypt, Morocco, South Africa). Other sectors with high shares of foreign value added include manufacturing of electrical goods and machinery, and textiles and apparel.

### 18.5.1 Shifts in value added: aggregate level

Figure 18.8 below pictures backward and forward integration rates for African countries (average 2010–2012). Africa's contribution to trade in value added is extremely low, at just 2.2 per cent. However, this overall result masks the fact that, relative to total value-added exports, African countries show a high degree of integration into global value chains through forward integration: a high proportion of their value added is further exported and embedded in the exports of their partner countries. This is the case for resource-rich economies such as Libya, Algeria, the Democratic Republic of the Congo and the Central African Republic.

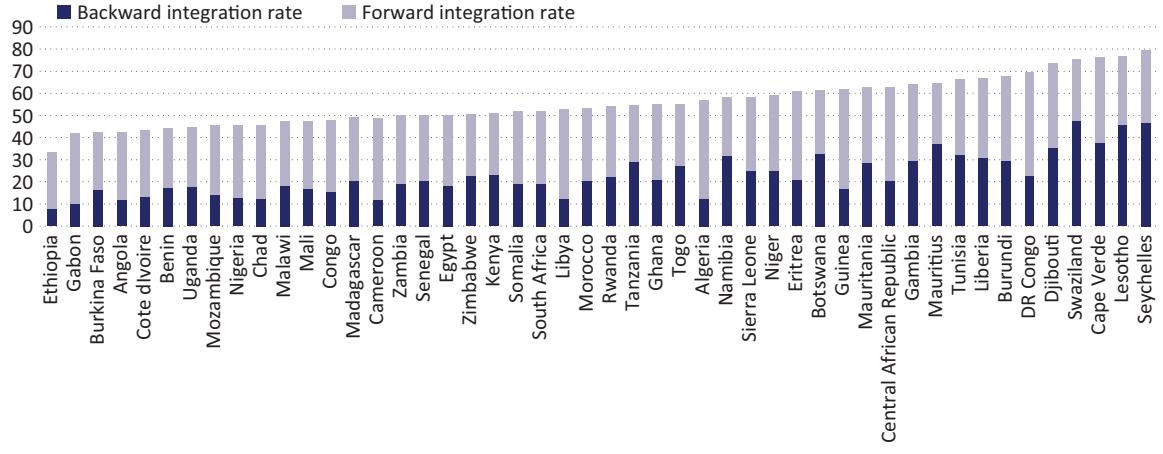
In comparison, with regard to backward GVC integration rates and the use of foreign value added in exports, southern African countries are the most integrated (e.g. Seychelles, Swaziland, Lesotho, Mauritius, Botswana and Namibia). Because of their limited market size, the small and landlocked countries Lesotho and Swaziland import a large amount of value added that is further exported.

### 18.5.2 Shifts in value added: regional picture

There is a consensus in the literature that regional integration and regional value chain development are important steps towards strengthening participation in GVCs (see, for example, ECA 2015 for an overview). Southern and eastern Africa are the regions most integrated into GVCs and also have a closer production network within the region (see Figure 18.10). In contrast to the structure of the continent's GVC participation, value added trade within Africa is driven by backward integration, although this is still very low as a proportion of exports. Regional production networks mostly occur in the manufacturing sector, particularly in transport equipment, and food and beverages. The least integrated sector is that of financial intermediation and business activities (Figure 18.9).

