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Chapter IV

REVISITING THE ROLE OF TRADE IN MANUFACTURES IN INDUSTRIALIZATION

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REVISITING THE ROLE OF TRADE IN MANUFACTURES IN INDUSTRIALIZATION

A. Introduction

Export-led industrialization, along with the trade in manufactures that is presumed to drive it, often seems like the last best idea for using trade to speed up development in the modern era. It simultaneously evokes the successes of the East Asian tigers and the alleged failures of import-substituting industrialization. Moreover, it confirms the significance of industrialization as an essential stepping stone to development, as there is little else that has proved as effective in fostering catching up. And it appears to conform to the prescriptions for trade liberalization in conventional trade theory.

However, export-led industrialization is much harder to achieve than is assumed by conventional wisdom. Its success is crucially dependent on the policy framework within which it evolves and on global and domestic economic conditions, which may or may not facilitate it. To induce industrialization and productivity-enhancing structural change, it is not enough to expand exports of manufactures; it also necessitates the development of deep and robust domestic production, learning and income linkages. Indeed, it is well established that the East Asian export-led growth model, including its more recent variants, is about maximizing the developmental benefits of trade by managing it through proactive industrial, macroeconomic and social policies, including the pairing of export promotion with the protection of infant industries and import substitution, particularly in the initial stages of industrialization (*TDR*s *1994, 1996* and *2003*). Indeed, managing trade to support domestic development was the same approach used by almost all of today's developed countries at some point in their industrializing histories (Chang, 2008; Cohen and DeLong, 2016).

The global economy has changed considerably since developed countries first industrialized, and even since the first-tier of East Asian late industrializers accomplished their catch-up miracles. Today's global economy is much more open, not only because of the many multi- and bilateral trade and investment agreements concluded, but also because of the full entry of former centrally planned economies into the global trading system. It is also more crowded, with a multitude of countries simultaneously trying to realize the promise of export-led industrialization by exporting their manufactures, thereby increasing the global supply of less-skilled labour. Advances in information and communication technologies (ICTs) have made it easier and cheaper to manage far-flung production networks, contributing to the rise of global value chains (GVCs) and giving multinational enterprises (MNEs) an even more prominent role

in the global trade regime. The latter also dovetails with global financialization, as MNEs become less directly involved with production activities and more concerned with coordinating productive assets, such as the ownership, control, design and marketing of intellectual property.

The central question of this chapter is whether the export of manufactures has led to the sorts of industrialization, productivity growth and structural transformation that are widely expected to result from this approach, focusing on the period since the 1980s. The chapter is organized as follows. Section B outlines the reasons the chapter focuses on trade in manufactures (particularly exports), and it develops a framework for understanding the linkages between trade in manufactures, industrialization and development. Section C begins with an overview of the broad changes in global trade, followed by an empirical analysis of inter- and intraregional trade in manufactures by country group since 1980. Section D evaluates the impact of exports of manufactures from the supply side, assessing structural transformation in terms of manufacturing value added, and the relationship between those exports and aggregate productivity growth. It also discusses how export sophistication and diversification shape the impact of trade on growth, especially as it has been linked to the so-called "middle-income trap" discussed in chapter II of this *Report*. Section E focuses on the prospects for industrial upgrading in the context of GVCs. Sections F and G analyse the distributional aspects of trade in manufactures both within and across countries, drawing from this analysis the implications for both human and physical capital accumulation. Section F uses a gendered lens to assess the employment record of the increased trade in manufactures, and the prospects for increasing incomes and reducing gender inequality as part of an industrialization process driven by trade. Section G focuses on inequalities between the North and South as reflected in their changing terms of trade, and assesses whether the expanding trade in manufactures has afforded the South the kind of pricing power necessary to drive investment and wage growth. Section H concludes.

B. A preliminary framework

As discussed in the previous chapter, manufacturing activities are a key means for catch-up development. And the processes of industrialization and productivity-enhancing structural change that stem from them provide an important foundation for achieving many of the Sustainable Development Goals (SDGs). Indeed, SDG 9 specifically calls for promoting inclusive and sustainable industrialization, reflecting its importance in advancing sustainable development. Likewise, international trade plays a significant role in shaping and mediating these relationships, both in practical terms, given the expanding reach of globalized production, as well as in terms of development theory and policy, where trade liberalization is often viewed as the solution to a wide range of development challenges. That trade in manufactures is a means to achieving inclusive industrialization and development, rather than an end in itself, is the starting point of this section, which presents a framework for understanding why this sort of trade is hypothesized as driving industrialization, structural change and productivity growth.

> Trade in manufactures is a means, rather than an end in itself, to achieving inclusive industrialization.

To begin with, it helps to categorize the linkages between trade and industrialization into two types. The first captures how both exports and imports of manufactures directly affect productivity growth

through changes in the structures of production. The second is based on how and to what extent trade in manufactures affects the structures of distribution and accumulation, which could, in certain conditions, spark increased investment and growth while sustaining higher wages and hence improving livelihoods.

Starting with the structures of production, export of manufactures can generate productivity growth both within and across industries and sectors. Probably the most familiar line of transmission is through economies of scale (i.e. the more of a good that is produced, the lower becomes its average cost) and scope (i.e. capabilities in one set of activities lower the effective cost of engaging in other activities). These economies of scale and scope are dynamic in the sense that they afford more than a one-off means of raising productivity; they create capabilities and processes that improve productivity in an ongoing and cumulative way. From this perspective, exporting becomes instrumental, because the domestic markets of most developing countries, even if they provide a starting base, are not large or complex enough to support the scale or scope achievable in global markets – an insight related to Adam Smith's oft-cited notion that the division of labour is limited by the extent of the market, and that external markets can act as a "vent for surplus" (Myint, 1977).[1]

The productivity growth and industrialization that exporting manufactures can generate requires exporting sectors to have strong production and learning linkages with the rest of the economy.

However, there is a potential contradiction here, as economies of scale and scope imply that large firms, or agglomerations of firms, may be necessary for capturing some of the benefits deriving from exports of manufactures. That world trade, and the GVCs that shape the structure of that trade, are so dominated by large firms – especially in the top tiers of value added – is probably related to this point (Bernard et al., 2007; Melitz and Trefler, 2012). Moreover, it also means that exporting first, and capturing those dynamic economies of scale and scope before others do, provides a strategic advantage, making it more difficult for new entrants to compete – the so-called "first mover advantage".

These challenges have often provided the basis for arguments in support of infant-industry protection. They maintain that developing-country firms need some combination of time, support and protection to adequately build their capabilities before they can compete internationally, just as developed-country and East Asian firms did during their nascent industrial periods (Wade, 1990; Chang 2002). Concerns about infant-industry protection are also linked to how exporting firms that have become globally competitive following initial protection can enhance both opportunities and capabilities for learning, discovery and innovation. Technological, managerial and worker capacities are cumulative and path-dependent, and experience – especially of the sort afforded by the dynamism of international markets – lengthens the forward reach of prior success (Amsden, 2001). Export of manufactures is an activity where these sorts of positive externalities and spillovers show particular promise.

However, there is an instructive difference between the macro and micro evidence of learning-by-exporting. As discussed in some detail in *TDR 2014*, while exporting firms also tend to be the most productive in a sector, micro-based empirical evidence indicates that this correlation is primarily driven by selection rather than by the hypothesized causal link from exporting to productivity growth (Harrison and Rodríguez-Clare, 2009; McMillan and Rodrik, 2011; Melitz and Trefler, 2012). That is, more productive firms tend to start exporting; alternatively, opening up to trade simply increases the market share of more productive firms because competition drives less productive domestic firms out of business. Either way, the sector's overall productivity increases, but not necessarily because firms are becoming more productive.

It is therefore essential that, at the macro level, the exporting sector should be able not only to strengthen and raise its own productivity, but also to generate positive linkages with the rest of the economy. As discussed in chapter III of this *Report*, these kinds of linkages depend on the policy framework (Furtado, 1967; Hausmann et al., 2007). Dynamic economies of scale and scope, coupled with the productive externalities and spillovers these processes engender, are by their very nature difficult to capture – empirically or practically – at the firm or even industry level. It may be useful here to be reminded of the substantive

difference between the narrow benefits of enclave production, and those derived from strong production, income and learning linkages, as discussed in the previous chapter.

Another way that exports and imports of manufactures can affect the structure of production and productivity is through their impact on aggregate patterns of structural change. As detailed in the previous chapter, part of productivity-enhancing structural change involves shifting labour and resources from low productivity work in traditional agriculture to higher productivity work in manufacturing and modern services. And selling to external markets enlarges these possibilities to a greater extent than what can be achieved by selling exclusively to domestic markets. Hence exporting manufactures can not only raise productivity within industry, it can also raise an economy's aggregate productivity by redistributing existing resources across broad economic sectors.[2] However, when there is surplus labour (a nearly universal feature of both developing and developed countries in the current era of deficient aggregate demand), import competition, and/or productivity growth that is driven by the exit of less productive firms from industry, trade liberalization can result in declines in aggregate, economy-wide productivity, even as it raises productivity in the industrial sector (McMillan and Rodrik, 2011). The determinant is the impact on employment, and whether the productivity growth in industry (when it occurs) is outweighed by a larger shift of labour and resources into low productivity work outside the industrial sector. These are the sorts of dynamics that underlie growing concerns about "premature deindustrialization" in developing countries, discussed in the previous chapter.

Growing aggregate demand, both domestic and international, is central to capturing and capitalizing on the opportunities afforded by trade in manufactures.

Typically, export-led industrialization and the productivity growth associated with it are considered almost exclusively from the production or supply side. However, demand can also play an important role through an economy's distribution of income and the consequences for capital accumulation. In order to capture and capitalize on the opportunities afforded by trade in manufactures, its benefits must be channelled in ways that lead to positive structural transformation and widely shared growth. Aggregate demand is central to this process.

First, export of manufactures should support a strong investment drive by generating profits for domestic firms in international markets. Such profits provide a basis for increasing domestic investment and financing innovation and upgrading. Upgrading can also come from the direct import of capital equipment and foreign technology, which in turn requires the foreign exchange earned by exports (alleviating the balance-of-payments constraint on growth).[3] The challenge here is a complex one, and involves generating, capturing and directing profits and rents in productive, development-oriented ways. Many of these issues are discussed in the next chapter on the profit-investment nexus and in the closing chapter on industrial policy. At this point, suffice it to note that industrialization and development require capital accumulation, and this raises the question as to whether the current global trade regime has, in fact, generated sufficient resources for financing such accumulation.

In a related sense, a key driver of investment (and the productivity growth and structural transformation that result) is aggregate demand, both domestic and external. When firms expect demand to increase, they respond by investing in order to expand productive capacities. Buoyant demand also makes it easier to assume the risks associated with moving into new areas of production or engaging in technological innovation. With export-led industrialization, external demand can help fulfil this function, but it has become a more capricious partner with the slowdown of global trade and the exponential expansion of the field of exporters (partly a result of the ease of entry into GVCs and international production networks). Additionally, depending exclusively, or even primarily, on maintaining a competitive edge by compressing wage growth structurally limits the extent of domestic demand. Ultimately, the path to development based on exporting manufactures should eventually lead to better livelihoods (more employment and higher wages) if it is indeed to live up to its promise.

For this to happen, it is necessary to move beyond traditional narratives of industrialization and the types of investments required to achieve it. When trade is associated with an increase in employment at higher wages, it also encourages investment in human capital, both by raising incomes and the returns to education, thereby enhancing the capabilities of labour (Lederman and Maloney, 2012). This aspect is sometimes overlooked when making a linkage between exporting and industrialization. But labour supply-side policies are not a substitute either, not least because supply is hardly ever successful at generating its own demand, especially where labour is concerned (Amsden, 2010). When investment in human capabilities is driven by demand, and is thus directly connected with employment, it becomes a substantive and sustainable vehicle for upward mobility. At the same time, from the perspective of fostering gender equality, generating more and better jobs for women is essential for empowering them. Moreover, both higher profits and better wages provide a tax base for public revenue and for investment in physical and social infrastructure, thereby helping to overcome one of the key challenges of financing the SDGs.

If, instead, aggregate demand and wage growth stagnate, competition grows intense and profit margins become slim, and governments are reluctant to expand the tax base for fear of losing (domestic or foreign) business activity, a sort of low-level equilibrium will prevail. In such a context, the productivity growth that may accompany trade in manufactures on the supply side may be used to gain, or simply maintain, market share by lowering relative export prices, thus effectively giving away productivity gains to global firms or foreign consumers. If these dynamics are strong enough, productivity growth may actually make a country worse off by lowering the terms of trade to a larger extent than the gains in growth.[4] This problem evokes points made by Raúl Prebisch and Hans Singer, that because the prices of developing-country exports (largely primary commodities) tend to decline relative to developed-country exports (largely industrial goods), developing countries face a structural disadvantage in global trade relations with the North, thus maintaining and magnifying the income gap between rich and poor (the so-called "Prebisch-Singer hypothesis"). Updates have since taken into account the increasing role of manufactures in developing-country exports (*TDR 2002*; Sarkar and Singer, 1991), but the spirit of the original hypothesis remains a concern. Since the distribution of income partly determines the nature and rate of capital accumulation and innovation, the price that developing countries get for their exports of manufactures could constrain the developmental benefits of trade.

C. Trends in international trade by region

1. General trends

The one element in the most recent era of globalization that has unquestionably proved successful in developing regions is trade expansion, both exports and imports. Between 1980 and 2014, developing countries as a whole increased their exports of goods and services (at constant prices) at an average annual rate of close to 7.5 per cent, compared with an average annual GDP growth rate of 4.8 per cent. As a share of GDP (at current prices), exports of goods and services from developing countries rose from an average of 19 per cent in the early 1970s to 27 per cent in the 1990s and 37 per cent in the 2000s; they reached a peak of 40 per cent between 2005 and 2008, before declining to 33 per cent in 2014 (table 4.1).[5] This expansion of exports (and also imports) as a share of GDP was significant in all developing regions (and developed as well), though it was larger in East and South-East Asia and more moderate in Latin America and the Caribbean and in South Asia.

Table 4.1

SHARE OF EXPORTS OF GOODS AND SERVICES IN GDP, BY COUNTRY GROUP, 1970–2014

(Per cent of GDP at current dollars)

	1970–1979	*1980–1989*	*1990–1999*	*2000–2009*	*2010–2014*
Developed economies	15.1	16.9	18.5	23.0	27.4
Transition economies	..	..	32.9	37.6	34.0
Developing economies	18.9	23.0	27.5	36.9	35.3
of which:					
Africa	22.6	21.4	24.5	31.9	31.4
Latin America and the Caribbean	13.2	16.3	15.3	22.5	21.2
East Asia	14.0	26.2	35.3	42.4	37.2
South-East Asia	29.7	39.2	57.7	76.3	65.0
South Asia	12.6	8.2	12.7	19.4	22.9
West Asia	36.3	39.3	33.3	43.7	50.9

Source: UNCTAD secretariat calculations, based on *UNCTADstat*.

The increase in international trade flows of developing regions also altered the pattern of international trade, albeit with a slight time lag. Between 1960 and 1990, the regional distribution of global trade remained virtually unchanged, with the share of developed countries averaging around 73 per cent of total merchandise trade, and that of developing countries around 23 per cent (transition economies accounting for the remaining 4 per cent). The participation of developing countries started to increase in the mid-1990s, and strongly accelerated during the 2000s, virtually doubling to about half of total world trade in 2015. However, the process has been uneven. East, South-East and South Asia accounted for two thirds of developing countries' total merchandise trade, and for 70 per cent of the increase in developing countries' share in total trade between 2000 and 2014. However, other groups of countries also expanded their share in both exports and imports of merchandise, such as the transition economies, Africa, South America and West Asia. The rise in commodity prices (but also in volumes traded) was largely responsible for the significant increase in the value of their exports and their purchasing power, which enabled an expansion also of imports. In particular, the share of trade among developing countries has more than doubled since 2000.

