ILO/SIDA PARTNERSHIP ON EMPLOYMENT

STRUCTURAL TRANSFORMATION FOR INCLUSIVE GROWTH AND PRODUCTIVE EMPLOYMENT

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Drawing upon 10 country studies of labour markets, this brief examines the specificities of structural transformation in different country contexts, while also setting out a few issues and debates in relation to the topic. It concludes with a number of policy implications, common among them the need to place greater emphasis on ensuring that the movement of workers across sectors is accompanied by both quantitative and qualitative improvements in employment in order to ensure that structural transformation is inclusive.

I. INTRODUCTION

The 2030 Agenda for Sustainable Development highlights the importance of structural transformation. Sustainable Development Goal (SDG) No. 8 on promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all includes a target to "achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors", while Goal No. 9 on building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation contains a target to "promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries."

The importance of structural transformation was also reaffirmed recently in the ILO Centenary Declaration, adopted at the 108th Session of the International Labour Conference. The Centenary Declaration calls upon Member States to promote full and productive employment and decent work through inter alia (i) trade, industrial and sectoral policies that promote decent work, and enhance productivity, and (ii) investment in infrastructure and in strategic sectors to address the drivers of transformative change in the world of work.

The reallocation of factors of production (capital and labour) from one economic activity to another has long been considered central to development. Kaldor (1966, 1967, 1968) emphasized the interactions among economic sectors in the growth process of modern economies, arguing in particular that manufacturing is the main engine of growth. Kuznets (1971) identified structural transformation as one of the six characteristics of modern economic growth. Herrendorf et al. (2013) have highlighted that considering an economy's sectoral composition is critical to understanding a number of economic and labour market outcomes, including income convergence, productivity and wage inequality.

The path of structural transformation in today's high income countries has typically entailed an initial shift from agriculture to industry and then services. As has been well documented, many developing countries are not following the classical path, experiencing a shift from agriculture to services, bypassing manufacturing, which has been termed "premature deindustrialization" (Dasgupta and Singh, 2006). Such a trajectory has led to concerns that these developing countries are precluded from benefitting from the ability of the manufacturing sector, through its spillover effects, to raise overall productivity and employment in an economy. For example, Felipe et al. (2014) examine 53 economies and identify a significant relationship between the historical peak of manufacturing employment and ensuing levels of per capita income: a one percentage point difference in peak manufacturing employment share is associated with a subsequent GDP per capita that is 13 per cent higher. In a sample of 118 countries, Rodrik (2016) finds that there is no systematic tendency at the aggregate level for countries with lower levels of labour productivity to grow more rapidly and hence converge over the long run to levels in more developed countries. However, he finds such a tendency and convergence only in the manufacturing sector.

This brief has been prepared by Kee Beom Kim with inputs from Sukti Dasgupta, David Kucera and Fernanda de Mattos, based on 10 country studies on the Sustainable Development Goals, conducted as part of the ILO/Sida Partnership Programme.

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On the other hand, Baghwati (2011) argues that services can provide an alternative "engine of growth" in light of the increasing tradability of services and potential for increasing returns. Ghani and O'Connell (2014) in turn find labour productivity convergence in services, in addition to manufacturing. Dasgupta and Singh (2005), Dasgupta, Kim and Pinedo Caro (2017) and Kucera and Jiang (2019) take a more nuanced view, with services having the potential to act as both a leading and a lagging sector in terms of driving aggregate labour productivity growth. This is particularly so because within the heterogeneous service sector there are high productivity subsectors, such as finance and business services, as well as traditional and non-market subsectors. The high productivity subsectors among services, however, often have a relatively small share of employment and therefore may not have the same scale effect as manufacturing.

The concerns over premature deindustrialization have been compounded in recent years in particular by the development of automation technologies. While technological advances could provide an opportunity for developing countries to leapfrog over old technologies and arrive at a new development pathway, there are also concerns that increasing automation may foreclose a proven development pathway. For example, while the global stock of industrial robots is highest in developed countries – with robot density per 10,000 employees highest in the Republic of Korea (Figure 1, panel A), they are projected to be installed at the highest annual rate in developing countries (Figure 1, panel B). The latter is probably a reflection of the continuing decline in the cost and increasing dexterity of robots, and could have repercussions on manufacturing employment generation in developing countries (Autor and Salomons, 2018).

Figure 1, panel A. Number of installed industrial robots per 10,000 employees in manufacturing industry, 2017

