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## Africa's Got Work to Do: Employment Prospects in the New Century

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Alun Thomas*

## IMF Working Paper

African Department

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#### Abstract

Estimates of the current and future structure of employment in sub-Saharan Africa (2005–20) are obtained based on household survey estimates for 28 countries and an elasticity-type model that relates employment to economic growth and demographic outcomes. Agriculture still employs the majority of the labor force although workers are shifting slowly out of the sector. Sub-Saharan Africa's projected rapid labor force growth, combined with a low baseline level of private sector wage employment, means that even if sub-Saharan Africa realizes another decade of strong growth, the share of labor force employed in private firms is not expected to rise substantially. Governments need to undertake measures to attract private enterprises that provide wage employment, but they also need to focus on improving productivity in the traditional and informal sectors as these will continue to absorb the majority of the labor force.

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Contents	Page
Abstract.....	1
I. Introduction.....	3
II. Output and Demographic Transformation in Sub-Saharan Africa.....	5
III. The Baseline Projection: Methodology, Data, and Results.....	7
IV. Projecting Employment Forward: Methodology and Results for 2010.....	13
V. Where Will Sub-Saharan Africa Work in 2020?.....	18
VI. Concluding Thoughts.....	24
 Table	
Table 1. Sub-Saharan Africa: Country Groups.....	10
Table 2. Sub-Saharan Africa and High Growth Comparators: Employed Population 15–64, 2010.....	12
Table 3. Sub-Saharan Africa: Growth by Sector, Averages 2005–10.....	14
Table 4. Elasticity Parameters.....	15
Table 5. Selected Countries: Difference Between Predicted and Actual Employment Outcomes.....	18
Table 6. Sub-Saharan Africa: Growth by Sector.....	19
Table 7. Selected Countries: Industry Growth, Average 2000–10.....	21
Table 8. Sub-Saharan Africa: Industry Growth.....	22
 <b>Figures</b>	
Figure 1. Sub-Saharan Africa and Asia: Real GDP Growth.....	6
Figure 2. Sub-Saharan Africa Selected Regions: Development of Sectoral Output Shares.....	6
Figure 3. Sub-Saharan Africa: Population by Age Group, 2005–20.....	7
Figure 4. Sub-Saharan Africa: Baseline Distribution of Employment by Country Type and Sector, 2005.....	10
Figure 5. Sub-Saharan Africa: Share of Public Sector in Wage Employment, 2005.....	11
Figure 6. Sub-Saharan Africa: Estimated Distribution of Employment by Country Type and Sector, 2010.....	17
Figure 7. Sub-Saharan Africa: Gross Job Flows, 2005–10.....	17
Figure 8. Sub-Saharan Africa: Estimated Distribution of Employment by Country Type and Sector, 2020.....	19
Figure 9. Sub-Saharan Africa: Net New Jobs by Sector, 2020.....	20
Figure 10. Sub-Saharan Africa: Gross Job Flows, 2010–20.....	20
Figure 11. Sub-Saharan Africa: Changes in Wage Industry Jobs.....	22
Figure 12. Sub-Saharan Africa: Alternative Employment Distribution for 2020.....	23
Figure 13. Sub-Saharan Africa: Wage Jobs as Share of Future Labor Force.....	23
 Appendix.....	 26
 References.....	 37

## I. Introduction

Employment outcomes are among the most important variables used by economists to link the size and structure of economic growth to the welfare of households. This is because experience has shown that growth in output alone is not enough to improve the welfare of the population. It is widely agreed that transformation of the economy from a fundamentally agrarian, basically subsistence one to an urbanized, integrated, enterprise dominated one is the essence of economic development. Dating back to the initial analysis of Lewis, 1954, the progress of this transition has been measured in both output and employment space. Sub-Saharan Africa<sup>1</sup> (SSA) has just completed one of its best decades of growth. Transformation of output is occurring as agriculture, the lowest productivity sector, has declined as a share of GDP across the continent (despite increases in agricultural commodity prices which pushed up the share in current prices). The share of higher productivity sectors has increased as a share of GDP. Yet poverty rates have remained stubbornly high. Dissatisfaction with economic outcomes is widespread (Afrobarometer, 2013). Is this because employment has not transformed?

It is difficult to answer this question because employment data by country and sector of activity is scarce. A cursory review of employment data for low income sub-Saharan African countries in the International Labor Organization (ILO) Key Indicators of the Labor Market (KILM) data base shows that almost half of the countries have not published any data on the structure of employment between 2000 and 2010. Much of the data published is over five years old. In some countries, the data is not collected regularly, while in others, the data is not publically available. In many cases where the data is available, methodological problems result in data that is not comparable over time within countries or at one point in time between countries.<sup>2</sup> Little is known about the current structure of employment in sub-Saharan Africa or the trends in employment creation. This makes it hard to assess the prospects for employment creation in the future, despite the political, social and economic importance of the topic.

As part of background work for the IMF *Africa Regional Economic Outlook* (IMF, 2012) and the World Bank *Africa Regional Report on Youth Employment* (Filmer, Fox, and others, 2013) estimates of the current and future structure of employment in sub-Saharan Africa were produced. As much country data as possible was collected and, using a special methodology designed to produce comparable employment and unemployment estimates by country, baseline results for 2005 were produced. Next, an elasticity-type model was developed to estimate how the baseline might have changed between 2005–10 based on economic growth and demographic outcomes, as well as any employment data available for sub-Saharan African countries. Using country level economic and demographic forecasts for 2010–20, the model was used to forecast the expected number of new jobs which would be created over this period and the

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<sup>1</sup> The countries included as part of Sub-Saharan Africa are shown in Table 1.

<sup>2</sup> See Fox and Pimhidzai (2013) for an extended discussion of this problem and its causes.

resulting regional employment structure by country profile and employment type. Using moderately optimistic and very optimistic assumptions, it showed how the structure could be expected to change by 2020.

These results are the first regional estimates of the structure of employment after Africa's longest economic expansion in 50 years. They show that agriculture still employs the majority of the labor force, despite only accounting for about 13 percent of GDP in 2010. In part this is because the employment transformation always lags the output transformation (Timmer, 1988). But the shift is slower in sub-Saharan Africa because the demographic transition is also lagging, so the labor force is still large and growing rapidly—much faster than in low and lower-middle-income countries in Asia, for example. Disaggregating the regional trend by country type, it is shown that the type of growth affects the employment opportunities created. While the share of employment in agriculture has declined in both resource rich and non-resource rich low and middle income countries, in resource rich countries the private enterprise sector has not created much new employment. Resource rent income has instead created public sector wage jobs.