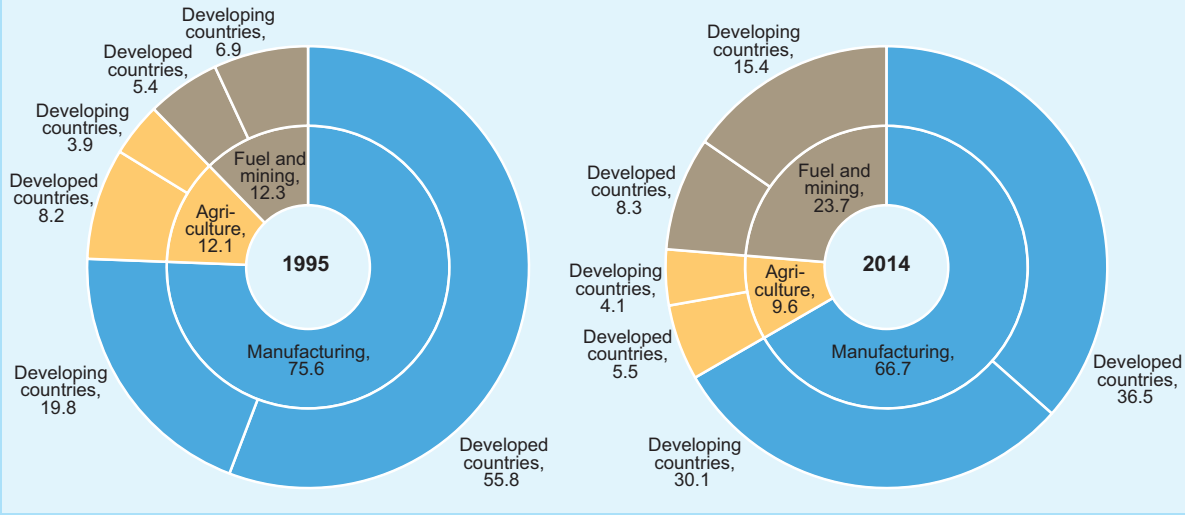
The changing weights of different regions in global trade affect its product composition, since the demand structure of different countries is not uniform, nor is their involvement in international production networks. In particular, the rise in developing-country demand has had a strong impact on the composition of global trade. It has operated through, among other factors, the change in relative prices. Increasing demand for primary commodities from large, fast-growing Asian countries (in particular China), combined with a range of other factors, including the slow supply response and the financialization of commodity markets, were the main drivers of the commodity price boom between 2003 and 2011–2013, and this increased the share of commodities, both processed and unprocessed, in total merchandise trade. Between 1995 and 2012, world trade in commodities (agriculture, fuel and mining) increased from 24.4 per cent of merchandise exports to 35.4 per cent, declining to 33.3 per cent in 2014 (chart 4.1). Growth was concentrated in minerals and fuels, while the share (not the value) of agricultural products slightly declined. Growth was also higher for unprocessed than processed commodities. This reflects the structure of the most dynamic markets, particularly China, which has its own substantial processing capacity.

In several regions, the composition of exports is closely related to the trading partner. In the successful industrializing regions of East and South-East Asia, high- and medium-skill manufactures, including the intermediate products required to assemble final

Chart 4.1

DEVELOPING AND DEVELOPED COUNTRIES' SHARE IN WORLD EXPORTS IN MANUFACTURES AND SELECTED COMMODITIES, 1995 AND 2014

(Per cent)



Source: UNCTAD secretariat calculations, based on *UNCTADstat*.
Note: In this chart, data for developing countries include data for transition economies. The totals of the inner and outer rings each equal 100 per cent. Each category includes the following SITC Rev. 3 codes: manufacturing = 5, 6, 7, 8 less 667 and 68; agriculture = 0, 1, 2, 4 less 27 and 28; fuel and mining = 27, 28, 3, 667, 68, 971.

manufactured goods, constitute the main exports, most of which are sold within the Asian region. On the other hand low-skill manufactures are predominant in South Asian exports. In all three subregions, developed countries remain an essential market for low-skill manufactures (charts 4.2C, D, and E).[6]

Africa exports mostly unprocessed commodities to the world – around 57 per cent of total exports (chart 4.2A). However, its intraregional exports consist mostly of manufactures and processed commodities (43 per cent and 22 per cent, respectively, in 2014). Hence, even though intraregional exports have remained modest (increasing from 12 per cent to 20 per cent of total exports between 2000 and 2014), they explain 42 per cent of the increase of African exports of manufactures between these years. Intraregional trade thus has the potential to support industrialization and diversification in Africa. It should therefore be encouraged, since one of the obstacles to African intraregional trade is precisely the insufficient supply of manufactures and processed commodities (*TDR 2007*).[7] The reorientation of some African exports from developed countries to other developing regions (most notably Asia) would not have the same impact on the composition of exports, because unprocessed commodities constitute a higher share of exports to Asia than exports to developed countries (chart 4.2A).

A similar pattern can be seen in South America and the transition economies, two groups whose already strong dependence on commodity exports has increased in recent years. In South America, the share of unprocessed commodities rose from 40 per cent to 52 per cent of its total exports, mostly due to an increase in exports to other developing regions, especially Asia (chart 4.2B). Conversely, exports of manufactures declined to only 25 per cent of total exports in 2014. However, manufactures, mostly high skill, remained at 50 per cent of intraregional exports. Thus, for these manufactures, the region accounts for as much as 60 per cent of their foreign markets. For the transition economies, the bulk of

Chart 4.2

COMPOSITION AND DIRECTION OF EXPORTS, SELECTED REGIONS/GROUPS, 2000–2014

(Per cent)

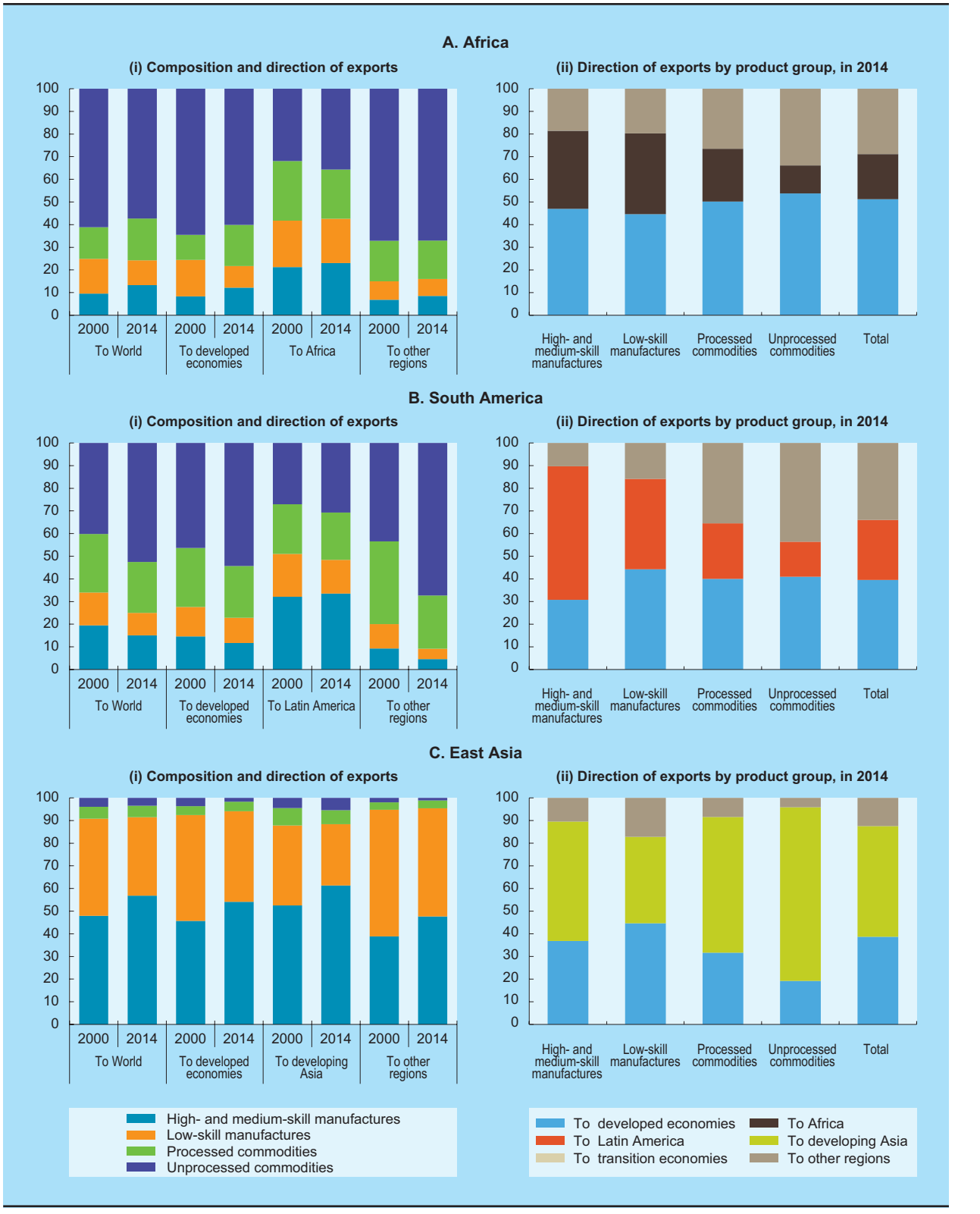
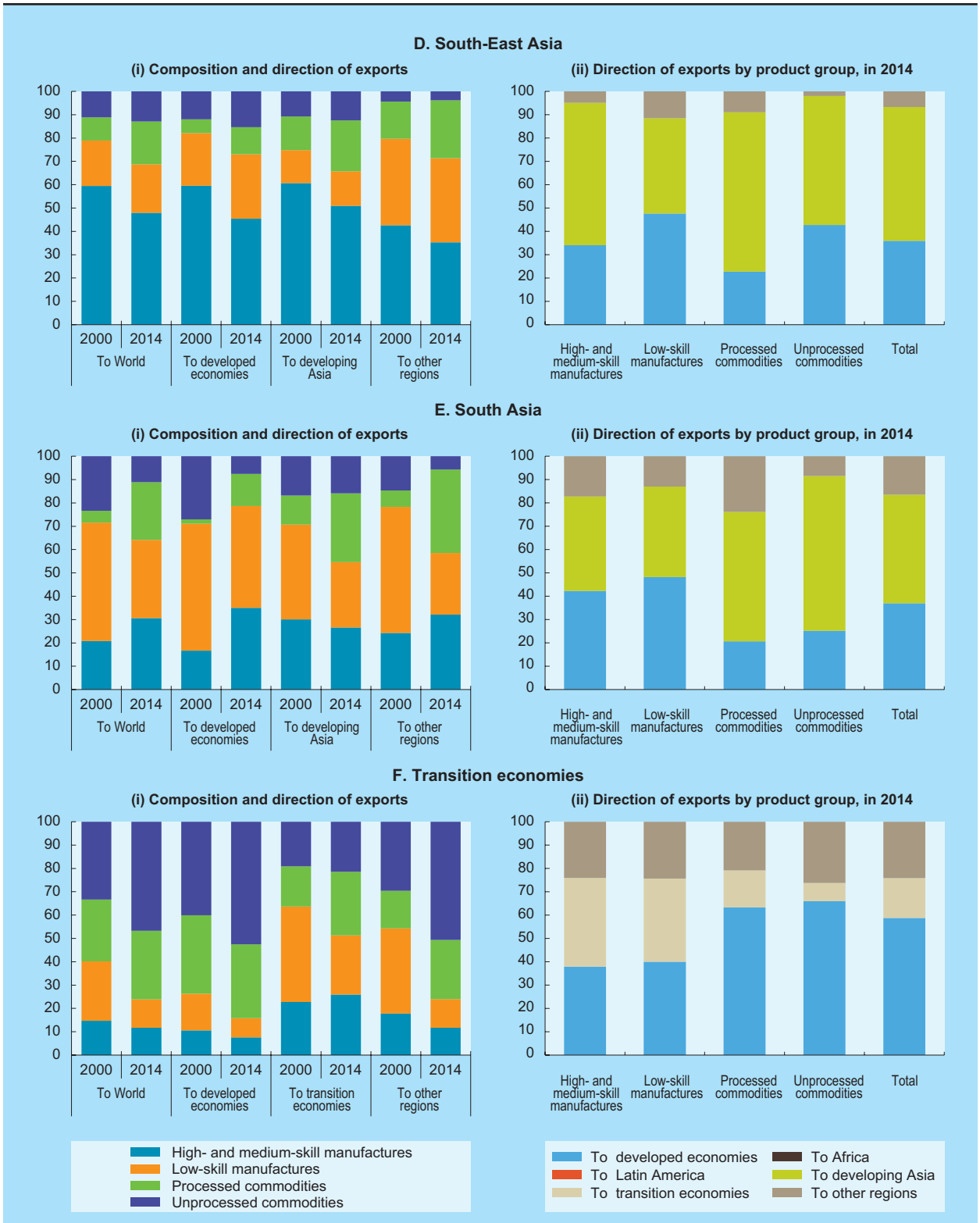


Chart 4.2 (concluded)

COMPOSITION AND DIRECTION OF EXPORTS, SELECTED REGIONS/GROUPS, 2000–2014

(Per cent)



Source: UNCTAD secretariat calculations, based on *UN Comtrade*.
Note: The classification is drawn from Wood and Mayer, 2001, and *TDR 2002*.

exports consists of unprocessed and processed commodities, almost two thirds of which go to developed countries' markets. By contrast, these economies provide more important markets for each other's manufactures (chart 4.2F).

2. Trade in manufactures

That developing countries have greatly increased their share in world trade of manufactures is a well-known and oft-cited phenomenon of the modern era: that share rose from about 10 per cent in 1980 to nearly 45 per cent by 2014.[8] This is certainly a promising shift in terms of the potential linkages between trade in manufactures and industrialization described above. However, the shift seems rather less encouraging when considered in a more disaggregated way, and relative to the (simultaneously changing) size of overall production.[9]

Tables 4.2 and 4.3 reveal a number of stylized patterns worth exploring, but the discussion here focuses on those of immediate relevance to the issues surrounding trade in manufactures and productivity-enhancing structural change which are discussed throughout this chapter.

For developed countries, the main trade partners for manufactures continue to be other developed countries, despite the tremendous increase in developing-country participation detailed above. In 2013, developed countries' intra-group trade constituted about 62 per cent of their total manufacturing trade with the world. Their trade with developing countries is dominated by trade with Asia,[10] which accounted for over half of their exports to developing countries, and three quarters of their imports from developing countries. Transition economies have been experiencing huge losses in their exports of manufactures over time, as well as large and increasing trade deficits in manufactures in line with the large decline in manufacturing activity in the region.

Developing countries started out with greater imports than exports of manufactures in the 1980s and 1990s, but also saw the largest increases of trade in manufactures as a share of GDP. Their main partners for trade in manufactures shifted from developed countries to other developing countries over the course of the 2000s, partly reflecting the decline of developed-country imports of manufactures as a share of GDP in the late 2000s. This decline and the relative increase in prominence of South-South trade substantiate concerns over the weakening of developed-country markets as a destination for developing-country exports. Thus, markets of the South might offer a substantive alternative for developing-country trade in manufactures, as underscored in chapter I.

As evidenced by the regional breakdown of Asia (i.e. East, South-East and South Asia), Latin America and the Caribbean, sub-Saharan Africa and West Asia and North Africa, aggregate developing-country patterns are driven by the weight of the Asian region. An analysis of directions of trade in manufactures by country groups and regions (tables 4.2 and 4.3) shows that Asia dominates, both in terms of changes in and levels of that trade. The increases in both South-North and South-South trade are almost entirely due to changes in the Asian region. These patterns are associated with the fact that most international production networks are not only regional in nature, but are also highly concentrated within the Asian region (*TDR 2014*).

West Asia and North Africa, sub-Saharan Africa, and Latin America and the Caribbean show different patterns of trade in manufactures than Asia. First, the former three regions exhibit a growing trade deficit over the years listed in the tables (determined by subtracting imports in table 4.3 from exports in table 4.2). Developed countries have been a more important destination and source for these regions than other developing countries, at least until the collapse of global trade following the financial crisis of 2007–2008. Overall, trade in manufactures accounts for a lower proportion of GDP in these regions than in Asia (a pattern that is more pronounced for exports than for imports), and a smaller proportion of that trade is intraregional.[11] Still, most of their exports of manufactures to developing countries are intraregional. On the other hand, their imports of manufactures are sourced more from developing Asia than from countries within their respective regions, and to a large extent these flows drive the trade deficits in manufactures.

To sum up, the rise of trade in manufactures from and among developing countries is attributable mainly to Asia. Therefore, aggregate analyses of developing-country trade should avoid generalization.

