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Abstract: Structural transformation can spur economic growth and development if it increases overall productivity growth. A labor market environment that enables workers and enterprises to transition smoothly across sectors and into more productive economic pursuits can enhance the effect of structural transformation on economic growth. This study examines Ghana's recent record of structural transformation and labor market performance. Based on the findings, the study proposes ways to further transform the country's economy, in a way that stimulates stronger, sustained growth and produces gainful, productive, and inclusive private employment. The COVID-19 pandemic and associated global economic crisis have posed a substantial setback to Ghana's economic progress and plans, but these challenges also underscore the need for structural transformation that can both strengthen economic performance and improve labor conditions and outcomes.

JEL codes: D22; D24; E24; J01; J08; L00; L10; O00; O14; O55

Key words: Employment; labor; enterprises; labor market; structural transformation; economic complexity; labor demand; labor supply; skills; productivity

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1. Introduction

Over the last three decades, Ghana has experienced strong, sustained economic growth, which has contributed to a substantial reduction in the extent and depth of poverty. Research suggests that these gains in poverty reduction are linked to the movement of workers from agriculture to industry and services, rising average productivity within sectors, and increasing education attainment among workers.¹ However, the pace of poverty reduction appears to have slowed in recent years.²

This study examines Ghana's record of structural transformation and labor market performance. Structural transformation refers to the reallocation of economic activity between agriculture, industry, and services that occurs with modern economic growth and development.³ Such structural transformation can spur economic growth and development if it increases overall productivity growth, as occurred with the onset of the Industrial Revolution or as part of the so-called "East Asian Miracle."⁴ A labor market environment that enables workers and enterprises to transition smoothly across sectors and into more productive economic pursuits can enhance the effect of structural transformation on economic growth.

The study describes the main features of Ghana's structural transformation, its labor market, and the interrelationship between the two based on a range of data sources. These sources include published aggregate statistics and household and enterprise surveys. Based on an analysis of these data and a synthesis of findings from available research, the study discusses policy considerations and options for Ghana to stimulate the type of structural transformation that generates more gainful, productive, and inclusive employment.

We examine Ghana's record of structural transformation through an analysis of the contribution of various sectors to value-added (gross domestic product, or GDP) and employment; the country's degree of economic diversification as reflected by the complexity of its products and exports; and the country's human capital and labor productivity, along with the contribution of labor productivity to economic growth.

As with many other countries, the sectoral distribution of value-added and employment in Ghana has progressively shifted from agriculture to industry and services. The shift to the industrial sector has been driven by shifts to construction and mining subsectors, whereas the shift to the services sector has been driven by a shift to trade services subsector. The contribution of manufacturing to value-added, employment, and exports has declined over time.

Traditionally, manufacturing is a marker of industrialization. But indications suggest that Ghana's economy has begun to deindustrialize prematurely. The manufacturing sector's share of employment appears to be peaking with the country at a lower national-income level compared to when countries such as South Korea, Malaysia, or Brazil began moving toward greater employment in services. Ghana's economy also lacks complexity, as suggested by its exports,

¹ Molini and Paci 2015; World Bank 2018a, forthcoming.

² World Bank 2018a, forthcoming.

³ Herrendorf, Rogerson, and Valentinyi 2013; de Vries, Timmer, and de Vries 2015.

⁴ McMillan, Rodrik, and Verduzco-Gallo 2014.

which are dominated by primary products, such as oil, cocoa, and gold. And this level of complexity appears to have changed little over the last decade.

Labor accumulation (including labor quality as reflected by education attainment) has been an important factor in Ghana's economic growth story over at least the last half-century. However, the stronger growth that occurred in the 1990s onward has been increasingly driven by capital accumulation and total factor productivity. Most of the aggregate productivity growth over recent decades appears to be driven by growth in productivity within sectors (particularly within agriculture), which is a positive development. Average productivity has also increased with the shift of employment from agriculture to services, but there are worrisome indications that the growth in employment in services is being accompanied by declining productivity in this sector.

Estimation of the contribution of human capital to productivity indicates that a Ghanaian child born today will grow up to be an adult who is 45 percent as productive as she would be under a benchmark of complete education and full health.⁵ The shortfall appears to be driven by students' low academic achievement, which, in turn, can be linked to a weak environment for child development and learning. The quality of education services is an important input into this environment. Average education attainment among the working-age population in 2016/17 was 9.4 years, an increase of half a year since 2005/06.

Estimated average earnings returns to an additional year of education for wage-employed workers for 2016/17 indicate that they are lower than typical estimates for other countries. In addition, average earnings returns are markedly lower for men than for women and for youth (those ages 15–35 years) than for nonyouth (those ages 36–64 years). Estimates of earnings returns by education attainment suggest much higher returns to the completion of secondary education and participation in tertiary education than for lower levels of education. However, in 2016/17, only 26 percent of Ghana's working-age population had completed secondary education.

To achieve growth-enhancing structural transformation and economic diversification, the World Bank's Ghana Country Private Sector Diagnostic (CPSD) 2017 identifies sectors to prioritize for investment and development.⁶ These sectors are: agribusiness, education, energy, finance, health, information and communications technology (ICT), and transport. These sectors are broadly in line with those identified by the government and other stakeholders as key to Ghana's growth and development.⁷

We examine Ghana's labor market performance through an analysis of key labor market indicators, looking at current levels and recent trends and comparing them to those for other countries. We also explore the association between Ghana's employment rate and economic growth. We examine the current extent and nature of labor market participation, including for important population subgroups such as women and youth; the characteristics of nonfarm enterprises, including their productivity; and the employment characteristics of workers in priority sectors identified in the Ghana CPSD 2017. While the focus of the study is on structural features

⁵ World Bank 2020a.

⁶ World Bank 2017a.

⁷ For example, see Ghana COTVET 2020; Government of Ghana 2017a, 2017c.

of the labor market, we also summarize available information on the predicted and recorded effects of the COVID-19 pandemic and resulting economic crisis on Ghana's labor market.

The evolution of Ghana's labor market mirrors that of other countries at similar income levels, with a decline in the extent of employment in the population, a decline in the extent of self-employment among workers, and an increase in the extent of wage employment among workers. However, Ghana's extent of self-employment remains higher than for other countries at its income level. Strong economic growth driven by oil production and export in the first half of the 2010s contributed to a sharp increase in wage employment growth.

However, the economy also exhibits some signs for concern. Ghana's employment rate has declined in recent years, and the country has seen an increase in the youth unemployment rate. Among unemployed workers, spells of unemployment tend to be long. And the percentage of Ghanaian youth who are neither enrolled in school, employed, nor engaged in training (NEET) has also increased. Further, because Ghanaians tend to be self-employed in low-skill occupations in agriculture and services, labor conditions and outcomes are generally poor. Workers tend to earn little and receive few nonwage benefits, such as health insurance or retirement benefits. Women, youth, rural residents, and of course the poor are more likely to experience these labor conditions and outcomes.

These labor conditions and outcomes, including labor and total factor productivity, are connected in part to the nature of Ghana's enterprise activity. Most of the country's nonfarm enterprises are informal and are micro or small in size, typically a single-person enterprise. Micro and small enterprises account for most of the employment in enterprises. Labor and total factor productivity levels tend to be low but do vary substantially across enterprises. Factors external to the enterprise, such as regulations and infrastructure, and those internal to the enterprise, such as human and financial capital, knowledge, and skills, appear to be important determinants of enterprise productivity and profitability in Ghana.

Many of the main features of Ghana's structural transformation and the labor market have been documented in previous studies,⁸ but have not been assembled together as in this study. The noted patterns and trends for Ghana are also in line with those of many other low- and middle-income countries, as suggested by several studies.⁹

The Ghana CPSD 2017 priority sectors account for a small percentage of the country's overall employment (20 percent in 2016/17). (Among the priority sectors, agribusiness accounts for 39 percent of employment, while education and transport combined account for 45 percent.) Given their greater vitality, an expansion of priority sectors, enabled by sound policies that are employment sensitive and socially inclusive, could spur greater employment. In addition, current characteristics of employment observed in these sectors suggest that increased employment in these sectors (particularly in energy, health, finance, and ICT) could improve average levels of

⁸ For example, see Francis and Honorati 2016; Honorati and de Silva 2016; World Bank 2018a; Geiger et al. 2019; Osei, Atta-Ankomah, Lambon-Quayefio 2020.

⁹ For example, see Fox and Sohnesen 2012; Gindling and Newhouse 2014; de Vries et al. 2015; Gindling, Mossaad, and Newhouse 2016; Merotto, Weber, and Aterido 2018; Arias, Evans, and Santos 2019; Beegle and Christiaensen 2019.

labor earnings and employment quality, and reduce poverty, vulnerability, and social inequities, in Ghana.

Evidence from household and enterprise surveys administered in May–June 2020 suggests that the COVID-19 pandemic has had widespread negative effects in Ghana. The surveys asked both households and enterprises to report any changes to their economic status since March 2020, when the government began to introduce measures to control the local spread of the virus. Most households reported a loss of income; this was especially true of households that received self-employment income, remittance income, or private transfers. The decline in remittance income and private transfers was presumably due to the loss of labor income by the benefactor. But only about one-quarter of households indicated that they were severely affected by business failure or loss of employment. Most enterprises reported a loss in revenue due to decreased sales, and a sizeable percentage reported an increase in the cost of production due to higher prices for inputs. As a coping response, affected enterprises tended to reduce worker pay and hours rather than laying off workers. Enterprises indicated they would prefer assistance mainly in the form of cash transfers, deferrals of rental payments, and loans with subsidized interest rates. However, the percentage of enterprises and households that received any formal assistance was in the single digits.

To respond to the current crisis arising from the COVID-19 pandemic, robust relief and recovery measures for households, workers, and enterprises are needed to inject liquidity to protect and restore consumption and investment. Only after Ghana and its main external markets curb the spread of the virus can the country return to its agenda of growth-enhancing structural transformation.

For Ghana to successfully transform its economy and boost its labor market performance will require a steadfast, multi-angled perspective, well-programmed macro and micro development policy actions, and multisector interventions. We propose six strategic directions to strengthen Ghana's economy and labor market:

- i. Promote economic activities and enterprises with the potential for jumps in product complexity;
- ii. Strengthen the participation of enterprises in global value chains;
- iii. Harness the potential of digital technologies and proactively adjust to the changing world of work;
- iv. Increase and enhance the participation of women, youth, and the poor and vulnerable in the labor market;
- v. Improve human capital in the current and future workforce; and
- vi. Design systems and interventions to be resilient and responsive, to protect the economy and labor market against any potential disasters and shocks.

Interventions at the macro and micro levels, and across multiple sectors, will require coherent and coordinated efforts across multiple government ministries and agencies. It will also be crucial to secure effective private sector and civil society participation in the design, implementation, and monitoring and evaluation of policies and interventions.

The types of interventions needed are diverse. They comprise inputs and incentives (including favorable rules and regulations) for international and domestic private investors to enter into specific sectors, locations, and value chains, and to develop and provide specific goods and services for domestic and international markets in a labor-intensive and socially inclusive manner. Inputs and incentives are also needed for private and public providers to develop the skills of current and future workers that are valuable for employment, productivity, and earnings, from vocational and technical, digital, and business management skills to cognitive and socioemotional skills. Interventions need to go beyond skills development to address the myriad, other potential constraints to productive, gainful private wage and self-employment, related to knowledge, technology, labor, land and property, physical and financial capital, networks, and market-entry support. Efforts are also needed to create a wide-reaching, robust, and flexible social protection system that is sufficiently delinked from formal employment or organizational arrangements and that effectively addresses the main risks faced by households, workers, and enterprises.

The remainder of the paper is organized as follows. Section 2 discusses Ghana's record of structural transformation, while section 3 discusses the performance of Ghana's labor market. Section 4 discusses policy considerations and options to stimulate growth-enhancing structural transformation and to strengthen the country's labor conditions and outcomes. Section 5 provides concluding remarks.

2. Structural transformation

Structural transformation refers to the reallocation of economic activity between agriculture, industry, and services, which occurs with modern economic growth and development. As data across countries and time suggest, this transformation can be stylized as a steady decline in the size of the agricultural sector and its contribution to the economy, a steady increase in the size and contribution of the services sector, and a hump shape in terms of the contribution of the industrial sector.¹⁰ Such structural transformation can spur economic growth and development if it increases overall productivity growth.

This section examines Ghana's record of structural transformation through three lenses: (i) evolution in the contribution of various sectors to value added (or GDP) and employment, (ii) economic complexity, which measures a country's degree of economic diversification through an analysis of its products and exports, and (iii) human capital, labor productivity, and the association between labor productivity and economic growth. The section also presents possible sectors that the country could prioritize for investment and development to spur potential growth-enhancing structural transformation, as identified in the World Bank's Ghana Country Private Sector Diagnostic (CPSD) 2017.

¹⁰ Herrendorf et al. 2013.

Sectoral evolution

We examine the sectoral distribution of total value-added from 1991 to 2018 (roughly three decades). Over this period, the contribution of agriculture to total value-added declined, while the contributions of industry and services increased (figure 1a). The share of agriculture in total value-added fell 13 percentage points, while that of industry and services increased by 6–7 percentage points each (table 1). The decline in the share of agriculture in total value-added accelerated with the start of oil production in 2011.¹¹ By 2018, services contributed the most to total value-added (46 percent), followed by industry (34 percent) and agriculture (20 percent).

The increase in the contribution of the industrial sector to total value-added was due to growth in construction, mining, and utilities subsectors (figure 1b and table 1). Manufacturing, which is also a subsector of industry, declined. Specifically, the share of manufacturing in total value-added fell 12 percentage points. The increase in the contribution of the services sector to total value-added was driven by growth in trade services subsector.

We also examine the sectoral distribution of employment over the same period (1991 to 2018). Over this period, the sector with the largest share of employment shifted from agriculture to services (figure 2). The share of agriculture in employment declined by 26 percentage points, while that of services increased by 20 percentage points. The share of industry in employment grew by 7 percentage points. By 2018, services accounted for 49 percent of total employment, followed by agriculture (30 percent) and industry (21 percent).

Data from the Ghana Living Standard Surveys for 2005/06, 2012/13, and 2016/17 permit an examination of the evolution of the distribution of employment at a more detailed sectoral level. Between 2005/06 and 2016/17, the growth in employment in the services sector was driven by growth in the trade services subsector, whereas the growth in employment in the industrial sector was driven by growth in the mining and construction subsectors.

How do Ghana's trends in sectoral shares of total value-added and employment compare to other countries? Figure 3 plots the best fit curves for the relationship of sectoral shares of total value-added and employment with national income (measured by GDP per capita) across countries in 1990 and 2019. It also plots the observations for Ghana in those two years. Across all national income levels, the shares of agriculture and industry in total value-added and employment fell while shares of services in total value-added and employment increased. Compared to other countries at its income level in 2019, Ghana's industrial sector accounted for higher shares of total value-added and employment, while services accounted for a lower share of total value-added and a similar share of employment. Ghana's shares of manufacturing in total value-added and employment are also lower than those of other countries at its income level in 2019 and 2010, respectively (figures 4a and 4b).

Manufacturing is a traditional marker of industrialization. The shares of manufacturing in total value-added and employment are often seen as a measure of structural transformation for three reasons. First, manufacturing tends to be a dynamic sector technologically, which enables manufacturing enterprises to exhibit unconditional labor productivity convergence, unlike the rest

¹¹ World Bank 2018c.

of the economy. Second, manufacturing has traditionally absorbed large quantities of unskilled labor, something that sets it apart from other high-productivity sectors such as mining or finance. This feature also highlights the sector's traditional role in structural transformation. Third, because manufacturing is a tradable sector that can produce goods for export, it does not face the demand constraints of a home market populated by low-income consumers. It can expand and absorb workers even as the rest of the economy remains technologically stagnant.¹²

Recognizing the manufacturing sector's potential contribution to industrialization, the Government of Ghana's Industrial Policy of 2010 specifically aims to address an array of challenges faced by the sector that affect production capacity, productivity, and product quality.¹³ Key challenges faced by local manufacturing enterprises include high production and distribution costs, aged and obsolete equipment, inefficient infrastructural services, and low productivity.