Sub-Saharan Africa's projected rapid labor force growth, combined with a low baseline private sector wage employment, means that even if sub-Saharan Africa realizes another decade of growth as good or even better than the past one, employment transformation will proceed slowly. Over the decade 2010–20, the absolute number of people employed in agriculture is expected to continue to grow, not shrink, even as the share employed outside the agricultural sector continues to rise. Equally important, because it is so small relative to the size of the labor force, even under an optimistic scenario, the share of labor force employed in private firms is not expected to rise substantially. These results have important implications for employment policies in these countries, as they show the importance of a balanced employment policy. Governments need to undertake the measures required to attract private enterprises that provide wage employment for lots of people, but they also need to focus on improving productivity in the traditional sectors as these will have to absorb the majority of the labor force. In particular, they should not discourage the household enterprise sector, despite its informality.

This paper is structured in six sections. The next section reviews the key trends driving the employment transformation in sub-Saharan Africa—the output and demographic transformations. Section 3 presents the data and methodology for the baseline employment distribution for 2005. Section 4 discusses the methodology for the projection, shows the estimate for 2010, and an assessment of the methodology. Section 5 presents the projected employment structure in the region for 2015 and 2020, and a sensitivity analysis. Section 6 offers some concluding thoughts.

## II. Output and Demographic Transformation in Sub-Saharan Africa

Since the mid 1990s, sub-Saharan Africa has had the longest continuous expansion in over 50 years. Economic growth averaged about 4 percent per annum among upper-middle income countries and about 6 percent per annum among low income sub-Saharan African countries. These growth rates surpass those of middle and low income Asia over this period (Figure 1). Moreover, during the recent financial crisis, the growth rate among lower income countries (LICs) in sub-Saharan Africa was broadly unaffected, in contrast to the sharp downturn among LICs in Asia.<sup>3</sup>

However, even though the growth rate among sub-Saharan African economies has been very strong, the output structure of the economies has changed only moderately, especially among LICs (Figure 2). The main sectoral output movements that have occurred over this period involve a reduction in the agriculture output share by about 8 percentage points combined with a corresponding rise in the share of services. At the same time the share of non-manufacturing industry has displaced some manufacturing production with the aggregate industry share remaining fairly flat and manufacturing only representing about 7 percent of output.

The economic structure has changed more swiftly among LICs in East Asia with the agricultural output ratio falling by 15 percentage points of GDP. Moreover, in contrast to the experience in SSA, the industrial sector has made a large contribution to the output transformation. The manufacturing output share has risen by 4 percentage points in low income East Asian countries and in the lower middle income countries, the manufacturing share continued to increase over the period. More importantly, in East Asian low-middle income (LMI) countries, by 2010 manufacturing output accounted for about twice the corresponding output of sub-Saharan Africa. The evolution of output shares in South Asia was closer to that of sub-Saharan Africa, especially in the LMI countries (where India dominates).

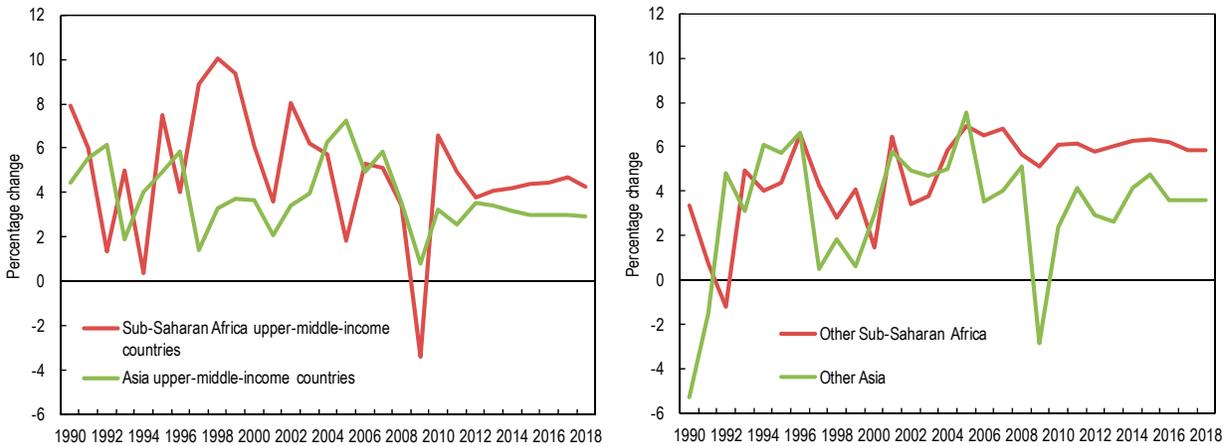
The low manufacturing output share is mirrored by the low share of manufacturing exports in total exports in sub-Saharan Africa. This assessment is based on 2-digit industry export data from Comtrade.<sup>4</sup> The share of manufacturing goods in the export basket of low and low middle income SSA countries is very low, between 10–20 percent on average over the past two decades. For East and South Asian countries the manufacturing export shares have historically been much higher, although the low income countries of South Asia took a sharp hit during the global financial crisis.

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<sup>3</sup> Countries are separated into groups according to the level of GDP per capita in 2012. The groups comprise upper-middle income, low-middle income and low income countries (see section II for more details).

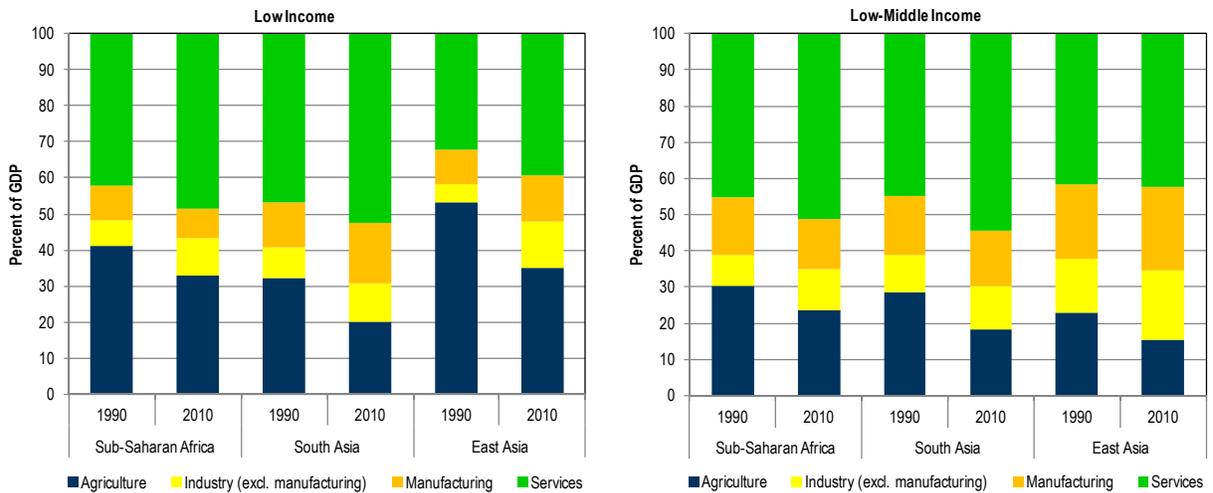
<sup>4</sup> Data is available at [comtrade.un.org/db](http://comtrade.un.org/db)

Figure 1. Sub-Saharan Africa and Asia: Real GDP Growth



Source: IMF, World Economic Outlook database.