Table 4.2

EXPORTS OF MANUFACTURES AS A SHARE OF GDP, BY COUNTRY GROUP, 1980–2013

(Per cent)

Country group	*Trade partner*	*1980*	*1990*	*2000*	*2006*	*2013*	*Percentage point change*
Developed economies	Developed economies	6.2	7.0	8.4	9.4	8.8	2.6
	Transition economies	..	..	0.1	0.4	0.5	0.4
	Developing economies	3.3	2.4	2.9	3.6	4.4	1.1
	Asia	1.0	1.2	1.5	1.9	2.3	1.4
	Latin America and the Caribbean	0.7	0.4	0.8	0.8	1.0	0.3
	Sub-Saharan Africa	0.4	0.2	0.1	0.2	0.2	-0.2
	West Asia and North Africa	0.9	0.4	0.4	0.6	0.8	-0.1
	World	9.5	9.4	11.4	13.3	13.7	4.2
Transition economies	Developed economies	..	..	6.5	3.9	2.6	-3.9
	Transition economies	..	..	3.1	2.7	2.5	-0.6
	Developing economies	..	..	3.9	2.5	1.9	-2.0
	Asia	..	..	2.4	1.4	0.9	-1.5
	Latin America and the Caribbean	..	..	0.3	0.3	0.2	-0.1
	Sub-Saharan Africa	..	..	0.1	0.1	0.1	0.0
	West Asia and North Africa	..	..	1.0	0.8	0.6	-0.4
	World	..	..	13.5	9.1	7.0	-6.5
Developing economies	Developed economies	3.6	6.9	10.4	10.8	7.7	4.1
	Transition economies	..	..	0.1	0.4	0.5	0.4
	Developing economies	2.4	4.9	7.6	11.2	11.2	8.9
	Asia	1.3	3.6	5.8	8.5	8.1	6.8
	Latin America and the Caribbean	0.3	0.5	0.9	1.2	1.2	1.0
	Sub-Saharan Africa	0.2	0.2	0.3	0.4	0.6	0.4
	West Asia and North Africa	0.5	0.4	0.6	1.1	1.3	0.8
	World	6.0	11.7	18.2	22.5	19.4	13.4
Asia	Developed economies	6.8	11.5	14.8	15.0	9.7	2.9
	Transition economies	..	..	0.2	0.6	0.7	0.5
	Developing economies	4.1	8.4	12.9	17.8	15.8	11.7
	Asia	2.5	6.9	10.9	14.8	12.4	9.8
	Latin America and the Caribbean	0.2	0.4	0.8	1.1	1.3	1.0
	Sub-Saharan Africa	0.3	0.3	0.3	0.5	0.6	0.3
	West Asia and North Africa	0.8	0.6	0.8	1.4	1.5	0.6
	World	10.9	19.9	27.9	33.4	26.2	15.3
Latin America and the Caribbean	Developed economies	2.2	2.7	7.4	7.4	5.6	3.5
	Transition economies	..	..	0.0	0.0	0.0	0.0
	Developing economies	1.4	1.5	1.9	3.2	2.6	1.2
	Asia	0.3	0.3	0.2	0.6	0.6	0.2
	Latin America and the Caribbean	0.8	1.0	1.6	2.5	1.9	1.1
	Sub-Saharan Africa	0.1	0.1	0.0	0.1	0.1	0.0
	West Asia and North Africa	0.2	0.1	0.0	0.1	0.1	-0.1
	World	3.6	4.2	9.2	10.6	8.2	4.7
Sub-Saharan Africa	Developed economies	..	2.3	4.3	5.1	2.9	0.6
	Transition economies	..	..	0.0	0.0	0.0	0.0
	Developing economies	..	1.8	2.4	3.0	3.7	1.9
	Asia	..	0.6	0.7	0.8	0.8	0.2
	Latin America and the Caribbean	..	0.1	0.2	0.2	0.1	0.0
	Sub-Saharan Africa	..	0.9	1.5	1.8	2.5	1.6
	West Asia and North Africa	..	0.2	0.1	0.3	0.3	0.1
	World	..	4.1	6.7	8.1	6.6	2.5
West Asia and North Africa	Developed economies	..	1.4	2.7	3.2	3.0	1.6
	Transition economies	..	..	0.2	0.5	0.7	0.2
	Developing economies	..	1.5	2.0	3.7	6.3	4.8
	Asia	..	0.5	0.8	1.3	2.5	2.0
	Latin America and the Caribbean	..	0.0	0.0	0.1	0.2	0.2
	Sub-Saharan Africa	..	0.0	0.1	0.3	0.5	0.4
	West Asia and North Africa	..	0.7	1.0	2.1	3.2	2.5
	World	..	2.9	4.9	7.4	10.0	7.1

Source: UNCTAD secretariat calculations, based on *UN Comtrade* database (SITC categories 5–8 less 667 and 68); United Nations Statistics Division (UNSD), *Main Statistical Aggregates* database.

Note: Asia comprises East, South-East and South Asia; group members may vary across time depending on data reporting to *UN Comtrade*. Each year is a 3-year moving average based on (t-1), (t) and (t+1) with the following exceptions depending on data availability: 1980 figures for Latin America and the Caribbean refer to 1983–1985, and 1990 figures for sub-Saharan Africa refer to 1991–1993. World totals equal the sum of developed, developing and transition economy exports, and may differ slightly from *UN Comtrade* totals. Percentage point change refers to the difference between the latest and earliest period reported in that particular row.

Table 4.3

IMPORTS OF MANUFACTURES AS A SHARE OF GDP, BY COUNTRY GROUP, 1980–2013

(Per cent)

Country group	*Trade partner*	*1980*	*1990*	*2000*	*2006*	*2013*	*Percentage point change*
Developed economies	Developed economies	6.3	7.1	8.3	9.1	8.5	2.2
	Transition economies	..	..	0.1	0.2	0.2	0.1
	Developing economies	1.1	1.8	3.3	4.6	5.5	4.4
	Asia	0.7	1.2	2.4	3.5	4.2	3.6
	Latin America and the Caribbean	0.2	0.3	0.7	0.7	0.8	0.6
	Sub-Saharan Africa	0.1	0.1	0.1	0.1	0.1	0.0
	West Asia and North Africa	0.0	0.1	0.1	0.3	0.3	0.3
	World	7.4	8.9	11.7	13.9	14.1	6.7
Transition economies	Developed economies	..	..	6.4	7.5	6.9	0.5
	Transition economies	..	..	3.0	2.6	2.4	-0.5
	Developing economies	..	..	1.2	3.0	4.5	3.3
	Asia	..	..	0.8	2.5	3.9	3.0
	Latin America and the Caribbean	..	..	0.0	0.1	0.1	0.1
	Sub-Saharan Africa	..	..	0.0	0.0	0.0	0.0
	West Asia and North Africa	..	..	0.3	0.4	0.5	0.2
	World	..	..	11.8	14.5	15.2	3.4
Developing economies	Developed economies	10.5	8.8	10.4	9.6	6.9	-3.6
	Transition economies	..	..	0.2	0.3	0.2	0.0
	Developing economies	2.3	4.4	7.3	10.9	10.2	7.9
	Asia	1.7	3.5	6.3	9.4	8.8	7.0
	Latin America and the Caribbean	0.3	0.5	0.6	0.9	0.7	0.5
	Sub-Saharan Africa	0.1	0.1	0.1	0.2	0.2	0.1
	West Asia and North Africa	0.2	0.2	0.3	0.4	0.5	0.3
	World	12.8	13.3	18.0	20.8	17.4	4.5
Asia	Developed economies	11.0	12.2	11.9	10.8	6.8	-4.2
	Transition economies	..	..	0.3	0.3	0.2	-0.2
	Developing economies	3.1	7.2	11.1	15.1	11.8	8.7
	Asia	2.7	6.4	10.6	14.2	10.9	8.2
	Latin America and the Caribbean	0.1	0.3	0.2	0.4	0.4	0.3
	Sub-Saharan Africa	0.1	0.1	0.1	0.1	0.1	0.0
	West Asia and North Africa	0.1	0.2	0.2	0.4	0.4	0.3
	World	14.1	19.4	23.3	26.2	18.8	4.7
Latin America and the Caribbean	Developed economies	3.9	4.5	9.6	8.0	6.6	2.7
	Transition economies	..	..	0.1	0.1	0.1	0.0
	Developing economies	0.9	1.3	2.9	5.4	6.5	5.6
	Asia	0.1	0.3	1.2	3.0	4.3	4.2
	Latin America and the Caribbean	0.8	0.9	1.6	2.4	2.1	1.3
	Sub-Saharan Africa	0.0	0.0	0.0	0.0	0.0	0.0
	West Asia and North Africa	0.0	0.0	0.0	0.0	0.1	0.1
	World	4.8	5.7	12.6	13.6	13.2	8.4
Sub-Saharan Africa	Developed economies	..	7.0	6.7	6.7	4.9	-2.1
	Transition economies	..	..	0.1	0.1	0.1	0.0
	Developing economies	..	2.4	4.2	6.7	8.1	5.8
	Asia	..	1.4	2.1	3.8	5.0	3.5
	Latin America and the Caribbean	..	0.1	0.2	0.3	0.3	0.2
	Sub-Saharan Africa	..	0.7	1.5	2.1	2.1	1.5
	West Asia and North Africa	..	0.1	0.3	0.5	0.7	0.6
	World	..	9.4	11.0	13.6	13.2	3.8
West Asia and North Africa	Developed economies	..	7.5	7.9	8.7	8.8	1.3
	Transition economies	..	..	0.4	0.7	0.6	0.2
	Developing economies	..	2.3	3.7	6.3	9.7	7.4
	Asia	..	1.3	2.6	4.5	7.2	5.9
	Latin America and the Caribbean	..	0.1	0.1	0.2	0.3	0.1
	Sub-Saharan Africa	..	0.1	0.1	0.1	0.3	0.2
	West Asia and North Africa	..	0.6	1.0	1.5	1.9	1.3
	World	..	9.8	12.0	15.7	19.1	9.3

Source: As in table 4.2.

Note: Intraregional exports and imports are not exactly equal because the data are taken from different sources (importers versus exporters) and recorded at different prices (imports CIF, exports FOB).

Table 4.4

SHARES OF EXPORTS OF HIGH- AND MEDIUM-SKILL AND TECHNOLOGY-INTENSIVE MANUFACTURES IN TOTAL EXPORTS OF MANUFACTURES, BY COUNTRY GROUP, 1980–2013

(Per cent)

Country group	*Trade partner*	*1980*	*1990*	*2000*	*2006*	*2013*	*Percentage point change*
Developed economies	Developed economies	67.4	73.6	77.1	76.8	77.6	10.2
	Transition economies	..	..	70.5	76.6	78.7	8.1
	Developing economies	70.5	77.1	81.3	81.8	82.4	11.8
	Asia	69.7	78.8	84.5	83.4	83.7	14.0
	Latin America and the Caribbean	75.2	76.7	77.6	79.1	81.5	6.3
	Sub-Saharan Africa	69.0	73.3	76.2	81.4	79.6	10.7
	West Asia and North Africa	68.5	74.5	79.0	80.8	81.2	12.8
	World	68.6	74.1	78.0	77.8	78.7	10.2
Transition economies	Developed economies	..	..	45.1	38.2	49.2	4.1
	Transition economies	..	..	60.3	53.0	55.3	-4.9
	Developing economies	..	..	37.8	39.0	50.9	13.1
	Asia	..	..	38.9	44.9	59.2	20.3
	Latin America and the Caribbean	..	..	53.9	64.3	78.8	24.8
	Sub-Saharan Africa	..	..	32.7	30.2	54.9	22.2
	West Asia and North Africa	..	..	30.8	21.8	25.4	-5.5
	World	..	..	46.1	41.8	51.1	5.0
Developing economies	Developed economies	32.6	45.2	62.6	63.8	64.8	32.2
	Transition economies	..	..	43.3	48.6	54.3	11.0
	Developing economies	48.3	52.9	67.3	73.6	73.3	25.0
	Asia	55.6	55.2	71.0	78.3	78.4	22.8
	Latin America and the Caribbean	44.3	54.8	60.7	66.7	67.4	23.1
	Sub-Saharan Africa	35.8	37.4	47.7	51.4	52.3	16.5
	West Asia and North Africa	36.9	38.0	50.1	54.8	56.6	19.7
	World	37.4	48.2	63.9	67.9	69.1	31.7
Asia	Developed economies	32.8	44.8	60.5	62.8	62.5	29.7
	Transition economies	..	..	40.4	46.6	54.7	14.3
	Developing economies	47.2	52.9	67.8	74.9	74.1	26.9
	Asia	55.0	55.7	71.2	78.9	78.7	23.8
	Latin America and the Caribbean	39.2	45.5	53.9	62.8	64.1	24.9
	Sub-Saharan Africa	34.6	32.7	40.8	46.1	50.3	15.7
	West Asia and North Africa	31.9	34.9	48.8	54.3	57.6	25.8
	World	38.0	47.9	63.5	68.5	69.0	31.0
Latin America and the Caribbean	Developed economies	41.9	56.8	76.4	75.5	80.9	39.0
	Transition economies	..	..	..	..	..	
	Developing economies	52.3	51.3	65.9	68.9	73.0	20.8
	Asia	30.5	26.5	54.4	55.7	64.3	33.8
	Latin America and the Caribbean	63.1	60.4	67.5	70.7	74.2	11.1
	Sub-Saharan Africa	50.6	55.3	67.7	68.7	74.9	24.3
	West Asia and North Africa	47.8	31.7	58.6	75.0	82.4	34.6
	World	46.9	54.8	74.1	73.2	78.5	31.6
Sub-Saharan Africa	Developed economies	..	23.7	35.1	42.6	46.7	23.0
	Transition economies	..	..	..	..	..	
	Developing economies	..	43.6	53.9	53.7	52.3	8.7
	Asia	..	44.8	42.9	42.0	38.8	-6.0
	Latin America and the Caribbean	..	44.3	41.2	34.5	61.9	17.6
	Sub-Saharan Africa	..	49.9	59.7	58.3	55.1	5.1
	West Asia and North Africa	..	21.3	48.1	60.8	53.1	31.8
	World	..	30.3	41.5	47.3	49.2	19.0
West Asia and North Africa	Developed economies	..	23.9	32.4	45.2	49.8	25.9
	Transition economies	..	..	63.0	61.5	62.1	-0.9
	Developing economies	..	69.4	77.3	73.3	75.5	6.0
	Asia	..	72.8	48.6	69.3	62.4	-10.4
	Latin America and the Caribbean	..	61.4	57.3	64.9	57.6	-3.8
	Sub-Saharan Africa	..	40.8	49.8	56.1	49.0	8.2
	West Asia and North Africa	..	47.6	53.4	54.3	49.9	2.3
	World	..	42.9	45.5	53.8	58.7	15.8

Source: As in table 4.2.

Note: For the categories of manufactures of high- and medium-skill and technology intensive, see *TDR 2002*, annex 1 to chap. III; the categories are based on SITC, Rev. 2. See also note to table 4.2.

As noted in the last section, the technological content of trade may matter for sustained growth and production upgrading as much, or even more, than trade volume, if, indeed, what is exported matters. Table 4.4 is a first attempt to assess those dynamics (discussed in greater detail in the next section) in the same terms as tables 4.2 and 4.3. It is based on classifying goods by degree of manufacturing, and shows the proportion of exports of high- and medium-technology manufactures relative to total exports of manufactures. The discussion is limited to exports partly for brevity, but also because of the leading role exports play in driving upgrading. To gain a full understanding of these effects, table 4.4 should be considered in conjunction with table 4.2, because export structure needs to be combined with export volume to determine overall impact.

There was an overall increase in the technological intensity of exported manufactures over the period 1980–2013. For all developing regions, intraregional trade in goods seems to have been more technologically intensive than South-South trade in general, and developing-country exports to developed and transition economies seem also to have been technologically intensive, at least according to the classification used here.[12] For many developing and transition economies, however, even when the commodities exported are classified as being of medium or high technological intensity, there is not much of this type of manufacturing activity overall (table 4.2). Some type of dualism may be in evidence here as well: while there may be islands of success in exports of manufactures in a number of countries, the limited scale means that domestic linkages are unlikely to be strong enough to generate any of the spillovers or externalities sought from this type of trade – the problem of enclave production. Additionally, the processing of intermediate goods for export is also likely to be at work. With the rise of GVCs and the goods processing associated with them, the technological sophistication embodied in the goods exported may not coincide with the exporting country's contribution to them, an issue taken up in section E.

D. Structural transformation, productivity growth and trade

Structural transformation and the productivity growth associated with it can be speeded up by deeper participation in international trade. Such participation can change the pace and extent of industrialization, and raise productivity both within and across industries. But these relationships are neither simple nor assured. Trade liberalization, if reciprocal, does indeed open up export markets and facilitate access to the import of capital goods and intermediate products, but it also introduces a number of potential challenges for the industrialization process. Two of the most significant challenges are: (i) the prospect of increasing competition from industrial imports, which has been linked to premature deindustrialization and informalization across a number of countries; and (ii) increased competition in export markets in a context of global wage compression and weak global aggregate demand.

