



## Policies for inclusion and sustainability

### Key findings

- **Developing countries would benefit from policies that spread the jobs and earnings gains from global value chain (GVC) participation across society.** Access to child care and training programs support jobs for women and youth, respectively. Smallholders need assistance, such as extension services and access to finance, to integrate into agricultural value chains. GVC lead firms, labor, and governments can work together to protect workers' safety and rights.
- **Industrial countries would benefit from adjustment policies for workers displaced by technology, trade, and the expansion of GVCs.** Placement services, training, and mobility support can help workers transition to more productive jobs.
- **Policy can mitigate negative environmental consequences and promote the adoption of environmentally friendly technologies.** Pricing the environmental costs of production and distribution appropriately will encourage conservation and cleaner technologies. In addition, regulation is needed for specific pollutants and industries.
- **These national measures can be complemented by global cooperation on the environment and working conditions.** Standardized international data will help expose poor production practices and induce firms to improve.

The policies and institutions that maximize the aggregate gains from participation in global value chains (GVCs) will not necessarily ensure that these gains are shared—across locations, across skill levels, and across different groups in society such as women and youth (chapter 3). They may even exacerbate the negative environmental consequences of GVCs (chapter 5). In this context, ensuring the inclusiveness and sustainability of the GVC model calls for considering policies in three areas that support broader gains among workers and mitigate their negative social and environmental consequences.

First, developing countries would benefit from policies that spread the jobs and earnings gains from GVC participation across society, thereby helping to lift the bottom 40 percent. For countries participating in agriculture value chains, policies that support the integration of smallholders are particularly important. As countries move into basic manufacturing, lower-skilled poor workers will benefit most from policies that support comparative advantage and incentivize investment in labor-intensive activities.

Policies should also support the inclusion of women and youth in GVCs, including by providing access to child care and training programs and by addressing legal and social barriers to employment and earnings. For example, in Côte d'Ivoire a project to develop the cashew value chain—supported by investments in feeder roads, reform of agricultural extension services, and improved access to finance—is expected to raise earnings for 225,000 smallholder farmers and create at least 12,000 processing jobs, with half going to women.

Significant shortfalls in worker safety standards are still common in the supply chains of many global brands, particularly among their second- and third-tier suppliers, as incidents such as the 2013 Rana Plaza garment factory disaster in Bangladesh attest. Although most global brands have developed social and environmental compliance standards for their global supply chains, broader initiatives bringing lead firms together with suppliers, trade unions, and civil society are becoming more common. For example, the International Labour Organization-International Finance Corporation (ILO-IFC) Better Work program, which covers nearly 2.5 million workers in 1,700 GVC-linked garment factories in eight countries, has demonstrated that improved compliance with labor standards can lead to higher productivity and profits. Meanwhile, governments are moving toward “binding due diligence,” whereby lead firms are legally responsible for compliance across their entire supply

chains. Yet a role remains for national governments to safeguard the protection of workers in GVCs through, for example, collective bargaining, freedom of association, and social dialogue.

Second, in advanced countries the welfare of workers left behind in communities where factories have closed is the primary threat to the sustainability of trade and GVCs. In response, labor adjustment policies can be used to ensure that workers have the skills to move to new industries and places. By contrast, using trade restrictions or rigid labor policies to protect existing jobs is unsustainable and will slow economic transformation and long-run income growth. Place-based interventions should take into account local endowments and favor targeted initiatives to address coordination failures over broad-based investment subsidies.

Third, policies can mitigate negative environmental consequences and promote the adoption of environmentally friendly technologies. An important first step is to set a price on environmental degradation. Prices of goods should reflect both their economic and socioenvironmental costs, and trade should be carried out based on comparative advantage that accounts for these costs. In addition to pricing, there is also a role for regulation, especially for specific pollutants and industries.

These national measures can be complemented by global cooperation to deal directly with the environment, as well as to ensure that trade agreements are consistent with environmental goals. International treaties such as the 2015 Paris Agreement on climate change include requirements on environmental protection for signatories at all income levels. Recent major trade agreements, such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the new European Union (EU) free trade agreements, include environmental provisions.

Finally, standardized international data on the environmental consequences of firms in GVCs can expose poor production practices and incentivize firms to improve.

## Sharing the gains

### Exploit comparative advantage to ensure jobs-rich investment in GVCs

Jobs are the most direct and important channel through which GVCs contribute to poverty reduction and shared prosperity. Chapter 3 describes the strong links between GVCs and job creation at both the national and the firm level. Importantly, it shows that

job growth in GVCs is associated with both greater use of imported inputs and greater use of technology. Thus, although the higher imported inputs and capital intensity of GVC production may mean less labor is needed per unit of output, the output boost induced by GVC participation means more jobs are created overall. Chapter 3 also points out that GVCs are, on the whole, inclusive; they are both pro-poor and a significant source of jobs for women. These positive outcomes can be facilitated by supportive domestic policies.

### ***Create jobs in sectors that absorb poor and low-skilled workers***

For many developing countries, particularly those selling only commodities, ensuring GVCs benefit the poorest will come primarily through integrating smallholders into agriculture value chains and home-based workers into manufacturing and services GVCs. Integration of smallholders is particularly important for Africa, where 55 percent of jobs and more than 70 percent of the earnings of the poor are reliant on the agriculture sector.<sup>1</sup>

As discussed in chapter 2, foreign direct investment (FDI) may play a critical role in supporting the development of agriculture value chains. Lead firms help solve many of the challenges of raising smallholder productivity by providing access to inputs, technical support, finance, and markets. The integration of smallholders with offtakers or directly with processors supports greater value addition at the farmgate through a range of services such as technology transfer, quality or certification premiums, and continual access to the market. For example, the rapid development of floriculture value chains across East Africa, which opened up many jobs and earnings opportunities for smallholder farmers and women in packing and distribution, was made possible through subcontracting models organized by lead firms.

Smallholder integration in GVCs is, however, not a panacea. A case study in Côte d'Ivoire and Ghana on participation in the pineapple and cocoa value chains found that, although participation leads to better growing processes, larger yields, and higher incomes for successful commercial farmers, it is also associated with an increase in casual labor hiring, as well as displacement of farmers from land because of their weak bargaining positions and scant knowledge of their rights to land ownership.<sup>2</sup> Moreover, the near-collapse of Ghana's export pineapple sector in the mid-2000s was due in part to smallholders' lack of organization, which contributed to overproduction and inflexibility in response to changing market demand.

Therefore, governments have an important role to play both in facilitating lead firm investment and in supporting smallholder integration in agricultural GVCs. Policies for the former include many of those discussed in chapter 7—notably, trade and investment policy and infrastructure. Policies for the latter include the provision of agricultural extension services, access to risk management instruments such as insurance, and assistance with convening and coordinating smallholders to exploit scale through cooperatives and other producer organizations.

Finally, as countries seek to move downstream from natural resources and integrate into manufacturing and services value chains, the objective of delivering jobs for the current stock of poor workers calls for policies that reinforce comparative advantage.<sup>3</sup> This means, for example, a relatively small, agriculturally rich country would focus on agriprocessing, or a large, low-skilled labor surplus country would implement policies conducive to attracting light manufacturing GVCs. For example, Côte d'Ivoire and Rwanda adopted strategies to expand agriculture value added and increase processing to raise returns to smallholder coffee farmers (box 8.1). Ethiopia, by leveraging FDI in industrial parks, developed labor-intensive light manufacturing to absorb labor transitioning away from agriculture. And Morocco upgraded to high-value manufacturing to create jobs for an underemployed skilled population. These strategies offer a contrast with strategies that attempt to promote the development of high-technology, innovation-driven value chain nodes—strategies that in the same countries, even if successful, would unlikely have significant impacts on lower-skilled workers and could contribute to wage polarization.