Figure 2. Selected Regions: Development of Sectoral Output Shares



Source: World Bank, World Development Indicators.

Sub-Saharan Africa’s demographic trends are also different. The median person in Sub-Saharan Africa is 18 years old—7 years younger than the median age in South Asia, which is the next youngest region (Figure 3). These population trends suggest that the number of youth entering Africa’s working age population will be rising for years to come. Between 2005 and 2020, the working age population is projected to increase by over 200 million people—nearly 3 percent per annum. This trend is not expected to decline soon because a rapid, systematic reduction in fertility rates has yet to occur in Sub-Saharan Africa. In the 1970s, the fertility rate in Asia and Latin America was identical to the rate in Africa today, but Africa’s fertility rate is falling much more slowly than in those regions at that time.

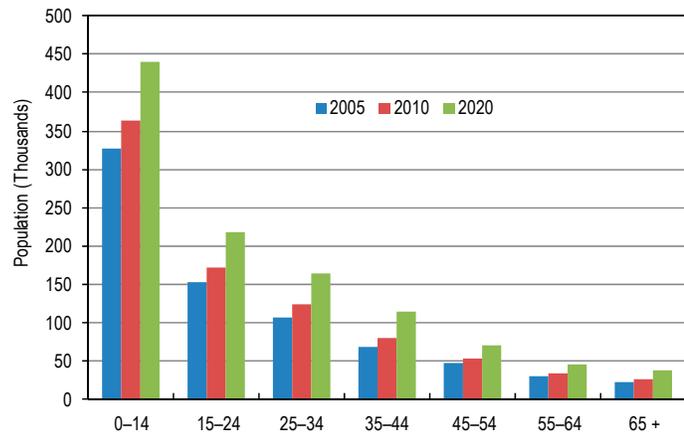
This lack of demographic transition complicates the employment transformation, because even with non-agricultural private sector enterprise growth as rapid and labor intensive as occurred in the last 20 years in East Asia, a similar employment transition could not occur. The enterprises would not be able to absorb the same share of the labor force because the labor force would just be too big.<sup>5</sup>

To summarize, although the growth experience has been very strong in many sub-Saharan African countries over the past decade and a half, the change in the structure of the economies has been concentrated in the service sector. There has been little, if no change in the output share of industry or in the export share of manufacturing products. At the same time, the population has been getting younger and the labor force has been growing rapidly, which poses challenges for the employment transition, as is reflected in the projections below.

### III. The Baseline Projection: Methodology, Data, and Results

The analysis began with the collection of unit record data from as many relevant household surveys conducted between 2000 and 2010 as possible in sub-Saharan Africa. To be used in the analysis, the survey needed to be nationally representative and collect data at the household level on individual member's labor force participation, employment status (employed or unemployed) and if employed, sector of activity (1-digit International Standard Industrial Classification of All Economic Activities (ISIC)) and type of employment. In a few cases where the unit record data was not available, special tabulations of these variables were made according to predetermined definitions of the variables (see below). A list of the surveys used by country is shown in Appendix table 1. Ultimately, survey data was collected from 28 of 47 countries in sub-Saharan Africa, covering 75 percent of the estimated 2010 labor force. The majority of the labor force was covered in each country group.

Figure 3. Sub-Saharan Africa: Population by Age Group, 2005–20



Source: United Nations, *World Population Prospects: The 2010 Revision*.

<sup>5</sup> This statement could be considered an oversimplification in that it ignores the endogeneity of labor force size and economic growth. But to the extent that labor in enterprises, especially manufacturing ones, requires capital and other complementary inputs to be productive, and these are not growing nearly as fast as the labor force, even a growth path which creates the same absolute output and number of jobs in private enterprises per capita in sub-Saharan Africa as in Asia will not show as rapid a transformation of the *structure* of employment.

Not only are micro data on the structure of employment in sub-Saharan Africa not collected regularly, the methodologies used to collect data differ substantially among countries. Additionally, the measurement of labor force or type of employment can vary depending on how the question is asked of the respondent. This is especially true in low income countries where labor force participation may be seasonal and the definition of employment subject to respondent or analyst interpretation. Thus, the data series reported by countries cannot be assumed comparable across countries in the region or even within countries over time, since many countries have not standardized their methodologies.<sup>6</sup> Aggregating these data for the region without substantial efforts at comparability could have produced trends which would be confusing at best. To avoid this problem, a standardization methodology was created.

The most problematic variable is labor force participation. Although the economic activities which constitute employment are defined in detail in the System of National Accounts (SNA), these definitions are not widely known, especially with respect to activities producing products which are not marketed (e.g. subsistence agriculture). As a result, the use of screening questions to establish whether the individual participated in these economic activities is critical to an accurate measurement of labor force participation (Fox and Pimhidzai, 2013). Owing to seasonality, especially in low income countries, the rate of labor force participation varies over the year, making it essential to use a 12-month recall on this item. Unfortunately, many questionnaires used for data collection in sub-Sahara Africa do not use these techniques.

To estimate comparable rates of labor force participation across the surveys, when the questionnaires for the country data sets did not use these methods, the procedure outlined in Fox and Pimhidzai, 2013, was followed. This involved using all of the information available within the survey on each individual, and declaring the individual a non-participant only if there was no evidence at all of any possible participation over the last twelve months. While this method can produce labor force participation rates higher than those published by the countries themselves, they do reflect the reality observed in low income countries – that few people can afford not to work, at least during the season—and which is recorded in surveys when well-designed questionnaires are used.

To ensure comparability, United Nations population estimates of the working age population (age 15–64) by country were used. The average labor force participation rate in each country was computed by income group based on the standardized data and this rate was applied to the working age population in each country to estimate the number of people in the labor force.<sup>7</sup>

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<sup>6</sup> See Fox and Pimhidzai (2013) for a discussion and some examples.

<sup>7</sup> The assumed group participation rates (LFPR) are LICs 89 percent, LMICs 86 percent and UMICs 65 percent and remain constant in the projections. This likely implies an overestimate of the labor force, as LFPR falls as income increases, in part owing to youth remaining longer in school. This overestimation of the labor force in countries transitioning to lower middle income status will result in an overestimation of the agricultural workforce.

