

# PARTICIPATION OF DEVELOPING COUNTRIES IN GLOBAL VALUE CHAINS

Implications for Trade  
and Trade-Related Policies

Summary Paper



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# The Participation of Developing Countries in Global Value Chains: Implications for Trade and Trade-Related Policies

## Introduction

This paper summarises the key results of a larger recent OECD study assessing the determining factors, economic effects and policy implications of global value chain participation across developing countries in five sub-regions in Asia, Africa and the Middle East (OECD, 2015).

Although global value chains (GVCs) are often considered a defining feature of the current wave of globalisation, little is known about what determines engagement in GVCs, what the effects of such engagement may be, and what it implies for policy making. These questions are particularly pertinent for developing countries where business environments are generally less competitive and where greater policy challenges have to be confronted with more limited public resources. These countries in particular are interested in seeking the most efficient ways of integration with the global economy to improve social and economic outcomes.

The unbundling of tasks and business functions typical of value chains may have opened opportunities for developing countries to engage in global markets without having to develop complete products or value chains (Stamm, 2004; Baldwin, 2012; Escaith, 2014; OECD, 2013), and to acquire knowledge and technology by learning from and interacting with other value chain actors in an integrated production process (e.g. Hausmann, 2014).

Nevertheless, there is an ongoing debate about the extent and desirability of integration into regional and global value chains and the benefits associated with wider participation for developing countries (e.g. UNCTAD, 2014). This debate has so far remained largely theoretical, or has been constrained to a discussion of specific case studies.

For this reason, the OECD has undertaken an assessment of the determinants and economic effects of GVC participation across developing countries in five developing regions of Africa, the Middle East and Asia, offering a starting point for policymakers to assess their countries' engagement and consider policy options on how to benefit from the reality of increasingly fragmented production (OECD, 2015).

The results of this analysis show that many developing countries are increasingly involved in GVCs, and that this participation tends to bring about economic benefits in terms of enhanced productivity, sophistication and diversification of exports. Key determinants of GVC participation are structural factors, such as geography, size of the market and level of development. In the short to medium term, this suggests that policy can affect GVC participation only to a certain extent.

However, trade and foreign direct investment (FDI) policy reforms, along with improvements in logistics and customs, intellectual property protection, infrastructure and institutions, are shown to play active roles in promoting further engagement. In each of the five developing regions considered in this study, there is a clear correlation between best performance in these policy areas and levels of GVC integration, suggesting a considerable role for policy reforms to contribute.

## Part 1: GVC Participation

### What are GVCs?

Global value chains have become a dominant feature of world trade and investment, encompassing developing, emerging, and developed economies. The process of producing goods, from raw materials to finished products, is increasingly fragmented and carried out wherever the necessary skills and materials are available at competitive cost and quality.

Companies, both large and small, can participate in GVCs by engaging in one of the many types of activities performed in a co-ordinated fashion across a number of countries to bring a product from conception to end use (e.g. Gereffi et al., 2001). These activities might include farming, extraction of natural resources, research and development, different types of manufacturing, design, management, marketing, distribution, post-sale services, and many others. Participating in GVCs does not necessarily mean directly trading goods or services across borders, but rather being linked to such activities through the process of value creation. Depending on the type of product and geographical location of different activities, some value chains will be regional, while others will have a truly global nature.

Propelled by falling costs in trade and information technology and telecommunication, the “GVC revolution” has brought about increasing specialisation at the task and business function level. Lead firms can increasingly draw on the international (as opposed to domestic) knowledge, resource, and production factor base. Small firms can increasingly participate in these global activities without having to master all of the technological and managerial knowledge necessary to produce a globally competitive product. Although not new – fragmentation and internationalisation of production processes have been observed already for some time – they seem to have recently taken a more global dimension through increased involvement of emerging and developing economies. The ability to embrace them has even been put forward as one of the key factors determining convergence of some developing countries’ incomes with those of high-income countries (Hausmann, 2014).

### How do countries benefit from participating in GVCs?

It is worth recalling that firms – not countries or governments – are the main actors in value chains. They participate in GVCs first and foremost to make a profit, and do so when it is in their business interest to fragment and internationalise production processes. Understanding GVCs also entails learning more about the evolving production and sourcing patterns of multinational enterprises (MNEs). With more trade taking place in intermediate inputs, a large share of these exchanges is taking place within the supply chains managed and controlled by MNEs.

Comparative advantage teaches us that some firms – or some countries – will be able to obtain higher overall gains from GVC participation by specialising in what could be considered less sophisticated products, tasks, or functions within the chain. Determining which segments of the value chain will be profitable is both a matter of the characteristics of the production process as well as relative skills and resource endowments of firms and countries in question (i.e. the comparative advantage). This suggests that productivity may be a preferred, unifying characteristic of upgrading in GVCs.

Analysis of outcomes associated with participating in GVCs is couched in the literature in terms of economic and social “upgrading”. Economic upgrading is usually defined in terms of efficiency of the production process, or characteristics of the product or activities performed; while social upgrading often refers to outcomes related to employment and pay, gender, and the environment. Focusing on economic upgrading, Humphrey and Schmitz (2002) distinguish between the following types of upgrading:

1. **Process upgrading:** where firms are seen to gain in terms of efficiency in producing a given type of output.
2. **Product upgrading:** where firms engage in the production of more sophisticated products.
3. **Functional upgrading:** where firms acquire new functions within a given value chain.
4. **Chain upgrading:** where firms move into different value chains.

While the path of process upgrading refers to increased efficiency, the path for product, functional, and chain upgrading all refer to the type of activities performed in value chains, without an explicit reference to value creation or productivity. Some analysts have suggested that a viable strategy for countries to upgrade in value chains in the latter three paths could be to target specific “sophisticated” products or production stages. For example, the “smiley curve” thesis – which suggests that the value added by firms at the product design and marketing stages may be higher than that at the assembly or manufacturing stages – has been interpreted by some to imply that firms may benefit by moving away from the assembly or manufacturing parts of the chain.

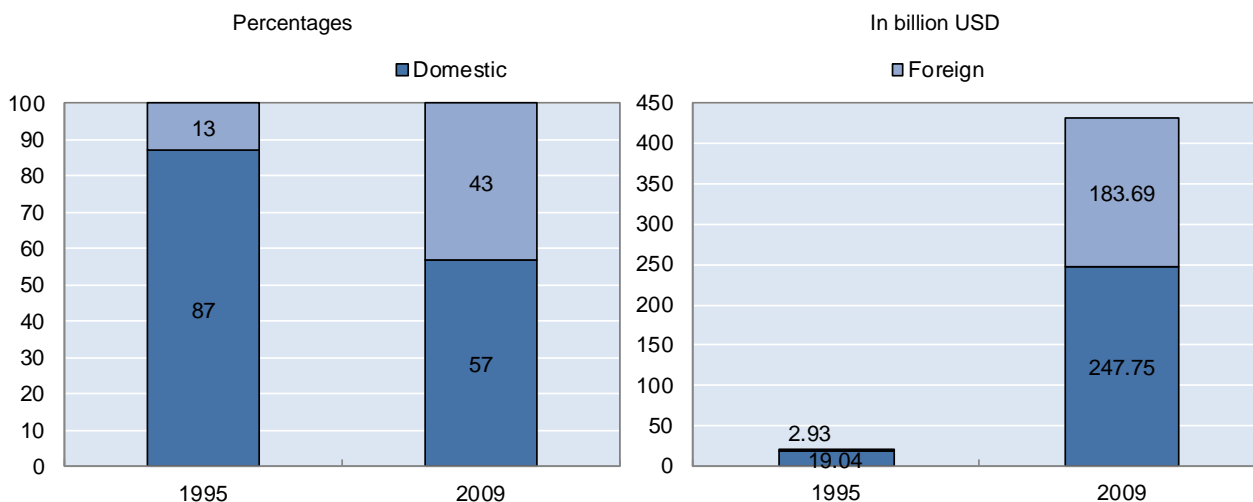
Recently, and perhaps mistakenly, the concept of upgrading has therefore been seen as the need to capture a growing share of domestic value added in exports. This idea is partly spurred by the oft-cited iPad case-study (Kraemer et al., 2011), which highlights the low share of value added that assembly occupies in the production process; less than 5% of the sale value of the iPad remains in the People’s Republic of China. This example has been used to justify policy objectives that seek to increase the *share of* domestic value added. However, this narrow view of upgrading may miss the point: the *volume* of the activity matters just as much, or more, as the domestic share of the value of the product. While it is indeed true that assembly activities often represent a very small share of the total value of the final product, it is also true that important benefits can be derived from specialising in assembly activities and performing them on a large scale.