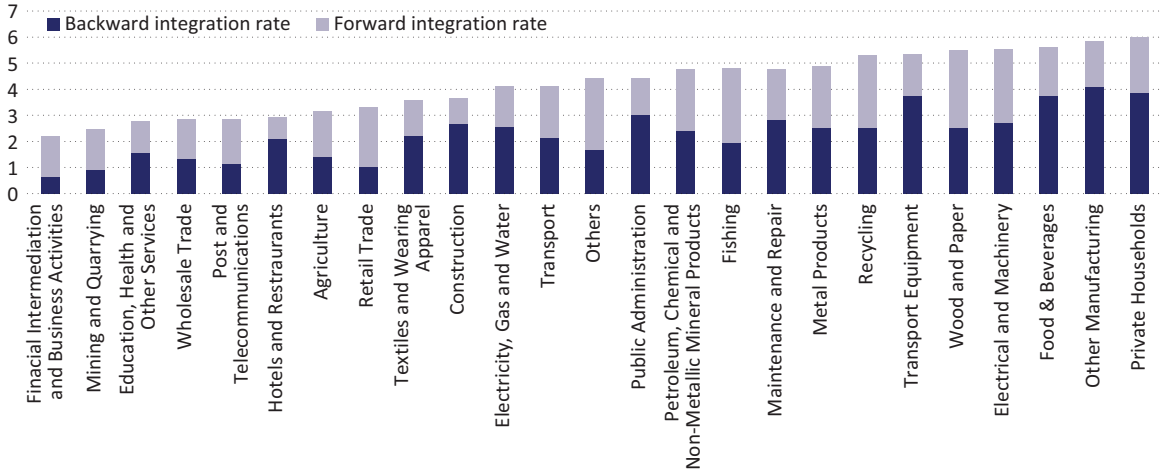
Only a few countries are strongly integrated into the regional production network and most of them are located in southern Africa. For instance, of the total value-added exports that go to Africa, Swaziland and Namibia source 38 per cent and 23 per cent respectively of

Figure 18.8 Global value chain backward and forward integration rates by country, 2010–2012




**Source:** Authors' calculations based on UNCTAD-Eora GVC database 2015
**Note:** Percentage of global exports.

Figure 18.9 Regional value chain backward and forward integration rates by sector, 2010–2012



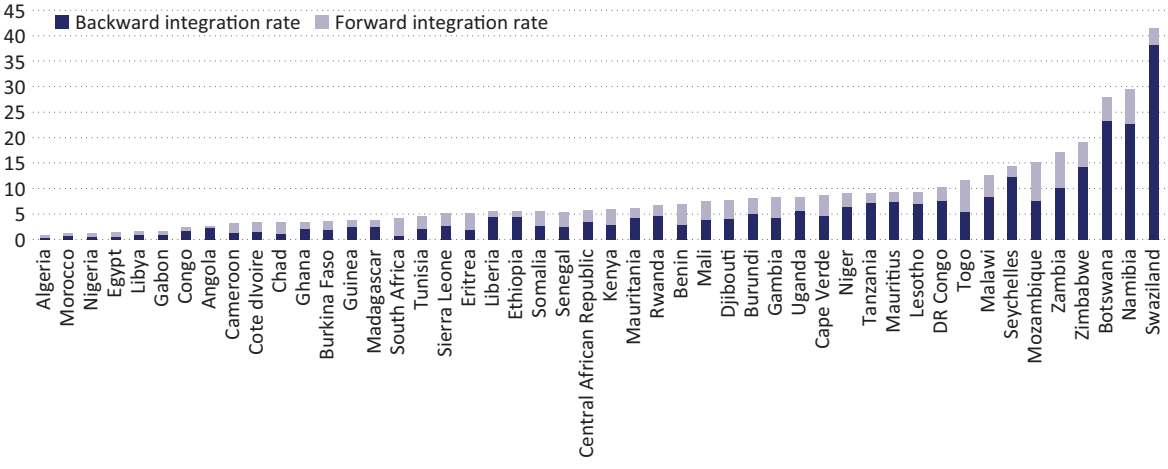

**Source:** Authors' calculations based on UNCTAD-Eora GVC database 2015
**Note:** Percentage in total exports.

their imported value added from within the continent.