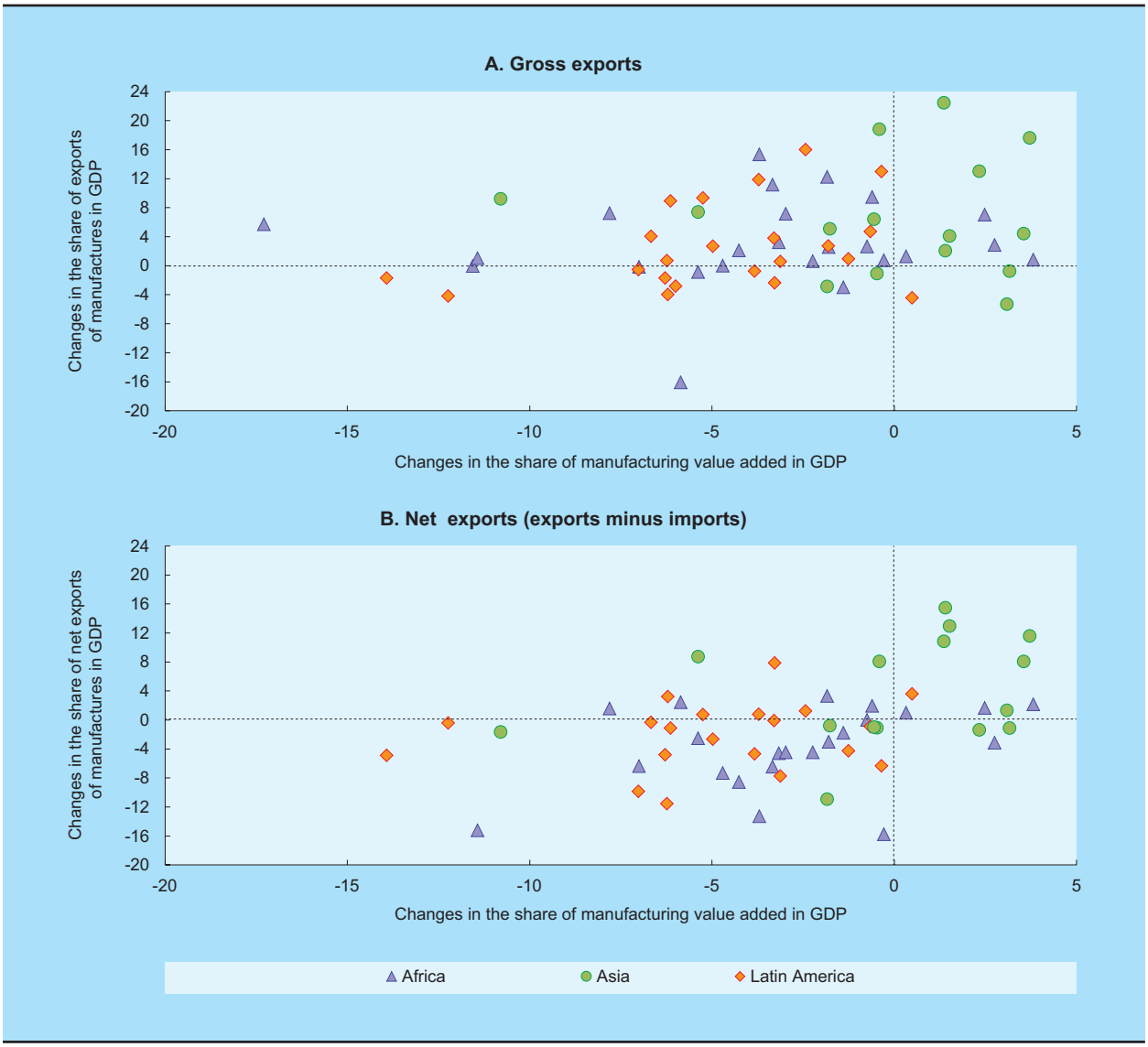
1. *Trade in manufactures, value added and structural transformation*

It might be expected, at the very least, that an increase in exports of manufactures would be associated with an increase in the share of manufacturing activities in an economy, and thus that the relationship between exports of manufactures and industrialization would be clearly positive. This is not necessarily

Chart 4.3

CHANGES IN THE SHARES OF EXPORTS OF MANUFACTURES AND MANUFACTURING VALUE ADDED IN GDP BETWEEN 1991–1994 AND 2011–2014, SELECTED COUNTRIES BY REGION

(Percentage point changes)



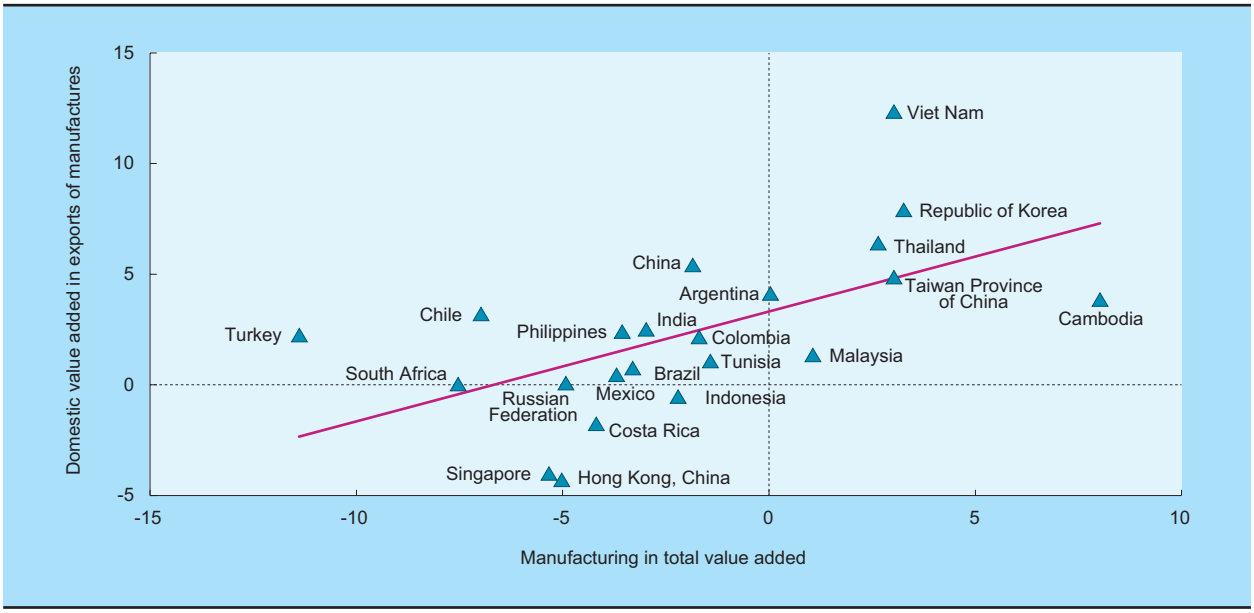
Source: UNCTAD secretariat calculations, based on *UN Comtrade*; and UNSD, *Main Statistical Aggregates* database.
Note: Change refers to the percentage point difference between average value for the two periods.

the case, however. This is illustrated in chart 4.3A, which presents percentage point changes in exports of manufactures against changes in manufacturing value added, both as shares of GDP, for a diverse group of developing countries over the course of nearly 20 years – between the early 1990s and the early 2010s. Most countries are in the upper left quadrant, indicating an increase in the total value of their exports of manufactures relative to GDP, but a decline in the share of manufacturing value added in GDP. There is no readily apparent regional pattern, since this applies to countries from all regions, though about two thirds of the countries in the upper right quadrant (experiencing an increase in both exports of manufactures and manufacturing value added as shares of GDP) are located in the Asia region.[13]

Chart 4.4

CHANGES IN DOMESTIC VALUE ADDED IN EXPORTS OF MANUFACTURES AND IN THE SHARE OF MANUFACTURING IN TOTAL VALUE ADDED, SELECTED ECONOMIES, 1995–2011

(Percentage point changes)



Source: UNCTAD secretariat calculations, based on OECD-WTO, *Trade in Value Added* (*TiVA*) database; and UNSD, *Main Statistical Aggregates* database.
Note: Change refers to the percentage point difference between current share values in 2011 and 1995. Line displays fitted values.

The lack of a clear relationship between exports of manufactures and value added might be partly a consequence of not controlling for what is happening with imports (see *TDR 2003* for an early discussion of these contradictions). Chart 4.3B, which illustrates changes in *net* exports of manufactures (exports minus imports) and manufacturing value added as a share of GDP over the same time period, confirms that imports help explain the weak correlation between changes in exports of manufactures and value added. This time, most countries are in the lower left quadrant, indicating that the decline in the share of manufacturing value added was accompanied by a decline in net exports. Among countries that experienced an increase in net exports of manufactures as a share of GDP, however, there is a fair amount of diversity in terms of changes in the share of manufacturing value added in GDP. Still, the overall correlation between the two series is strongly positive. Thus the relationship between exports of manufactures and structural change is contingent, at least partly, on increasing the *net* exports of manufactures. From an industrialization perspective, import competition can make it more challenging to boost domestic manufacturing, a point alluded to in some discussions of premature deindustrialization (e.g. Felipe et al., 2014; Rodrik, 2016), and reflected in the standard trade literature by the dominance of selection over increasing-returns effects within certain industries as a consequence of trade liberalization (that is, productivity rises because firms with higher productivity increase their industry shares, and not because getting larger increases productivity) (Harrison and Rodríguez-Clare, 2009).

A related problem with interpreting chart 4.3A is that total trade values do not accurately reflect domestic value added, because they include the values of foreign value added in imports that are eventually exported. Considering net exports as a rough way of dealing with this issue, chart 4.4 is more direct. It uses available data on domestic value added in exported manufactures and casts the same relationship as chart 4.3A (though the time period differs slightly as it depended on data availability), only now there is a clear positive association between the changes in the two series. As in previous charts, the upper right

quadrant is populated by Asian countries, confirming their particular relationship with trade and industrial performance.

2. Growth in labour productivity and trade in manufactures

Given the qualified picture of the connections between trade in manufactures and value added discussed above, it could be that the effects are experienced in a more economy-wide sense, boosting labour productivity overall rather than simply increasing the share of manufacturing value added. This is certainly one of the outcomes expected by the proponents of policies that combine export orientation with trade liberalization and specialization based on comparative advantage. It could also emerge from the learning and production linkages that become possible as the structure of production shifts, sometimes via the movement of traditional manufacturing activities into other sectors, especially manufacturing-related services.

In this view, it is expected that trade shares (measured as the total value of exports or imports, or the sum of the two, as a share of GDP) and labour productivity will move together; that is, the growth of one should be positively associated with the growth of the other. However, economically dynamic countries may also tend to trade more, and once the endogeneity of trade is adequately controlled for, other determinants of economic growth (e.g. investment, institutions and policy) can dominate the causal landscape (Rodriguez and Rodrik, 2001; Rodrik et al., 2004). Chart 4.5 relates the level of exports of manufactures as a share of GDP in the mid-1990s to aggregate labour productivity growth over the subsequent nearly 20 years. Assuming that trade and productivity move together, to tease out a causal relation from one to the other (exporting to labour productivity growth), the chart traces exports of manufactures using a broad definition (i.e. including processed commodities or resource-based manufactures) at the beginning of the period to see if larger exporters of manufactures (based on their exports as a share of GDP) achieved higher subsequent aggregate labour productivity growth, as theory would predict. As illustrated in the chart, the opposite happened: the larger exporters of manufactures had, on average, lower – not higher – subsequent labour productivity growth, at least in Africa and Latin America (the regression line is nearly horizontal for Asia).[14] Interestingly, the broader definition of manufactures yields somewhat stronger results than when using the narrower definition (though both are negative). This suggests that exports of manufactures using the broader definition have been poorer predictors of productivity growth than exports of manufactures using the narrow definition.

What could be driving this seemingly counter-intuitive relationship, and why does it occur in the African and Latin American regions, but not in the Asian region? One explanation has to do with the varying dynamics of structural change and productivity growth across countries. As noted above, development is partly about the shift in resources and labour from low productivity activities in traditional agriculture to higher productivity activities in modern manufacturing and services. When this shift occurs, aggregate productivity should increase. But when export orientation is paired with trade liberalization, and is accompanied by the sort of "industry rationalization" that results in higher industrial productivity because less productive firms exit the industry, newly unemployed or underemployed workers (not to mention new labour market entrants) have to turn to lower productivity work outside the manufacturing sector, thereby reducing an economy's aggregate productivity (McMillan and Rodrik, 2011).

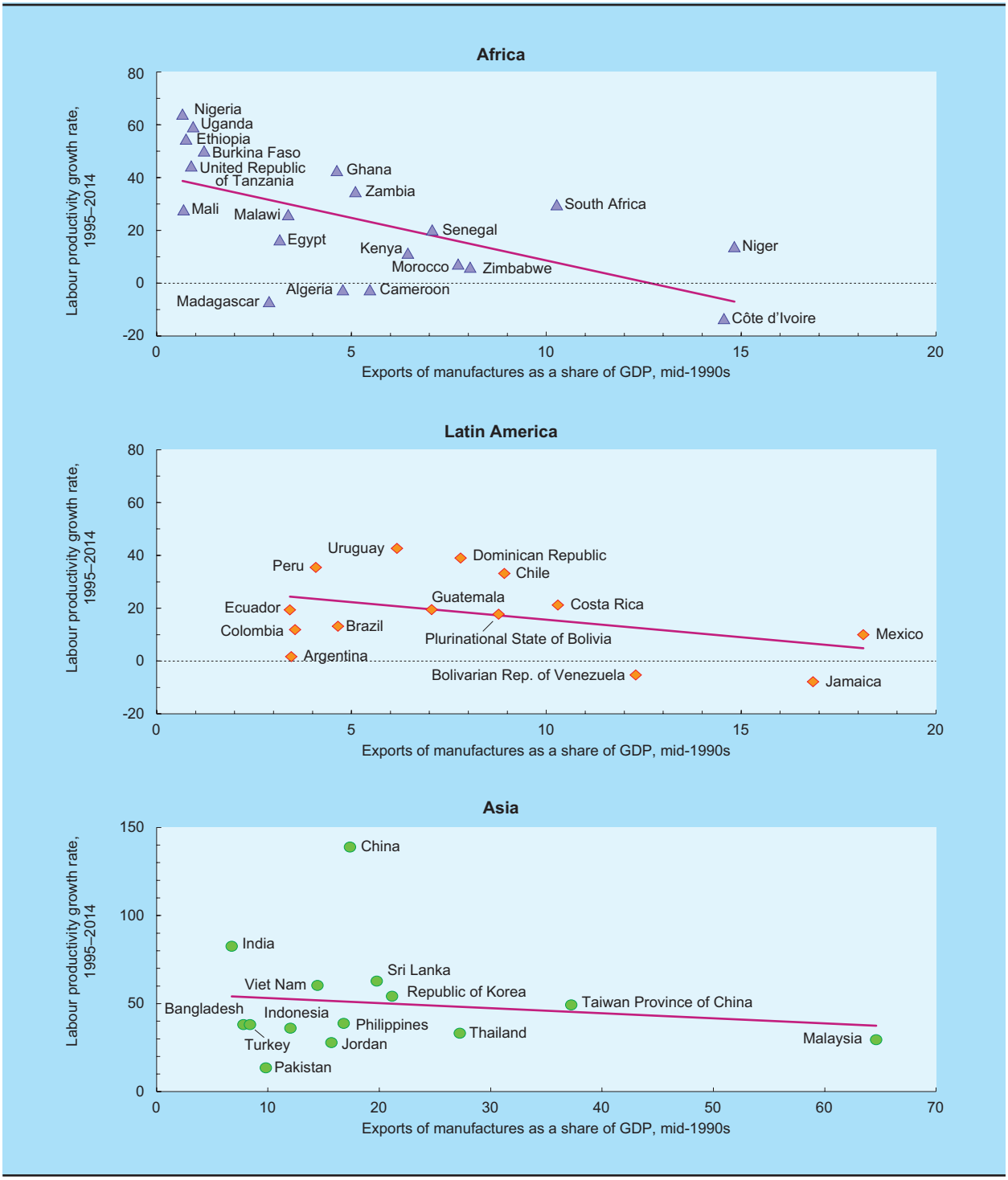
There is no uniform relationship between exports of manufactures on one hand, and productivity growth and industrialization on the other hand.