At the heart of policies that reinforce comparative advantage are those that minimize distortions of market prices—of land, labor, and capital—so that factors flow smoothly to the sectors and places where comparative advantage can be best exploited. These include economywide policies to support land market reforms, competition, open labor markets, and access to finance, along with investments in critical infrastructure.

In low-income, labor surplus countries with large pools of unskilled labor transitioning from the agriculture sector, externalities arising from the divergence between the market price and the opportunity cost of labor may call for additional targeted incentives for the private sector to invest in labor-intensive activities.<sup>4</sup>

## Box 8.1 Taking advantage of comparative advantage: Agribusiness GVCs deliver more and better jobs in Côte d'Ivoire and Rwanda

### Côte d'Ivoire's cashew value chain

Cashews are Côte d'Ivoire's third-ranking export after cacao and refined petroleum products, and they are an important source of cash for smallholders and processors in the poorer north of the country. Although Côte d'Ivoire produces 23 percent of the world's cashew supply, fewer than 7 percent of raw cashew nuts are processed domestically. Low yields and low quality are a result of poorly maintained plantations, lack of quality stock and inputs, weak extension services, losses in postharvest handling and storage, and lack of finance for improvements. With coordinated support from the World Bank and the International Finance Corporation, and working closely with the private sector, a comprehensive program to upgrade the cashew sector and increase domestic value addition was put in place. In 2017 the program established four cashew "platforms" and eight satellite hubs that provide training, access to inputs, and market information, along with processing demonstration units. The program was supported with access to new sources of finance for smallholders, notably through the introduction of a warehouse receipts system that enables processors to use unprocessed nuts as collateral for working capital loans. About 225,000 cashew farmers are expected to benefit from the upgrading and improved value chain integration.

Source: World Bank (2018).

### Rwanda's coffee value chain

In the late 1990s, as Rwanda looked to rebuild its economy and create jobs and earnings opportunities after a civil war, it faced structural challenges to developing internationally competitive tradables. For one thing, it is small and land-locked and in a poor and fragile neighborhood. The coffee

sector was historically the country's main export crop and a major source of earnings for up to half a million rural Rwandans. But at the end of the 1990s, fallout from the civil war helped put the sector on the verge of collapse because of the low quantity and quality of its product. To address this challenge, the country put in place a strategy, completed in 2002, to raise production and move to a higher value-added position in the coffee GVC. Working closely with the private sector and nongovernmental organizations, the government introduced a two-pronged approach: (1) upgrade technology and increase production and (2) boost skills and improve quality.

These interventions proved to be a critical turning point for the sector and spurred upgrading along the coffee value chain. The upgrading was manifested in more skilled farming techniques, better use of technologies, and higher productivity. During the first five years of implementing the National Coffee Strategy, private investment in coffee washing stations grew by an average of 120 percent a year in locations with the highest cherry availability (the fruit that contains the coffee bean), water supplies, and road linkages. The total number of coffee washing stations rose from just two in the entire country in 1998 to 299 as of early 2015. Meanwhile, the higher-quality coffee began to merit higher prices, with Rwandan coffee now fetching a premium in international markets. According to the U.S. Agency for International Development (USAID), as a result of the reforms in the coffee GVC, approximately 50,000 rural households have seen their incomes from coffee production more than double, and some 2,000 jobs have been created in coffee washing stations.

Source: Adapted from Karuretwa (2016).

### Create jobs for women and youth

The propensity of GVCs to employ women and youth is partly related to the sectors and activities that lend themselves to outsourcing and global relocation, which in turn are associated with some of the negative consequences of GVCs, especially those around low wages and poor working conditions. Nevertheless, the potential of GVCs to employ large numbers of young female workers means they may play a major role in supporting many countries' efforts to increase female labor force participation and reduce youth NEETs

(not in employment, education, or training). In Bangladesh, more than 3 million women, mainly young rural-urban migrants, gained employment in the garment sector as it integrated into GVCs in the early 2000s, contributing to an almost 10 percentage point rise in the rate of female labor force participation in just a decade.

Education and skills development policy is the starting point for helping youth to take advantage of the opportunities for employment in GVCs. The *World Development Report 2019: The Changing Nature of*

Work highlighted the rapidly changing demand for skills, along with the growing importance of advanced cognitive skills, sociobehavioral skills, and, most important, adaptability to changing circumstances and to “unlearn and relearn quickly.”<sup>5</sup> Research shows increasingly large payoffs from such adaptability—for example, in Armenia and Georgia the ability to solve problems and learn new skills yields a wage premium of nearly 20 percent.<sup>6</sup>

GVCs are at the forefront of these changing demands for skills, but in many if not most countries there remains a large gap between the needs of employers and the approaches of education and skills development institutions. Countries need to work toward a system that emphasizes the employability of youth and facilitates the transition from study to work. Promising policy directions include adoption of dual education systems that provide flexibility for combining general and vocational education, development of vocational training curricula with private sector participation to ensure relevance to employer needs, and expanded use of innovative apprentice models that give youth an opportunity to learn from working. Public-private models are often used to develop pathways to GVC-specific employment. For example, in Kenya the national coffee board and industry bodies have teamed up with Kimathi University of Technology to develop a coffee diploma program that combines classroom training on technology and quality management with an industry placement of three to six months.

Governments can help facilitate women’s access to jobs in GVCs by enacting policies that support women’s participation in the economy. Such policies could establish the legal and regulatory environment for access to quality child care, facilitate access to safe transport, as well as ensure that women are protected from unfair treatment. For example, recent research by the World Bank’s Women, Business, and the Law project shows that in the Middle East and North Africa region women have on average less than half the legal rights of men in measured areas. Box 8.2 highlights two contrasting approaches to integration of female workers in GVC factories—one that brought women workers to the factories and another that brought factories to women workers.

Private enterprises have a role to play through training and development programs and ensuring fair promotion practices. In Bangladesh, for example, an initiative in partnership with the ILO-IFC Better Work program developed, implemented, and evaluated an innovative training program for women operatives in

28 apparel factories. Of the 144 women who attended the training program, 92 were offered a promotion and higher salary within weeks of completing the program. The evaluation also found that average efficiency increased by 5 percent, and absenteeism fell in line where trained female supervisors worked.

### **Balance adequate wages with sustaining competitiveness**

The inclusivity and social sustainability of GVCs depend not only on the scale and distribution of jobs in GVCs, but also on the quality of those jobs. Here the concept of job quality incorporates both wages (or earnings more broadly) and working conditions, including working hours, benefits, the health and safety environment, treatment of workers, and the degree to which workers have voice and agency to help shape employers’ decisions on issues that affect workers. This concept is in line with Sustainable Development Goal 8 of United Nations Agenda 2030, which highlights the importance of ensuring improvements in working conditions—combining aspects such as productive employment, social protection, social dialogue, and rights at work—together with economic growth. The issue of job quality is particularly relevant to labor-intensive GVCs, where outsourcing to developing country locations is fundamentally motivated by the desire to access low-cost labor.<sup>7</sup>

Because many of the most prominent GVCs involve outsourcing of low-skill, labor-intensive activities, the very low nominal wages in some countries often grab the world’s attention. For example, recent news articles have noted that t-shirts are being produced for charities or high-profile brands in factories paying less than 50 cents an hour. Certainly, to readers in high-income countries where even the lowest-skilled factory jobs pay 20–30 times that level, this is a shockingly low wage. However, this does not necessarily mean that low wages are a problem in GVCs. As discussed in chapter 3, firms operating in GVCs tend to pay higher wages than firms operating in direct trade only.<sup>8</sup> What matters more is whether the wages on offer are in line with productivity and whether they offer a reasonable “living wage” for workers.