### 18.5.3 Shifts in value added: sectoral level

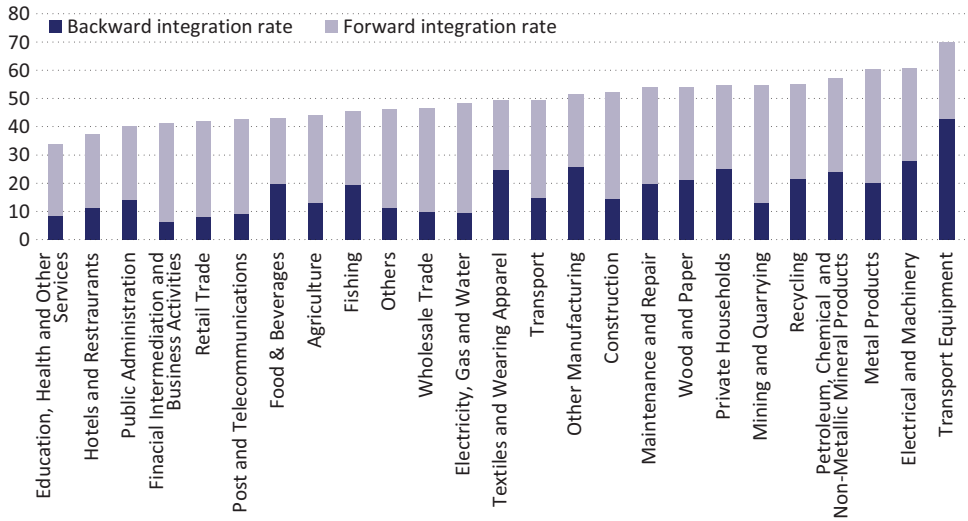
In comparison, the available evidence suggests much scope to move up the value chain through processing primary products into higher-value-added products (see for example ECA and AUC 2014). Africa's mining and quarrying has the highest forward integration rate of any of its sectors (41%). Figure 18.11 also shows that little foreign value is added to these exports, which indicates limited technological sophistication.

Figure 18.10 Regional value chain backward and forward integration rate by country, 2010–2012




**Source:** Authors' calculations based on UNCTAD-Eora GVC database 2015
**Note:** Percentage of total exports.

Figure 18.11 Africa's global value chain backward and forward integration rates by sector, 2010–2012




**Source:** Authors' calculations based on UNCTAD-Eora GVC database 2015
**Note:** Percentage of total exports.

## Notes

1 These findings are based on analysis of Eora-Miro data, a forthcoming GVC Handbook for the Caribbean and Pacific, and a background paper prepared by Mendez-Parra (2016). These findings are adapted from Slany and Davies (2016); we are grateful to the United Nations Economic Commission for Africa (UNECA) for sharing this information.
2 Kowalski et al. (2015).
3 Excluding 'others' and 're-import and re-export'.
4 Remittances received.
5 In the case of New Zealand, these may be associated with agricultural products (i.e. feedstuff) that have seen a sharp increase in their prices between 2005 and 2012. In the case of Australia, these results may reflect the major price increases experienced for some types of mineral and agricultural commodities between 2000 and 2012.
6 Excluding 'others' and 're-import and re-export'.
7 These findings are adapted from Slany and Davies (2016); we are grateful to the United Nations Economic Commission for Africa (UNECA) for sharing this information.

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Uncorrected advanced copy for the upcoming publication: *Future Fragmentation Processes: Effectively Engaging with the Ascendency of Global Value Chains*



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This set of policy briefings has been developed by Dr Jodie Keane, Economic Adviser (Trade Policy Analysis) at the Commonwealth Secretariat, with support from Roland Baimbill-Johnson, previously Commonwealth Scholar at the School of African and Oriental Studies (SOAS), University of London and currently a SOAS funded PhD candidate, at the Department of Economics. The editors are extremely grateful to all contributors and participants in the a technical workshop held at the Commonwealth Secretariat, 7 October 2016.

The global trade slowdown has been accompanied by profound shifts in the trade-growth nexus, with continued declines in advanced economies' participation in global production network exports. Against this backdrop, this publication presents a collection of think-pieces reflecting on past experiences of global value chain (GVC) engagement and potential future fragmentation processes.

Providing new evidence of participation in GVCs by the Commonwealth, it is intended to spur far more nuanced and country-, as well as region-, specific approaches towards effective and gainful GVC engagement. Policy measures which arise include: overcoming barriers to entry, addressing informational asymmetries, tackling unfair competition and stimulating innovation. These are all areas where the potential of the 'Commonwealth Effect' could be further leveraged to enhance trade gains, the necessity of which is heightened in view of the advancement of structural economic transformation to support the Sustainable Development Goals (SDGs).

*Future Fragmentation Processes: Effectively Engaging with the Ascendency of Global Value Chains* addresses these issues in four parts:

Section 1: Global Developments

Section 2: Thematic Issues

Section 3: Sectoral Developments

Section 4: Policy Perspectives

The Commonwealth