JOBS
DIAGNOSTIC
TANZANIA

Carly Petracco and Javier Sanchez-Reaza

LET'S WORK

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The following report is based exclusively on Mainland Tanzania and excludes Zanzibar.

CONTENTS

ABSTRACT

Tanzania has just entered a phase of growing dependency rates that will put pressure on job creation so that the larger number of dependents do not fall into poverty. However, the new millions of jobs that will be needed in the next decade is only part of the challenge. It is important to create better jobs. An economy that produces plenty of good jobs is the most direct way to continue the trajectory toward lower poverty rates.

Challenges to creating more and better jobs for the poor and vulnerable groups stem from both labor demand and supply issues. On the demand side, large firms in a few sectors dominate. Possibly because of that dominance, micro and small firms find it difficult to grow and provide new jobs. Firms' relatively restricted market access may also be a crucial factor in explaining comparative low productivity and employment.

Trade expansion and a well-connected economy would address issues of comparative low-productivity and employment. On the supply side, urban areas have high unemployment. In rural areas, underemployment is on the rise. The fall in unemployment rates may be largely explained by discouraged workers withdrawing from the labor force. Where there is willingness to work—like with women and young workers—disparities in the access to quality employment is an obstacle. Finally, the rise in educational attainment was insufficient to address labor market challenges likely due to the fall in the quality of education.

ACKNOWLEDGMENTS

ABBREVIATIONS

CIP .... Census of Industrial Production
DRC .... Democratic Republic of the Congo
FDI .... Foreign Direct Investment
GDP .... Gross Domestic Product
JD .... Jobs Diagnostic
LAC .... Latin American countries
LF .... Labor force
LIC .... Low-income countries
NEET .... Not in Education, Employment, or Training
SBR .... Statistical Business Register
SOE .... State-Owned Enterprise
SSA .... Sub-Saharan Africa
TZS .... Tanzanian Shilling
WAP .... Working-age population

OBJECTIVE AND FRAMEWORK

The objective of the Jobs Diagnostic (JD) is to identify the main challenges to job creation and to improve the quality and inclusiveness of employment. The JD is a data-driven exercise that looks at macroeconomic and demographic factors, as well as labor supply and demand to pinpoint the main constraints for a jobs-rich growth path. The fact that JDs are data-driven allows for international comparisons based on standardized datasets.

The JD covers three main areas: macro and demographic trends, labor supply, and labor demand (Figure O.1). The first section looks at the relationships between employment growth, labor productivity, and economic growth to set the macro context to later examine labor supply and demand.

The second section cover labor supply. It aims to identify trends in labor supply to understand the population's needs for employment, the unemployment challenges, underemployment, and waged and informal employment. These trends include working-age population (WAP), labor force, and inactivity. Once identified, international comparisons are based on a global harmonized household database (International

Figure O.1
Coverage of a Jobs Diagnostic
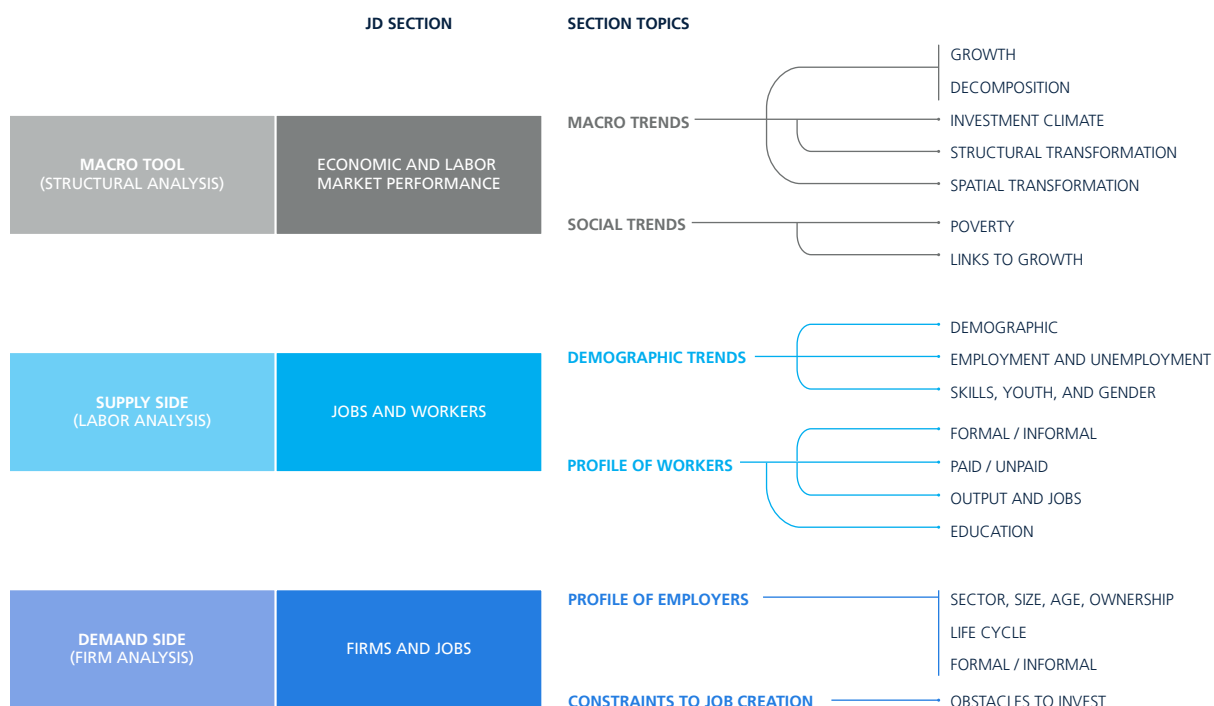
Income Distribution Dataset— 'I2D2'). The labor supply section in JDs employs a set of harmonized variables that are comparable across countries and time.

The third section covers labor demand. It aims to identify the links between sectoral productivity, size, age, and other characteristics to assess the constraints for employment growth, productivity, and wages. Firm-level datasets such as Enterprise Surveys, (which allow for some international benchmarking), or censuses of enterprises are used to do this. The demand for labor is derived from the production of goods and services by entrepreneurs to meet the demand for products in an economy. The analysis also highlights who gets the jobs created in the economy and what variables determine earnings and employment.

A JD analyzes a country's economic transformations in relation to other experiences. There are three important aspects of such transformation:

- Structural transformation (the movement of labor across sectors);
- Spatial transformation (or "urbanization"; the movement of labor across places); and
- Organizational transformation (or "formalization"; the movement from informality to formal work, and from self to waged employment).

A JD also identifies the characteristics of individuals that can access jobs in the economy, and those who are left behind. In turn, it shows whether jobs outcomes in the economy are becoming inclusive of the young, the poor, women, and other disadvantaged groups (Merotto, Weber, and Aterido, forthcoming).

EXECUTIVE SUMMARY

This Jobs Diagnostic (JD) presents the main challenges to create more, better, and inclusive jobs in Tanzania, and offers key topics for a jobs agenda. The JD approach integrates macroeconomic and demographic factors to labor market challenges, not only from the perspective of the workers (the supply in the labor market), but also from the point of view of the firm (the demand). To understand the macroeconomic factors, much more than growth and employment trends are needed. It involves considering the structure of trade and foreign direct investment (FDI), pinpointing the factors that drive growth and productivity, and analyzing the links between structural change and spatial transformation. The diagnostic also accounts for demographic changes that fuel the demand for jobs.

The diagnostic presents a deeper view of both the supply and demand. Regarding supply, it presents more than the amount of jobs and workers. The diagnostic addresses trends not only of unemployment, but also of the quality of jobs by considering underemployment, unpaid employment, and the returns to education.[1] Throughout the JD, issues of territorial inclusion are evident in the differentiated trends for urban and rural areas. Inclusion (or the access of vulnerable groups to jobs and their quality) is also reported in the analysis done by gender and its focus on youth.

From the demand perspective, the diagnostic unveils the links between firm characteristics and employment growth, productivity, and wages. Issues related to market concentration, firm growth, and market access are salient aspects of the diagnostic's analysis, which uses firm-level data. The JD of Tanzania is ultimately an attempt to provide a comprehensive evidence base to further a dialogue on fostering jobs, improving their quality, and ensuring inclusion.

High market concentration and limited access to the market may contribute to firms' stunted growth and thus, curtail job creation. Most value-added industries are concentrated in a few activities and a handful of firms. A near absence of medium-sized firms suggests that micro and small firms are unable to grow and fill this void. Barriers to competition may be a substantial obstacle to small firm growth and greater job creation.

Simultaneously, the comparatively high fertility rates lead to a mounting supply of labor. The high fertility rates result in a relatively constant age-structure of the population with a sizable and constant flow of youth entering ranks. The WAP will likely rise by almost 71 percent between 2015 and 2030. Those new 19 million potential workers will demand the economy to create as many jobs in the next 13 years.

Tanzania has a pressing need to increase productivity. Most productivity gains stem from inter-sectoral shifts of labor and capital, rather than the more efficient use of these factors within each sector. Except for services, most sectors have had a negligible to negative contribution to value added. While the process of structural change across sectors, from agriculture to industry and services, will continue to deliver some gains, over time, these gains will likely wane.

Productivity growth is important for quality of jobs because it determines wages. Productivity has a strong and positive effect on wages. Whether productivity is measured as sales per worker, or value added per

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[1]   The dimensions of the quality of jobs include earnings, labor market security and working environment (OECD, 2016a). A methodology put forward in IZA considers that quality jobs can be assessed through their pay, hours of work, prospects, hard work, job content and interpersonal relationships (Clark, 2015). This Jobs Diagnostic considers that quality of jobs refers to earnings and the number of hours worked.

worker, high productivity determines higher average wages: they move in tandem with productivity. Foreign firms and, to a lesser extent, state-owned enterprises (SOEs) are more productive than privately owned domestic firms, and pay higher wages.[2]

Unpaid work is a challenge, particularly for women. Only one in seven employed workers earned a wage; 86 percent of employment was, in 2014, self-employment or unpaid. At least 40 percent of employed workers are unpaid. The fact that the near totality of rural female employment is either self-employed or unpaid, and that over half of female farming employment is unpaid signals a gender challenge in unpaid work.

Despite recent progress in education, issues of quality remain. Tanzania's efforts to make education available to everyone has led to a doubling in primary school enrollment. Tanzania's standardized tests for primary and secondary education declined between 2006 and 2014, but recently recovered. However, passing scores are still below the average for similar countries. Low educational performance may be the product of limited teacher quality, insufficient resources and low teaching time. While Tanzanian students spend more time in school, they do not necessarily spend that time learning.

Possible skills mismatches may be responsible for growing unemployment and inactivity. Workers with secondary education and above earn more, but their unemployment and inactivity rates increased between 2006 and 2014. One explanation could lie in a skills mismatch between employers' needs and the skills acquired through the education system. Students end up with skills that firms find wanting, possibly because educational quality has declined.

Unemployment is low and continues to decline, but not for urban areas and urban female workers. Between 2006 and 2014, unemployment rate contracted from 2.9 to 1.9 percent. But unemployment concentrated in urban areas: four in every five unemployed workers were urban dwellers. At the same time, urban female unemployment was twice the levels of male unemployment in urban areas.

The fall in unemployment could also mask workers' discouragement and mounting inactivity, particularly for women. Between 2006 and 2014, unemployment fell but inactivity rose at a faster rate. By the end of the period, one in seven workers in the WAP was inactive). However, inactivity was worse among women and in urban areas. From 2006 to 2014, the share of inactive females in the WAP doubled; for males, inactivity grew from 8 to 11 percent. Urbanization is associated with the increase in inactivity. In the mid-2000s, 60 percent of inactive workers were in rural areas; eight years later, most inactive workers resided in urban areas.

Female and young workers have yet to benefit from better access to quality of jobs. The recent decline in unemployment rates benefited females disproportionately, but they still represent most of the unemployed: two-thirds of unemployed are women. While overall employment opportunities are improving in urban areas, women and the youth remain largely employed in rural areas. Female workers have a lower probability of finding wage employment. Young workers are in less lucrative work, but work more hours. While hours worked per week for workers 25 years and older has remained around 50 hours, for young workers the average is closer to 60 hours per week. At the same time, two-thirds of young workers are in unpaid work. There is a sizable number of youth that is inactive (not in education, employment, or training). Inactivity among the youth is not explained by school attendance: 60 percent of young men and nearly 40 percent of young women were not in education, employment, or training (NEETs).

Underemployment also grew, particularly in rural areas. Between 2006 and 2014, the number of workers that reported underemployment nearly doubled. In 2014, almost 2.4 million workers reported being underemployed, which represented approximately 12 percent of the labor force. Except for Dar-es-Salaam, underemployment grew everywhere in Tanzania. However, underemployment in rural areas is significant: in 2014, three in every four underemployed workers lived in rural areas.

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[2]   The forthcoming Tanzania State Owned Enterprise Competitiveness Review will explore in greater detail the extent to which differences in compensation between SOEs and private firms may provide incentive to retain highly skilled workers (World Bank, 2018c).

PART 1. MACRO AND SOCIAL TRENDS

1. GROWTH DRIVERS AND BARRIERS

Since the late 1980s, Tanzania has put in place a series of reforms that have changed the outlook of the economy. Tanzania progressively moved away from the protectionist policies established in 1967 to a more market-driven approach. Reforms included institutional changes that resulted in more macroeconomic stability such as the central bank's autonomy and the elimination of controls on exchange rates. The change in the development approach also relaxed restrictions for foreign investment. Such actions facilitated mergers and acquisitions, and eliminated the need for import licenses. Just as importantly, reforms were aimed at providing a favorable environment for firm creation and growth, such as easier firm entry, deregulation, and the removal of price controls. The country also reduced the direct participation in the economy through privatization of SOEs nationalized after the 1967 Arusha Declaration. These reforms led to a more dynamic private sector. This dynamism can be seen in the number of micro and small firms that have been created since reforms took place (Box 1.1).

Tanzania had relatively sustained solid growth. At 6.8 percent, Tanzania's economic growth rate softened in the first half of 2017, compared to the 7.7 percent recorded for the same period in 2016 (World Bank, 2017a). Overall however, the Tanzanian economy grew at annual average rates of over 6 percent since 2007.

Investment led this growth. Year-on-year GDP trends seem to correspond to investment growth (Figure 1.1). The 1991 financial sector deregulation contributed to create the environment for domestic investment growth. During the first decade of the 21st century, financial sector assets expanded tenfold (Financial Sector Stability Department, Bank of Tanzania, 2010). Similarly, FDI inflows saw a fivefold increase in the decade prior to 2011 (OECD, 2013). As a percentage of GDP, FDI increased from 1.8 percent in 1998 to 4.3 in 2015 (World Bank, 2016a). However, according to World Bank (2017a), well-intended reforms in public administration to address corruption, among other things, is causing uncertainty in the private sector, which may influence future private-sector investment.[3]

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[3] According to the November 2017 Tanzania Economic Update, an "overall deterioration in business sentiment due to the perceived risks resulting from the unpredictability of policy actions related to the Government's intensified efforts to collect revenue and to its anticorruption drive, which has delayed payment of Government arrears to suppliers and contractors and VAT refunds" (World Bank, 2017a: ix).

BOX 1.1: REFORM, RECOVERY, AND TRANSFORMATION IN TANZANIA

Tanzania's transformation took place in three phases. From the 1967 Arusha Declaration to the mid-eighties, Tanzania embraced Ujamaa Socialism. Under the leadership of Julius Nyerere, Tanzania became independent in 1961. In the eyes of its leader, there were only minor changes that were at odds with his model of society. Ujamaa Socialism was designed with the idea of a communalist society based on freedom, self-reliance, and family. Although a sense of national coherence developed during that time, the country underwent economic decline. State intervention in the economy in the form of SOEs, centrally determined prices, and inefficient public policies led to a reduction in agricultural produce. Inefficient SOEs led to large deficits that were financed with new money emissions. As a result, inflation rose to over 30 percent annually. An overwhelming presence of the State in the economy was also visible in price controls and limited licenses resulted in a lower interest from foreign agents and therefore a decline in international exchanges. Lower levels of foreign investment and trade led to scarce foreign currencies, which prompted the government's rationing of overseas currencies and the corresponding emergence of a black market with large premia. Pressures on the exchange rate translated into an incapacity by local firms to pay foreign creditors and led to a shortage of imported goods.

The second phase of the transformation was the recovery. From 1986 to 1995, the economy was gradually liberalized. The 1986 Economic Recovery Program included price and exchange rate liberalization, as well as the removal of restrictions to economic activity. State ownership and government intervention were rolled back. Despite these profound changes, the economy exhibited sluggish growth and stability remained elusive.

The third phase was the consolidation of the reform. It started in the mid-1990s. Import liberalization, and boosting exports led to an increase in foreign reserves. The restructuring of the financial sector provided financial resources for private investment. Inflation fell as SOEs finances were under a stricter control with no access to credit. A comprehensive debt relief and foreign aid, along with increased tax revenues from private-sector led economic growth, allowed the much-needed fiscal space for the government to set and finance priorities.

Source: Nord, R., Sobolev, Y., Dunn, D., Hajdenberg, A., Hobdari, N., Maziad, S. and S. Roudet (2009), Tanzania: The Story of an African Transition, Washington, DC: International Monetary Fund.

Figure 1.1
Investment and real GDP growth, 1991–2014
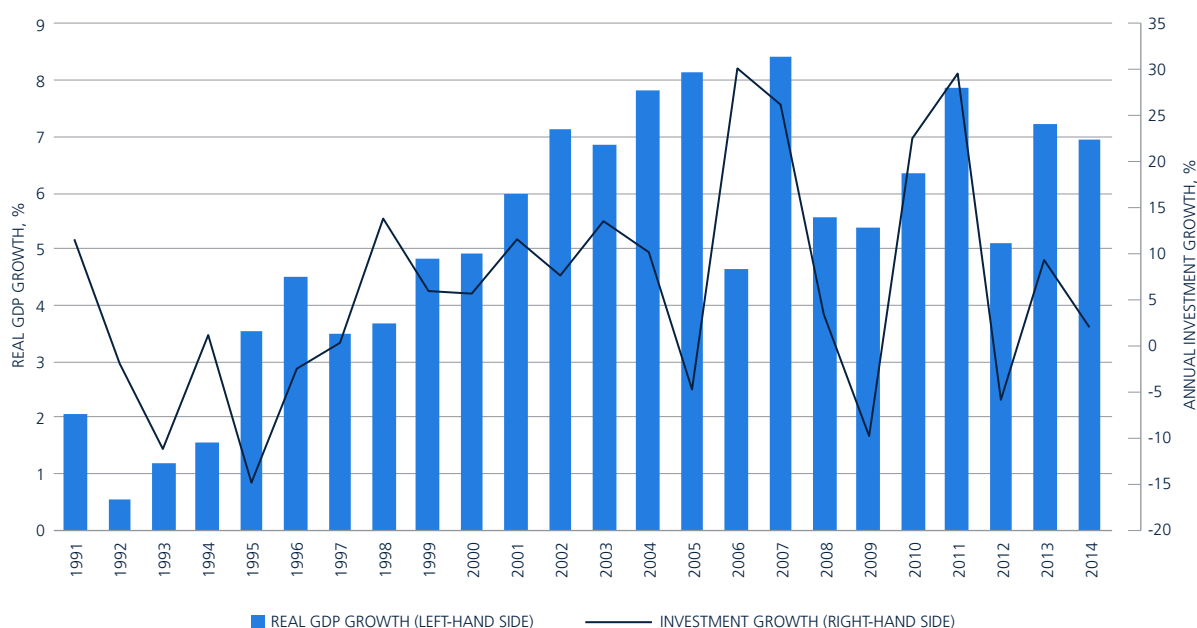
Source: World Bank (2016a), World Development Indicators, accessed on November 21, 2016 at http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD

Real GDP growth in Tanzania and comparators, 2000–2015
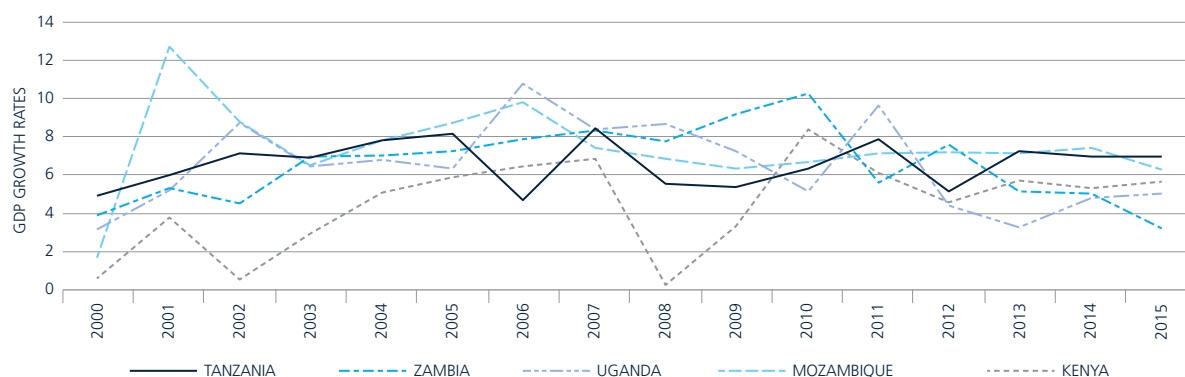
Source: World Bank (2016b), JobStructures Tool, Jobs Group, World Bank

Tanzania's economic performance has been stronger than the East African average and most other regional peers. Regional growth has been robust, but unstable. Most countries in the region grew between 2 to 12 percent annually. Prior to 2006, when Tanzanian growth almost halved, Mozambique and Uganda exhibited faster growth rates (Figure 1.2). A short-lived recovery in 2007 took Tanzanian growth rates to one of the lowest amongst regional comparators—only higher than Kenya. Since 2012, the country has exhibited solid and steady growth rates that outpaced every comparator in the region.

In terms of GDP per capita, Tanzania still lags in comparison to the progress made by other countries in the sub-region such as Kenya or Zambia. Despite a sustained period of GDP growth, in terms of GDP per capita, Tanzania went through a period of sluggish growth and decline prior to the mid-1990s. As of 1996, and because of economic reform and liberalization, Tanzania displayed steady and accelerated gains in GDP per capita. Between 1995 and 2015, Tanzanians' GDP per capita almost doubled (83 percent growth). However, other countries in the region, such as Kenya and Zambia achieved higher GDP per capita levels (Figure 1.3). In relative terms, Tanzania made significant gains relative to 1995, but countries in the region such as Mozambique and Uganda made greater per capita gains. When compared to other emerging countries, Tanzania's growth challenge is even clearer. The World Bank (2014) Country Economic Memorandum argues that at a historical trend of GDP per capita growth averaging 4.5 percent is insufficient. To catch up with Indonesia's 2009 GDP per capita, a 7.6 average growth rate to 2026 is required, and a 9.8 to meet Thailand's 2009 per capita levels. Similarly, the 2017 Systematic Country Diagnostic warns that if Tanzania were to continue the same growth path, by 2025 GDP per capita would reach US$ 1,450, a level that is currently similar to Ghana and Kenya and lower than South Africa, Indonesia, and Thailand (World Bank, 2017b).

Figure 1.3
Real GDP per capita in Tanzania and comparators, 1990–2015
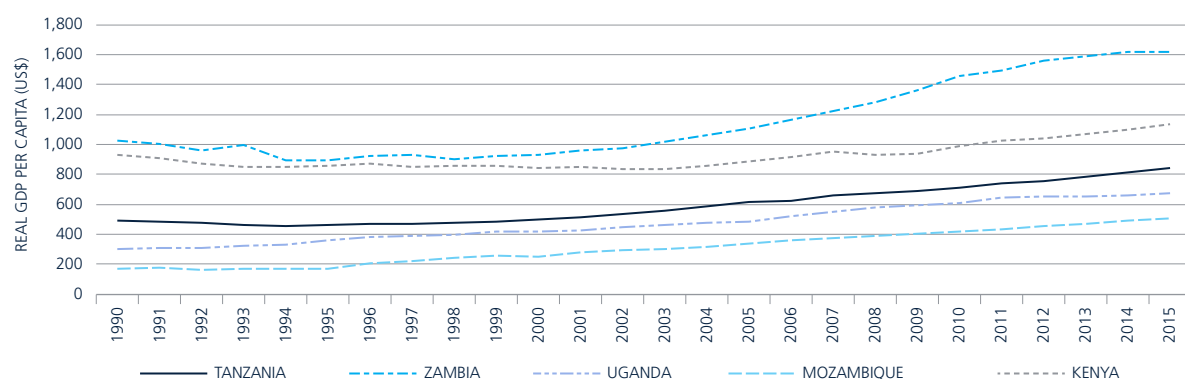
Source: World Bank (2016b), JobStructures Tool, Jobs Group, World Bank

BOX 1.2: TANZANIA'S NATURAL RESOURCES

Natural resources are the basis of many of Tanzania's industries. A large expanse of fertile land conducive to agriculture has high potential for future development. Its diverse renewable resources also include wildlife, forestry, and marine and inland fishery resources, which create a comparative advantage both for tourism and to support livelihoods both in the Mainland and Zanzibar. Water resources make it possible for hydroelectric power to supply about a third of Tanzania's electricity needs, while also serving agriculture.

Tanzania's wealth of nonrenewable resources is topped by gold, diamonds, base metals, and gemstones. Its top export is gold, which in 2014 supplied 20 percent of total export value. Proven near and on-shore gas reserves at Songo Songo and Mnazi Bay and some smaller fields are estimated at 1.4 trillion cubic feet and may be as high as 8 trillion cubic feet. The recent offshore gas discoveries—estimated at about 50 trillion cubic feet gas-in-place—could attract a large volume of FDI and bring in substantial revenue once production starts. Natural gas is also important as an alternative source of power generation.

Source: World Bank (2017b), "United Republic of Tanzania, Systematic Country Diagnostic," World Bank

Although the economy is more diversified, commodities are still important. According to World Bank (2017b), growth in the past decade has been driven by growth of services (particularly communications and financial), as well as construction. However, World Bank (2017b) also estimates that in 2011 natural resource rents accounted for more than 9 percent of GDP.[4] (See Box 1.2 for a brief discussion of Tanzania's wealth of natural resources.) Since then, commodity prices have declined substantially. The decline of commodity prices has reduced rents, particularly from minerals and natural gas, but the magnitude of Tanzania's natural resources is still large for non-oil-exporting Sub-Saharan African countries (World Bank, 2017b). However, the November 2017 Tanzania Economic Update reports a modest improvement in commodity prices that remain low for oil and stable on gold, which is currently favoring Tanzania (World Bank, 2017a).

Going forward, growth will likely be negatively affected by declining commodity prices. Commodity prices have, in general, declined since 2013. Tanzania's most important export, gold (Figure 1.4), has lost around one-third of its 2012 value (Figure 1.5). Silver was traded in 2016 at an average annual price of US$ 17.15 per troy ounce—less than half of its 2011 price (World Bank, 2017c). Other major exports such as copper, are traded

Figure 1.4
Tanzanian exports, 2015
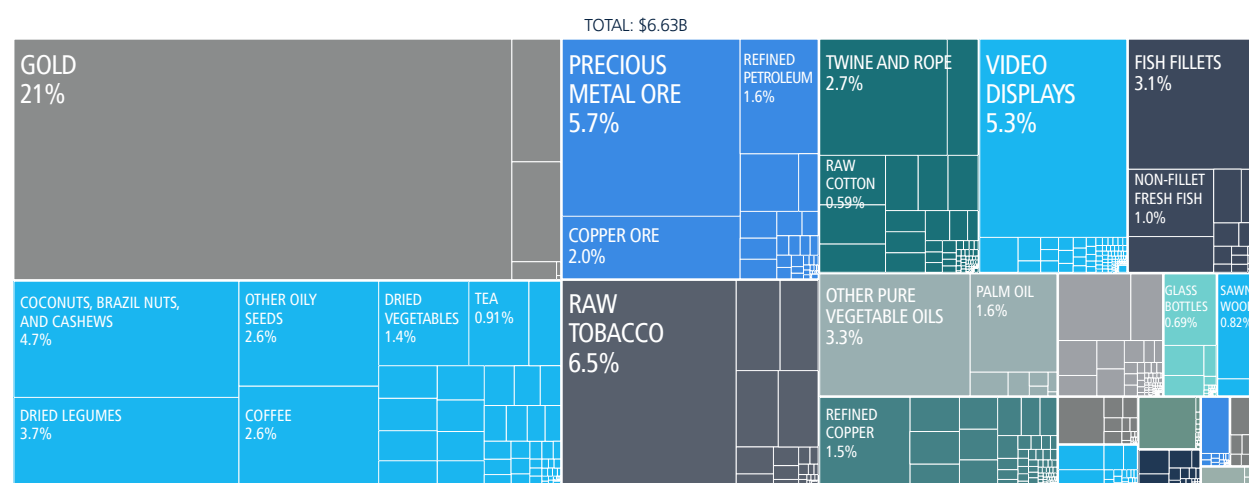
Source: The Observatory of Economic Complexity (2017), "What does Tanzania export? (2015)," accessed on July 24, 2017 at http://atlas.media.mit.edu/en/visualize/tree_map/hs92/export/tza/all/show/2015/

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4   Rents from natural resources, can be understood as those resources' net value (net of extraction and production costs and normal economic returns).

Figure 1.5
Real precious metals prices, 1980–2017

US$/TOZ   US$/TOZ

PLATINUM (RIGHT-HAND SIDE)   GOLD (RIGHT-HAND SIDE)

SILVER (LEFT-HAND SIDE)

Source: World Bank (2016a), World Development Indicators, accessed at http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD

at less than half of their January 2011 value, and platinum lost around 40% of the 2011 levels. Although tobacco prices—another important export—have increased since 2014, World Bank (2017d) estimates that real prices will slide from 2019; by 2030, tobacco prices are estimated to lose around one-third of their current prices.

FDI has been counterbalancing the negative effect of commodities' revenue losses on GDP. Declining commodity prices grew a trade imbalance that was partially offset by investment growth. Since 1991, Tanzania's trade deficit has persisted, but it has grown since 2006. Public and private consumption levels, as a proportion of GDP, remained relatively stable over the same period. Thus, larger imports were financed with investment (Figure 1.6). Part of that investment were FDI flows that grew at the end of the nineties with the country's economic reform, and that accelerated since 2006 (Figure 1.7). Conversely, the current account deficit came under control by 2002. However, the current account deficit deteriorated thereafter, with a mild improvement in 2014. One possibility is that FDI flows triggered the need for intermediate inputs from abroad.