Although a substantial fraction of the labor force reports more than one economic activity (employment) over a twelve month period, this analysis focuses only on primary employment in order to analyze trends in the distribution of employment over time and across countries in a comparable fashion.<sup>8</sup> The structure of employment can be analyzed across two main dimensions: (i) sector of activity, such as agriculture, industry or services, corresponding to the output categories above, and (ii) type of employment, such as wage employment, or non-wage employment (household farm or business). The notion of employment transformation implies both movement of labor out of the agriculture sector and out of non-wage employment. These two dimensions are collapsed into one for the purposes of this analysis, drawing on the fact that wage employment in agriculture as a full-time activity is quite low in sub-Saharan Africa. The employment categories are:

- *Agricultural employment*—predominantly farmers working on small holdings and consuming a significant share of their production, but including more commercialized farmers as well. Wage work in agriculture as a primary activity is included in this category as well as fishing and primary forestry (collecting wood and other forest products).
- *Household enterprise employment*—Household enterprises are unincorporated, nonfarm businesses owned by households. This category includes self-employed people running unincorporated businesses (which may or may not employ family or other workers) and family members working in those businesses.
- *Wage employment (industry or services)*—includes all labor force participants who report working outside the agricultural sector and receive a payment for their work from an unrelated individual. It includes the public and private sectors. This category is divided into the industry and service sectors as the relationship between output growth and employment is expected to be different. The former is more likely to be tradable, while the latter is more likely to be the public sector.

Finally, those labor force participants not in employment according to the broad definition are unemployed.

The country groups are divided according to whether they are resource rich and by their level of income per capita. The resource rich countries are those whose ratio of resource exports to total exports was above 80 percent between 2008–12. Botswana is an exception being categorized as an upper-middle income country because of its high unemployment level (Table 1). The non-resource rich countries are separated according to the level of per capita income in 2012 with

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<sup>8</sup> This may underestimate the employment transformation as farmers often move into the non-farm sector on a part time basis; see Fox and Pimhidzai (2011).

threshold levels at 4,036–12,475 U.S. dollars (upper-middle income), 1,026–4,035 U.S. dollars (lower middle-income), and 1,025 U.S. dollars and below (low-income).

**Table 1. Sub Saharan Africa: Country Groups**

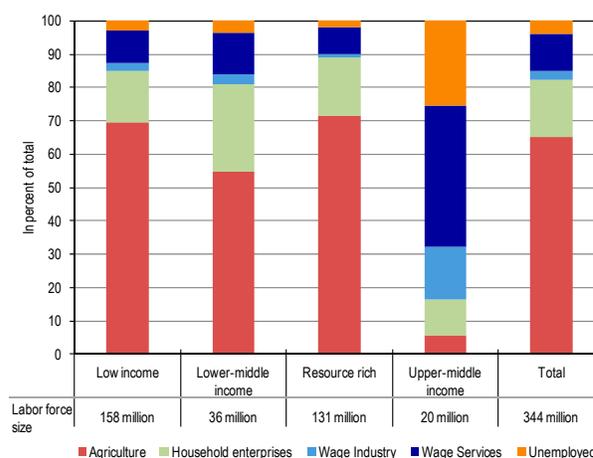
Resource Rich	Upper Middle-Income	Lower Middle-Income	Low-Income		
Angola	Botswana*	Cameroon*	Benin*	Guinea-Bissau	Rwanda*
Chad	Cape Verde*	Côte d'Ivoire*	Burkina Faso*	Kenya*	Sierra Leone*
Congo, Dem. Rep.*	Gabon*	Ghana*	Burundi*	Liberia*	Somalia
Congo, Rep.	Mauritius*	Lesotho	Central African Rep.	Madagascar	Tanzania*
Guinea	Namibia*	Mauritania	Comoros*	Malawi*	Togo*
Nigeria*	Seychelles	São Tomé and Príncipe*	Eritrea	Mali	Uganda*
Sudan	South Africa*	Senegal*	Ethiopia*	Mozambique*	Zimbabwe*
Zambia*	Equatorial Guinea	Swaziland	Gambia, The	Niger*	

Note: Sudan includes South Sudan due to data availability. \* signifies employment estimates based on actual household surveys.

The estimated 2005 labor force participants were allocated in country groups across the four categories of employment or into unemployment. For the countries with data, the distribution from the data set nearest to 2005 (or a linear interpolation if were available two data points with one before 2005 and one after) was used. For countries without data, the average distribution for the country group was computed and applied to the calculated country specific labor force. (The countries where this estimation method was used to compute the baseline distribution are labeled “projected” in Appendix table 1). The results of this estimation by country are shown in Appendix table 2, and Figure 4 below.

The majority of Africans still work in agriculture according to the baseline profile of employment in sub-Saharan Africa for 2005. This is not too surprising as almost half of employment in 2005 was in low income countries, where the share of agriculture in GDP was also higher. It is well known that the transformation in employment by sector always lags the transformation in output (more capital per worker is needed to employ people in more productive jobs).<sup>9</sup> Only in upper-middle income countries has employment in agriculture almost disappeared.

**Figure 4: Sub-Saharan Africa: Baseline Distribution of Employment by Country Type and Sector, 2005**



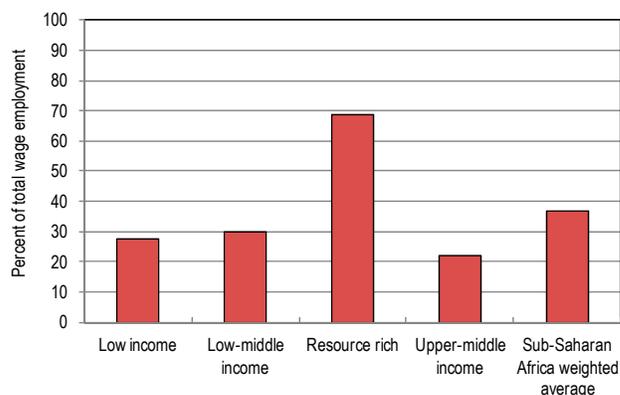
Sources: Country household surveys; IMF, African department database; and authors' calculations.

<sup>9</sup> One well known demonstration of this point is found in Timmer (1988).

The next largest category of employment is household enterprises. This is primarily self employment, but not exclusively, as in low and lower-middle income countries, a significant minority of household enterprise owners involve family members or a casual wage employee in their business.<sup>10</sup> Taken together, the analysis shows that 86 percent of employment in 2005 was in household farms and firms – a segment commonly termed “the informal sector”. To the extent that the employment transition consists of moving labor to the wage sector, by 2005 most countries in sub-Saharan Africa had not made much progress here.

Mirroring the output shift, the majority of wage employment was in the services sector in 2005. This category includes both “formal” wage employment (where the employee has a contract and may be entitled to social protection), and “informal” or casual wage employment. These two types of wage employment are grouped together because most of the data sets used do not allow a consistent disaggregation of wage employment to this level.<sup>11</sup> This also includes the public and private sector. Public sector employment primarily presents in the services sector. For the baseline, a disaggregation of wage employment between the public and private sectors was attempted (Figure 5). This shows that in non-resource rich countries, the dominance of the public sector in wage employment common in the 1960s and 1970s was reversed. The private sector created most of the wage jobs found in SSA in 2005. This reversal—including the shedding of many public sector jobs in the 1990s—helps explain the low share of wage employment in the economy in 2005. Despite the fact that wage employment grew faster than GDP in many countries since the mid 1990s, it started from such a low base that it was hard to catch up to the other sectors, given the rapid growth of the labor force (Fox and Sohnesen, 2012; Fox and Gaal, 2008). In resource rich countries there has not been a reversal. Growth was dominated by commodity exports, and the state distributed part of the resource rents in the form of public sector jobs. The incentives for the private sector to create employment remained weak, so the public sector still provided the majority of the wage employment in these countries.