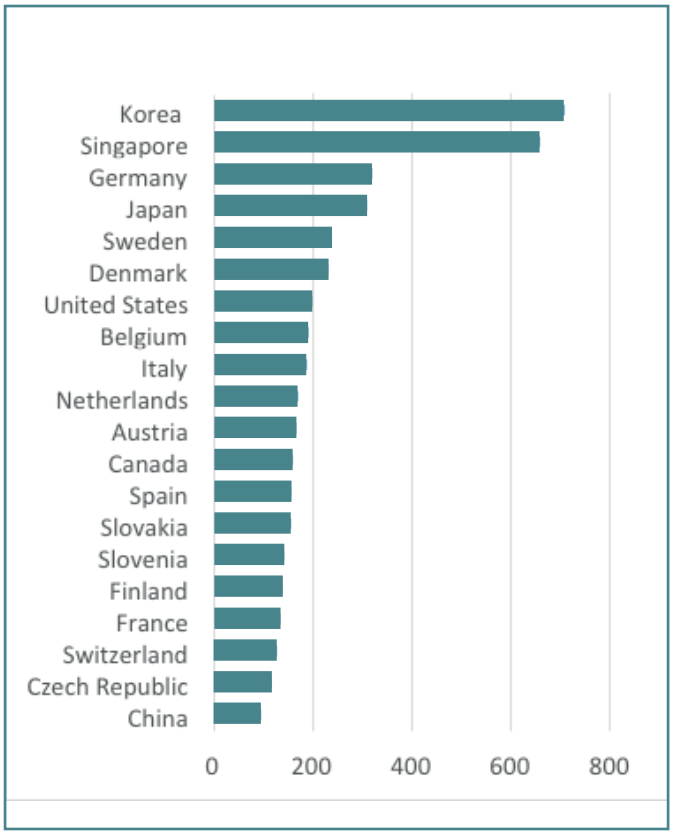
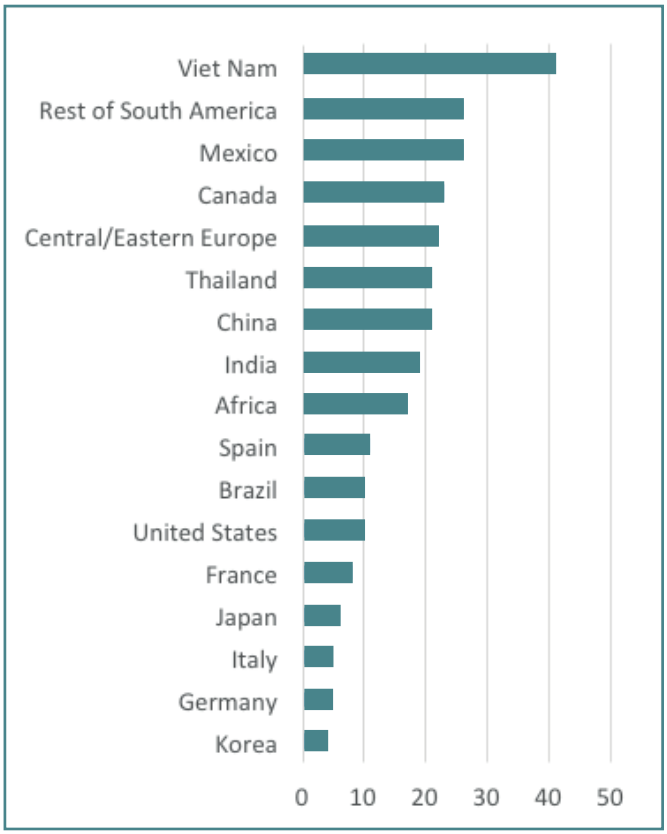


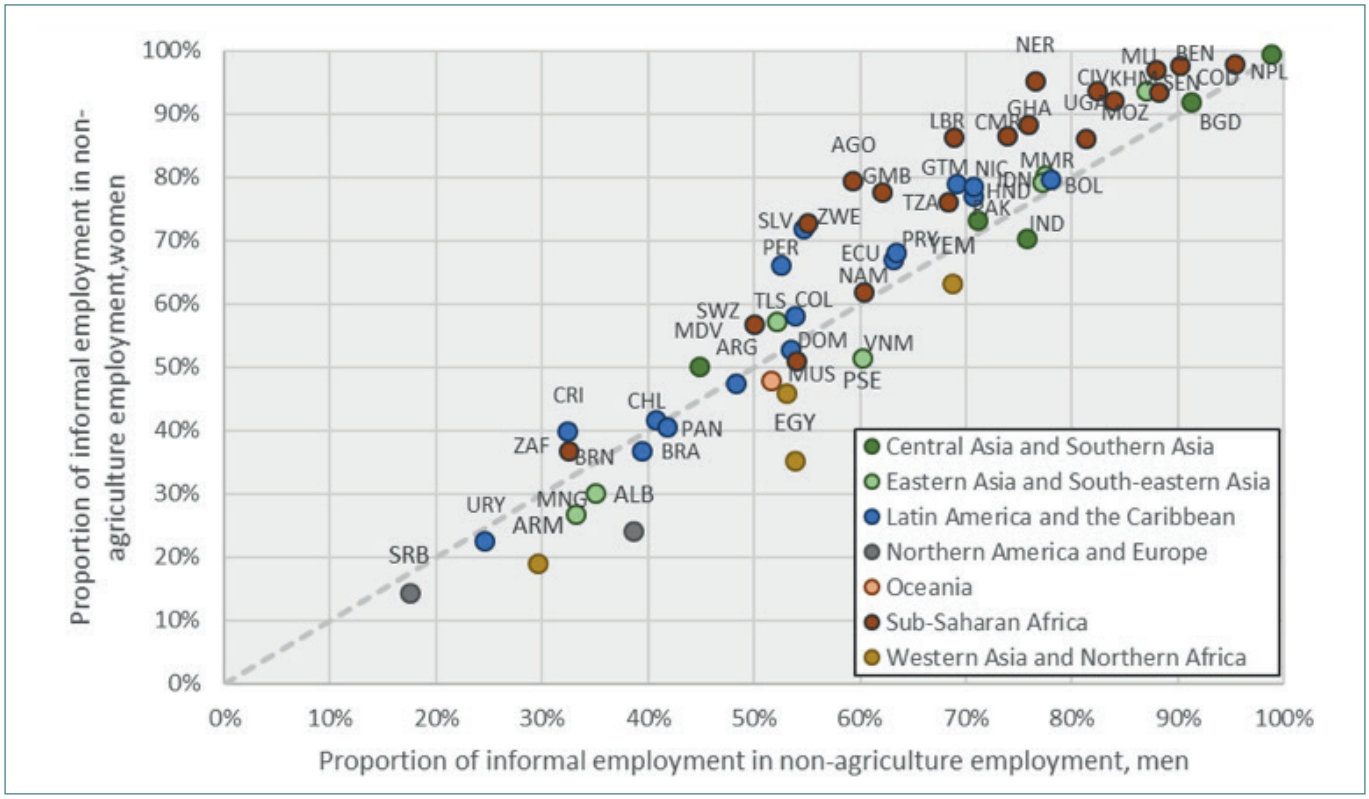
Figure 1, panel B. Projected compound annual growth rate in annual shipments of robots, 2019–21 (%)