Figure 1.6
GDP decomposition, 1991–2014
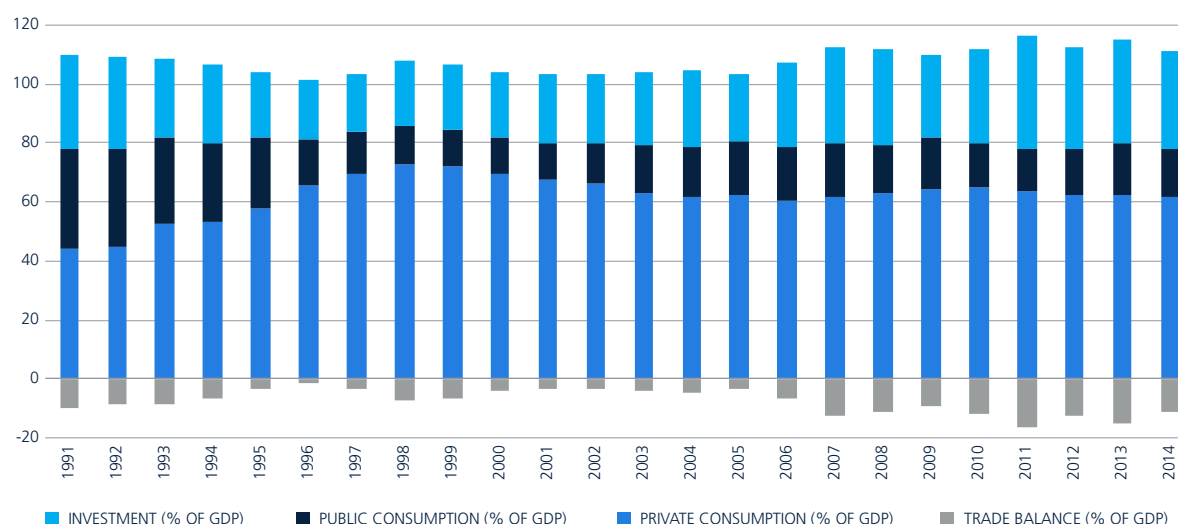
INVESTMENT (% OF GDP)   PUBLIC CONSUMPTION (% OF GDP)   PRIVATE CONSUMPTION (% OF GDP)   TRADE BALANCE (% OF GDP)

Source: World Bank (2016a), World Development Indicators, accessed on November 21, 2016 at http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD

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Figure 1.7
FDI flows and current account, 1991–2014
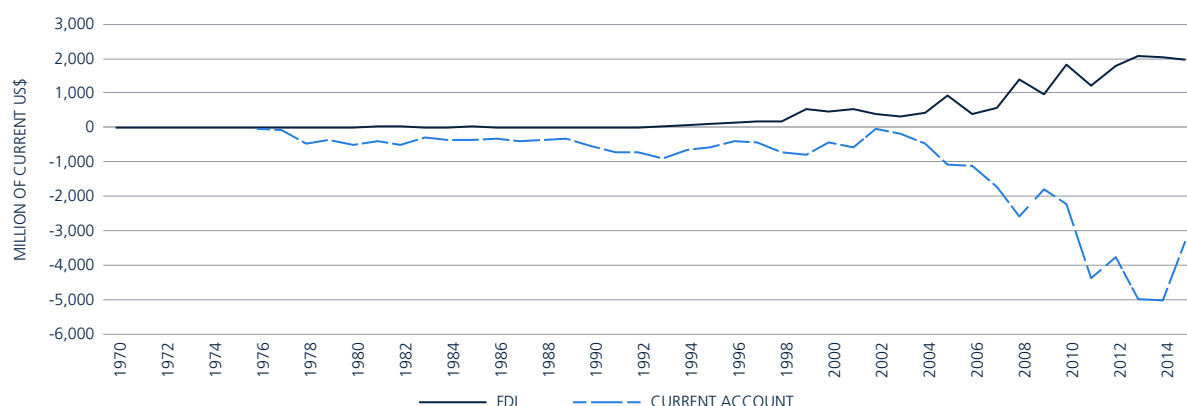
Source: World Bank (2016a), World Development Indicators, accessed on November 21, 2016 at http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD

Productivity is the driver of GDP. Since 1991, productivity fuels GDP growth. At little over 2 percent average annual rates, growth in per capita value added—in the last quarter century—has been modest. Fueled partly by demographic change and relatively low productivity growth, per capita value added during the last decade of the 20th century stood at around an average annual rate of 0.7 percent (Figure 1.8). Sluggish growth during that period was expected as economic reforms were just being implemented as the old central planning model was exhausted. In addition, slow growth during the 1991–2001 period was also the product of slow employment growth. Employment grew at a compounded annual growth rate of 2.9 percent during the same period. However, its contribution to per capita value-added growth was negative (0.16 percent).[5] The greatest expansion took place between 2001 and 2007: on average, per capita value added grew over 4 percent annually. Chief among the factors associated to growth was productivity; over 85 percent of the variation in value added growth was attributed to improvements in productivity.[6] Large productivity gains were accompanied by employment

Figure 1.8
JobStructures Tool decomposition of per capita value added, 1991–2014
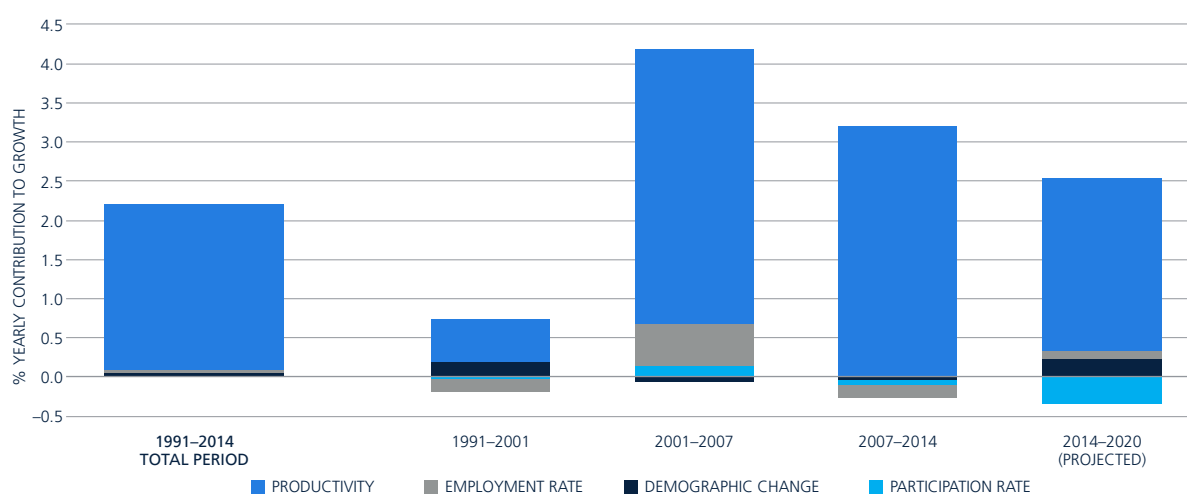
Source: World Bank (2016b), JobStructures Tool, Jobs Group, World Bank

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[5] A relatively rapid employment expansion with sluggish value-added growth can usually lead to a negative contribution to growth, since the latter is measured in per capita terms.

[6] The 2017 Systematic Country Diagnostic shows 2013 IMF results on GDP decomposition that shows a similar direction of the impact of productivity on growth, but carried out by the extended form of the Solow accounting, whereas the JobStructures tool in Figure 1.11 decomposes growth on labor market elements.

Shift-share sectoral decomposition of value added per worker, 1991–2014

MILLION USD PER 1,000 PEOPLE (CONSTANT AT 2005 PRICES)

■ PERIOD 3: 2007 TO 2014
(CHANGE=0.11)

■ PERIOD 2: 2001 TO 2007
(CHANGE=0.08)

■ PERIOD 1: 1991 TO 2001
(CHANGE=0.02)

■ TOTAL PERIOD: 1991 TO 2014
(CHANGE=0.2)
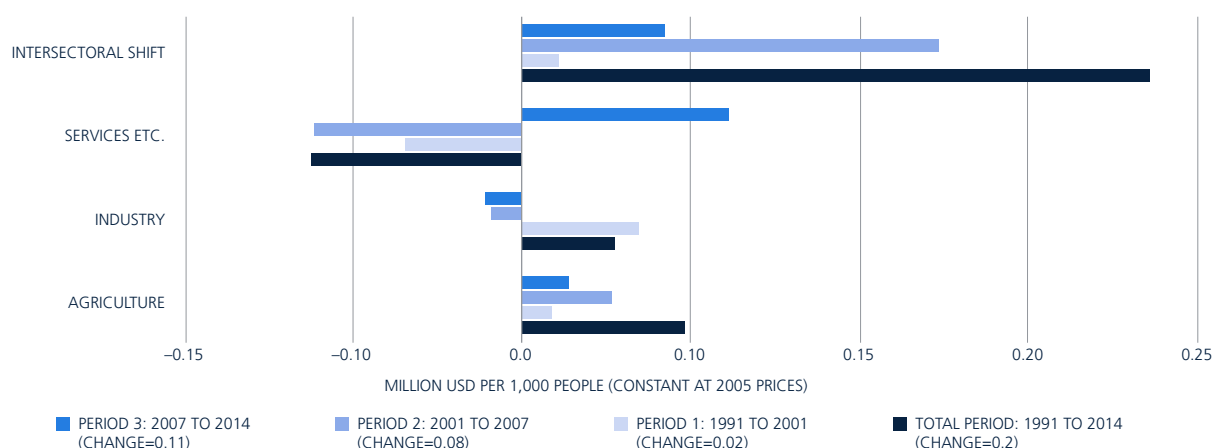
Source: World Bank (2016b), JobStructures Tool, Jobs Group, World Bank

rates' positive contribution to growth. Over 13 percent of the variation can be related to employment growth. No significant contributions to growth were provided by demographic changes.

Marginal productivity is decreasing due to the increase in employment rate. Employment and demographic trends could be more important for future growth. During the most recent period (2007–2014), growth was entirely attributed to improvements in productivity. Over 108 percent of the variation—compensating for negative contributions in other factors—is associated to growth in productivity (Figure 1.9). Employment growth was a noticeable factor among the negative contributors. During the 2007–2014 period, employment grew by 3 percent annually. Thus, the economy added over 4.5 million new jobs. However, annual average growth in per capita value added slowed down to 3.2 percent; a 0.4 percent annual decline from the previous period. If Tanzania's trends continue over the next few years, employment rates and demographic change could be more relevant in explaining growth, but at lower growth rates.

Structural change is a major influence on productivity differentials across sectors. Productivity in Tanzania, measured as value added per worker, has been primarily driven by labor movement across sectors since 1991 (Figure 1.10). This result is in line with the 2017 Systematic Country Diagnostic result for the shorter

Figure 1.10
Employment and value added by sector, 1991–2014

PANEL A

PANEL B

NOTE: BUBBLE SIZE REPRESENTS EMPLOYMENT

■ AGRICULTURE
— AGRICULTURE-VALUE ADDED (RIGHT-HAND SIDE)

■ INDUSTRY
— INDUSTRY-VALUE ADDED (RIGHT-HAND SIDE)

■ SERVICES
— SERVICES-VALUE ADDED (RIGHT-HAND SIDE)
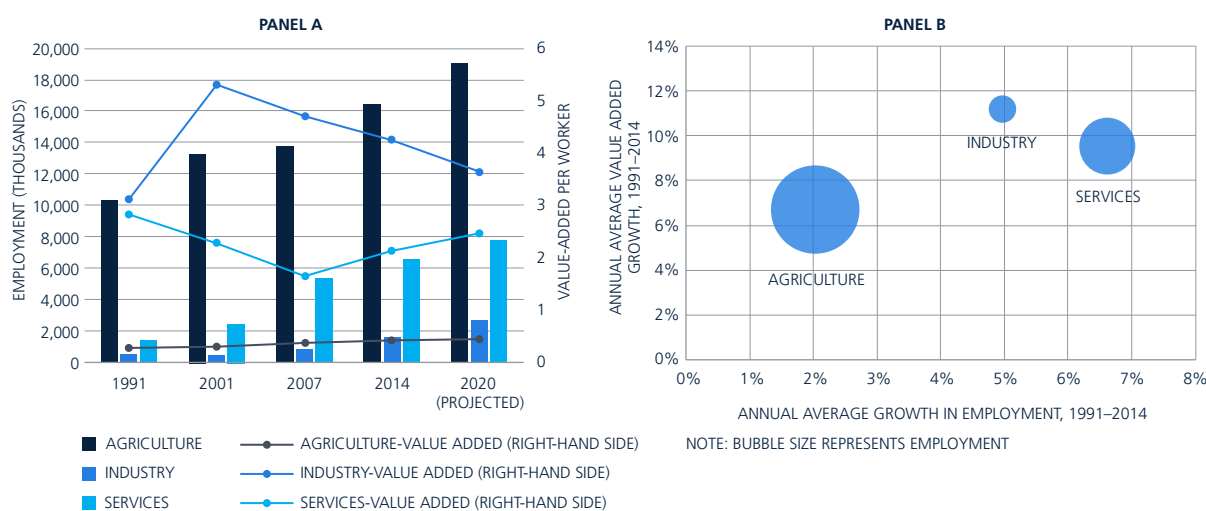
Source: World Bank (2016b), JobStructures Tool, Jobs Group, World Bank

period of 2006 to 2014 (World Bank, 2017b). Although they are declining, most of the gains in productivity have stemmed from intersectoral shifts: agricultural workers moving into services, and to a lesser extent industry.

Conversely, most within-sector productivity gains waned. In agriculture, contributions to productivity gains stemming from the sector's efficiency declined over time, but remained positive. In industry, contributions to productivity gains were negative since the turn of the century. Services, is the sector with the greatest positive contribution to productivity. These results confirm the 2017 Systematic Country Diagnostic's claim of little within-sector labor productivity gains for the shorter periods of 2001–06 and 2006–14 (World Bank, 2017b).

Industry yields high value added, but productivity growth has declined in that sector. The greatest change in value added was in industry. Value added per worker was five times larger in services, and eight times greater in industry than in agriculture (Figure 1.11 panel A). However, since 2001, labor productivity (measured as value added per worker) has slowly declined in industry. In services, the decrease in labor productivity is also noticeable, albeit recovering since 2007 (Table 1.1). The only sector with modest, but consistently positive gains in labor productivity was agriculture. One explanation for it is that as labor is shed by agriculture, new manufacturing employment lowers productivity at the margin.

Table 1.1
Sectoral statistics, 1991–2014

Sectoral employment (1,000 people)

	Absolute				Change			
	1991	*2001*	*2007*	*2014*	*1991–2001*	*2001–07*	*2007–14*	*1991–2014*
Agriculture	10,272	13,299	13,788	16,391	2.6%	0.6%	2.5%	2.0%
Industry	500	421	839	1,568	−1.7%	11.5%	8.9%	5.0%
Services	1,427	2,478	5,355	6,542	5.5%	12.8%	2.9%	6.6%

Sectoral Value Added (million constant 2005 USD)

	Absolute				Change			
	1991	*2001*	*2007*	*2014*	*1991–2001*	*2001–07*	*2007–14*	*1991–2014*
Agriculture	2,807	3,916	5,076	6,713	3.3%	4.3%	4.0%	6.7%
Industry	1,562	2,235	3,941	6,667	3.6%	9.5%	7.5%	11.2%
Services	4,025	5,611	8,823	13,891	3.3%	7.5%	6.5%	9.5%

Sectoral Value Added per worker (million constant 2005 USD)

	Absolute				Change			
	1991	*2001*	*2007*	*2014*	*1991–2001*	*2001–07*	*2007–14*	*1991–2014*
Agriculture	0.2733	0.2945	0.3681	0.4095	0.7%	3.7%	1.5%	3.1%
Industry	3.1221	5.3062	4.6960	4.2516	5.3%	−2.0%	−1.4%	2.4%
Services	2.8198	2.2640	1.6475	2.1235	−2.2%	−5.3%	3.6%	−2.2%

Source: World Bank (2016b), JobStructures Tool, Jobs Group, World Bank

Agriculture remains the main source of employment. Employment has grown across sectors, but agriculture continues to be the main activity in terms of employment (Figure 1.10 panel A). Employment gains are also visible in services and, to a lesser extent, in industry (Table 1.1). In relative terms, employment growth in non-farming sectors has been greater than in agriculture (see horizontal axis in panel B in Figure 1.10). These relative

larger gains in industry and services signal that, albeit slowly, structural change is already under way in Tanzania. However, to put in perspective the speed of structural change in Tanzania, consider that other emerging countries like Thailand, which went from an agriculture employment share of 71 percent in 1980 to 42 percent in 2009. Albeit most of the gains went to services, manufacturing's share grew from 8 to 14 percent (World Bank, 2014a). In contrast, Tanzania's agricultural employment share peaked in the 1990s at around 79 percent; with limited structural change, the share stood at 67 percent in 2016, while industry's went from a low 2.6 to a modest 6.3 over the same period (World Bank, 2016a).

Limited manufacturing could be the consequence of constraints in commercial farming. The abundance of smallholders that produce small quantities that fail to reach markets beyond their communities make capital deepening in agriculture extremely difficult. Limited technological change in that sector in turn curtails economies of scale and productivity and inhibits the flow of produce available for processing. A recent World Bank study carried out under the Let's Work Program Tanzania shows that in the tomatoes value chain in two regions in Tanzania (Iringa and Njombe), the lack of commercial farming limits the expansion of agroprocessing (World Bank, 2018a). The study also argues that taking actions such as promoting commercial farming, buying small-sized tomatoes from farmers (not sold in the fresh market), and investing in technical skills to reduce downtime in facilities could yield jobs not only in processing, but also in production/farming (World Bank, 2018a).

However, employment growth in industry has been lackluster. Between 1991 and 2014, in absolute terms, agriculture added more jobs than the other two sectors combined. However, in relative terms, the change was consistently greater in services and industry (Figure 1.11 panel B). Structural change in terms of employment was strong in both services and industry for the 2001–07 period growing at average annual rates of over 10 percent. Since the financial crisis, average annual employment growth rates in industry nearly reached 9 percent, which is three times as fast as services (Table 1.1). Employment in industry however, remains insufficient (Figure 1.11 panel A). The 2017 Systematic Country Diagnostic also warns that structural change in Tanzania "is characterized by the absence of labor movement to high-productivity sectors" (World Bank, 2017b:42).

Structural change is accompanied by a spatial transformation. Across the globe, an increasingly productive agricultural sector requires machines replacing labor. As labor is replaced, farming workers in rural areas (for the most part) migrate to secondary towns and eventually to cities. In the urban setting, these ex-farm laborers find work in industry or services. This process of inter-sectoral shift, from agriculture to other sectors, could not take place without spatial transformation: the urbanization process that results from migration from rural areas. In 1960, 5 percent of the Tanzanian population (slightly over 500 thousand people) lived in urban areas. By 2016, nearly one-third of population lived in urban areas (Figure 1.11). Urban dwellers nowadays stand at almost 18 million people; that is, urban population has multiplied 34 times since 1960.

Figure 1.11
Urbanization rate in Tanzania and neighboring countries, 1960–2016
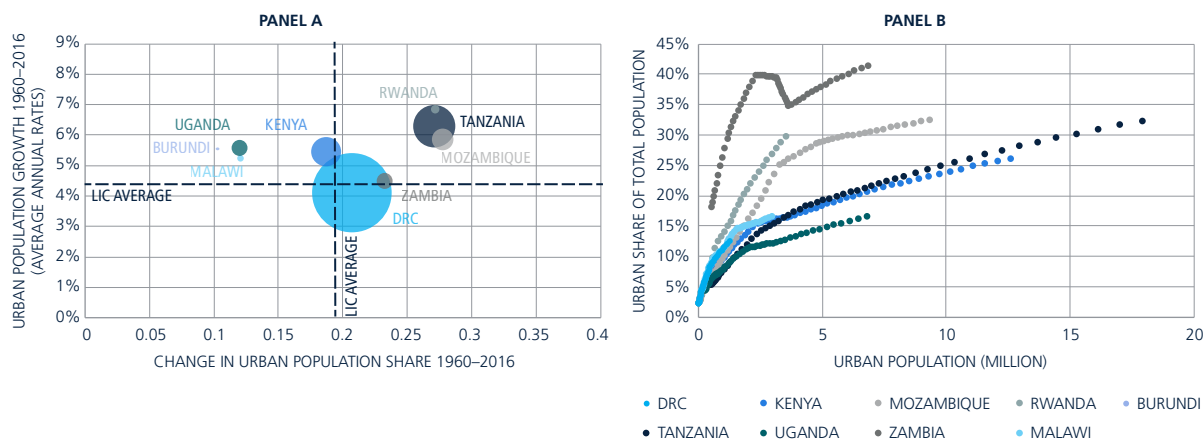
Note: Bubble size depicts total urban population figures in 2016.
Source: World Bank (2016a), World Development Indicators, accessed on November 21, 2016 at http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD

Figure 1.12
Urban population growth in Tanzania and neighboring countries, 2006–2014
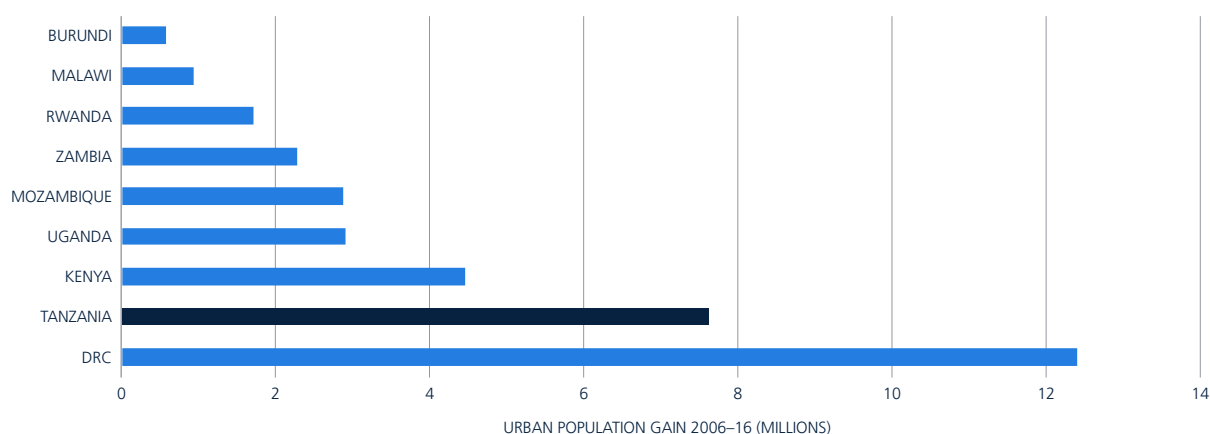
Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

The change in the urban share of total population is almost on par with the highest in the region. Only Rwanda and Mozambique had higher urbanization shares. In terms of urban population growth, Tanzania's average annual rates reached 6.3 percent, second only to Rwanda's 6.9 percent (Figure 1.12).[7] By both accounts (urban shares, and urban population growth rates), Tanzania is one of a handful of countries in the region with figures above the average for low-income countries. Although the size of the urban population is greater in Democratic Republic of Congo, its impact on the latter's urban share—and its speed—have been lower than Tanzania's. The rate of urban population growth has accelerated since the turn of the century. Even though Zambia, Rwanda, and Mozambique had higher urban population shares in 2016, in absolute terms Tanzania has had greater gains. Accelerated gains are observable in the increasing spread between value points for Tanzania compared to all its neighbors.

Urban population grows faster than national rates and rural areas. The speed of population growth in Tanzania has accelerated. In the late 1990s, population grew at an average annual rate of 2.6 percent, but started acceleration around 2002 (Figure 1.13). From a 2.6 percent at the turn of the century, population growth steadily grew to an annual average of 3.2 percent since 2007. Population growth at those rates was possible because of urbanization. Urban population growth went from an average annual growth rate of 4.2 in the late

Figure 1.13
Population growth, 1996–2014
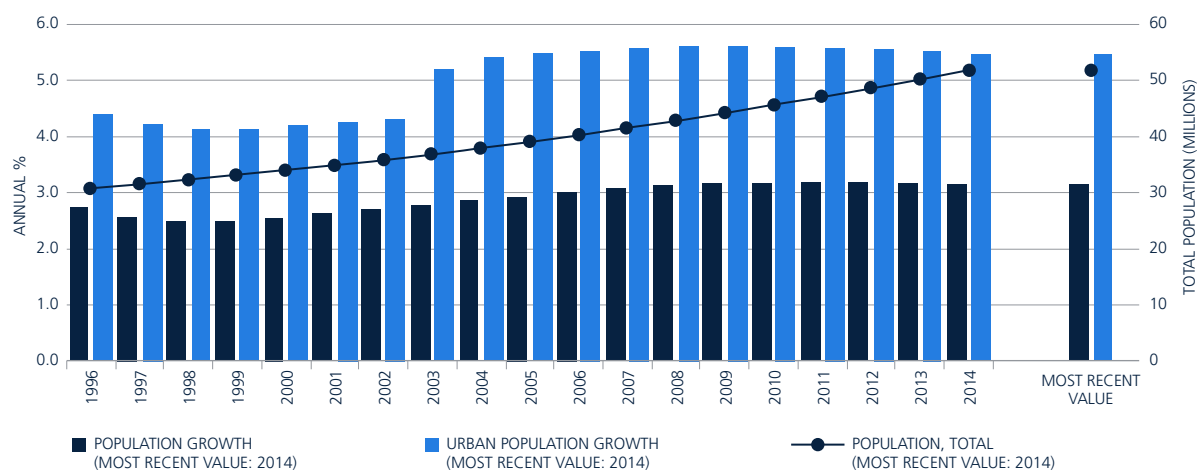
POPULATION GROWTH (MOST RECENT VALUE: 2014)   URBAN POPULATION GROWTH (MOST RECENT VALUE: 2014)   POPULATION, TOTAL (MOST RECENT VALUE: 2014)

Source: United Nations (2015) 2015 Revision of World Population Prospects, accessed on November 22, 2016 at http://esa.un.org/unpd/wpp/, United Nations.

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7   Since 1996, urban population growth rates have been on average twice as large as those for rural areas.

Figure 1.14
Growth, labor force, and employment, 2003–13
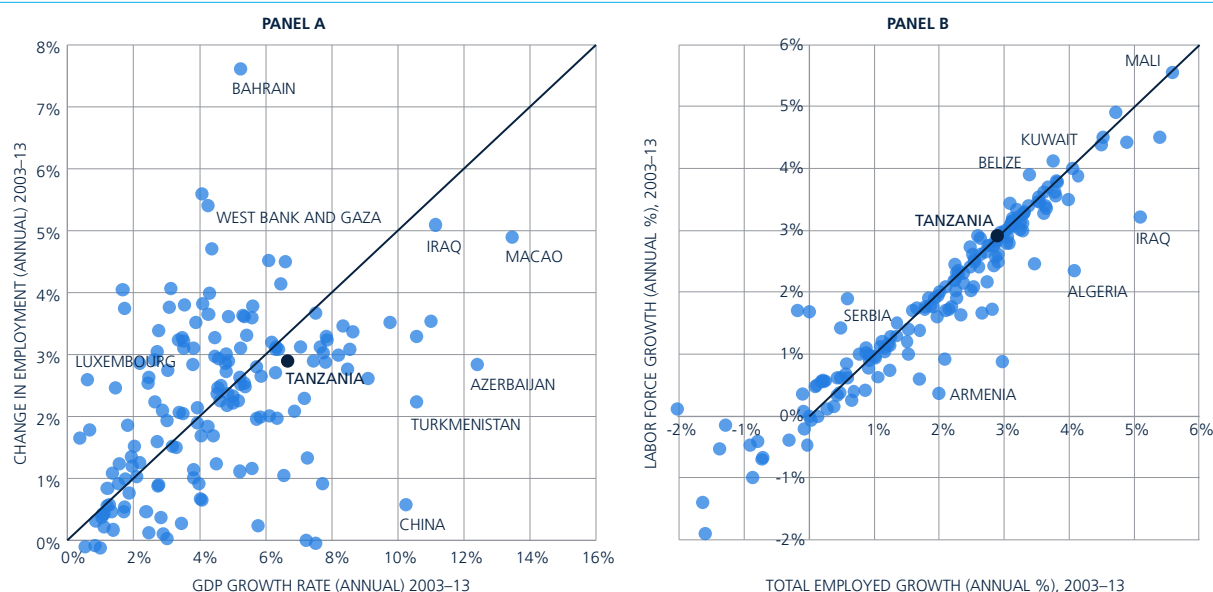
PANEL A

CHANGE IN EMPLOYMENT (ANNUAL) 2003–13
GDP GROWTH RATE (ANNUAL) 2003–13

BAHRAIN
WEST BANK AND GAZA
IRAQ
MACAO
LUXEMBOURG
TANZANIA
AZERBAIJAN
TURKMENISTAN
CHINA

PANEL B

LABOR FORCE GROWTH (ANNUAL %), 2003–13
TOTAL EMPLOYED GROWTH (ANNUAL %), 2003–13

MALI
KUWAIT
BELIZE
TANZANIA
IRAQ
ALGERIA
SERBIA
ARMENIA

Source: World Bank (2016a), World Development Indicators, accessed on November 21, 2016 at http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD

1990s to a 5.6 percent since 2007. In contrast, rural population grew at 2.2 percent per year between 1996 and 2014. That is, in the last decade, urban population grew almost three times faster than rural population.

Tanzania's solid growth rates were reflected in employment rates. Between 2003 and 2013, employment expanded in line with growth rates (Figure 1.14 panel A). Positively, the relationship between GDP growth rates for that period and the corresponding change in employment was close to the average for all countries. Similarly, employment growth also grew in line with labor force (Figure 1.14 panel B).

Recently, however, employment rates have declined despite the solid growth performance. Since 2007, employment rates (employment as a proportion of the WAP) sharply declined. Employment rates in 2007 stood at 87 percent of the WAP, but fell to 76 percent by 2013, and have remained on those levels ever since (Figure 1.15 panel A). Conversely, the size of the economy in 2016 was over four times the size in 1991 (in real terms). The decline in employment rates in Tanzania is noticeable when compared to other countries. While Tanzania's employment rates are still higher than low-income countries and Sub-Saharan countries, they are significantly lower than neighbors Rwanda or Zambia (Figure 1.15 panel B).

Figure 1.15
Employment rates, 1991–2015
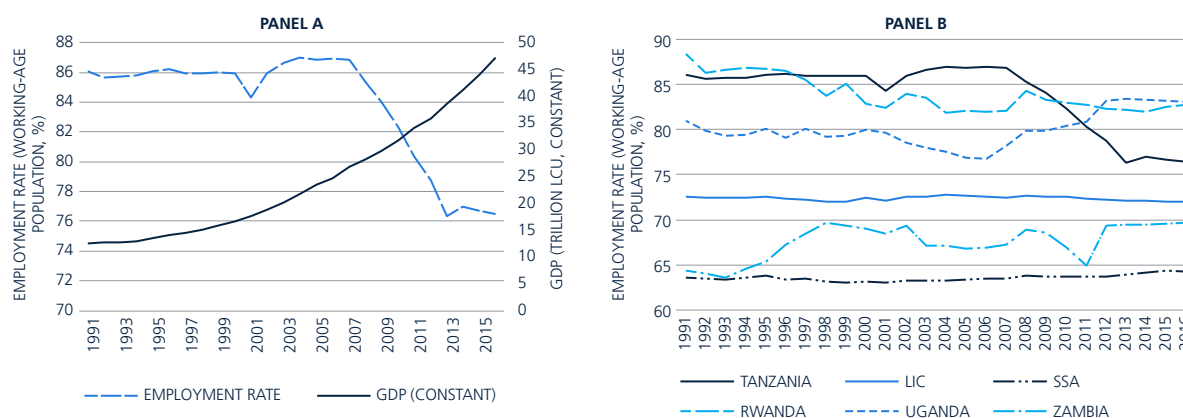
PANEL A

EMPLOYMENT RATE (WORKING-AGE POPULATION, %)
GDP (TRILLION LCU, CONSTANT)

— — EMPLOYMENT RATE   —— GDP (CONSTANT)

PANEL B

EMPLOYMENT RATE (WORKING-AGE POPULATION, %)

—— TANZANIA   —— LIC   ——·· SSA
—— RWANDA   – – – UGANDA   —·— ZAMBIA

Source: World Bank (2016a), World Development Indicators, accessed on November 21, 2016 at http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD

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2. SOCIAL TRENDS

Growth slashed poverty rates in a short period of time. At the turn of the century, when average GDP per capita growth rates stood at just over 2 percent, nearly 9 in 10 Tanzanians (85 percent) lived in poverty (Figure 2.1). Growth in GDP per capita terms accelerated in 2001 and reached its peak in 2007. High per capita growth rates were matched with a significant reduction in poverty headcount. By 2007, poverty headcount ratios stood at just 53 percent (World Bank, 2016a). The most recent value in the poverty measurement indicates that poverty was almost halved in just one decade; by 2011, poverty headcount ratios stood at less than 47 percent (World Bank, 2016a). However, national poverty lines indicate that only 28 percent of the population in 2011 lived under poverty (World Bank, 2015). According to the 2015 Poverty Assessment, basic needs poverty declined from 34 percent in 2007 to 28 percent in 2012 (World Bank, 2015).