The cross-country relationship between the share of manufacturing in total value-added and national income (measured by GDP per capita) appears to follow an inverted U-shape (figure 4a). The share of manufacturing in total value-added increases and then falls (or flattens) with national income. The downward shift in the curve between 1990 and 2019 suggests deindustrialization across all national income levels, consistent with existing evidence.¹⁴

The trend in manufacturing employment suggests Ghana may be experiencing “premature deindustrialization.”¹⁵ The share of manufacturing in employment in Ghana peaked in 1978 at a lower national income level compared to countries like South Korea (which peaked in 1989), Malaysia (1997), or Brazil (1986). In these countries, the peaks occurred when the countries had attained higher levels of national income than Ghana at its peak (figure 4c). As a further indication of deindustrialization in Ghana, the share of manufactured goods in exports fell by 7 percentage points between 1990 and 2018 (figure 4d).

Premature deindustrialization can partly be attributed to economic openness, which, in Ghana's case, accelerated between 1990 and 2019 (figure 4e). Because Ghana's manufacturing sector is small relative to the global market, the country takes international prices as fixed, and the trend in these prices has been downward. In other words, price takers like Ghana may have “imported” deindustrialization from outside.¹⁶ The decline in the relative price of manufactured goods has been due to technological progress elsewhere, the economic rise of China, and domestic trade liberalization.

Even if Ghana were to register rapid total factor productivity growth in manufacturing (compared to nonmanufacturing), the country, like other developing countries, would find itself deindustrializing in employment terms as enterprises adopt labor-saving technologies. (See box 1 for an account of Ghana's industrial history.) Greater employment in industry in developing countries requires that the difference in productivity growth between manufacturing and

¹² Rodrik 2016; Nguimkeu and Zeufack 2019; and Page 2019a.

¹³ Ghana MOTI 2010.

¹⁴ Rodrik 2016.

¹⁵ While the statistics may suggest “premature deindustrialization,” caution is urged as the theory of premature deindustrialization is itself very premature and has not been carefully tested.

¹⁶ Rodrik 2016.

nonmanufacturing sectors exceeds the decline in manufactured goods' relative prices on world markets. Very few developing countries have managed this feat consistently.¹⁷ Later in this section, Ghana's experience is contrasted with that of Malaysia, a country that succeeded in diversifying its economy despite starting from a similar base of relatively uncomplex production.

In addition to premature deindustrialization, resource-rich economies like Ghana must contend with the threat of Dutch disease, one manifestation of the "natural resource curse."¹⁸ The term Dutch disease refers to the adverse effects that natural gas discoveries in the 1960s had on Dutch manufacturing, through the subsequent appreciation of the Dutch real exchange rate.¹⁹ In Ghana's context, Dutch disease would be realized through an appreciation of the cedi following expansion in oil-related investments or cocoa exports. This would not only make inputs more expensive for domestic manufacturers but could also divert productive inputs such as labor out of the manufacturing sector.

The Government of Ghana has taken actions to avert Dutch disease. In 2011, it introduced the Petroleum Revenue Management Act (PRMA), which provides a framework for the collection, allocation, and management of petroleum revenues. The PRMA created the Ghana Stabilization Fund (GSF), which could act as a buffer for the budget to any potential petroleum-revenue shortfalls. The Act also mandated the Ghana Ministry of Finance to select four priority areas, to which oil revenues would be directed to foster economic diversification.²⁰

Economic complexity

Research by Harvard University's Center for International Development links a country's exports to overall economic complexity—yet another measure of structural transformation. The Economic Complexity Index (ECI) is a measure of a country's economic diversification and of the complexity of its exports. Countries that are home to a diversity of productive knowhow, particularly complex, specialized knowhow, are able to produce a diversity of sophisticated products. The complexity of a country's exports is found to highly predict national income levels.²¹ In other words, where complexity exceeds expectations for a country's income level, the country is predicted to experience more rapid economic growth in the future. ECI therefore provides a useful measure of economic development.

The product equivalent of the ECI is the Product Complexity Index (PCI). Products that have high PCI are rare and tend to be made only by those countries that are diversified. For example, as of 2018, the most complex products included "machines and apparatus of a kind used solely or principally for the manufacture of semiconductor boules or wafers, semiconductor devices, electronic integrated circuits or flat panel displays."²² On the other hand, products that have a low

¹⁷ Ibid.

¹⁸ Nguimkeu and Zeufack (2019) test the responsiveness of manufacturing output to resource-sector performance (proxied by the minimum wage) in a sample of resource-rich countries in Sub-Saharan Africa, including Ghana, and find a negative (although statistically insignificant) effect of the minimum wage variable. The study claims that this finding suggests the presence of Dutch disease.

¹⁹ Corden and Neary 1982.

²⁰ Page and Tarp 2020.

²¹ Hausmann and Hidalgo 2010.

²² See the MIT Observatory of Economic Complexity rankings (<https://oec.world/en/rankings/pci/hs4/hs12>).

PCI are ubiquitous and tend to be made by both diversified and nondiversified countries. For example, as of 2018, one of the least complex exported products by Ghana was cocoa beans.²³

Between 2008 and 2018, Ghana's economic complexity improved slightly, with ECI rising by 4 percent and Ghana's rank moving up to 103 from 105 (out of 133 countries).²⁴ Ghana's low economic complexity has been driven by a lack of diversification of exports and by the dominance of products with low PCI in its export basket. In the 10-year period from 2008 to 2018, low-complexity products in agriculture (primarily cocoa), precious metals (primarily gold), and crude petroleum grew from 60 percent of the country's exports to more than 95 percent. Thus, export growth has largely come from low to moderate complexity products (figure 5).

To what extent has Ghana diversified into new products that are incrementally more complex?²⁵ According to the Atlas of Economic Complexity managed by Harvard University's Center for International Development, Ghana has added 10 new products since 2003 and these products contributed an estimated US\$129 in per capita income in 2018. By value, 98 percent of the new product exports are in crude petroleum; the rest are in iron, fresh fruit, lead, and coffee extracts. All these new products, however, are of low complexity. As a point of reference, Malaysia added 25 new products between 2003 and 2018. Half of these were of positive complexity (i.e., added to the country's ECI), including machinery and equipment as well as synthetic rubber.

Countries can build on the policies adopted by successful transformers. Consider Malaysia once again. It experienced a strong shift in tradables from agriculture to complex activities in industry. Ghana and Malaysia gained independence in the same year (1957), and both were heavily dependent on commodity exports (natural rubber in Malaysia, and cocoa beans in Ghana) (figures 6a and 6b). As such, both countries ranked low in overall economic complexity in 1964 (figure 7). However, Malaysia's export-oriented growth in the 1970s, supported by strong foreign direct investment in electronics and electrical products, enabled the country to integrate into global value chains, which in turn facilitated improvements in overall economic complexity (box 2). Ghana, on the other hand, retains an overall complexity score that is similar to its 1964 level.

Analysis of the employment-generation potential in more complex products "within reach" for Ghana suggests that, while the potential exists from incremental shifts in Ghana's product space to generate growth-enhancing diversification and structural transformation, the potential for generating greater employment, in particular for women and youth, may be more subdued without appropriate gender- and youth-sensitive labor market and enterprise development policies.²⁶ Based on a small, purposive survey, enterprises report that they have the capability to shift to more complex products. However, surveyed enterprises also indicate that they face strong constraints in doing so, comprising high production costs, little or no access to larger markets to sell their

²³ Ibid.

²⁴ Based on the recently launched interactive "Country Profiles" from Harvard University's Center for International Development (<http://atlas.cid.harvard.edu/countries/83>).

²⁵ A product is considered "new" if it was absent 15 years ago (Revealed Comparative Advantage or RCA < 0.5) and present today (RCA > 1 for the latest three years). RCA is a measure of whether a country is an exporter of a product, based on the relative advantage or disadvantage that country has in the export of a certain good. A country is an effective exporter of a product if it exports more than its "fair share," or a share that is at least equal to the share of total world trade that the product represents (RCA greater than 1).

²⁶ Baah-Boateng and Twum 2019.

products, low-quality intermediate products in their production process, high competition from imported products, and limited skills among local prospective workers for producing more complex products.²⁷

Human capital, labor productivity, and economic growth

As of 2019, average annual labor productivity was highest in industry (at \$5,247 in 2010 U.S. dollars), followed by services (\$4,403) and agriculture (\$3,365) (figure 8a). Hence, the shift of workers from agriculture to service and industry has come with increasing average labor productivity. Labor productivity in agriculture has increased substantially over the period. Labor productivity in industry has also increased substantially (with a spike in productivity during the early 2010s). The gain in labor productivity in services over the period has been limited.

Labor productivity data at a more detailed sectoral level are only available before 2010. Between 1985 and 2010, sectors can be roughly divided into three levels based on average labor productivity: relatively high productivity (transport and utilities), relatively moderate productivity (mining, construction, and business services), and relatively low productivity (agriculture, manufacturing, and trade and personal services) (figure 8b). The low labor productivity in manufacturing is due to its composition in Ghana: Agro-processing is the most important subsector of the manufacturing sector, with food and beverages representing the largest component of processed commodities.²⁸

Decomposition of Ghana's economic growth in different subperiods between 1970 and 2016 into the contributions of changes in total factor productivity, capital accumulation, and labor accumulation (including labor quality as reflected by education) suggests that the change in labor accumulation has contributed meaningfully to the country's economic growth in all subperiods (figure 9). The contribution of the change in total factor productivity to economic growth became positive and sizeable roughly between 1990 and 2010. Likewise, the contribution of the change in capital accumulation to economic growth became positive and sizeable roughly between 2005 and 2015. Further, productivity gains appear to have attracted capital investment.^{29,30,31}

Decomposition of the change in overall labor productivity in Ghana between 1990 and 2010 into the change in labor productivity within sectors and the change in labor productivity from workers moving between sectors (or intersectoral allocation) indicates that over 80 percent of the gain in overall labor productivity is attributable to within-sector productivity gains. Productivity gain from the movement of workers from lower- to higher-productivity sectors accounts for the remainder. The gain in labor productivity within sectors is driven mainly by agriculture, accounting for 57 percent of this gain, while industry and services account for 18 percent and 25 percent,

²⁷ Ibid.

²⁸ Newfarmer, Page, and Tarp 2018.

²⁹ As suggested by productivity gains leading capital-accumulation gains in time trends (Geiger et al. 2019).

³⁰ On the demand side, the growth in national income in Ghana since 1990 has been driven by the shares of investment and public consumption in national income, while the share of private consumption in national income has remained relatively constant over time (Geiger et al. 2019).

³¹ Geiger et al. 2019; Osei et al. 2020.

respectively. The productivity gain in industry is mainly due to the gain in manufacturing, while the productivity gain in services is mainly due to the gain in transport services.³²

The movement of workers into services from agriculture is accompanied by a jump in the level of productivity. However, it also comes with declining marginal productivity, which suggests negative efficiency dynamics. This decline is particularly pronounced in trade and business services, which have observed the largest growth in employment.³³

Decomposition of the change in value-added per capita between 1990 and 2010 into the contributions from the change in labor productivity (within-sector, between-sector or intersectoral allocation) at a detailed sector level, change in the employment rate, change in labor force participation rate, and change in the working-age share of total population suggest that the gains in value-added per capita are largely attributable to gains in labor productivity, with relatively little positive contributions from other factors (figure 10 and table A.1). The results confirm that within-sector productivity gains dominate between-sector (or intersectoral) productivity gains. The results also reveal that, while within-sector productivity gains in manufacturing were important in the subperiod between 1990 and 2000 among industrial subsectors, within-sector productivity gains in mining and construction became important in the subperiod between 2001 and 2010 (table A.1).

Human capital

The World Bank's Human Capital Project (HCP) highlights the contribution of human capital to productivity. Specifically, the HCP's Human Capital Index (HCI) estimates the amount of human capital that a child born today can expect to attain by age 18 years, given any risks of poor health and poor education that prevail in the country where she lives.³⁴

The HCI has three main components: survival, education, and health. Component 1 measures the likelihood of surviving to age 5 years. Component 2 measures the number of years of education a child progressing through the current pattern of enrollment rates can expect to obtain by the time she is 18-years-old. Harmonized test scores are used to augment the education attainment measure by accounting for performance on international tests. Component 3 measures adult survival rates from age 15 to 60 years as well as the percentage of children under age 5 years who are not stunted. The HCI ranges from 0 to 1, where a score of 1 can be interpreted as stating that a child will grow up to be an adult who is as productive as she would be under the benchmark of complete education and full health.³⁵

Ghana's HCI for 2020 is 0.45. This means that a Ghanaian child will grow up to be an adult who is 45 percent as productive as she would be under the benchmark of complete education and full health (table 3). Decomposing Ghana's HCI shows that there is room for improvement particularly under component 2 on education. On average, Ghanaian students are expected to spend more years in education than students in the average lower-income country (12.1 years versus 10.4 years), but

³² Ibid.

³³ Ibid.

³⁴ Kraay 2019; World Bank 2020b.

³⁵ Ibid.

Ghana's students have much lower harmonized test scores, suggesting that children's development and learning environments are a concern.³⁶

In terms of education attainment as a measure of human capital, average education attainment was 9.4 years among the working-age population in Ghana in 2016/17 (figure 11a). Among the population subgroups examined, average attainment was highest for urban residents (10.1 years) and lowest for the poor (7.4 years). Relative to their respective counterparts, the shortfall in average attainment was greatest for the poor (2.3 years) followed by rural residents (1.7 years) and by women (1.1 years).³⁷ Average attainment for youth was 9.6 years, compared to 9.2 years for nonyouth, and 15 percent of youth were attending some education or training institution, compared to less than 1 percent of nonyouth.³⁸

Average education attainment increased by half a year between 2005/06 and 2016/17 (figure 11b). Except for nonyouth, all examined population subgroups saw an increase in average attainment. The largest gain in absolute terms was by youth: Their average attainment increased from 8.5 years to 9.6 years, roughly a full year. The poor and urban residents saw the smallest gain in average attainment, of 0.1 years each. However, the starting points are different for these two subgroups: Baseline (2005/06) attainment was lowest for the poor, while it was highest for urban residents.

Evidence for Ghana suggests that human capital plays an important role in influencing the extent and nature of labor force participation by individuals and the welfare gains from this participation.³⁹ The association between labor earnings and years of education for wage-employed workers indicates average returns of about 7 percent for an additional year of education in 2016/17 (figure 12), less than the average earnings return to an additional year of education globally.⁴⁰ Average returns for female, rural, and nonyouth wage-employed workers appear to be markedly higher than for male, urban, and youth counterparts, respectively.⁴¹

Available studies for Ghana also find that average returns to education in terms of profits are higher for nonfarm than farm income-generating activities; functional literacy is associated with a higher

³⁶ See Tanaka (2019) for an analysis of differences in school enrollment, student achievement, child stunting, and other human development indicators across regions and welfare quintiles in Ghana.

³⁷ The poor are defined as those with per adult equivalent consumption below the country's official overall poverty line (Ghana Statistical Service 2018).

³⁸ Youth is defined as those ages 15–35 years, in accordance with the government's definition of youth (Ghana Ministry of Youth and Sports 2010).

³⁹ Fasih 2008; Tanaka 2019.

⁴⁰ Montenegro and Patrinos 2014.

⁴¹ The estimations of wage earnings returns to education are based on regressions with a basic set of sociodemographic controls, and are more accurately interpreted as partial correlations between wage earnings and years of education. Importantly, the estimations do not correct for potential selection or endogeneity bias. Relatedly, the extent to which different subgroups are engaged in wage employment varies markedly—a situation that can have important implications for the results on differential returns by subgroup. Among employed workers, 15 percent of women are wage-employed, compared to 34 percent for men; and 13 percent of those in rural areas are wage-employed, compared to 35 percent of those in urban areas. While estimations of returns to education in the economics literature in general sometimes control for occupation (sector of employment, public or private employment, occupational category), we choose not to do so. This allows the estimated returns to additionally reflect the effect of education on earnings through occupation (an important pathway), rather than the residual effect of education on earning after controlling for occupation. Estimations of returns to education additionally controlling for occupation reduce average returns to 4 percent for an additional year of education in 2016/17.

likelihood of labor force participation, and, in turn, higher average labor earnings; and stronger noncognitive ability is associated with more schooling and higher-quality employment.⁴²

An analysis of predicted earnings by years of education suggests much higher average returns among wage-employed workers to secondary completion and tertiary education than for primary education and, in particular, some secondary education (figure A.1), corroborated by several studies for Ghana.⁴³ This pattern in earnings returns by education attainment holds for the subgroups examined (sex, youth/nonyouth, rural/urban).