Source: International Federation of Robotics (IFR), World Robotics 2018.

These developments are occurring at the same time as continued challenges in relation to several labour market outcomes that are closely linked to the structural transformation process, including informality. In fact, in Lewis' (1954) dual economy framework, the pattern of structural transformation was the gradual transfer of surplus labour in agriculture to modern non-agriculture. Informality in non-agriculture has also remained widespread, however: three-quarters of all persons employed in non-agriculture are in informal employment in 35 per cent of the countries with available data. Moreover, challenges associated with urban informal employment – first identified in the 1970s in fragmented economy models such as that of Fields (1975) and others building on Harris and Todaro (1970) – remain critical today. Furthermore, informality has a strong gender dimension, with the share of informal employment in non-agriculture higher for women than for men in most countries with available data (Figure 2). Relatedly, sectoral patterns of employment also have a strong gender dimension, highlighting the need for careful consideration of the gender implications of structural transformation and in policies aimed at facilitating and managing the process (see Kucera and Tejani, 2014; Esquivel, forthcoming; and related brief on gender and structural transformation).

Figure 2. Proportion of informal employment in non-agriculture employment by sex (ILO harmonized estimates), latest year available for each country (%)



Source: ILO, based on ILOSTAT.

Another critical factor with implications for policies to promote and manage structural transformation processes today concerns the need to address all three dimensions of sustainable development, economic, social and environmental, as reflected in the 2030 Agenda. In this context, whereas historically today's high income countries arguably transformed at the expense of the environment (UNCTAD, 2012), today's developing and emerging countries must strive to achieve a pattern that promotes economic growth substantive enough to generate productive employment and improved well-being, while avoiding putting more pressure on environmental resources (Islam and Iversen, 2018; UNIDO, 2017). The importance of environmental sustainability in structural transformation is identified, for instance, in SDG Target No. 8.4, which aims to improve resource efficiency in production and decouple economic growth from environmental degradation; Target No. 9.2 on promoting inclusive and sustainable industrialization; and Target No. 9.4 on greater adoption of clean and environmentally sound technologies and industrial processes.

II. PACE AND PATTERN OF STRUCTURAL TRANSFORMATION IN SELECTED COUNTRIES

Countries around the world have experienced significantly different paces and patterns of structural transformation in the past few decades. In some of the selected countries presented in Table 1, agriculture continues to account for the largest share of employment, including in Ethiopia (66.2 per cent), India (43.9 per cent) and Rwanda (66.6 per cent). In all the other countries, services account for the largest share of employment, with the share highest in Portugal and Costa Rica (69.1 per cent). In Egypt, India and Portugal, approximately a quarter of total employment is in industry. India in particular has experienced the most rapid increase in the share of employment in industry, which rose by 9.4 percentage points between 1991 and 2018, though often in the informal economy. The share of employment in agriculture declined by approximately 20 percentage points in India, the Philippines and Rwanda, and at the same time the Philippines and Rwanda experienced the most rapid expansion in the share of services in total employment, rising by 17.8 and 15.7 percentage points, respectively.