GVCs can be problematic if they contribute to the emergence of “low wage traps”—that is, where wage suppression is used to maintain international competitiveness. Although low wage traps are not inherent to GVCs, the globalized and footloose nature of GVC production in some sectors may make them more likely, particularly where lead firms in GVCs use international production cost comparisons to maintain

## Box 8.2 A tale of two economic zones: Initiatives to promote women's employment in garment GVCs in Bangladesh and Jordan

### Bangladesh

In Bangladesh, women's integration into the workforce of garment factories in export processing zones (EPZs)—mostly in Dhaka and Chittagong—was almost immediate. Because the EPZs were located in Bangladesh's largest cities, urban women faced somewhat lower transport and social barriers to working in GVC factories. The challenge in Bangladesh was how to make these same opportunities available to rural women for whom these constraints were binding. An innovative pilot project, the Northern Areas Reduction of Poverty Initiative, supported by the World Bank in cooperation with the Bangladesh Export Processing Zones Authority, brought women from the poorest regions of northern Bangladesh into Dhaka for training and employment in the EPZ-based garment factories. The program gave women and the local community the information and awareness they needed to overcome social stigmas. Women also received transport, living stipends, and comprehensive technical and life skills training, followed by employment. The results of the pilot were positive: more than 6,000 women (two-thirds of those who completed training) took up employment in the garment factories at earnings above the industry average. And positive spillovers from the pilot are evident. Many of the constraints of information and social norms have been overcome,

opening up new opportunities for other women in these northern villages.<sup>a</sup>

### Jordan

Jordan's qualified industrial zones (QIZs), established in the late 1990s, were expected to not only generate exports by integrating Jordan into the garment GVC, but also create large-scale employment for women in a country in which the female labor force participation is among the lowest in the world. The QIZs were able to attract investment and create jobs, but manufacturers faced large barriers in integrating local women into the factories in the QIZs because of lack of transport and perceptions of the safety and social acceptability of working in these factories. As a result, virtually all the jobs created for women in the initial stages of the QIZs were taken up by migrant workers, mostly from South and Southeast Asia. In response, the government created satellite production units in rural areas around the villages in which women resided, supported by substantial financial incentives for manufacturers to hire through these satellite units. The initiative, which was launched in 2010, has shown positive results, even if on a small scale: as of August 2017, approximately 3,300 jobs had been created in 12 satellite factories, with a 90 percent female workforce.<sup>b</sup>

a. World Bank (2017).

b. Davis (2017).

pricing pressure on suppliers in developing countries. Moreover, because GVCs can emerge as enclaves or dominant sectors in developing country economies, there is a risk that employers take advantage of monopsony and political power in labor bargaining. For example, in Bangladesh garment factory owners have managed, despite repeated large-scale protests, to avoid any real term increase in garment factory wages. Depressed wages can be particularly problematic for low-income workers in developing countries where GVC integration is associated with rapid urbanization and where housing and transport costs are rising far more quickly than overall inflation rates.

In this context, policies should protect workers' earnings while maintaining competitiveness to attract GVC investment. Collective bargaining can be an effective mechanism for negotiating the appropriate wage

levels. Minimum wages also play an important role. Virtually all countries have some minimum wage for regular workers, although it varies dramatically (even considering differences in purchasing power) from just \$2 a month in Burundi and Uganda to more than \$2,900 a month in Norway.<sup>9</sup> Minimum wages should be set at a level that, at the very least, protects workers from poverty and vulnerability,<sup>10</sup> while also keeping an eye on firm competitiveness. Perhaps most important, they should be raised at regular intervals and through a systematic and transparent process,<sup>11</sup> which includes tripartite social dialogue. Minimum wage indexation should be linked to both productivity growth and the cost of living, avoiding excessively sharp increases during significant economic downturns. Meanwhile, the impact of minimum wage on workers is unequal and depends on compliance and enforcement, as well

as the degree of segmentation between formal and informal workers. Thus a minimum wage should be seen as just one mechanism for supporting inclusivity in GVCs.

In some countries, distortions in the domestic market may drive a significant wedge between a living wage for workers and the wage at which firms can remain competitive in international markets. Government policy can help bridge this gap—over the medium term by addressing the market failure and over the short term by undertaking interventions that change relative prices. In South Africa, the government introduced a wage subsidy for youth workers and later extended it to all workers based in special economic zones (SEZs). Governments may also seek to raise net returns to workers by, for example, lowering the cost of transport to access jobs through transport subsidies or investments in public transport services or by lowering the costs of housing through social housing schemes or unlocking the constraints to private housing construction. Such instruments are often incorporated directly into SEZs, with SEZ-based employers routinely providing transport for workers and in some cases providing housing in on-site dormitories.

As countries shift from commodity and basic manufacturing GVCs to advanced manufacturing and innovation-based GVCs, wages are less fundamental to competitiveness. However, in many developing countries the problem is lack of a sufficient base of skilled workers (particularly technical workers), which in turn creates large wage premiums that not only contribute to polarization but also undermine competitiveness. Because skilled workers in these GVCs typically complement unskilled workers, the lack of skilled workers also has a negative impact on inclusion. Aside from the obvious role of education and skills-development policy, countries should be open to the immigration of skilled workers as a strategy for both competitiveness and inclusion.

### **Protecting the well-being of workers is about more than wages**

But workers care about more than just wages. Evidence from Vietnam shows that workers' reported well-being is affected also by incentive structures, benefits packages, training, absence of sexual harassment, strikes, and health and safety. Beyond wages, occupational health and safety affect well-being at four times the rate of any other measure of working conditions, such as number of hours worked.<sup>12</sup> Yet working conditions are commonly found to fall short of international standards in GVC supplier countries,

ranging from violations of core labor standards such as child labor, forced labor, lack of freedom of association, and exploitative and abusive practices to unsafe working conditions, low wages, excessive working hours, and precarious contracts. Although serious breaches of standards are becoming less common in the direct supplier networks of multinationals, they remain a problem and are rife in second- and third-tier suppliers. Widely publicized examples, such as the Rana Plaza disaster in Bangladesh in 2013, in which more than 1,100 garment workers lost their lives, and the Baldia textile factory fire, which killed close to 300 workers in Pakistan in 2012, are well known. However, below the radar millions of workers in globally linked industries work daily in vulnerable situations. Although poor working conditions in Dickensian factories tend to garner the most attention, similar problems exist in global commodity chains such as agriculture<sup>13</sup> and even in high-technology value chains, as confirmed by recent news reports documenting the casualization, discrimination, harassment, and retaliation encountered in some of the world's largest technology multinationals.

Many of the specific features of poor working conditions (particularly around workplace safety) are less a feature of GVCs themselves than of the labor markets in countries to which GVC activities are outsourced. In fact, like wages, working conditions in GVC-linked enterprises tend to be better on average than in those enterprises in the same country operating outside of GVCs. And yet aside from the fact that the GVC model enables global enterprises (and consumers) to profit from offshoring to avoid the costs of protecting workers, GVCs may also exacerbate the problems of poor working conditions by creating incentives for GVC-linked suppliers in developing countries to similarly seek to cut these costs. For example, an underlying factor in Bangladesh's Rana Plaza disaster was the common practice of first-tier suppliers subcontracting work to smaller, often informal, producers to reduce costs and avoid scrutiny from lead firms.

Even where developing countries have robust national policy regimes in place to support international labor standards, those regimes are ultimately only as good as their enforcement capacity. It is here that many developing countries come undone. Lack of technical capacity and financial resources, corruption, and distorted incentives are all powerful forces that undermine both national and private standards designed to promote quality jobs in GVCs. As countries engage more deeply in GVCs, investing in upgrading the capacity and governance of their labor regulatory regimes will be increasingly critical to both

protect workers and maintain the “national brand” for supply chain compliance.