In Asia, for example, several firms have become assemblers of electronic devices *par excellence* and have attracted clients that include Apple, Dell, Amazon, Nokia and Samsung. When considering the total value of products made by these lead firms, a share of 5% of the value adds up to a relatively large sum. While these assemblers could have instead launched a new mobile phone to rival the larger smartphone producers (as an alternate business development strategy), thereby seeking to enter the higher end of the smiley curve to capture larger shares of the value of the final product, they would have had to capture a significant market share from the established electronic device producers to succeed. From this perspective, it is therefore important to recognise the economic value that is created by the activities of the assembling firm, and not simply focus on the share that the firm occupies in the value of the final product.

A good illustration of some of the pitfalls associated with defining upgrading as increasing shares of domestic content is the case of China’s production of electric and optical equipment. As can be seen in Figure 1, the domestic content of China’s electrical and optical equipment exports fell from 87% to 57% between 1995 and 2009, but the volume of domestic value added embodied in exports increased more than tenfold. This shift has also led China to grow its domestic share of global value added in exports of electrical and optical equipment from 3% in 1995 to 22% in 2009. While certainly other developments in the Chinese and global economies not accounted for in the figure may have played a role, these figures provide evidence that firms operating in China have increased the foreign content of their products while multiplying their overall sales, profits, and the wage bill for the workers they employ.

This observation supports the view that trade is increasingly *complementary* rather than competitive in nature and access to competitive intermediate products is likely to have played an important role in helping China to gain such a large share of global value added in electrical and optical equipment.

**Figure 1. Enjoying a smaller share of a larger pie: electrical and optical equipment in China**



Source: OECD (2015).

Perspectives on the benefits of GVC participation naturally differ between policymakers and firms. Policymakers attach weight not only to capital gains, but also to labour gains and other social or environmental outcomes. They are likewise concerned with the policy environment in which their firms operate, looking at the economic, social, and environmental outcomes of GVC participation at the country level. Policymakers can therefore try to correct market failures and externalities related to firms' participation in GVCs in order to attain economically and socially superior outcomes.

To shed more empirical light on how GVC participation may influence the economic performance of countries, the relationships between a number of measures of GVC engagement and associated outcomes were analysed. When looking at the determinants of per-capita domestic value added generated from GVC activity across a sample of 152 countries over a 15-year period, analysis showed that positive changes in foreign sourcing were associated with positive changes in the domestic value added in exports, which suggests that a greater use of foreign inputs was complementary to a growing per capita domestic value added in exports. Similarly, countries' value chain activity (in terms of the share of foreign value added in exports) was linked to growing sophistication and diversification of exports as was the use of more sophisticated inputs.

It is clear that gains associated with value chain trade do not accrue to countries in a uniform fashion. Nevertheless, engaging more widely in GVCs, whether by using more foreign value-added embodied in imported intermediates or importing more sophisticated intermediates, does appear to lead to positive outcomes, even when there is a large heterogeneity across income groups.

## Part II: Mapping Developing Country Participation in GVCs

### How do developing countries participate in GVCs?

When it comes to measurement of GVC participation, the traditional approach is to look at bilateral trade in intermediate products. Trade in intermediates is a key characteristic of value chain activity and has considerable data availability and detail advantages.<sup>1</sup>

The study focuses on five developing sub-regions within Asia, Africa and the Middle East:

- Southeast and Eastern Asia (SEA);
- South Asia (SAS);
- the Middle East and North Africa (MENA);
- West and Central Africa (WCA); and
- Eastern and Southern Africa (ESA).

Analysis of regional and global export competitiveness in seven key sectors where these developing sub-regions display high participation rates: agriculture; processed food products; plastics and rubber; textiles; metal products; electrical and electronic equipment; and motor vehicles indicates that many of the success stories across the sub-regions are linked to positive effects from sourcing imported goods that are used to produce exports. This finding further suggests that countries interested in competing globally should prioritise measures that facilitate global access to the most competitive inputs in their development strategies.

There are important differences between the regions in terms of their propensity to trade in intermediate inputs and whether they trade within or outside their own regions. In SEA, deeper regional integration and growing intra-regional trade have been the driving force that has allowed countries to specialise and has created favourable conditions for trade in intermediate goods within the region. SEA economies source more than 30% of their intermediate inputs from within the region.

The ratio is much lower in South Asia, below 7%. This region seems to be relatively less dependent on co-ordinated regional partnerships and more reliant on access to an inexpensive labour force. This approach seems to have enabled the establishment of export-oriented industries such as textiles.

There is also little sign of a “factory Africa” emerging along the lines of that seen with “factory Asia”, with ESA, MENA and WCA sourcing 10% of their intermediate inputs from within the region. African economies currently display a propensity to trade with extra-regional partners. This suggests that countries in Africa could take greater advantage of trading with their neighbours in order to profit from geographical proximity and to developing export competitiveness in a regional context. .

The results also show that free trade agreements (FTAs) have a higher impact on trade flows of intermediate goods in manufacturing sectors than on aggregate trade flows. This is true whether the agreement is between countries in the same region or with partners outside it. However, the impact is greater when the agreement is regional in character. This suggests that engaging in regional trade agreements (RTAs) may be a necessary element to further develop regional value chains.

The level of diversification i.e. the number of exported products as well as the number of destinations to which a country is able to export is also an important measure of competitiveness and quality of integration in international markets. In this study, the sub-regions that show the lowest levels of diversification of exported intermediates are ESA, WCA and SAS, which are also the regions where the least amount of change in trade flows has been observed over the last

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<sup>1</sup> A shortcoming is that it does not trace the origin and use of intermediates which can come from third countries and can be used by them for either further export processing or consumption, which can be done using Input Output tables and which is discussed in the following section.



decade. In ESA, South Africa is the most diversified economy in terms of intermediates, and is the most connected with international GVCs. South Africa is therefore an important value chain connection to global markets for less advanced countries in the region. Kenya, Nigeria, Ghana, and Mauritius show the highest potential to catch up with South Africa, while most other countries in the region are still well below world averages. A similar trend is observed in SAS, where India is among the most competitive economies in terms of diversification of intermediates, while Pakistan and Sri Lanka show the greatest potential for catching up.

Two of the regions in this study that show some of the most pronounced changes in levels of diversification are SEA and MENA. In SEA, the largest changes can be seen in Viet Nam and the Philippines. These two countries have halved the gap in the number of exported intermediates and served markets between them and the diversification levels of the well-performing and well-integrated economies in the region like Thailand, Indonesia, Malaysia, and China. However, in other countries such as Myanmar intermediate exports remain persistently concentrated. In MENA, countries like Egypt, Tunisia, Oman, and Qatar have made significant progress. It is also noteworthy that the countries that are lagging behind are those with relatively high endowments of natural resources.