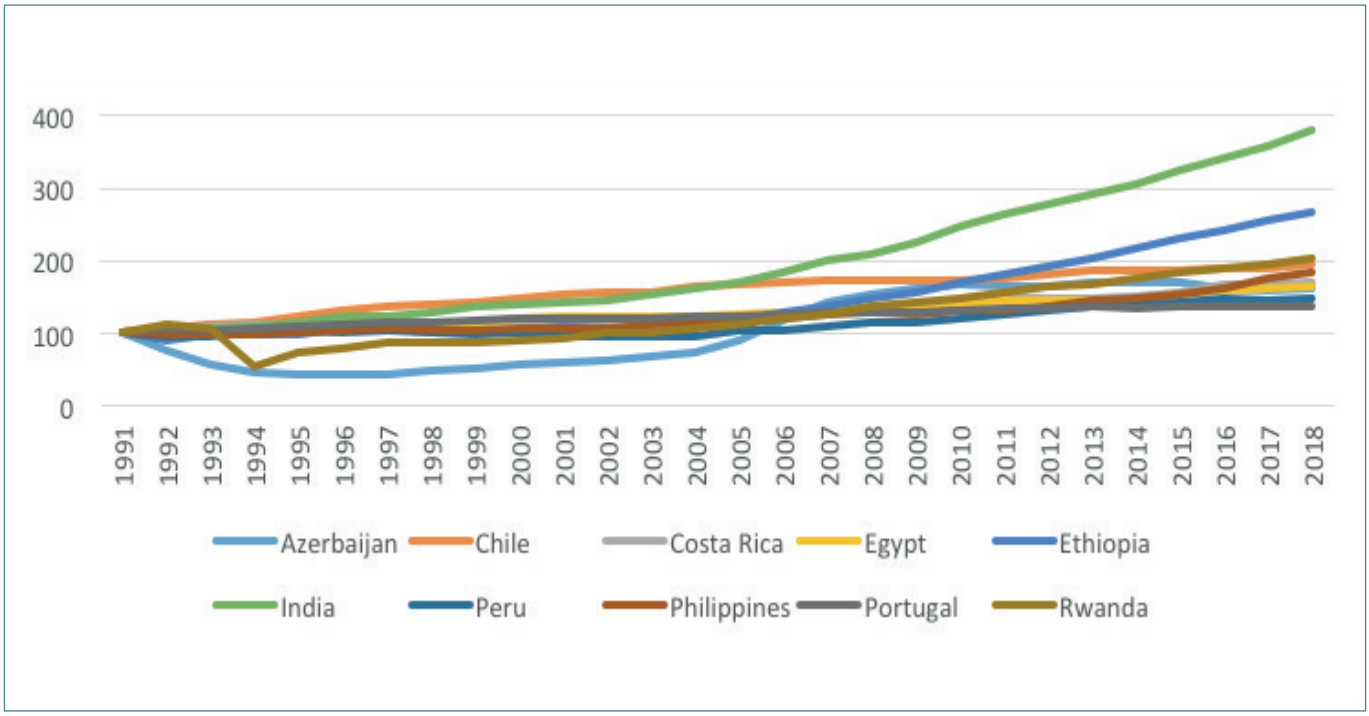
TABLE 1- EMPLOYMENT BY SECTOR, SELECTED COUNTRIES, 1991–2018 (% OF TOTAL EMPLOYMENT)

	1991			2000			2010			2018		
	AGR	IND	SERV	AGR	IND	SERV	AGR	IND	SERV	AGR	IND	SERV
Azerbaijan	43.8	11.1	45.1	41	10.9	48.1	38.2	13.7	48.1	36.1	14.4	49.5
Chile	19.1	26.3	54.6	14.4	23.4	62.2	10.6	23.0	66.4	9.2	22.7	68.1
Costa Rica	17.0	24.5	58.5	15.8	23.5	60.7	11.4	20.0	68.6	12.5	18.4	69.1
Egypt	38.6	21.5	39.8	29.6	21.3	49.1	28.3	25.4	46.3	24.9	26.6	48.6
Ethiopia	78.1	6.0	15.9	76.4	6.8	16.8	73.9	8.0	18.1	66.2	12.0	21.8
India	63.0	15.3	21.7	59.6	16.3	24.0	51.1	22.4	22.6	43.9	24.7	31.5
Peru	37.1	14.7	48.2	34.7	14.5	50.8	27.7	16.9	55.4	27.5	15.6	56.9
Philippines	45.3	16	38.7	37.1	16.2	46.7	33.2	15.4	51.4	25.2	18.3	56.5
Portugal	11.7	33.3	54.9	12.7	34.4	52.9	11.2	27.3	61.5	6.3	24.6	69.1
Rwanda	88.5	2.7	8.9	88.3	2.5	9.2	77.3	5.8	17.0	66.6	8.8	24.6

Source: ILO modelled estimates, November 2018.

The varied patterns of structural transformation have led to different outcomes in terms of labour productivity growth, as measured in output per worker (Figure 3). India has witnessed the largest increase by far in labour productivity, almost quadrupling between 1991 and 2018. Ethiopia and Rwanda, two countries that, like India, also experienced a significant decrease in the share of agriculture and an increase in the share of employment in industry of least 6 percentage points, also saw their levels of labour productivity approximately double.

Figure 3. Output per worker (GDP constant 2011 international $ in PPP), selected countries, 1991–2018 (Index, 1991=100)



Source: ILO modelled estimates, November 2018.