In response to concerns about working conditions in GVC supply chains, over the last decade or more most global brands have developed social and environmental compliance standards for supply chains. Such initiatives, which increasingly involve global framework agreements between trade unions and multinational enterprises, have succeeded in improving working conditions, particularly those related to occupational health and safety and other measurable

standards. In recent years, the limitations of unilateral brand initiatives have been addressed somewhat by multistakeholder initiatives that bring together lead firms and suppliers, trade unions, civil society, and, in some cases, national governments. One example is the ILO-IFC Better Work program noted earlier and described in box 8.3.<sup>14</sup>

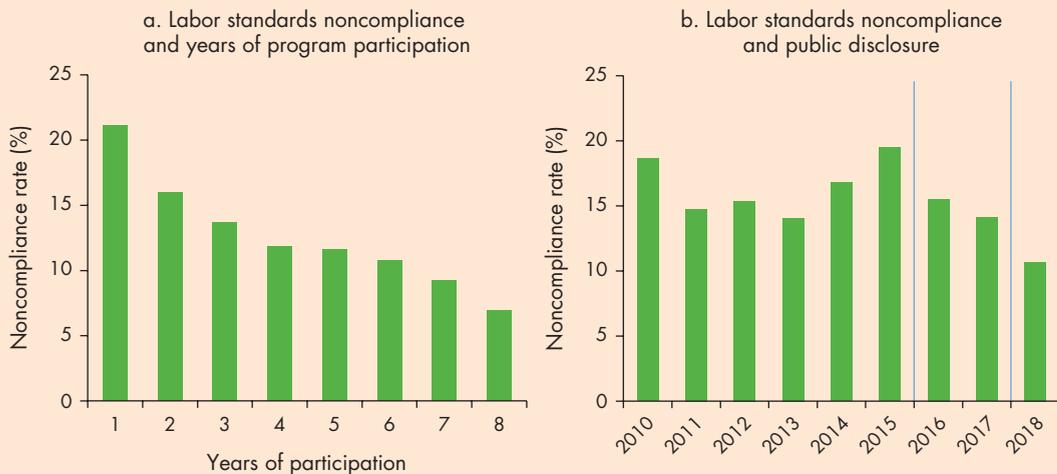
Despite the success of private and public-private initiatives, they are limited in scope and coverage. At the very least, national governments must play a supportive role in facilitating compliance through

### Box 8.3 Transparency promotes compliance with labor standards and improves working conditions

According to global evidence from the International Labour Organization-International Finance Corporation (ILO-IFC) Better Work program, garment factories in GVCs are more productive and more profitable when they comply with labor standards<sup>a</sup>—especially those aimed at ensuring freedom of association and collective bargaining,<sup>b</sup> improving workers’ sense of physical security and assurance of wage payments, and eliminating sexual harassment<sup>c</sup> and verbal abuse.<sup>d</sup>

Greater transparency on working conditions in GVCs plays a role in promoting compliance with labor standards. In Vietnam, for example, the noncompliance rates of firms in the apparel sector declined with each additional year of program participation (figure B8.3.1, panel a), and the introduction of a policy to publicly disclose the firms that fail to meet key labor standards has also improved firm compliance (figure B8.3.1, panel b).<sup>e</sup>

**Figure B8.3.1 Working conditions improved in apparel sector firms participating in the ILO-IFC Better Work Vietnam program**



Source: Hollweg (2019).

Note: Panel a plots the average noncompliance rate of firms for each year of program participation in Better Work Vietnam (2010–18). Panel b plots the average noncompliance rate of firms over time since Better Work Vietnam was launched in 2010. The policy of public disclosure of firms that failed to meet key labor standards was announced in 2015 and implemented in 2017. IFC = International Finance Corporation; ILO = International Labour Organization.

a. ILO and IFC (2016).  
 b. Brown et al. (2015).  
 c. Brown and Lin (2014).  
 d. Rourke (2014).  
 e. Hollweg (2019).

regulatory enforcement, even if their capacity is often weak. In addition, they can, in partnership with the private sector, support their GVC-linked enterprises, and especially small and medium enterprises (SMEs), in meeting the international standards on wages and working conditions.<sup>15</sup> A starting point is for countries to adopt international labor standards—notably ILO’s core conventions.<sup>16</sup> By doing so, countries send an important signal to GVC investors that they will not engage in a race to the bottom on wages and working conditions. To make the standards effective, however, countries need to strengthen the monitoring and enforcement capacity of labor inspection regimes and build robust labor market institutions, including support for collective bargaining, freedom of association, and social dialogue.

In addition, a shortcoming of most of the initiatives targeting working conditions in GVC supply chains is that they are nonbinding on the lead firm and tend to rely on a “name and shame” approach. Increasingly, however, governments in countries where lead firms are based are responding to demands from civil society to introduce “binding due diligence”—that is, lead firms are legally responsible for standards across their supply chains (including subcontractors), particularly around issues of labor and human rights, but potentially also with respect to the environment, industrial relations, consumer protection, and corporate governance. Most notably, in 2017 France enacted the Duty of Vigilance Law, which requires large French companies to publish and implement a vigilance plan in order to identify and prevent human rights risks linked to their activities. Other European countries are considering similar measures.

Some international trade agreements include specific provisions on labor rights.<sup>17</sup> For example, following its participation in the U.S.–Cambodia Bilateral Textile Trade Agreement (USCBTTA), Cambodia ratified the ILO conventions on forced labor, freedom of association, collective bargaining, discrimination, and child labor, with positive spillovers for labor conditions in apparel factories.<sup>18</sup>

## Managing adjustment

As highlighted in chapter 3 and recent research,<sup>19</sup> because GVC trade tends to strongly reinforce comparative advantage, lower-skilled workers in high-income countries, and the places in which they are concentrated, typically lose out as countries upgrade in GVCs. In this context, there is a role for policy to manage the adjustment process for workers who may be displaced during the transitions across GVC

development stages, as well as the places where those workers are concentrated.

### “Flexicurity” approaches can help manage adjustment while maintaining competitiveness

Labor market policies can provide a cushion when workers lose jobs and offer assistance in finding new employment. Income protection policies, such as unemployment and disability insurance, along with other forms of social protection, aim to mitigate the income losses of workers without taking steps to return them to work. And active labor market policies (ALMPs), including employment services (such as counseling, job search assistance, and intermediation), training, wage subsidies, and entrepreneurship programs are designed to match displaced workers with income-earning opportunities.<sup>20</sup>