Priority sectors for potentially growth-enhancing structural transformation

Going forward, which sectors should Ghana prioritize for investment and development? The World Bank's Ghana Country Private Sector Diagnostic (CPSD) 2017 examines this question.⁴⁴ The CPSD sector scan identifies the seven top-priority sectors with the highest potential development impact and high feasibility as agribusiness, education, energy, finance, health, information and communications technology (ICT), and transport.⁴⁵ Figure 13 presents the Ghana CPSD 2017 priority sectors based on desirability and reform feasibility. A sector's desirability is measured in terms of its contribution to development objectives is measured across six categories: inclusion and employment, economic growth, competitiveness and productivity, integration and connectivity, resilience and stability, and environmental sustainability.⁴⁶ Reform feasibility is scored across four categories: demand, production factors, key inputs, and institutions. Each category is assigned the same weight.

A main dimension of desirability of a sector is captured by the number of marginal forward and backward linkages it can generate in terms of value addition and employment (multiplier analysis). The CPSD analysis shows that the sectors with the most linkages are finance, education, transport, energy, and agribusiness. The feasibility dimensions are measured using a benchmarking exercise of Ghana's performance relative to the rest of the world. The exercise draws from a database of more than 7,000 investments by the International Finance Corporation.⁴⁷ In the next section, the employment characteristics of workers in the Ghana CPSD 2017 priority sectors are discussed.

3. Labor market performance

This section discusses the performance of Ghana's labor market. It compares current levels of key labor market indicators for Ghana with those of other countries, examines recent trends in Ghana's indicators, and assesses the association between the country's levels of employment and economic growth. The section also examines the country's current extent and nature of labor market

⁴² Jolliffe 2004; Blunch and Verner 2000; Tan and Thamarapani 2018.

⁴³ Fasih et al. 2012; Montenegro and Patrinos 2014; Falco et al. 2014.

⁴⁴ World Bank 2017a.

⁴⁵ Ibid.

⁴⁶ Each category (namely, inclusion and jobs, economic growth, competitiveness and productivity, integration and connectivity, resilience and stability, and environmental sustainability) is weighted according to a subjective measure of its importance, with weights of 25 percent, 15 percent, 25 percent, 10 percent, 15 percent, and 10 percent, respectively, in the case of Ghana.

⁴⁷ See World Bank (2017a) for a detailed discussion of constraints to growing the identified priority sectors.

participation, including for important population subgroups such as women and youth; discusses the characteristics of nonfarm enterprises, including their productivity; and describes the employment characteristics of workers in the Ghana CPSD 2017 priority sectors. The section ends with a discussion of the predicted and recorded effects of the COVID-19 pandemic on workers and enterprises in Ghana.

Ghana's labor market performance compared to other countries and over time

How do Ghana's labor market indicators compare to those of other countries at its national income level? How have Ghana's labor market indicators evolved over the recent past? And what is the association between Ghana's GDP growth and its employment in the recent past and how does it compare to other countries? We examine these questions based on analysis of labor market statistics for various countries and years modeled by the International Labour Organization (ILO).

Estimates for 2019 indicate that Ghana's employment rate is higher than the average for other countries at its income level, while its unemployment rate is lower (figure 14). In addition, Ghana's labor market has a higher share of workers in self-employment and a lower share of workers in wage employment than the average for countries at Ghana's income level.

Over the 1991–2019 period, estimates indicate that Ghana's employment rate has fallen. Ghana's labor market has seen an increase in the share of workers in wage employment and a decline in the share of workers in self-employment during this time. These patterns and trends for Ghana are also observed for women (figure 15) and youth (figure 16). Similar to other countries at its income level, Ghana has seen a rise over time in the share of youth (ages 15–24, according to the international definition of youth) that are not in education, employment, or training (NEET).

Between 1991 and 2019, a one-percent increase in Ghana's GDP was associated with an increase in overall employment by 0.45 percent (figure 17a). This employment-GDP growth elasticity is lower than the average for Sub-Saharan Africa (0.62) but higher than the average for lower-middle-income country peers (0.35) over the same period. The employment-GDP growth elasticity varies by subperiod: It was higher between 1991 and 2005, at 0.57, and lower between 2006 and 2019, at 0.35.

This trend in elasticities for Ghana implies that the economic growth driven by oil production in recent years has not been as employment-intensive as growth preceding the extractives boom. This finding is consistent with international research that economies that are rich in natural resources have experienced strong economic growth accompanied by anemic employment growth; it is also consistent with other research for Ghana.⁴⁸

The elasticity of *wage* employment to GDP growth for Ghana, estimated at 0.76 between 1991 and 2019, is also somewhat lower than the average for Sub-Saharan Africa (0.83) but higher than the average for other lower-middle-income countries (0.60) (figure 17b). Wage employment-GDP growth elasticities have been relatively stable over time, with elasticities of 0.79 between 1991 and 2005 and 0.77 between 2006 and 2019.

⁴⁸ Honorati and De Silva 2016.

Between 1992 and 2019, Ghana's economy expanded by an average of 5.6 percent per year, while employment growth averaged 2.6 percent per year. Over the same period, wage employment grew by an average of 4.2 percent per year, while self-employment grew by an average of 2.1 percent per year.

In 2011, the economy grew by 14 percent, induced mainly by oil production. Concurrently, wage employment increased by 7.2 percent (while self-employment growth was near zero) (figure 18). Further, wage employment growth rates remained above pre-2011 levels through 2015, even though economic growth declined, suggesting that effect of the initial spike in economic growth persisted.

The results suggest that oil production may have generated higher growth in the share of wage-employed workers. This is consistent with existing evidence that the discovery of oil in Ghana increased real income and employment for households and individuals in areas where oil was found.⁴⁹

Current labor market structure, conditions, and outcomes in Ghana

What is the current structure of the labor market in Ghana? What do current labor market conditions and outcomes look like? And how do current conditions and outcomes differ across population subgroups, namely women versus men, youth versus nonyouth, rural versus urban residents, and poor versus nonpoor? We examine these questions based on analysis of data from the Ghana Living Standards Survey 2016/17.⁵⁰ All analysis is restricted to the working-age population, defined as ages 15–64 years. Youth is defined as those ages 15–35 years, in accordance with the government's definition of youth.⁵¹ The poor are defined as those with per adult equivalent consumption below the country's official overall poverty line.⁵²

Note that poverty status and rural residence status are highly correlated.⁵³ Further, the extent of the population that is rural increases moving from the south of the country to the north. The ratios of women to men and of youth to nonyouth are similar across Ghana's regions and for urban and rural areas.

Overall labor market structure

Based on data from 2016/17, Ghana has a working-age population of 15.9 million. Among them, 11.6 million (or 73.0 percent) are in the labor force (figure 19). (See box A.1 for definitions of key labor market indicators estimated in this study.) Among those in the labor force, 10.6 million (91.4 percent) are employed while 1.0 million (8.6 percent) are unemployed, based on the Ghana

⁴⁹ Adofo, Tarui, and Tanaka 2019. The authors find that oil discovery and production increased real household income by 4 percent. The positive effect on income was larger for more-educated workers than less-educated workers. Likewise, oil discovery and production increased overall local employment by 4.5 percent, with discovery and production having an indirect impact on other local nonoil sectors such as manufacturing and construction. No significant effects on the extent of employment in agriculture or services were found.

⁵⁰ Ghana Statistical Service 2018.

⁵¹ Ghana Ministry of Youth and Sports 2010.

⁵² Ghana Statistical Service 2018.

⁵³ World Bank 2018a, forthcoming.

Statistical Service’s definition of unemployment, which does not require individuals who are available for employment to be actively searching for work. Table A.2 reports estimates for a range of labor market indicators for Ghana in 2016/17, including by key population subgroups.

Ghana’s labor force participation rate is 73.0 percent, while its employment-to-population ratio (or employment rate) is 66.8 percent. The unemployment rate based on Ghana Statistical Service’s relaxed definition is 8.6 percent (while it is 3.6 percent based on the standard international definition). On average, workers work 36 hours per week.

Self-employment predominates in Ghana. Of those working, 69 percent are either self-employed or a contributing family worker, while 25 percent are wage employed (another 6 percent are categorized as “other”). Average monthly earnings among wage-employed workers are GH¢971. Data on labor earnings by self-employed workers are unavailable.

In terms of population subgroups, the employment rate for youth is estimated at 55.4 percent, whereas it is 84.6 percent for nonyouth, a difference of 29.2 percentage points. Part of this is due to youth enrollment in education and training institutions. Average hours of work are about 4–6 hours lower for women, youth, the poor, and those in rural areas than for their respective counterparts. Among wage-employed workers, average labor earnings for women are 62 percent of those for men; those for the poor are 70 percent of those for the nonpoor; those for youth are 73 percent of those for nonyouth; and those for rural residents are 83 percent of those for urban residents. (See figure A.2 for the distribution of wage earnings for population subgroups).

Unemployment rates, based on the Ghana Statistical Service’s relaxed definition, are higher for women, the nonpoor, and those in urban areas than for their respective counterparts (figure 20). The unemployment rate is especially high for youth, at 17.6 percent, compared to 4.0 percent for nonyouth, a difference of 13.6 percentage points.

The average length of unemployment raises some concern: Fifty-four percent of those unemployed have been unemployed from 6 months to less than 2 years, while 23 percent have been unemployed for at least 2 years (figure 21). Longer unemployment durations appear to be much more common among the unemployed in urban areas than in rural areas. The vast majority of the unemployed report either a desire for any wage employment opportunity (indicating that their unemployment is not due to a highly discriminating search for employment) or a desire for a self-employment opportunity (indicating that they face constraints to establishing and operating an income-generating activity) (figure 22). Specifically, 45 percent of the unemployed report a desire for any wage employment opportunity, while 27 percent indicate a desire for a self-employment opportunity. The desire for a self-employment opportunity among the unemployed is much more prevalent among youth than nonyouth and among women than men.

Table A.2 presents estimated changes in select labor market indicators between 2005/06 and 2016/17, based on comparable rounds of the Ghana Living Standards Survey. These survey estimates confirm the shifts in workers to services and wage employment discussed earlier based on published statistics, as well as the decline in the employment rate. Also notable in the survey estimates is a large decline in average hours worked per week, by almost 10 hours, over this period.

The decline in the employment rate between 2005/06 and 2016/17 is observed across all population subgroups apart from urban residents. The decline in average hours worked per week over the same period is observed for all population subgroups, but is strongest for the poor.⁵⁴

School-to-work transition

The patterns in labor market participation by youth are partly explained by their patterns of schooling, specifically the age pattern of the transition from school to work or to other statuses. The distribution of youth, by age, is examined across four statuses: school only, school and work, work only, and no work and no school, where “no school” is defined as the absence of participation in any formal education or training institution (figure 23).

Overall, the share of individuals at every age who are in school only exceeds the share of those who are in school and work. The transition from school to work is faster (in percentage point terms) during adolescence years and when individuals are in their early 20s than when they are in their late 20s and early 30s. The transition from school is mainly to work as opposed to nonwork status, although the transition to nonwork status is more common among women than men. An important driver of women’s greater transition to nonwork status is family formation (marriage and childbearing), as suggested by international evidence.⁵⁵ Among the poor and those in rural areas, the combination of work and school (and the transition from this status to work only) is more common than among the nonpoor and those in urban areas, respectively.

Employment characteristics of workers

While most workers perform one economic activity in the reference period, a notable share performs more than one economic activity. Overall, 13 percent of workers have at least a secondary economic activity (figure 24). Multiple economic activities are more much common among rural than urban residents, and slightly more common among nonyouth than youth. The shares of workers performing multiple economic activities are roughly similar between women and men and between the poor and the nonpoor. In the subsection below, we describe the employment characteristics of workers based on their primary economic activity.

Most workers are employed in services (45 percent), followed by agriculture (37 percent) and industry (19 percent) (figure 25). As expected, those in rural areas are much more likely to be employed in agriculture than those in urban areas. Likewise, the poor are much more likely to be employed in agriculture than the nonpoor. Compared to men, women are more likely to be employed in services and less likely to be employed in agriculture. Similarly, youth are less likely to be employed in agriculture than nonyouth.

The vast majority of workers are employed in the private sector (figure 26). Public employment constitutes 7 percent of total employment, and virtually all public employment is in services. As expected, public sector workers are much more likely to be nonpoor than private sector workers; they are also much more likely to reside in urban areas. Men are more likely to be employed in the public sector than women. Youth are just as likely to be employed in the public sector as nonyouth.

⁵⁴ Trends in indicators by subgroup are available upon request.

⁵⁵ World Bank 2012, 2014.

As noted earlier, most workers are self-employed. A sizeable number are also contributing family workers, that is, they provide labor to household economic activities (which can be thought of as household enterprises). Among those employed, 48 percent are self-employed without any paid employees (that is, they operate household enterprises), while 4 percent are self-employed with paid employees (figure 27). Further, 17 percent are employed as contributing family workers. Wage employment accounts for 25 percent of total employment, while 6 percent consist of casual workers, apprentices, and domestic workers.

Wage employment is more prevalent in services than in industry. Agriculture is almost fully composed of self-employed workers without employees and contributing family workers. Women, the poor, and those in rural areas are much more likely to be self-employed or a contributing family worker than their respective counterparts. Youth are much less likely to be self-employed and are much more likely to be a contributing family worker than nonyouth.

Among those employed, most (36 percent) work in skilled agriculture or fisheries (figure 28).⁵⁶ This share is followed at some distance by work in services or sales (23 percent) and in craft and related trades (18 percent). All other occupations individually register single-digit shares of total employment. Women are much more likely to be employed in services or sales than men. The poor and those in rural areas are much more likely to be employed in skilled agriculture or fisheries than the nonpoor or those in urban areas, respectively. The difference between youth and nonyouth in the distribution of workers by occupation is relatively small.

Another dimension through which to understand occupations is at the task level. A task is a unit of work activity that produces output.⁵⁷ Any single job is made up of tasks, which require differing levels of analysis, interpersonal interaction, manual exercises, or repetitiveness. Using data from the World Bank's Skills Toward Employment and Productivity (STEP) survey for Ghana administered in 2013, task-level qualities of occupations performed by Ghanaians can be determined. Data from this survey are representative of the working-age population in urban areas. Box 3 discusses the process by which the skills content of tasks and occupations is ascertained, and how Ghana compares to other countries with comparable STEP survey data.⁵⁸

In terms of work location, most workers are employed on the land or on farms, followed by on the street or in markets, consistent with the distribution of workers by sector, type of employment, and occupation. Among those employed, 37 percent work on the land or on farms and 24 percent work on the street or in markets (figure 29). Another 11 percent work at home. Small percentages of workers work in such places as the office, a factory or workshop, or a store or shop, with these places collectively accounting for 18 percent of total employment.

Women are much more likely to work at home, on the street, or in markets than men. Both the poor and those in rural areas are much more likely to work on the land or on farms than the nonpoor

⁵⁶ For definition of skilled agriculture and fisheries, see <https://www.ilo.org/public/english/bureau/stat/isco/isco88/6.htm>.

⁵⁷ Lo Bello, Puerta, and Winkler 2019.

⁵⁸ See Roseth, Valerio, and Gutierrez (2016), Darvas, Favara, and Arnold (2017), and Arias et al. (2019) for analysis of patterns and correlates of the skills content of occupations based on the Ghana STEP survey 2013.

or those in urban areas, respectively. Similar to the results from examining occupations, differences between youth and nonyouth are relatively small in terms of the distribution of workers by place of work.

A large number of Ghanaian workers are composed of migrants. Overall, 14 percent of workers report being labor migrants, while 38 percent say they are migrants who have moved for nonlabor-related reasons (figure 30). Migrants are more likely to be employed in industry or services than agriculture. As expected, men are more likely to be labor migrants than women; conversely, women are more likely to be nonlabor migrants than men (for example, accompanying male household members who migrate for labor reasons). Migration is more common among nonyouth and the nonpoor compared to their respective counterparts. The shares of migrant workers are significant in both rural and urban areas, although the share is higher in the latter areas.

