

Chapter 16

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

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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 organised 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 specialised 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).

16.1 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 chapter 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 ascendancy of GVCs, there is a need for a transition from industrial policy to productive-sector policy.

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

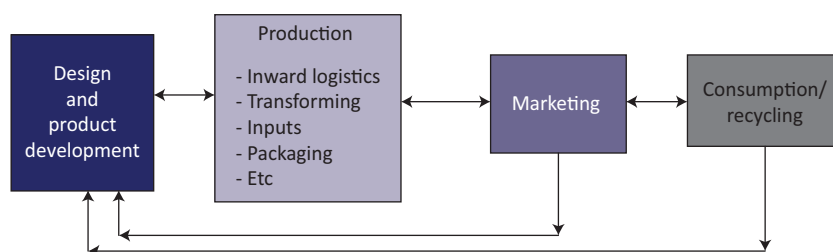
Global value chains have increasingly come to dominate global trade, affecting virtually all sectors and all economies. The value chain comprises the full range of activities that are required to bring a product or service from conception through the various phases of production (involving a combination of physical transformation and the input of various producer services) to delivery to final consumers and disposal after use (see Figure 16.1). 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 16.1 Four links in a simple value chain



Source: Author.

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

16.3 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 subprocesses. 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,

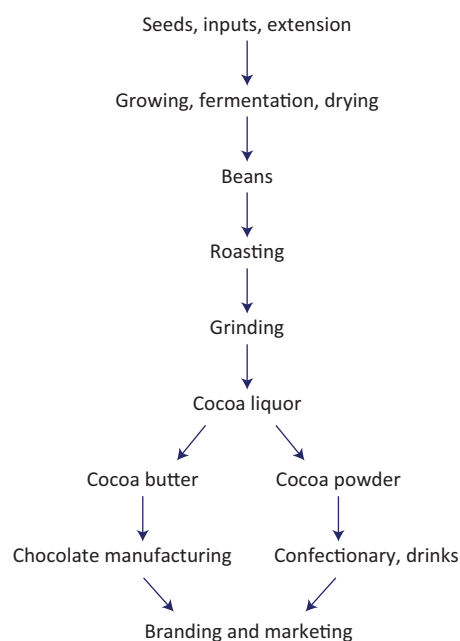
fragmented chain of production, distribution and after-sales support. This fracturing and global dispersion of services is also increasingly evidenced in higher-knowledge content activities such as in the legal, architectural and health sectors.

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 16.2). 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).

16.4 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 16.2 The cocoa additive value chain

Source: Author.

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

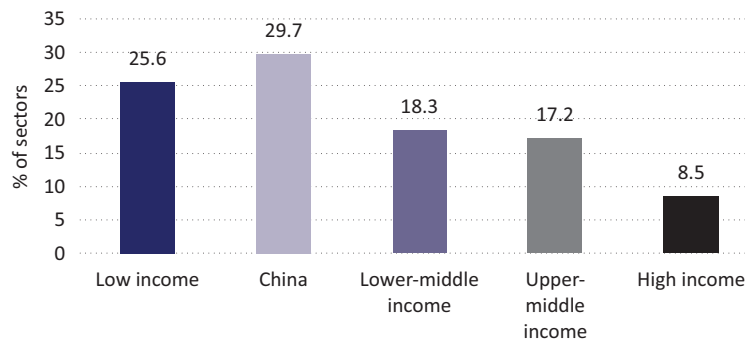
work in export processing zones (EPZs). The failure of either the jeans manufacturer or the economy as a whole to benefit from any significant barriers to entry meant that they could compete only by lowering incomes (unit prices for the firm; currency exchange rates for the economy). We can describe 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 16.3).

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 16.3 Percentage of sectors with negative price trends, 1988/89–2000/01 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.

16.5 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 includes 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.

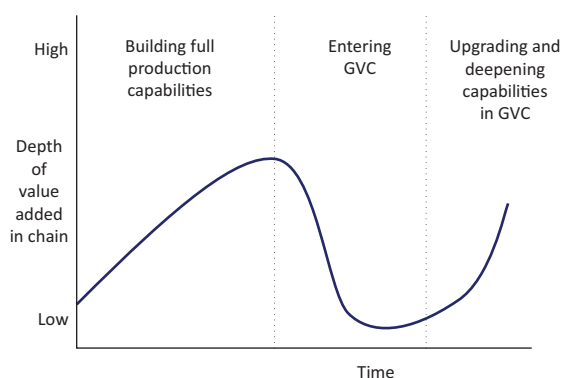
Self-evidently, not all firms and economies can jump to the technological and competitive frontiers of global competition. Therefore, positioning in GVCs has to be geared to the level of capabilities. However, since the global competitive frontier is continually changing, the challenge is to identify 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.

16.6 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 16.4). 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 16.4 'Thinning out' and 'thinning in' in vertically specialised global value chains



Source: Author.

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.

16.7 The end of industrial policy? If so, what then?

Five major related policy challenges follow from the discussion in this chapter:

1. The focus of policy must shift from industrial policy (historically conflated with manufacturing⁴) 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 chapter, 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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