There is also a story to tell from this analysis about the sustainability over time of export flows in intermediates, with the evidence showing differences in survival rates of export flows between those engaged in intra-regional trade of intermediate goods, and those that are not. Survival rates of intermediate trade in Asian countries can be as much as double those in African regions. In general, survival rates seem to be linked to higher levels of intra-regional trade, which suggests that regional integration may be a way of learning by doing and preparing for competition in global markets. In Asia, SEA countries outperform the survival rates observed in the rest of the world, and are significantly more successful in this respect than their SAS neighbours. Exports of intermediates from the SAS region still face severe risks of failure despite showing promising signs of competitiveness in the mid-term (up to five years after the launch of the export). In Africa, countries in the WCA region struggle to sustain their exports for longer periods; only one in every ten export relationship survives beyond the third year. Countries in other African regions also struggle with the sustainability of their exports, and this suggests that well-targeted support policies for exporters might be needed.

Connectivity between the different regions included in the study has increased over time. In particular, SEA is an increasingly important destination for exports of intermediates, particularly those from the ESA and MENA sub-regions. Countries in the ESA region have become the most important destination for WCA's intermediates, and MENA has become a major destination for intermediates produced in SAS. The increased connectivity between developing countries is confirmed by looking at the major sources of intermediate goods' imports by region. North America and the European Union are becoming less important as sources of intermediate inputs for developing countries.



## What determines participation in GVCs?

Recent studies using harmonised inter-country input-output (ICIO) tables have enabled more accurate measurement of the buying and the selling activities in value chains, where countries respectively either source foreign inputs for export production, or provide inputs to foreign partners for their export production. These two types of GVC activities have been dubbed the “backward” and “forward” linkages in GVCs (e.g. Timmer et al. 2012; OECD, 2013; de Backer and Miroudot, 2013; UNCTAD, 2013b).

While most developed and developing countries engage in both types of GVC activity to some extent, countries with relatively strong backward linkages (buying) tend to have weaker forward linkages (selling), and vice versa. For example, a country that primarily assembles products into final goods and then exports them will tend to have a high backward, but a low forward, measure of participation. Conversely, a country that primarily supplies intermediate goods to an assembler will typically show a highly-developed forward participation, but a low backward participation measure. This difference suggests that the determinants of GVC participation, and thus policy recommendations, could be quite different for countries and firms at different stages of integration.

A number of factors can influence the degree and type of integration into GVCs, in terms of both backward and forward engagement. These factors can be broadly grouped into two categories: *non-policy factors*, or factors that are not easily influenced by policy, at least in the short to medium-term; and *policy factors* that can be reflected in measures such as trade and investment openness (OECD, 2015).

### Non-Policy Factors

The main determinants of GVC participation are structural in nature, and their relationships with backward and forward engagement are diverse. The following elements are most important:

- Market size: The larger the size of the domestic market, the lower the backward engagement of a country, and the higher the forward engagement. Countries with a larger market are able to draw on a wider array of domestic intermediates both in terms of purchases and sales;
- Level of development: The higher the per-capita income, the higher the aggregate forward and backward engagement. Developed countries tend to source more from abroad and sell a higher share of their gross exports as intermediate products;
- Industrial structure: The higher the share of the manufacturing sector in GDP, the higher the backward engagement, and the lower the forward engagement;
- Location: GVC activity is organised around large manufacturing hubs – the larger the distance to the main manufacturing hubs in Europe, North America, and Asia, the lower the backward engagement, suggesting that there is a premium to locating close to large “headquarter” economies.

## Policy Factors

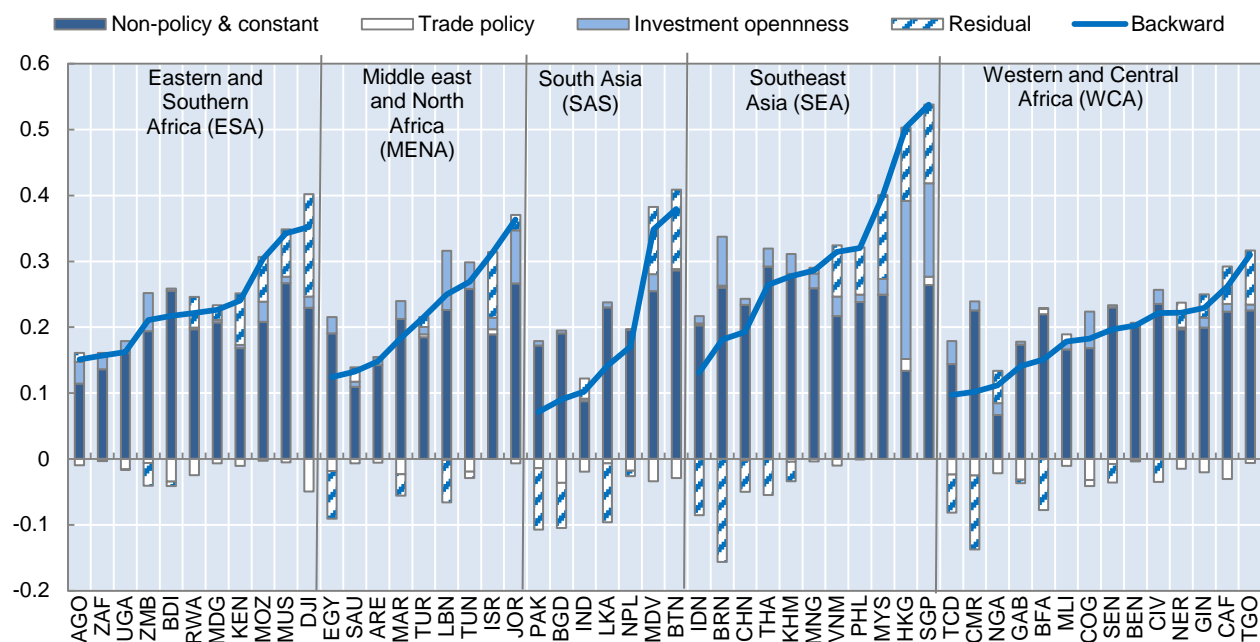
Trade and other policies can also play a significant role. In particular:

- Trade policy: Low import tariffs, both at home and faced in export markets, and engagement in regional trading agreements (RTAs) can all facilitate backward and forward GVC engagement;
- Inward FDI openness tends to have a significant association with both backward and forward integration;
- Other GVC-related policies, including trade related policies, such as: trade facilitation, intellectual property protection, logistics performance, infrastructure, and the quality of institutions.

When considered altogether, the above factors account for roughly 60% of the variation across countries in their level of backward GVC integration (buying or sourcing), and for approximately 20% in that of forward GVC integration (selling). In other words, the differences in the extent of foreign sourcing can be explained relatively well by the above mentioned factors.

Importantly, since structural characteristics differ widely across countries, one cannot simply compare the level of participation across countries and say that a country with higher participation is “doing better” in GVCs. Larger countries tend to have lower rates of participation, which are often attributed to the fact that they have larger domestic markets from which to draw their intermediate goods and services. A better way of assessing how countries are engaging in GVCs is to benchmark policy and structural characteristics to determine participation with the aim of identifying if countries are participating above or below what would be expected by these characteristics.

**Figure 2. Backward GVC participation ratio—relative contribution of non-policy and policy factors**



Source: OECD (2015).

The analysis shows that structural and policy drivers of GVC participation can vary significantly by sector and by the level of a country's development. In the short- and medium-term, the influence of policy seems to play a smaller role in determining GVC participation of low-income countries when compared to high- or middle-income countries. This may imply that in order for low-income countries to overcome a relative disadvantage in structural factors (e.g. in distance to the closest manufacturing hub) policymakers may need to implement more change to the policy environment than a high-income country might.