Employment security and benefits among wage-employed workers

As noted earlier, wage employment accounts for 25 percent of total employment in Ghana. Such employment is more common among men, youth, the nonpoor, and those in urban areas. Here, we examine additional conditions of wage employment, specifically the contract status of workers and the coverage of workers by employer-provided social security and health insurance. Overall, 44 percent of wage-employed workers are in employment relationships governed by a written contract (which can be viewed as an indicator of formal wage employment status), while the remaining percentage is not (figure 31).

Notably, wage employment under written contracts is much less common among the poor than the nonpoor. Written contracts are least common in agriculture. Only 10 percent of wage workers in agriculture have written contracts, compared to 25 percent of wage workers in industry and 54 percent of wage workers in services. Written contracts are the norm in public employment (91 percent of public employees have such contracts), while only 29 percent of private sector workers are covered by written contracts.

Overall, only 35 percent of wage workers report being entitled to employer-provided social security benefits (figure 32), hereafter referred to as social security coverage for brevity. Written-contract status drives social security coverage status: Among wage workers, 76 percent of those with written contracts have social security coverage; conversely, 96 percent of those without written contracts lack social security coverage. Hence, subgroup patterns for social security coverage status are similar to the subgroups patterns for written-contract status. Among wage workers, social security coverage is much more likely among those in the public sector than the private sector, and among those in services than in agriculture or industry. Social security coverage is also more common among nonyouth, the nonpoor, and those in urban areas than their respective counterparts.

Health insurance is comprised of both private and public schemes, the latter, for example, through the National Health Insurance Scheme (NHIS). The levels and patterns in employer-provided health insurance coverage of wage workers mirror those of employer-provided social security coverage. Overall, 15 percent of wage workers report having employer-provided health insurance coverage (figure 33), hereafter referred to as health insurance coverage for brevity. And similar to

social security coverage, written-contract status is a key determinant of health insurance coverage. Among wage workers, 32 percent of those with written contracts have health insurance coverage, while 98 percent of those without written contracts lack health insurance coverage. Coverage rates are higher among nonyouth, the nonpoor, and those in urban areas than their respective counterparts. These rates are also higher among public- than private-sector workers and among workers in services than among those in agriculture and industry.

Characteristics of formal and informal nonfarm enterprises

Data on nonfarm enterprises, referred to as enterprises for brevity, were also gathered in GLSS 2016/17. An enterprise that is not registered with the Registrar General's Department, the Department of Cooperatives, District Assembly, or the Ghana Revenue Authority is defined as informal, in line with the approach taken in the World Bank's Informal Enterprise Surveys.⁵⁹ Based on this definition, 3.1 million, or 82 percent, of Ghana's 3.8 million enterprises, are informal, while 0.7 million, or 18 percent, are formal (figure 34).

Compared to formal enterprises, informal enterprises are more common in rural areas than in urban areas, and are much less likely to benefit from capital received from formal financial institutions. The Ghana Statistical Service classifies enterprises into four categories: manufacturing or construction, wholesale and retail trade (WRT), services (other than WRT), and preparation and sale of meals. Informal enterprises are less likely to be in non-WRT services compared to formal enterprises. Informal enterprises are more likely to be smaller than formal enterprises: Eighty-six percent of one-person enterprises are informal, whereas 55 percent of enterprises with at least 10 employees are formal.⁶⁰

Among all enterprises, informal enterprises account for 84.5 percent of employment. One-person enterprises account for 73.0 percent of employment in all enterprises, while enterprises with 2–9 and 10+ workers account for 26.2 percent and 0.8 percent, respectively.

The above-noted patterns in the characteristics of enterprises are qualitatively similar to those identified from other surveys and studies that have examined either household or nonhousehold enterprises in Ghana and other countries.⁶¹

Connected to the earlier discussion on labor productivity, human capital, and economic growth (section 2), the nature of enterprise activity also matters for labor and total factor productivity in Ghana, and is influenced in part by the human capital of owners and workers. Several studies have explored the determinants of labor and total factor productivity of enterprises in Ghana. These studies include research specific for Ghana as well as cross-country research where Ghana is included. Average productivity among enterprises is lower in Ghana and in other low- and middle-income countries than in high-income countries.⁶² While micro and small enterprises account for most of Ghana's enterprise employment, large enterprises are more productive and pay higher

⁵⁹ See <https://www.enterprisesurveys.org/en/enterprisesurveys>.

⁶⁰ A finer disaggregation of enterprises by workforce size is precluded by small sample sizes.

⁶¹ Fox and Sohnesen 2012; Gindling and Newhouse 2014; Ghana Statistical Service 2016; Gindling et al. 2016; Ghana Statistical Service 2018.

⁶² Bloom et al. 2010.

wages on average.⁶³ The relationship between enterprise size and productivity is positive; however, this relationship is driven by large enterprises, rather than being observed across the entire distribution of enterprise size.⁶⁴ While informal enterprises tend to be small, size does vary significantly; further, the relationship between enterprise size and productivity among these enterprises appears to be negative.⁶⁵

Enterprises often report poor-quality or missing infrastructure, a restrictive regulatory environment, and low human capital as constraints to productivity and profitability. Importantly, enterprises also appear to be constrained by poor business management practices and lack of sufficient financial capital.⁶⁶ Among micro and small enterprises, business management practices appear to be better in enterprises with owners who have higher human capital and in enterprises with employees.⁶⁷ Micro and small enterprises are more likely to fail (exit or death) if they are younger enterprises, retail enterprises, less productive and less profitable enterprises, or female-owned enterprises. Further, the features of enterprise exit point to enterprise competition and shocks, occupational choice, and non-separability from household activities as causes.⁶⁸ The effects on profitability of cash or in-kind grants to small enterprises in Ghana to alleviate capital shortage appear to differ by the type of grant and by the gender of the owner.⁶⁹

Employment characteristics of workers in the Ghana CPSD 2017 priority sectors

The World Bank's Ghana CPSD 2017 identifies seven priority sectors: agribusiness, education, energy, finance, health, ICT, and transport. Who works in these priority sectors? What does work in the priority sectors look like? We examine these questions based on data from GLSS 2016/17.

The priority sectors together employ 2.1 million workers, accounting for 20 percent of overall employment in Ghana (table 4). Among those employed in the priority sectors, 39 percent work in agribusiness, which includes commercial agriculture involving some processing activities (even if they are basic). It also includes smallholders and micro enterprises in food processing and retail to the extent that they are market oriented. The most common item that is processed in Ghana is maize, followed by other commodities such as nuts and oils, fish, and grains such as millet, sorghum, and guinea corn. Food processing is dominated by informal micro and small enterprises, with many employing family labor. The food-processing sector can be classified into two groups: domestic processing and factory processing.⁷⁰ Domestic processing activities are dominated by female workers who tend to acquire their skills mostly through apprenticeships. Domestic processing often leads to processed outputs of variable quality. Nonetheless, these operations create employment opportunities and make use of local resources. Factory processing businesses, on the other hand, are mostly foreign-owned (for example, Nestle and Cadbury) or state-owned

⁶³ Francis and Honorati 2016.

⁶⁴ Ibid.

⁶⁵ Amin and Huang 2014.

⁶⁶ Bloom et al. 2010; McKenzie and Woodruff 2017.

⁶⁷ McKenzie and Woodruff 2017.

⁶⁸ McKenzie and Paffhausen 2019.

⁶⁹ Fafchamps et al. 2014.

⁷⁰ Newfarmer et al. 2018.

(for example, Fan Milk). These factories can process large quantities of raw materials and can contribute significantly to the economy through exports.⁷¹

The second-largest priority sector in terms of employment is education, which accounts for 27 percent of overall employment in the priority sectors, followed by transport, at 18 percent. While ICT has the highest desirability and feasibility scores among the priority sectors, employment in this sector is miniscule, accounting for just 2 percent of overall employment in priority sectors.

The share of workers who are wage-employed in priority sectors is 59 percent, compared to only 16 percent in nonpriority sectors. Among the various priority sectors, average monthly earnings among wage-employed workers range from GH¢755 in agribusiness to GH¢2,719 in ICT (table 4). The average monthly wage earnings in priority sectors is GH¢925, compared to GH¢1,006 in nonpriority sectors. The lower average for the former is driven by low averages in agribusiness and transport. (See figure A.3 for the distribution of monthly wage earnings for priority sectors.).

Youth, the nonpoor, and urban residents account for higher shares of employment in priority sectors than in nonpriority sectors. These patterns are due in part to the nature of priority sectors, including where these sectors operate and what worker attributes are needed for entry. Women constitute 50 percent of workers in priority sectors, compared to 52 percent of workers in nonpriority sectors (figure 35). However, among priority sectors, the employment share of women varies considerably: Most workers in health and agribusiness are women, while virtually all workers in transport and ICT are men.

Youth account for 53 percent of overall employment in priority sectors, compared to 43 percent of overall employment in nonpriority sectors. In priority sectors such as ICT or finance and insurance, about two-thirds of workers are youth. While 25 percent of workers in nonpriority sectors are poor, only 10 percent of those in priority sectors are such. Sixty-six percent of workers in priority sectors live in urban areas, compared to 44 percent for workers in nonpriority sectors. In certain priority sectors, such as ICT and finance and insurance, the share of workers from urban areas is even higher.

Workers in priority sectors tend to be much more educated than their counterparts in nonpriority sectors (figure 36a). As one measure, the average years of education among workers in priority sectors is 10.9, compared to 8.9 years for workers in nonpriority sectors. Among priority sectors, workers in health, education, ICT, and finance and insurance tend to be much more educated than those in agribusiness and transport.

The nature of work in priority sectors is more likely to involve nonroutine cognitive analytical tasks, such as analyzing data, thinking creatively, and interpreting information (figure 36c and d). Priority sectors are also more likely to include nonroutine cognitive interpersonal work, such as establishing and maintaining personal relationships and managing people, common in occupations such as management, teaching, and sales.

The differing education and skills profiles of workers in priority and nonpriority sectors (and across different priority sectors) are, in part, due to the nature of the occupations in these sectors

⁷¹ Ibid.

(figure 36b). Two factors stand out. First, all priority sectors are nonagricultural (the small exception is agribusiness, where 10 percent of employment is agricultural). Second, in several priority sectors, occupations such as professionals and technicians (which require higher levels of education and skill) are more common than in nonpriority sectors.

As noted earlier, wage employment is more common in priority sectors than nonpriority sectors (figure 37a). In addition, public employment is more common among workers in priority sectors than nonpriority sectors: Twenty-four percent of employment in priority sectors is public, compared to 3 percent in nonpriority sectors (figure 37b). This pattern is driven by the public education, energy, and health sectors.

Homing in on wage-employed workers, employment in priority sectors tends to be more formal (as suggested by written-contract coverage) and higher quality (as suggested by, for example, employment-based social security coverage) (figures 37c and 37d). Specifically, 64 percent of wage-employed workers in priority sectors have written contracts (compared to 41 percent of nonpriority-sector counterparts) and 54 percent have employment-based social security (compared to 33 percent of nonpriority-sector counterparts).

Across many of the dimensions examined, the priority sectors of agribusiness and transport have patterns that more closely resemble nonpriority sectors than the other priority sectors.

COVID-19 pandemic and effects on the economy and labor market

The findings we have presented reflect more “structural” aspects of labor market performance and less transitory aspects such as those related to the COVID-19 pandemic, which has posed a major, negative shock to the country’s economy and labor market. In July 2020, the Ghana Ministry of Finance revised its projection for GDP growth for 2020 to 0.9 percent compared to the originally projected 6.8 percent.⁷² In October 2020, the International Monetary Fund (IMF) also projected that Ghana’s real GDP for 2020 will grow by 0.9 percent.⁷³ In contrast, in October 2019 (before the pandemic), the IMF had forecast real GDP growth of 5.6 percent for Ghana in 2020.⁷⁴ As of October 2020, the IMF was projecting real GDP growth would rebound for Ghana in 2021, to 4.2 percent, implying a V-shaped recovery from the crisis in the short term.

In settings such as Ghana, we predict that, as a result of COVID-19, households can experience economic loss (specifically, reduced household consumption) from reduced income due to adverse health outcomes (illness, morbidity, or mortality directly or indirectly due to COVID-19) of members or due to the disruption of economic activities and of transfers from formal social assistance and insurance programs and informal private sources (for example, remittances or extended family or community assistance). The labor market represents the predominant pathway behind the predicted economic effects on households, given that labor income (obtained directly or indirectly) is the largest share of total income for most households.

⁷² Both original and revised projections are reported in Ghana Ministry of Finance 2020.

⁷³ IMF 2020.

⁷⁴ IMF 2019.

In addition, some potential changes in household behavior in response to current or anticipated economic distress may prove suboptimal for the extent and speed of recovery of income (and consumption). For example, households may sell productive inputs. Human capital loss, or the prolonged inability to invest in human capital due to the outbreak, and any resulting breakdowns in access and service delivery, may cause long-term economic loss, felt by children when they reach adulthood. Poorer households, with lower initial incomes and poorer prospects for income growth, have little or no ability to withstand any economic loss.

Simulations have attempted to attach numbers to some of these predicted effects for Ghana. One simulation exercise indicates that the COVID-19-induced partial lockdown of Accra and Kumasi in April 2020 contributed to a decline in national GDP of 27.9 percent during the lockdown period, and that the services sector saw the largest decline in GDP, followed in turn by industry and agriculture.⁷⁵ The simulation also suggests that the decline in GDP is reflected in income losses across the population, with larger losses (in percentage terms) for richer than poorer households, and the accrual of large losses by farm and nonfarm households in areas that were not locked down, due to interlinkages among markets. Depending on how fast the Ghanaian economy recovers, the analysis indicates a decline in annual GDP between 8.6 percent and 12.3 percent in 2020, translating into a real GDP growth rate of –2.3 percent to –6.3 percent year-on-year for 2020, a larger decline than the first round of forecasts made by the Government of Ghana and the IMF after the emergence of COVID-19 cases in Ghana and the introduction of restrictions to control the infection. The analysis also indicates an increase in the national poverty rate from a baseline (pre-COVID-19) level of 24.2 percent to 36.7 percent.

Another simulation study based on Ghana Living Standards Survey 2016/17 data suggests that the pandemic and the government's containment measures have contributed to large increases in poverty and inequality, with Accra, Kumasi, and other urban areas hardest hit.⁷⁶ Specifically, the exercise indicates national income losses equivalent to 5.3 percent of monthly GDP, affecting more than 8 million people (about 26 percent of the national population). These income losses increase the national poverty rate from a baseline level of 20.5 percent to 33.9 percent, and the national Gini index (a measure of inequality) from a baseline level of 41.2 percent to 47.3 percent.

Telephone-based national surveys of sample households and enterprises suggest Ghanaians have suffered widespread and acute economic distress amid the pandemic.⁷⁷ In a survey of households conducted in June 2020, a majority of respondents said they had experienced a loss in income since mid-March 2020 when the government began to introduce restrictions to control the local spread of infection. Those who received self-employment income were more likely to report a loss in income than those who received wage earnings. Those who received remittance income or other private transfers were more likely to report a loss in income than those who received cash or in-kind assistance from the government or nongovernmental organizations.

In terms of how households were affected by the pandemic, 75–77 percent reported that they were severely affected by the suspension of schooling or by an increase in food prices, while 37–44 percent said they were severely affected by an increase in the price of nonfood goods and services

⁷⁵ Amewu et al. 2020. This study was updated and published in June 2020.

⁷⁶ Issahaku and Musah Abu 2020. This study was distributed for comment in August 2020.

⁷⁷ Ghana Statistical Service 2020a, 2020b.

or by a fall in the price of outputs. In addition, 23–25 percent reported that they were severely affected by business failure or loss of employment.^{78,79} Only 1–5 percent of households had received any formal assistance, such as from government, NGOs, employers, or insurance.