This can also occur when export-oriented manufacturing takes place in an enclave type of structure, where manufacturing inputs get increasingly outsourced from lower cost producers abroad that are part of international production networks, thus thinning linkages with the domestic economy. The effect can be positive for productivity at the firm or industry level, but overall production relative to total employment may decline. This productivity-reducing type of structural transformation has been occurring in Africa and Latin America, and, according to chart 4.5, is also

Chart 4.5

LABOUR PRODUCTIVITY GROWTH AND EXPORTS OF MANUFACTURES AS A SHARE OF GDP

(Per cent)



Source: UNCTAD secretariat calculations, based on *UN Comtrade*; UNSD, *Main Statistical Aggregates* database; and The Conference Board, *Total Economy Database*.

Note: Manufactures includes processed primary goods, drawing from Wood and Mayer, 2001, and Lall, 2000. Exports of manufactures as a share of GDP refer to the average shares in current value in 1994–1996. Labour productivity refers to output per person employed in 1990 dollars (converted at Geary Khamis purchasing power parity). The growth rate of labour productivity equals the natural log difference between average values in 2011–2014 and 1994–1996. Lines display fitted values.

associated with export-oriented manufacturing activity – most likely as a general proxy for trade exposure. The question therefore arises as to why Asia, which faces the same external trade dynamics as Africa and Latin America, did not suffer the same mixed fate. The answer lies in differences in domestic policy, and how these interact with and shape economic structure to determine the developmental impacts of global integration via trade.

3. Export sophistication and diversification

The results in charts 4.3, 4.4 and 4.5 point to a complex, if not ambiguous, role of trade in manufactures in generating industrialization and productivity growth. This section approaches this issue from a different angle, focusing on the important role of "export sophistication", rather than trade value, in determining the precise nature and direction of these relationships.

The notion of convergence is based on the premise that, although developing economies face a number of challenges to growing at sustained rates, they also benefit from some advantages: rather than having to pioneer new technologies, late-developing countries can imitate and import know-how from abroad. Growth is led by a combination of the mobilization of underutilized resources and "innovations inside-the-frontier", along with the introduction of goods already produced elsewhere in the industrial pipeline, which allows a progressive move up the value chain and the technological ladder. Furthermore, if they manage to significantly increase real investment in modern sectors, late-developing countries can reap productivity gains by shifting workers from underemployment in agriculture to higher productivity urban manufacturing, where those imported technologies are utilized on a sufficiently large scale to productively absorb a lot of labour. Export-oriented manufacturing is expected to magnify these possibilities, as discussed in section B above.

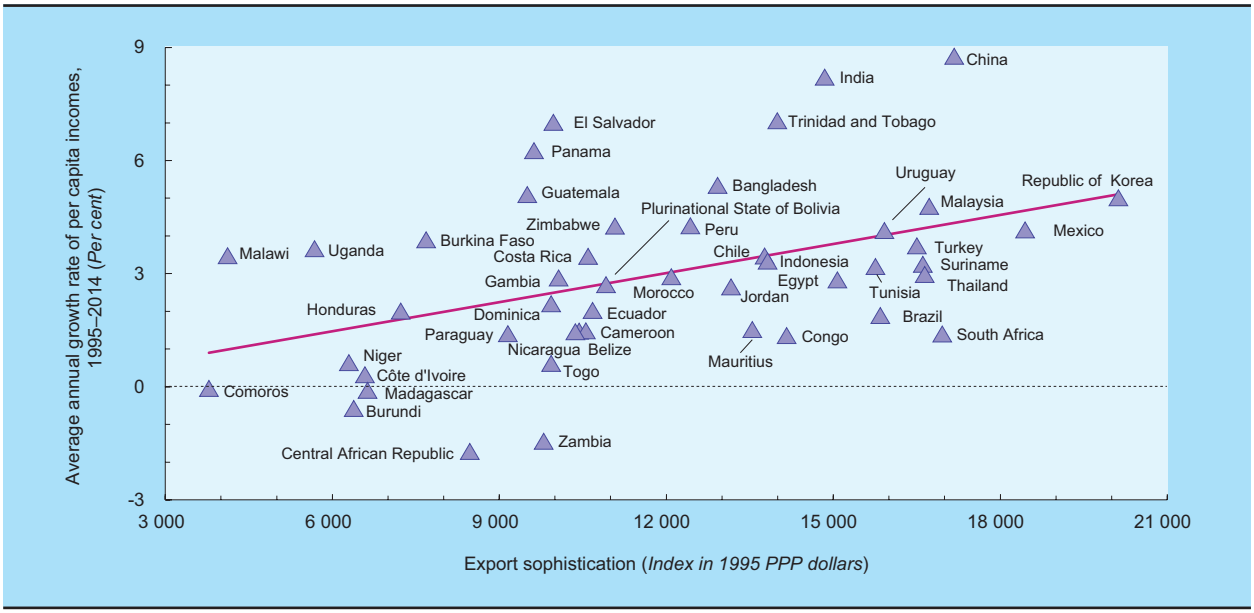
However, even when such forces exist, their effects cannot last forever. Most importantly, as middle-income levels are reached and the economy approaches the technological frontier, it needs to acquire capabilities to develop and patent new products, transitioning from relying less on imported technology and more on indigenous innovation. According to this logic, at middle levels of income, sustaining productivity-enhancing structural transformation and economic growth entails new challenges (see chapter II, box 2.1). In the end, it is the ability of a society to accumulate and combine the productive knowledge of its individuals that determines its capacity to diversify and produce goods that are progressively more sophisticated and competitive in international markets, and the production of which generates more positive spillovers in the domestic economy.

In any case, the rapid and persistent relative income growth (eventually leading to convergence) experienced by the Asian newly industrializing economies (NIEs) shows that it is possible to escape the "middle-income trap", if it exists. Labour productivity differentials were the key factor behind these success stories. Cole et al. (2005) find that Asian labour productivity jumped from 15 per cent to 54 per cent of the United States level during the second half of the twentieth century. In contrast, the labour productivity gap between Latin America and the United States remained unchanged or slightly narrowed until 1980, and thereafter it increased (chart 2.9). This impressive productivity growth in Asian countries was made possible by the progressive reallocation of labour towards more modern, higher productivity sectors. In the Republic of Korea and Taiwan Province of China, the share of labour engaged in manufacturing increased dramatically until the 1990s, alongside its continuously declining share in agriculture. Subsequently, labour shares in both agriculture and manufacturing fell, while the labour share in services increased, in line with the traditional sequence of productive structural transformation.

The Asian NIEs also crucially relied on the sequential nature of their transformation, which enabled them to progressively climb quality and sophistication ladders, eventually achieving productivity levels comparable to those of the traditional economic leaders (Palma, 2009). New production and export capacity were sequentially developed in industries such as iron, steel and electronics, using both skills and capabilities that could be transferred with relative ease from existing industries. At the same time, proactive policy measures were adopted to strengthen these connections. This strategic increase in high "connectivity" sectors allowed a gradual yet

Chart 4.6

RELATIONSHIP BETWEEN EXPORT SOPHISTICATION AND PER CAPITA INCOME GROWTH, SELECTED DEVELOPING ECONOMIES



Source: UNCTAD secretariat calculations, based on World Bank, *World Integrated Trade Solutions* (*WITS*) database and *World Development Indicators* database.

Note: Per capita incomes are in 1995 PPP dollars. Line displays fitted values.

systematic transition towards more sophisticated and higher value-added activities, especially those requiring similar technology and production techniques (Jankowska et al., 2012).

In evaluating the empirical relationship between economic growth and export sophistication, this section uses a different concept than that of table 4.4 to measure the technological or productivity content of exports. Rather than trying to determine the technological qualities embodied in a particular good (e.g. how much research and development (R&D) went into producing it, or the relative amounts of technology, labour and capital that are embedded in it), it uses a measure of export sophistication that simply infers from existing patterns of trade and the level of per capita income associated with exporting the product (Jarreau and Poncet, 2012; Fortunato and Razo, 2014).[15] The causal logic is that countries whose export baskets exceed the sophistication level typically associated with their per capita incomes also tend to grow faster (Hausmann et al., 2007 and 2011). Chart 4.6 uses a simple scatter plot to illustrate the relationship between this measure of export sophistication and per capita GDP growth for developing countries. The chart can be taken as a sort of export-sophistication analogue to chart 4.5. Although it does not focus on manufacturing per se, it addresses the more general question of the composition of exports and consequent GDP growth, which itself is linked to labour productivity growth.

Export sophistication can also have an indirect effect on economic growth via the spillovers and externalities it generates for a variety of domestic producers and workers (not all of whom are involved in exporting). During the 1980s and 1990s the prevailing view in academic and policy circles was that trade openness had a positive impact on income growth and industrialization (see, for example, Krueger, 1998). Multilateral institutions, such as the World Bank and the International Monetary Fund (IMF), regularly promoted trade liberalization, and even linked development assistance to the undertaking of liberalizing reforms. The evidence on which this view was built, however, is controversial, partly

because researchers and policy advisers often mistake trade volume for trade policy (Rodríguez and Rodrik, 2001). Furthermore, as noted above, even if a positive correlation between trade and growth exists (which was not the case in several developing regions in the 1980s and 1990s), disentangling the causality links is an extremely complex (and possibly tricky) exercise.

Interestingly, accounting for the composition of exports, particularly the level of sophistication of the exported products, helps explain the relationship between trade and economic growth by indicating that it is not how much a country exports, per se, that matters, but its composition. Moreover, it is not sufficient to target manufacturing alone. The question then becomes more about the domestic capabilities and processes that drive export sophistication performance, and how the structures of production can be shaped so as to maximize the potential developmental returns from trade in manufactures.

It is not how much a country exports, per se, that matters, but its composition, particularly the level of sophistication of the exported products.

While export sophistication is important, there are some limits to focusing exclusively on it as a definitive industrialization strategy. First, while high-income economies' exports can be used as a proxy for the economic structure developing economies should be aiming for, this is quite different from recommending that developing economies try to export the same goods developed economies are exporting now. Trade and industrial policy should not only aim to diversify exports and incorporate products with higher value added, advanced technology and qualified labour; it should also consider other factors, including the difficulty of competing with "first movers" in the markets they already supply.

More generally, the aim of industrial policy should not be export sophistication per se, but rather the underlying, systemic conditions that result in faster technological development and better export performance. Some argue that the results from econometric growth studies that use the export sophistication index (EXPY) are econometrically fragile, and that the role of export sophistication recedes once measures of investment are added to well-specified models (Lederman and Maloney, 2012). Deep and robust learning and production linkages do not arise without a wider, supportive economic base. In the final analysis, it could be that exporters excel relative to what their per capita incomes would predict because they are located in economies that invest considerable amounts in the right types of human and physical capital.

Industrial policy should aim at creating systemic conditions conducive to faster technological development and better export performance.

Also, the argument in favour of export sophistication (and its attendant prescriptions) is an exclusively supply-side one. As discussed throughout this chapter, policies have to account for the demand side as well. This necessitates grappling with the challenge of market demand and price movements. Combining high-tech production with low-cost labour is already a crowded field with considerable price competition, and it is very difficult for developing countries to break into markets for such goods as these are already dominated by developed countries (Lederman and Maloney, 2012). If developing countries collectively seek to climb the technological ladder all at the same time, the climb is likely to be steeper.

Moreover, export diversification, both in markets and products, remains essential for reducing vulnerability and sustaining growth. Today's low- and middle-income exporters exhibit a type of "hyperspecialization" that is more reminiscent of the concentration of production experienced by primary goods and natural-resource exporters in the past. In 2008, out of a classification comprising 238 different goods (excluding petroleum), the share of the single largest export item in total exports was 21 per cent; for the top 4 exports, the share was 45 per cent, and for the top 8 exports it was 58 per cent. For middle-income countries, the export shares of the top 1, 4 and 8 goods exported were 16, 37 and 49 per cent respectively. In the United States, the comparable shares were 5, 17 and 28 per cent respectively (Hanson, 2012: 56–57). This lack of export diversification adds to economic volatility, as an economy's fortunes are

tied to fewer products, and lack of diversification has been associated with the middle-income trap. Increasing South-South trade (particularly within the Latin American and African regions) can help alleviate market saturation pressures and volatility risk by expanding and diversifying export markets. But supporting the growth of domestic demand within developed and developing countries in order to sustain both better livelihoods and expanding markets is essential as well (see chapter VI).

E. Global value chains, industrial upgrading and structural transformation[16]

International production is substantially structured around GVCs that are coordinated by MNEs through networks of affiliates, contractual partners or arms' length suppliers (UNCTAD, 2013b; 2015a). Although such value chains are not a new feature of the global economy, their importance is reflected in the large volume of trade in intermediate goods, which amounted to 46 per cent of total merchandise trade in 2014. This share has remained fairly stable over the past couple of decades.[17] From GVCs' modest start in the clothing and electronics industries in the late 1960s, North-South exchanges within international production networks have now spread to many other industries. Moreover, in recent years, production networks have evolved to encompass multiple countries involved in different stages of the assembly process and with proliferating South-South linkages (UNCTAD, 2015b).

GVCs have made MNEs more – not less – important in guiding global distribution and relations of production.

Several factors have contributed to these transformations, including advances in technology that enable effective management of production networks involving multiple locations, the ongoing push towards trade and investment liberalization and a shift in corporate strategy to one that emphasizes the cost savings and flexibility afforded by outsourcing. Starting in the 1970s, MNEs have concentrated more and more on their "core competencies" such as R&D, design, marketing and branding. Manufacturing and, increasingly, other functions that were formerly considered core activities, such as input sourcing or logistics, have been gradually contracted out to suppliers and to countries that offer cost advantages (offshoring). In addition, MNEs have progressively moved away from direct forms of control over production (e.g. through foreign direct investment (FDI)) towards more indirect forms (i.e. outsourcing to independent suppliers). This has led to the emergence of buyer-driven value chains in labour-intensive consumer goods industries, such as apparel, footwear and toys, that are controlled by commercial capital (retailers and marketers such as Walmart, Nike and Starbucks), and not by industrial MNEs as in producer-driven value chains (Gereffi, 1999).

In recent years, however, outsourcing and producer-driven value chains are more common in capital- and technology-intensive industries such as automobiles, electronics and machinery. The underlying rationale for this reorientation is that intangible activities (R&D, design, marketing and branding) are less prone to competition, as they are based on unique resources and capabilities that other firms find difficult to acquire; they are therefore sources of superior returns (Kaplinsky, 2005). On the financial side, outsourcing creates higher profits, and because there is less need for reinvestment in production capacity, those profits are increasingly devoted to returning shareholder value. This dynamic is

becoming more and more prevalent in the current era, which is characterized by high profitability but little investment and an emphasis by financialization on turning profits into cash returns (see chapter V of this *Report*; and Milberg and Winkler, 2013). As a result, there has been a significant change in industrial organization, driven by MNEs across a variety of sectors, with a shift of focus away from internal scale economies via vertical integration towards external economies related to outsourcing (Gibbon and Ponte, 2005). However, this shift does not mean that MNEs in mining, manufacturing, services or retail have become less important in global economic activity; many of them have simply changed their roles from being predominantly global producers to becoming global coordinators and governors of GVCs. If anything, GVCs have made MNEs more – not less – important in guiding global distribution and relations of production.

GVCs are often considered an indication of the natural evolution of the global trading system and as a promising basis for further trade and investment liberalization (OECD, 2013, 2015; OECD et al., 2013; UNCTAD, 2013b; WTO et al., 2013). From a development perspective, GVCs would seem to present an attainable first step towards integrating into global trade and to industrialization. Rather than having to develop an entire product or break into an extremely competitive market on their own, countries can specialize in specific tasks or components of a multitude of value chains, starting at the relatively accessible bottom. However, despite these opportunities, as is the case for trade in manufactures in general, the evidence for a positive causal connection between GVC participation and industrialization is weak (*TDR 2014*). Chart 4.7 illustrates the association between changes in manufacturing value added as a share of GDP and changes in the import content of export-oriented manufactures (a common measure of backward participation in the GVC literature) between 1995 and 2011 for all developing countries for which data were available.

Much of the Asian region shows a clear and strong positive association between GVC participation and industrialization, while developing countries in other regions show the opposite relationship. Clearly, the positive contribution of GVCs to structural change in Asia does not necessarily apply to other regions. When increases in the foreign value added of exports occurs in a larger context of greater production and exports of manufactures (as in Cambodia and Viet Nam, for instance), GVC participation can complement industrialization and structural change.[18] However, when increasing backward participation in GVCs reflects a reduction of domestic sourcing in a context of weak export performance of manufactures, GVC participation may in fact run counter to the goals of industrialization and structural transformation, as evidenced by the negative slope of the fitted value line for other developing countries in chart 4.7.

The positive contribution of GVCs to structural change in Asia does not necessarily apply to other regions.