Despite progress, most people remain vulnerable to poverty reversals. When poverty lines using US$ 1.90 and US$ 3.10 thresholds are used, a different picture emerges. The former (US$ 1.90 poverty line), results in a poverty headcount ratio at the most recent value of less than 47 percent. However, the latter line indicates nearly 77 percent of Tanzanians lived under poverty. That is, many of those who have recently escaped poverty under the first line have remained near it. Economic shocks could, like in other parts of the world, highlight such vulnerability and lead to poverty reversals. Indeed, World Bank (2015) reports that the poverty depth indicator shows that many of the poor cluster around the poverty line.

Figure 2.1
Growth and poverty in Tanzania, 1996–2014
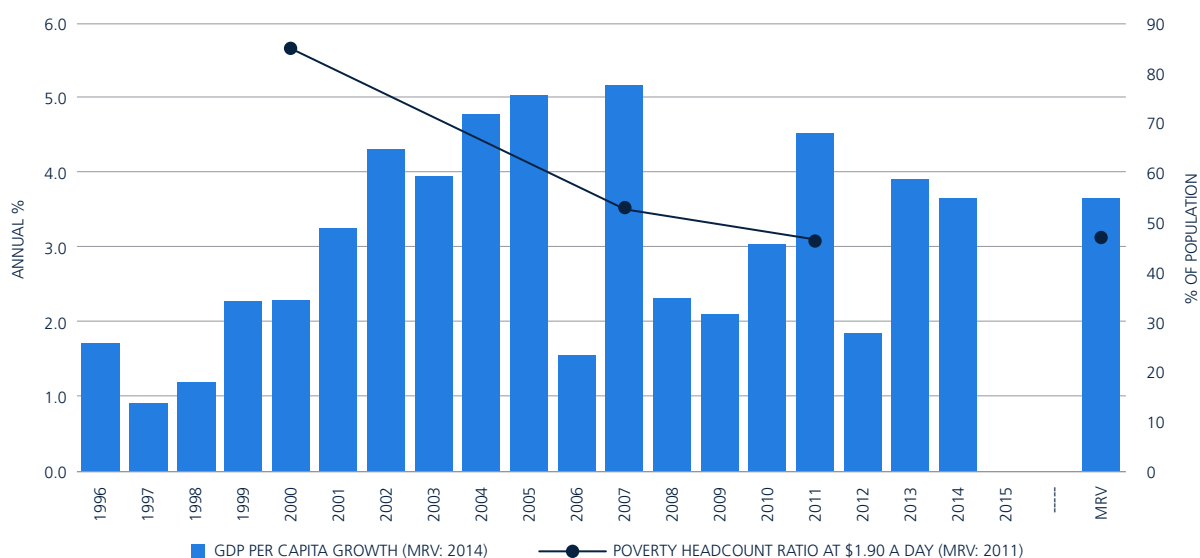
GDP PER CAPITA GROWTH (MRV: 2014)   POVERTY HEADCOUNT RATIO AT $1.90 A DAY (MRV: 2011)

Source: World Bank (2016a), World Development Indicators, accessed on November 21, 2016 at http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD

Source: World Bank (2016a), World Development Indicators, accessed on November 21, 2016 at http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD
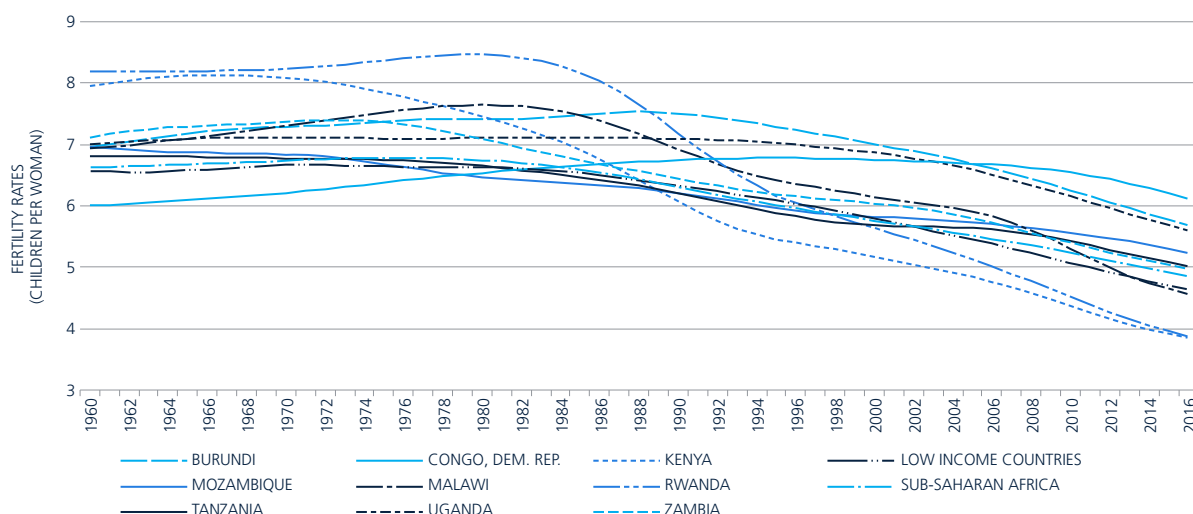
Non-farm employment is associated to a decrease in poverty rates. The 2015 Poverty Assessment find that agricultural employment was positively correlated with poverty (World Bank, 2015). The Poverty Assessment also showed that between 2007 and 2011/12, poverty rates for households in non-agricultural activities, decreased by 30 percent. The Assessment considered that "the development of nonfarm employment can offer a pathway out of poverty" (World Bank, 2015: 25).

Tanzania is characterized by relatively high fertility rates. In 1960, Tanzanian women had on average nearly 7 children (fertility rates stood at over 6.8). Little changed during the following two decades (Figure 2.2). Some reduction in fertility took place after 1980, before stabilizing in the early 2000s. Further decline in fertility rates have taken place since 2007. By 2014, fertility rates approached five children per woman. Tanzanian trends mirror closely those of low-income countries and Sub-Saharan countries. Recently however, Tanzania's reduction in fertility rates lags that of other low-income countries and they remain relatively high. Rwanda and Kenya dramatically reduced fertility rates. At around eight children per woman, Rwanda and Kenya had in the 1960s, the highest levels of fertility in the region. Rates fell during the 1980s and the 1990s and by 2014, Kenya's fertility rates stood at 4.3 while Rwanda descended to 3.8.

High fertility rates may negatively affect poverty. The 2015 Poverty Assessment argues that a reduction in fertility could yield significant per capita income growth (World Bank, 2015). Under the medium population scenario, a reduction in fertility rates to 3.3 children per woman would yield an increase in growth rates of 1.3 percentage points per year. Other scenarios would increase or decrease by 0.6 percentage points depending of the fertility rate reduction. The faster the reduction in fertility rates, the larger the demographic gains (World Bank, 2017b).

Youthfulness and fertility determine the size of the labor force. Tanzania's WAP (those between 15 and 64 years of age) share of the total population has remained steady since 1990. At between 51 and 52 percent of the population, Tanzania's WAP is comparable to that of Mozambique's or Zambia's. The same stability in WAP is apparent in the overall population structure. From 1960 to 2015, the youth (0 to 14 years old) represented 45 percent of the population. In addition to a stable WAP at 51 percent, the elderly (65 and older), indicated little variation at around 3 percent during the same period. Moderate fertility rate scenarios yield similar stability across the population pyramid to 2030. The same age-cohort structure will remain in the next 12 years (Figure 2.3). Consequently, the population pyramid indicates a young population bulge; evidently, Tanzania will remain a youthful country for some time to come. This suggests that to reduce the burden on the economy, there is a need to generate millions more jobs while improving productivity.

Figure 2.3
Population distribution by age cohorts, 2015 and 2030 projected
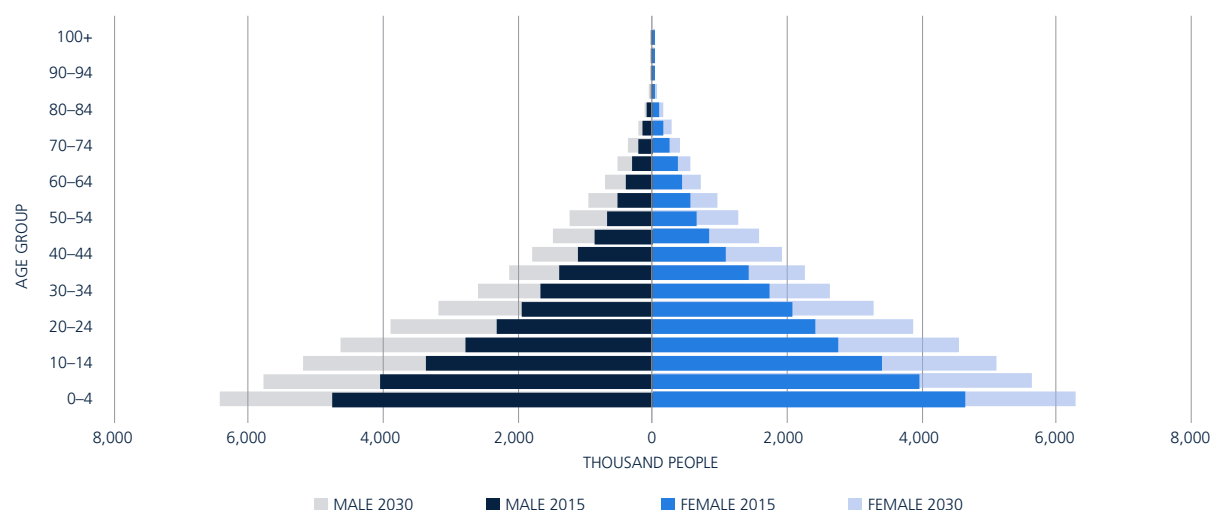
Source: United Nations (2015) 2015 Revision of World Population Prospects, accessed on November 22, 2016 at http://esa.un.org/unpd/wpp/, United Nations.

Persistently high fertility rates led to a sizable youth bulge and constant and high age-dependency ratios. In 2015, Tanzania's total dependency ratio stood at 93.8, down for 95 in 1990 (Figure 2.4).[8] With the notable exception of Kenya, which saw a significant reduction, dependency ratios are comparable across neighboring countries. In the case of Tanzania, modest reductions in youth dependency ratios were partially offset by the increase in elderly dependency ratios.

A youthful population compounds the challenge to create jobs in the context of inclusive growth. United Nation's mid-range projections show that population will expand from nearly 52 million people in 2014, to over 62 million in 2020, and almost 83 million in 2030 (Figure 2.5). Employing United Nation's projections, the WAP would increase from 52 percent in 2020 to 55 percent in 2030. The youth bulge implies that the WAP will rise by almost 71 percent between 2015 and 2030, which will demand the economy creates jobs for the extra 19 million potential workers—with respect to 2014—in the next 12 years. At the same time, inactivity and dependency will grow significantly (Figure 2.6).

Figure 2.4
Age-dependency ratios in Tanzania and neighboring countries, 1990 and 2015
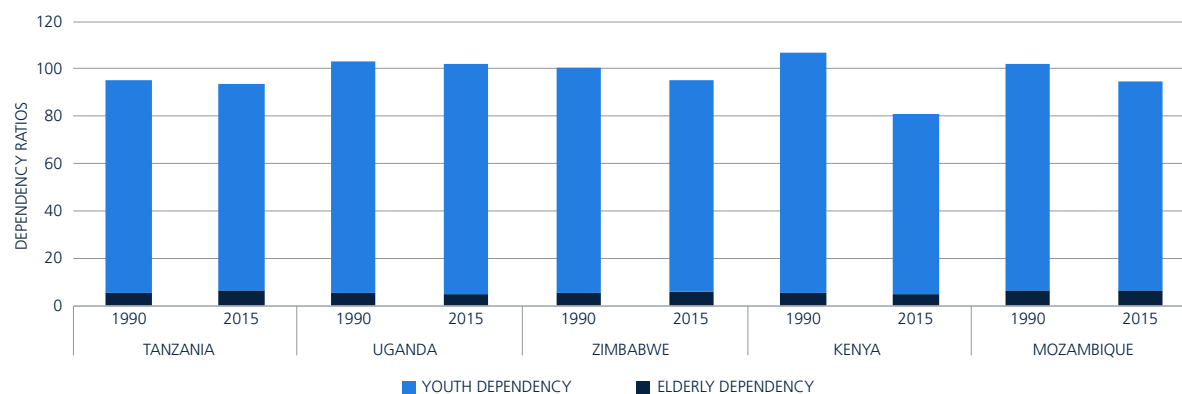
Source: World Bank (2016a), World Development Indicators, accessed on November 21, 2016 at http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD

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8   Total dependency ratio is a measure that reflects the size of the dependent population (those ages 0 to 14 and those over 65) as a proportion of the total population.

Figure 2.5
Outlook of population and labor force, 1991–2014 and projections
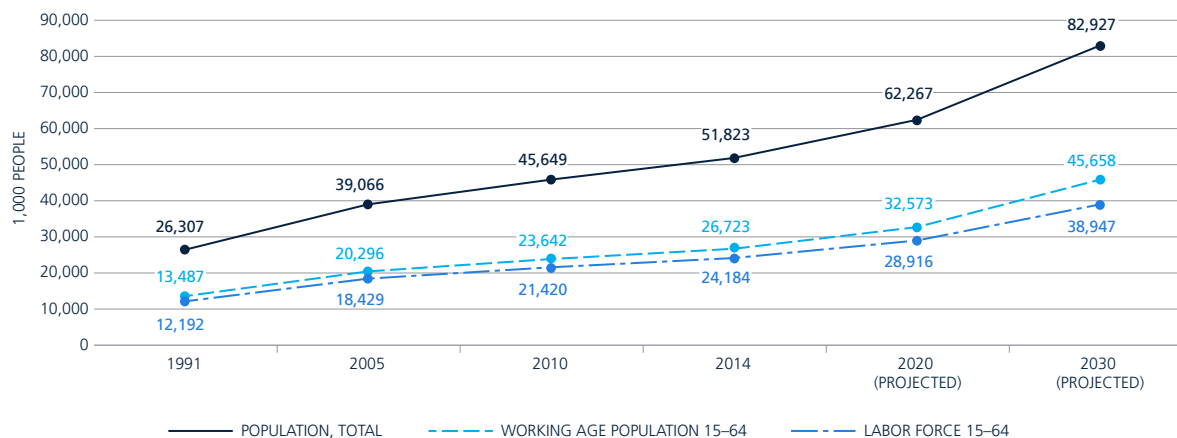
Source: World Bank (2016b) JobStructure Tool, Jobs Group, World Bank.

Figure 2.6
Outlook of employment and dependency, 1991–2014 and projections
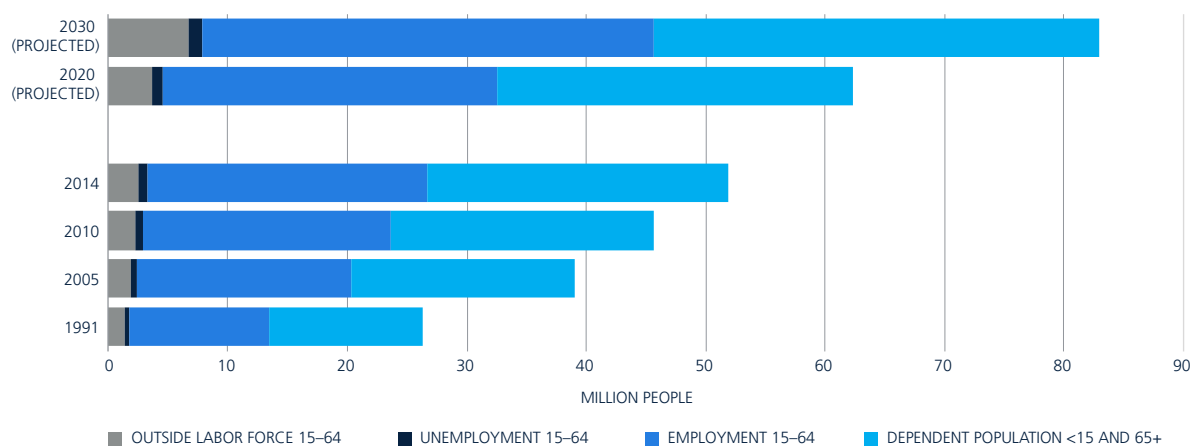
Source: World Bank (2016b) JobStructure Tool, Jobs Group, World Bank

PART 2. LABOR SUPPLY: JOBS AND WORKERS

SUMMARY

Unemployment in Tanzania is low even by international comparators. However, due to an increasing number of exits from the labor market, low unemployment rates may mask a growing number of workers who are discouraged from failed job searches. Exits from the labor market could also be influenced by the ongoing structural and spatial transformations; rural migrants' skills may not be what urban firms need. Part of the growing inactive labor force may be the result of more educated workers that can wait for better job offers.

When employed, most Tanzanians are either self-employed or in unpaid work. Unpaid work is prevalent in agriculture. In comparison, paid employment in the services sector increased. Unpaid work is the youth's most common form of employment, often working more hours than older workers.

Widespread informality presents challenges in terms of the quality of jobs.[9] One of the consequences of informality is more work for less pay. Although wages for informal workers in most sectors are growing faster, the wage gap between informal and formal workers is considerable. However, wage employment does not guarantee formality.

The key to quality employment is specialized skills and education. In the context of the ongoing spatial transformation, skills are the key to employment. In fact, post-secondary education was the strongest determinant of wage employment. Education and skills to the highest level are critical for wage employment, but at the same time, schooling is indispensable to non-farming jobs. Only the highest levels of education are associated with a higher probability of wage employment. Escaping farming activities also requires schooling.

However, the quality of education has suffered and greater access to schooling has been insufficient to deliver relevant skills. By 2014, primary-school enrollment nearly doubled. Gains in educational attainment were achieved across gender and type of region. But financial constraints, parents' decisions and the perception of usefulness of education prevent further enrollment. Although young workers gained the most from the educational progress, the challenge is not so much the quantity, but the quality of education. Poor infrastructure, high pupil-teacher ratios, and the lack of tools needed to teach are among the reasons for the decline in the quality of education. Teacher quality could also hamper learning.

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[9]   The dimensions of the quality of jobs include earnings, labor market security and working environment [OECD, 2016a]. A methodology put forward in IZA considers that quality jobs can be assessed through their pay, hours of work, prospects, hard work, job content and interpersonal relationships [Clark, 2015]. This Jobs Diagnostic considers that quality of jobs refers to earnings and the number of hours worked.

The needs of the private sector are not met by technical and vocational training, but firms are not using enough training to remedy skills gaps. Given the wage differential with the private sector, the government is the largest employer of skilled workers. Government wages attract educated employees, but limit the number of skilled workers in the private sector. Firms however, are, for the most part, not remedying the differential in skills with their own training.

Making jobs more inclusive requires addressing female unemployment in urban areas. Unemployment is largely an urban phenomenon. Unemployment rates for females fell the most but they still represent most of the unemployed. In contrast, the progress made in terms of unemployment favored the youth and rural areas. With the decline of unemployment, inactivity rose sharply among female and urban workers. Young workers are most likely to be inactive in the labor market.

Improving the conditions of employment require a rural, gender, and youth focus. Female and young workers' employment conditions worsened, except in urban areas. However, even among skilled workers, women are affected by the gender wage gap. While unemployment is an urban phenomenon, underemployment affects rural areas.

Options of employment have become narrower for most females and young workers, particularly in rural areas. Female and youth self-employment declined in favor of unpaid work. Gender roles and land limitations may curtail the ability of females and youth to undertake self-employment, leading them to take unpaid jobs or migrate. Females' role as entrepreneurs also declined and stood lower than most comparators.

3. DEMOGRAPHIC TRENDS

Unemployment in Tanzania is low even by international comparators. In 2017, Tanzania's unemployment rate stood at 2.7 percent, which is up from the 2014 Integrated Labor Force Survey figure of less than 2 percent. Since the turn of the century, Tanzania's unemployment rate was on par with Uganda's (Figure 3.1). Tanzania's unemployment rate is now about half of the average for low-income countries. When compared to high-growth economies in South Asia, Tanzania's unemployment rate is noticeably lower. Other countries exhibited higher unemployment in the past. Zambia's unemployment rate is nearly three times larger than Tanzania, and Kenya's 11 percent is over four times Tanzania's. Mozambique stands out for its unemployment rate: in 2017, its southern neighbor's unemployment was almost ten times greater than Tanzania.

Most Tanzanians are employed. The 2014 Integrated Labor Survey indicates that the WAP includes just over half of the population (52 percent). The clear majority (84 percent) of this population is employed (Figure 3.2). However, around one in seven (14 percent of the WAP) are not in the labor force (see Annex 2.A for a summary of labor supply statistics.) The labor force inactivity rates were relatively low compared to Sub-Saharan Africa. According to a report from the Organization for Economic Cooperation and Development, only a handful of countries in the continent had lower or comparable inactivity rates (OECD, 2016b).[10]

Figure 3.1
Unemployment rates, Tanzania and comparators, 1991–2017
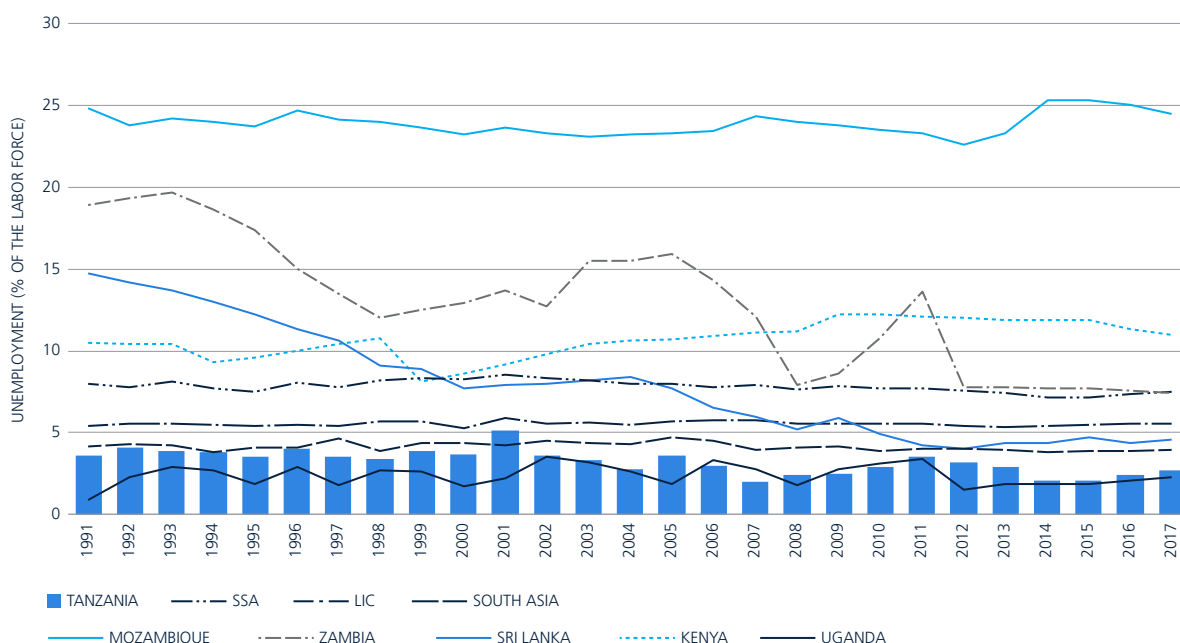
Source: Based on World Bank (2018) World Development Indicators.

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[10]   Inactivity rates can be defined as the proportion of the WAP that is neither employed, nor actively looking for work.

Figure 3.2
Labor market structure, 2014
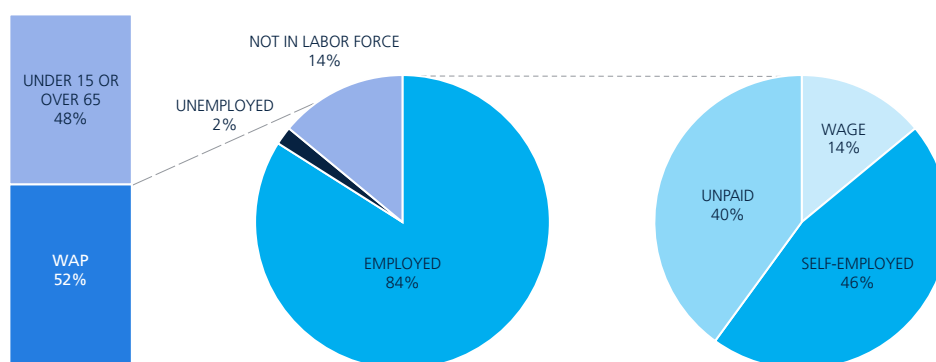
Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

Employment is either self-employed or unpaid work. In 2014, one in seven employed workers earned a wage (4 percent public wages and 10 percent private wages). In contrast, 86 percent of employed were self-employed (46 percent) or unpaid (40 percent). Self-employment in agriculture accounted for twice the number of self-employed in other sectors (30 and 16 percent respectively). The second largest share of workers was in unpaid employment.

Low unemployment rates may mask lower labor force participation rates. Unemployment is low and explained by an increasing number of workers leaving the formal labor market. Between 2006 and 2014, unemployment rates, particularly among females, and the younger workers (15 to 24 years old), fell (Figure 3.3). In tandem, overall employment numbers also declined. The drop was particularly acute for young workers and females. Consequently, the number of workers that quit their search for a job grew from 10 to 14 percent of the labor force.

Exits from the labor market are more likely in urban areas Labor market exits in urban areas grew more than in rural areas (Figure 3.4). One possible explanation for a growing number of exits in the labor market could be that farmers in their new urban milieu may lack the skills—or the social networks—to land a job. After a while, discouraged, some of these workers may stop their search and exit the formal labor force altogether.

Figure 3.3
Labor force shares by gender and age group, 2006 and 2014
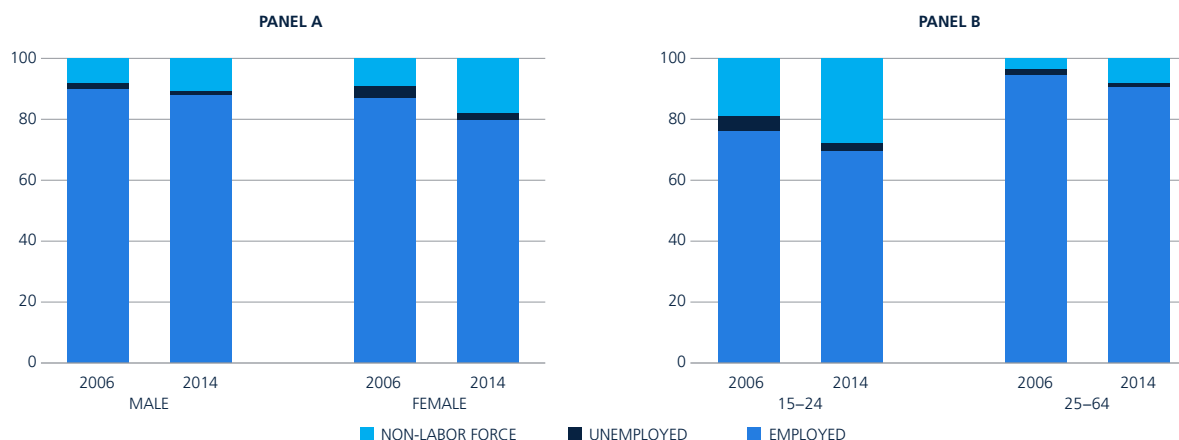
Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

Figure 3.4
Labor force participation in urban and rural areas, 2006 and 2014
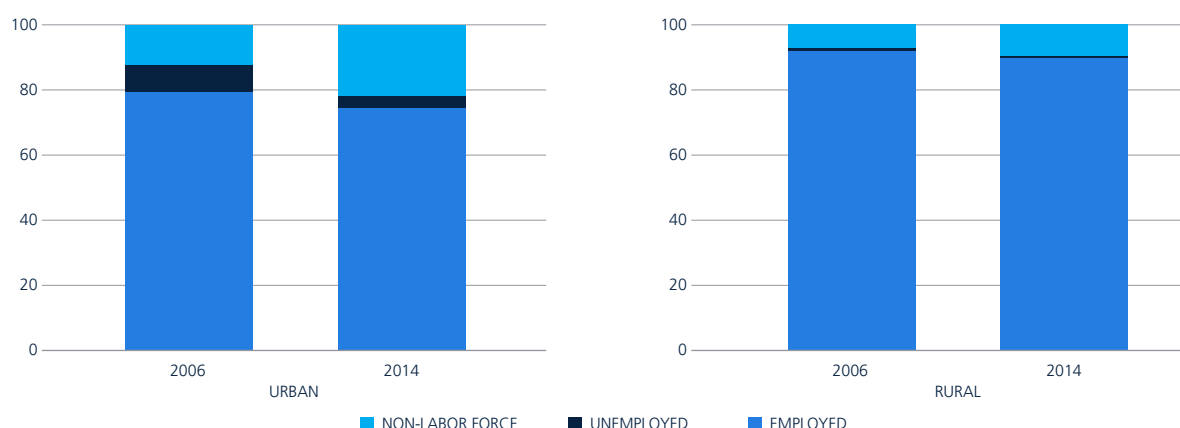
Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

A greater number of educated workers are inactive or unemployed. In 2006, one-third of the inactive population had not completed primary school; by 2014, the figure was down to 10 percent (Figure 3.5 panel A). In contrast, the percentage of inactive population that at least completed secondary schooling rose from 7 to 26 percent. Skills built through schooling seem to matter less to the labor market. As a result, many young and educated workers resorted to exit the labor force; those that persevered in the search, faced unemployment (Figure 3.5 panel B).