In developing countries the policy areas with the highest estimated impact on sourcing foreign inputs are trade facilitation and logistics performance, intellectual property protection, and the quality of infrastructure and of institutions (see Figure 3).

**Figure 3. The impact on GVC integration of other policies**



Source: OECD (2015).

## **What are the policy implications for Asia, Africa and the Middle East?**

A number of broad policy implications can be highlighted. For example, export competitiveness is inextricably linked to having access to competitively-priced intermediate imports. Border costs, such as import tariffs or inefficient customs procedures, become amplified with production processes that involve multiple border crossings. International rules, standards, and regulations make GVC-related transactions easier when coherent and transparent, and openness to FDI has been shown to be a key vehicle of GVC participation. Specialisation at the task or business function level suggests that GVC activity is sensitive to individual elements of the business environment, stressing the importance of policy coherence.

Value chain activities can be very competitive, and their location is sensitive to even small changes in costs of doing business, production, or trade. In this sense, many poorer countries face the challenge of putting in place some preconditions for integration into GVCs that can include – but are not restricted to – open trade and investment regimes. Development of human capital through education and training, developing infrastructure, improving the availability of capital, improving the business climate and the quality of institutions have also been identified as important factors in enabling integration into GVCs.

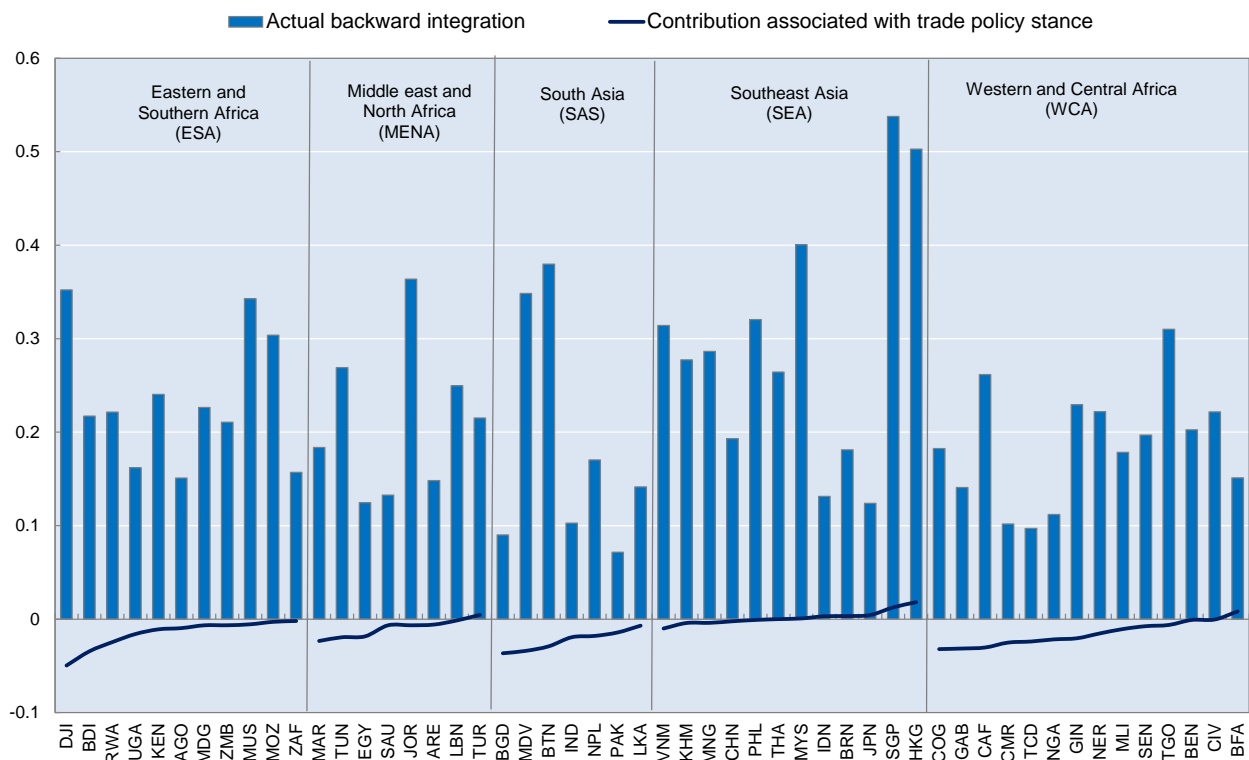
The assessment of GVC participation performed with the ICIO data attempts to shed light on the relative importance of different factors influencing backward and forward integration. It can be used to gauge the relative performance of individual countries in terms of GVC participation, and to summarise the relative contributions of non-policy and policy factors to this performance.

### **Trade Policy**

As fragmented modes of production may entail multiple border crossings, even modest tariffs can become magnified and overly-burdensome (OECD, 2013). While the removal of these tariffs would be a step in the right direction, it may not be sufficient for further integration to occur if products are held back at the border by onerous customs procedures, or if there is an inability to engage in regional cumulation due to burdensome rules of origin. The policy measures that are likely to be most conducive to value chain integration are those that promote deep integration, including trade facilitation, services liberalization, competition policy, investment, intellectual property protection and dispute settlement (Baldwin, 2013).

The study's analysis of trade policy's contribution to explaining GVC participation rates captures not just conditions within countries (tariffs charged, or share of imports covered by FTAs), but also those faced in third markets (tariffs faced, or share of exports covered by FTAs). The trade policy contribution thus measures the net contribution of trade policy to participation, where the positive effect of having a more liberal trade policy may be diminished when facing high tariffs in key export markets (Figure 4).

**Figure 4. Backward GVC participation ratio and model-based measures of performance – Trade policy<sup>2</sup>**



Source: OECD (2015).

SEA countries tend to charge the lowest import tariffs and show the highest shares of imports covered by an RTA. This openness would explain why their trade policy position is seen to be the most favourable to GVC participation across all five developing regions. Economies like Hong Kong, China and Singapore show some of the highest positive contributions of tariff policy. Nevertheless, some SEA countries like Viet Nam face relatively high tariffs in their export markets for intermediate products, and the share of exports covered by an RTA is not much larger than in some countries in SAS and ESA. What this implies for Viet Nam is that more emphasis should perhaps be placed on negotiating market access in export markets.

In contrast to the SEA region, the results show that all countries in SAS appear to be performing below what would be expected by the model in terms of backward GVC participation, and that the trade policy environment contributes to this underperformance. For example, if Bangladesh improved its trade policy stance to match that of an average country in the sample, its backward GVC participation could be increased by 50% from current levels.

In WCA and ESA, trade policies are estimated to restrict participation considerably in several countries. In the case of the Republic of the Congo, reforms that would align its trade policy with average performance could boost its value chain participation by approximately 25%. In Burkina Faso and the Ivory Coast, on the other hand, the combination of effects associated with tariffs and RTAs seem to have a relatively neutral impact on the observed levels of participation.

In MENA, performance seems closer to that of SEA, which can be attributed not so much to lower levels of import tariffs, but rather to a relatively high coverage of imports and exports of intermediates by RTAs. Nevertheless, Morocco and Tunisia could boost their GVC participation by 15% or more if they liberalised their trade policies.