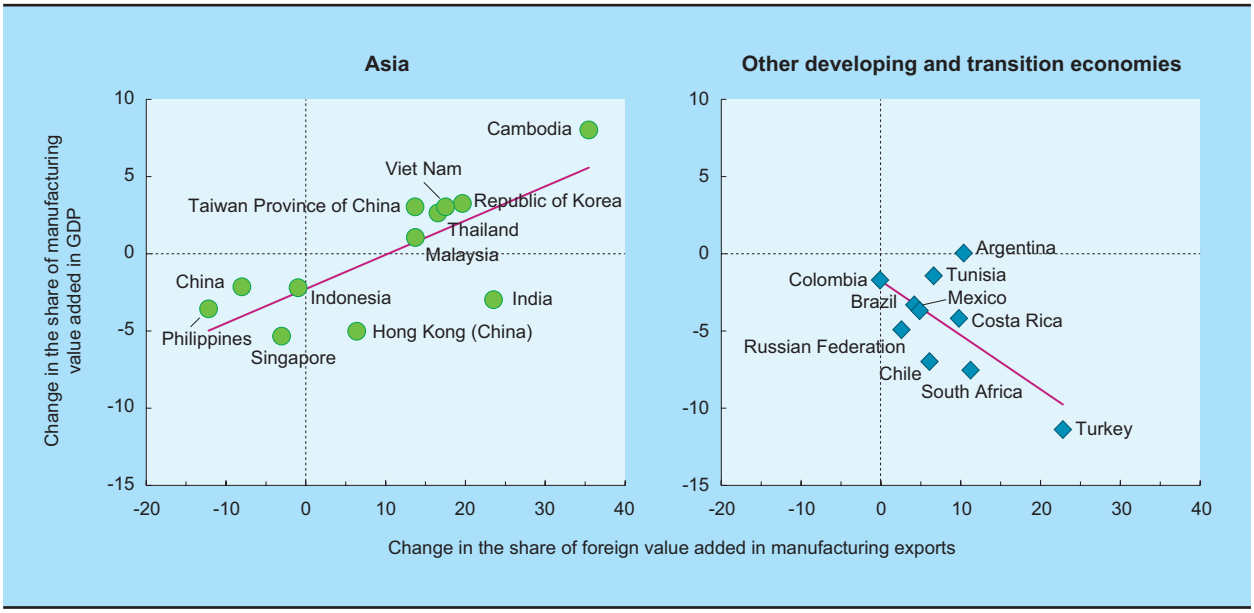
It is much more challenging to assess stylized patterns on forward participation in manufacturing (measured as the share of domestic value added in foreign export-oriented manufactures) and industrialization. Forward participation might be expected to be higher at both low and high levels of industrialization, the former because of supplying relatively unprocessed goods to foreign markets, and the latter because of shifting out of processing into the types of headquarter activities that accompany greater technological development (OECD, 2015). Taking the groups in chart 4.7, Asian countries show a strong negative correlation between changes in forward participation and manufacturing value added, while no similar relationship is discernible for the other countries.

Claims for how GVCs strengthen productivity or contribute to growth are largely based on conventional trade models, and the attendant benefits and policy prescriptions cited are associated with arguments in support of trade liberalization (see, for instance, OECD, 2013).[19] But from the vantage point of comparative advantage, trade and development, the particularities of GVC structures and the consequent distribution of power along the value chain require a more specific analysis. On the one hand, GVCs lower barriers to entry at the bottom of the value chain, making it easier for developing countries to break into global exports of manufactures than in the past. However, the conditions that ease access can also act as barriers to upgrading. More accessible parts of the value chain are associated with few

Chart 4.7

CHANGES IN THE SHARES OF FOREIGN VALUE ADDED IN MANUFACTURING EXPORTS AND OF MANUFACTURING VALUE ADDED IN GDP, 1995–2011

(Percentage point changes)



Source: UNCTAD secretariat calculations, based on OECD-WTO, *Trade in Value Added* database (accessed October 2015); and UNSD, *Main Statistical Aggregates* database.

Note: Shares taken in current values, changes refer to percentage point changes.

forward and backward linkages, limited institutional development, and little possibility for knowledge externalities in the wider economy, which can result in "thin industrialization" (Gereffi, 2014; *TDR 2014*). As noted in the UNCTAD Secretary-General's Report to UNCTAD XIV, "Those developing countries with limited productive capacities can remain trapped in, and competing for, the lowest value added activities at the bottom of regional and global value chains… with hampered potential to move up the value chain or to upgrade through technology transfer and learning. Many LDCs, landlocked developing countries and small island developing States belong to this group. Many middle-income countries, though, also face challenges in progressing upward in regional and global value chains" (UNCTAD, 2015a: 17).

Participation in GVCs also carries the risk of leading to specialization in only a very narrow strand of production with a concomitantly narrow technological base and overdependence on MNEs for GVC access (OECD et al., 2013). Such shallow integration also manifests itself in asymmetric power relations between lead firms and suppliers and in weak bargaining positions for developing countries. For example, the experiences of Mexico and Central American countries as assembly manufacturers have been likened to the creation of an enclave economy, with few domestic linkages (Gallagher and Zarsky, 2007; Dussel Peters, 2008). The same can be said about the electronics and automotive industries in Eastern and Central Europe (Plank and Staritz, 2013; Pavlinek, 2015; Pavlinek and Zenka, 2016). There has been significant "internal upgrading" within MNE affiliates, but it has involved very few spillovers to the domestic economy in the form of productivity improvements and imitation by domestic firms, partly due to limited linkages of MNEs with local firms and labour markets (Fons-Rosen et al., 2013; Paus, 2014). However, there is some evidence that spillovers increase where joint ventures operate as formalized linkages between local firms and MNEs (Ngoc Thuyen et al., 2014; Tian et al., 2015). Moving up the chain into more capital-intensive or higher value-added production is particularly challenging in such an environment, because it necessitates relationships with lead firms

at the top that are ultimately focused on maintaining their profitability and flexibility. Indeed, these firms sometimes intentionally use GVCs to induce and intensify competition among suppliers and countries for their own benefit (Levy, 2005; Ietto-Gillies, 2005; Phillips and Henderson, 2009).

Looking towards the future, the centres of economic power in GVCs may be getting more widely dispersed with the rise of large emerging economies. To an important extent, a number of these economies host larger suppliers, many of which have gained some market power relative to lead firms in the North. Recent strategies by lead MNEs include efforts to rationalize supply chains by paring down the number of suppliers that are now larger and higher up in the value chains in countries such as Brazil, China, India and Turkey. Those suppliers often have well-organized domestic supply channels and the potential to exercise greater bargaining power relative to their North-based MNE buyers (Gereffi, 2014). However, there is little evidence that the large suppliers have successfully transformed size into pricing power, and scale does not necessarily translate into an ability to increase value added per worker (Nolan, 2012; and section G below). For now, it is important to note that the governance structure of international production networks and the power of lead firms constrain the ability of even lead suppliers to achieve the sorts of price increases that could boost wages and improve labour standards (Milberg and Winkler, 2013).

Turning more towards regional markets in the South may offer an alternative. In response to the collapse in trade after the financial crisis of 2007–2008, a number of developing-country suppliers shifted their end markets from the North to the South in an effort to regionalize their supply chains. For instance, South African clothing manufacturers moved into other countries in sub-Saharan Africa such as Lesotho and Swaziland, leading to an expansion of the regional value chain led by South African retailers (Gereffi, 2014). But the shift to more regional markets could be associated with fewer upgrading opportunities and even greater competition, as demand in lower income countries tends to be linked with lower quality and less variety, and lower entry barriers mean more developing-country suppliers can participate. Moreover, MNEs could quickly catch up on local knowledge advantages once profitability emerges, as illustrated by the displacement of domestic firms in the Chinese mobile phone industry (Gereffi, 2014: 15; Brandt and Thun, 2011; OECD, 2013).

While GVCs may provide important opportunities for firms in developing countries to enter export markets for manufactures, increase production, employment and incomes, learn new capabilities and gain access to new technologies, there is little evidence that they have been instrumental in the development of a vibrant industrial sector over the past two decades. They are often based on low-value-added activities and low-cost labour, and, in most cases, have failed to establish a basis for more sophisticated domestic production. In this context, integration into GVCs should not be seen as "a panacea" for development, let alone as an alternative to a proactive industrial policy. Rather, they should be viewed as providing a "window of opportunity" (Phillips and Henderson, 2009: 60) that can support learning, upgrading and industrialization. However, they can also lead to lock-ins, enclaves and fallacies of composition (*TDR 2014*; UNCTAD, 2015b). Hence, some opportunities for upgrading and industrial development exist, but they generally take place in the context of asymmetric power relations between lead firms and supplier firms and countries. More broadly, the rise of GVCs has resulted in a consolidation of power and increasing appropriation of profits by lead firms that are still largely based in developed countries. This makes it more difficult for developing countries that pursue very similar export-oriented development strategies to increase bargaining power in value chains and upgrade their economies in the longer run (Starrs, 2014; UNECA, 2016).

> The conditions that ease access to international production networks may also act as barriers to upgrading and industrialization.

F. Gender, industrialization, trade and employment[20]

Despite widespread impressions to the contrary, export-led industrialization since the 1980s has been generally disappointing as a generator of broadly shared, high-wage employment (*TDR 2010*). One of the challenges is the popularity of the export-led growth and industrialization model itself: when many countries with similar comparative advantages increase their exports of manufactures, it drives down the prices of those goods and constrains the types of improvements in employment that such a strategy is intended to deliver. Even where productivity gains offer the potential for social upgrading, they may be used instead to lower prices and help maintain or increase global market shares rather than to raise wages. This pressure can be particularly strong in the context of GVCs, where the demanding sourcing policies of lead firms or first-tier suppliers manifest in the form of low wages and precarious labour arrangements involving temporary, contract and migrant labour (Barrientos et al., 2011; Locke, 2013). To the extent that wages do rise, the stylized fact is that there is an increase in the returns to skilled relative to unskilled work, driving a positive association between trade integration and wage inequality in developing countries (Felipe et al., 2014; Goldberg and Pavcnik, 2007). This is partly because of the technological changes brought about by trade integration, but also because of increased competitive pressures induced by expanding the global supply of low-skilled labour in a context of deficient global aggregate demand.

These competitive dynamics have been particularly problematic for countries in Africa and Latin America, where globalization has been associated with the movement of labour from high to low productivity production, including in the informal economy, as discussed above. Conversely, a number of Asian countries have been better able to leverage the opportunities created by exporting manufactures enabling a simultaneous increase in productivity and employment. Using gender as a lens through which to investigate the links between trade in manufactures and employment affords a more nuanced understanding of these dynamics, which are typically overlooked and yet important when analysing the distributive structures and effects of trade.

1. Export orientation and women's employment

Trade liberalization and global integration underlie the almost universally increased participation of women in the industrial labour force in the high growth or semi-industrialized economies over the past few decades. It is mainly a result of the tremendous growth of trade in manufactures and export processing in developing countries. Increases in women's wage employment have also occurred in exporters of non-traditional agricultural goods, such as designer fruits and vegetables or cut flowers, in sub-Saharan Africa and Central America, as well as in countries engaged in the more traditionally feminine aspects of the global services trade that involve lower paid and lower skilled work such as data entry and call centres (Seguino and Grown, 2006; UNCTAD, 2014a). Since labour costs are a crucial aspect of international competitiveness, exporters in labour-intensive sectors prefer to hire women both because women's wages are typically lower than those of men, and because employers perceive women as

> The positive association between trade integration and women's employment is strongest in labour-abundant, semi-industrialized countries ...

more productive in these types of jobs (Elson and Pearson, 1981). Foreign investors and firms looking for low-cost outsourcing platforms conform to the same pattern, at least on the lower rungs of the value-added ladder.

However, this positive association between trade integration and women's employment is strongest in labour-abundant, semi-industrialized countries. In primarily agricultural economies where women tend to be concentrated in import-competing agricultural sectors such as the production of food crops, whereas men are better situated to take advantage of export opportunities in cash crop production or natural resource extraction, women lose employment and income as a result of trade liberalization (Fontana, 2007; UNCTAD, 2013a, 2014b; UNCTAD and EIF, 2014). Also, in developing economies with less globally competitive manufacturing sectors, particularly in Africa, tariff reductions on labour-intensive imports have resulted in more job losses for women than for men (Adhikari and Yamamoto, 2006; Seguino and Grown, 2006).

Extending these dynamics to wages, conventional economic theory predicts that trade liberalization should increase women's wages and reduce the gender wage gap for two reasons. One is that the increased competition introduced by trade liberalization will make it more costly for domestic firms to discriminate, and hence they will tend to diminish gender wage discrimination. The second is based on conventional trade theory, which predicts that when developing countries with abundant labour endowments open up to trade, their exports of unskilled, labour-intensive goods will increase. Therefore, assuming that women constitute a disproportionate share of the unskilled labour force, trade liberalization should bring about convergence in men's and women's wages because it will raise the relative demand for women's labour. A number of empirical studies support these predictions, finding women's wages increasing relative to men's wages in a variety of country contexts.[21] However, there is also substantial evidence to the contrary, that gender wage gaps – both absolute measures of the gap and the proportion of the gap attributable to discrimination – have either persisted or widened as a result of trade and investment liberalization.[22]

> … However, women seem to lose their initial comparative advantages as industries upgrade, leading to a defeminization of employment in manufacturing.

These contradictory findings may have to do with the fact that women seem to lose their initial advantages as industries upgrade, leading to a defeminization of employment in manufacturing (Kucera and Tejani, 2014; Ghosh, 2007; Tejani and Milberg, 2010). Similar patterns have been found in high-income countries, where women's job losses in manufacturing have been directly linked to rising imports of manufactures (Kongar, 2007; Kucera and Milberg, 2007). Paired with the finding that trade liberalization has widened inequality in developing countries, partly because of increasing relative returns to skill, this defeminization raises questions about the potential of export-oriented manufacturing to serve as a platform for advancing gender wage equality.

That women supplied a deep pool of low-wage labour in the initial stages of export-led industrialization has been instrumental to its success (box 4.1). Gender-based wage gaps contributed to growth in semi-industrialized economies, especially in Asia, because they supported export competitiveness (Seguino, 2000). As discussed in section IV.B above, the development of many economies has been limited by the small size of their domestic markets (i.e. they are demand constrained) and by a lack of foreign exchange to purchase capital goods imports and foreign technology (balance-of-payments constraints). Lower wages of women who were segregated into labour-intensive export sectors helped enhance competitiveness and profitability, thus increasing investment and growth. This phenomenon has been termed the "feminization of foreign exchange earnings," referring to how women's wages crowded into export sectors can have the same salutary effect on trade performance as an exchange rate devaluation (Samarasinghe, 1998; Seguino, 2010). It also reveals how varying systems of inequality, not just between

> That women supplied a deep pool of low-wage labour in the initial stages of export-led industrialization has been instrumental to its success.

Box 4.1

GENDERED PATTERNS IN INDUSTRIAL EMPLOYMENT[a]

The chart in this box illustrates the average share of employment in industry as a percentage of total employment by gender and region (with high income economies grouped together) across three decades: the 1980s, 1990s and 2000s; the bottom panel is the ratio of the top two panels, women to men. Though there is considerable global variation, some commonalities also emerge. Industry is a much more important source of employment for men than for women, especially in the high-income countries group where the women-to-men ratio in the share of industrial employment is the lowest among all country groups across all three decades, falling to an average of just 0.33 in the 2000s. Most regions also experienced a decline in the share of industrial employment for both women and men over time, though this decline was faster for women than for men, as illustrated by the declining ratios in panel C. The exceptions to this pattern are the Middle East and North Africa group and South Asia. In the former group, the average share of male employment in industry rose from 28 per cent to 31 per cent between the 1990s and 2000s, while the share of women in industrial employment declined from 14 per cent to 10 per cent, in line with other regions. By contrast, South Asia was the only group that saw a rise in the share of women – a rise that even outstripped that of men. These changes were driven by large increases in women's industrial employment in Bangladesh, India and Nepal. And lastly, it is also important to note the relative significance of industrial employment for women in East Asia and the Pacific and selected countries from the Europe and Central Asia group in the chart below, especially during the 1980s. While these shares significantly declined in both regions over time, men maintained essentially the same share. The changing structure of trade and industrial structure in East Asia and the Pacific and the process of transition in Eastern Europe and Central Asia appear to have been the most obvious drivers of the decline in women's employment rates.

[a] It should be noted that although the analysis in this chapter focuses on manufacturing, because of the kind of data available this box refers to employment in industry, which also includes mining, construction and utilities – sectors that have higher shares of men's employment, though manufacturing is the largest sector. This means that the women-to-men ratio in industry is lower than that prevailing in manufacturing alone, but changes in industrial shares still tend to be driven by changes in manufacturing.

but also within countries, can determine the structural conditions for and distributional effects of a development strategy such as export-led industrialization.