Unpaid work is common, especially in agriculture. In 2014, unpaid work accounted for nearly 52 percent of agricultural employment (Figure 3.6). Unpaid work is not only a large share of the sector's employment: it is also increasingly common. In 2014, the number of employees working without pay was five times greater than in 2006. The entire change in employment type in agriculture was at the expense of self-employment. In industry, except for self-employment, which grew from 11 to 16 percent, changes in employment type were almost imperceptible.

However, paid employment in the services sector increased. On the one hand, in 2014, unpaid employment in services fell to a third of its 2006 figure. On the other hand, paid employment increased from under 35 to over 40 percent during the same period. Hence, the gains that female and young employees experienced in paid work in urban areas could be mostly associated to paid employment in services and to some entrepreneurial activity in industry.

Figure 3.5
Inactivity and unemployment by educational attainment, 2014

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

Figure 3.6
Employment type by sector, 2006 and 2014
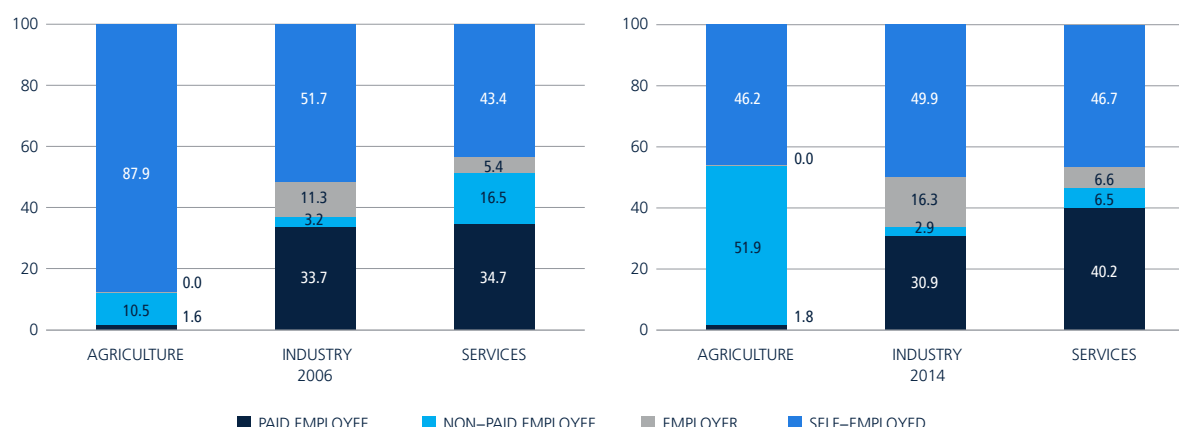
Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

Young workers are frequently unpaid and working more than older employees. In 2006, two-thirds of young workers (aged 15 to 24), were self-employed in the agriculture sector. By 2014, two-thirds were in unpaid work. Furthermore, while hours worked per week for workers 25 years and older remained around 50 hours, for young workers the average was closer to 60 hours per week.

One of the consequences of informality is more work for less pay. Informal work is prevalent. In 2014, on average, two-thirds of employment was informal (Figure 3.7).[11] Over 91 percent of employment in agriculture, and over 83 percent of employment in the services sector, were informal. In the private sector, informal jobs represented over 82 percent of the total in 2014. The notable exception was public sector employment. Informal workers toil for longer hours and for lower wages. In 2014, most formal sector employees, work around

Figure 3.7
Wage workers not registered in the social security system, 2014

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

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[11] Registration in the social security system is used as a proxy for formality.

Figure 3.8
Predicted probabilities for earnings differentials 2005 and 2012, selected results
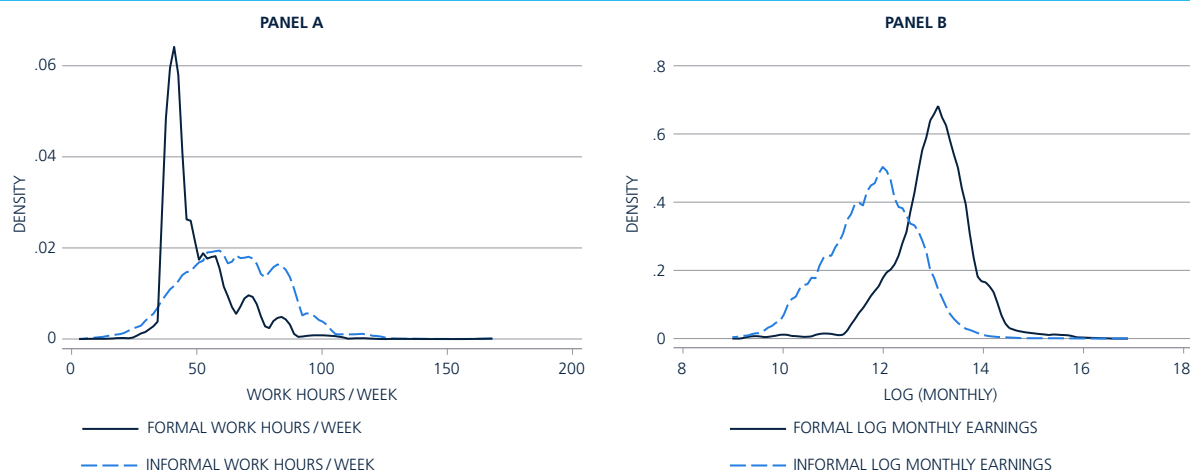
PANEL A	PANEL B

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

50 hours per week.[12] In contrast, informal workers were employed between 50 and 100 hours per week (Figure 3.8 panel A). For those additional hours, earnings in the informal sector were, on average, significantly lower than their formal sector counterparts (Figure 3.8 panel B). In fact, most informal workers earned less than the national monthly average.

The wage gap between informal and formal workers is considerable and varies by sector. In 2014, wages for informal workers were consistently lower than those for formal employees. In absolute terms, in 2014, mining and utilities paid the highest formal wages (Figure 3.9). In contrast, the lowest formal wages were found in manufacturing and agriculture. For informal employment, the largest wages were in finance and business services, as well as government, with other services and agriculture at the bottom of the table. But the largest formal to informal wage gaps were in utilities and other services: a formal employee earned typically four times more than an informal worker in the same sector. When the gap is measured as each sector's average

Figure 3.9
Sectoral average wages and earning gaps by formality, 2014

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

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[12] An examination of kernel densities of work hours per week, indicate that formal sector workers were highly concentrated around the 50- hour per week mark. Kernel density estimation is a non-parametric way to estimate the probability density function of a random variable where inferences about the population can be made.

Figure 3.10
Sectoral earning gaps by formality, 2006–2014

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

wage with respect to the mean for overall formal employment in 2014, the gap was as low as 23 percent in finance and business, and as large as 80 percent in agriculture. The wage gap among formal workers was also important, albeit less pronounced. Formal agriculture and manufacturing wages lagged mean formal earnings by nearly 40 percent.

However, wages for informal workers, in most sectors, are growing faster. In terms of wage growth, informal workers saw significant gains. Between 2006 and 2014, informal workers' wages grew faster than average wages in most sectors (Figure 3.10). Only in mining, construction and commerce had wage growth rates exceeded the informal wage average. Economic activities with the largest wage growth during the same period include finance and business services, as well as mining. Except for informal workers in finance and business services, informal workers in agriculture had the highest increase in wages; their wages increased at averages that were superior to those offered informally in mining, government, and manufacturing. The growth in average wages in informal agriculture outpaced wage growth in formal employment in agriculture, manufacturing, and government.

4. PROFILE OF WORKERS

Primary-school enrollment nearly doubled in Tanzania. Primary-school enrollment grew from 4.8 million in 2001 to 8.4 million in 2010 (World Bank, 2015). The growth in secondary-school enrollment was also significant. It went from 0.5 million in 2005 to nearly 2 million in 2012 (World Bank, 2015).

Gains in educational attainment were achieved across gender and type of region. Men residing in urban areas benefited the most. Nearly one-quarter of the urban male population completed at least secondary schooling (Figure 4.1). Completion of secondary schooling by women living in urban areas nearly doubled: from 9 percent in 2006 to 17 percent in 2014. In rural areas an important milestone was achieved: in 2006, most of the WAP had not completed primary school but by 2014, the majority had at least completed primary school.

Further enrollment is constrained by financial limitations and parents' perceptions of schooling for young children. For some parents, the cost of attending school continues to be the main restriction to enroll their children. In addition, some parents believe their children are too young to go to school. In a baseline scenario for an impact evaluation of the Productive Social Safety Net, Pinzon, Rosas, and Zaldivar (2016) indicate that the reason pre-primary children are not enrolled is the parents' perception that their children are too young to attend school. For the rest of children and youth, the main reason is the cost of attending, including materials, books, and uniforms. For the youth (15–24), the low perception of the usefulness of education is also a factor (Pinzon, Rosas, and Zaldivar, 2016).

Young workers gained the most from more education. Between 2006 and 2014, the share of young workers with minimal education halved (Figure 4.2). Over the same period, the number of young workers that at least completed secondary education increased four times: from just 5 percent to 20 percent.

Figure 4.1
Educational attainment by gender and type of region, 2014
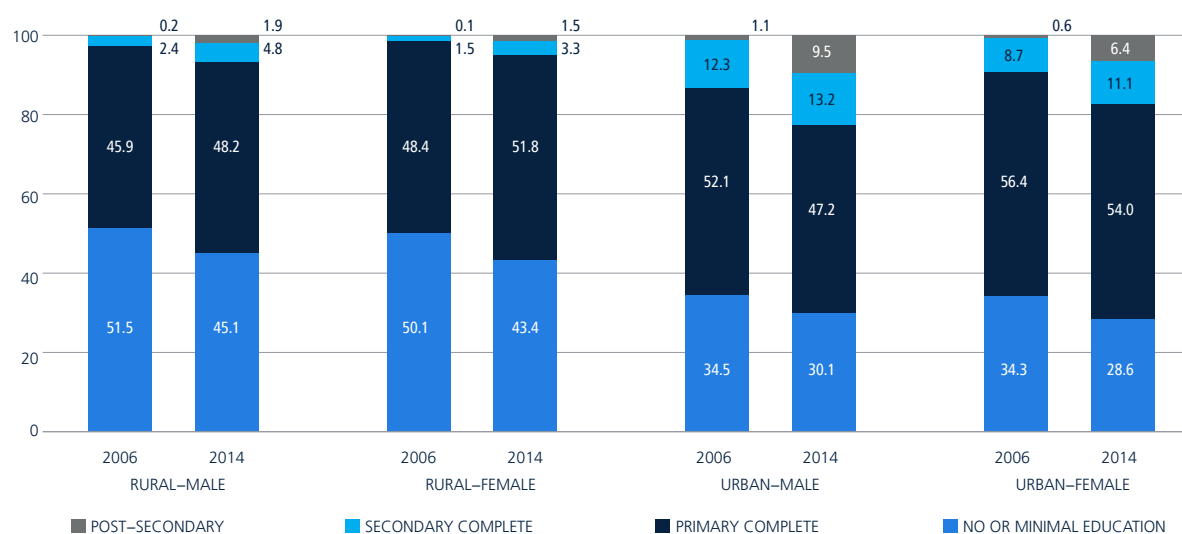
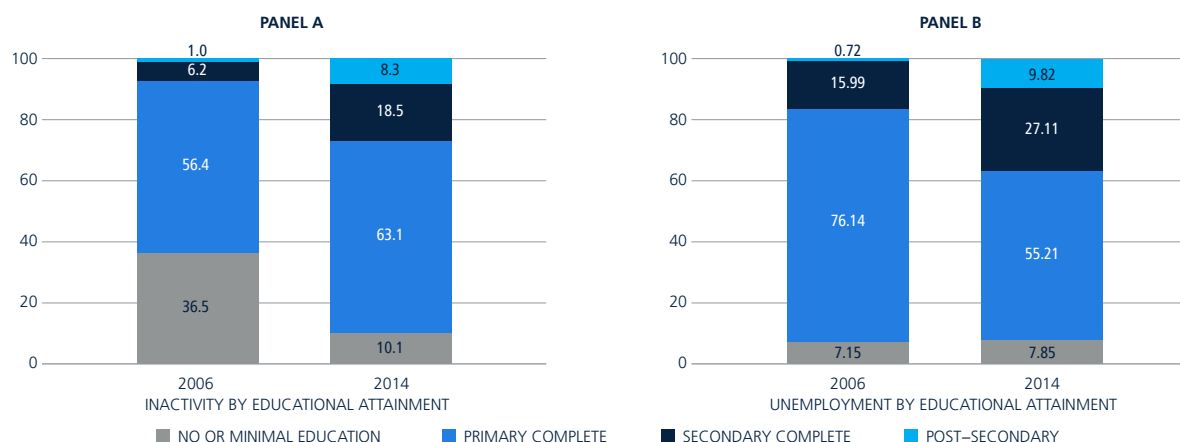*Source:* Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

Figure 4.2
Youth's educational attainment by gender, 2006 and 2014
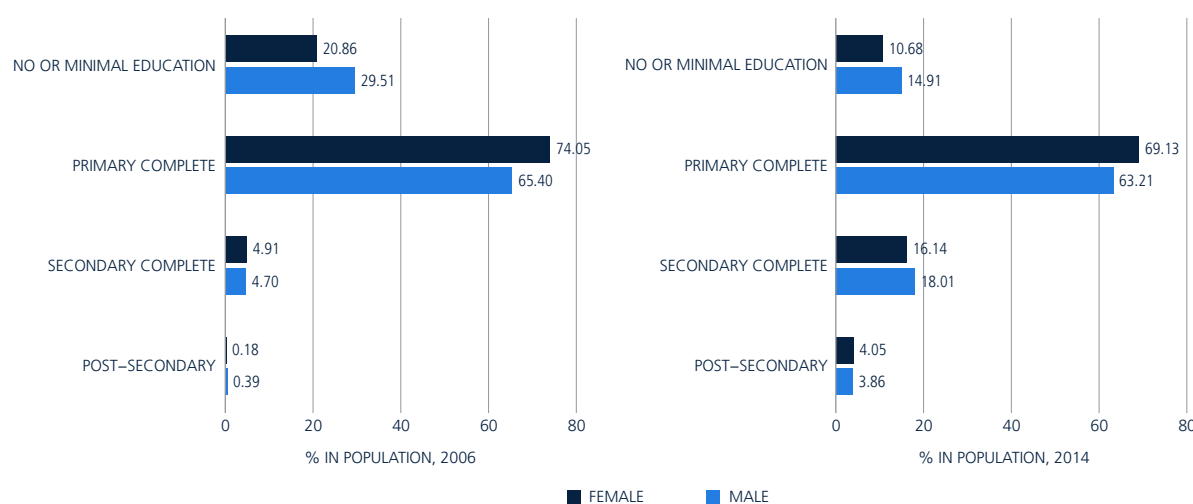
% IN POPULATION, 2006   % IN POPULATION, 2014

■ FEMALE   ■ MALE

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

Despite recent improvements in educational outcomes, the challenge now is not so much educating more children, but rather educating them better. Quality, measured by the number of students passing the Primary School Learning Exam, has widely varied from year to year. The World Bank report on challenges and opportunities in education details that in 2006, nearly 70 percent of students passed the Primary School Learning Exam. By 2014, the passing rate went down to just 31 percent (Joshi and Gaddis, 2015). Despite large regional variations, steady progress in students' Primary School Learning Exam pass rates since then brought back passing rates to 70% in 2016. Despite regional differences, primary pass rates show an upward trend in all regions from 2013–2016 (Uweza, 2017). Joshi and Gaddis (2015) report a similar picture for secondary education. During the same period, the student passing rate for the Certificate of Secondary Education Examination (CSEE), fell from 90 percent to 35 percent. Just as important, repetition is high: almost one in every five students (5 to 19 years old) repeats at least one grade (NBS-OCGS-WBG, 2016).

One evident challenge is language. The percentage of children mastering basic Kiswahili and reading skills almost doubled between 2011–2015. In Standard 3 level, passing rates in Kiswahili rose from only 29 percent in 2011 to 56 percent in 2015. Kiswahili pass rates in Standard 7 also rose, from 76 percent in 2011 to 89 percent in 2015. Learning outcomes for Tanzanian students are much higher for Kiswahili than for English: 81 versus 37 percent (World Bank, 2017d). Yet, in comparison to other countries, findings from the 2014 Africa Service Delivery Indicators Surveys show that Tanzanian pupils are performing below the average of comparators, not in math, but in language (World Bank, 2014b). However, at the end of 4th grade, when tested in Kiswahili, Tanzanian children perform better than comparators (World Bank, forthcoming). Given that only 48 percent of primary Standard 7 pupils in 2015 could read a story in English, low learning outcomes in secondary education are not surprising, especially given that the language of instruction switches to English in the first grade of lower secondary school.

Learning outcomes have slightly improved recently, but more effort is needed in education quality across subjects. For example, Kiswahili Oral Reading Fluency at the Standard 2 level, rose from 18 words per minute (wpm) read in 2013, to 24 words in 2016. However, only 7 percent of Standard 2 students (up from 5 percent in 2014) can read according to the national benchmark of 50 wpm, meaning reading comprehension is very limited. Bold et. al. (2017) present a striking reality when it comes to basic literacy skills. After three years of primary schooling, almost half of pupils are unable to read a letter or a word, only 10 percent can identify words, and only 2 percent can read a paragraph (Bold et. al., 2017). Although these outcomes are similar to the average in the comparators in Bold et. al. (2017), Tanzania's outcomes rank low in the region.

High pupil-teacher ratios and the lack of tools needed to teach are among the reasons for the decline in educational quality. According to the 2013 Basic Education Statistics in Tanzania, the average ratio of

NOTE: DEPENDENT VARIABLE IS 1 IF THE WORKER IS A WAGE WORKER AND 0 OTHERWISE.
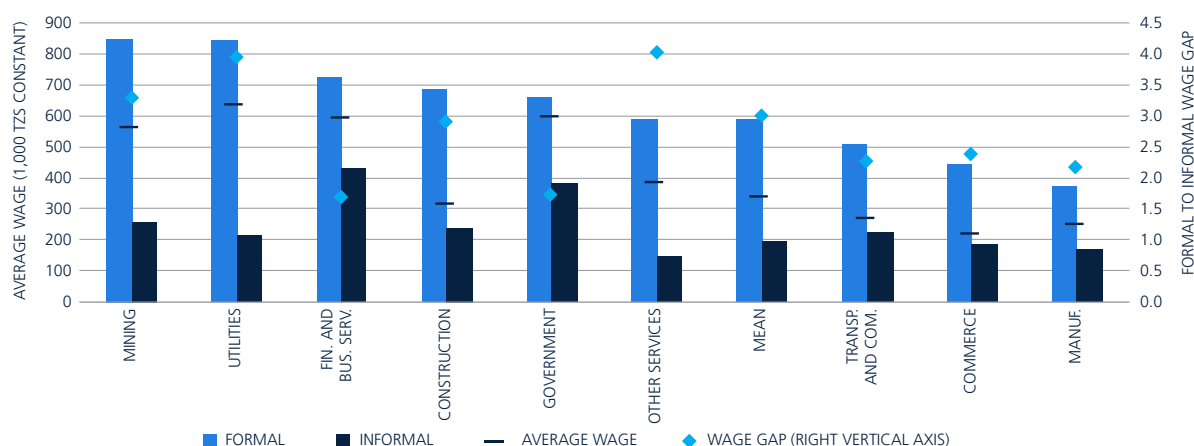
Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

pupils-teacher was 43 to 1. This ratio was down from a decade earlier, when it reached 58 to 1. However, these average ratios do not consider significant regional variations. Pupil-teacher ratios in rural areas were almost twice as large as ratios for urban areas: an average of 59 to 1 for the former and an average of 30 to 1 for the latter (MoEVT, 2014). Furthermore, in 42 percent of schools around the country, none of the students had textbooks to use during the lesson (World Bank, 2016c).

Teacher quality also affects learning. A recent Service Delivery Indicator found a teacher classroom absence rate of 47 percent, which resulted in a loss of more than 50 percent of scheduled teaching time (World Bank, 2016c). The same survey found that when English and mathematics were taken together, the average assessment score for teachers was just 59 percent. Furthermore, World Bank (2016c) found that teachers were only able to complete one-third of tasks, which implies that teachers knew little more than their pupils. The survey found that teachers were not even able to adequately teach the content with which they were familiar. Teachers are, in addition, absent from classrooms. The World Bank (2016c) reports that only 49 percent of teachers are in class and teaching; 14 percent do not show up and the rest are in school but not in the classroom or in class, but not teaching. The May 2016 Service Delivery Indicator also claims that teachers tend to spend little time in classrooms: pupils "lose more than 50 percent of the scheduled teaching time and interact with their teachers for only 2 hours and 47 minutes per day" (World Bank, 2016: 1). Across African countries, absenteeism is as common as "being present in the school but absent from class" (Bold et. al., 2017: 9). In the cases of Kenya and Tanzania, relatively low school absences do not prevent relatively high classroom absence rates—conditional on being in school (Bold et al., 2017).

A post-secondary education was the most important in predicting wage employment. In 2014, workers with some tertiary or post-secondary education had a 44 percent higher probability of earning a wage than those with no education or incomplete primary school (Figure 4.3). Lower levels of educational attainment had no significant impact on wage employment. However, being female, elderly, married, or living outside the capital, diminished the probability of wage employment.

The highest levels of education are correlated with a higher probability of wage employment. In 2006, completing secondary school increased the probability of wage employment by 25 percent, relative to those with minimal education. Education beyond secondary school increased the probability to 50 percent (Table 4.1). By 2014, the probability that a worker with secondary schooling earned a wage was 8 percent higher than a worker with minimal education. For workers with tertiary education, the probability was 45 percent, but down from 50 percent in 2006.

Table 4.1
Probability of wage employment, 2006 and 2014

	Probit model results (marginal effects)	
	2006	**2014**
Individual age	0.011***	0.010***
	(0.00)	(0.00)
Age Squared	−0.000***	−0.000***
	(0.00)	(0.00)
Female	−0.075***	−0.077***
	(0.00)	(0.01)
Ever Married	−0.041***	−0.056***
	(0.01)	(0.01)
Rural	−0.118***	−0.151***
	(0.00)	(0.01)
Primary complete	0.024***	−0.001
	(0.00)	(0.01)
Secondary complete	0.246***	0.085***
	(0.01)	(0.01)
Some tertiary/post-secondary	0.501***	0.445***
	(0.05)	(0.02)
Observations	24,894	16,240

Standard errors in parentheses

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

More educated workers are in non-farm employment. Education is correlated with a higher probability of employment in non-farming activities. In 2006, completing primary school was sufficient to lower the probability of agriculture employment by 20 percent. In 2014, the probability of employment in agriculture decreased by 32 percent, but only for workers with completed secondary school.

The needs of the private sector are not fully met by technical and vocational training. A 2012 situational analysis of technical and vocational education and training found that stakeholders felt the sector was underserved, few sufficiently trained teachers were available, and that there was a need to increase the number of vocational graduates and technicians (MoEVT, 2014). The 2013 Enterprise Survey indicates that over 40 percent of firms view education as a major obstacle (World Bank, 2013). More recent analysis of private firm performance and skill mix in Tanzania found that while a larger share of employees with tertiary education results in greater productivity, the same is not true for workers with secondary education or technical or vocational training (Tan, Bashir, and Tanaka, 2016). According to the Ministry of Education and Vocational Training (MoEVT, 2015), skills gaps in the tourism and hospitality sector include: communication (multi-lingua and interpersonal skills), customer care, marketing and sales, innovation and creativity, leadership and managerial, and basic ICT skills. In the construction industry, Lema, Mnzava, and Mahundi (2015), found that Tanzania needs to triple the number of technicians and artisans to match the number of engineers (level 4 professionals). They also found that training for electrical artisans dominates supply but the highest demand is in road work artisans, masons, and carpenters. To remedy this situation, firms employ a variety of strategies including conducting in-house training, hiring foreign workers, or outsourcing professional services. According to Tan, Bashir and Tanaka (2016) however, "skill deficits are primarily demand-driven among exporters and/or innovators and that how firms respond to these deficits can have consequences for productivity and job creation" (Tan, Bashir and Tanaka, 2016: 24).

Figure 4.4
Private and public employment by educational attainment, 2006 and 2014

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

The Government is the largest employer of skilled workers. The Government employs more than half of all highly educated Tanzanians. Conversely, the share of public sector workers with secondary education has decreased over time. The share of government workers with lower levels of education has fallen to nearly zero (Figure 4.4). The few low-skilled workers that remain in public employment earn, however, significantly higher wages than private sector counterparts (Annex 2.C).

Government wages attract educated employees but likely limit skilled workers attracted to the private sector. In 2006, 6.5 percent of public employees had post-secondary education; by 2014, the share rose to two-thirds—a tenfold increase. During the same period, the share of highly educated workers employed in the private sector grew from 0.5 percent to 2.7 percent (Figure 4.5).[13] In 2006, workers' completion of primary school increased their probability to be employed in the public sector by 10 percent. But when workers completed secondary school, the probability rose to 40 percent. For workers with post-secondary schooling, public employment probability was 50 percent. These probabilities increased by 2014. The probability of employment in the public sector was 20 percent greater if secondary education is complete, and 56 percent with post-secondary education.

Figure 4.5
Private and public employment by educational attainment, 2006 and 2014
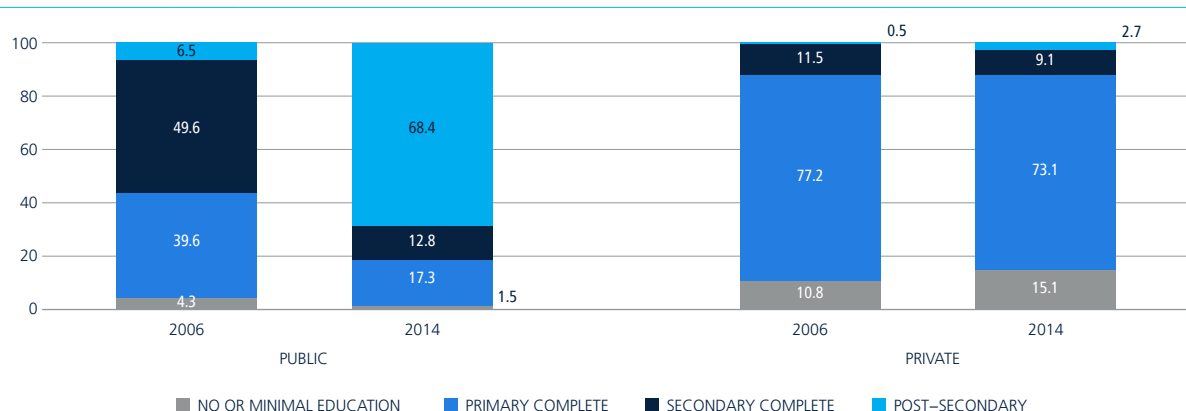
Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

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[13] Based on probit regressions results for 2006.

5. EMPLOYMENT STATUS OVERVIEW

Unemployment is largely an urban phenomenon. Four in every five unemployed workers were urban dwellers. Dar-es-Salaam residents were particularly affected: the city concentrated over half of all unemployed workers in 2014.

Unemployment particularly affects female workers. Unemployment rates for females fell the most, but they still represent most of the unemployed. Unemployment rates among women declined from 3.8 percent in 2006 to 2.3 percent in 2014. In contrast, male workers' unemployment rates decreased from 1.8 to 1.5 percent during the same period. However, female unemployment numbers are still significantly larger than males'. In 2006, females represented nearly 70 percent of all the unemployed. By 2014, 63 percent of unemployed were women. In contrast, male unemployment shares rose from 36.6 percent to 39.3 percent during the same period.

Women experienced unemployment at higher rates regardless of the type of region (urban or rural). In 2014, over half of the unemployed were women. At the same time, urban female unemployment was twice the levels of male unemployment in urban areas (Figure 5.1). In contrast, the unemployment gap between rural women and men decreased. Only 10.7 percent of women and 8.4 percent of men in rural areas were unemployed in 2014.

Progress made in lowering unemployment favored youth and workers in rural areas. The decline in unemployment was particularly noticeable among young workers (15–24 years old). Young male workers' share of unemployment in rural areas fell from nearly 68 percent in 2006 to just over 40 percent in 2014 (Figure 5.2). In contrast, the contribution of other age groups to rural, male workers, grew significantly. Young women in rural areas saw the greatest decline: from 55 to 32 percent of all female rural unemployed. Conversely, female workers aged 25 to 34 experienced the greatest increase in unemployment: their share of rural female unemployment more than doubled.

Figure 5.1
Unemployment by gender and region type, 2006 and 2014
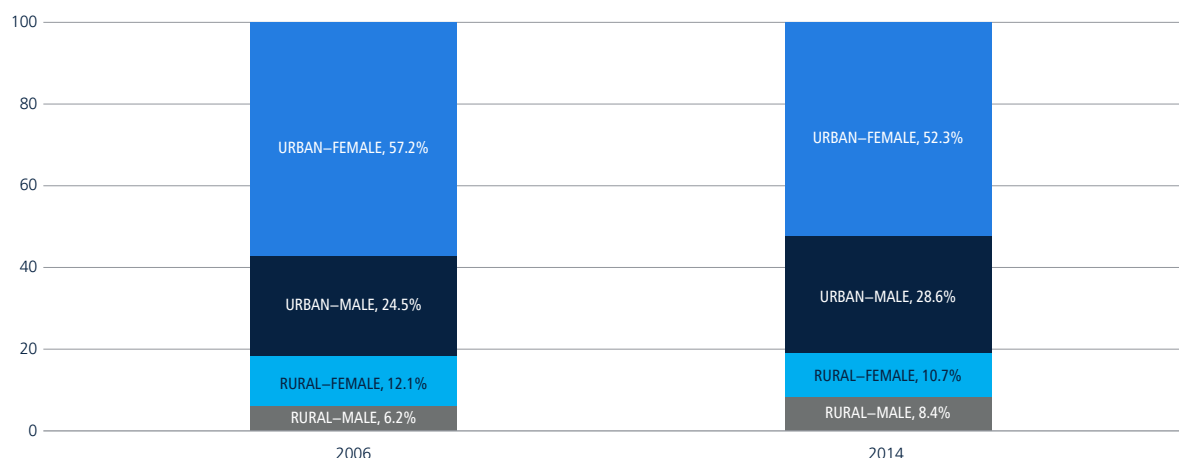
Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

Figure 5.2
Unemployment by age, gender, and region type, 2006 and 2014
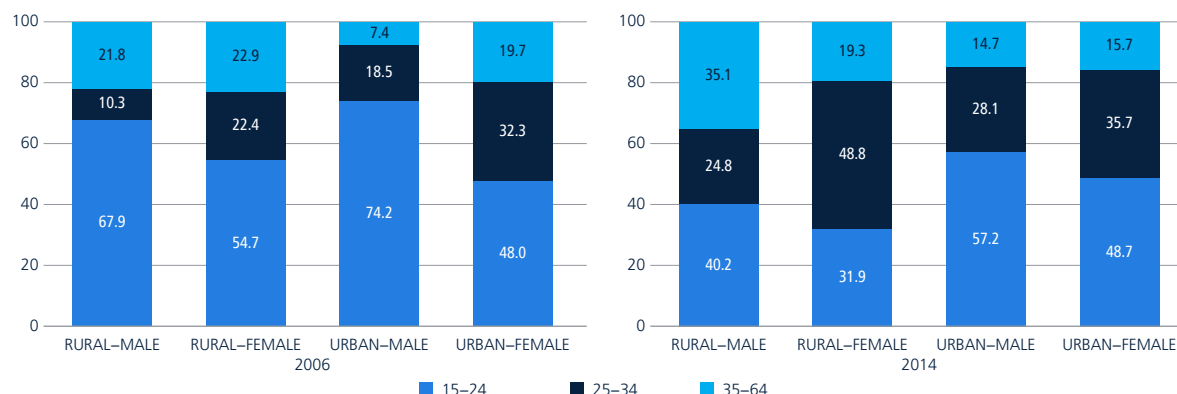
Figure 5.2
Unemployment by age, gender, and region type, 2006 and 2014

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

While unemployment is an urban phenomenon, underemployment affects rural areas. Underemployment was on the rise between 2006 and 2014.[14] The number of workers that reported underemployment nearly doubled during the period. By 2014, almost 2.4 million workers were underemployed. In 2014, the increase in underemployment affected approximately 12 percent of the labor force (up from less than 8 percent in 2006). With the notable exception of Dar-es-Salaam, underemployment increased everywhere in Tanzania. However, in rural areas, the increase was noticeable: from 7.6 to 13.4 percent. By 2014, three in every four workers that were underemployed were in rural areas.