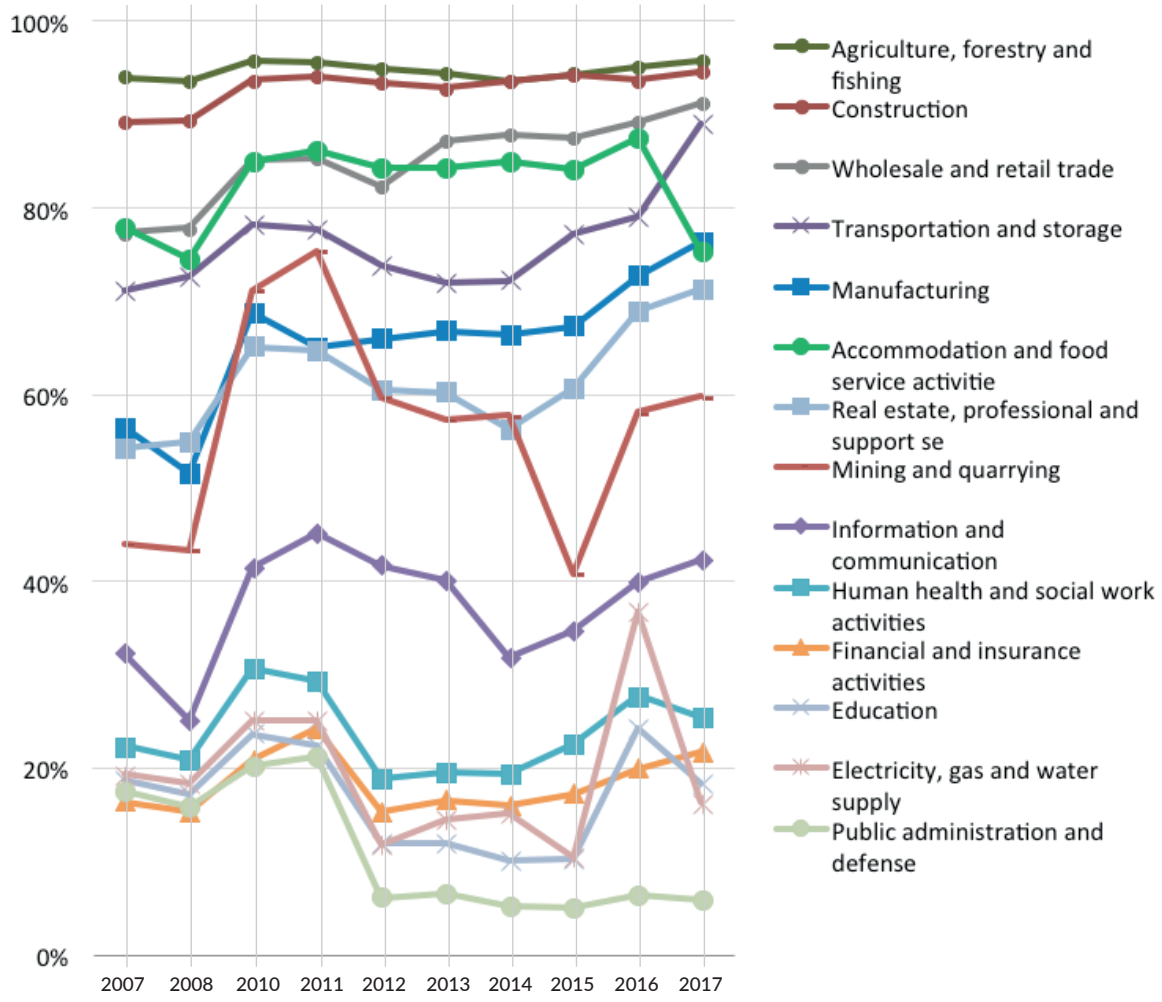
While India has achieved very high rates of productivity growth in recent decades, and such growth has improved returns to workers by increasing their consumption, there has not been significant change in the distribution of the qualitative structure of employment (Majid, forthcoming). The majority of labour reallocations that have led to aggregate productivity increases has been from within the unorganized economy and not from the unorganized to the organized economy.[1] Similarly in Egypt, structural transformation, which has principally been from agriculture to low productivity services, has not been accompanied by an improvement in the qualitative structure of employment. Between 2007 and 2017, a period of social discontent and political instability, the share of precarious jobs increased in the vast majority of sectors, further accentuating the strong sectoral dimension of precarious work (Figure 4).[2] In 2017, over 90 per cent of work in agriculture, construction, trade and transportation was precarious, while precarious work accounted for between 50 and 75 per cent of work in manufacturing, accommodation, real estate and mining.

While Ethiopia and Rwanda continue to face a number of development challenges, their progress to date highlights the importance of transforming agriculture through focussed investments (see Box 1), while at the same time undertaking concerted efforts to promote off-farm employment and the growth of productive employment opportunities outside agriculture, including in the digital economy.

1 According to the India National Sample Survey Organization (2001), the organised sector comprises enterprises for which the statistics are available regularly from the budget documents, annual reports in the case of public sector enterprises and through the Annual Survey of Industries in the case of registered manufacturing. On the other hand, the unorganized sector refers to those enterprises where data collection is not regulated under any legal provision and / or which do not maintain any regular accounts.

2 Precarious work here is defined as individuals receiving wages who meet any of the following conditions: working poverty; time-related underemployment; irregular employment; unprotected or informal work. See Fedi et al. (forthcoming).

Figure 4. Precarious work by economic activity, Egypt, ages 15–64, 2007–08 and 2010–17 (%)



Note: Data for 2009 are omitted.

Source: Fedi et al. (forthcoming).

BOX 1: AGRICULTURAL DEVELOPMENT–LED INDUSTRIALIZATION IN ETHIOPIA

Ethiopia's first generation of development strategies, called Agricultural Development–Led Industrialization (ADLI), were launched in the 1990s to address the numerous challenges facing the country, including pervasive working poverty and widespread subsistence agriculture. The ADLI was based on the notion that agricultural productivity growth (especially among smallholders) would stimulate industrial demand through (a) higher rural incomes; (b) lower food prices in urban areas; (c) increased savings in rural areas, leading to mobilization of capital for domestic industry; and (d) the expansion of domestic markets for non-agricultural goods. The policy also aimed to encourage investment in industries with most production linkages to agriculture/rural areas (Dercon and Gollin, 2019; Moller 2015).

The effective implementation of the strategy, however, began only in 2002, which marked the beginning of a period of unprecedented and sustained economic and agricultural growth. The current Growth and Transformation Plan 2015–20 (GTP-II) continues to emphasize the importance of agricultural productivity growth, but also identifies industrialization, to be driven by export demand, in addition to rising agricultural incomes (Manyazewal and Shiferaw 2019).

Source: Ronnas and Sarkar (forthcoming).