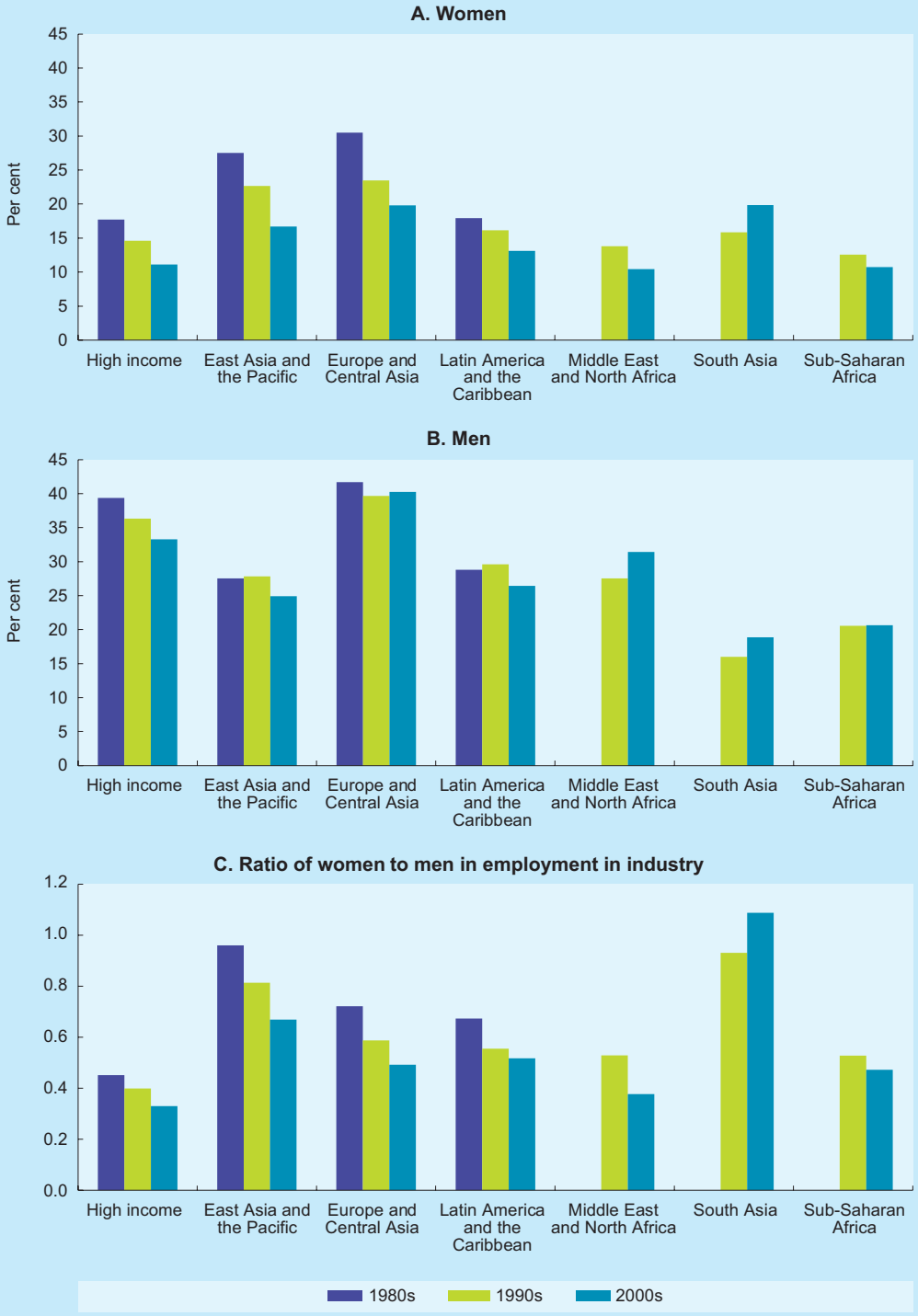
2. Employment elasticity of export-oriented manufacturing

While export of manufactures provides a potential route for fast-tracking industrialization and productivity-enhancing structural change, it must ultimately generate more employment at higher wages if it is to forge a sustainable and self-reinforcing high-road development path. This section evaluates the recent record of this relationship by assessing the responsiveness of employment by gender to the growth of exports in manufactures. Table 4.5 presents the elasticities of different categories of employment with respect to different categories of production by region for the period 1991–2014. The rows present the sector of employment: all employment (which includes agriculture, services and industry), industrial employment and services employment, and the sector of production (exports of manufactures versus industry in general). The columns disaggregate results by gender. The far right column presents median annual values by region for a number of the variables discussed to provide a better sense of the actual magnitudes involved.

The elasticities shown refer to the percentage changes in employment associated with a 1 per cent

Box 4.1 (concluded)

SHARE OF WOMEN'S AND MEN'S EMPLOYMENT IN INDUSTRY BY REGION, 1980s, 1990s AND 2000s



Source: UNCTAD secretariat calculations, based on World Bank, *World Development Indicators* database.

Note: Numbers for each decade refer to the average for that decade. Country samples for regional averages are consistent across time. Regional classifications are those of the World Bank. Data for the Europe and Central Asia group cover only the following countries: Croatia, Cyprus, Czech Republic, Estonia, Latvia, Lithuania, Poland, Romania, the Russian Federation, Slovakia, Slovenia and Turkey.

Table 4.5

RESPONSIVENESS OF EMPLOYMENT TO EXPORTS OF MANUFACTURES AND INDUSTRIAL GROWTH, BY GENDER, 1991–2014

(Per cent)

		Total employment	*Women's employment*	*Men's employment*	*Median annual values*	
Africa						
Elasticity of:	*Vis-à-vis:*				Total employment/population	64.6
Total employment	Exports of manufactures	0.18	0.20	0.18	Women's employment/population	57.4
Industrial employment	Industrial output	0.51	0.27	0.59	Men's employment/population	71.7
Industrial employment	Exports of manufactures	0.22	0.12	0.25	Growth in exports of manufactures	6.2
Services employment	Exports of manufactures	0.24	0.34	0.19	Industrial output growth	3.3
					Productivity growth	1.2
Asia						
Elasticity of:	*Vis-à-vis:*				Total employment/population	60.9
Total employment	Exports of manufactures	0.22	0.27	0.20	Women's employment/population	49.3
Industrial employment	Industrial output	0.42	0.29	0.44	Men's employment/population	77.7
Industrial employment	Exports of manufactures	0.23	0.13	0.26	Growth in exports of manufactures	8.6
Services employment	Exports of manufactures	0.40	0.44	0.35	Industrial output growth	6.2
					Productivity growth	3.6
Latin America and the Caribbean						
Elasticity of:	*Vis-à-vis:*				Total employment/population	58.3
Total employment	Exports of manufactures	0.21	0.29	0.17	Women's employment/population	42.9
Industrial employment	Industrial output	0.36	0.38	0.35	Men's employment/population	74.0
Industrial employment	Exports of manufactures	0.14	0.14	0.14	Growth in exports of manufactures	7.3
Services employment	Exports of manufactures	0.22	0.29	0.17	Industrial output growth	3.1
					Productivity growth	1.1

Source: UNCTAD secretariat calculations, based on International Labour Office (ILO), *Key Indicators of the Labour Market* database; World Bank, *World Development Indicators* (*WDI*) database; United Nations, *World Population Prospects: The 2015 Revision*; *UN Comtrade* database; UNSD, *Main Statistical Aggregates* database; and The Conference Board, *Total Economy Database*.

Note: Labour productivity growth was calculated by combining data on real value added from UNSD with *WDI* data on employment. Elasticities are based on the following regression model with country fixed effects: $logEmp_{it} = \alpha + \beta logX_{it} + \mu_i + \varepsilon_{it}$, where $logEmp_{it}$ and $logX_{it}$ refer to the logs of employment and the production variables respectively in country i and year t, and μ_i is the country fixed effect. All results are statistically significant at the 1 per cent level; country samples are consistent for all within group regressions.

change in exports or output. Beginning on the top left with Africa and moving right, a 1 per cent increase in exports of manufactures is associated with a 0.18 per cent increase in total employment, a 0.20 per cent increase in women's employment and a 0.18 per cent increase in men's employment. A 1 per cent increase in industrial output is associated with a 0.51 per cent increase in total industrial employment, a 0.27 per cent increase in women's industrial employment and a 0.59 per cent increase in men's industrial employment.[23] It is important to note that these results are (unweighted) average correlations by region, after controlling for a country's individual fixed effect.

Comparing regions, industrial expansion has had a larger impact on industrial employment than growth in exports of manufactures for both women and men, though the relative rise in employment is much larger for men's industrial employment in Africa, where, as noted above, the elasticity of men's industrial employment with respect to industrial output is 0.59, while the figure for exports of

manufactures is 0.25. Still, these differences have to be considered in conjunction with the extent of growth of industrial output versus exports of manufactures: the average growth rate of the latter was about twice as large as the former in Africa and in Latin America and the Caribbean, though in Asia industrial output largely kept up with the growth in exports of manufactures.

For women, one surprising result is that when exports of manufactures grew, the responsiveness of employment in services was much higher than in industry. For instance, a 1 per cent increase in exports of manufactures in Africa was associated with a 0.34 per cent increase in women's employment in services, but only a 0.12 per cent increase – one third as much – in their employment in industry. In Latin America and the Caribbean, a 1 per cent increase in exports of manufactures was associated with a 0.29 per cent increase in women's employment in services compared with a 0.14 per cent increase – about half as much – in industry. The gap was largest for women in Asia, with an employment elasticity of 0.44 in services and only 0.13 in industry. The same was also true for men across the different regions, but the gaps were considerably narrower (and not statistically significant in the case of Latin America and the Caribbean).[24]

In Africa and in Latin America and the Caribbean, the relatively large increase of women's employment in services, which is associated with the growth of exports of manufactures, has been accompanied by slow productivity growth, with median annual growth rates of 1.2 per cent in Africa and 1.1 per cent in Latin America and the Caribbean. This pairing suggests that the growth of trade in manufactures is more closely linked to the expansion of employment in low productivity services than to climbing up the value-added ladder – especially for women – and it reflects accounts of the connection between globalization and informalization (Bacchetta et al., 2009). The causal mechanism here is twofold. On the one hand, increased competitive pressures on export and domestic markets have induced more outsourcing and the proliferation of (often home-based) informal work, as documented in multiple studies of trade liberalization in Latin America (e.g. Acosta and Montes-Rojas, 2014; Reinecke, 2010). Such outsourced work would still be categorized as manufacturing. The point here is a more general one: increased competition in manufacturing, both at home and abroad, is associated with the informalization of work, both within and outside the manufacturing sector. On the other hand, lower cost access to more skill- and capital-intensive production technologies has both lowered the employment intensity of manufacturing and raised the relative demand for skilled labour. For many low-income countries in Africa, growth in exports of manufactures has not been accompanied by the same feminization of manufacturing as in other regions; instead, women have remained employed in subsistence agriculture or transitioned to low-productivity services, even as exports of manufactures have increased (UNCTAD, 2014a).

Table 4.6

ELASTICITY OF LABOUR SHARE IN TOTAL INCOME VIS-À-VIS THE WOMEN-TO-MEN EMPLOYMENT RATIO AND THE SHARE OF MANUFACTURES IN GDP, 1991–2014

	Ratio of women's to men's employment	*Exports of manufactures as a share of GDP*
Africa	*-0.02*	-0.32
Asia	*0.03*	-0.06
Latin America and the Caribbean	-0.17	-0.36

Source: As in table 4.5.
Note: All elasticities are significant at the 1 per cent level except for the two in italics.

Conversely, in Asia the services sector is expanding for both women and men in a context of high labour productivity growth, with an annual median value of 3.6 per cent. This seems to reflect dynamism in this sector as is expected in later stages of productivity-enhancing structural transformation.

Concerning the implications for inequality, table 4.6 presents results on the elasticity of labour's share of income with respect to both women's-to-men's employment ratios and the share of exports of manufactures in GDP. If women are systematically underpaid relative to men, or if their integration into the labour market reflects an industrial or trade structure that generates considerable surplus labour, one would expect a negative association between

women's relative employment rates and the labour share of income. By the same token, a negative association between exports of manufactures as a share of GDP and the labour share is also indicative of a low-road manufacturing export model or result. Looking at the employment results first, a 1 per cent increase in women's employment relative to that of men is associated with a 0.17 per cent decline in the labour share in Latin America and the Caribbean, but it is not statistically significant in either Africa or Asia. More telling is the elasticity of the labour share with respect to exports of manufactures as a share of GDP. A 1 per cent increase in this share is associated with a decline in the labour share of income in all three regions: -0.06 per cent in Asia, -0.36 per cent in Latin America and the Caribbean, and -0.32 per cent in Africa. These patterns are consistent with the ones suggested by employment elasticities: that growth in exports of manufactures has been associated more closely with the expansion of low productivity employment, particularly in services, than with the high productivity, modern manufacturing jobs that export-led industrialization strategies are expected to create. And these patterns are particularly pronounced when disaggregated by gender, confirming the importance of evaluating industrialization and trade from a gender-awareness perspective, as it is often women who bear the costs of the failures of export-led industrialization – a burden masked by limiting analyses to aggregated, gender-blind statistics.[25]

In Africa and in Latin America and the Caribbean, the growth of trade in manufactures is more closely linked to the expansion of employment in low productivity services than to climbing up the value-added ladder – especially for women.

The employment failures of export-led industrialization seriously compromise the model's potential for delivering on its promises, both on the supply and demand sides. On the supply side is the problem of increasingly low-productivity employment, which drags down an economy's overall productivity. On the demand side, stagnant incomes leave firms dependent on highly competitive external markets. Both problems could be addressed by raising global aggregate demand and alleviating the income inequality that drives it (*TDRs 2010, 2013, 2014*). Expanding domestic demand is also a promising approach from a gender equality perspective, because it would enable a rise in women's incomes and a decline in the gender wage gap without sacrificing economic growth due to a loss of global competitiveness (Seguino and Grown, 2006). Furthermore, given the association between women's incomes and spending on basic needs, there may be positive ripple effects for domestic production to the extent that demand shifts away from imports (Hoddinott et al., 1997).

G. The past and future of pricing power

As discussed in the next chapter, generating financial resources for investment is a key requirement for structural transformation. The export of manufactures provides opportunities for productivity growth and expectations that the profits and foreign exchange earnings from those exports will help finance investment and innovation – major benefits of the export-led industrialization model. However, given the highly competitive nature of export markets for manufactures, and the concentration of power at the top tiers of GVCs, it is not certain that developing countries have the pricing power or the ability to capture sufficient value from exporting their manufactures to set these beneficial feedback mechanisms in motion.

The question of whether developing countries, as a group, face a structural disadvantage in global

trade relations with developed countries underlies the Prebisch-Singer hypothesis referred to in section IV.B. That hypothesis is often considered in its simplest form, as a straightforward observation on terms-of-trade movements of primary commodities relative to manufactured goods; but its more important and interesting feature concerns the causal dynamics and associated policy implications.

Prebisch (1950) argued that the changing terms of trade reflected differences in market structure between the North and South, with the industrial markets of the North being more oligopolistic and the primary goods markets of the South highly competitive. Thus, industrial producers in the North could increase the relative prices of their manufactures, as their technical progress and productivity growth proceeded at a faster pace than in the South's primary commodity sectors. Relative prices of primary goods exports from the South would therefore decline, as would relative real incomes in the South. Hence, trade would become a vehicle for uneven development between the North and the South, and the changing terms of trade a reflection of the distribution of market and pricing power. This is a significant point from the perspective of modern trade relations, where concentration, both in terms of industries and higher value-added segments of GVCs, reflect exactly the sorts of differences in market structure (Northern oligopolies versus Southern competition) that troubled Prebisch more than half a century ago.

The changing terms of trade between the North and South reflect the changing distribution of market and pricing power between the two groups.

Singer (1950) agreed with Prebisch that changes in relative prices did not reflect those of relative productivities. According to Singer, the "fruits of technical progress" could be distributed either to producers as higher incomes or to consumers as lower prices, and monopoly power in manufacturing in the North favoured the former over the latter. Singer also emphasized differences in the income elasticities of demand, arguing that, since the income elasticity for manufactures is higher than that for primary commodities, as incomes increase, the relative demand for (and relative prices of) manufactures in the North will also increase.

Exporting manufactures is not associated with export values converging towards those of developed countries.