Inactivity rose sharply among female and urban workers. From 2006 to 2014, the share of the female WAP that was not in the labor force doubled from 9 to 18 percent (Figure 5.3). Over the same period, the share of male workers not in the labor force grew from 8 to 11 percent. Urbanization seems to help explain the increase in inactivity. In the mid-2000s, 60 percent of inactive workers were in rural areas; eight years later, most inactive workers resided in urban areas.

Young workers are most likely to be inactive in the labor market. In 2014, regardless of gender and type of region, young workers (15 to 24 years old) represented the largest share of inactive workers. This is true across all regions of Tanzania (Figure 5.4 panel A). However, these figures represent a decline from the 2006 levels:

Figure 5.3
Inactivity by gender, 2006 and 2014

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

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14   Underemployment is defined as those workers engaged in less than 35 work hours per week.

Figure 5.4
Inactivity by gender and region, 2014

PANEL A

PANEL B
SHARES OF NEETs IN 2014, BY AGE GROUP

15–24: MALE 60.37, FEMALE 38.93
25–34: MALE 18.48, FEMALE 29.03
35–64: MALE 21.15, FEMALE 32.05

% IN INACTIVE POPULATION OF FEMALE/MALE

■ MALE ■ FEMALE

NOTE: SHARES MAY NOT SUM UP TO 100 PERCENT DUE TO MISSINGNESS IN EDUCATION VARIABLE.
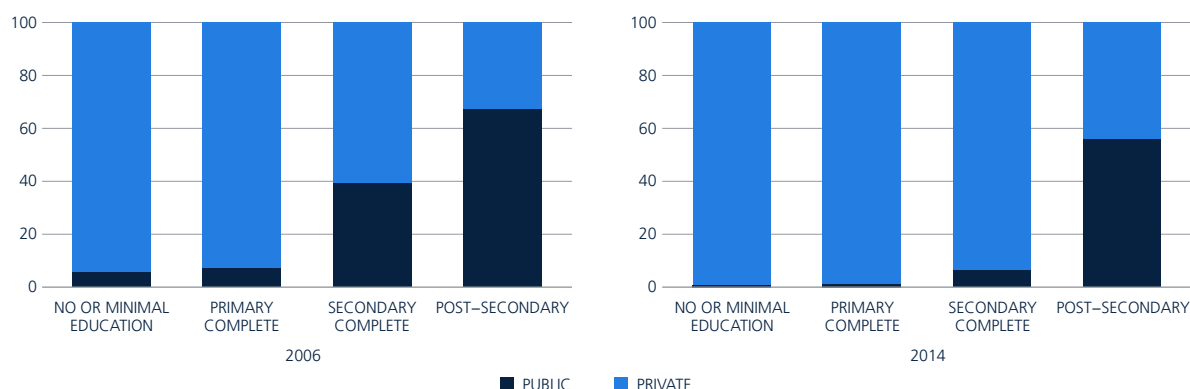
Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

young workers accounted for nearly three-quarters of inactive workers (Figure 5.4 panel B). Inactivity among the youth is not explained by school attendance. Sixty percent of young men and nearly 40 percent of young women were not in employment, education, or training.

The prevalence of unpaid work increased for female and young workers, but not so in urban areas. Between 2006 and 2014, unpaid employment grew dramatically for females, particularly in rural areas (Figure 5.5). Just as dramatic was the increase in unpaid employment among the youth. The worst conditions were observed across rural areas' female employment; there were almost no options for paid employment available and they had to rely on self-employment or unpaid work. Conversely, some improvement in paid employment was observed in urban areas. Rural workers were 15 percent less likely than those in urban areas to find wage employment (Figure 5.6).[15] While paid youth employment became more difficult to find, young workers in urban areas experienced some improvement for both genders.

Even among skilled workers, there is wage gap between men and women workers. Except for workers that completed secondary school, all others experienced a doubling of their average monthly wages (Figure 5.7). In 2014, the average male worker with post-secondary education earned a monthly wage of over 750,000 shillings. In contrast, females with the same level of education earned a monthly average of 550,000 shillings.

Figure 5.5
Urban and rural employment type by gender, 2006 and 2014

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

15   Based on probit regression results [Annex 2.B].

Figure 5.6
Probability of wage employment by regions, 2014
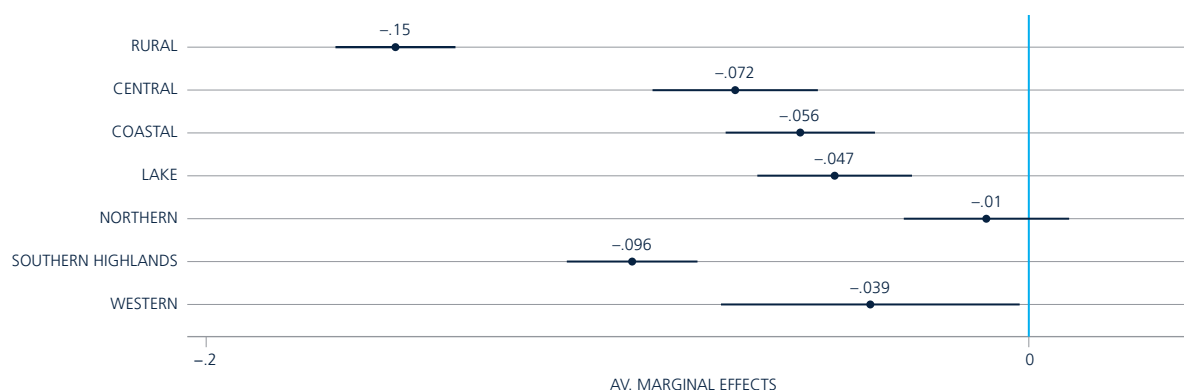
NOTE: DEPENDENT VARIABLE IS 1 IF THE WORKER IS A WAGE WORKER AND 0 OTHERWISE. BASE REGION IS DAR-ES-SALAAM.

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.
Note: Probit regression results with respect to urban areas

The gender wage gap represented over one-third of salaries foregone by women. The disparity persists at lower levels of education. Female wage workers with no or minimal education earned an average of 175,000 shillings per month, whereas the average male wage worker with that level of education earned 250,000 shillings per month: a 43 percent salary difference.

Female and youth self-employment declined in favor of unpaid work. Self-employment sharply decreased between 2006 and 2014. At a negative 4 percent average annual growth, self-employment went from 74 percent of labor force in 2006 to 45 percent just eight years later (Table 5.1). Within self-employment, the greatest decrease was in rural youth and youth female (Figure 5.8). Even though most self-employment is carried out by adults and the decrease was observable among them as well, rural, youth and female workers were in relative terms much more affected. In contrast, unpaid employment grew at an average annual growth rate of almost 17 percent to reach 35 percent of the labor force; that is more than three times its 2006 share (see Annex 2.D, Table 2.2). Chief among the groups whose share of the corresponding labor force was rural unpaid employment, followed by female, and youth unpaid jobs.[16]

Figure 5.7
Average monthly wages by educational attainment, 2006 and 2014
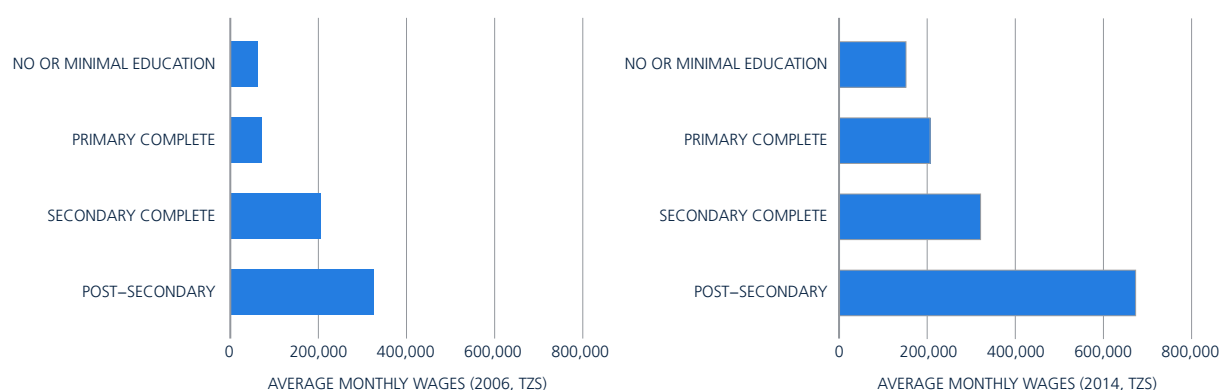
Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

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[16] Each category's ratio used the most relevant labor force. For instance, rural unpaid employment was calculated with respect to the rural labor force. Similarly, youth female self-employment used youth female labor force.

		Number of workers		Prop of WAP				Prop of LF			
		2006	2014	2006	2014	Change, %	Growth	2006	2014	Change, %	Growth
Labor Force	Labor Force	17,300,000	20,500,000	91%	86%	-5%	2%				
	Male Labor force	8,324,036	10,300,000	92%	90%	-2%	3%				
	Female Labor Force	9,012,206	10,200,000	91%	82%	-9%	2%				
Employed and unemployed	Female employed	8,625,292	9,908,411					95.7%	97%	1.4%	1.7%
	Unemployed	557,857	456,934	2.9%	1.9%	-1%	-2%				
	Male unemployed	170,943	168,985	1.9%	1.5%	0%	0%				
	Female unemployed	386,914	287,948	3.9%	2.3%	-2%	-4%				
Inactive	Inactive	1,629,548	3,443,066	8.6%	14.4%	6%	9%	9.4%	16.8%	7.4%	9.4%
	Male Inactive	727,795	1,220,196	8.0%	10.6%	3%	6%	8.7%	11.8%	3.1%	6.5%
	Female inactive	901,753	2,222,870	9.1%	17.9%	9%	11%	10.0%	21.8%	11.8%	11.3%
Paid	Paid Employee	1,725,830	2,783,503	9.1%	11.6%	3%	6%	10.0%	13.6%	3.6%	6.0%
	Male Paid Employee	1,212,596	1,817,585	13.4%	15.8%	2%	5%	14.6%	17.6%	3.1%	5.1%
	Female Paid employees	513,234	965,919	5.2%	7.8%	3%	8%	5.7%	9.5%	3.8%	7.9%
	Urban Paid Employees	1,164,655	2,110,874	6.1%	8.8%	3%	7%	24.4%	28.3%	3.9%	7.4%
	Rural paid employees	561,175	672,628	6.2%	5.8%	0%	2%	4.5%	5.2%	0.7%	2.3%
Unpaid	Unpaid employees	1,914,309	7,341,232	19.3%	59.2%	40%	17%	11.1%	35.8%	24.7%	16.8%
	Male Unpaid Employees	781,265	2,230,636	8.6%	19.4%	11%	13%	9.4%	21.7%	12.3%	13.1%
	Female Unpaid Employees	1,133,044	5,110,597	11.4%	41.2%	30%	19%	12.6%	50.1%	37.5%	18.8%
	Urban Unpaid Employees	509,492	1,268,225	9.4%	13.3%	4%	11%	10.7%	17.0%	6.3%	11.4%
	Rural Unpaid Employees	1,404,815	6,073,007	10.4%	42.2%	32%	18%	11.1%	46.7%	35.6%	18.3%
	Youth unpaid	971,729	3,692,627	15.4%	46.8%	31%	17%	18.9%	64.6%	45.7%	16.7%
	Adult unpaid	942,579	3,648,606	7.4%	22.8%	15%	17%	7.7%	24.7%	16.9%	16.9%
	Urban youth unpaid	277,026	673,273	15.2%	21.4%	6%	11%	5.8%	9.0%	3.2%	11.1%
	Rural youth unpaid	694,703	3,019,354	5.1%	21.0%	16%	18%	5.5%	23.2%	17.7%	18.4%
	Youth female unpaid	539,220	1,930,983	16.2%	47.8%	32%	16%	19.7%	67.8%	48.1%	15.9%
	Adult female unpaid	593,823	3,179,614	9.0%	38.0%	29%	21%	9.0%	38.0%	28.9%	21.0%
Self-employment	Self employment	12,844,983	9,324,484	67.6%	39.0%	-29%	-4%	74.2%	45.5%	-28.8%	-4.0%
	Male self-employment	5,953,024	5,658,585	65.8%	49.2%	-17%	-1%	71.5%	54.9%	-16.6%	-0.6%
	Female self-employment	6,891,959	3,665,900	69.5%	29.6%	-40%	-8%	76.5%	35.9%	-40.5%	-7.9%
	Youth self-employment	3,428,305	1,062,978	54.3%	13.5%	-41%	-15%	66.8%	18.6%	-48.2%	-14.6%
	Adult self-employment	9,416,677	8,261,506	74.1%	51.6%	-23%	-2%	77.2%	55.8%	-21.4%	-1.6%
	Urban youth self-employment	520,149	372,388	28.6%	11.8%	-17%	-4%	39.3%	20.6%	-18.6%	-4.2%
	Rural youth self-employment	2,908,157	690,590	64.6%	14.5%	-50%	-18%	76.4%	17.7%	-58.7%	-18.0%
	Youth female self-employment	1,825,394	437,423	54.7%	10.8%	-44%	-18%	66.8%	15.4%	-51.5%	-17.9%
	Adult female self-employment	5,066,565	3,228,476	77.0%	38.5%	-38%	-6%	77.0%	38.5%	-38.5%	-5.6%

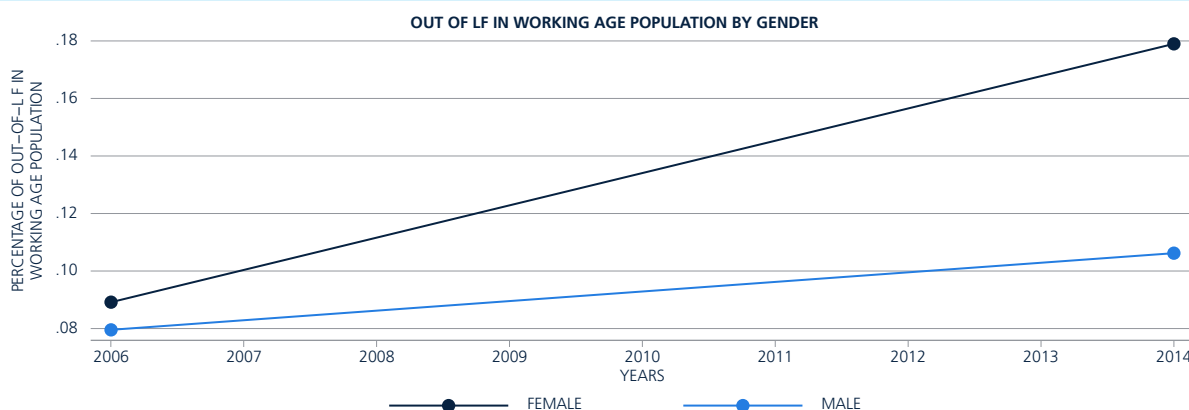*Source:* Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

Figure 5.8
Change in paid and self-employment across demographic groups 2006–2014
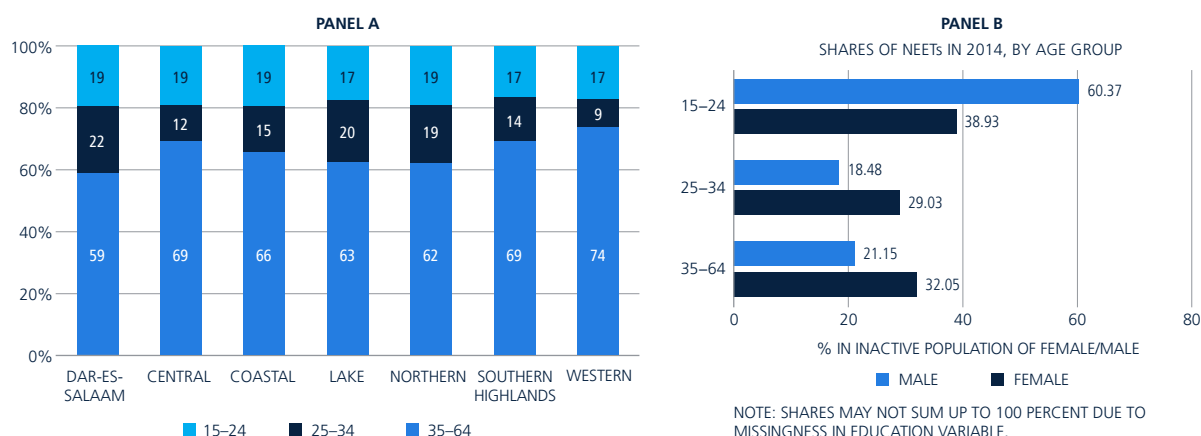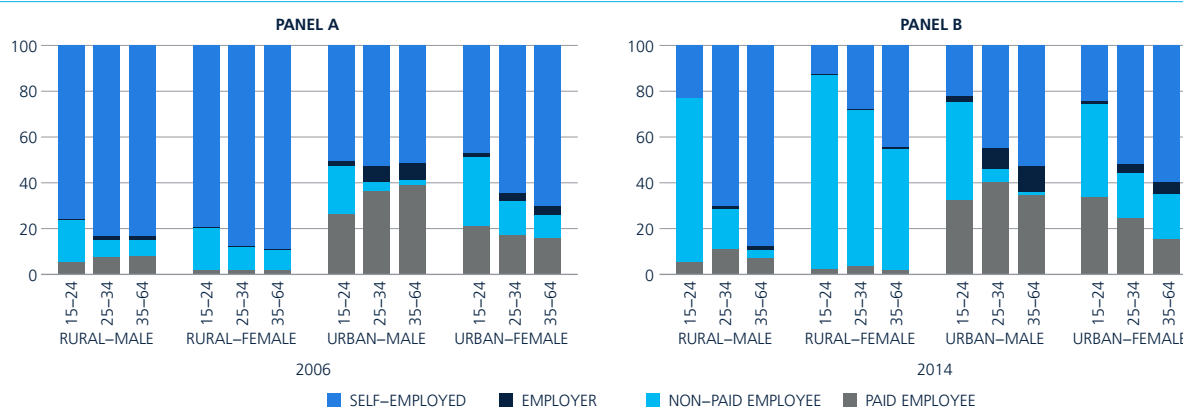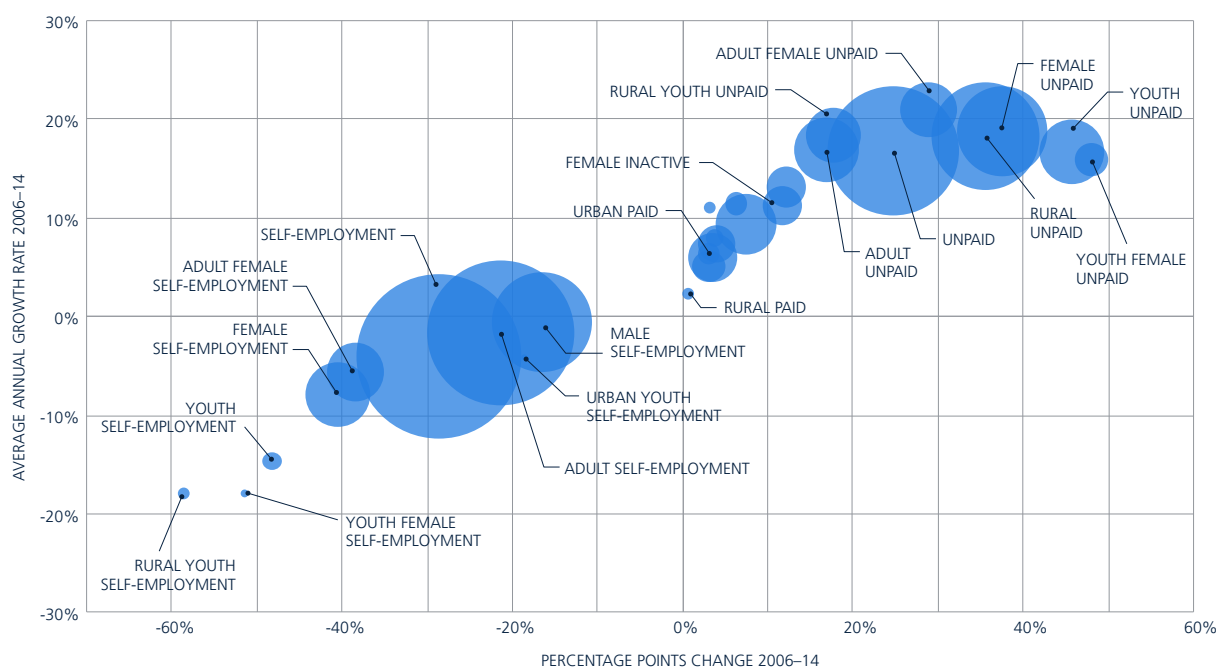

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.
Note: 1. Bubble size represents 2014 figures for each category.
2. Each category's change and growth rates were calculated on the basis of ratios with respect to the relevant labor force subgroup (e.g. youth self-employment change used the ratios of 2006 and 2014 with respect to youth labor force; similarly, youth female unpaid used youth female labor force).
3. Horizontal-axis changes were the simple difference between 2014 ratios with respect to the corresponding labor force and the 2006 figures.
4. Vertical-axis growth rates are simple average for the number of years in the period of the logarithmic quotient of the two periods.

Female's role as entrepreneurs declined and stood lower than most comparators. The share of firms that benefit from female ownership in Tanzania went from 21 percent to less than 25 percent between 2006 and 2013 (Figure 5.9). Their role as the share of firm owners not only declined, but is lower than neighbors Kenya and Uganda, which showed an increase in that share. Tanzania's share of female ownership in firms is also lower than Zambia, whose share also declined.

Figure 5.9
Firms with female participation in Tanzania and comparators, 2006/07–2013–2016
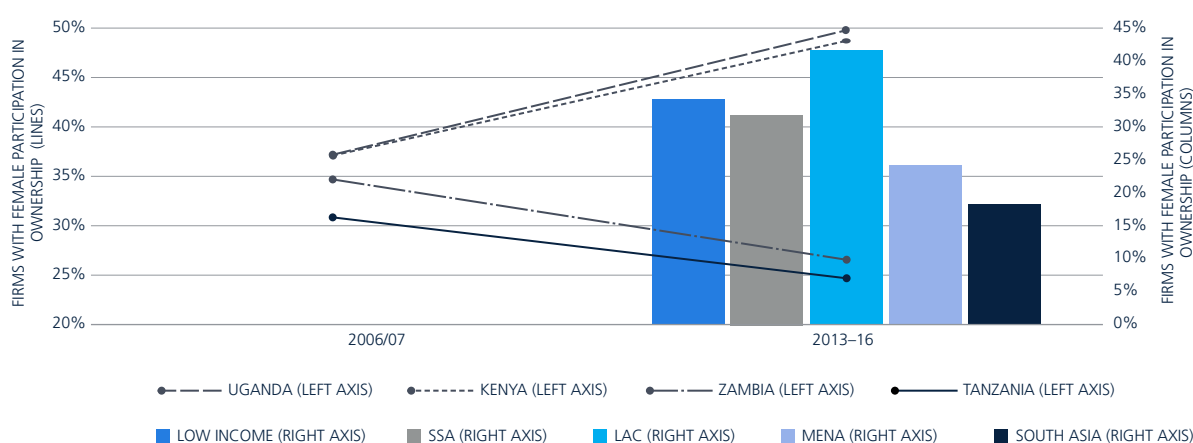
Source: Based on World Bank (2018) World Development Indicators.
Note: Bars show single data point for latest available: 2016 for Latin America and the Caribbean, low income, Middle East and North Africa, and Sub-Saharan Africa. Lines' final data point: 2013 for Kenya, Tanzania, Uganda and Zambia. Initial data point for lines: 2006 for Tanzania and Uganda, 2007 for Kenya and Zambia.

PART 3. LABOR DEMAND: FIRMS AND JOBS

SUMMARY

Small firms don't grow. Tanzanian firms continue to be predominantly micro and small—particularly in manufacturing and commerce. While young and small firms may signal a healthy economy, large firms in Tanzania are crucial for non-farm employment. Large firms account for most industrial employment and value added, but they also represent an overwhelming share of their markets. A near absence of medium-sized firms, may signal that micro and small firms are unable to grow and fill the void. Empirical results indicate that employment is partly determined by firm size.

Market concentration in Tanzania might hamper firm entry and growth. A handful of industrial activities concentrate value-added, but don't generate as much employment. Three-quarters of value-added and 60 percent of sales are generated by just four industrial activities, but they only account for 37 percent of employment in all industrial sectors. Furthermore, the top 4 firms in each subsector represent at least two-thirds of the total share of sales.

Jobs are also driven by the role of the State in the economy. SOEs can, not only help explain employment, but also wage differentials and productivity. Since SOEs are larger, more productive and pay better wages, the State's involvement in economic activities could partly explain market concentration.

Employment, wages and productivity trends are linked to market access. Results show that firms are larger, better wages are paid and higher value added attained, when firms are connected to either external markets through foreign investment and exports, or domestic markets through proximity to Dar-es-Salaam. Since foreign firms are connected to external markets, a conducive business environment to continue to attract FDI is crucial to increase jobs, wages and productivity. Equally important is to improve market access for other firms—possibly in other regions outside Dar-es-Salaam—which could increase productivity and deliver better paid jobs.

The challenges for female employment also require attention. Female workers are at a disadvantage in terms of jobs and wages. Firms that hire female workers tend to operate in low value-added activities with lower wages.

INTRODUCTION

DATA CAVEATS

The demand-side analysis in the Jobs Diagnostic for Tanzania is based on firm-based data sets. A thorough diagnostics of jobs in Tanzania requires an analysis of the trends and dynamics of the demand for labor. There are essentially three data sets that this report could tap into. First, the Statistical Business Register (SBR) of 2014/15. Second, the 2013 Census of Industrial Production (CIP). Third, the 2013 Enterprise Survey (ES). Although the SBR is the most comprehensive in terms of sectors and firms surveyed, it lacks some of the key variables for the demand-side analysis, particularly productivity. The CIP cover all the variables and indicators needed for this report, but it focuses only on industrial sectors (i.e. mining, manufacturing, electricity and gas, and water) and therefore, presents a partial view of the economy. Finally, the availability of the SBR and the CIP, makes the use of the ES with a small sample of only 813 firms, unnecessary.

This JD uses both the SBR and the CIP to offer the best compromise possible between sectoral coverage and analytical depth. The initial part of this chapter on the profile of firms is based on the SBR. The second part of the chapter that assesses performance and explores the links between firm characteristics and performance, is based on the CIP that offers the greatest indicator coverage. The authors acknowledge that the analysis based on the CIP only refers to industrial sectors and cannot be extrapolated to other sectors of the economy.

FIRM'S BUSINESS ENVIRONMENT CONTEXT

Tanzania's business-environment reform had positive outputs. The results of Tanzania when compared to India, both pre- and post-reform, hint at the possibility that the country is on the right track in terms of business-environment reform. The improvement in the country's ranking in the World Bank Doing Business Report 2017, provides further evidence. Tanzania's ranking among 190 countries, improved from number 144 in 2016, to number 132 in 2017—the largest progress reported in the ranking. The improvement was largely driven by the leap in "Getting Credit" from number 152, to number 44 in the world. The country's credit bureau, Creditinfo, signed agreements with purveyors of credit to expand borrower coverage from 4.95 to 6.48 percent of the adult population (World Bank, 2017e).

However, business-environment hurdles may impinge on investment. The business environment in Tanzania is still not as attractive as in other countries. In addition, State interventions in the market persist while competition is limited (World Bank, 2017b). Despite its locational advantage, Tanzania still faces challenges in trading across borders with a number of behind-the-border bottlenecks. According to World Bank (2017b), given its geographic advantage, Tanzania could attract more manufacturing FDI by improving the local investment climate (e.g. enabling business environment, availability of skilled labor, and reliable infrastructure services particularly power and transport).

6. PROFILE OF FIRMS: CONTEXT, SIZE, COMPOSITION, AGE, AND GEOGRAPHY

The initial part of this chapter on the profile of firms is based on the Statistical Business Register (SBR). The second part of the chapter that assesses performance and explores the links between firm characteristics and performance, is based on the Census of Industrial Production (CIP) that offers the greatest indicator coverage. The authors acknowledge that the analysis based on the CIP only refers to industrial sectors and cannot be extrapolated to other sectors of the economy.

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However, the business environment in Tanzania is still not as attractive as in other countries. In addition, State interventions in the market persist while competition is limited (World Bank, 2017b). Despite its locational advantage, Tanzania still faces challenges in trading across borders, with many behind-the-border bottlenecks. According to World Bank (2017b), given its geographic advantage, Tanzania could attract more manufacturing FDI by improving the local investment climate (for example, enabling business environment, availability of skilled labor, and reliable infrastructure services, particularly power and transport).

Most Tanzanian firms are micro or small. According to the 2014/15 SBR of Tanzania, 77 percent of firms employ between one and four workers and are thus, micro enterprises (Figure 6.1).[17] Almost one in five firms (18.6 percent) in Tanzania are small and employ between 5 and 19 workers. Together, micro and small firms make 96 percent of all firms in the country. Only 3.7 percent of fixed-location firms (those considered in the SBR) were medium (20 to 99 employees). Large firms in Tanzania account for just 0.5 percent of the total. The figures are consistent across all sectors.

Micro and small firms are particularly present in manufacturing and commerce. Firms with 1 to 19 employees that encompass micro and small firms are widespread in manufacturing and commerce. In the former, 97 percent of firms operate at a micro or small scale of employees (Table 6.1). In the latter, the share reaches 99 percent.