Rwanda's stellar productivity and poverty-reduction performance, for example, has been accompanied by a decrease in the share of independent farmers (from 85.0 per cent in 2000–01 to 53.2 per cent in 2016–17) and an increase in both wage farm (from 3.6 per cent in 2000–01 to 15.9 per cent in 2016–17) and wage non-farm jobs (from 7.3 per cent in 2000–01 to 21.0 per cent in 2016–17) (Table 2). Concurrently, the Government of Rwanda is also making significant investments in the information and communications technologies (ICT) sector, aiming to become an ICT hub in the region, and transforming the country into the most connected country in Africa (Malunda, forthcoming). As a result, the growth in employment in the transport and communications sector has been one of fastest, expanding by almost 80 per cent between 2005–06 and 2016–17.

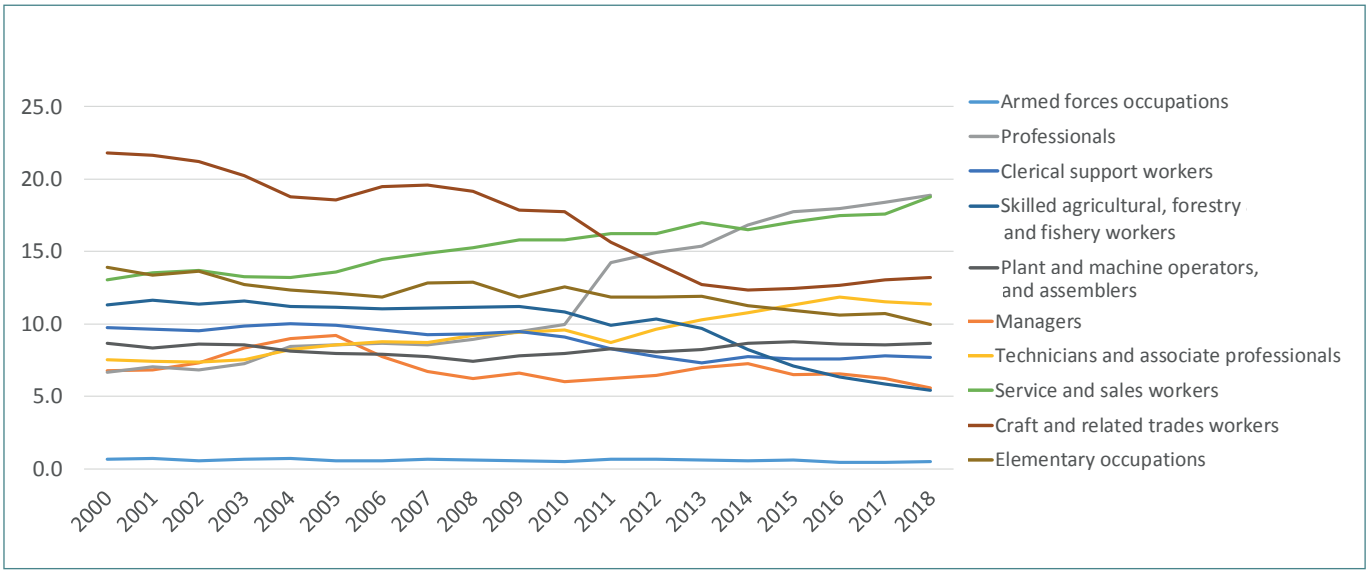
TABLE 2- SHARE OF TOTAL EMPLOYMENT BY JOB TYPE, RWANDA, 2000/01–2016/17 (%)

	2000–01	2005–06	2010–11	2013–14	2016–17
Wage farm	3.6	8.2	11.9	12.2	15.9
Wage non-farm	7.3	10.9	18.7	20.8	21.0
Independent farmer	85.0	71.3	56.5	54.6	53.2
Independent non-farmer	3.7	8.1	11.5	11.2	8.9
Unpaid non-farmer and others	0.5	1.6	1.3	1.2	1.0

Source: Malunda (forthcoming), based on Rwanda Integrated Household Living Conditions Surveys 2000–01, 2005–06, 2010–11, 2013–14, 2016–17.

Structural transformation in Portugal is also continuing to change the occupational structure of the labour market (Figure 5). The share of "craft and related trades workers" in total employment declined by 9 percentage points from 2000 to 2018, while the share of "professionals" increased by 12 percentage points during the same time. The share of "service and sales workers" and "technicians and associate professionals" also saw gradual increases.

Figure 5. Distribution of employment by occupation, Portugal, 2000–18 (%)



Source: Escária (forthcoming), based on National Statistical Office, Labour Force Survey.

Unlike many of its Southeast Asian peers, in the Philippines the political conflict and the acute power shortages in the 1980s and early 1990s prevented the country from fostering structural transformation through extensive participation in regional production networks (RPNs), driven by foreign direct investment from Japan and subsequently strengthened by the emergence of China as a global production hub (Yap et al., forthcoming). In recent decades, however, the Philippines has also taken advantage of advances in information and communications technologies, and their increased tradability, to develop the business process outsourcing (BPO) sector, the revenues from which in 2016 were estimated at 7.5 per cent of GDP (see Box 2).