One overarching question is the extent to which RTAs have played, or can play, a role in enhancing participation at the regional level. In SEA, the proliferation of GVC activity is said to pre-date the formation of the “noodle-bowl” proliferation of RTAs, but further integration appears

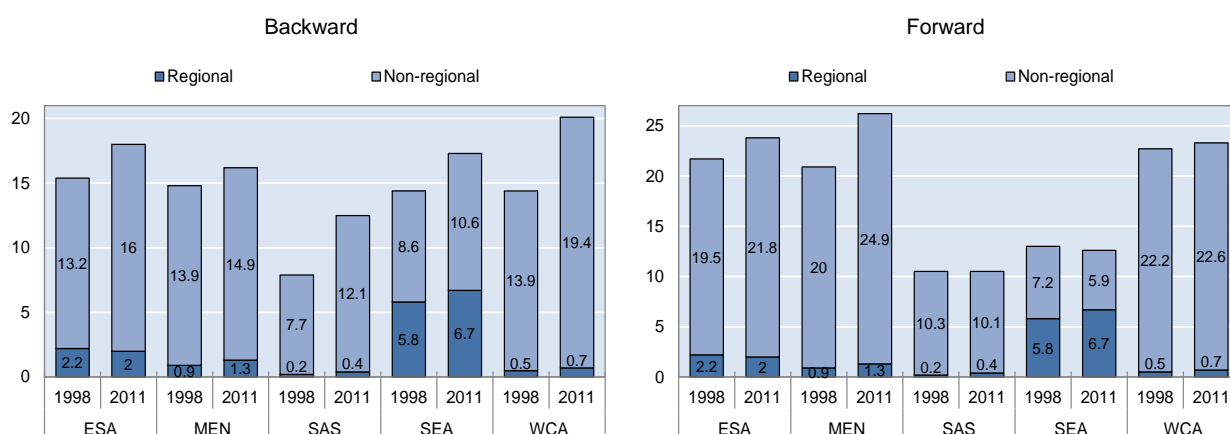
<sup>2</sup> Note that trade policy here is narrowly defined to include tariffs and shares of imports covered by regional trade agreements (RTAs).

also to have come as a consequence of the new agreements it spurred (Cheewatrakoolpong et al., 2013). In contrast, the case in South Asia is one where regional agreements are intentionally being pursued with the goal of stimulating economic integration.

One telling sign that FTAs may help GVC participation can be seen in Figure 5. The contribution of intra-regional GVC integration in SEA, the region that supports the most comprehensive and deepest agreements, stands out in comparison with the other regions. ESA is second in terms of intra-regional value chain activity, and here too there are agreements such as the East African Community and the Southern African Development Community, which although less ambitious than those in the Association of Southeast Asian Nations (ASEAN), appear to have achieved a relatively strong element of integration. Lagging behind are MENA, WCA and SAS.

Nevertheless, it is important to remember that competitiveness is more strongly associated with global rather than regional sourcing of intermediate inputs, implying that regional initiatives aimed at facilitating access to intermediate inputs, while welcome, should not come at the expense of pursuing inputs sourced more globally. However deep integration measures (WTO+) negotiated at the regional level, and which include trade facilitation measures as well as competition policy, investment, intellectual property protection, services and dispute settlement do not tend to discriminate between firms (Baldwin, 2013) and therefore there remains a case for cooperating with regional neighbours on these issues.

**Figure 5. Intra and extra-regional participation in value chains**



Note: Shading identifies the share of linkage which is from the region.

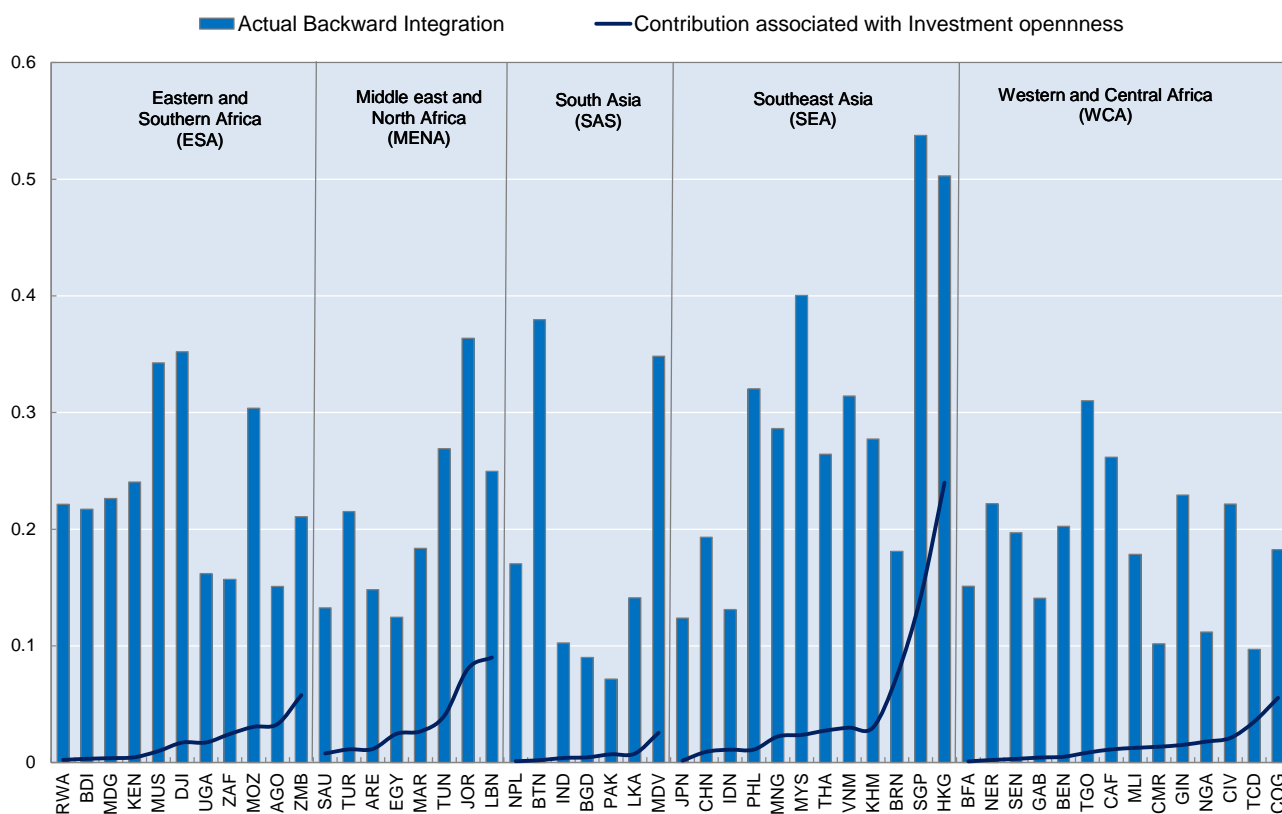
Source: OECD (2015).

## Openness to Inward Foreign Direct Investment

FDI openness and backward GVC participation are closely related, and the premium here can be large. For some economies in SEA, FDI openness is found to increase participation by over 20 percentage points, but in others, including Indonesia, the Philippines, China and Malaysia there is considerable scope for inward FDI to contribute further to GVC integration. SAS has the lowest ratios of inward FDI to GDP amongst the regions, and thus the lowest estimated contributions to GVC integration (Figure 6).

Countries in the WCA region tend to have the lowest FDI to GDP ratios within the African regions, although its best performers with respect to FDI openness (such as the Republic of the Congo) are on par with best performers in ESA and with average performers in SEA. For several countries in ESA, contributions associated with investment openness are not far off what seems to be the norm in SEA. However, as in any other region, there are countries that are relatively closed (e.g. Rwanda) and those that are relatively open (e.g. Zambia and South Africa). These regional comparisons, as well as comparisons of specific restrictions, provide an indication of the extent to which participation could be facilitated through appropriate FDI policies

**Figure 6. Backward GVC participation ratio and model-based measures of performance – Investment openness**



Source: OECD (2015).

### Other GVC-Related Policies

Trade facilitation, logistics performance, infrastructure, intellectual property protection, and the quality of institutions are other policy areas that are estimated to have an impact on GVC integration in developing countries.