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[17] The SBR focuses on formal and informal firms with at least one employee in a fixed location. The SBR for 2014/15 included 154,618 firms of which 51.5 percent registered formally, and unregistered/informal represent 48.5 percent. These criteria led to a near absence of smallholder farming in their sample. The SBR 2014/15 reports that the average number of employees per establishment in agriculture was 18.3. In contrast, the 2014 Country Economic Memorandum reports that micro firms represent up to 98 percent of Tanzanian firms, overwhelmingly (87 percent) firms of a single employee (World Bank, 2014a). Again, the caveat of this section is that it fails to reflect the dynamics in smallholder farming.

Table 6.1
Firm Distribution by Sector and Size

	Micro	Small		Medium		Large		Total
	1–4	*5–9*	*10–19*	*20–49*	*50–99*	*100–499*	*500+*	
Agriculture	32%	33%	16%	9%	6%	4%	0.0%	**461**
Mining	26%	22%	16%	24%	7%	5%	0.9%	**551**
Manufacturing	89%	9%	1%	1%	0%	0%	0.1%	**54,017**
Utilities	49%	17%	13%	10%	6%	4%	0.2%	**567**
Construction	35%	27%	19%	12%	4%	2%	0.4%	**489**
Wholesale and retail trade	94%	4%	1%	0.4%	0.1%	0.04%	0.0%	**52,820**
Transport and communication	47%	28%	14%	8%	2%	1%	0.2%	**1,137**
Services	46%	25%	18%	9%	1%	1%	0.1%	**44,576**
Total	**77.3%**	**12.4%**	**6.2%**	**3.1%**	**0.6%**	**0.4%**	**0.1%**	**154,618**
Number of firms	**119,508**	**19,144**	**9,543**	**4,818**	**919**	**576**	**110**	**154,618**

Medium-sized firms are nearly absent. The few medium firms in Tanzania operate in sectors with large capital investments. All sectors show a decreasing share of total firms as firm size increases. The noticeable exceptions are in sectors where large capital investments are usually a necessary condition. Mining, utilities, and construction are sectors that typically require large sums of capital to make investments productive. Thus, in Tanzania, almost one-third of mining firms are medium-sized (20 to 99 employees). Similarly, 16 percent of both, utilities and construction firms are also medium-sized.

Large firms contribute disproportionately to employment. Micro and small firms (1 to 19 employees) account for 96 percent of all firms, but they only account for 28 percent of employment (Figure 6.2). Large firms are few, but they contribute most of the industrial employment in Tanzania. Indeed, 91 percent of industrial firms employ less than 10 workers. However, those small firms only employ one-quarter of all workers. Conversely, most of the employment in industrial sectors is provided by large and older (10 years and more)

Figure 6.2
Employment by firm size, 2014/15
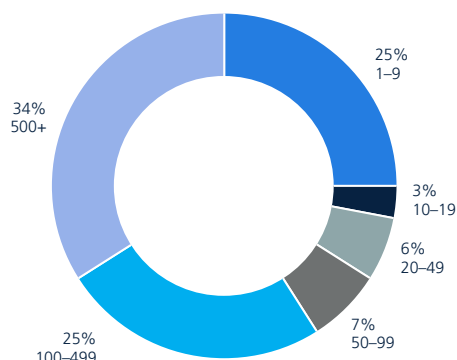
Source: Authors' calculations based on NBS (2016a) 2014/15 Statistical Business Register of Tanzania, National Bureau of Statistics, Tanzania.

firms (Figure 6.3 panel B). Large firms, with over 100 employees, employ 60 percent. This makes them key to employment outcomes in Tanzania.

Medium-sized firms represent an opportunity for job growth since firm age and size determine employment. A low number of medium-sized firms might constrain employment growth. Like in other African countries, employment shares in Tanzania are concentrated at the two extremes of the firm-size spectrum. However, medium-sized firms account for only 4 percent of all firms and they represent 13 percent of total employment. These figures may signal a 'missing middle' in Tanzania: a reduced presence of medium enterprises that curtail job growth (Ayyagari, Beck, and Demirguc-Kunt, 2003).

Larger firms favor female employment. Female employment increases with firm size. The share of female employees positively determines the size of a firm (model 5 in Annex 3.B). A similar relationship is found between firms with most female employees (regression not shown). This may possibly be driven by a wage gap between male and female workers. Though we are unable to test this directly, wage regressions show that firms with a higher share of female employees or mostly female employees have a significantly lower wage bill (see wage regressions in Annex 3.C).[18]

Figure 6.3
Employment by firm size, 2014/15
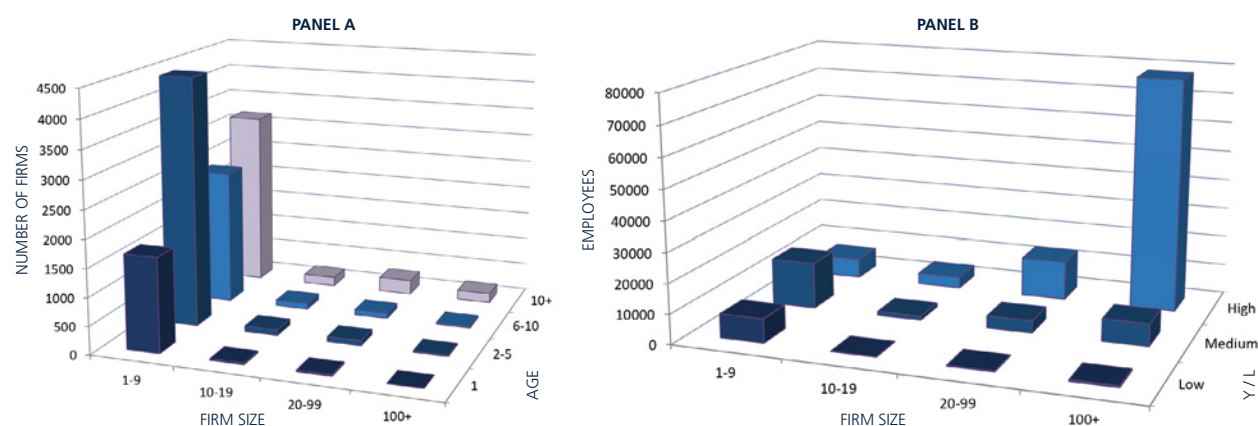
Source: NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

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[18] See Box 6.1 for further discussion on female employment.

Figure 6.4
Employment densities by firm ownership, 2013
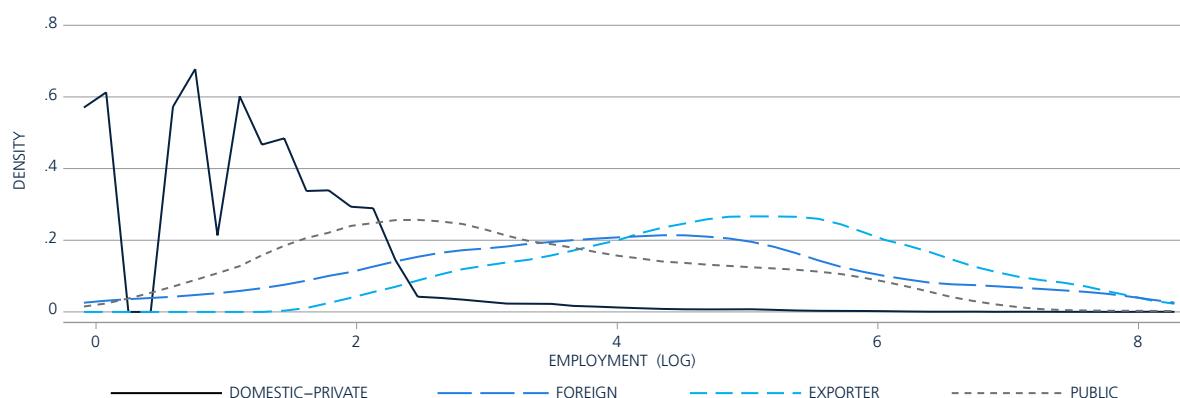
Source: NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

Surprisingly, skills are not linked to the larger firms. In fact, the share of skilled workers seems to be associated with smaller firms. One possible explanation is that those with tertiary education benefit from the financial support of their families to start a small business if job opportunities are hard to find in the labor market.

Links to external markets can explain firm size. Density analysis of industrial firms' ownership and export trends reveal significant differences. Privately owned domestic firms are significantly smaller than publicly owned firms, foreign-owned firms, or exporting firms (Figure 6.4). While privately owned, domestic firms represent the lion's share of firms (97 percent), and employ 61 percent of the labor force. In contrast, foreign-owned firms represent just 1 percent of firms, but employ one-quarter of the labor force in industrial activities. Exporters, a group that cuts across ownership characteristics, show even denser employment averages.

Even among household enterprises in farming, lack of access to other markets hinders their growth. A World Bank's qualitative assessment reports that, in addition to lack of differentiation in their produce (which limits competitiveness), farmers in Tanzania consider lack of mobility and poor roads restrictive of household enterprises' markets to their own communities (World Bank, 2017f). A lack of access to other markets and lack of differentiation render their produce vulnerable to price reductions to remain in a low-profitability market. Not surprisingly, the lion's share of agricultural producers are smallholders or household enterprises that are unable to grow.

As expected, foreign and exporting firms—along with SOEs—tend to be larger. Foreign-owned firms are significantly larger than domestic privately-owned firms. Firms that are partially public-owned are also significantly larger than their fully privately-owned counterparts (models 2 through 12 in Annex 3.B). The size of SOEs is so large that the value of the government's participation in them represents 12 percent of GDP (World Bank, 2018c).[19] With the addition of the exporting variable (model 4 in Annex 3.B), the magnitude, but not the significance, of the foreign and publicly-owned variables decreases, while the exporting variable indicates that exporters are significantly larger than non-exporting firms.

In addition to firm size and external markets, firm age matters for employment. To understand firm employment and age, kernel densities can arrange CIP data.[20] A distribution of firms according to age emerges using each firm's age range (i.e. 1–5, 6–9, and 10 and more years). For Tanzania, there were no significant differences across firm's age ranges (Figure 6.5). However, firms that survive beyond five years seem to grow. While the available data does not allow to track firms over longer periods of time, it is possible to gauge whether firms tend, on average, to be larger as they become older. Hsieh and Klenow (2014) found that older firms in the

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[19] Among those large SOEs energy [Tanzania Petroleum Development Corporation], land [National Housing Corporation], and transport [Tanzania Ports Authority] stand out [World Bank, 2018c].

[20] Kernel density estimation is a non-parametric way to estimate the probability density function of a random variable where inferences about the population can be made.

Figure 6.5
Employment densities by firm's age, 2013
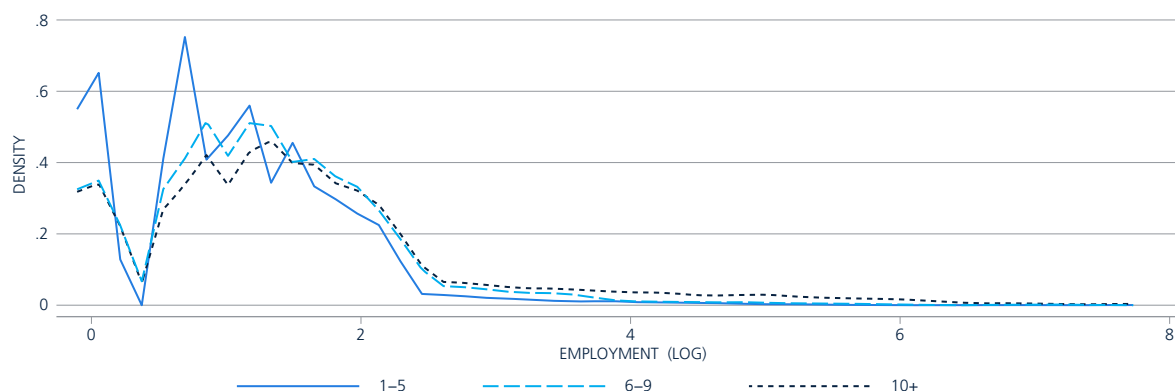
Figure 6.5
Employment densities by firm's age, 2013

Source: NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

manufacturing sector in the United States tend to be significantly larger than young start-ups.[21] For instance, U.S. firms aged 25–29 are 3.4 times larger and firms aged 40 years or older, are 7 times larger than firms younger than 5 years. A slightly different methodology[22] offers evidence of stunted growth among surviving (beyond five years) industrial production sector firms in Tanzania (Figure 6.6). Only firms with 40 years or more of operation can double their original size.

Evidence indicates that, unsurprisingly, older firms tend to be larger. Regression analysis of firm age on firm size confirms the results of the lifecycle regressions and finds a positive and significant relationship between age and size. Results in Annex 3.B confirm that under various specifications this relationship holds true (models 1 through 12). Additional regressions utilize a binary variable to designate young firms, those five years old or less, and confirms that younger firms are significantly smaller than older firms (regressions not shown).

At first glance, firms do not seem to be concentrated in sectors. According to the 2014/15 SBR of Tanzania, manufacturing establishments represent 35 percent of fixed-location firms (Figure 6.7). A similar share

Figure 6.6
Result of lifecycle regression for Tanzania and comparators
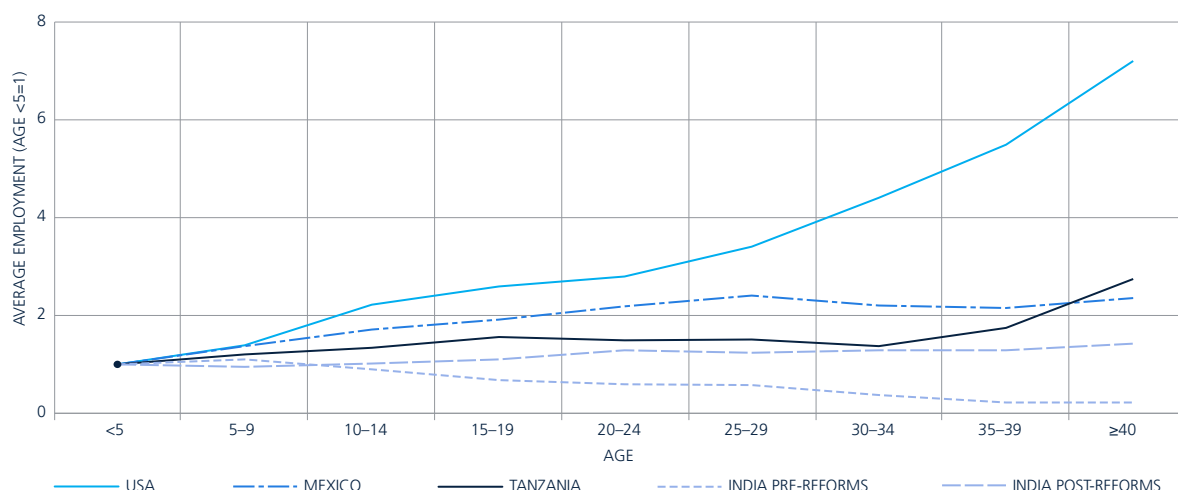
Source: NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

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[21] Hsieh and Klenow (2014) construct a synthetic panel using two years of surviving manufacturing firms five years apart and grouped in five-year age bins. They assume that every cohort experiences similar rates of exit and growth over the life cycle.

[22] We regress size of firms (log of employment) on dummies for age categories.

Figure 6.7
Firms' sectoral composition, 2014/15
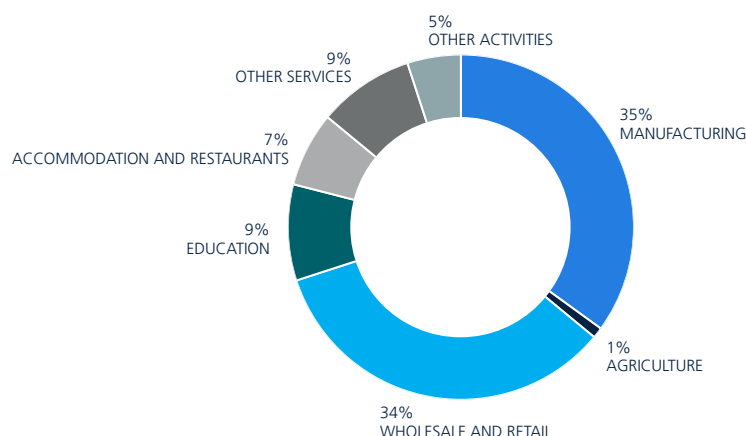
Source: Authors' calculations based on NBS (2016a) 2014/15 Statistical Business Register of Tanzania, National Bureau of Statistics, Tanzania.

of firms operated in the commerce sector (that is, wholesale and retail). The services sector accounts for at least one-quarter of firms in the SBR.[23] Since the survey only considered firms with a fixed location and at least one employee, agriculture makes up only 1 percent of firms in the SBR.

But a closer look at industrial sectors reveals market concentration in sales and value added. A handful of industrial activities concentrate value-added, but do not generate as much employment. Just four industrial activities generate three-quarters of value-added and 60 percent of sales, yet they only account for 37 percent of employment in all industrial sectors.[24] Mining of metal ores is the industrial sector with the highest share of value-added and sales: over one-third of the industrial sectors' value-added and almost one-quarter of sales (Figure 6.8). However, the sector accounted for only 6 percent of employment (fourth among industrial sectors). Conversely, manufacturing of food products ranks second for value-added (18 percent), and sales (20 percent), but it leads industrial sectors in terms of employment (24 percent). Food-processing is even more important considering firms beyond the CIP. According to the enterprise map of Tanzania published by the International Growth Centre, almost one-quarter of all registered manufacturing enterprises are in the food-processing sector (Sutton and Olomi, 2012). Food processing firms employ around 58 thousand workers, which represent 56 percent of total manufacturing employment (Sutton and Olomi, 2012).

Figure 6.8
Performance in top industrial sectors, 2014/15
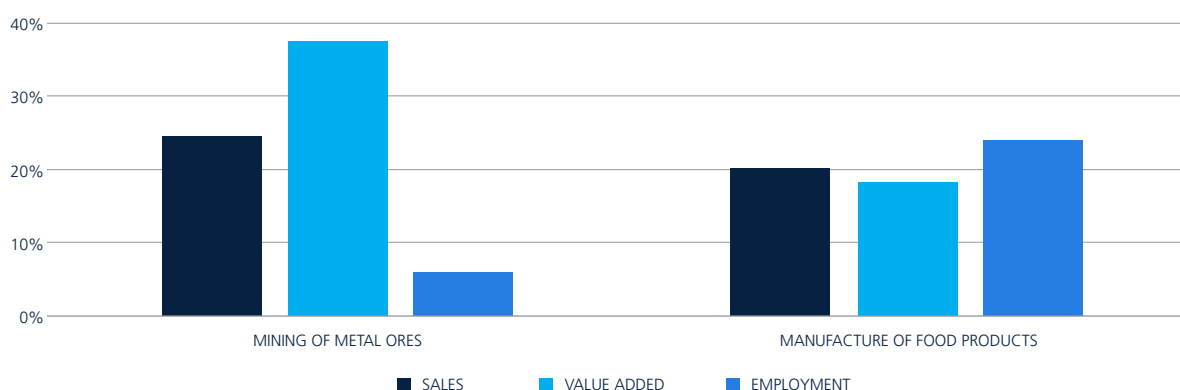
Source: NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

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23 A combined share comprising 9 percent in education, 7 percent in accommodation and restaurants, and 9 percent in other services.

24 The four areas are: mining of metal ores [ISIC rev. 4 code 7]; manufacturing of food products [ISIC rev. 4 code 10]; manufacture of beverages [ISIC rev. 4 code 11]; manufacture of tobacco products [ISIC rev. 4 code 12].

BOX 6.1: GENDER SEGREGATION IN THE INDUSTRIAL SECTORS

Female employment in the industrial production sector remains low in Tanzania. Women account for just 16 percent of employees. Furthermore, in high value-added activities, their share of employment is even lower. The mining of metal ores accounts for over one-third of value added, but on average, less than 10 percent of the employees in these firms are female (Figure B6.1.1). Conversely, in activities with low contribution to value-added, such as tobacco products, female employment shares increase.

Figure B6.1.1
Female employment and firm value-added, 2013
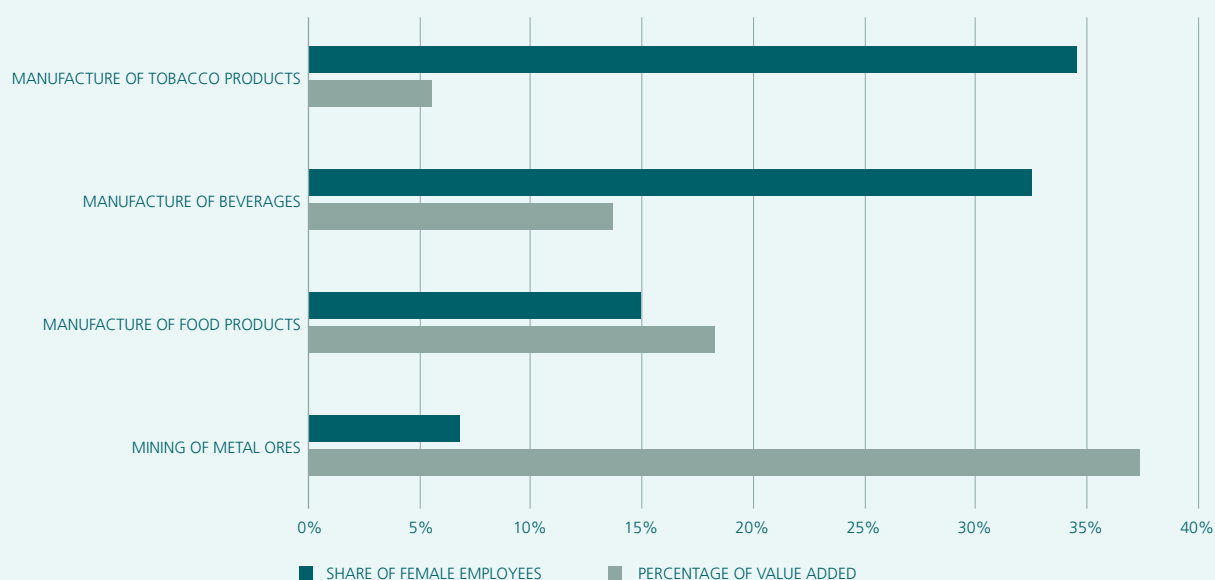
SHARE OF FEMALE EMPLOYEES   PERCENTAGE OF VALUE ADDED

Source: NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

Women mainly work in low value-added activities. In manufacturing, most firms in textiles and apparel, employ large shares of female workers (73 and 63 percent respectively). These two activities notably display the lowest levels of value-added and productivity among firms in the CIP.

This trend however, seems contrary to what happens in foreign and exporting firms. Foreign firms employ a significantly higher share of female employees compared to domestic firms, 25 versus 17 percent. The ratio of exporting firms to non-exporting firms is similar.

Source: Authors, based on data from NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

Concentration is also evident when information is disaggregated by subsector.[25] The top four firms in each subsector represent at least two-thirds of the total share of sales (Table 6.2). Conversely, entrant firms' share of total sales range from 0 to 17 percent. The overall entrant firms' average sales share is 13 percent, but can be as high as 66 percent in the manufacturing of refined petroleum products, or 33 percent in the manufacturing of wooden containers. However, most subsectors' entrant firms' sales share falls far below the overall average.

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[25]   Disaggregated to the four digit International Standard Industrial Classification of All Economic Activities Revision 4 level.

Table 6.2
Market concentration, top four firms, 2013

	Sales Concentration by top four firms	Share of entrant firms
Manufacture of sugar	100%	0%
Manufacture of tobacco products	100%	0%
Manufacture of vegetable and animal oils and fats	86%	17%
Manufacture of grain mill products	81%	15%
Manufacture of malt liquors and malt	80%	0%
Mining of other non-ferrous metal ores	79%	14%
Manufacture of soft drinks; production of mineral waters and other bottled waters	71%	6%

Source: NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

Firms and jobs are also concentrated in space. Contrary to what could be anticipated, it is not the Dar-es-Salaam region that concentrates the largest share of firms but the Lakes region. It is home to one-quarter of all firms (Figure 6.9). In terms of jobs, there is a notable concentration of jobs in both regions (the Lakes and the Dar-es-Salaam regions) that represent 28 and 25 percent of jobs respectively. At the other end of the spectrum, the Central and Western regions represent significantly less jobs. The Western region is the least populated on the mainland accounting for just 6 percent of the population, but only 1 percent of industrial jobs.[26]

Geographical concentration increases with firm size. The 2010 SBR data indicates that micro firms, albeit concentrated, are present in a large part of the country (Figure 6.10 panel A). Concentration increases with small firms (Figure 6.10 panel B), and it further increases if medium-sized firms are considered (Figure 6.10 panel C). Large firms show the greatest concentration in and around Dar-es-Salaam, and a few other wards in the country (Figure 6.10 panel D).

However, the geography of jobs could change. New or entrant firms seem to follow a different pattern. Entrant firms are relevant here because the employment they generate can be taken as an indicator of a healthy

Figure 6.9
Geographical distribution of firms, 2014/15
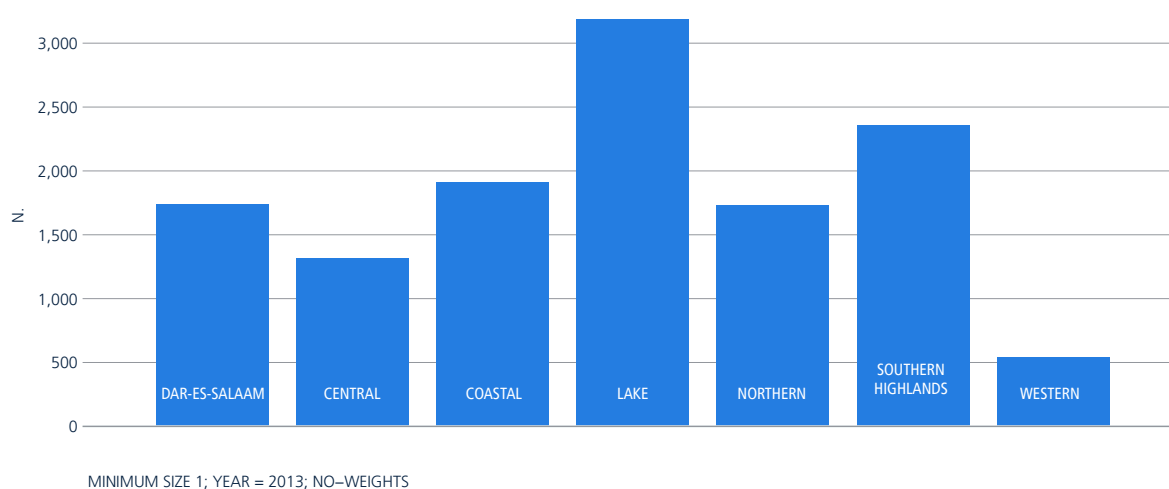
MINIMUM SIZE 1; YEAR = 2013; NO–WEIGHTS

Source: NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

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26   According to the 2012 Population Census.

Figure 6.10
Firm concentration by size, 2010

**PANEL A. MICRO FIRMS' CONCENTRATION
(FEWER THAN 10 EMPLOYEES)**

DAR-ES-SALAAM

**PANEL B. SMALL FIRMS' CONCENTRATION
(BETWEEN 10 AND 50 EMPLOYEES)**

DAR-ES-SALAAM

**PANEL C. MEDIUM FIRMS' CONCENTRATION
(BETWEEN 50 AND 250 EMPLOYEES)**

DAR-ES-SALAAM

**PANEL D. LARGE FIRMS' CONCENTRATION
(MORE THAN 250 EMPLOYEES)**

DAR-ES-SALAAM

- BETWEEN 1 AND 5
- BETWEEN 5 AND 10
- BETWEEN 10 AND 15
- HIGHER THAN 15
- WARDS

Source: Sanchez-Reaza (forthcoming) using data from NBS (2010) "Census of Industrial Production 2010," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

business environment. As a percentage of all employment in the region, the Western and Central regions have the highest share of entrant firms (Figure 6.11).[27] Conversely, regions with the highest share of firms such as the Lake region, the Southern Highlands, or the Dar-es-Salaam region, all lag in terms of percentage of entrant firms. It is unclear whether these trends are sufficiently low to shift firm concentration, or whether lower percentages of entrant firms reflect reaching a steady-state in number of firms' growth.[28]

Larger firms are important because they are significantly more productive. Larger firms are associated to greater productivity (Figure 6.12). However, without panel data, it is not possible to explore firm productivity changes over time and its relationship to size. Alternative analyses include the evaluation of the allocation of labor in comparison to productivity.

Furthermore, firm size matters for productivity. Regression analysis in Annex 3.D confirms that productivity is associated to firm size. The relationship is robust at various specifications (except for those that include exporter and pubic-owned variables, such as model 5 in Annex 3.D). The variable that includes exporting firms not only shows statistically significant and positive results, but also appears to cancel out the effects of size on productivity. This result is consistent across measures of productivity (that is, sales per worker and value added per worker). One explanation for this result might be that firm growth is important for productivity, and that the firms that could grow are those linked to external markets—most of them foreign—and SOEs.

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[27] An entrant firm to the market is aged one year old.

[28] The steady-state argument here refers to the observation that economic growth in larger, more developed economies seems to decrease and stabilize in the long-run [Barro and Sala-i-Martin, 1999]. Using the same principle for the increase in the number of firms [i.e. entrant firms] may simply reflect that as a percentage, new firms reflect a smaller figure than the growth in regions with overall lower number of firms.