Findings from a survey of sample enterprises (business establishments and household enterprises) administered in May–June 2020 suggest that the vast majority experienced a decline in sales, resulting in cash flow problems. The average reported decline in sales among business establishments was 60 percent compared to the same period the previous year. A sizeable share of enterprises also reported difficulties in obtaining productive inputs. Enterprises with employees were more likely to cut pay and hours than to lay off workers in response to the hardship. During the partial lockdown of Accra and Kumasi in April 2020, a total of 36 percent of business establishments and 24 percent of household enterprises closed across the country. However, Ghana saw a sharp rebound in enterprise activity after the government relaxed the lockdown in late April 2020. Enterprises in industry and services were more likely to report being adversely affected than those in agriculture. Micro, small, and medium-sized enterprises were more likely to report being affected than large enterprises. Enterprises indicated that they would like assistance in the form of cash transfers, deferrals on rent payments, and loans with subsidized interest rates. Less than 4 percent of enterprises reported receiving any form of formal assistance.

4. Policy directions

If Ghana is to successfully transform its economy and boost its labor market performance, it will require a steadfast, multi-angle perspective, well-programmed macro and micro development policy actions, and multisector interventions.

Six strategic directions are recommended to strengthen Ghana’s economy and labor market:

- i. Identify and nurture economic activities and enterprises with the potential for jumps in product complexity;
- ii. Strengthen the participation of enterprises in global value chains;
- iii. Harness the potential of digital technologies and proactively adjust to the changing world of work;
- iv. Increase and enhance the participation of women, youth, and the poor and vulnerable in the labor market;
- v. Improve human capital in the current and future workforce; and
- vi. Design systems and interventions to be resilient and responsive, to protect the economy and labor market against disasters and shocks.

⁷⁸ Households can report multiple ways they were affected.

⁷⁹ Whether these reported effects differ from trends reported during the March–June period in past years has yet to be investigated.

Interventions at the macro and micro levels, and across multiple sectors, will require coherent and coordinated efforts across multiple government ministries and agencies. It will also be crucial to secure effective private sector and civil society participation in the design, implementation, and monitoring and evaluation of policies and interventions.

Policy considerations and options in relation to these strategic directions are discussed in detail below.

Identify and nurture economic activities and enterprises with the potential for jumps in product complexity

The Government of Ghana is taking steps to bolster its industrial sector through programs such as One District One Factory (1D1F), an initiative meant to spur a “massive nationwide industrialization drive, which will equip and empower communities to utilize their local resources in manufacturing products that are in high demand both locally and internationally.”⁸⁰ As of July 2020, the 1D1F program had more than 70 factories in production, with additional ones in various stages of construction.⁸¹ In pursuing potential investors for 1D1F sites, the government should consider targeting enterprises operating in the priority sectors identified in the World Bank’s Ghana CPSD 2017.

Countries are more successful in diversifying when they move into production that requires similar knowhow and builds on existing capabilities. This adjacency approach to export diversification can facilitate small gains in the near term for Ghana. But for larger gains, the country would need to consider making strategic bets, that is, coordinated long jumps into strategic areas with future diversification potential.

Given Ghana’s current exports, some of the sectors with high potential for new diversification are industrial machinery and plastics. The country’s recent production of oil and gas in commercial quantities opens the way to developing associated industries such as petrochemicals and fertilizer, which can be targeted for export.⁸² Given strong linkages with the rest of the domestic economy, these industries can also produce broad spillover benefits.

A number of organically occurring clusters in Ghana appear to hold export promise and could benefit from targeted government support. These include a light manufacturing cluster in Suame-Magazine and a furniture cluster in Kumasi. In Suame-Magazine, more than 10,000 micro and small enterprises and workshops are estimated to have set up operations, including in automobile parts production, retail, automobile repair services, and metalworking.⁸³

The government would need to address constraints to enterprise development and success in general. Enterprises surveyed in Ghana’s Brong Ahafo region often cited the lack of business

⁸⁰ One District One Factory website: <http://1d1f.gov.gh/about-us/>.

⁸¹ Ghana Ministry of Finance 2020.

⁸² Government of Ghana 2017b.

⁸³ Ackah, Adjasi, and Turkson 2016.

services and technological support as key constraints to business success.⁸⁴ In other surveys, enterprises frequently identified their main constraints to business success to be access to financial capital, land, and infrastructure services (electricity, water, and information and communications technology) and a reliable supply of infrastructure services.⁸⁵

Strengthen the participation of enterprises in global value chains

The growth of global value chains (GVCs) brings both opportunities and challenges for countries.⁸⁶ GVCs break up the production process across countries, allowing enterprises to specialize in a specific task suited to their capabilities, but these chains also place a strong premium on trade logistics.⁸⁷ Ghana has succeeded in entering into global value chains in horticulture. To further agriculture development in the country, the Government of Ghana should prioritize public investments in infrastructure, particularly in areas with high agricultural potential, such as the Northern Savannah Ecological Zone (NSEZ) (including the Afram Plains), which is seen as critical to sustaining Ghana's agricultural growth.⁸⁸

“Industries without smokestacks,” primarily the agro-processing sector, offer opportunities to create productive, gainful employment, capture more value locally (instead of having raw products processed outside the country), increase exports, and reduce post-harvest losses for farmers and traders. Most of the off-farm work involved in agro-processing tends to be in trade services, including logistics to move processed products to markets. Importantly, many young people may find employment in the “post-processing” sectors (including packaging, logistics, and marketing services) to be more attractive than farming.

The use of inclusive value chain development (iVCD), which links farmers to buyers and other stakeholders through contracts, can help reduce risks for and facilitate connections between players in the agro-processing sector. iVCD arrangements allow buyers (processors) to secure higher volumes of better- and more-consistent-quality agricultural products needed to access markets or to operate processing plants at scale. Farmers, meanwhile, get access to credit, gain agronomic knowledge, and reduce their production, price, and market risks. Contracts can be bilateral or involve multiple parties, and can be informal or formal. Depending on the scope of a contract, farmers may remain self-employed or become quasi-wage workers, with the processor or marketing agent stipulating production modalities, as is common in poultry and pork contract farming.⁸⁹

For Ghana, the iVCD model might offer a promising option given the prevalence of informal self-employment, primarily in agriculture. Specifically, Ghana should consider the iVCD model for cash crops grown in rural areas in the north.

⁸⁴ Honorati and de Silva 2016.

⁸⁵ Ackah et al. 2016.

⁸⁶ Beegle and Christiaensen 2019.

⁸⁷ Page 2019b.

⁸⁸ World Bank 2017b.

⁸⁹ World Bank 2015, 2020a.

Harness the potential of digital technologies and proactively adjust to the changing world of work

The so-called Fourth Industrial Revolution, or Industry 4.0, is characterized by growth in the use of connected, autonomous systems and smart technology in production processes. This trend is set to revolutionize manufacturing and lead to major economic disruptions, creating new winners and losers around the world. The Government of Ghana should take deliberate policy action to ensure that the country adopts Industry 4.0 technologies if its industrial sectors are to remain competitive. At the same time, policy makers need to be sensitive to the fact that Industry 4.0 is expected to lead to employment losses and declines in labor demand as enterprises adopt labor-saving technologies.⁹⁰

Technologies that underpin Industry 4.0 are leading to an increasingly service-oriented labor market characterized by the sharing economy. The sharing economy is a system of peer-to-peer exchanges or rentals facilitated through a digital intermediary.⁹¹ Digital platforms can be used to access many goods and services, from ordering and delivering meals, clothes, or groceries; to hiring personal assistants or contingent workers; to utilizing Internet-based scheduling. Adoption of the sharing economy is highest among youth. The Government of Ghana should encourage the growth of the sharing economy and the creation of enabling platforms by youth, and support collaborative innovations and commercialization of platforms through hubs.

Digital platforms can help to expand productive, gainful work opportunities in Ghana. Projections suggest that the country's labor market will continue to be dominated by informal employment in poor, precarious conditions. When Ghanaian policy makers consider the future of work, then, the question should not be whether employment will be formal or informal, but how to make informal employment more productive and gainful. Digital platforms offer more and new opportunities for informal workers not just in Ghana but across Africa, by opening up new markets to artisans and domestic workers. This shift offers enough scale for artisanal producers of food, cosmetics, and clothing to flourish, and can help to accelerate informal trade at a regional and even international level.⁹²

In Ghana, enterprises such as TROTRO Tractor and Farmerline are leveraging digital technologies to boost the productivity of farmers. TROTRO Tractor is an online marketplace for tractor services including ploughing, harrowing, planting, shelling, and ridging. Smallholders request its services through SMS texts via cell phones, and tasks can be completed within 72 hours.⁹³ Farmerline, meanwhile, is transforming farmers into successful entrepreneurs by increasing their access to information, inputs, and resources so they can increase productivity. Established in 2013, the enterprise operates an online platform that connects, and communicates with, small-scale farmers in their native languages through innovative mobile technology.⁹⁴ Other disruptive, platform-based

⁹⁰ Already, footwear companies are using 3D printers and robotic arms to produce running shoes in Germany; laser cutting is replacing hand cutting of fabrics in textile mills; *sewbots* are poised to displace workers in developing countries as preferred producers of shirts in the United States; and knitting machines that produce sweaters in two hours are being deployed in key markets (ILO 2019b).

⁹¹ Yaraghi and Ravi 2017.

⁹² Ng'weno and Porteous 2018.

⁹³ See <https://www.youtube.com/watch?v=iG5eN0YVwkI> for an illustrative video.

⁹⁴ Choi, Dutz, and Usman 2020.

sources of informal employment in Ghana and in Africa more broadly include ride-hailing enterprises such as Uber and the online marketplace JUMIA.⁹⁵

The World Bank's Ghana CPSD 2017 has identified the information and communications technology (ICT) sector as a potential priority sector for the country for targeted investment and development. Ghana will also need to invest significantly in digitalization across the entire economy, touching workers and enterprises, to spur economic growth and competitiveness and to strengthen labor outcomes. Such a digital transformation should include the expansion of digital infrastructure, and cover public and commercial platforms, financial services, skills and literacy, and entrepreneurship. An important part of the digital economy comprises digitally enabled enterprises and the integration of digital technologies with entrepreneurship ecosystems (composed of incubators, accelerators, and hubs).⁹⁶

Digitalization can help generate completely new occupations alongside traditional economic sectors. In health, for example, ICT innovations include online and mobile health applications, 3D- and bioprinting, artificial intelligence (AI), blockchain, electronic health (e-health), and mobile health (m-health, involving mobile phones)—all of which will radically reshape the health sector.⁹⁷ These innovations will also require workers who are skilled in their use.

To prepare current and future workers for this changing world of work, the government will need to invest in digital literacy and skills training. Globally, employers consistently rank higher-order cognitive (technical) skills and socio-behavioral competencies among the most-valued skills.⁹⁸ In high-income countries, employment has been growing fastest in high-skill, cognitive occupations and low-skill occupations that require human dexterity, while shifting away from middle-skill occupations, such as machine operators. Middle- and low-skilled workers could experience declining wages—the former because of automation, the latter because of increased competition. Ghana will need to reshape its education and training systems both to teach existing workers new skills and to prepare future workers for a digital economy.⁹⁹

Increase and enhance the participation of women, youth, and the poor and vulnerable in the labor market

Facilitating greater and more productive participation by women, youth, and the poor and vulnerable in Ghana's labor market will require interventions that are intentionally and proactively designed and implemented to promote the interests and prospects of these groups. Success is more likely if these groups help to shape the design and implementation of such interventions.

An individual, particularly one from among these specific groups, may face multiple constraints to labor market success. Based on growing international evidence, the prevailing view of good practice is that a suite of interventions should be offered to address these constraints. These interventions might include vocational, socioemotional, and life skills training; access to

⁹⁵ Ibid.

⁹⁶ World Bank 2019a.

⁹⁷ ILO 2019b.

⁹⁸ World Bank 2019b.

⁹⁹ Roseth et al. 2010; Darvas et al. 2017; Arias et al. 2019.

knowledge, markets, physical and financial capital, and other inputs for starting and running a self-employment activity; and intermediation and counseling services to support success in searching for and securing wage employment. These interventions can be provided through a single multicomponent program or through multiple, distinct programs that are well coordinated.¹⁰⁰

To strengthen returns from labor force participation for these groups, individuals should be directed toward areas where productive and gainful wage and self-employment opportunities are expected to expand. In addition, centers of expanding employment opportunities in Ghana should be deliberately shaped to be conducive to the participation of these groups. The design and delivery of labor market programs and services need to be tailored and made sufficiently flexible to allow for entry, retention or midstream reentry, completion, and otherwise successful participation for individuals from these groups. In relation to gender in particular, women's constraints differ systematically from those of men. Specifically, they relate to domestic, childcare, and elderly-care responsibilities and emanate from social norms and expectations around the extent and nature of economic participation by women. Ensuring that labor market programs and services are sensitive to these issues would require customized and intensive outreach, information, counseling, referral, and overall case management.¹⁰¹

Ghana has several labor market policies and programs aimed explicitly or implicitly at addressing the labor challenges of youth across the skills distribution. Many of these programs have substantial budgets and operations. Reviews of programs suggest several have overlapping objectives and similar core design features. Programs also appear to be biased toward youth who are already relatively skilled, toward high school and university graduates, or toward urban residents, either because the programs are oriented toward these groups or because these groups are more likely to take up program opportunities. Efforts by the government and other actors may be needed to enhance the coherence and complementarity between programs. Efforts may also be needed to improve the effectiveness, efficiency, and equity effects of programs.¹⁰²

Existing programs in Ghana tend to target youth who have exited schooling. The longer the duration between exiting schooling and entering employment, the greater the damage to an individual's short- and longer-term labor market prospects. Moreover, employment programs and services may not be able to offset that damage. Consequently, programs and services should be designed to reach individuals while they are students in private and public education and training institutions.

Social safety net programs, which target the poor and vulnerable, can influence the overall functioning of the labor market and individual labor behavior in positive ways. By addressing poverty and its ill effects on individual economic decision making, these programs can improve the psychological, physical, and material wherewithal of beneficiaries, enabling them to engage more successfully in the labor market. By promoting greater human capital investment, the programs can foster greater labor market success for beneficiaries. Social safety net programs can also function as a desirable "floor" for labor markets, strengthening the market power of poor

¹⁰⁰ Datta et al. 2018.

¹⁰¹ Beegle and Rubiano-Matulevich 2020.

¹⁰² Honorati and De Silva 2016; Dadzie, Fumey, and Namara 2020.

individuals and raising equilibrating market wages and working conditions (in other words, improving the quality of employment offers in general).

Social safety net programs need to be designed to enable and enhance mechanisms that generate positive labor market effects while controlling those that generate downside risks or negative labor market effects. To boost the potential for positive labor market effects, one important design feature would be to actively assist beneficiaries to connect to suitable labor market programs and services or to private self- and wage-employment opportunities.¹⁰³ One such effort being rolled out by the Government of Ghana is an economic inclusion program for social safety net program beneficiaries in northern Ghana.¹⁰⁴

Improve human capital in the current and future workforce

Greater human capital—that is, improved nutrition, health, education, and training outcomes (or human development outcomes)—can stimulate structural transformation and improve labor outcomes, including labor productivity. Interventions should aim to extend opportunities for raising human development outcomes as well as to improve the quality of available opportunities.

Averages, and changes in averages, can hide important demographic socioeconomic disparities in human development outcomes. The greatest shortfalls in human development outcomes are observed among the poor, those vulnerable to falling into poverty, those in rural areas and in northern regions, and girls and women, among other groups. These greater shortfalls are presumably the result of a combination of lower household demand for nutrition, health, education, and training services (owing to a lower valuation of improved human development outcomes) and poorer availability, access, and quality of human development services delivered by private and public actors. Interventions should aim to address both demand- and supply-side factors behind lower human capital investments.¹⁰⁵

Improving human development does not necessarily mean focusing immediately on improving nutrition, health, education, and training services. Interventions in sectors such as water and sanitation, social protection, or transport, to name a few, can produce direct, meaningful, and positive gains in human development; these “human development-sensitive” interventions can also enhance payoffs from “human development-specific” interventions in the education or health sectors. Nor does the government necessarily have to provide human development services. Indeed, the returns may be greater if the government sets the rules and creates the conditions to allow the private sector to successfully provide the services.

Ensuring that the full, relevant set of interventions (or reforms to interventions) converge or coincide at the level of the community and the household can enhance human development payoffs. While lifelong learning, skills acquisition, and health should be promoted, interventions at specific points in the lifecycle of the individual appear to produce especially large and durable dividends. These periods include prepregnancy, early childhood, adolescence, and early adulthood.

¹⁰³ Almeida et al. 2012.

¹⁰⁴ World Bank 2018b.