**Figure 5. Sub-Saharan Africa: Share of Public Sector in Wage Employment, 2005**



Source: Country household surveys; and authors' calculations.

<sup>10</sup> See Fox and Sohnesen, (2012) for an analysis of this sector in Sub-Saharan Africa. Note that the paid non-family employee will be included in the category of wage employment.

<sup>11</sup> See ILO (1993) for accepted definitions of formal and informal employment.

For low-income countries, the share of employment in agriculture is not unusually high in sub-Saharan Africa. Vietnam and Laos, countries with a per capita income just above US\$ 1,000, still have 50 percent or more of their labor force in agriculture, about the average for lower-middle income countries in Africa. Agricultural productivity is higher in these East Asian countries, which has helped to reduce rural poverty to well below sub-Saharan African levels. In sub-Saharan Africa, the same share of the labor force in agriculture produces a higher poverty rate than in Asia because of the persistently low growth in agricultural productivity (IMF, 2012). The household enterprises sector is also large in all lower income countries, especially in Bangladesh, the poorest of the comparator countries.

The low share of the labor force working in *private industry* is what makes the employment structure so different in low and lower-middle income countries of Africa compared to the rapidly growing countries of Asia or Latin America (Table 2). All the comparator countries except Mongolia and Laos have a larger share of employment in industrial wage jobs, because they have a high number of manufacturing jobs. Clearly the importance of mineral rents in raising the per capita incomes of sub-Saharan African lower-middle income countries contributes to this discrepancy. As noted above, resource rich countries in sub-Saharan Africa have not created much private wage employment at all. Mongolia and Laos, mineral exporters in East Asia, have economic structures more similar to sub-Saharan African countries. Resource extraction does not create many jobs, and high resource rents can create an economic structure unfriendly to private sector labor intensive industry (Gelb, 2012). But even here, Africa's high mineral-exporting countries stand out, as they have even less wage employment in industry than Laos or Mongolia. Resources are not destiny, however, as Bolivia's successful performance in export-oriented manufacturing shows.

**Table 2. Sub-Saharan Africa and High Growth Comparators: Employed Population 15-64, 2010**  
(Percent)

Income level	Region/Country	Wage			Household enterprises	Agriculture	Total
		All	Industry	Services			
Low income	Sub-Saharan Africa	13.3	2.6	10.7	18.2	68.5	100.0
	Lao	13.5	5.4	8.1	19.0	67.5	100.0
	Bangladesh	25.7	10.8	14.9	27.7	46.6	100.0
	Cambodia	23.3	11.1	12.2	21.0	55.7	100.0
Low-middle income	Sub-Saharan Africa	13.4	1.8	11.6	29.1	57.5	100.0
	Vietnam	31.8	14.3	17.5	19.1	49.1	100.0
	Nicaragua	43.9	13.3	30.6	22.9	33.2	100.0
	Philippines	48.7	12.6	36.1	19.5	31.8	100.0
	Bolivia	43.0	12.6	30.4	28.1	28.9	100.0
	Mongolia	39.3	5.9	33.4	16.0	44.7	100.0

Source: Authors' calculations. See Appendix Table 1 for details on country data sources.

Contrary to popular perceptions, real unemployment in low-income Africa is only 3 percent; even in middle-income countries outside of Southern Africa, unemployment is not high.<sup>12</sup> This finding may seem counterintuitive, given the widespread concerns about “unemployed youth”. The reason for the low unemployment rate in Africa is simple: most working age people in SSA cannot afford to be unemployed. Many families cannot fully support a recent graduate while he or she looks for a job, and many youth did not graduate from secondary school, so would not qualify for a formal job anyway (Fox and Sohnesen, 2012). That the unemployment rate is highest among university graduates—who mostly come from the top end of the income distribution—is no coincidence. Only in upper-middle income countries, with broader safety nets, does substantial unemployment persist, including among youth. In the data shown here, South Africa accounted for over 80 percent of the labor force in upper middle income countries. The very high unemployment there pushed the estimate up in this country group.

The estimates show that by 2005, the employment transformation in sub-Saharan Africa was moving sluggishly, especially in lower middle income countries. The majority of Africa’s labor force still worked in its least productive sector—agriculture—which had yet to experience the substantial productivity growth seen in rapidly growing economies outside Africa. Africa still faced the dual challenge of increasing productivity in agriculture and diversifying employment in the non-agricultural sector.

#### **IV. Projecting Employment Forward: Methodology and Results for 2010**

Using the 2005 employment distribution as the starting point, employment is projected forward in 5-year increments. For the few countries where actual data on the structure of employment for 2010 was available, the estimation process described above to estimate the employment structure in 2010 was used. For the rest, the employment was projected forward from the latest data point available or the 2005 estimate, using the labor force projections as above and a simple elasticity model of the relationship between changes in output and changes in employment.

The employment elasticity of growth is a simple measure which expresses the responsiveness of employment to output growth.<sup>13</sup> In this case, the relationship is analyzed by sector. The relationship is expressed as follows:

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<sup>12</sup> The analysis uses the ILO definition of unemployment. To be unemployed, an individual cannot have worked even one hour, even in the household garden, in the last seven days and job search in the last month is also required. See ILO (1982).

<sup>13</sup> This parameter has been estimated for the economy as a whole by a number of authors, both for specific countries and for groups of countries. A recent example is E. Crivelli; D. Furceri; and J. Toujas-Bernaté (2012). Estimates by sector and demographic group for a number of countries using data from 1991–2003 can be found in Kapsos (2005)

$$dln(Eit) = \alpha dln(GDPt)$$

where  $Eit$  is the volume of employment by sector (wage or non-wage) at time  $t$ ,  $GDP$  is the sectoral output value at time  $t$  and  $\alpha$  is the sectoral employment elasticity, for a given country. The parameter  $\alpha$  can be estimated by country directly from actual historical data, year on year. However, studies have shown this estimate to be unreliable owing to a higher volatility in annual output growth rates than in employment growth (Kapsos, 2005). It is preferable to either use a longer period to estimate elasticities or a regression panel technique to account for employment persistence. Once  $\alpha$  is identified at the country level, a future employment change can be projected for a given change in output.