The natural policy prescription for developing countries to escape the structural disadvantages of trade was to pursue industrialization by promoting import substitution and developing domestic technological capabilities. In addition, export promotion, both to ease balance-of-payments constraints on development and to stimulate technological advancement, was seen as key to a push for sustained industrialization (Prebisch, 1964; Saiwing Ho, 2012), foreshadowing the successful export-led industrialization strategies of the East Asian NIEs.

Since the Prebisch-Singer hypothesis first emerged, developing countries have greatly increased their participation in global exports of manufactures. In light of the hypothesis, an important question to ask is whether the changing structure of developing-country exports has overcome some of the disadvantages that Prebisch and Singer (and many others since) warned against. To answer this question, table 4.7 lists estimated annual growth rates between 1980 and 2014 by country group for three merchandise terms-of-trade measures.[26] The net barter terms of trade (NBTT) is simply the unit price index for exports divided by the unit price index for imports. An increase in the NBTT indicates that a unit of exports is increasing in value relative to imports, reflecting the export of (relatively) higher value commodities. But high relative prices can also undermine competitiveness in markets where demand is particularly responsive to price changes and competition is intense. Thus table 4.7 also lists growth in the income terms of trade, which equals the NBTT times an index for export volume, indicating how scale can compensate for price in determining a country's capacity to import. The third column is an index for changes in the unit value of exports. It indicates whether changes in the NBTT are driven by changes in import prices (as might be the case at present, given the hike in global commodity prices since the early 2000s).

Table 4.7

ANNUAL GROWTH IN THE TERMS OF TRADE, BY COUNTRY GROUP, 1980–2014

(Per cent)

	Net barter terms of trade	*Income terms of trade*	*Export unit value index*
All countries			
Developed countries	0.0	5.1	2.5
Developing countries	-0.6	5.6	1.3
Africa	-0.7	3.4	2.3
Asia	-1.3	10.3	-1.7
Latin America and the Caribbean	0.3	5.4	2.2
Exporters of manufactures			
Developing countries	-1.1	6.2	0.5
Africa	-0.9	3.5	1.8
Asia	-1.5	10.4	-1.3
Latin America and the Caribbean	-0.9	3.6	1.4

Source: UNCTAD secretariat calculations, based on *UN Comtrade* database.

Note: Terms of trade refer to UNCTAD merchandise terms of trade data. Exporters of manufactures comprises countries whose mean share of manufacturing in merchandise exports for 1990–2014 was greater than 1/2. Growth rates were calculated by regressing the log of the terms of trade for each year and country on a common constant and time trend to get the annual rates of change reported in the table (fixed effects yield the same results). To control for effects of fuel prices, developing countries excludes West Asia (though Turkey is included).

Table 4.7 presents two sets of estimates. The first is based on the merchandise terms of trade for all countries in the specified group regardless of export structure (developed versus developing countries) or subgroup (developing Africa, Asia or Latin America and the Caribbean), while the second set is limited to those countries that are identified as exporters of manufactures. The developed-country group is not differentiated by export structure, in keeping with the North-South focus of the analysis.

Starting with all countries (regardless of whether they are exporters of manufactures or not), over the 34 years covered in the table, developed countries experienced no statistically significant change in their NBTTs, though they recorded the highest average annual growth rate in their export unit values of any group in the table, at 2.5 per cent. By contrast, developing countries saw an average annual decline of -0.6 per cent in their NBTT, though their export unit values grew at 1.3 per cent per year. At this aggregate level, then, the NBTT of developing countries relative to developed countries clearly diverge, driven by faster increases in import than export prices. There are differences between developing regions as well, with the African and Asian regions experiencing annual NBTT declines of -0.7 and -1.3 per cent respectively, and the Latin America and Caribbean region an annual increase of 0.3 per cent. This is somewhat surprising, as the performance of the Asian region in exports of manufactures might be expected to stand out in terms of NBTT growth, if indeed exporting manufactures is supposed to be associated with export values converging towards those of developed countries. However, the negative growth rate of export unit values of -1.7 per cent per year indicates the opposite. On the other hand, the increase in the annual NBTT growth rate in Latin America and the Caribbean was largely driven by the commodity price boom that began in the early 2000s. If the sample is limited to the period 1980–2002, the estimate for NBTT growth in Latin America and the Caribbean falls to -0.9 per cent per year.

Looking to the second set of estimates for exporters of manufactures reveals more about the dynamics driving the first set of estimates. Here, all regional groups display larger declines in NBTT growth than when all types of exporters are included. Developing countries as a whole show an annual decline of -1.1 per cent, with annual declines of the African, Asian and Latin American regions being -0.9, -1.5 and -0.9 per cent respectively. Thus, exporters of manufactures have fared worse, not better, than less manufacturing-oriented developing-country exporters; and manufacturing has taken on the features of primary commodities in the global trade regime as a source of structural disadvantage. The results on export unit values confirm this point, as Asian exporters of manufactures experienced the only reduction in the set (-1.3 per cent).

These patterns indicate that the prices of manufactures exported by developed countries, which have a higher technological content, behave differently from those exported by developing countries which have a more intensive content of low-skilled

labour (*TDR 2005*). This should not be surprising, given the extreme competitiveness of export markets for manufactures and the dangers posed by pressures stemming from the fallacy of composition, as discussed in this chapter. But it contradicts the frequent argument that exporting manufactures is desirable partly because it affords access to higher value added production. These results indicate that maintaining price competitiveness seems to dominate efforts to move into higher value added production. Even among the most successful exporters of manufactures in Asia, or where large GVC suppliers have gained some market power relative to lead firms in larger middle-income countries like China, there is scant evidence that they have been able to successfully transform their market power into pricing power (Milberg and Winkler, 2013).

Turning to the income terms-of-trade reveals another aspect of the story, as well as an explanation for Asia's success in its exports of manufactures, namely scale, not price. During the period 1980–2014, all regions experienced growth in their capacity to import based on total exports (price times volume), but the Asian region was a strong positive outlier. Considering exporters of manufactures only, the income terms of trade for developing countries as a whole increased at an average annual rate of 6.2 per cent, and for the Africa, Asia and Latin America and Caribbean regions the rates were 3.5, 10.4 and 3.6 per cent respectively. Asia was the only developing region to gain in terms-of-trade performance relative to developed countries, though this was attributable to volume, not price. Asia's outsized performance in terms of scale is linked to fallacy-of-composition pressures on prices; the export volumes that helped propel growth in Asia were at least partly responsible for its falling NBTT (*TDR 2005*).

Trade and investment policies should ensure that export-related incomes are used in ways that increase investment and rates of innovation.

Scale can compensate for (and drives) prices to some extent, but trade and investment policies have to carefully manage these resources to ensure that they are used in ways that increase investment and rates of innovation. But catching up or converging towards high-income countries ultimately requires higher incomes for producers *and* workers, and for this to happen, there need to be improvements in relative prices along with productivity, as well as higher shares of domestic value added in the context of GVCs. One of the more formidable development challenges in the current era of global trade is to find a way out of a situation where technical progress and productivity growth are effectively given away to global consumers because both market competition and concentration make it difficult to capture value added.

H. Conclusions

Targeting the growth of export-oriented manufactures or increasing participation in global value chains linked to manufacturing offer neither automatic nor straightforward pathways to industrialization and development. On the production side, both the composition of export-oriented manufactures – the more technologically intensive the better – and the share of domestic value added determine whether and to what extent exporting will induce structural change and productivity growth. Scale seems to matter as well, not least because of the need to absorb abundant supplies of labour into manufacturing in order to achieve aggregate productivity growth. Islands of manufacturing excellence are encouraging, but they are insufficient to generate the sort of economy-wide productive transformation necessary to achieve substantive industrialization. In order for trade to foster industrialization and structural transformation, it is necessary for developing countries to avoid the risks of being pulled towards specialization

in static comparative advantages, drawing productive resources away from efforts to increase technological intensity and diversify towards more dynamic industries.

Problems of distribution and accumulation that originate on the demand side of the economy also create obstacles to achieving export-led industrialization, and only rarely get the policy attention they deserve. The fallacy of composition – caused by an ever more crowded field of exporters pursuing the same export-led strategy – compresses price (and ultimately wage) growth, even for the most successful exporters of manufactures. Moving into more technologically intensive exports seems like a promising alternative, but the leap has to be large and sustained to outpace the many competitors vying for the same prize. This is an important point for understanding the promises and pitfalls of giving priority to export sophistication and its link with labour capabilities. With developing countries facing such highly competitive and fast-changing markets, it seems that cultivating capabilities and skills is more important than targeting particular products and hoping for the best.

The flip side of the fallacy of composition is the concentration of market and pricing power in a narrow band of MNEs. The rise of GVCs is both a cause and a consequence of this phenomenon. On the one hand, GVCs facilitate wider participation of developing countries in the global trade in manufactures, creating new avenues for industrialization. On the other hand, this wider participation and the associated competition facilitate the concentration of market power in developed-country MNEs, making it difficult for developing-country producers to increase and capture value added in economically consequential ways.

Deficient aggregate demand is at the heart of the fallacy of composition. Growth strategies based on wage compression and fiscal austerity weaken demand in the traditional developed-country markets for countries purusing export-led industrialization. Turning towards more regional markets of the South offers an alternative, as is already reflected in the changing geography of international trade. But while there has been considerable South-South coordination of production, demand in developing countries is uncertain. Regional production networks in Asia, where sequential movements into higher value added were punctuated by the shift of more basic production (and exports) to neighbours, underlie the "flying geese" nature of the Asian export-led industrialization model (Palma, 2009), as confirmed by the different statistical and developmental outcomes covered in this chapter for the region. These regional networks afforded opportunities for learning, production and income linkages through exporting in ways that generated dynamic capabilities to deal with ever changing markets. At the same time, domestic industries were protected from import competition as upgrading and learning proceeded, but not at the expense of (indeed, more typically to foster) export performance. Macroeconomic policies that ensured both stable and competitive real exchange rates supported both exporting and import substitution (see chapter VI for a discussion). On the demand side, the East Asian NIEs enjoyed access to the relatively open developed-country markets in the context of a more sparsely populated field of export competitors. Today, the demand and market conditions are substantially changed, not least because of greater export competition coming from countries trying to emulate earlier successes with export-led industrialization. Developing-country demand is a potential substitute, but requires that developing countries, especially large emerging economies, shift their emphasis from export-led industrialization to one aimed at boosting domestic consumption. This would generate demand for lower-income countries that are trying to access the developmental benefits from exports of manufactures, and further diversify markets and products at different levels of sophistication. Developed-country markets still serve as important destinations for selling more sophisticated goods, and provide critical opportunities for refining production, design and marketing capabilities.

Ultimately, for such a strategy to succeed, it must be recognized that part of managing capital accumulation and structural change requires an employment policy that ensures inclusive industrialization. One of the most formidable challenges presented by the relationship between globalization and industrialization in today's world is its failure to generate enough good jobs. This failure also tends to magnify existing gender inequalities, which is too often masked by gender-blind analyses of trade. Enhancing and utilizing the capabilities of both women and men on both the supply and demand sides of industrialization are essential for achieving, sustaining and sharing success. Chapter VI discusses the policy implications of these points in conjunction with the findings of other chapters.

Notes

1 The same may be said for some developed countries, but differs slightly in the context of advanced industrialization.

2 Historically, gender has played a role here as well. Because women are so frequently a new source of labour in the early phases of export-led industrialization, this transition often involves a shift of women's work from the unpaid household sector to the market, thus expanding market production and inducing the sort of fertility decline and increased investments in children that not only result in demographic shifts, but also contribute to development.

3 Technology and foreign exchange might of course come through foreign direct investment (FDI), but not necessarily. Drawing technological benefits from FDI requires intentional and broad-based industrial and technology transfer policies to reap the potential rewards. In addition, FDI has been generating rising income payments that have significantly reduced, and in some cases reversed, its contribution to the balance of payments (Akyüz, 2015).

4 This theoretical possibility reflects Jagdish Bhagwati's (1958) explanation of immiserizing growth.

5 In some regions (e.g. in Africa, Latin America and West Asia), this decline in recent years was due mostly to the fall in unit export prices, while in others (the rest of Asia) it resulted from a slowdown in the volume of exports; meanwhile, GDP in current dollars continued to grow rapidly – 11 per cent on average between 2009 and 2014 (*UNCTADstat*).

6 The classifications used in this subsection draw from Wood and Mayer (2001) who use the following main groups: manufactured goods (SITC Rev. 2 categories 5–9 less 667, 68, 941 and 971), unprocessed primary products (those that ISIC classifies, more narrowly than SITC, as agricultural and mineral goods in the state they leave the farm or the mine) and processed primary goods (which SITC classifies as primary products but ISIC classifies as manufactures, as they are produced in factories using large inputs of local raw material).

7 For example, in sub-Saharan Africa, crude oil is the main exported product, mostly sent to extraregional markets, and refined oil is the main imported good (Moussa, 2016). Expanding the production of refined oil, for example, or manufactured products would greatly enlarge the scope for intraregional trade.

8 Unless otherwise specified, trade in manufactures refers to SITC Rev. 2 categories 5–8 less 667 and 68.

9 There is, of course, a significant variation across countries within regions, as discussed later in this chapter. At this stage, it is useful to consider broad regional patterns, as they are in themselves distinctive and instructive.

10 Excluding West Asia.

11 In the Latin America and Caribbean region, Mexico is a significant driver of trade with developed countries, and therefore tends to depress measures of intraregional trade in manufactures. Taking Mexico out of the group, trade within this region has been a little less than one third of its total trade in manufactures since the 2000s, as opposed to about one fifth of its total trade in manufactures if Mexico is included.

12 This is particularly the case for the Latin America and Caribbean region, which shows very high shares of high- and medium-technology goods in its exports of manufactures. Much of this is due to Mexico. If Mexico were excluded from this group, the latter's high- and medium-technology export shares for 2013 would be as follows: to developed economies, 56.6 per cent; to developing economies, 69.1 per cent; to Asia, 48.6 per cent; to Latin America and the Caribbean, 71.8 per cent; to sub-Saharan Africa, 73.3 per cent; and to the World, 64.6 per cent.

13 These are primarily East and South-East Asian countries.

14 Trade shares could be acting as a statistical proxy for income, implying that the negative association is more a reflection of convergence dynamics (i.e. higher income countries tend to grow more slowly than lower income countries) than trade. This might be the case for countries in Asia, but not for countries in Africa and Latin America, as indicated by regression analysis that includes real per capita GDP in 1995 as well as the share of exports of manufactures in GDP.

15 This is the so called export sophistication index proposed by Hausmann et al. (2007). According to this index, a product is more sophisticated the higher the average income of its exporters; that is, a high (low)

level of sophistication indicates that the product is mainly exported by rich (poor) countries. This definition is only a first proxy, as some raw materials (e.g. crude oil) are considered sophisticated goods because they are mostly exported by countries with a high per capita income.

16 This section on GVCs draws largely from Staritz, 2016, and Braunstein and Houston, 2016.

17 This proportion is based on classifying UN Comtrade data by broad economic categories.

18 In China, for example, more domestic sourcing of manufacturing inputs is part of efforts to turn away from export processing and reach for better economic performance.

19 For more discussion of the policy implications of this point, see *TDR 2014*: 104.

20 This section draws largely on Braunstein (2012) and Braunstein and Houston (2016).

21 See Black and Brainerd, 2004; Juhn et al., 2014; Oostendorp, 2009; Tzannatos, 1999; and Wood, 1991.

22 See Berik et al., 2004; Busse and Spielmann, 2006; Braunstein and Brenner, 2007; Dominguez-Villalobos and Brown-Grossman, 2010; and Menon and van der Meulen Rodgers, 2009.

23 Women's employment elasticities tend to be higher than men's in general, partly because women's employment participation is lower; thus when the pattern presents as opposite (i.e. when men's employment elasticity exceeds that of women), it is a significant result.

24 One possibility to consider is the outsourcing of activities previously done in manufacturing to services as a potential driver of the higher responsiveness of services employment. Tregenna (2010) has done a close analysis of this question for South Africa for the period 1997–2007, and finds services employment growth to have been driven by cleaners and security guards, with these activities having been outsourced from manufacturing and from the public sector to private services. According to Tregenna, this suggests that the services sector is less dynamic than previously thought, and that there is a natural limit to this growth once the jobs have been fully outsourced. Furthermore, the pay is lower in private services than for the same jobs in manufacturing or in the public sector, which indicates a loss in job quality.

25 UNCTAD has commissioned a number of country case studies that underline the importance of evaluating trade policy from a gender-awareness perspective. For a summary overview, see UNCTAD, 2014a.

26 This analysis was inspired by that of Sarkar and Singer (1991), who discuss similar findings for the 1970–1987 period.

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