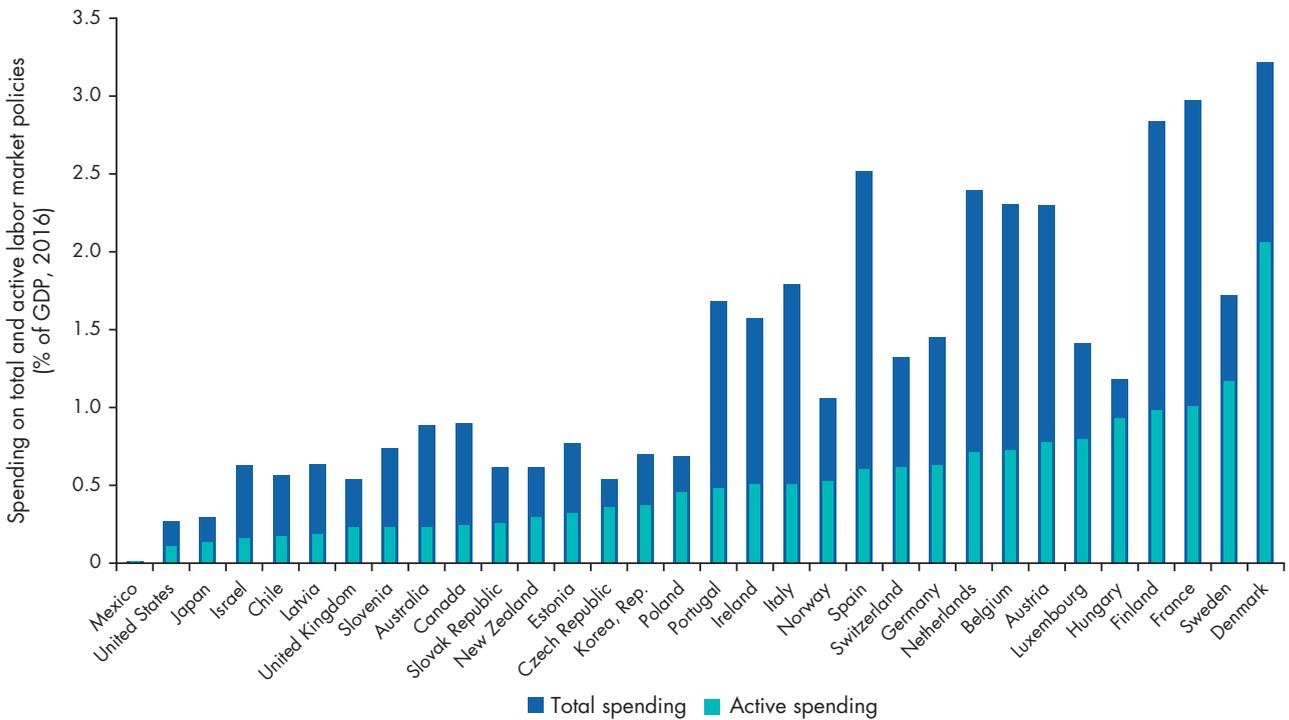
Because GVC employers need to compete in absolute terms in global markets, restrictive labor market policies can be a barrier to investment. To balance inclusion and competitiveness, countries may combine greater labor market flexibility (that is, limiting labor regulations that significantly restrict employers, while maintaining adequate protection of workers) with highly supportive social protection and complementary social insurance.

This approach, proposed in *World Development Report 2019*,<sup>21</sup> calls for a stronger and expanded socially supported minimum level of income, complemented by mandated social insurance and more flexibility in labor markets. For example, Denmark’s “flexicurity” model gives businesses the freedom to hire and fire workers with relatively limited restrictions, while providing a generous, broad-based unemployment benefit system that cushions the negative income effects on displaced workers. A key feature of Denmark’s system is the significant investment in active labor market programs to enhance employability and connect workers to jobs.

Despite having relatively low levels of unemployment, Denmark invests more heavily in labor market policies than other countries (figure 8.1). A large share of this spending is devoted to ALMPs to help workers in sectors or regions undergoing adjustments. By contrast, in the United States minimal, broad-based protection is the norm, and ALMPs are deployed narrowly for specific “trade adjustment assistance.”

Designing and delivering labor market programs remain a challenge, particularly in low- and middle-income countries. In these countries, lower formal education in the workforce limits the benefits of vocational training, higher labor market informality limits

**Figure 8.1** Denmark invests more than other OECD countries to support workers



Source: Adapted from Bown and Freund 2019.

Note: Data for France, Italy, and Spain are for 2015, and data for the United Kingdom are for 2011.

the reach of adjustment beyond the formal economy, and a weak institutional capacity limits the ability to ascertain eligibility and control fraud. Because such programs are expensive, they are also difficult to implement in countries facing significant fiscal constraints. However, evidence suggests that they pay off to both protect workers and maintain political support for open trade. Denmark, for example, has not experienced the kind of backlash against trade experienced by many industrial countries.

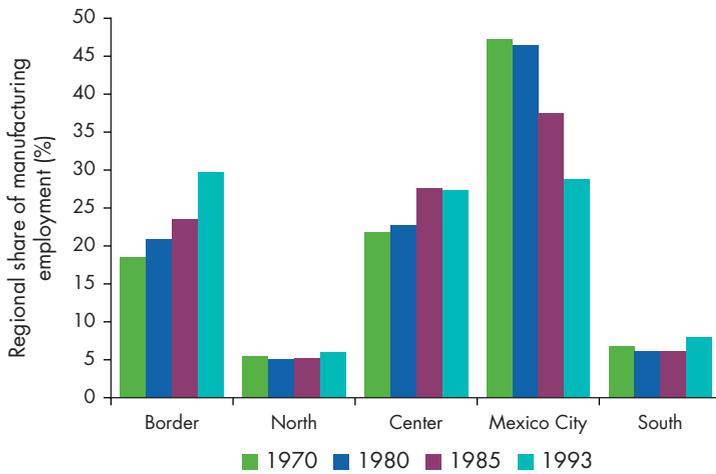
**Support for people in left-behind places can target services, skills training, and mobility**

The challenge of labor adjustment is fundamentally linked to the spatial distribution of economic activity in GVCs both across and *within* countries. These spatial patterns of development are relevant at the initial stages of GVC integration and throughout the stages of upgrading. As countries integrate globally, GVC investment tends to concentrate in the places within countries that are well connected to regional and global markets (figure 8.2). This concentration may aggravate existing disparities by reinforcing the competitiveness of leading regions, especially where large

infrastructure gaps and regulatory barriers prevent the integration of domestic markets.<sup>22</sup>

As a result, the dislocations that come with GVC adjustments do not happen just to people; they also happen to places. Examples are easy to find. Detroit and other Rust Belt cities in the United States have seen automotive and other machinery and equipment manufacturing offshored to lower-cost locations like Mexico. Similarly, industrial production has shifted out of places like northeastern France and Germany’s Ruhr Valley and toward locations in central and eastern Europe. In many developing countries, both former industrial hubs and agricultural hinterlands may no longer be able to rely on captive domestic markets—examples are Bulawayo in Zimbabwe and East London in South Africa. The effects can be long-lasting. Research in Brazil has found that regions affected by trade liberalization faced sharply lower formal sector employment and earnings even after 20 years.<sup>23</sup> Wherever places are facing adjustment, there has emerged a strong political imperative for targeted, place-based policies designed to create new sources of demand to absorb displaced workers in the short term and to shift the local economy onto a more sustainable path for the future.

**Figure 8.2 Industrial development was uneven across regions of Mexico during the period of strong international market integration**



Source: Hanson 1998.

Policies addressing these increasing regional inequalities must target the people in them, a principle that is set out clearly in *World Development Report 2009: Reshaping Economic Geography*.<sup>24</sup> Policy measures might include launching retraining programs and removing barriers to labor mobility, including lack of access to information on job opportunities and subsidies for relocation. China's relaxation of strict controls on internal mobility and the integration of Germany after 1989 are natural experiments that prove the positive effects of promoting labor mobility, not just on the individuals who migrate, but also on the places both receiving *and* sending migrants.

Spatially targeted interventions work best when designed with a clear understanding of the structural conditions of the region. Regions that are peripheral and sparse in population may well have niche opportunities that can be exploited, but interventions should give priority to raising welfare, strengthening human capital, and promoting mobility. By contrast, regions that have sufficient density and relatively good market access are candidates for place-based interventions that aim to overcome coordination failures blocking investment and preventing the formation of productive agglomerations.

The traditional subsidies used to attract (usually foreign) investors to regions lagging or suffering from trade adjustment have largely been ineffective, for several reasons. For one thing, the level of subsidy required to overcome constraints such as poor infrastructure, distance to markets, and lack of agglomeration is usually infeasibly large. For another, there

is a major risk that, with fiscal incentives, regions within the same country will engage in territorial competition and a race to the bottom. The fiscal wars fought by Brazilian states competing for global automotive investment in the 1990s are instructive. Investment subsidies amounted to massive transfers to private—mainly foreign—investors at a huge fiscal cost but with a limited impact on job creation, no guarantees of sustainability through development of local supply chains, and the potential of undermining the competitiveness of the overall sector.<sup>25</sup> Moreover, governments face risks in offering large incentives to attract investment in footloose activities such as garment manufacturing, which may relocate quickly in response to political factors, global market conditions, or the removal of subsidies such as recently for Foxconn and Amazon in the United States.