Using such a relationship to estimate employment structure involves a strong assumption, which is that the underlying relationships between the structural parameters which jointly determine employment and output in a given sector stay constant over time. This means, for example, that at both high and low levels of sectoral growth, the employment elasticity would be the same. Given the well know stickiness of employment levels, especially as countries come out of a recession, this assumption can be problematic, especially for estimates over short periods. The model also assumes that a long period of high or low sectoral growth will not affect the elasticity. To the extent that the period of high output growth is caused by, for example, technological change, it is unreasonable to expect the employment elasticities to remain constant. However, in the absence of any actual data on the structure of employment for most countries in 2010, using sectoral elasticities and actual sectoral output growth rates to estimate changes in employment structure by country over a maximum of five years can provide a useful estimate of the starting point as countries formulate their employment strategies over the next decade. As shown in the robustness check below, this modeling technique does not perform badly in terms of the size and direction of the error term.

The starting points for the 2010 projections are the actual output growth rates by sector. These were obtained from the IMF database for sub-Saharan Africa.<sup>14</sup> Table 3 shows five year average sectoral growth rates according to country group over the 2005–10 periods. The output growth figures show a pattern of strong historical growth among resource rich and low income countries with both regions having recorded growth above 6 percent per annum over the 2005–10 periods. There are considerable differences in the sectoral composition of the growth patterns with

**Table 3. Sub-Saharan Africa: Average Annual Growth by Sector, Average 2005–10**  
(Percent)

	Real GDP	Agriculture	Industry	Services
Resource Rich	6.8	7.5	3.1	11.9
Upper-middle income <sup>1</sup>	3.0	1.5	1.5	4.8
Lower-middle income	4.4	4.1	4.9	4.5
Low income	6.5	4.8	6.6	7.7
South Africa	3.6	2.5	2.3	4.1

Source: IMF, African Department database.

<sup>1</sup>Excludes South Africa

<sup>14</sup> See Sub-Saharan Africa *Regional Economic Outlook*, April 2013 for the latest published estimates of aggregate growth, the sectoral estimates are not published.

service sector growth extremely strong among the resource rich countries, consistent with the view that a lot of the resource rents in these countries are channeled into demand for services. Service growth was lower among LICs over the 2005–10 period but was still the sector that grew the fastest at almost 8 percent per annum. The growth rates over the 2005–10 period for upper-middle income countries and South Africa were relatively subdued at 3–3½ percent per annum, partly related to the adverse effects of the global financial crisis that impacted middle income countries in sub-Saharan Africa much more than LICs.

To convert sectoral output growth rates by country into employment projections, an estimate of the employment elasticity by sector is needed. As very few countries had even two available recent data points for employment, country-specific elasticity parameters were not estimated. Instead, sectoral employment elasticities were chosen by triangulation, based on a combination of (i) calculations of long period elasticities for countries with two or more years of data since 2000, (ii) similar calculations made for a few East and South Asian economies with long periods of data, and (iii) estimates from Kapsos, (2005), a previous study on the same topic using older data.<sup>15</sup> The selected elasticity parameters based on country groups (employment weighted) are shown in table 4.

**Table 4. Elasticity Parameters**

<i>Elasticity parameters</i>					
	<i>Low income</i>	<i>Lower-middle Income</i>	<i>Resource rich</i>	<i>Upper middle Income (excluding South Africa)</i>	<i>South Africa</i>
Agriculture <sup>1</sup>				-0.8	-1.0
Wage industry	0.9	0.8	0.6	0.6	0.5
Nonwage industry <sup>3</sup>	0.7	0.6	0.7	0.3	0.3
Wage services	0.8	0.8	0.8	0.7	0.5
Nonwage services <sup>3</sup>	0.8	0.9	0.7	0.6	0.5
<i>Comparators</i>					
	<i>Asia 1990–2010</i>		<i>ILO, SSA, 1990–2003<sup>2</sup></i>		
	<i>Viet Nam, Cambodia, Bangladesh</i>	<i>Indonesia, Philippines</i>	<i>Low and lower- middle income</i>	<i>Upper middle Income</i>	
Agriculture	0.3	0.3	0.7	0.1	
Wage industry	1.2	0.4	0.6	0.8	
Nonwage industry	1.1	0.4	0.6	0.8	
Wage services	0.7	0.7	0.8	0.7	
Nonwage services	0.7	0.7	0.8	0.7	

<sup>1</sup> Agricultural employment closes the model for low-middle income, low-income and resource-rich countries.

<sup>2</sup> Data estimated over 1991–2003 from Kapsos (2005).

<sup>3</sup> Household enterprises includes nonwage industry and nonwage services.

<sup>15</sup> Regression analysis was also used to test the elasticity estimates and they showed a pattern of rising elasticities across wage/nonwage industry and wage/nonwage services except for resource rich countries that had a very high elasticity for wage services, associated with high public sector employment.

In general, the elasticity parameters chosen for the LICs are close to those previously estimated by the ILO for a similar group of countries except for industry elasticity estimates that are slightly higher. This reflects a more bullish view on the prospects for employment creation in manufacturing and construction in these countries compared with the 1990s, which was born out by the few country-specific results estimated. On the other hand, the industry elasticities are considerably lower than the elasticities estimated for the low income Asian economies (Bangladesh, Cambodia and Vietnam). Middle income countries in sub-Saharan Africa have experienced declines in agricultural employment over the past decade.

To proxy this development the agriculture elasticity for this group is negative and almost unity and considerably below the elasticities estimated previously for sub-Saharan Africa middle income countries and below comparator Asian country values (Indonesia, Philippines).<sup>16</sup> For industry, the elasticities in middle income countries are between those of the previous ILO study and the comparator Asian countries, while for services, they are very similar to the other estimates. Finally, South Africa has its own estimates which are generally slightly lower than other upper middle income countries given its weak employment performance over the past decade.

The final step was to specify rules for model closure. In high income countries, the lack of employment creation results in unemployment and/or a decline in labor force participation. Excess employment creation results in higher wages, inducing higher labor force participation and at the same time, choking off demand for labor. In the model, labor force participation is assumed constant, so this adjustment mechanism is not available. Yet unemployment is rare in low and lower middle income countries, so this factor cannot be the adjustment mechanism. The agricultural sector is the employer of last resort that closes the model, so that no elasticities are required for agricultural employment among low, lower-middle and resource rich economies. Slow growth in output in non-agricultural sectors in a country leaves labor stuck in agriculture, regardless of output or productivity growth in the agricultural sector and unemployment is assumed to be a constant share of the labor force. In contrast, the unemployment level is allowed to vary and close the model among upper income countries.

The employment estimate by country group (using the elasticity model to fill in the years between the most recent estimate and 2010) is shown in Figure 6. The individual country estimates for 2010 are shown in table A2.