Figure 6.11
Geographical distribution of entrant firms, 2014/15
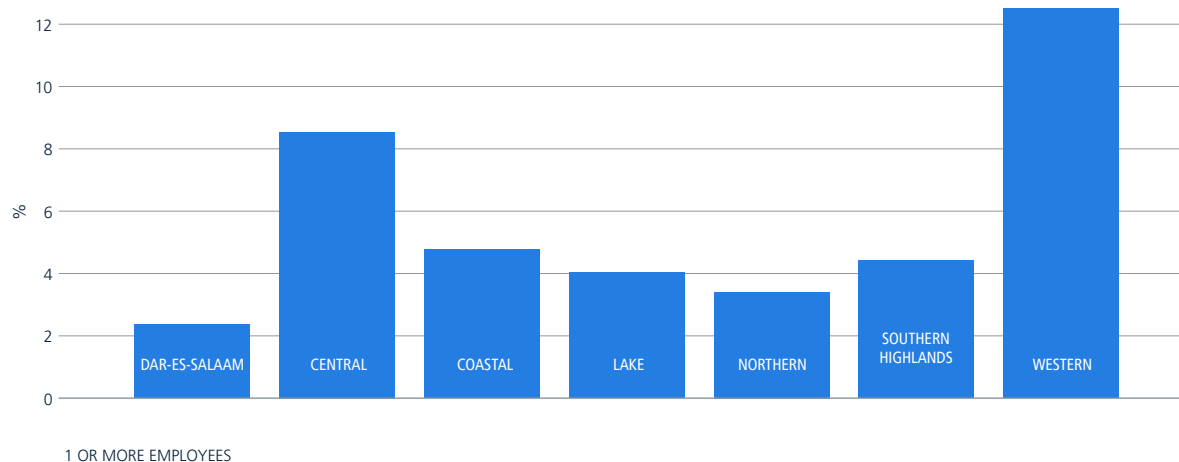
1 OR MORE EMPLOYEES

*Source:* NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

A positive relationship between employment and productivity could signal that productivity allows firms to grow. Firms in the CIP show a positive relationship between productivity and employment (Figure 6.13). A positive slope indicates a positive relationship between employment size and productivity.[29] The results show that greater productivity relates positively with employment expansion. However, the relationship is more consistent and positive in the mining/utilities/construction firms than manufacturing firms. Manufacturing experiences a relatively flatter relationship with size, although standard errors are large for larger firms. The 2014 Country Economic Memorandum also signals the association between productivity and employment for farming households.[30]

Figure 6.12
Productivity densities, 2013
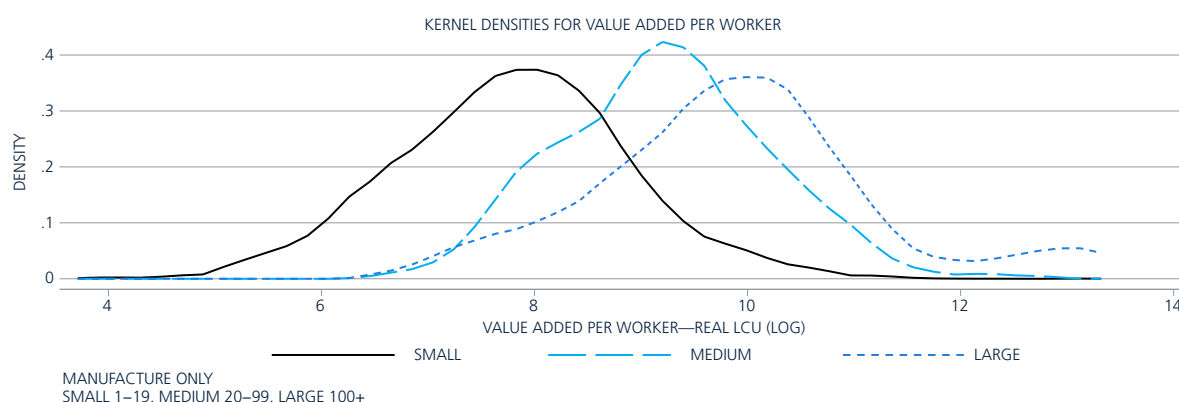
KERNEL DENSITIES FOR VALUE ADDED PER WORKER

MANUFACTURE ONLY
SMALL 1–19, MEDIUM 20–99, LARGE 100+

Source: NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

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29   The graphs in Figure 3.16 are local polynomial smooth plot of output per worker versus employment with 95 percent confidence interval and local mean smoothing.

30   The 2014 Country Economic Memorandum (CEM) results for firms' productivity are based on regressions ran on the 2008/09 and 2010/11 National Panel Survey (NPS). The NPS is a household survey from which data on enterprise characteristics and ownership can be extracted. However, as acknowledged by the CEM, those surveys were not designed specifically for enterprises and larger firms may not be well-represented.

ALL FIRMS

MANUFACTURE

MIN./ UTIL./ CONSTR.

95% CI — LNLPV

Source: NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

**Firm age is relatively less important to determine productivity.** Firms aged 6 to 9 years old and 10 to 19 years old, are more productive than younger firms (that is, five years and younger).[31] This effect however, disappears for firms operating for 20 to 29 years and for firms 30 or more years old. In fact, the latter's negative and statistically significant coefficient (models 2 through 8 in Annex 3.D for variable Age 30plus) signals that firms were significantly less productive than younger firms.

Firms with links to external markets—and SOEs—tend to be more productive. Regression results confirm an earlier density analysis: foreign, as well as publicly owned firms are significantly more productive (models 3 through 8 in Annex 3.D). Empirical evidence from other developing countries confirms that foreign-owned firms are more productive relative to their domestic counterparts (De Mello, 1997; Aitken and Harrison, 1999; Rasiah and Gachino, 2005). Concerning exporting firms, previous research shows that more productive firms self-select into exports (Delgado, Farinas, and Ruano, 2002; Wagner, 2007). In this way, they continue to increase productivity even after that (Van Biesebroeck, 2005). Domestically owned private firms are smaller than domestic firms that are partially or majority publicly owned (SOEs) (Figure 6.14). However, within SOEs there is great variation. The World Bank (2018c) indicates that singlehandedly, the National Housing Corporation drives

KERNEL DENSITIES FOR VALUE ADDED PER WORKER

DOMESTIC–PRIVATE — — FOREIGN — — EXPORTER - - - - - PUBLIC

Source: NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

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31   Models 3, 6, and 8 through 10 in Annex 3.C display no statistical significance for firms aged 6 to 9 years old.

Figure 6.15
Productivity by ownership status, 2013
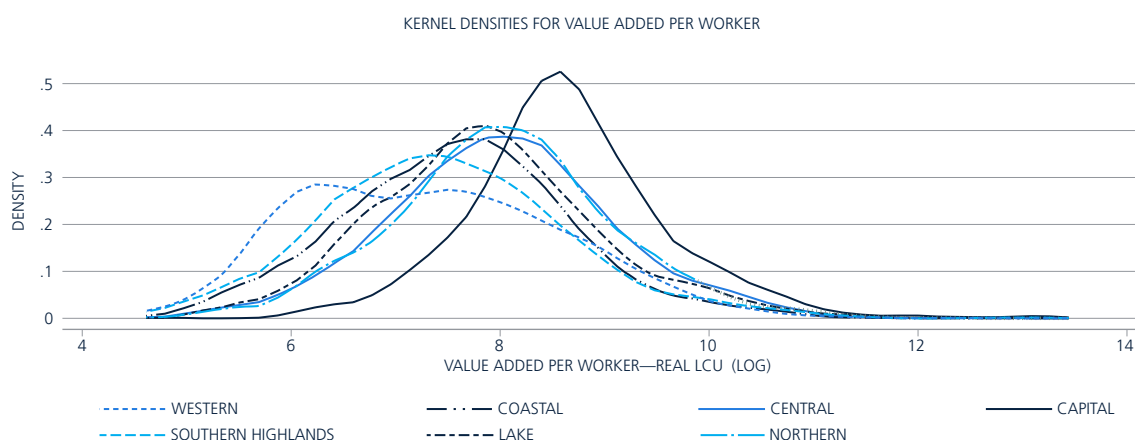
KERNEL DENSITIES FOR VALUE ADDED PER WORKER

Source: NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

commercial SOEs' average return on assets. Foreign owned and exporting firms are even more productive. These firms (foreign and exporting) each comprise about 1 percent of the firms in the survey, with minimal overlap between them.

The link to the largest domestic market is also relevant for productivity. Dar-es-Salaam leads the country in productivity across the country with every region significantly less productive (model 4 in Annex 3.D). Firms and employment are fairly distributed across regions. However, when it comes to productivity, Dar-es-Salaam is the clear leader. Many firms based in the Dar-es-Salaam region yield higher value added per worker than the rest of the country (Figure 6.15). Except for the Western region and to a lesser extent the Southern Highlands, which seem to lag, all other regions display similar levels of productivity.

The demographics of the workforce also affect productivity. The results for shares of female employees and skilled workers (models 6, 7, and 8 in Annex 3.D) show a negative sign that indicates lower productivity rate for firms with larger shares of female workers or those with higher shares of skilled workers. As mentioned before, this could be related to female workers that were hired for manual or menial work in low value-added activities, and to a lack of demand for skilled workers. These results are robust when the measures of productivity are either value added per worker or sales per worker (not shown).

Productivity has a strong and positive effect on wages, as they usually move in tandem. Whether productivity is measured as sales per worker, or value added per worker, high productivity determines higher average wages (models 8 and 10 in Annex 3.C). However, the relationship between productivity is non-linear. Wages increase with productivity, but the contribution of productivity to wage increases is marginally reduced.[32] One explanation for large wage disparities, lies in the possibility that these gaps are driven by productivity differentials. Real average wages are directly associated to productivity; when productivity is arranged by deciles, real wages move in the same direction (Figure 6.16). SOEs are thus more productive than privately owned domestic firms. However, SOEs are less productive than foreign firms, but still pay higher wages.

However, market concentration can hurt workers' pay. A high rate of concentration in a sector can also be associated to lower average wages.[33] One explanation could be that firms with greater sales shares reduce other firms' capacity to compete for labor and once the market is concentrated in a few firms, there is no incentive to increase salaries due to lack of competition.

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[32] The inclusion of the quadratic term, productivity squared, shows that the relationship is positive, but at a decreasing rate—a very low decreasing rate (see models 9 and 11 in Annex 3.C).

[33] See model 7 in Annex 3.C that shows the Herfindahl index in terms of sales, a measure of market concentration.

Figure 6.16
Average real wages by decile of productivity, 2013
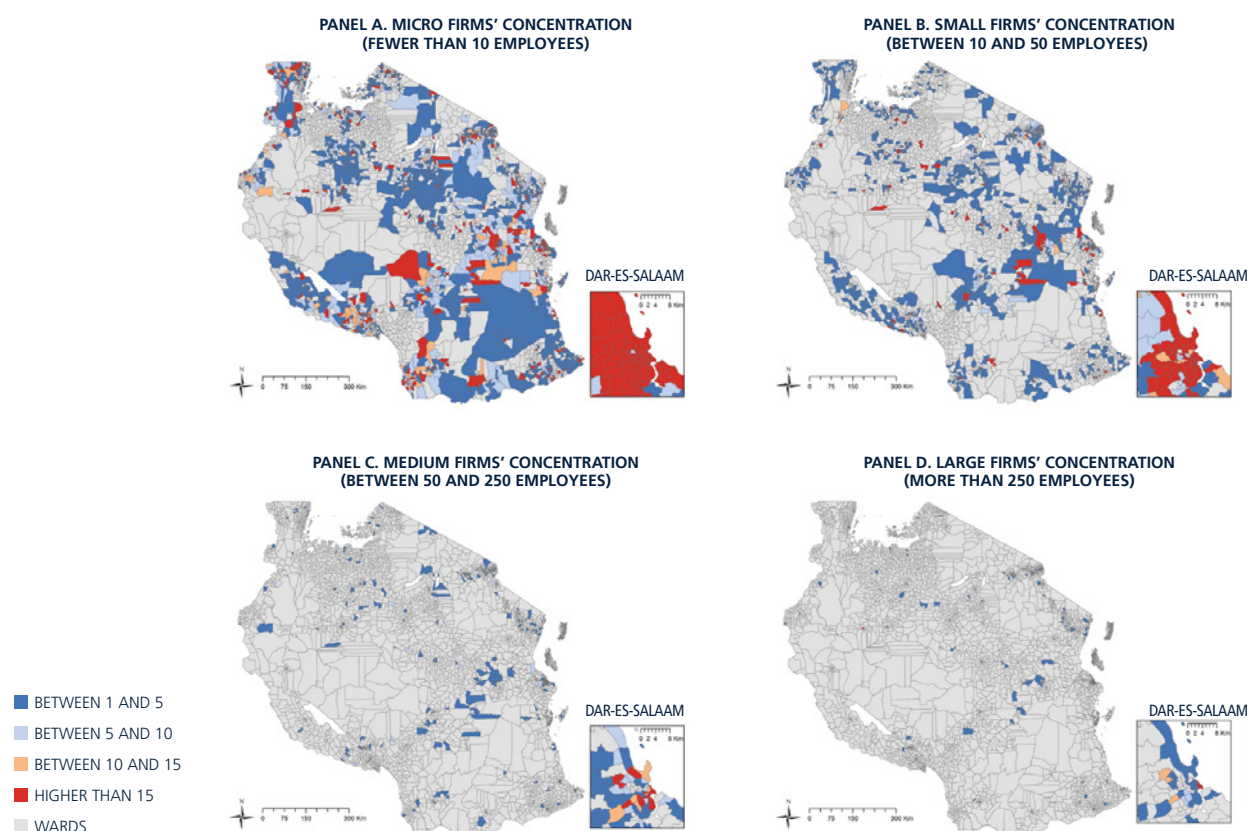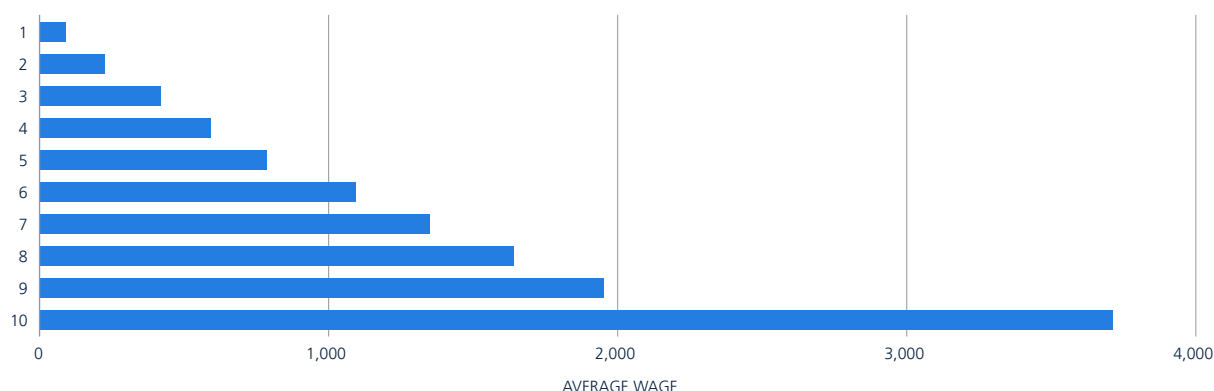

Source: NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

Wages in Tanzania could be facing distortions by the SOE's activity. SOEs pay significantly higher wages in mining and manufacturing (Figure 6.17). In 2013, average wages paid by SOEs were twice as high as those paid by foreign firms in the same sector. In manufacturing, average wages by SOEs were over eight times greater than foreign firms'. For instance, in a beverage-producing SOE, wages can be seven times higher than those of a foreign firm in the same sector, and more than 20 times the wages paid by a domestically owned private firm. Domestic firms pay significantly lower wages than any other type of firm ownership across all sectors.

Furthermore, apart from the SOEs' activity, proximity to the largest domestic market also influences wage dynamics. As noted before, SOEs that are included in the model as publicly owned firms pay significantly more across various specifications. Additionally, firms that are based in the largest Tanzanian market, that is, Dar-es-Salaam, pay higher wages.[34] Regression results in Annex 3.C show that nearly all models reveal a strong and positive relationship between firms' size and wages. The notable exception is Model 3, where the exporting capacity of firms is included. It seems that firms size can determine wages, but the effect disappears once the feature of exports is factored in the model. In other words, firm size determines wages, but access to external markets overshadows firm size. The most productive firms—not necessarily foreign owned as the corresponding

Figure 6.17
Average real wages by sector and ownership, 2013

Source: NBS (2016c) "Census of Industrial Production 2013," Tanzania Mainland," Dar-es-Salaam: National Bureau of Statistics.

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[34] See model 2 in Annex 3.C which shows each region's wage differential with respect to Dar-es-Salaam. All regions show a negative relationship.

variable is not statistically significant—linked to external markets is one of the most important determinants of wages, even beyond firm size (see model 3 compared to the rest in Annex 3.C).

Although firm age does not determine productivity, it too is associated to wages. Wages appear to consistently increase with firm age. Firm age variables are consistently positive and statistically significant. Wages in firms with five or more years of operation are higher than younger firms. Despite some of the models' lack statistical significance for one of the age variables, most results across models in Annex 3.C, show a robust and positive relationship between firm age and wages.

A greater share of female or skilled employees is negatively associated to wages. Annex 3.C's regression results for model 4 indicate that firms' share of female employment is negatively associated to wages. Likewise, results in model 5, for the share of skilled employment, reveal a negative and statistically significant relationship to wages. That is, firms that employ either a larger share of female workers, or skilled workers, typically pay lower wages. One explanation for this, could be that females are hired in low value-added and menial work that yields lower productivity and limits their wages. The explanations for a negative relationship between skills and wages could lie in a lack of response or incentives in the market for skills' acquisition/value, rather than a lower pay for skilled workers compared to unskilled employees. For example, workers might not adjust to changes in the demand with the acquisition of new skills. Alternatively, employers might not take the supply of skills into account to hire or set wages.

PART 4. CONCLUDING REMARKS

7. THE WAY FORWARD

A Jobs Diagnostic typically limits its analysis to identifying the main challenges to employment creation and improvement. It is not in its initial intentions to recommend any course of action in terms of public policy. However, the findings for Tanzania can be the basis for policy discussion on the main challenges and possible questions to be addressed with the country's government. It is in that spirit that this Jobs Diagnostic offers an initial set of policy questions for discussion.

Encouragement of private-sector employment and greater competition. Most value added in industry is concentrated in a few industries and in a handful of firms. To tackle market concentration that may limit firm growth and employment, firm entry and exit would need to be facilitated. In addition, firm growth needs a reform of any policies that may undermine equality of opportunity for entrepreneurs or reduce the space for discretionary policy design. It is key to ensure that laws and regulations are also enforced equally across firms. An improved business environment for micro and small firms would require further action through policies. At the same time, competition could be further stimulated by removing or diminishing barriers to entry (or exit).

Market access emerges as a binding constraint for firm growth. Improving market access for micro and small firms could imply an aggressive FDI policy, infrastructure investments to connect rural and urban areas, and further development of value chains. Since foreign firms are connected to external markets, a conducive business environment to continue to attract FDI is crucial to increase jobs, wages, and productivity. Equally important is the improvement of market access for other firms—possibly in other regions outside Dar-es-Salaam, which could increase productivity and deliver better paid jobs. Finally, it is important to strengthen value chains that involve more than one sector and create rural-urban linkages, such as agroprocessing. These value chains would help rural firms reach markets in urban areas and beyond.

Labor supply challenges require that interventions address the need for gender equality and access to opportunities by the youth. Unpaid employment represents a significant share of the labor force and particularly affects women. A gender approach to interventions and to policymaking could help reduce unpaid work. Interventions that raise gender equality such as (i) introducing changes in the organization of paid employment to facilitate paid and unpaid work by women and men alike; (ii) provision of public services, such as child care; or (iii) commercialization of domestic labor. Similarly, unpaid work could be addressed by changing the organization of paid work to allow for work-life balance, investing in infrastructure that increases female participation in the labor market, and by facilitating micro-lending for off-farming employment aimed

at female workers. To improving young workers' opportunities in the market, an apprentice system for young workers that help them develop relevant skills and connect to labor markets could be an option. Likewise, other successful policies in other countries have included making short-term work opportunities available primarily for the youth that will help develop market-relevant skills, and bridging the skills mismatch by flexible curricula in schools that adapts to industry needs.

Labor supply challenges also require tackling spatial and skills mismatches. Unemployment is an urban phenomenon, while a growing challenge of underemployment is present in rural areas. On the former, interventions aimed at tackling spatial mismatches between places of work and residence that may limit employment possibilities for vulnerable groups of people could be useful. Such interventions would require making transport connections available and affordable to bring people to jobs. But at the same time, it requires an effort to bring jobs to people by facilitating financing for micro and small firms in where people—particularly vulnerable people— live. To reduce underemployment, interventions that consider small local economies in rural areas with little opportunities for off-farming employment are required. For instance, interventions to encourage off-farming work in rural areas that complement farming income/work. Similarly, conditional cash transfers to trigger demand in rural areas and generate off-farming jobs could be provided.

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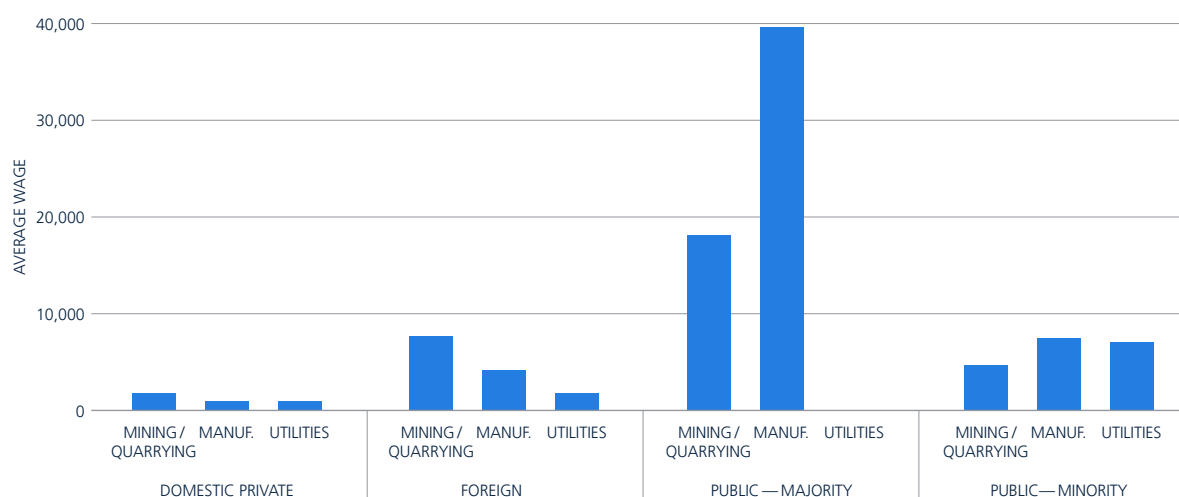NBS (2016b), "Statistical Business Register Report 2014/15," Dar-es-Salaam: National Bureau of Statistics.

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ANNEX 2.A: LABOR SUPPLY SUMMARY STATISTICS

Table 2.A.1
Working-age population

| | Working-age population | | | | | |
| | Employed | | Unemployed | | Inactive | |
	Number	Rate, %	Number	Rate, %	Number	Rate, %
Male	10,099,276	50.5	168,985	37	1,220,196	35.4
Female	9,908,411	49.5	287,948	63	2,222,870	64.6
Youth 15–24	5,492,087	27.4	221,993	48.6	2,181,413	63.4
Adult 25–64	14,515,600	72.6	234,940	51.4	1,261,653	36.6
Rural-male	6,447,721	32.2	38,290	8.4	522,892	15.2
Rural-female	6,475,786	32.4	48,959	10.7	860,806	25.0
Urban-male	3,651,555	18.3	130,695	28.6	697,304	20.3
Urban-female	3,432,625	17.2	238,989	52.3	1,362,064	39.6
Rural-youth	3,878,317	19.4	30,992	6.8	842,512	24.5
Rural-adult	9,045,190	45.2	56,257	12.3	541,187	15.7
Urban-youth	1,613,770	8.1	191,001	41.8	1,338,901	38.9
Urban-adult	5,470,410	27.3	178,683	39.1	720,467	20.9
No education	15,573	0.1	0	0	2,784	0.2
Primary incomplete	2,338,718	14.5	34,251	7.9	228,641	12.8
Primary complete	11,394,814	70.5	240,393	55.8	1,185,614	66.1
Secondary complete	1,470,068	9.1	116,378	27	311,107	17.4
Some tertiary	932,560	5.8	39,994	9.3	64,167	3.6

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

Table 2.A.2
Employment status

| | Employment status | | | | | |
| | Paid | | Non-paid | | Self-employed | |
	Number	Rate, %	Number	Rate, %	Number	Rate, %
Male	1,817,585	65.3	2,230,636	30.4	5,658,585	60.7
Female	965,919	34.7	5,110,597	69.6	3,665,900	39.3
Youth 15–24	699,022	25.1	3,692,627	50.3	1,062,978	11.4
Adult 25–64	2,084,481	74.9	3,648,606	49.7	8,261,506	88.6
Rural-male	497,121	17.9	1,813,295	24.7	4,065,612	43.6
Rural-female	175,508	6.3	4,259,712	58.0	2,010,364	21.6
Urban-male	1,320,464	47.4	417,340	5.7	1,592,973	17.1
Urban-female	790,410	28.4	850,885	11.6	1,655,536	17.8
Rural-youth	162,944	5.9	3,019,354	41.1	690,590	7.4
Rural-adult	509,685	18.3	3,053,653	41.6	5,385,385	57.8
Urban-youth	536,078	19.3	673,273	9.2	372,388	4.0
Urban-adult	1,574,796	56.6	594,953	8.1	2,876,121	30.8
No education	2,439	0.1	4,490	0.1	8,644	0.1
Primary incomplete	177,214	6.8	859,853	16.2	1,276,385	16.6
Primary complete	1,279,361	49.2	4,011,603	75.6	5,738,138	74.4
Secondary complete	434,450	16.7	398,829	7.5	544,901	7.1
Some tertiary	704,912	27.1	34,113	0.6	142,225	1.8

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

Table 2.A.3
Employment by sector

	Sector					
	Agriculture		Industry		Services	
	Number	*Rate, %*	*Number*	*Rate, %*	*Number*	*Rate, %*
Male	6,473,818	48.3	954,086	75.9	2,671,372	49.9
Female	6,922,927	51.7	303,692	24.1	2,681,792	50.1
Youth 15–24	4,175,424	31.2	224,720	17.9	1,091,943	20.4
Adult 25–64	9,221,321	68.8	1,033,058	82.1	4,261,221	79.6
Rural-male	5,538,633	41.3	296,615	23.6	612,473	11.4
Rural-female	5,799,109	43.3	78,447	6.2	598,231	11.2
Urban-male	935,185	7.0	657,471	52.3	2,058,899	38.5
Urban-female	1,123,818	8.4	225,245	17.9	2,083,561	38.9
Rural-youth	3,559,738	26.6	60,758	4.8	257,822	4.8
Rural-adult	7,778,004	58.1	314,304	25.0	952,882	17.8
Urban-youth	615,686	4.6	163,963	13.0	834,121	15.6
Urban-adult	1,443,317	10.8	718,754	57.1	3,308,339	61.8
No education	12,132	0.1	2,765	0.2	676	0
Primary incomplete	1,878,735	18.7	105,038	9.2	354,945	7.2
Primary complete	7,526,969	74.8	796,424	69.8	3,071,420	62.2
Secondary complete	554,720	5.5	164,166	14.4	751,183	15.2
Some tertiary	96,732	1.0	72,870	6.4	762,958	15.4

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.

Table 2.A.4
Mean wages (TZS) by education, gender, and region type

		No education	Primary incomplete	Primary complete	Secondary complete	Some tertiary	Total
Rural males	*Mean wages*		131,675	204,521	228,591	772,877	316,102
	Indexed		*64*	*99*	*111*	*375*	*154*
Rural females	*Mean wages*	115,600	130,170	98,094	386,082	527,142	341,728
	Indexed	*56*	*63*	*48*	*187*	*256*	*166*
Urban males	*Mean wages*	200,000	174,773	257,930	377,233	744,156	397,695
	Indexed	*97*	*85*	*125*	*183*	*361*	*193*
Urban females	*Mean wages*		161,968	131,465	237,119	556,931	276,628
	Indexed		*79*	*64*	*115*	*270*	*134*
Total	*Mean wages*	**128,945**	**151,947**	**205,922**	**319,174**	**664,496**	**345,511**
	Indexed	***63***	***74***	***100***	***155***	***323***	***168***

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.
Note: Indexed by primary complete for total numbers.

Table 2.A.5
Mean wages (TZS) by education, age cohort, and region type

		No education	Primary incomplete	Primary complete	Secondary complete	Some tertiary	Total
Rural youth	*Mean wages*		125,035	110,076	178,011	351,973	145,537
	Indexed		*61*	*53*	*86*	*171*	*71*
Rural adult	*Mean wages*	115,600	136,519	212,885	320,936	679,883	381,747
	Indexed	*56*	*66*	*103*	*156*	*330*	*185*
Urban youth	*Mean wages*	200,000	99,783	130,136	192,605	273,204	154,416
	Indexed	*97*	*48*	*63*	*94*	*133*	*75*
Urban adult	*Mean wages*		218,074	248,647	390,366	704,890	420,485
	Indexed		*106*	*121*	*190*	*342*	*204*
Total	**Mean wages**		**151,947**	**205,922**	**319,174**	**664,496**	**345,511**
	Indexed		***74***	***100***	***155***	***323***	***168***

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics.
Note: Indexed by primary complete for total numbers.