Recent proposals have called for shifting from targeting investment broadly to deploying a geographically targeted wage subsidy or a hiring tax credit that directly targets job creation in regions that are affected by trade adjustment or are otherwise lagging.<sup>26</sup> Such approaches may indeed be effective for supporting increased investment and targeted employment, as discussed previously in this Report. However, because they do nothing to change the structure of the local economy, they are likely to be effective only in the short run in the absence of complementary interventions.

## Environmental sustainability

Chapter 5 highlights how GVCs can have significant negative environmental impacts. These impacts include both the aggregate global effects of GVC-oriented production and distribution systems and the place-specific effects of the concentration of GVC activities in a country or region. And yet, as outlined in chapter 5, GVCs also offer opportunities to support environmentally sustainable production models, especially if countries adopt appropriate policies. Building environmental sustainability directly into both the production and governance models guiding GVCs will be increasingly critical to their ongoing viability. That effort will require a combination of appropriate pricing, regulations, and cooperative arrangements.

Both pricing environmental degradation and mandating sustainable production, in particular for local pollutants, are needed to counter the negative impacts on the environment of the scale and composition effects discussed in chapter 5. Effective policy support in the form of carbon taxes or tradable emissions permits, regulations such as low-carbon fuel standards, and restrictions on the use of fossil fuels are needed.

For example, the International Maritime Organization (IMO) has committed to an energy transition in shipping to zero-emissions fuels.<sup>27</sup> The combination of taxes on shipping fuels and regulations could support fully exploiting the existing energy efficiency potential and developing alternative fuels and other innovative solutions. The challenge, however, is that ships are highly mobile: they travel mostly in international waters and can easily be registered anywhere. Thus regional or—ideally—global cooperative solutions are preferable.

### **Pricing environmental degradation**

Pigouvian taxes equivalent to the environmental harm inflicted by an activity (for example, a tax on carbon) would reduce the use of energy and lead to more innovation in energy-efficient products. Not pricing the environmental costs implies a subsidy for fuels. Using the difference between existing and efficient (inclusive of environmental costs) prices, the International Monetary Fund (IMF) estimates that the unpriced externality caused by fossil fuels is more than 10 times the direct financial subsidy.<sup>28</sup>

What can countries do? Many still have energy subsidies in place that lead to excess pollution. The subsidies are often regressive because the poor tend to have smaller houses and fewer appliances and thus use less energy. Removing explicit fuel subsidies shifts business incentives away from energy-intensive production toward labor. Shifting from a system that is subsidizing carbon emissions or is neutral to taxing those emissions is optimal.

To minimize distortions of trade, the most efficient implementation of a carbon price would be through an international agreement on a “carbon price floor.”<sup>29</sup> Universal adoption may, however, suffer from free-rider problems for public goods. Some observers have suggested that incentives to join the agreement could be strengthened if participating countries agree to grant preferential access to each other’s markets.<sup>30</sup>

Countries can also act unilaterally. To maintain competitiveness, they can tax the consumption of pollution-intensive goods rather than their production (box 8.4). Different forms of consumption-based carbon pricing are available, but a simple design consistent with trade law is to tax carbon in much the same way that countries use corrective taxes for tobacco or alcohol—they apply a consumption-based excise tax. In many countries, both imported and domestically produced alcohol are taxed alike when they are consumed within the country, but alcohol headed for export is exempt from the tax. This way, corrective taxes can be applied unilaterally without

harming external competitiveness and in compliance with trade law.<sup>31</sup>

The same policy design could be used for taxing the environmental costs of traded commodities. For example, a country could tax carbon-intensive aluminum by setting an excise tax according to the social cost of the emissions typically released per ton of the metal. The tax would be levied at the same rate for all aluminum used in the country, but not for exports. The efficiency of the tax scheme could be further improved by granting output-based tax rebates to domestic and overseas firms that adopt low-emissions production techniques.

Despite the clear efficiency of a carbon tax, its feasibility from a political perspective is far from guaranteed. Unlike regulations, which hide the additional costs to consumers, carbon taxes are very visible. In late 2018, when France announced an increase in fuel taxes in part to help the country transition to renewable energies, it stoked a reaction from the *gilets jaunes* (or yellow vests) movement (according to French law, all vehicles must carry yellow vests in case of emergency). Large, at times violent, protests broke out across the country, led by commuters—many from rural areas—and those in the transport industry. Protesters argued that the rise in fuel taxes imposed a disproportionate burden on the poorest in society, particularly those living in nonurban areas who were already suffering from stagnating incomes and poor public transport services. Meanwhile, large multinationals—deemed to bear greater responsibility for rising emissions worldwide—could find ways to minimize their tax burden and still reap large profits. Ultimately, the government was forced to withdraw the proposed tax increase.

### **Mandating more sustainable production**

Countries can also use regulatory (command-and-control) policy to deal with externalities from traded commodities, especially to maintain clean water, prevent overfishing and overfarming, curb emissions and specific pollutants, and reduce the production of disposable, single-use goods. For example, agricultural runoff contaminated with high levels of pesticide and fertilizer residue, as well as organic matter and sediment, is the primary source of water pollution in many countries, particularly high-income and middle-income ones. A 2018 report by the Food and Agriculture Organization (FAO) on the topic identifies the regulatory measures needed to reduce agriculture-related water pollution, such as water quality standards and pollution discharge permits.<sup>32</sup> China, the world’s largest pork producer, adopted new laws in 2015 to manage runoff from pig farms and to

## Box 8.4 Cost-effectiveness and equitability of environmental regulation

The year 2020 marks the 100th anniversary of British economist Arthur Pigou's description of environmental pollution as "externalities" and his suggestion that they be addressed with taxes.<sup>a</sup> Pollution taxes are more cost-effective than other types of environmental regulations—that is, such taxes reduce pollution the most per dollar of cost or, equivalently, taxes cost the least per ton of pollution reduced. They are also more robust to tax evasion than direct taxes and are a fiscally efficient means of domestic resource mobilization because their coverage extends to the informal sector.

Despite that cost-effectiveness and despite the advocacy of such taxes by economists, policy makers worldwide have largely chosen other types of regulations over pollution taxes. Many claim that the burden of paying pollution taxes would be unfair, or regressive, falling disproportionately on poor households and poor countries. But the evidence that pollution taxes harm poor people is not straightforward. Richer people are indirectly responsible for more pollution because they spend more money and consume more goods whose production generates pollution. Thus if one follows Pigou's 100-year-old advice and taxes pollution, rich households would pay more than poor households in absolute terms. But that spending on polluting goods may constitute a larger share of poor households' incomes. In relative terms, then, those tax payments could fall disproportionately on the poor. Which effect prevails varies across economies. In lower-income countries, these taxes tend to be regressive, with overall positive effects on equity.<sup>b</sup> Furthermore, a proportion of the environmental tax burden may fall onto capital factor incomes. Since capital is highly unequally distributed, studies considering these General Equilibrium effects find a progressive impact.<sup>c</sup>

Source: WDR 2020 team, based on Levinson (2019).

Note: Data are from the 2009 National Household Travel Survey, conducted by the U.S. Federal Highway Administration (<https://nhts.ornl.gov/>). Data include all 101,000 households surveyed, including those without vehicles.

a. Pigou (1920).

b. Dorband et al. (2019).

c. Beck et al. (2015); Dissou and Siddiqui (2014); Metcalf and Hassett (2012); Rausch, Metcalf, and Reilly (2011).