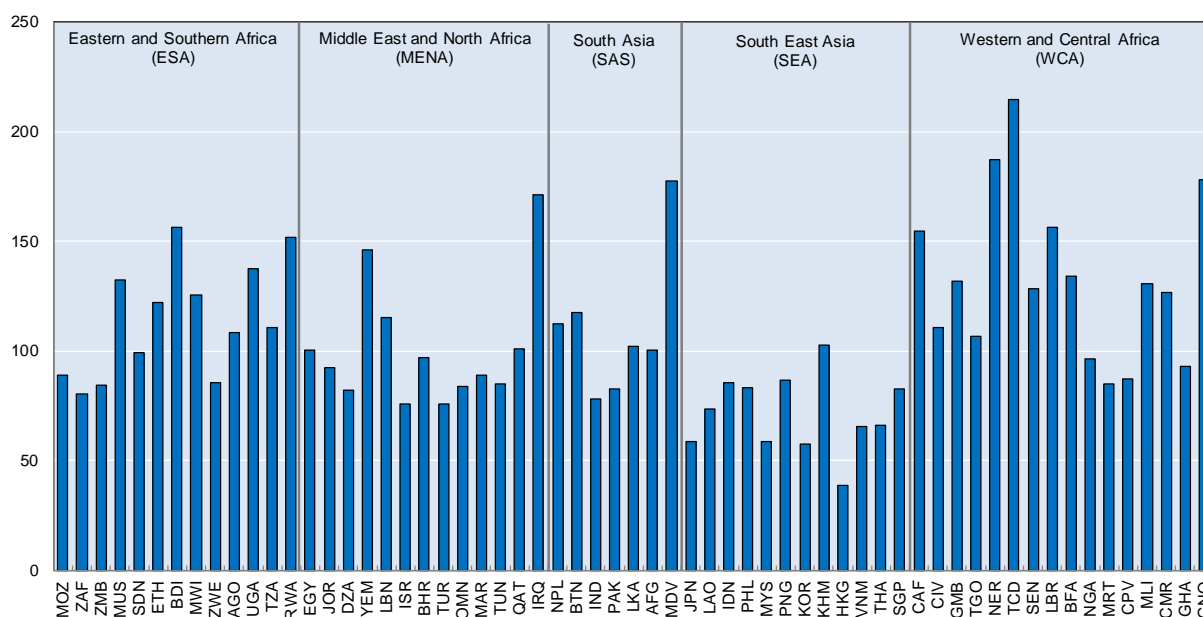
#### Trade facilitation, logistics, and infrastructure

Trade facilitation involves a range of issues (including commercial, transport, regulatory or financial procedures) that aim to reduce trade-related transaction costs, thereby facilitating the smooth functioning of international trade. With goods crossing more borders as a result of enhanced GVC activity, trade facilitation has become increasingly important for overall GVC performance. While less than 10% of trade costs are related to tariffs, and between 10-30% of trade costs are related to natural costs (such as geographical and cultural factors), the remaining 60-80% of trade costs are related to non-tariff policy measures, including indirect costs of trade procedures, maritime connectivity and services, business (regulatory) environment, currency fluctuations, and availability and use of ICT services (UNESCAP, 2014).

The varying levels of trade costs across and within the regions can be seen in SEA, where traders enjoy the lowest costs of the developing regions in this study, a factor that is likely to contribute to their GVC prowess (see Figure 7). Although much of this may be due to non-policy factors, such as economies of scale in shipping (Haddad, 2007), it also reflects the important investment in the region on physical infrastructure and the carefully devised *Master Plan on ASEAN Connectivity*, which explicitly aims to tackle trade facilitation issues.



Figure 7. Trade costs across regions



Note: Bars show *ad valorem* equivalents of trade costs calculated from Arvis et al. (2011) using the trade cost measure proposed in Novy (2012). Since the data is bilateral, here we show trade weighted values per country for the year 2010.

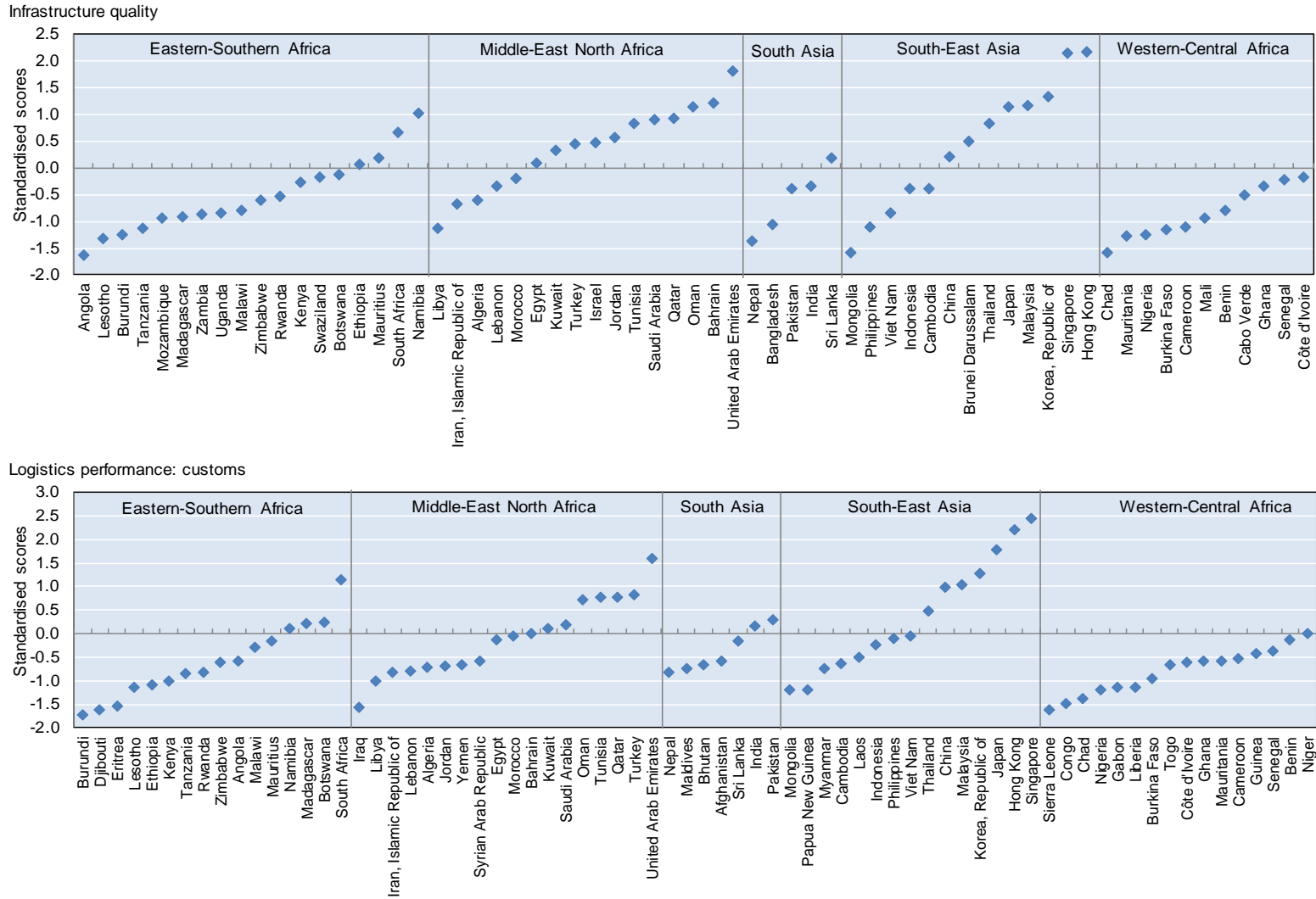
Source: OECD (2015) based on ESCAP-World Bank Trade Cost Database.