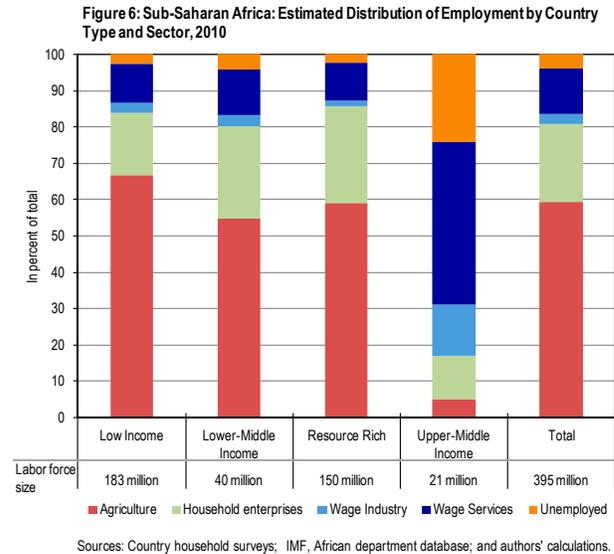
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<sup>16</sup> Indonesia and Philippines are used as comparator countries because their demographic structure is similar to middle income countries in sub-Saharan Africa even though they are classified in the lower-middle income category by the World Bank.

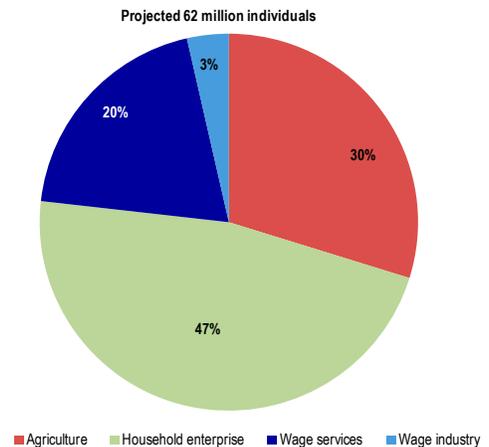
Although the employed population is estimated to have increased by about 50 million over the five year period (62 million entered and but 13 million left), the structure of employment remained roughly the same (Figure 7). This indicates how difficult the employment transformation will be in SSA. Although the overall picture did not change substantially, there is indication of one type of employment transformation. Assuming no one changed jobs<sup>17</sup> and the new entrants took the jobs left by those who exited the labor force due to age, *70 percent of the entrants found jobs in the nonfarm sector*. This suggests that at least some type of employment transformation is underway. The problem is that most of the entrants had to make their own jobs, as no one hired them. Less than one out of four entrants got a wage job, and only 3 percent got an industrial wage job. Thus, the transformation into wage jobs is proceeding more slowly.

These results depend heavily on the elasticity parameters. To evaluate the robustness of the elasticity parameters, the model was tested by comparing employment projections for 2010 based on actual output growth rates and the elasticity parameters with actual employment data from household survey tabulations. Four countries are included in the exercise; three of which had unit record data from a household sample survey (Nigeria, Rwanda, Uganda) and the other had conducted a population census in 2010 and provided tabulations (Ghana). The analysis involved comparing the actual 2010 employment outcome with the projections based on actual household survey data for 2004/05 and projecting forward to 2010 based on the sectoral employment elasticities and growth rates. The results are shown in Table 5.

<sup>17</sup> The assumption that no one changed sectors is not so implausible, as analysis suggests that mobility between broad employment sectors is still low, and few people actually change sector of primary employment once they settle into their job. But cross section analysis does not track people, so there could be some churning which is hidden. See Bossuroy and Cogneau, (2008).



**Figure 7. Sub-Saharan Africa: Gross Job Flows, 2005–10**  
(Percent of new entrant individuals)



**Table 5. Selected Countries: Difference Between Predicted and Actual Employment Outcomes**

*(Percent of outcome)*

	Ghana	Nigeria	Rwanda	Uganda	Average error
Agriculture	0.04	0.28	-0.02	-0.06	0.06
Household enterprises	0.00	-0.43	0.17	0.22	-0.01
Wage industry	0.24	-0.64	0.10	-0.11	-0.10
Wage services	-0.13	0.02	0.06	0.06	0.00

Source: Authors' calculations.

The robustness check suggests that the elasticity parameters perform reasonably well for the period 2005–10. There is no obvious bias in the estimates because the average errors across the sectoral categories are small with the largest error for wage industry. Moreover, the errors are not consistently of one sign, either over-predicting or under-predicting the employment outcome. The largest errors occur for Nigeria with the model over-predicting the size of the agricultural sector in 2010 by 28 percent and under predicting wage employment by 64 percent<sup>18</sup>.

## V. Where Will Sub-Saharan Africa Work in 2020?

To project the employment profile for the region through 2020, IMF sectoral projections are used. These projections currently run through 2018 and for the purposes of this paper they are assumed to remain constant in 2019–20. The output growth figures show a pattern of continued strong growth among resource rich and low income countries, with both regions projected to maintain their recent growth patterns of above 6 percent per annum growth (Table 6). While service sector growth remains extremely strong among the resource rich countries, the projected growth rates decline over time associated with fairly flat resource price projections. Industry remains the driver of growth among LICs even controlling for the sharp increase in industry growth among some countries based on natural resource extraction (Ghana, Liberia).

<sup>18</sup> One explanation could be the sample weights for the Nigeria 2004/5 survey undercount the population according to UN estimates by about 10 percent, while the weights for the 2011 survey replicate the UN population estimate. Thus, there could be an unestimated sampling error included in the 2004 numbers so that the implied levels of employment in agriculture are substantially below the likely actual outcomes.

**Table 6. Sub-Saharan Africa: Average Annual Growth by Sector**  
(Percent)

	Average 2010–15				Average 2015–20			
	Real GDP	Agriculture	Industry	Services	Real GDP	Agriculture	Industry	Services
Resource Rich	6.8	6.5	4.6	9.5	6.4	6.4	3.7	8.5
Upper-middle income <sup>1</sup>	4.6	3.2	4.7	5.1	4.5	4.7	4.1	4.9
Lower-middle income	5.5	4.1	9.9	4.0	5.9	4.7	6.9	5.8
Low income	6.2	5.0	7.9	6.2	6.4	5.8	7.3	6.2
South Africa	3.1	2.1	2.2	3.5	3.2	3.2	1.3	3.8

Source: IMF, African Department database.