ANNEX 2.B: LOGIT REGRESSIONS OF LABOR STATUS

Table 2.B.1
Logit regression for labor status

Gender	Female						Male					
Year	2006			2014			2006			2014		
Labor Status	*Employed*	*Unemployed*	*Inactive*	*Employed*	*Unemployed*	*Inactive*	*Employed*	*Unemployed*	*Inactive*	*Employed*	*Unemployed*	*Inactive*
Individual age	0.036***	-0.002**	-.033***	0.039	0.002	-0.041	0.035	-0.000	-0.035	0.032***	0.001	-.033***
	(22.08)	(-2.04)	(-24.41)	(.)	(.)	(.)	(.)	(.)	(.)	(22.09)	(1.64)	(-23.94)
Age Squared	-0.00***	0.000	0.000***	-0.000	-0.000	0.000	-0.000	-0.000	0.000	-0.00***	-0.000*	0.000***
	(-19.47)	(0.34)	(23.63)	(.)	(.)	(.)	(.)	(.)	(.)	(-20.26)	(-1.71)	(22.10)
Married	0.033***	0.018***	-.051***	-0.026	-0.002	0.028	0.057	-0.024	-0.032	0.109***	-0.020***	-.089***
	(4.16)	(3.86)	(-6.99)	(.)	(.)	(.)	(.)	(.)	(.)	(10.54)	(-4.45)	(-9.25)
Rural	0.110***	-0.058***	-.052***	0.154	-0.026	-0.128	0.063	-0.020	-0.043	0.073***	-0.015***	-.058***
	(14.86)	(-12.44)	(-8.24)	(.)	(.)	(.)	(.)	(.)	(.)	(10.09)	(-4.65)	(-8.42)
Primary incomplete	0.044	0.008	-0.052	-0.247	0.036	0.211	-0.110	0.011	0.099	0.051	0.021***	-0.073
	(0.49)	(0.28)	(-0.57)	(.)	(.)	(.)	(.)	(.)	(.)	(0.31)	(4.32)	(-0.44)
Secondary incomplete	0.063	0.027	-0.090	-0.212	0.028	0.185	-0.101	0.022	0.079	0.039	0.013***	-0.052
	(0.69)	(1.02)	(-0.99)	(.)	(.)	(.)	(.)	(.)	(.)	(0.23)	(8.97)	(-0.31)
Secondary complete	0.041	0.032	-0.073	-0.244	0.035	0.209	-0.130	0.028	0.102	-0.014	0.028***	-0.014
	(0.44)	(1.19)	(-0.80)	(.)	(.)	(.)	(.)	(.)	(.)	(-0.08)	(8.14)	(-0.08)
Some tertiary / post-secondary	-0.068	-0.004	0.073	-0.206	0.018	0.188	-0.207	0.019	0.188	-0.072	0.019***	0.053
	(-0.66)	(-0.15)	(0.71)	(.)	(.)	(.)	(.)	(.)	(.)	(-0.43)	(5.09)	(0.32)
Size of Household	-.018***	0.007***	0.011***	-0.039	0.007	0.032	-0.013	0.003	0.010	-.024***	0.005***	0.019***
	(-6.16)	(3.69)	(4.44)	(.)	(.)	(.)	(.)	(.)	(.)	(-8.89)	(4.50)	(7.43)
Number of children	0.021***	-0.007***	-.014***	0.047	-0.009	-0.038	0.018	-0.004	-0.014	0.033***	-0.006***	-.027***
	(5.59)	(-2.88)	(-4.35)	(.)	(.)	(.)	(.)	(.)	(.)	(9.62)	(-4.12)	(-8.21)
Number of youth	0.013***	-0.003	-.009***	0.038	-0.005	-0.032	0.010	0.001	-0.011	0.022***	-0.003**	-.019***
	(3.45)	(-1.49)	(-2.93)	(.)	(.)	(.)	(.)	(.)	(.)	(5.87)	(-2.07)	(-5.25)
Number of elderly	0.017**	-0.010**	-0.007	0.048	-0.008	-0.040	0.004	-0.003	-0.002	0.010	-0.006*	-0.004
	(2.51)	(-1.96)	(-1.32)	(.)	(.)	(.)	(.)	(.)	(.)	(1.50)	(-1.82)	(-0.63)
Central	0.100***	-0.089***	-0.011	0.244	-0.063	-0.181	0.031	-0.030	-0.001	0.104***	-0.027***	-.078***
	(7.58)	(-10.18)	(-1.02)	(.)	(.)	(.)	(.)	(.)	(.)	(9.66)	(-6.23)	(-7.50)
Coastal	0.116***	-0.079***	-.037***	0.232	-0.054	-0.178	0.047	-0.025	-0.022	0.085***	-0.020***	-.066***
	(9.50)	(-9.28)	(-3.71)	(.)	(.)	(.)	(.)	(.)	(.)	(7.10)	(-3.69)	(-5.75)
Lake	0.109***	-0.084***	-.026***	0.213	-0.036	-0.177	0.045	-0.023	-0.022	0.037***	-0.011*	-0.026**
	(9.34)	(-10.16)	(-2.74)	(.)	(.)	(.)	(.)	(.)	(.)	(3.12)	(-1.95)	(-2.30)
Northern	0.090***	-0.092***	0.002	0.127	-0.042	-0.085	0.051	-0.032	-0.020	0.062***	-0.015***	-.047***
	(7.38)	(-11.48)	(0.21)	(.)	(.)	(.)	(.)	(.)	(.)	(5.32)	(-2.80)	(-4.27)
Southern Highlands	0.155***	-0.104***	-.050***	0.240	-0.056	-0.184	0.071	-0.033	-0.037	0.086***	-0.023***	-.063***
	(13.78)	(-13.82)	(-5.48)	(.)	(.)	(.)	(.)	(.)	(.)	(8.35)	(-5.39)	(-6.39)
Western	0.153***	-0.104***	-.049***	0.267	-0.055	-0.212	0.070	-0.022	-0.048	0.097***	-0.021***	-.076***
	(9.78)	(-11.74)	(-3.55)	(.)	(.)	(.)	(.)	(.)	(.)	(6.02)	(-3.11)	(-4.95)
Observations	13,882	13,882	13,882	11,314	11,314	11,314	14,956	14,956	14,956	11,060	11,060	11,060

t statistics in parentheses

* p<0.1; ** p<0.05; *** p<0.01

ANNEX 2.C: MINCERIAN LOG WAGE ESTIMATIONS

Mincerian log wage estimations

Labor Status	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Female	-0.280***	-0.29***	-0.247***	-0.309***	-0.294***	-0.280***
	(-8.81)	(-8.96)	(-7.43)	(-10.21)	(-9.89)	(-8.81)
Individual age	0.107***	0.105***	0.0995***	0.0995***	0.0900***	0.107***
	(10.81)	(10.29)	(9.76)	(10.36)	(10.01)	(10.81)
Age Squared	-0.001***	-.0011***	-0.001***	-0.001***	-0.001***	-.001***
	(-8.20)	(-7.77)	(-7.38)	(-8.18)	(-7.89)	(-8.20)
Primary incomplete	-0.114	0.0173	0.0604	-0.153	-0.171*	-0.114
	(-1.04)	(0.14)	(0.48)	(-1.55)	(-1.73)	(-1.04)
Secondary incomplete	-0.0173	0.0882	0.137	-0.106	-0.101	-0.0173
	(-0.20)	(0.84)	(1.31)	(-1.45)	(-1.35)	(-0.20)
Secondary complete	0.377***	0.464***	0.470***	0.231***	0.173**	0.377***
	(4.17)	(4.17)	(4.31)	(3.01)	(2.17)	(4.17)
Some tertiary post-secondary	1.109***	1.202***	1.242***	0.783***	0.678***	1.109***
	(13.09)	(11.25)	(11.40)	(9.98)	(8.58)	(13.09)
Rural	-0.0858	-0.0325	-0.0328	-0.102*	-0.0856	-0.0858
	(-1.46)	(-0.55)	(-0.57)	(-1.83)	(-1.61)	(-1.46)
Central	-0.230***	-0.237***	-0.281***	-0.302***	-0.232***	-0.23***
	(-3.32)	(-3.48)	(-4.53)	(-4.68)	(-3.72)	(-3.32)
Coastal	-0.422***	-0.419***	-0.430***	-0.481***	-0.444***	-0.42***
	(-7.94)	(-8.03)	(-8.33)	(-9.21)	(-8.79)	(-7.94)
Lake	-0.253***	-0.216***	-0.227***	-0.282***	-0.251***	-0.25***
	(-4.27)	(-3.93)	(-4.20)	(-4.97)	(-4.72)	(-4.27)
Northern	-0.196***	-0.202***	-0.213***	-0.225***	-0.209***	-0.2***
	(-4.09)	(-4.32)	(-4.60)	(-4.84)	(-4.65)	(-4.09)
Southern Highlands	-0.405***	-0.382***	-0.394***	-0.468***	-0.425***	-0.41***
	(-7.78)	(-7.44)	(-8.04)	(-8.88)	(-8.72)	(-7.78)
Western	-0.448***	-0.424***	-0.458***	-0.500***	-0.438***	-0.45***
	(-5.26)	(-4.80)	(-5.31)	(-6.05)	(-5.51)	(-5.26)
Industry		0.354***				
		(3.77)				
Services		0.263***				
		(2.95)				
Mining			0.991***			
			(5.55)			
Manufacturing			0.217**			
			(2.15)			
Public utilities			0.573***			
			(4.59)			
Construction			0.395***			
			(3.93)			

Labor Status	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Commerce			0.0906			
			(0.96)			
Transport and communications			0.297***			
			(3.26)			
Financial and business services			0.378***			
			(3.68)			
Public Administration			0.563***			
			(4.98)			
Other services			0.343			
			(2.03)			
Private				-0.430***		
				(-9.56)		
Informal					-0.561***	
					(-13.67)	
Informality unknown					-0.586***	
					(-5.68)	
Constant	10.11***	9.761***	9.851***	10.81***	11.04***	10.11***
	(54.36)	(44.22)	(45.91)	(58.32)	(62.91)	(54.36)
Observations	5046	5046	5046	5011	5046	5046
F test	-5324.8	-5294.6	-5199.7	-5175.4	-5104.1	-5324.8

t statistics in parentheses

* p<0.1; ** p<0.05; *** p<0.01

ANNEX 2.D: WAP AND LABOR FORCE STATISTICS

Table 2.D.1
WAP and labor force statistics

	2006	2014	Prop of WAP				Prop of LF			
			2006	2014	% Change	Growth	2006	2014	% Change	Growth
WAP	19,000,000	23,900,000								
MaleWAP	9,051,831	11,500,000								
Female WAP	9,913,959	12,400,000								
Urban WAP	5,433,054	9,513,232								
Rural WAP	13,500,000	14,400,000								
Youth WAP	6,315,284	7,895,494								
Adult WAP	12,700,000	16,000,000								
Youth Male WAP	2,978,722	3,852,160								
Youth Female WAP	3,336,562	4,043,334								
Adult female WAP	6,577,397	8,375,896								
Urban Youth WAP	1,816,786	3,143,673								
Urban Adult WAP	3,616,268	6,369,559								
Rural Youth WAP	4,498,498	4,751,821								
Rural Adult WAP	9,034,238	9,642,634								
Labor Force	17,300,000	20,500,000	91%	86%	-5%	2%				
Male Labor force	8,324,036	10,300,000	92%	90%	-2%	3%				
Female Labor Force	9,012,206	10,200,000	91%	82%	-9%	2%				
Urban LF	4,772,392	7,453,864								
Rural LF	12,600,000	13,000,000								
Youth LF	5,132,734	5,714,081								
Adult LF	12200000	14,800,000								
Youth Male LF	2,401,010	2,866,670								
Youth Female LF	2,731,724	2,847,410								
Urban Youth LF	1,324,646	1,804,771								
Urban Adult LF	3,447,746	5,649,093								
Rural Youth LF	3,808,087	3,909,309								
Rural Adult LF	8,755,762	9,101,447								
Female employed	8,625,292	9,908,411					95.7%	97%	1.4%	1.7%
Unemployed	557,857	456,934	2.9%	1.9%	-1%	-2%				
Male unemployed	170,943	168,985	1.9%	1.5%	0%	0%				
Female unemployed	386,914	287,948	3.9%	2.3%	-2%	-4%				
Inactive	1,629,548	3,443,066	8.6%	14.4%	6%	9%	9.4%	16.8%	7.4%	9.4%
Male Inactive	727,795	1,220,196	8.0%	10.6%	3%	6%	8.7%	11.8%	3.1%	6.5%
Female inactive	901,753	2,222,870	9.1%	17.9%	9%	11%	10.0%	21.8%	11.8%	11.3%
Paid Employee	1,725,830	2,783,503	9.1%	11.6%	3%	6%	10.0%	13.6%	3.6%	6.0%
Male Paid Employee	1,212,596	1,817,585	13.4%	15.8%	2%	5%	14.6%	17.6%	3.1%	5.1%
Female Paid employees	513,234	965,919	5.2%	7.8%	3%	8%	5.7%	9.5%	3.8%	7.9%
Urban Paid Employees	1,164,655	2,110,874	6.1%	8.8%	3%	7%	24.4%	28.3%	3.9%	7.4%

	2006	2014	Prop of WAP				Prop of LF			
			2006	2014	% Change	Growth	2006	2014	% Change	Growth
Rural paid employees	561,175	672,628	6.2%	5.8%	0%	2%	4.5%	5.2%	0.7%	2.3%
Unpaid employees	1,914,309	7,341,232	19.3%	59.2%	40%	17%	11.1%	35.8%	24.7%	16.8%
Male Unpaid Employees	781,265	2,230,636	8.6%	19.4%	11%	13%	9.4%	21.7%	12.3%	13.1%
Female Unpaid Employees	1,133,044	5,110,597	11.4%	41.2%	30%	19%	12.6%	50.1%	37.5%	18.8%
Urban Unpaid Employees	509,492	1,268,225	9.4%	13.3%	4%	11%	10.7%	17.0%	6.3%	11.4%
Rural Unpaid Employees	1,404,815	6,073,007	10.4%	42.2%	32%	18%	11.1%	46.7%	35.6%	18.3%
Self employment	12,844,983	9,324,484	67.6%	39.0%	-29%	-4%	74.2%	45.5%	-28.8%	-4.0%
Male self-employment	5,953,024	5,658,585	65.8%	49.2%	-17%	-1%	71.5%	54.9%	-16.6%	-0.6%
Female self-employment	6,891,959	3,665,900	69.5%	29.6%	-40%	-8%	76.5%	35.9%	-40.5%	-7.9%
Youth unpaid	971,729	3,692,627	15.4%	46.8%	31%	17%	18.9%	64.6%	45.7%	16.7%
Adult unpaid	942,579	3,648,606	7.4%	22.8%	15%	17%	7.7%	24.7%	16.9%	16.9%
Urban youth unpaid	277,026	673272.6	15.2%	21.4%	6%	11%	5.8%	9.0%	3.2%	11.1%
Rural youth unpaid	694,703	3,019,354	5.1%	21.0%	16%	18%	5.5%	23.2%	17.7%	18.4%
Youth female unpaid	539,220	1,930,983	16.2%	47.8%	32%	16%	19.7%	67.8%	48.1%	15.9%
Adult female unpaid	593,823	3,179,614	9.0%	38.0%	29%	21%	9.0%	38.0%	28.9%	21.0%
Youth self-employment	3,428,305	1,062,978	54.3%	13.5%	-41%	-15%	66.8%	18.6%	-48.2%	-14.6%
Adult self-employment	9,416,677	8,261,506	74.1%	51.6%	-23%	-2%	77.2%	55.8%	-21.4%	-1.6%
Urban youth self-employment	520,149	372,387.9	28.6%	11.8%	-17%	-4%	39.3%	20.6%	-18.6%	-4.2%
Rural youth self-employment	2,908,157	690,589.8	64.6%	14.5%	-50%	-18%	76.4%	17.7%	-58.7%	-18.0%
Youth female self-employment	1,825,394	437,423.4	54.7%	10.8%	-44%	-18%	66.8%	15.4%	-51.5%	-17.9%
Adult female self-employment	5,066,565	3,228,476	77.0%	38.5%	-38%	-6%	77.0%	38.5%	-38.5%	-5.6%

Source: Authors' calculations based on NBS (2014) "2014 Integrated Labour Force Survey," Dar-es-Salaam: National Bureau of Statistics

ANNEX 3.A: TANZANIA'S CENSUS OF INDUSTRIAL PRODUCTION

3.A.1. SOME CHARACTERISTICS OF TANZANIA´S CENSUS OF INDUSTRIAL PRODUCTION

The data utilized for the demand side analysis of the Jobs Diagnostic is the 2013 Census of Industrial Production (CIP) collected by the National Bureau of Statistics of Tanzania. The CIP 2013 is the fourth comprehensive industrial census to be conducted in Tanzania since Independence in 1961. The first, second and the third censuses were undertaken in 1963, 1978, and 1989 respectively. The data includes the sectors of mining and quarrying; manufacturing; electricity, gas, steam and air conditioning supply; and water supply; sewerage, waste management and remediation activities. The census covers all establishments that engaged 10 or more persons and a sample of establishments which engaged less than 10 persons (referred to as small establishments).[35] A sample of 13,619 establishment was covered during enumeration, of which 12,297 were small establishments and 1,322 were large establishments, which were 100 percent covered.

Although the CIP covered all industrial sectors, manufacturing features prominently. According to the National Bureau of Statistics (NBS, 2016c), the Census of Industrial Production 2013 covered all industrial establishments in Tanzania with fixed premises and in accordance with the International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4 to ensure international comparability and coherence. It covered all establishments falling under the following four industrial sub-sectors: (i) mining and quarrying; (ii) manufacturing; (iii) electricity, gas, steam and air conditioning supply; and, (iv) water collection, treatment and supply. However, the manufacturing sub-sector made the largest contribution to almost all statistical variables and indicators. It was therefore the leading sub-sector which controlled direction of the industrial sector as a whole.

Manufacturing includes physical or chemical transformation of materials, substances, or components into new products. The materials, substances, or components transformed are raw materials that are products of agriculture, forestry, fishing, mining or quarrying as well as products of other manufacturing activities. Substantial alteration, renovation, or reconstruction of goods is generally considered to be manufacturing.

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[35]   The 2013 CIP, covered small establishments using a short questionnaire and large establishments using long or detailed questionnaire.

ANNEX 3.B: EMPLOYMENT REGRESSIONS

3.B.1. DEFINITION OF DEPENDENT AND INDEPENDENT VARIABLES

Age 6to9	firms with 6 to 9 years of operation
Age 10to19	firms with 10 to 19 years of operation
Age 20to29	firms with 20 to 29 years of operation
Age 30plus	firms with over 30 years of operation
foreign	foreign-owned firm
public	publicly owned enterprise
Central	dummy variable indicating a firm is based in the Central region
Coast	dummy variable indicating a firm is based in the Coast region
Lake	dummy variable indicating a firm is based in the Lake region
Northern	dummy variable indicating a firm is based in the Northern region
Southern Highlands	dummy variable indicating a firm is based in the Southern Highlands region
Western	dummy variable indicating a firm is based in the Western region
Exporter	firm with links to external markets through trade
Share-female empl.	firm's share of female employment
Share-skilled empl.	firm's share of skilled employment
Herfindahl of Labor	market concentration in terms of labor
Herfindahl of Sales	market concentration in terms of sales
Sales/worker-log	log values of output (sales) per worker
Sales/worker-log sq.	squared values of the log of output (sales) per worker
Val-add/worker-log	log values of value-added per worker
Val-add/worker-log sq.	squared values of the log of value-added per worker

Table 3.B.1.
Employment regressions

Variables	1	2	3	4	5	6	7	8	9	10	11	12
Age 6to9	0.225***	0.203***	0.203***	0.025	0.204***	0.189***	0.193***	0.204***	0.174***	0.167***	0.183***	0.180***
	-0.0415	-0.0343	-0.0343	-0.0954	-0.0335	-0.0338	-0.0393	-0.0414	-0.0312	-0.0284	-0.0334	-0.0326
Age 10to19	0.403***	0.337***	0.337***	0.451***	0.344***	0.330***	0.340***	0.353***	0.292***	0.278***	0.304***	0.298***
	-0.0875	-0.0647	-0.0647	-0.121	-0.065	-0.0642	-0.0739	-0.0764	-0.0469	-0.0416	-0.0539	-0.0521
Age 20to29	0.469***	0.414***	0.414***	0.471***	0.424***	0.417***	0.445***	0.464***	0.375***	0.333***	0.388***	0.375***
	-0.111	-0.0899	-0.0899	-0.165	-0.0889	-0.0929	-0.107	-0.111	-0.0688	-0.064	-0.0788	-0.0777
Age 30plus	0.854***	0.519***	0.519***	0.567***	0.535***	0.547***	0.525***	0.591***	0.420***	0.320***	0.438***	0.397***
	-0.254	-0.17	-0.17	-0.129	-0.17	-0.168	-0.171	-0.193	-0.121	-0.105	-0.136	-0.131
Foreign		2.291***	2.291***	0.616***	2.262***	2.284***	2.497***	2.668***	2.104***	1.809***	2.160***	2.005***
		-0.279	-0.279	-0.154	-0.283	-0.271	-0.287	-0.316	-0.29	-0.276	-0.281	-0.27
Public		1.910***	1.910***	0.530***	1.883***	1.925***	1.872***	1.826***	1.674***	1.415***	1.780***	1.665***
		-0.235	-0.235	-0.135	-0.232	-0.235	-0.255	-0.264	-0.226	-0.199	-0.236	-0.223
Central			-0.452**									
			-0.214									
Coastal			-0.420*									
			-0.218									
Lake			-0.319									
			-0.224									
Northern			-0.403									
			-0.251									
Southern Highlands			-0.658***									
			-0.221									
Western			-0.683***									
			-0.216									
Exporter				1.193***								
				-0.182								
Share-female empl.					0.417***							
					-0.0726							
Share-skilled empl.						-0.511***						
						-0.0599						
Herfindahl of Labor							1.604***					
							-0.492					
Herfindahl of Sales								-0.574***				
								-0.12				
Sales per worker -log									0.162***	-1.518***		
									-0.0429	-0.183		
Sales/worker-log sq.										0.0966***		
										-0.0111		
Val-Add/worker-log											0.0966***	-0.806***
											-0.0305	-0.123
Val-Add/worker-log sq.												0.0571***
												-0.00786
Constant	5.013***	2.711***	2.711***	4.134***	2.735***	2.739***	1.363***	1.572***	0.964	8.245***	1.837***	5.524***
	-0.266	-0.357	-0.357	-0.507	-0.361	-0.351	-0.244	-0.277	-0.618	-0.838	-0.475	-0.662
Observations	12,773	12,707	12,707	1,011	12,707	12,707	12,707	12,707	12,431	12,431	12,407	12,407
R-squared	0.266	0.346	0.346	0.442	0.356	0.373	0.246	0.24	0.368	0.404	0.349	0.362
Sector dummies	YES	YES	YES	YES	YES	YES	NO	NO	YES	YES	YES	YES
Location dummies	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year Dummies	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

ANNEX 3.C: WAGE REGRESSIONS

3.C.1. DEFINITION OF DEPENDENT AND INDEPENDENT VARIABLES

Size 10to19	firms with 10 to 19 employees
Size 20to49	firms with 20 to 49 employees
Size 50to249	firms with 50 to 249 employees
Size 250to499	firms with 250 to 499 employees
Size 500plus	firms with over 500 employees
Age 6to9	firms with 6 to 9 years of operation
Age 10to19	firms with 10 to 19 years of operation
Age 20to29	firms with 20 to 29 years of operation
Age 30plus	firms with over 30 years of operation
foreign	foreign-owned firm
public	publicly owned enterprise
Central	dummy variable indicating a firm is based in the Central region
Coast	dummy variable indicating a firm is based in the Coast region
Lake	dummy variable indicating a firm is based in the Lake region
Northern	dummy variable indicating a firm is based in the Northern region
Southern Highlands	dummy variable indicating a firm is based in the Southern Highlands region
Western	dummy variable indicating a firm is based in the Western region
Exporter	firm with links to external markets through trade
Share-female empl.	firm's share of female employment
Share-skilled empl.	firm's share of skilled employment
Herfindahl of Labor	market concentration in terms of labor
Herfindahl of Sales	market concentration in terms of sales
Sales/worker-log	log values of output (sales) per worker
Sales/worker-log sq.	squared values of the log of output (sales) per worker
Val-add/worker-log	log values of value-added per worker
Val-add/worker-log sq.	squared values of the log of value-added per worker

Table 3.C.1.
Wage regressions

Variables	1	2	3	4	5	6	7	8	9	10	11
Size 10to19	0.668***	0.668***	-0.287***	0.674***	0.669***	0.707***	0.692***	0.0285	0.118**	0.160**	0.227***
	-0.0848	-0.0848	-0.07	-0.0867	-0.0846	-0.0917	-0.0892	-0.054	-0.0557	-0.0631	-0.0579
Size 20to49	0.741***	0.741***	-0.248***	0.746***	0.733***	0.789***	0.771***	0.183**	0.254***	0.373***	0.390***
	-0.112	-0.112	-0.0562	-0.113	-0.111	-0.0972	-0.0996	-0.0863	-0.0804	-0.0816	-0.0736
Size 50to249	0.994***	0.994***		1.001***	0.991***	1.024***	1.020***	0.198	0.382***	0.427***	0.515***
	-0.154	-0.154		-0.153	-0.157	-0.16	-0.157	-0.149	-0.126	-0.102	-0.105
Size 250to499	1.115***	1.115***	-0.0649	1.120***	1.103***	1.184***	1.168***	0.206	0.511***	0.456***	0.668***
	-0.172	-0.172	-0.0935	-0.173	-0.173	-0.187	-0.187	-0.182	-0.183	-0.163	-0.168
Size 500plus	1.328***	1.328***	0.0535	1.332***	1.326***	1.425***	1.431***	0.299***	0.639***	0.534***	0.809***
	-0.114	-0.114	-0.109	-0.114	-0.119	-0.156	-0.143	-0.109	-0.138	-0.15	-0.142
Age 6to9	0.0527**	0.0527**	0.0372	0.0532**	0.0519**	0.042	0.0499**	0.0136	0.0195	0.0235	0.0326**
	-0.0245	-0.0245	-0.0696	-0.0243	-0.0242	-0.0259	-0.0246	-0.0166	-0.0129	-0.0177	-0.0154
Age 10to19	0.113***	0.113***	0.178**	0.112***	0.114***	0.0939**	0.102***	0.0684***	0.0681***	0.0636**	0.0665***
	-0.0316	-0.0316	-0.0658	-0.0317	-0.0322	-0.035	-0.0336	-0.0247	-0.0218	-0.0254	-0.0228
Age 20to29	0.115***	0.115***	0.0497	0.115***	0.118***	0.120***	0.130***	0.0641*	0.0810**	0.0724**	0.0822***
	-0.0362	-0.0362	-0.0961	-0.0364	-0.0362	-0.0431	-0.0418	-0.0357	-0.0332	-0.0285	-0.0275
Age 30plus	0.182**	0.182**	0.354***	0.180**	0.188***	0.225**	0.248***	0.147**	0.191***	0.153***	0.187***
	-0.0687	-0.0687	-0.128	-0.0689	-0.0693	-0.0873	-0.0869	-0.0565	-0.0617	-0.0522	-0.0537
Foreign	0.0692	0.0692	0.128	0.0723	0.0786	0.0489	0.0592	-0.0697	-0.0112	-0.137*	-0.0175
	-0.0771	-0.0771	-0.084	-0.0765	-0.0775	-0.0878	-0.0858	-0.0778	-0.0762	-0.0712	-0.0774
Public	0.804***	0.804***	0.689***	0.807***	0.822***	0.621***	0.563***	0.644***	0.733***	0.545***	0.640***
	-0.15	-0.15	-0.185	-0.15	-0.153	-0.179	-0.182	-0.108	-0.125	-0.0968	-0.118
Central		-0.480***									
		-0.0783									
Coastal		-0.717***									
		-0.0723									
Lake		-0.688***									
		-0.0752									
Northern		-0.601***									
		-0.0717									
Southern Highlands		-0.908***									
		-0.0761									
Western		-1.010***									
		-0.0821									
Exporter			0.178***								
			-0.0576								
Share-female empl.				-0.0946*							
				-0.0477							
Share-skilled empl.					-0.119***						
					-0.0411						
Herfindahl of Labor						-0.0531					
						-0.111					
Herfindahl of Sales							-0.511***				
							-0.0679				
Sales per worker -log								0.468***	1.851***		
								-0.0192	-0.147		
Sales/worker-log sq.									-0.0777***		

Variables	1	2	3	4	5	6	7	8	9	10	11
									-0.00848		
Val-Add/worker-log										0.503***	2.109***
										-0.0147	-0.143
Val-Add/worker-log sq.											-0.0978***
											-0.00882
Constant	8.444***	8.444***	8.791***	8.437***	8.455***	7.411***	7.524***	4.097***	-2.111***	4.370***	-2.437***
	-0.205	-0.205	-0.153	-0.205	-0.209	-0.0805	-0.079	-0.273	-0.65	-0.172	-0.621
Observations	8,751	8,751	997	8,751	8,751	8,751	8,751	8,609	8,609	8,598	8,598
R-squared	0.269	0.269	0.359	0.269	0.271	0.249	0.255	0.457	0.479	0.488	0.519
Sector dummies	YES	YES	YES	YES	YES	NO	NO	YES	YES	YES	YES
Location dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year Dummies	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

ANNEX 3.D: PRODUCTIVITY REGRESSIONS

3.D.1. DEFINITION OF DEPENDENT AND INDEPENDENT VARIABLES

Size 10to19	firms with 10 to 19 employees
Size 20to49	firms with 20 to 49 employees
Size 50to249	firms with 50 to 249 employees
Size 250to499	firms with 250 to 499 employees
Size 500plus	firms with over 500 employees
age_6to9	firms with 6 to 9 years of operation
age_10to19	firms with 10 to 19 years of operation
age_20to29	firms with 20 to 29 years of operation
age_30plus	firms with over 30 years of operation
sz_10to19	firms with 10 to 19 employees
sz_20to49	firms with 20 to 49 employees
sz_50to249	firms with 50 to 249 employees
sz_250to499	firms with 250 to 499 employees
sz_500plus	firms with over 500 employees
foreign	foreign-owned firm
public	publicly owned enterprise
Central	dummy variable indicating a firm is based in the Central region
Coast	dummy variable indicating a firm is based in the Coast region
Lake	dummy variable indicating a firm is based in the Lake region
Northern	dummy variable indicating a firm is based in the Northern region
Southern Highlands	dummy variable indicating a firm is based in the Southern Highlands region
Western	dummy variable indicating a firm is based in the Western region
Exporter	firm with links to external markets through trade
Share-female empl.	firm's share of female employment
Majority of female employees	firms with a female majority of employees
Share-skilled empl.	firm's share of skilled employment

Table 3.D.1.
Productivity regressions

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Size 10to19	1.488***	1.067***	1.016***	1.016***	-0.272	1.027***	1.014***	0.996***
	(0.116)	(0.102)	(0.0995)	(0.0995)	(0.306)	(0.101)	(0.100)	(0.0926)
Size 20to49	1.376***	0.858***	0.754***	0.754***	-0.582*	0.765***	0.754***	0.711***
	(0.147)	(0.0910)	(0.0921)	(0.0921)	(0.297)	(0.0939)	(0.0939)	(0.0851)
Size 50to249	1.708***	1.194***	1.036***	1.036***	-0.387	1.049***	1.037***	1.004***
	(0.154)	(0.182)	(0.175)	(0.175)	(0.300)	(0.174)	(0.173)	(0.180)
Size 250to499	2.065***	1.490***	1.317***	1.317***	-0.306	1.324***	1.307***	1.262***
	(0.199)	(0.178)	(0.170)	(0.170)	(0.270)	(0.171)	(0.170)	(0.170)
Size 500plus	2.457***	2.121***	1.723***	1.723***		1.724***	1.707***	1.694***
	(0.384)	(0.229)	(0.267)	(0.267)		(0.266)	(0.269)	(0.284)
Age 6to9		0.102***	0.102***	0.102***	0.126	0.101***	0.0997***	0.0957***
		(0.0212)	(0.0216)	(0.0216)	(0.0978)	(0.0213)	(0.0215)	(0.0203)
Age 10to19		0.121***	0.121***	0.121***	0.299***	0.118***	0.116***	0.119***
		(0.0218)	(0.0217)	(0.0217)	(0.0795)	(0.0211)	(0.0211)	(0.0233)
Age 20to29		0.0521	0.0572	0.0572	0.274**	0.0519	0.0510	0.0621
		(0.0431)	(0.0430)	(0.0430)	(0.127)	(0.0440)	(0.0442)	(0.0416)
Age 30plus		-0.0882	-0.137**	-0.137**	0.229	-0.147***	-0.149***	-0.115**
		(0.0619)	(0.0530)	(0.0530)	(0.160)	(0.0537)	(0.0534)	(0.0528)
Foreign			0.409***	0.409***	0.416***	0.415***	0.417***	0.432***
			(0.133)	(0.133)	(0.120)	(0.134)	(0.133)	(0.137)
Public			0.504***	0.504***	0.334*	0.513***	0.501***	0.531***
			(0.143)	(0.143)	(0.183)	(0.142)	(0.143)	(0.148)
Central				-0.472***				
				(0.0496)				
Coastal				-0.850***				
				(0.0470)				
Lake				-0.583***				
				(0.0498)				
Northern				-0.542***				
				(0.0494)				
Southern Highlands				-0.990***				
				(0.0525)				
Western				-1.056***				
				(0.0572)				
Exporter					0.301**			
					(0.118)			
Share of female employees						-0.175***		
						(0.0275)		
Majority of female employees							-0.172***	
							(0.0278)	
Share of skilled employees								-0.316***
								(0.0645)
Constant	7.744***	8.658***	8.426***	8.426***	9.125***	8.407***	8.417***	8.452***
	(0.122)	(0.190)	(0.218)	(0.218)	(0.393)	(0.217)	(0.216)	(0.223)
Observations	12,486	12,467	12,407	12,407	928	12,407	12,407	12,407
R-squared	0.148	0.296	0.291	0.291	0.241	0.292	0.293	0.299
Sector dummies	NO	YES	YES	YES	YES	YES	YES	YES
Location dummies	NO	YES	YES	NO	YES	YES	YES	YES
Year Dummies	NO	NO	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1