¹⁰⁵ Blunch 2020.

The current extent and nature of private and public sector failures in the education and health markets (spanning the different levels and types of education, training, and health care services) should be examined, in order to inform the Government of Ghana on where and how the public sector should intervene in these markets going forward.

Design systems and interventions to be resilient and responsive, to protect the economy and labor market against disasters and shocks

The frequency, scale, and severity of negative, large-scale natural and other shocks are expected to increase globally, including in Ghana. Disaster management institutions, early warning systems, and preparedness and response plans are vital. However, a basic prerequisite for effective shock responsiveness is sufficient, timely, and well-executed emergency government spending when a major shock occurs. For this, the Government of Ghana may need to improve its capability to reprogram planned spending; to activate and earmark additional financing from own and external sources; to streamline budget execution processes for fast disbursement; and to find innovative ways to track the integrity of emergency spending.

In the face of shocks, interventions that aim to promote structural transformation and labor market performance will need to build in flexibility and resilience to minimize any disruptions.

Social safety net programs that are effective in protecting against, or mitigating, the adverse effects of shocks on households and individuals can help prevent labor markets from unraveling in affected communities and areas. Left unaddressed, shocks, even those that only have a localized impact, can produce labor market disruptions or labor dislocations that ripple widely, with large-scale and persisting negative social welfare effects. Social safety net programs should be designed to ensure, first, that they can withstand the shock and continue to operate; and, second, that they can help households manage the effects of the shock. The second may require structures and processes to smoothly and swiftly expand social safety net program coverage, accurately target benefits, raise benefit amounts, adjust the timing of benefits distribution, or all four.¹⁰⁶ Social insurance programs that have extensive uptake and reach and offer quick and meaningful benefits and services when a shock occurs also can help protect workers and enterprises against the impact of shocks. Finally, participation in social safety net and social insurance programs should be sufficiently delinked from employment or organizational arrangements such as formal employment contracts. This delinking can help insulate program beneficiaries from adverse shocks transmitted through the labor market.¹⁰⁷

5. Conclusion

As Ghana continues to develop, economic activity in the country is increasingly dominated by services. The shift in employment toward services has resulted in higher average labor productivity, but there are indications of declining marginal productivity in those services that have observed the largest employment gains, namely wholesale and retail trade and food services. Further, within the services sector, the types of services that have seen the largest gains in

¹⁰⁶ Bowen et al. 2020.

¹⁰⁷ Packard et al. 2019; World Bank 2019b.

employment are considered to be those with the lowest levels of productivity. These trends have sparked concern that workers are moving from low-productivity agriculture to low-productivity services. Consequently, improvements in average labor conditions and outcomes, such as in earnings and nonwage benefits, have been limited.

Findings suggest Ghana began to deindustrialize prematurely, with the share of manufacturing in employment peaking when the country had a lower national income compared to when countries such as South Korea, Malaysia, or Brazil, began moving toward more employment in services. Ghana's shares of manufacturing in value-added and exports are lower than for other countries at its income level; further, its manufacturing share in exports has been declining. Ghana's economy is also characterized by persistently low complexity, as suggested by the patterns and trends in its exports, which are dominated by primary products.

The Government of Ghana recognizes the important role that industrialization can play in boosting productivity and incomes. Its industrial policy aims to address challenges faced by the manufacturing sector. The government has also taken steps to try and prevent Ghana's oil industry, which began production in 2011, from crowding out the country's non-oil manufacturing sector.

What alternative paths exist to transform the structure of Ghana's economy? "Industries without smokestacks," including tradable services (such as tourism and ICT) and agribusiness (primarily horticulture), offer many of the same characteristics and advantages of manufacturing without the environmental and societal costs. As with manufacturing, industries without smokestacks have the potential to generate high productivity growth, to produce services and value-added goods suitable for domestic and international markets, and to elevate both worker skills and a country's economic complexity. As such, they offer possible options for Ghana as it seeks to strengthen its industrial sectors.

At the same time, Ghana should seek to boost the productivity of its population by raising nutrition, health, education, and training outcomes and by enhancing the productivity returns to human capital acquired. Earnings returns for an additional year of education appear to be much larger for higher levels of education (secondary education completion, post-secondary education participation) than for lower levels of education. Credible evidence exists for Ghana on the positive effects of various interventions on human development outcomes. Additionally, credible international evidence exists on the effects of various interventions in enhancing (the labor market returns to) human development outcomes.

The World Bank's Ghana Country Private Sector Diagnostic (CPSD) 2017 recommends priority sectors that the Government of Ghana should focus on as it continues to diversify the economy and promote industrialization. The study describes the employment characteristics of workers in these priority sectors. Development and expansion of these priority sectors could improve the country's average labor market conditions and outcomes, and accompanying affirmative action policies could help to draw traditionally disadvantaged groups into these sectors.

In the short term, the economic crisis triggered by the pandemic and the government's efforts to contain the spread of COVID-19 have stalled Ghana's economic progress. The potential decline in formal private employment in Ghana due to COVID-19 means that affected workers may lose

employment-based social protection. Available social safety net and social insurance programs in Ghana lack sufficient coverage and benefit generosity to provide effective relief to affected informal and formal workers and enterprises. Until economic recovery gets fully underway, the potential positive influence of labor market programs and services on labor outcomes will be subdued. How quick and strong Ghana's economic recovery will be hinges crucially on both international and domestic efforts to stop the further spread of COVID-19.

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Box 1. Early Developments in Ghana's Industrial Policy

Ghana's post-independence (1957) industrialization strategy sought to develop large-scale, capital-intensive manufacturing industries owned and managed by the state, commonly referred to as import substitution industrialization (ISI). ISI was accompanied by protectionist measures to promote so-called infant industries. The government invested heavily in infrastructure and manufacturing activities by setting up state-owned enterprises (SOEs) for domestic production of previously imported consumer goods, processing of exports of primary products (agricultural and mining), and the expansion and development of building materials and of the country's electrical, electronic, and machinery industries.

ISI policies were largely dependent on the cocoa sector, which was dominated by less-educated or illiterate farmers. However, ISI had some initial success in fostering industrialization in Ghana, with the country's manufacturing sector growing from representing 2 percent of total output in 1957 to 9 percent in 1969. During the 1960s, manufacturing output grew at a rate of 13 percent per year, while its share of total industrial output increased from 10 percent in 1960 to 14 percent in 1970. Industrial sector employment averaged 8 percent annual growth between 1960 and 1970, and total employment in the manufacturing sector alone increased by nearly 90 percent between 1962 and 1970.

An unintended consequence of protecting the domestic manufacturing sector was the creation of excess capacity. The reversal of policies under different governments in the 1970s engendered balance of payments crises. For instance, import and interest rate liberalization and increased public expenditures in 1971 led to an influx of imports and escalating debt levels in the early 1970s. Production and capacity utilization in most of the import-substituting industries, especially those dominated by SOEs, fell during the mid-1970s to 1983. Stabilization efforts after 1983 had a negative impact on the industrial sector in several ways. First, they exposed the over-protected domestic industries to competition from imported manufactured inputs (i.e., adverse effect of trade liberalization). Second, the reforms relating to exchange rate and financial liberalization resulted in a rapid depreciation of the cedi and high costs for credit (due to high lending rates). Increased competition and high cost of credit, in turn, led to increased production costs and production cuts in the industrial sector.

By 1983, the government had raised tax rates on rental income and on consumables such as beer, cigarettes, and gasoline, and introduced new taxes on wealth, including on property and non-commercial vehicles. The government also introduced simplified tax schedules that capped the import tariff at a maximum of 30 percent. At the same time, the government strengthened its tax collection system with the aim of boosting revenue collection. These policies appear to have contributed to a significant increase in government revenue. Although spending and revenue remained stable for some time, the government began to focus on providing and improving incentives for the private sector with the aim of increasing its contribution to growth.

Following the country's poor economic performance in the 1970s and early 1980s, Ghana adopted the International Monetary Fund (IMF)- and World Bank-supported structural adjustment programs (SAP) in 1983. A key element of these programs in Ghana was a shift away from an ISI strategy to an export-led strategy and a more liberalized trade regime. Overall economic growth and growth of all economic sectors including manufacturing responded positively to the new policies.

Between 1989 and 2010, the manufacturing sector's contribution to overall economic growth declined continuously while that of the utilities and construction sectors and, later, the mining sector grew. Thus, manufacturing became a relatively less important subsector of industry at the expense of the other subsectors and during a period where industry's contribution to overall economic growth increased. The services sector remained the largest contributor to economic growth throughout this period.

The decline in the manufacturing sector during this time is partly attributed to increased liberalization of trade, which opened Ghana's manufacturing sector to strong competition from countries such as China. At the same time, financial sector liberalization led to high cost of borrowing as interest rates surged while the local currency began to suffer steep depreciation. These new constraints together caused production costs to soar, making local manufacturers economically inefficient.

Source: Ackah, Adjasi, and Turkson 2016; Osei, Atta-Ankomah, and Lambon-Quayefio 2020.

Box 2. Malaysia's Industrialization through Electrical and Electronics Manufacturing

The period between 1957 and the early 1990s is generally considered as one where the Malaysian economy achieved substantive structural transformation with the share of manufacturing in GDP rising from 14 percent in 1971 to 30 percent in 1993. The share of manufactures in total exports rose from 12 percent to 71 percent over the same period.

The Electrical and Electronics (E&E) industry is one of the leading industries of Malaysia, accounting for 24.5 percent of manufacturing value-added. In 2014, Malaysia's exports of E&E products accounted for 49.2 percent of exports of manufactured goods and 32.9 percent of overall exports. Major export destinations are China, the United States, Singapore, Hong Kong, and Japan. Reflecting Malaysia's role in the global value chains in the industry, E&E products were also the largest imports by volume, accounting for 37.8 percent of manufactured goods imports and 28.8 percent of total imports.

The E&E industry got its start in Malaysia in 1965, when Japan's Matsushita Electric sought to supply the domestic market with final consumer goods under a government program that encouraged import substitution for products like household appliances, electrical fittings, wires and cables, and automotive batteries. By 1972, the government had embarked on an export-oriented program of industrialization as part of an effort to generate more productive, gainful employment. Initiatives such as the Investment Incentives Act (1968) and the New Economic Policy (1971) led to the establishment of Export Processing Zones (EPZs) in 1971. The Malaysian Industrial Development Authority (MIDA) spotted an opportunity in the semiconductor-assembly business, when Singapore was trying to move into more complex activities and potentially vacating its role as an assembly hub. MIDA directly approached transnational corporations about investing in Malaysia, offering tariff- and tax-free zone locations and profit-repatriation guarantees.

Clarion and National Semiconductor started the first operations in the electronics sector in Malaysia in 1972, when the Bayan Lepas Export Processing Zone was opened in Penang. The government continued to establish EPZs and attracted foreign enterprises with low wages and tax exemptions. A wave of export-oriented E&E enterprises from developed countries relocated their plants to Malaysia as a result. By 1992, almost 90 percent of electronic products in Malaysia were being manufactured by affiliates of transnational corporations.

Along with fiscal incentives, a largely literate and English-speaking labor force helped Malaysia successfully lure transnational corporations. The government of Malaysia favored export-oriented enterprises, and these companies enjoyed various government subsidies for training, export, and R&D activities. They were also the main beneficiaries of duty drawbacks along with export incentives offering double deduction benefits on corporate tax. The government also targeted the E&E sector by concluding Technology Transfer Agreements to enable enterprises to obtain the necessary technologies for state-of-the-art manufacturing. During the 1989–96 period, the government approved a total of 1,124 technology transfer agreements.

Source: UN ECA 2016.

Box 3. Skills Intensity of Occupations in Urban Ghana, 2013 and 2016/17

What is the skills intensity of the distribution of occupations among workers in Ghana? How does this differ for selected subgroups of workers such as by sex, age group (youth versus nonyouth), poverty status (poor versus nonpoor), and education-attainment level? And how has the skills intensity of occupations among workers in Ghana evolved over the recent past?

To examine these questions, an analysis using data from the Ghana STEP survey 2013 and GLSS 2016/17 can be done to identify the skills content of tasks and occupations. Such an analysis involves several steps.^a First, standardize each component task variable to have an average of zero and a standard deviation of one in the subsample of employed persons. Second, add the corresponding standardized task variables to estimate an individual-level skills score for each skills category. Third, estimate the occupation-level average score using sample weights, and then standardize the occupation-level skills score to have an average of zero and a standard deviation of one. Finally, merge the standardized occupation-level skills scores with respective occupations in GLSS 2016/17 data. The analysis excludes individuals in rural areas since the Ghana STEP survey has been administered in urban areas only. Below is a brief description of the five types of skills by which tasks and occupations have been grouped.

- **Nonroutine cognitive analytical:** tasks that require analyzing data, thinking creatively and interpreting information for others; common in occupations such as researcher and artist
- **Nonroutine cognitive interpersonal:** activities that require establishing and maintaining personal relationships and managing people; common in occupations such as manager, teacher, and salesperson
- **Routine cognitive:** abstract activities that require repeating the same tasks, being accurate or exact, and doing structured work; common in occupations such as record-keeper and cashier
- **Routine manual:** manual tasks that involve intense repetition and exact, structured movements; common in occupations such as machine operator and repetitive assembly line worker
- **Nonroutine manual:** manual tasks that are difficult for machines to perform because they require dexterity and spatial orientation; common in occupations such as truck driver and janitor

Figure B3.1 shows the skills content of occupations in 2013 (panel a) and of occupations in 2016/17 (panel b), the latter by mapping categorization from the STEP survey 2013 to GLSS 2016/17. Ideally, a similar STEP survey in 2016/17 would be used to assess task-level skills requirements for occupations, but the STEP survey is only available for 2013.

Figure B3.1. Skills Intensity of Urban Occupations in Ghana, 2013 and 2016/17

a. Skills intensity of occupations, 2013

b. Skills intensity of occupations, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17 and Ghana STEP Survey 2013.

Note: Information for 2016/17 is based on mapping task categorizations from the STEP Survey 2013 to GLSS 2016/17. Given this, occupations in 2016/17 are assumed to be constituted of the same tasks as those in 2013.

Managerial, professional, technical, and clerical-support occupations are relatively more intensive in nonroutine cognitive tasks. Occupations such as plant and machine operators are relatively more intensive in manual tasks. Elementary occupations consist mainly of simple and routine tasks which mainly require the use of hand-held tools and often some physical effort.

Work performed by men and the nonpoor is relatively more intensive in nonroutine tasks than work performed by their respective counterparts (figure B3.2). Likewise, work performed by more educated workers (upper-secondary education or more) is more intensive in nonroutine tasks than work performed by less educated workers (figure B3.3). Skills differences also exist in the work performed by youth versus nonyouth, but the differences are relatively small.

Figure B3.2. Differences in Skills Intensity of Urban Occupations in Ghana, by Population Subgroup, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17 and Ghana STEP Survey 2013.

Note: Information for 2016/17 is based on mapping task categorizations from the STEP Survey 2013 to GLSS 2016/17. Given this, occupations in 2016/17 are assumed to be constituted of the same tasks as those in 2013.

Figure B3.3. Skills Intensity of Urban Occupations in Ghana, by Education Level, 2016/17

Source: Own estimates based on data from the Ghana Living Standards Survey 2016/17 and Ghana STEP Survey 2013.

Note: Post-secondary technical includes vocational, polytechnic, technical, and professional training. Information for 2016/17 is based on mapping task categorizations from the STEP Survey 2013 to GLSS 2016/17. Given this, occupations in 2016/17 are assumed to be constituted of the same tasks as those in 2013.

How has the skills intensity of occupations evolved in Ghana compared to in other countries? After transposing the STEP-based indexes task content of occupations onto various rounds of country surveys, Lo Bello, Puerta, and Winkler (2019) examine changes in the relative intensity of each of the five skills categories (figure B3.4). Nonroutine manual content of occupations increased in seven of 11 countries examined by Lo Bello et al., including Ghana. In fact, Ghana ranked second only to Vietnam in terms of increases in the intensity of nonroutine manual and nonroutine cognitive tasks between 1990 and 2015. Similarly, after Vietnam, Ghana had the second-largest drop in the intensity of routine cognitive tasks.

Figure B3.4. Change in the Skills Intensity of Occupations, Ghana versus Other Countries

Source: Lo Bello et al. 2019.