That general argument—that pollution taxes are worse for poor households—fails to consider the case in their favor for two further reasons. First, it ignores what happens to the tax revenues. If revenues are distributed to rich households or used to fund programs that mostly benefit rich households, they would, of course, be regressive. But if the revenues are paid to or fund programs for poor households, that can offset the higher tax burden on poorer people. If the revenues are divided evenly, there would be a net benefit to poorer households. Poor consumers would pay more in taxes as a share of their income, but would receive an even larger share of the dividends.

A second shortfall of the regressivity argument is that policies enacted in lieu of pollution taxes can be worse for poor households, no matter what is done with the revenue. Consider energy efficiency mandates—the type of technical rules that require appliances, buildings, and vehicles to use less energy in their operation. For vehicles, these take the form of fuel economy standards that amount to a tax on gas guzzlers and a subsidy for efficient cars. Whereas a gas tax targets fuel directly, a fuel economy standard effectively taxes vehicles based on their fuel-consuming attributes.

If U.S. households were taxed based on the vehicles they own in a way designed to mimic a fuel economy standard and raise the same revenue as a \$0.29 a gallon gas tax, poor households would pay an extra \$92 a year and rich households an extra \$260. Even if all the revenue were refunded evenly, or if the tax subsidy combinations were designed to be revenue neutral, poor households' net tax rebates would be lower with the fuel economy standard than the gas tax. Fuel economy standards are therefore both less cost-effective and less progressive than Pigou's 100-year-old, mostly disregarded suggestion.

institute more efficient, sustainable farming methods. In fisheries, quota systems are used to prevent overfishing, although there is concern that quotas, which are based on commercial considerations, may be too high to prevent the depletion of certain fish stocks. The European Union has committed to basing all fishing quotas on scientific advice (the "maximum sustainable yield") by 2020.<sup>33</sup>

How to reduce and eliminate the consumption of disposable goods such as single-use plastics is a

growing concern. The European Union announced in March 2019 that single-use plastics will be banned as of 2021 and has implemented a target to recycle 90 percent of plastic beverage bottles by 2029. Canada announced a similar measure in May 2019, banning single-use plastic items such as bags, straws, cutlery, and stirring sticks as of 2021. Many more countries have long imposed bans on single-use plastic bags, including Bangladesh (2002), Kenya (2017), and Rwanda (2008). In Kenya, the acts of manufacturing

and importing plastic bags incur penalties ranging between \$19,000 and \$38,000 and jail terms of up to four years. Although some large firms have announced the elimination of certain single-use plastics in their supply chain, government measures are needed to achieve broad-based change across society.

Developing countries sometimes worry that environmental policies would be to their economic disadvantage. However, the economic literature over the last 30 years on “double dividends” and the “economic co-benefits of environmental policies” finds that internalizing external costs through fiscal policy raises economic development more often than it deflects it.<sup>34</sup> It is precisely in those economic circumstances characteristic of developing countries—informality,<sup>35</sup> difficulty in raising domestic tax revenue,<sup>36</sup> a highly distorted preexisting tax system,<sup>37</sup> and high air pollution levels,<sup>38</sup> among others—that the probability of a double dividend is higher.

Other policies can be used to further stimulate sustainable production and consumption. For example, a number of governments are exploring feebates, which combine a surcharge for energy-inefficient production with rebates for energy-efficient production.<sup>39</sup> Policy makers also need to take into account behavioral biases to changing habits. People may stick to old habits for lack of sufficient incentives to switch to more sustainable production or consumption. They may also not be aware of better alternatives. In this latter case, labels and certification schemes for sustainability standards can help. Standards, and in particular private standards, play an increasingly important role in GVCs.

A private sector solution to externalities from traded products is sustainability certification. Such certificates were first issued in the timber market, specifically as a solution for trade, and now they are spreading to other commodities. Sustainability certificates can greatly improve the sustainability of trade, but they also have their limits. Governments are increasingly recognizing the importance of working with large international corporations and other private sector actors to help them establish and phase in higher standards in their production networks. In some cases, governments and stock exchanges are making mandatory sustainability reporting by large multinationals and their suppliers.<sup>40</sup>

### Using trade policy and agreements?

In most countries, import tariffs and nontariff barriers are substantially lower on dirty industries than on clean industries, measured as carbon dioxide (CO<sub>2</sub>) emissions per dollar of output.<sup>41</sup> These dirtier

industries, such as fuel, tend to be located upstream in the value chain and face lower tariffs (as discussed in terms of tariff escalation in chapter 7). The greater environmental protection of downstream industries is explained by the fact that downstream industries lobby for relatively low tariffs on their inputs and relatively high tariffs on competing goods. If countries applied similar trade policies to clean and dirty goods, global CO<sub>2</sub> emissions may decline substantially without a fall in global real income.<sup>42</sup>

In addition to greater market access, countries upstream in the chain may be reluctant to raise environmental standards because of fear of losing investors. This reluctance leads to a “regulatory chill” in which regulatory progress stalls across policy areas that affect foreign investors. The extent of a regulatory chill is a function not of whether firms will actually relocate, but of whether governments believe their threats to do so.<sup>43</sup> Evidence from the economic literature (and the World Bank’s operational experience) indicates that governments tend to believe these threats, even when they are not credible.<sup>44</sup> International investment agreements, especially those with investor-state dispute settlement (ISDS) provisions, seem to be particularly vulnerable to regulatory chill.<sup>45</sup> A solution is not to forgo ISDS provisions, which can help compensate for weak institutions, but to exclude environmental and health provisions.

Both international climate agreements and trade and investment agreements can be used to help address the risk of regulatory chill and to implement environmental regulations. International treaties such as the Paris Agreement include ambitious commitments for environmental protection and emissions reduction. Recent trade agreements have taken into account the need for environmental policy. Countries that do not adhere to environmental commitments risk losing the preferential market access in the agreements. Deep trade agreements also increasingly include environmental provisions. For example, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) has an environmental chapter that promotes sustainable fisheries (see chapter 9). And new agreements include trade-exposed industries in environmental policies without the need for exemptions for competitiveness problems and without violations of trade law.<sup>46</sup>

### Encouraging green goods and environmentally friendly production?

Production subsidies are typically considered distortionary because they encourage production above the

efficient level. They are especially worrisome in industries such as agriculture and mining, where overuse is particularly harmful to the environment. However, if the good or production process has a positive externality, the standard argument changes.

In particular, there is a possible argument for subsidizing green goods, especially in industries where costs fall with higher production. The electric vehicle sector, for example, was fostered by government interventions tailored to stimulate supply and demand in both China and the United States. Indeed, such subsidies hastened the economic viability of the sector. Similarly, deployment incentives have been important for solar photovoltaic firms in China, Europe, and Latin America, especially for new projects. But such incentives must be weighed carefully because they can distort trade and become fiscally burdensome to governments.

Trade agreements on environmental goods can also promote their use, effectively lowering their cost relative to other goods. In the summer of 2014, a group of nearly 50 members of the World Trade Organization launched negotiations to reduce tariffs on green goods. Relatively few developing countries signed on because their tariffs tend to be relatively higher on

the targeted goods and the agreement would have required more liberalization from them. In addition, the large countries could not agree on the final list of products. The agreement therefore remains stalled. And yet the goals of the agreement remain desirable: increase trade, reduce the price of environmental goods, and reduce CO<sub>2</sub> emissions. If the agreement one day becomes a multilateral one, the magnitude of the identified impacts would increase substantially.<sup>47</sup>

Chapter 7 discusses the role that SEZs and industrial parks could play in stimulating GVC production. For their part, governments could induce GVC firms to opt for industrial parks that encourage the use of environmentally friendly production techniques. Worldwide, more than 300 industrial parks now consider themselves to be eco-industrial parks (EIPs)—a number that is expected to rise. In many countries, governments have become more conscious of green approaches to manufacturing, and lead firms, concerned about their reputation, are eager to improve the sustainability of production (box 8.5).