BOX 2: BUSINESS PROCESS OUTSOURCING (BPO) IN THE PHILIPPINES

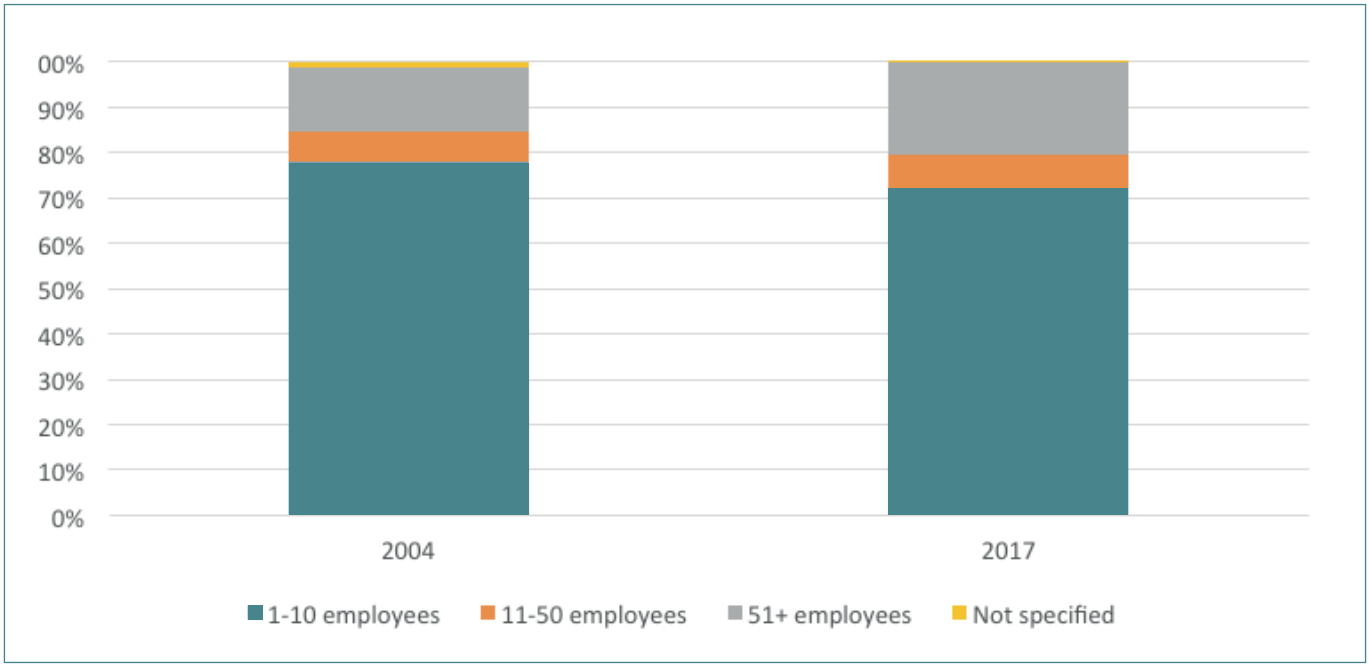
The BPO sector, while representing a relatively small 2 per cent of total employment in the Philippines in 2016, has grown remarkably in recent decades with the support of government policies. In particular, the sector has played an important role in providing jobs for young women and men. Nearly 85 per cent of call centre workers are college undergraduates, while nearly 13 percent are college graduates. On the other hand, animation BPOs, which typically require more advanced skills, hire mostly college graduates for entry-level positions (72 per cent). Similarly, college graduates usually fill entry-level positions in medical transcription (68 per cent) and computer-related activities, including software development (55 per cent). More than half (54 per cent) of total employed persons in the BPO sector are female. Furthermore, almost 70 per cent of those employed in the sector are in customer relationship management activities, 13.2 per cent are in sales and marketing, while 6.4 per cent are in computer programming activities. As the sector develops further, there is recognition of a need to move up to the higher productivity and higher skilled segment of the BPO sector. The Information Technology and Business Process Association of the Philippines (IBPAP) forecasts that the share of low-skilled BPO workers will decline from 47 per cent in 2016 to 27 per cent in 2022, while that of middle- and high-skill occupations will increase to 46 per cent and 27 per cent, respectively, up from 38 per cent and 15 per cent in 2016.

Source: Yap et al. (forthcoming), based on Philippine Statistics Authority data.

Integration into global/regional value chains has been an active strategy of economic transformation in Costa Rica. Traditional exports, such as coffee and bananas, dominated in the 1960s, but by leveraging foreign direct investment, exports of industrial goods and those from free trade zones (FTZs), such as electronics, accounted for 71.3 per cent of merchandise exports in 2016 (Sauma, forthcoming). In 2015, FTZs generated around 82,000 direct formal jobs (Medaglia Monge, 2016), accounting for less than 5 per cent of total employment in the country. Similar to Costa Rica, Chile has diversified its export base since the 1960s, when mining represented the vast majority of exports. By 2018, industrial products accounted for almost 40 per cent of total exports (Pinto, forthcoming). Nonetheless, diversification of the economy remains a challenge as copper continues to account for half of all exports, leaving the country and its workers vulnerable to external shocks and volatile commodity markets.

Diversification of the economy also remains a challenge in both Peru and Azerbaijan. In Peru, approximately half of total employment is in agriculture and wholesale and retail trade, restaurants and hotels, two sectors with the lowest levels of productivity. This concentration of employment in the least productive sectors also manifests itself in terms of employment by firm size, with over 70 per cent of employment in enterprises with between 1 and 10 workers. This experienced only modest changes between 2004 and 2017 (Figure 6).

Figure 6. Employment by size of enterprise, Peru, 2004 and 2017 (%)



Source: León (forthcoming), based on Peru National Institute of Statistics and Informatics (INEI).