Note: Each bar represents a change in the task content of occupations using STEP-based indexes per country.

What might account for the observed changes in the skills intensity of occupations? Theory and international evidence suggest that both supply- and demand-side factors could influence the skills content of occupations. On the supply side, increased education, increasing female labor force participation, and demographic transition could affect the skills intensity of occupations in an economy. Increases in educational attainment in developing countries could be one of the factors behind the rise in the intensity of nonroutine cognitive occupations and the decrease in the number of low-skill occupations.

With respect to the demand side, recall that routine cognitive tasks include abstract activities that require repeating the same tasks, being accurate or exact, and doing structured work, common in occupations such as recordkeeper and cashier. Across countries, the growth of information and communications technology (ICT), capital intensity, and robot use and participation in global value chains have been found to be negatively correlated with the share of routine occupations (Lo Bello et al. 2019). This is an area of potential future research for Ghana.

Note: ^a The method in Lo Bello et al. (2019) is used to estimate task and skills content.

Table 1. Evolution in Sectoral Distribution of Value-Added, 1991–2018

Sector	Share of total value-added, 1991 (percent) (1)	Share of total value-added, 2018 (percent) (2)	Change in share of total value-added, 1991–2018 (percentage points) (3)	Average annual growth, 1991– 2018 (percent) (4)
a. Three-sector classification				
Agriculture	32.9	19.7	–13.2	–1.9
Industry	27.5	34.0	6.4	0.8
Services	39.6	46.3	6.7	0.6
b. Detailed-sector classification				
Agriculture	32.9	19.7	–13.2	–1.9
Construction	1.5	7.1	5.5	5.9
Manufacturing	22.9	11.3	–11.7	–2.6
Mining and utilities	3.1	15.6	12.6	6.2
Wholesale, retail trade, restaurants, and hotels	14.4	18.9	4.5	1.0
Transport, storage, and communication	10.2	9.9	–0.3	–0.1
Other activities	15.0	17.5	2.5	0.6

Source: Authors' estimates based on United Nations data (<http://data.un.org>).

Note: Columns 1 and 2: Distributions in the share of total value-added in each year may not add up to 100 percent due to rounding. Column 3 values may differ from the difference in values in columns 1 and 2 due to rounding.

Table 2. Evolution in Employment Shares by Sector, 2005/06–2016/17

	2005/06	2012/13	2016/17	Change, 2005/06–2016/17	
	Percent			Percentage point	Annualized growth rate (percent)
	(1)	(2)	(3)	(4)	(5)
Agriculture	50.8	43.3	36.8	–14.0	–2.6
Industry					
Mining and quarrying	0.3	1.7	1.6	1.3	14.8
Manufacturing	11.6	8.8	12.2	0.6	0.4
Public utility services	2.7	0.5	0.4	–2.3	–15.0
Construction	2.0	3.4	4.6	2.6	7.4
Services					
Wholesale and retail trade	15.4	20.4	21.5	6.1	2.8
Transportation and storage	3.5	4.1	3.7	0.2	0.5
Education	3.4	3.8	5.3	1.9	3.8
Accommodation and food services	2.1	4.1	3.3	1.2	3.9
Public administration	1.4	0.9	1.8	0.4	2.2
Other services	6.7	8.2	8.4	1.7	1.9
Other	0.4	0.9	0.5	0.1	1.3

Source: Authors' estimates based on data from the Ghana Living Standards Surveys for 2005/06, 2012/13, and 2016/17.

Note: Agriculture includes forestry and fisheries. Columns 1, 2, and 3: Distributions in the share of employment in each year may not add up to 100 percent due to rounding. Column 4 values may differ from the difference in values in columns 1 and 3 due to rounding.

Table 3. Ghana's Human Capital Index Performance

Indicator	Ghana	Averages for country income groups			
		Low income	Lower-middle income	Upper-middle income	High income
	(1)	(2)	(3)	(4)	(5)
Component 1: Survival					
Probability of survival to age 5	0.95	0.93	0.96	0.98	0.99
Component 2: Education					
Expected years of education	12.10	7.60	10.41	11.83	13.17
Harmonized test scores	307.28	356.04	391.69	410.71	486.89
Component 3: Health					
Survival rate from age 15–60	0.77	0.75	0.80	0.86	0.92
Fraction of children under 5 not stunted	0.83	0.65	0.75	0.87	0.80
Human Capital Index	0.45	0.37	0.48	0.56	0.71

Source: World Bank 2020b.

Note: Apart from harmonized test scores and expected years of education, the domain for values for all other indicators is zero to one.

Table 4. Priority Sectors Identified by the World Bank’s Ghana Country Private Sector Diagnostic 2017

Priority sector	Desirability score	Feasibility score	Employment numbers	Average monthly wage earnings, (cedis)
	(1)	(2)	(3)	(4)
Agribusiness ^a	3.9	3.6	825,033	755
Education	3.9	3.4	556,688	877
Transport	4.0	4.0	386,389	682
Health	3.8	3.3	156,659	1,056
Finance and insurance	3.9	3.8	124,058	1,444
ICT	4.2	4.1	31,830	2,719
Energy	4.2	3.5	20,179	1,029
Priority sectors			2,100,836	925
Nonpriority sectors			8,497,831	1,006
Overall			10,598,667	973

Source: World Bank 2017a; authors’ estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Priority sectors are ordered by size of employment in 2016/17. Desirability pertains to how private investments in these sectors could help Ghana to address its development challenges; feasibility pertains to the ease with which the constraints standing in the way could be removed. Average monthly wage earnings are for wage-employed workers only.

- a. While agriculture refers to on-farm production, including crops and livestock (but not floriculture, fisheries, or forestry), agribusiness denotes organized enterprises—from small and medium-sized enterprises to multinational corporations—involved in input supply or in downstream transformation.

Figure 1. Evolution in the Sectoral Distribution of Value-Added, Ghana, 1991–2018

a. Three-sector classification

b. Detailed-sector classification

Source: Statistics obtained from the United Nations (<http://data.un.org>).

Note: Agriculture includes forestry and fisheries. Panel (a): industry includes construction.

Figure 2. Evolution in the Sectoral Distribution of Employment, Three-Sector Classification, 1991–2018

Source: Statistics obtained from the World Bank’s World Development Indicators databank (<https://databank.worldbank.org/source/world-development-indicators>).

Note: Agriculture includes forestry and fisheries. Industry includes construction.

Figure 3. Sector Share of Value-Added and Employment, Ghana vs. Other Countries

Source: Authors' estimates based on data from the World Bank's World Development Indicators databank (<https://databank.worldbank.org/source/world-development-indicators>).

Note: Agriculture includes forestry and fisheries. Industry includes construction. The best-fit curves across countries for 1990 or 1991 (depending on the panel) are denoted in blue, whereas the best-fit curves across countries for 2019 are denoted in red. Observations for Ghana (GHA) are denoted by black dots. The change in outcomes for Ghana between 1990 or 1991 and 2019 (depending on the panel) is denoted by a black arrow.

Figure 4. Manufacturing's Share of Total Value-Added, Employment, and Exports, Ghana vs. Other Countries

Source: Panels (a), (d), and (e): Authors' estimates based on data from the World Bank's World Development Indicators databank (<https://databank.worldbank.org/source/world-development-indicators>). Panel (b): Authors' estimates based on data from Timmer et al. 2015. Panel (c): Reproduced from Rodrik 2016.

Note: Openness = the sum of exports and imports as a share of GDP. Panels (a), (b), (d), and (e): The best-fit curves across countries for 1990 or 1991 (depending on the panel) are denoted in blue, whereas the best-fit curves across countries for 2010, 2018, or 2019 (depending on the panel) are denoted in red. Observations for Ghana (GHA) are denoted by black dots. The change in outcomes for Ghana between 1990 or 1991 and 2010, 2018, or 2019 (depending on the panel) is denoted by a black arrow.

Figure 5. Product Complexity and Evolution of Export, 2008–18

a. Product complexity and export growth

b. Evolution of exports

Source: Country Profiles, Harvard Center for International Development

(<https://atlas.cid.harvard.edu/countries/83/growth-dynamics>).

Note: ECI = Economic Complexity Index; CAGR = compound annual growth rate. The economic complexity of a country is calculated based on the diversity of exports a country produces and their ubiquity, or the number of the countries able to produce them (and those countries' complexity).

Figure 6. Evolution in Export Composition, Ghana vs. Malaysia, 1962–2018

Source: Data obtained from the MIT Observatory of Economic Complexity
 ((<https://oec.world/en/visualize/stacked/sitc/export/gha/all/show/1962.2018/>;
<https://oec.world/en/visualize/stacked/sitc/export/mys/all/show/1962.2018/>).

Figure 7. Evolution in Economic Complexity, Ghana vs. Malaysia, 1964–2017

Source: Data obtained from the MIT Observatory of Economic Complexity (https://oec.world/en/rankings/legacy_eci).

Figure 8. Evolution in Labor Productivity, by Sector

a. Three-sector classification, 2006–19

b. Detailed-sector classification, 1985–2010

Source: Panel (a): Statistics obtained from the World Bank's World Development Indicators databank (<https://databank.worldbank.org/source/world-development-indicators>). Panel (b): Statistics obtained from Timmer et al. 2015.

Note: Panel (a): Agriculture includes forestry and fishing; industry includes construction.

Figure 9. Decomposition of Factors of Economic Growth, 1970–2016

Source: Reproduced from Geiger et al. 2019.

Note: TFP = total factor productivity.

Figure 10. Decomposition of Yearly Change in Value Added Per Capita into Productivity and Employment Growth Components, 1990–2010

a. Decomposition by productivity and employment components

b. Decomposition by productivity (within-sector, intersectoral) and employment components

c. Decomposition of within-sector and intersectoral allocation contributions, by three-sector classification

d. Decomposition of intersectoral allocation contributions, by three-sector classification

Source: Calculations based on statistics from the GGDC 10-Sector Database (<https://www.rug.nl/ggdc/productivity/10-sector/>).

Note: Calculations made using the World Bank’s Job Structure Tool (<http://datatopics.worldbank.org/JobsDiagnostics/jobs-tools.html>). The decomposition method is described at https://development-data-hub-s3-public.s3.amazonaws.com/ddhfiles/160361/jobstructure_tool.pdf. “Intersectoral reallocation” captures the contribution to the change in overall labor productivity due to the movement of workers between sectors (i.e., structural change). Intersectoral reallocation is further decomposed into “static reallocation” (or “static”) and “dynamic reallocation” (or “dynamic”) subcomponents. Static reallocation captures the contribution of workers moving to sectors with higher productivity growth regardless of whether it is rising or falling. Dynamic reallocation captures the contribution of the joint effects of changes in employment and sector productivity growth. Dynamic reallocation is positive (negative) if workers are moving to sectors that are experiencing positive (negative) productivity growth.

Figure 11. Education Attainment Among the Working-Age Population

a. Average years of education, 2016/17

b. Change in average years of education, 2005/06–2016/17

Source: Authors' estimates based on data from the Ghana Living Standard Surveys for 2005/06 and 2016/17.

Note: Working-age population = ages 15–64 years; youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line.

Figure 12. Average Earnings Returns to an Additional Year of Education for Wage-Employed Workers, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standard Survey 2016/17.

Note: Average labor earnings returns to an additional year of education are obtained from estimating an ordinary least squares regression of the natural logarithm of annual(ized) earnings on years of education, controlling for age, age squared, sex, parents' education, marital status, rural/urban, and region. Subgroup returns are estimated based on subgroup-specific regressions of similar specifications. Regressions are estimated for wage-employed workers only. Youth = ages 15–35 years; nonyouth = ages 36–64 years.

Figure 13. Product Opportunities Suggested by the World Bank's Ghana Country Private Sector Diagnostic 2017

Source: World Bank 2017a.

Note: Green dots denote sectors that are highly desirable and impactful; yellow dots denote sectors with growth potential but limited development impact; and red dots denote sectors with below-average direct spillovers on the economy.

Figure 14. Select Labor Market Indicators, Ghana vs. Other Countries

Source: Statistics obtained from the World Bank's World Development Indicators databank

(<https://databank.worldbank.org/source/world-development-indicators>).

Note: Wage employment comprises wage and salaried employment. For all figures, the best-fit curves across countries for 1991 and 2019 are denoted in blue and red, respectively. Observations for Ghana (GHA) are denoted by black dots. The change in outcomes between 1991 and 2019 for Ghana is denoted by a black arrow.

Figure 15. Select Labor Market Indicators for Women, Ghana vs. Other Countries

Source: Statistics obtained from the World Bank's World Development Indicators databank

(<https://databank.worldbank.org/source/world-development-indicators>).

Note: Wage employment comprises wage and salaried employment. For all figures, the best-fit curves across countries for 1991 and 2019 are denoted in blue and red, respectively. Observations for Ghana (GHA) are denoted by black dots. The change in outcomes between 1991 and 2019 for Ghana is denoted by a black arrow.

Figure 16. Select Labor Market Indicators for Youth, Ghana vs. Other Countries

Source: Statistics obtained from the World Bank's World Development Indicators databank (<https://databank.worldbank.org/source/world-development-indicators>).

Note: Share of youth not in education, employment or training (NEET) is the percentage of people in the age groups 15–24 years who are not in education, employment, or training. The best-fit curves across countries for 1991 or 2006 (depending on the panel) is denoted in blue, whereas the best-fit curves across countries for 2017 or 2019 (depending on the panel) are denoted in red. Observations for Ghana (GHA) are denoted by black dots. The change in outcomes for Ghana between 1991 or 2006 and 2017 or 2019 (depending on the panel) is denoted by a black arrow.

Figure 17. Elasticity of Employment to GDP Growth, Ghana vs Other Countries, 1991–2019

a. Employment-GDP growth elasticity

b. Wage employment-GDP growth elasticity

Source: Authors' estimates based on data from the World Bank's World Development Indicators databank (<https://databank.worldbank.org/source/world-development-indicators>).

Note: Elasticities are obtained by regressing the natural logarithm of (wage) employment on the natural logarithm of real GDP (in purchasing power parity terms), without any controls.

Figure 18. Annual Economic and Employment Growth Rates, 1992–2019

Source: Authors' estimates based on data from the World Bank's World Development Indicators databank (<https://databank.worldbank.org/source/world-development-indicators>).

Note: Wage employment comprises wage and salaried employment.

Figure 19. Distribution of Ghana's Population by Labor Market Status, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: See table A.1 for definitions for labor force and employment statuses. Ghana's population as based on GLSS 2016/17 is estimated at 28.360 million. In comparison, United Nations data for Ghana show a population of 28.482 million in 2016 and 29.121 million in 2017 (<https://population.un.org/wpp/DataQuery/>).

Figure 20. Key Labor Market Indicators, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line. Panel (c): Unemployment is defined as without work and available for work. Panel (d): Unemployment is defined as without work, available for work, and actively looking for work.

Figure 21. Distribution of Length of Search Among the Unemployed, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line. The distributions by population subgroup may be particularly prone to error because of small sample sizes. In all subfigures, in each bar, the percentages may not add up to 100 percent. As relevant, values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 22. Distribution of Desired Employment Among the Unemployed, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line. The distributions by population subgroup may be particularly prone to error because of small sample sizes. In all subfigures, in each bar, the percentages may not add up to 100 percent. As relevant, values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 23. School-to-Work Transition Profiles, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Poor = those with per adult equivalent consumption below the country's official upper poverty line.