South Asia spends much less on physical infrastructure, and lacks regional co-ordination of trade facilitation efforts. It has the highest intra-regional trade costs after the African regions. The quality of infrastructure in SAS is below average in all countries except Sri Lanka. This is likely to hamper integration not just domestically (connecting more remote regions), but also regionally and internationally. Investment in the maintenance and upgrading of existing and new infrastructure could provide an important boost to economic activity, particularly in countries such as Nepal, Bangladesh, and Pakistan, where the quality is lowest.

Beyond connectivity issues, the SAS region faces the important challenge of energy shortages (World Bank, 2010), which may impede the smooth functioning of GVCs. Electricity supply quality in SAS is amongst the lowest of all regions. As a point of reference, the worst performer in SEA (Cambodia) is seen to be on par with India, highlighting a key difference between the regions.

There is a wide variance in logistics performance in Asia, both within and across the regions (Figure 8). India's performance stands between that of Thailand and Indonesia, but the other SAS countries are amongst the lowest performers in Asia, with landlocked Afghanistan, Bhutan, and Nepal scoring particularly low. The World Bank (2010) has noted that for Nepal to trade goods with India, it takes around 200 signatures; while trading from India to Nepal requires around 140. These bottlenecks are not exclusive to the landlocked countries, as at one important border between Bangladesh and India, trucks are often required to wait over four days in order to cross the border.

Figure 8. Infrastructure quality and efficiency of customs procedures in Africa and other regions



Source: World Competitiveness Indicators 2010; World Bank Logistics Performance Index (customs) 2009.

Within ASEAN, Singapore, Malaysia and Thailand lead the way in terms of logistics performance, although only Singapore shows similar levels to those of the best performing economies in Asia (Japan and Hong Kong, China). Indonesia, Viet Nam, and the Philippines are slightly behind, though still ahead of many South Asian countries. Unsurprisingly, given their lower level of development and late entry into ASEAN, Myanmar, Cambodia and Lao People's Democratic Republic show the lowest performance in the region.

A critical factor that impedes further GVC participation of Sub-Saharan African countries is geographical remoteness. The cost of trading across borders in Africa is substantially higher than in other regions. According to the World Bank, it takes an average of 38 days to import, and 32 days to export goods across borders (World Bank, 2012). The analysis confirms the burden that firms face in trading inside and outside of the region, with the cost of trading intra-regionally in ESA and WCA standing at two, three, and six times the equivalent cost of shipping goods within MENA, the EU and North America respectively.

In the case of Africa, remoteness cannot only be considered in terms of geographical distance; critical elements related to the quality of infrastructure and to burdensome border procedures that delay shipments to and from Africa exacerbate this issue. With the exception of South Africa and a few smaller partners, most countries in the region score below the world average in logistics performance and quality of infrastructure. Landlocked countries may be disproportionately affected by the unreliability of supply routes, as firms face high levels of uncertainty over the supply of inputs and their production costs. According to anecdotal evidence, firms in Burundi and Zimbabwe are forced to hold inventories of imported inputs covering up to one year of production in order to prevent stocking-out.

#### ***Institutional quality and intellectual property protection***

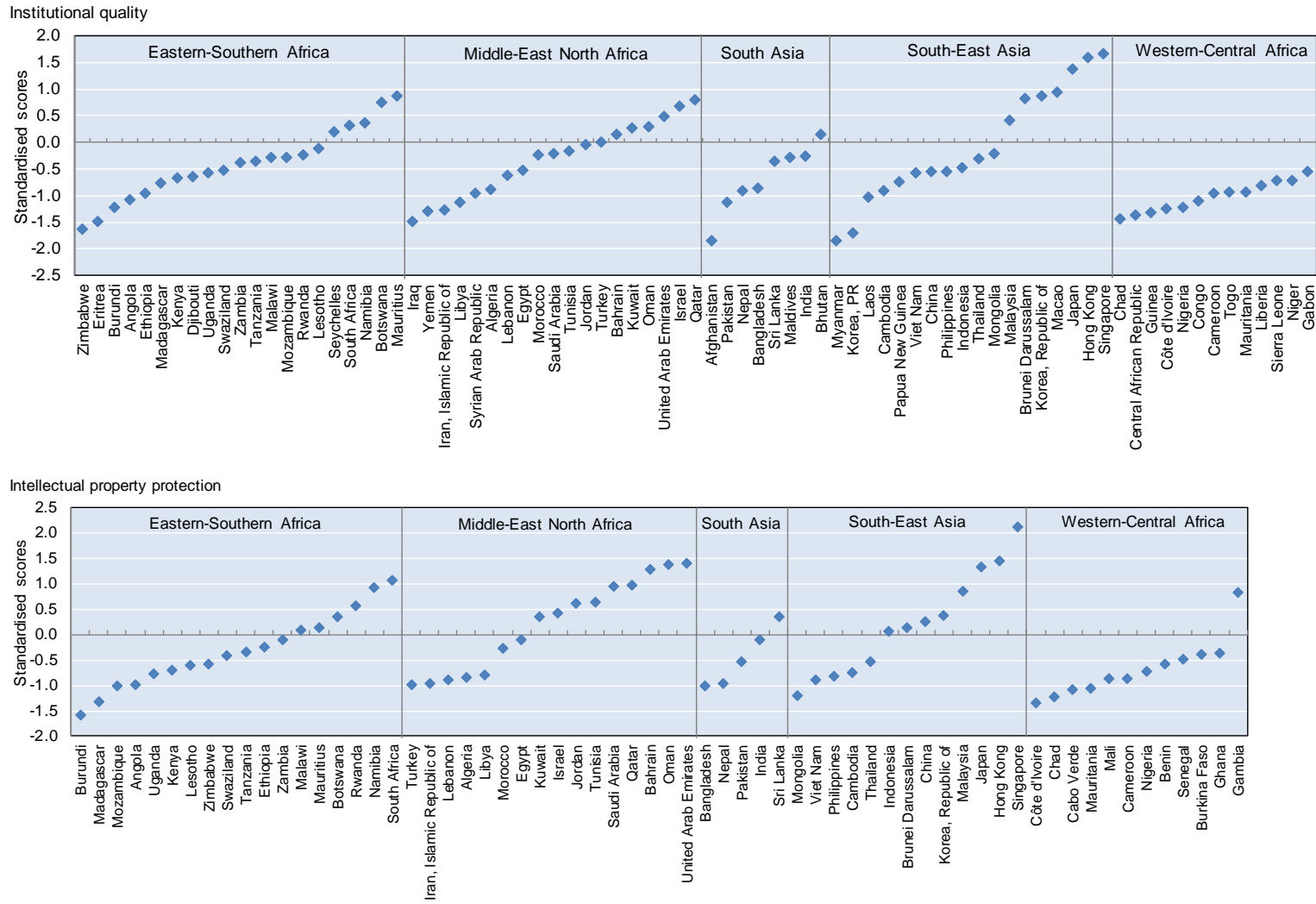
The absence of corruption, political stability, the credibility of reforms and policy initiatives are often put forward as preconditions for international business, lowering the risk faced by suppliers, investors, and exporters. For example, greater political stability in Zambia and Mauritius has had significant positive and visible impacts on investment flows, while on the other hand, major deterioration in controlling corruption seem to have led to a sharp fall in FDI in Namibia and Swaziland in the early 2000s (Mengistae, 2010).

With the rising complexity of international transactions, the role of institutions is becoming increasingly important (Nunn and Trefler, 2013; Blyde, 2014). Uncertainty in international contractual arrangements can lead to sub-optimal trade and investment decisions and hold-ups. Institutions can step in to provide appropriate contracting environments to help ease difficulties, thereby even becoming a source of comparative advantage (Nunn, 2007 and Levchenko, 2007). Indeed, institutional quality is closely associated with GVC participation.