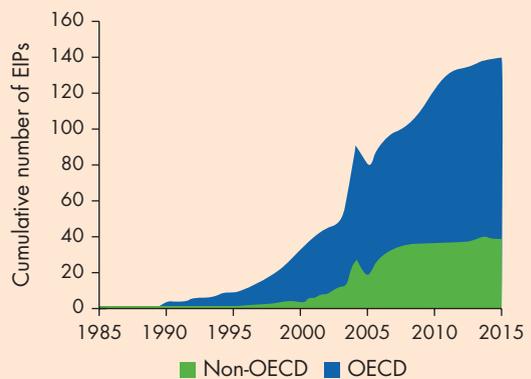
Finally, better metrics are needed for monitoring environmental practices to understand problem firms, industries, and regions and encourage upgrading. Transparent, consistent, and standardized

### Box 8.5 Green industrial parks support sustainable production and attract better investors

In 2018, 40 countries, including Argentina, Bangladesh, China, Colombia, the Arab Republic of Egypt, India, Indonesia, the Republic of Korea, Lebanon, Mauritania, Morocco, Thailand, Turkey, and Vietnam, were home to more than 300 eco-industrial parks (EIPs) and special economic zones (SEZs).<sup>a</sup> (Figure B8.5.1 shows the worldwide growth in the number of EIPs from 1985 to 2015.) Because in many countries a high share of export-oriented industrial production is located in industrial parks located in SEZs, a correspondingly high share of industrial emissions originates from them—not only air and water pollution but also greenhouse gases. For three reasons, then, SEZs and industrial parks are relevant to pollution control and GVCs.<sup>b</sup>

First, GVCs are now in a position to create strong incentives for more sustainable production in SEZs. A major issue for many developing countries is attracting foreign investment, diversifying export baskets, and creating better jobs. But in many old-style SEZs, the environmental standards

**Figure B8.5.1** The number of eco-industrial parks grew rapidly from 1985 to 2015



Source: Kechichian and Jeong 2016.

Note: EIPs = eco-industrial parks; OECD = Organisation for Economic Co-operation and Development.

(Box continues next page)

## Box 8.5 Green industrial parks support sustainable production and attract better investors *(continued)*

were low, with an industrialization model based on the attractiveness of low production costs and taxes. Under emerging laws on sustainability reporting, companies with headquarters in many industrialized countries are liable for risks along their value chains. To reduce those risks and ensure the traceability and quality of final products, companies are now seeking more transparency along value chains.

Second, as in other policy areas, SEZs offer an avenue for policy experimentation in making industrial parks sustainable. New environmental policies and disciplines can be implemented in a more manageable environment, such as promoting recycling, provisioning renewable energy and other green infrastructure, constructing environmentally friendly buildings, and reusing and commercializing waste products. Because waste reuse and energy cogeneration can be designed to link firms within the same SEZ, some of these policies can take advantage of the ecosystem aspects of SEZs (industrial symbiosis).

In a bid to address the negative environmental impacts of the concentration of industrial production, the World Bank, in partnership with the United Nations Industrial Development Organization (UNIDO) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ),

developed in 2017 an international framework to guide policy makers in establishing environmentally sustainable EIPs. Meanwhile, EIPs are becoming increasingly important for overcoming sustainability challenges within the scope of the United Nations' Sustainable Development Goals. Countries such as Denmark, France, Japan, and Korea, among many others, have leveraged EIPs to promote more inclusive and sustainable action to improve industrial competitiveness in line with climate change goals.<sup>c</sup>

Third, from the perspective of an industrial park operator or developer, offering environmentally sustainable facilities is an opportunity to attract higher-quality and higher-paying tenants, which GVC firms tend to be. With thousands of industrial parks globally, operators are seeking a more sustainable and competitive operating environment in order to differentiate themselves from the more basic industrial parks. For example, Hawassa industrial park in Ethiopia adopted zero-liquid discharge technologies for wastewater treatment to attract high-end apparel manufacturers. Vietnam recently issued guidelines for improved environmental performance in its industrial parks. These approaches improve socioenvironmental performance without the need for more regulations.

a. Kechichian and Jeong (2016); UNIDO, World Bank, and GIZ (2017).

b. Special economic zones are spaces in a country intended to attract industrial production by offering companies locating there special concessions on taxes, tariffs, and regulations. Chapter 7 describes SEZs in more detail.

c. UNIDO, World Bank, and GIZ (2017).

information on how firms produce is not available. Multiple sets of sustainability standards exist, from public to private and from mandatory to voluntary, but they are not standardized, and ratings of the same firms often differ widely across them. An international agency tasked with these ratings could shed light on firms' activities and offer incentives for changes in behavior.

## Notes

1. Beegle, Coudouel, and Monsalve (2018).
2. Elbehri and Benali (2013).
3. Lin (2012).
4. Robalino and Walker (2017).
5. World Bank (2019b, 72).
6. World Bank (2019b).
7. ILO and IFC (2016).
8. McMillan and Verduzco-Gallo (2011); Shingal (2015).
9. World Bank's Doing Business database (2018). See appendix A for a description of the databases used in this Report.
10. Increasingly, many jurisdictions are including calculations of a living wage in efforts to establish the level of a minimum wage.
11. Kuddo, Robalino, and Weber (2015).
12. Domat et al. (2013).
13. Barrientos et al. (2016).
14. Hollweg (2019).
15. ILO (2016, 2017).
16. Covering freedom of association, right to collective bargaining, elimination of forced and compulsory labor, abolition of child labor, and elimination of discrimination with respect to employment and occupation.
17. Evans (2019).
18. Wetterberg (2011).
19. Farole, Hollweg, and Winkler (2018).
20. Bown and Freund (2019).
21. World Bank (2019b).

22. Farole (2013).
23. Dix-Carneiro and Kovak (2017).
24. World Bank (2009).
25. Rodriguez-Pose and Arbiz (2001).
26. Austin, Glaeser, and Summers (2018); Hendrickson, Muro, and Galston (2018).
27. IMO (2018a, 2018b).
28. The estimates are based on a price gap analysis that takes as the reference price a calculation of externalities based on detailed country data. This calculation controls for the true comparative advantages for hosting polluting industries, such as having a low population density or (more controversially) a low value of statistical life. For estimates, see Coady et al. (2017, 2019), and for the method for calculating them, see Parry et al. (2014).
29. Cramton et al. (2017); Farid et al. (2016); Weitzman (2017).
30. Gollier and Tirole (2015); Nordhaus (2015).
31. Trachtman (2017).
32. Mateo-Sagasta, Zadeh, and Turrall (2018).
33. "Managing Fisheries," Common Fisheries Policy, Directorate-General for Maritime Affairs and Fisheries, European Commission, Brussels, [https://ec.europa.eu/fisheries/cfp/fishing\\_rules\\_en](https://ec.europa.eu/fisheries/cfp/fishing_rules_en).
34. Pigato (2019).
35. Bento, Jacobsen, and Liu (2018).
36. Liu (2013).
37. Parry and Bento (2000).
38. Parry, Veung, and Heine (2015).
39. Fay et al. (2015).
40. See World Business Council for Sustainable Reporting "Reporting Exchange" for a database on mandatory regulation in sustainability reporting. <https://www.reportingexchange.com/> and [https://www.cdsb.net/sites/default/files/cdsb\\_report\\_1\\_esg.pdf](https://www.cdsb.net/sites/default/files/cdsb_report_1_esg.pdf).
41. Shapiro (2019).
42. Shapiro (2019).
43. Neumayer (2001).
44. Zarsky (2006).
45. Examples include countries allowing mining in forest protection areas (Brown 2013; Gross 2003) and repealing science-based environmental regulations on oil mining because of threats of investor-state disputes (Tienhaara 2011).
46. Böhringer, Rosendahl, and Storrosten (2017); Trachtman (2017).
47. European Commission (2016).

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