Figure 24. Distribution of Workers by Multiple Economic Activities, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line. In all subfigures, in each bar, the percentages may not add up to 100 percent. As relevant, values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 25. Distribution of Employment by Sector, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line. In all subfigures, in each bar, the percentages may not add up to 100 percent due to rounding. As relevant, values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 26. Distribution of Employment by Public or Private Sector, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line. In all subfigures, in each bar, the percentages may not add up to 100 percent due to rounding. As relevant, values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 27. Distribution of Employment by Type of Employment, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line. "Other" includes casual workers, paid and unpaid apprentices, and domestic workers. Agriculture includes fisheries and forestry, and industry includes construction. In all subfigures, in each bar, the percentages may not add up to 100 percent due to rounding. As relevant, values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 28. Distribution of Employment by Occupation, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line. Agriculture includes fisheries and forestry, and industry includes construction. In all subfigures, in each bar, the percentages may not add up to 100 percent due to rounding. As relevant, values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 29. Distribution of Employment by Place of Work, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line. Agriculture includes fisheries and forestry, and industry includes construction. In all subfigures, in each bar, the percentages may not add up to 100 percent due to rounding. As relevant, values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 30. Distribution of Employment by Migrant Type, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line. Migrant refers to an individual who was neither born in the current (at the time of interview) town or village nor has lived in the same since birth. Labor migrant refers to a migrant whose reason for moving is employment-related (including job transfer, employment search, and own business). Nonlabor migrant refers to a migrant who moved for family, education, or other reasons (spouse's employment, parent or family move, marriage, war, fire, flood or famine or drought, political or religious reasons, or other family reasons). Agriculture includes fisheries and forestry, and industry includes construction. In all subfigures, in each bar, the percentages may not add up to 100 percent due to rounding. As relevant, values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 31. Distribution of Wage Employment by Contract Status, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line. Agriculture includes fisheries and forestry, and industry includes construction. The distributions by population subgroup may be particularly prone to error because of small sample sizes. In all subfigures, in each bar, the percentages may not add up to 100 percent due to rounding. As relevant, values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 32. Distribution of Wage Employment by Employer-Provided Social Security Coverage Status, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line. Agriculture includes fisheries and forestry, and industry includes construction. The distributions by population subgroup may be particularly prone to error because of small sample sizes. In all subfigures, in each bar, the percentages may not add up to 100 percent due to rounding. As relevant, values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 33. Distribution of Wage Employment by Employer-Provided Health Insurance Coverage Status, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line. Agriculture includes fisheries and forestry, and industry includes construction. The distributions by population subgroup may be particularly prone to error because of small sample sizes. In all subfigures, in each bar, the percentages may not add up to 100 percent due to rounding. As relevant, values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 34. Distribution of Nonfarm Enterprises by Formal or Informal Status, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: An enterprise is defined as informal if it is not registered with the Registrar General's Department, the Department of Cooperatives, the District Assembly, the Ghana Revenue Authority, or other government institution, in line with the definition used in the World Bank's Informal Enterprise Surveys

(https://microdata.worldbank.org/index.php/catalog/enterprise_surveys/about).

Subfigure (b) shows statistics for responses to the question: "What was the main source of capital in setting up this enterprise?" In all subfigures, in each bar, the percentages may not add up to 100 percent due to rounding. As relevant, values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 35. Demographic and Socioeconomic Characteristics of Workers in Priority Sectors, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with consumption below the country's official upper poverty line. In all subfigures, in each bar, the percentages may not add up to 100 percent due to rounding. As relevant, values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 36. Education Attainment and Occupation Status of Workers in Priority Sectors, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Panel (a): Postsecondary technical includes vocational, polytechnic, technical, and professional training. Panel (b): Elementary occupations consist mainly of simple and routine tasks which mainly require the use of hand-held tools and often some physical effort. Panels (c) and (d): Information for 2016/17 is based on mapping task categorizations from the Ghana STEP Survey 2013 to GLSS 2016/17. Given this, occupations in 2016/17 are assumed to be constituted of the same tasks as those in 2013. In all subfigures, in each bar, the percentages may not add up to 100 percent due to rounding. Values are not reported for bar segments which constitute less than 5 percent of the distribution.

Figure 37. Additional Employment Characteristics of Workers in Priority Sectors, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Panel (a): "Other" includes casual workers, paid and unpaid apprentices, and domestic workers. In all subfigures, in each bar, the percentages may not add up to 100 percent due to rounding. Values are not reported for bar segments which constitute less than 5 percent of the distribution.

Appendix

Box A.1. Definitions of Labor Market Indicators for the Analysis of Ghana Living Standards Survey 2016/17 Data

Employment

An economic activity that is paid in cash or in kind and does not violate human rights. Apart from wage employment, it includes income generated at the household (rather than at the individual) level, whether from farming or off the farm. While it includes the production of goods for consumption within the household, the provision of services (cleaning, food preparation, care of one's children, and the like) is not included in the definition of economic activities.

Labor market statuses

Labor market statuses and indicators using the Ghana Living Standard Survey 2016/17 are based on the following definitions. All definitions refer only to the working-age population (ages 15–64 years).

Employed persons: Persons above a specified age who, during a specified brief period, either one day or one week, were in one of the following categories:

(a) “Paid employment”:^a

(a1) “At work”: persons who during the reference period performed some work for wage or salary, in cash or in kind

(a2) “With a job but not at work”: persons who, having already worked in their present job, were temporarily not at work during the reference period and had a formal attachment to their job

(b) “Self-employment”:

(b1) “At work”: persons who during the reference period performed some work for profit or family gain, in cash or in kind

(b2) “With an enterprise but not at work”: persons with an enterprise, which may be a business enterprise, a farm, or a service undertaking, who were temporarily not at work during the reference period for any specific reason

Unemployed: The unemployed comprise all persons of working age who met all of the following criteria:

(a) Without work during the reference period, i.e., were not in paid employment or self-employment;

(b) Currently available for work, i.e., were available for paid employment or self-employment during the reference period; and

(c) Seeking work, i.e., had taken specific steps in a specified recent period to seek paid employment or self-employment.

Unemployed (relaxed definition): “Relaxed” unemployment is defined as the number of persons who did not work in the reference week but are available to work. The “seeking work” criterion (item [c] in the definition above) may be relaxed “in situations where the conventional means of seeking work are of limited relevance, where the labor market is largely unorganized or of limited scope, where labor absorption is, at the time, inadequate or where the labor force is largely self-employed.”

Time-related underemployment: Time-related underemployment exists when the hours of work of a person are insufficient in relation to an alternative employment situation in which the person is willing and available to engage. Accordingly, persons in time-related underemployment comprise all those in employment who satisfy the following three criteria:

(a). were willing to work additional hours (i.e., wanted another job [or jobs] in addition to their current job [or jobs] to increase their total hours of work to 40 hours a week; wanted to replace any of their current jobs with another job [or jobs] with increased hours of work; wanted to increase the hours of work in any of their current jobs; or a combination of the above);

(b) were available to work additional hours (i.e., were ready, within a specified period of time, to work additional hours, given opportunities for additional work); and

Box A.1. Definitions of Labor Market Indicators for the Analysis of Ghana Living Standards Survey 2016/17 Data

(c) worked less than a threshold relating to working time (i.e., persons whose hours actually worked in all jobs during the reference period were below a threshold to be specified according to national circumstances, which in Ghana's case is 40 hours per week according to the Ghana Statistical Service).

In labor force: Formerly known as the economically active population, this is the sum of the number of persons employed and the number of persons unemployed.

Out of labor force: Comprises all persons, irrespective of age, including those below the age specified for measuring the economically active population, who were *not employed or unemployed* during the reference period because of: (a) attendance at educational institutions; (b) engagement in household duties; (c) retirement or old age; or (d) other reasons such as infirmity or disablement, which may be specified.

Labor market indicators

Employment-to-population ratio (employment rate): Share of those in the working-age population who are employed.

Labor force participation rate: Share of those in the working-age population who are in the labor force (either employed or unemployed).

Unemployment rate (strict ILO definition): The unemployment rate is calculated by expressing the number of unemployed persons as a percentage of the total number of persons in the labor force.

Unemployment rate (relaxed ILO definition): The relaxed unemployment rate is calculated by expressing the number of unemployed (relaxed) persons as a percentage of the total number of persons in the labor force.

Source: ILO 2013; Ghana Statistical Service 2018.

Note: ^aFor “paid work,” the assessment is based on the notion of “formal job attachment,” which is to be determined in light of national circumstances according to one or more of the following criteria: (a) the continued receipt of a wage or salary; (b) an assurance of a return to work (with the same employer) following the end of the contingency, or an agreement as to the date of return; and (c) the elapsed duration of absence from the job, which may be the duration for which workers can receive compensation benefits without the obligation to accept other jobs.

Table A.1. Decomposition of Yearly Change in Value-Added Per Capita into Productivity and Employment Growth Components, Detailed Sector Classification, 1990–2010

	1990–2000	2001–2010	1990–2010
	Percent		
	(1)	(2)	(3)
Annual growth in value-added per capita	1.82	3.50	2.57
Change in labor productivity	3.24	2.67	2.94
<i>Within-sector</i>	2.91	2.34	2.43
Agriculture	1.21	1.46	1.37
Mining and utilities	–0.09	0.35	0.10
Manufacturing	0.50	0.01	0.22
Construction	–0.14	0.46	0.09
Wholesale and retail trade	0.42	–0.07	0.14
Transport and communications	0.39	0.19	0.27
Other activities	0.62	–0.07	0.23
<i>Intersectoral reallocation</i>	0.33	0.34	0.51
Agriculture	0.01	–1.01	–0.57
Mining and utilities	0.20	–0.18	0.03
Manufacturing	–0.29	0.00	–0.12
Construction	0.29	0.09	0.27
Wholesale and retail trade	0.00	0.40	0.23
Transport and communications	0.14	0.35	0.27
Other activities	–0.01	0.68	0.39
<i>Static reallocation</i>	0.56	0.70	0.52
Agriculture	0.01	–0.70	–0.26
Mining and utilities	0.25	–0.10	0.02
Manufacturing	–0.20	0.00	–0.08
Construction	0.40	0.05	0.19
Wholesale and retail trade	0.00	0.43	0.17
Transport and communications	0.11	0.31	0.18
Other activities	–0.01	0.70	0.29
<i>Dynamic reallocation</i>	–0.22	–0.36	–0.01
Agriculture	0.00	–0.31	–0.31
Mining and utilities	–0.05	–0.08	0.01
Manufacturing	–0.09	0.00	–0.04
Construction	–0.11	0.04	0.08
Wholesale and retail trade	0.00	–0.03	0.06
Transport and communications	0.03	0.04	0.09
Other activities	0.00	–0.02	0.09
Change in employment rate	–1.74	0.82	–0.51
Change in labor force participation rate	–0.01	–0.60	–0.32
Change in working-age share of total population	0.32	0.60	0.46

Source: Calculations based on statistics from the GGDC 10-Sector Database

(<https://www.rug.nl/ggdc/productivity/10-sector/>).

Note: Calculations made using the World Bank’s Job Structure Tool

(<http://datatopics.worldbank.org/JobsDiagnostics/jobs-tools.html>). The decomposition method is described at https://development-data-hub-s3-public.s3.amazonaws.com/ddhfiles/160361/jobstructure_tool.pdf. “Intersectoral reallocation” captures the contribution to the change in overall labor productivity due to the movement of workers between sectors (i.e., structural change). Intersectoral reallocation is further decomposed into “static reallocation” and “dynamic reallocation” subcomponents. Static reallocation captures the contribution of workers moving to sectors with higher productivity growth regardless of whether it is rising or falling. Dynamic reallocation captures the contribution of the joint effects of changes in employment and sector productivity growth. Dynamic reallocation is positive (negative) if workers are moving to sectors that are experiencing positive (negative) productivity growth.

Table A.2. Labor Market Indicators, 2016/17

Indicator	Overall (1)	Female (2)	Male (3)	Youth (4)	Nonyouth (5)	Rural (6)	Urban (7)	Poor (8)	Nonpoor (9)
Share attending any education or training institution (%)	9.0	7.7	10.3	15.3	0.7	12.8	6.2	17.6	7.6
Years of education	9.4	8.8	10.0	9.6	9.2	8.4	10.1	7.4	9.7
Years of education (for those not attending any education or training institution)	9.2	8.9	9.4	9.2	9.5	8.3	10.6	7.2	9.9
Labor force participation rate (%)	73.0	72.3	73.8	63.4	88.1	75.4	71.1	70.8	73.6
Employment-to-population ratio (%)	66.8	65.5	68.2	55.4	84.6	71.4	62.9	66.3	66.9
Unemployment rate, strict definition (%)	3.6	3.7	3.5	5.1	1.9	1.7	5.4	1.8	4.1
Unemployment rate, relaxed definition (%)	8.6	9.5	7.6	12.6	4.0	5.3	11.5	6.3	9.1
Time-related underemployment (%)	21.7	24.9	18.3	23.4	19.9	26.2	17.3	30.3	19.5
Average hours worked in reference week	36.1	33.5	38.9	34.2	38.1	33.0	39.1	30.8	37.4
Sector of employment (1)									
Share in the public sector (%)	7.3	5.3	9.3	7.0	7.5	4.1	10.3	1.6	8.7
Share in the private sector (%)	92.1	94.2	89.9	92.5	91.8	95.4	89.0	98.0	90.7
Sector of employment (2)									
Share in agriculture (%)	33.6	30.4	37.0	30.0	37.6	60.2	9.5	68.6	25.1
Share in industry (%)	17.1	15.8	18.5	17.2	17.0	12.6	21.3	9.8	18.9
Share in services (%)	49.3	53.8	44.5	52.7	45.4	27.2	69.2	21.6	56.0
Type of employment									
Share wage-employed (%)	24.3	15.2	33.9	27.7	20.8	13.2	34.9	7.1	28.6
Share self-employed with employees (%)	4.1	3.6	4.7	2.8	5.6	2.2	5.9	1.2	4.9
Share self-employed, no employees (%)	47.1	53.7	40.1	33.3	61.6	52.6	41.9	51.0	46.2
Share contributing family worker (%)	18.2	23.3	12.8	28.0	8.0	26.9	9.9	35.5	13.9
Share other (%)	6.3	4.1	8.5	8.3	4.1	5.1	7.4	5.3	6.5
Share of those with more than one economic activity in the reference week (%)	12.5	12.5	12.6	10.5	14.5	17.2	8.0	13.9	12.2
Average monthly earnings, wage-employed workers only (cedis)	971.1	686.8	1,105.5	841.2	1,158.8	856.9	1,026.8	702.2	998.0

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line. The distributions of workers by sector or type of employment for each population subgroup may not add up to 100 percent due to rounding.

Table A.3. Select Labor Market Indicators, 2005/06–2016/17

Indicator	2005/06	2012/13	2016/17	Change, 2005/06–2016/17	
				Percentage point	Annualized growth rate (percent)
	(1)	(2)	(3)	(4)	(5)
Labor force participation rate (%)	74.5	74.3	73.0	–1.5	–0.2
Employment-to-population ratio (%)	70.2	70.9	66.8	–3.4	–0.4
Unemployment rate, strict definition (%)	4.7	2.4	3.6	–1.1	–2.1
Unemployment rate, relaxed definition (%)	7.9	4.6	8.6	0.7	0.7
Average hours worked in reference week	45.8	41.4	36.1	–9.7	–2.0
Type of employment					
Share wage-employed (%)	18.6	21.8	24.3	5.7	2.3
Share self-employed with employees (%)	4.4	6.2	4.1	–0.3	–0.6
Share self-employed, no employees (%)	53.1	45.5	47.1	–6.0	–1.0
Share contributing family worker (%)	21.1	22.7	18.2	–2.9	–1.2
Share other (%)	2.9	3.7	6.3	3.4	6.8
Sector of employment					
Share in agriculture (%)	50.7	43.3	36.7	–14.0	–2.7
Share in industry (%)	16.6	14.4	18.7	2.1	1.0
Share in services (%)	32.7	42.4	44.6	11.9	2.6

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2005/06, 2012/13, and 2016/17.

Note: The distributions of workers by type of employment or sector of employment in each year may not add up to 100 percent due to rounding.

Figure A.1. Predicted Earnings by Years of Education, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Estimates are based on linear regressions of log monthly wage earnings on a quadratic for years of education, quadratic for age, father's education, mother's education, sex, youth/nonyouth, urban/rural, marital status, and region. Youth = ages 15–35 years; nonyouth = ages 36–64 years.

Figure A.2. Distribution of Monthly Wage Earnings, 2016/17

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Youth = ages 15–35 years; nonyouth = ages 36–64 years. Poor = those with per adult equivalent consumption below the country's official upper poverty line.

Figure A.3. Distribution of Monthly Wage Earnings, Ghana CPSD 2017 priority sectors, 2016/17

a. Individual priority sectors

b. Nonpriority sectors versus priority sectors

Source: Authors' estimates based on data from the Ghana Living Standards Survey 2016/17.

Note: Priority sectors = agribusiness, education, energy, finance and insurance, health, ICT, and transport.

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