In South Asia, institutional quality is below the world average in all countries except Bhutan. India ranks second in the region, showing an institutional quality slightly higher than that of China, while Afghanistan, Pakistan, Nepal and Bangladesh score particularly low (Figure 9). Levels of institutional quality are similar in the four lesser-developed countries in ASEAN (Cambodia, Myanmar, Lao PDR and Viet Nam), suggesting that it is not just South Asia that needs to work on upgrading the quality of its institutions. Countries such as Indonesia, Thailand and the Philippines trail behind other SEA countries, and might learn good practices from some of their ASEAN neighbours towards increasing the quality of their institutions. The WCA sub-region stands out with consistently low scores on the institutional quality indicator. In ESA and MENA, countries including Botswana, Namibia, South Africa, Qatar, UAE and Oman perform above the average in the sample.

Where intellectual property protection is concerned, performance is also mixed. The only country that ranks above average in South Asia is Sri Lanka, while in SEA, China, Indonesia, Malaysia, Brunei, Korea, Japan, and Hong Kong, China are good performers. Apart from the Gambia, countries in WCA again have the lowest scores across all the regions, while in ESA, and even more in MENA, there are a number of countries whose performance is reasonably good.

Figure 9. Institutional quality and intellectual property protection



Source: World Governance Indicators 2010.

## PART III: CONCLUSIONS AND POLICY RECOMMENDATIONS

### Conclusions

This paper summarises the results of a recent OECD study assessing the determining factors and economic effects of global value chain participation across developing countries in five sub-regions in Asia, Africa and the Middle East. The study seeks to contribute to the ongoing debate about the extent and desirability of integration into regional and global value chains, to identify the benefits associated with wider participation, and to provide policymakers with insight and recommendations on how to reap those benefit. The results of the study suggest that both the buying and the selling activities in value chains can bring about economic benefits, highlighting the importance of understanding what determines participation and identifying the scope that governments may have in shaping it.

One of the key findings of this work is that structural characteristics of countries are the main determinants of GVC participation. Policy can nevertheless play a significant role. In particular, low import tariffs, both at home and faced in export markets, and engagement in regional trading agreements can facilitate backward and forward GVC engagement. Inward openness to foreign direct investment also has a significant association with backward integration. Trade facilitation and, logistics performance, intellectual property protection, and the quality of infrastructure and institutions are all estimated to have impacts on GVC integration.

The country-specific empirical analysis presented in this report provides a starting point for policymakers in the regions to assess their countries' GVC engagement, and to consider policy options. In each of the five developing regions, there are examples of countries that are among the world's worst and best performers in policy areas most important for GVC integration. Thus, there is potential to learn which policies work for the best performers, regionally or indeed, globally.

### Region-specific policy recommendations

#### South Asia

In South Asia, countries could make a more concerted effort to integrate regionally, including by fully eliminating intra-regional tariffs, and by co-ordinating more concrete regional trade facilitation initiatives for both physical and institutional infrastructure. The OECD Trade Facilitation Indicators suggest that a key common weakness in Bangladesh, India, Nepal and Pakistan is the need to further streamline border procedures; this could be prioritised to promote a more favourable trading environment. South Asia could also reference the *Master Plan on ASEAN Connectivity* as a guiding framework to identify action points to increase logistics performance to the levels seen in SEA. This may help countries such as Nepal and Afghanistan, both landlocked and small economies, to exploit benefits from economies of scale and tap into regional value chains for their development. These efforts could also benefit India and the regions located close to these countries, insofar as they too may achieve greater market access.

Where domestic reform is concerned, several issues are important to note. The quality of infrastructure in South Asia is below world average in all countries except Sri Lanka, and this is likely to hamper integration not just domestically (connecting more remote regions), but also regionally and internationally. Here, investment in the maintenance and upgrading of existing and new infrastructure could provide an important boost to economic activity, particularly in countries such as Nepal, Bangladesh and Pakistan, where the quality is lowest.

Beyond connectivity issues, the South Asia region faces additional challenges, including energy shortages that may impede the smooth functioning of GVCs. Electricity supply in the region is amongst the lowest of all regions. Here, India is on par with the worst performer in SEA (Cambodia), highlighting a key difference between South and Southeast Asia.

Trade facilitation and better infrastructure are necessary, but are alone insufficient conditions for further value chain participation. These measures need to be complemented with MFN tariff liberalisation (South Asia continues to have high tariffs relative to other regions), institutional reform, and further liberalisation of services and investment regimes. Efforts to this end could help attract foreign investment, and therefore new technologies complementary to the labour abundance of the South Asian countries. In many respects, and particularly in terms of labour endowments, South Asian countries resemble many South East Asian countries, and therefore should be able to attract important GVC activity, which may help further regional development objectives.

## **Southeast Asia**

Southeast Asia has often been lauded for its fast-paced integration into regional and global markets, and indeed a lot of progress has been made; but there is still room for improvement. Competitive pressures are likely to grow as other developing countries increase their GVC participation, and as a result, Southeast Asia needs to continue reforming if it is to remain competitive.

Several countries in the region continue to lag behind in economic development, and will need to undertake important efforts in order to catch up with the ASEAN-6 countries (Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore and Thailand). The ASEAN Economic Community (AEC) regional integration effort is likely to help in this process, giving particular consideration to the development aspect, but finalising the internal market will likely help most towards this end.

ASEAN-6 countries see their CLMV neighbours (Cambodia, Lao PDR, Myanmar and Viet Nam) as important complements to their GVC strategy, offering new economic opportunities for offshoring parts of their production processes, and therefore “upgrading” within the value chain. However, such ambitious plans require further work. First, by eliminating intra-regional tariff barriers to trade and reducing the MFN tariff (so as to avoid costly trade diversion); and second, by implementing reform via the finalisation of the internal market so that services and investment can move freely within the region.

Although ASEAN-6 countries are progressing well, there is much that countries like the Philippines, Thailand, and Indonesia can learn from Singapore and Malaysia. There are big differences between these countries in terms of logistics performance, infrastructure, and quality of institutions. The continued push for the finalisation of an ASEAN single market is likely to help convergence, and this, coupled with domestic reform aimed at increasing institutional quality and logistics performance, will also be necessary to complement regional efforts.

## **Africa**

While Africa still accounts for a very low share of world trade, the region has exhibited remarkable dynamism over the last decade, with trade rising faster than in most developed and developing economies (UNCTAD, 2013a). Intermediate goods and services represent a relatively low share of imports and a high share of exports in the region, mainly due to Africa’s rich endowments in natural resources, weak industrial production, and the relatively low-income base.

Many African countries face important challenges in terms of scale and productivity that are necessary to integrate successfully into GVCs. These are exacerbated by fundamental problems related to the quality of infrastructure and institutions. International firms often put forward the absence of corruption, political stability, the credibility of reforms, and policy initiatives as pre-conditions to doing business, which taken together, lower the risk faced by suppliers, investors and exporters. Dealing with these issues should be a key priority in order to better integrate into the global system.

Additional policy measures should be pursued in parallel, such as increasing the scope and depth of regional integration, and pursuing a more active stance on multilateral liberalisation in order to avoid trade diversion and reduce the costs of sourcing competitive intermediates. The different regional economic communities in Africa have contributed to progress in reducing barriers to trade, although intra-regional trade still suffers from relatively high tariffs, incompatibility of rules

of origin across the different trading blocks, and implementation issues. Benefits are most likely to emerge from trade facilitation efforts, both in terms of soft and hard infrastructure. The African regions have the highest trade costs of all regions (both in terms of intra- and extra-regional trade), and it is here where special focus should be placed.

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