In Azerbaijan, following the collapse of the Soviet Union, the economy began to stabilize towards the end of 1990s, when oil exports began. As oil production accelerated, so did its economy, with economic growth in excess of 25 per cent between 2005 and 2007. These oil revenues enabled the country to make progress on a wide range of socioeconomic fronts but the extremely high dependence on oil – accounting for 90 per cent of total exports – also set the stage for an economic crisis and a severe devaluation of the local currency in 2015, when oil prices declined steeply. Since the recent crisis, in recognition of the need to diversify its sources of growth, Azerbaijan has focused on increasing investment in agriculture (including processing agricultural products), tourism, and in establishing industrial and technological parks.

III. POLICY IMPLICATIONS

A number of policy implications emerge from examining the various structural transformation pathways. For countries that have a large share of employment in agriculture, and especially subsistence agriculture, the experiences of Ethiopia and Rwanda illustrate the importance of supporting a shift to a more modern market-oriented agriculture with higher returns to labour and land by strengthening the skills of agricultural workers, facilitating access to land, agricultural services and credit, improving infrastructure and enhancing farm efficiency. Concurrently, efforts are needed to strengthen the value chains associated with agriculture, including for example in food and beverage manufacturing, to create more opportunities for non-farm employment. Such job opportunities can strengthen the linkages between the subsistence and monetized economies, while at the same time providing relatively more accessible productive employment opportunities for those leaving subsistence agriculture or by supplementing incomes from on-farm activities. Furthermore, productive employment opportunities in promising sectors will need to be identified and nurtured through appropriate employment policies on the basis of dialogue and consultations between governments, workers and employers in order to absorb those leaving agriculture and new entrants into the labour force (see Box 3 for methods of identifying promising sectors). In such policies, the qualitative structure of employment needs to be considered, in addition to its quantitative element.

BOX 3. METHODS FOR IDENTIFYING POTENTIALLY PROMISING PRODUCTS AND CORRESPONDING SECTORS

There are a number of approaches to identifying promising products and corresponding sectors in order to support export growth and structural transformation, including (i) the growth identification and facilitation framework (GIFF) (Lin, 2012); (ii) the economic complexity (EC) and product space (PS) method (Hausmann and Klinger, 2006; Hidalgo and Hausmann, 2009; Hausmann et al. (2014); and (iii) the export potential and product diversification indicators of the International Trade Centre (ITC) (Decreux and Spies, 2016).

The GIFF aims at identifying potentially promising sectors by benchmarking the exports of another country that had similar per capita incomes 20 years ago while having high rates of GDP growth rates. The sectors that have moved into or fallen out of the benchmark country's top exports are examined to provide an indication of export market opportunities.

The EC and PS method also seeks to identify potentially promising sectors through multi-dimensional and detailed analyses of export data. Economic complexity provides an indication of the capabilities required in the production of a product, while product space, by examining how easy it is to obtain the capability required to make another product, identifies a trajectory that countries can take to diversify.

ITC's export-potential indicator takes into account the supply, demand and ease of trade of existing export products, while the product diversification indicator is intended to help countries identify export opportunities in new rather than established sectors.

Source: Kucera et al. (2020).

Many countries around the world, including Azerbaijan, Chile and Peru, also remain highly dependent on commodities or limited economic diversification, with poor linkages with the rest of the economy. Using the wealth generated from commodities to expand employment opportunities and productivity growth in non-resource tradeable sectors remains a challenge. Investments in infrastructure, including digital infrastructure, in addition to being a generator of jobs in its own right, can play a role in nurturing linkages between economic sectors. Global and regional value chains provide an opportunity for countries to expand demand and jobs but participation is often limited to low value added activities. Supporting the growth of microenterprises and their efforts to become more innovative through public policies can play an important role in addressing informality, in addition to enhancing productive employment opportunities.

Structural transformation in many countries, such as Costa Rica, the Philippines and Portugal, has been towards services, and an increasing number of workers around the world are engaged in the sector. The challenge for many countries, including Egypt and India, is to ensure that such services-led transformation is channelled into higher-productivity services rather than into services subsectors in which differences in labour productivity compared with agriculture are not significant and where informal employment prevails. Increasing the productivity of these services subsectors, including through investments in lifelong learning, and translating such gains into better wages can also address income inequalities.[3] A number of studies point to structural transformation into services in developing countries (for example, Baymul and Sen, 2018) increasing income inequality, while the movement of workers to manufacturing may decrease inequality. This is probably due to the wide productivity gaps within services and the bulk of workers moving into low productivity services. Furthermore, the growth of the services sector in high income countries has coincided with an increase in part-time and temporary work, and job instability. New forms of

employment, such as on-call work and crowd work, have blossomed in the services economy, while institutions for regulating such work remain limited. Consequently, such forms of employment may also increase in developing countries as their services economy expands, pointing to a need to strengthen labour market institutions.

Structural transformation in most of today's high income countries initially entailed a movement of economic activity and employment from agriculture into manufacturing. Although, as discussed above, this has not been the experience of developing and emerging countries today, the manufacturing sector has the potential to drive productivity and employment growth. Well-designed industrial and sectoral policies that are coordinated with comprehensive employment policies could aim to establish and increase participation in global value chains, as well as nurture production for national and regional markets.

3 Measuring productivity in services also remains a challenge given that the end product in services is often intangible (in contrast to tangible outputs produced by agriculture and industry).

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