<sup>1</sup>Excludes South Africa

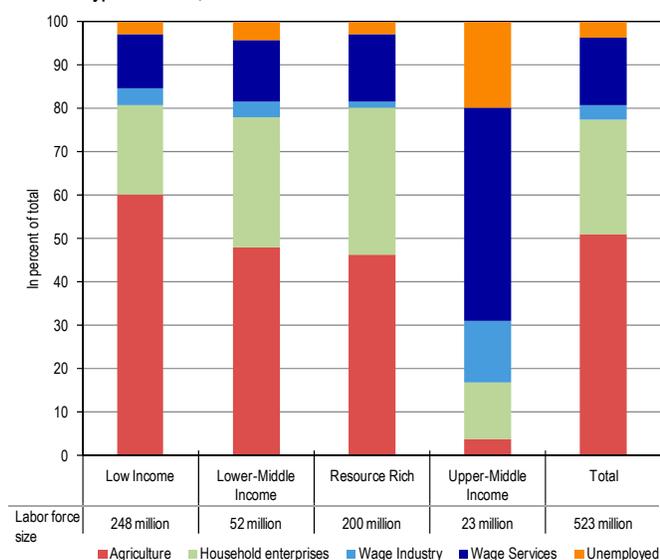
For upper middle income countries except South Africa, growth is projected to increase to 4½ percent per annum. Botswana is a driver of this growth rate, and is propelled by electricity delivery from a new power plant. South Africa's growth rate remains more subdued at slightly above 3 percent per annum with weak industry growth but strong growth in services.

Translating these growth figures into employment reveals that agriculture remains the dominant employer among the low income and resource rich countries. It remains about 60 percent of the total labor force in low income countries (Figure 8). Moreover, even though its share falls quite fast among the resource rich countries over the next decade, it still ends up at about 46 percent of the total in 2020. Among LICs, even though the industry growth rate is promising over the next decade at about 7 percent per annum, this healthy growth rate makes little inroads into the share of industry employment which remains at less than 3 percent.

A major factor in the slow moving employment distribution is the very high growth rate of the labor force in the region. This high growth rate requires a lot of capital and technology to shift the structure of employment into higher productivity areas. This is also evident in the slow speed of structural transformation in the region (*Sub-Saharan Regional Economic Outlook*, October 2013). Even though labor is moving out of agriculture in many sub-Saharan African countries, convergence in sectoral productivities is very slow.

The sector that is growing fastest among LICs is household enterprises with the

**Figure 8. Sub-Saharan Africa: Estimated Distribution of Employment by Country Type and Sector, 2020**



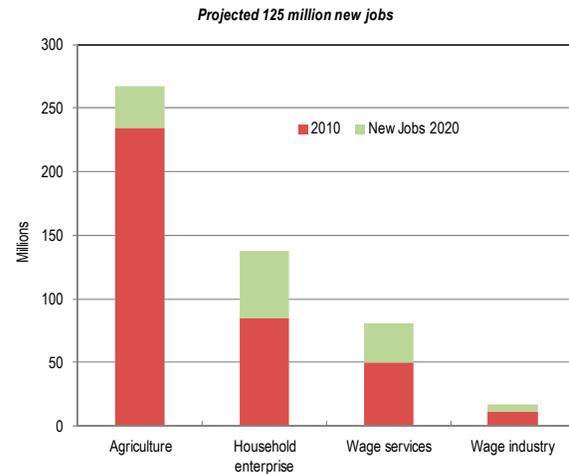
Sources: Country household surveys; IMF, African department database; and authors' calculations.

share projected to rise by 4 percentage points to 22 percent of employment. While this could be a concern in terms of job quality, Fox and Sohnesen, 2012, have shown that the level of consumption per capita in households where the main breadwinner is in household enterprises is equal to or higher than for wage earners, controlling for the level of education and the demographics of the household. They recommend that much greater policy attention should be placed on this sector because it is here to stay.

For the upper-middle income countries, wage earners in services experience the most rapid increase in the share of employment, reflecting a transition to a post-industrial services economy. The share grows by 5 percentage points over the decade to about 50 percent of the total by 2020. This ratio compares with 15 percent for lower-middle income countries and 12 percent for low income countries. Optimistic growth rates in the middle income countries result in a projected slight decline in the unemployment rate over the decade to just below 20 percent of the workforce.

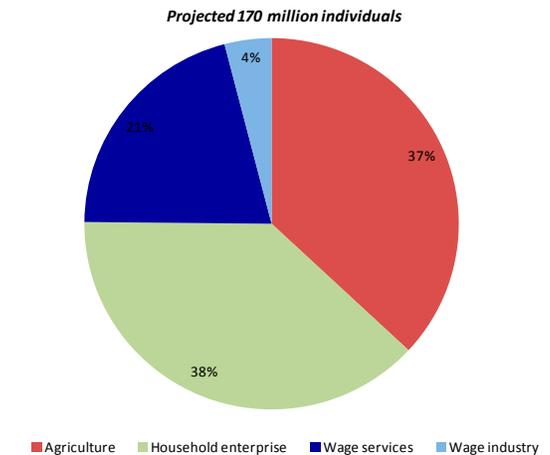
Focusing on the opportunities for the new entrants, over the course of the 2010–20 period, 45 million people will leave the labor force as they will have aged beyond the normal working age of 64 years old. They will be replaced by new entrants.<sup>19</sup> In addition, it is projected that an additional 125 million net new jobs will be created over this period for the increasing labor force (Figure 9). This means that a total of 170 million individuals will enter the labor force and find jobs over the period. Figure 10 shows where these new entrants will be employed in the projection. Once again, the majority of new jobs are projected to be outside the agricultural sector. However, the absolute size of regional employment in agriculture

Figure 9. Sub-Saharan Africa: Net New Jobs By Sector, 2020



Source: Authors' calculations.

Figure 10. Sub-Saharan Africa: Gross Job Flows, 2010–20  
(Percent of new entrant individuals)



Source: Authors' calculations.

<sup>19</sup> Some may not actually leave the labor force, but they are not included in the projected employment because they are beyond the age range used for the labor force.

is still expected to increase, and nearly 40 percent of the new entrants will have to find employment in this sector. This result underscores the importance of the agricultural sector for future employment prospects and country strategies.

In terms of the distribution of the net new jobs, almost half will be created in the household enterprise sector with the rest of the jobs divided fairly equally between wage and agriculture jobs.

How do these estimates compare with others in the literature? McKinsey did a recent study on a similar issue and argued that about 122 million new jobs would be created over the next 10 years, but that almost half of these would be wage paying jobs (Fine and others, 2012). This is a considerably more optimistic assessment than provided in this paper given that only 30 million new wage jobs over the decade are projected. The main difference in results is that this paper uses sub-Saharan Africa specific data and projections to forecast the employment profile, while McKinsey uses fast growing developing and emerging market countries in other continents to project the employment profile.<sup>20</sup> This method clearly imparts an upward bias to the results.

As noted above, the elasticity model used here in essence assumes “business as usual”—that the fundamental parameters determining demand for wage labor in the nonagricultural sectors remain stable. Yet analyses such as McKinsey, 2012, and Lin and Monga, 2011, suggest that these fundamental parameters can be changed, bringing about a faster shift towards wage employment in low and lower-middle income countries. As growth in the public sector is limited by resource constraints (at least in non-resource exporting countries), these jobs will have to be created by the private sector, through attracting more investment in labor intensive production. If the claims of Lin and Monga, 2011, and Dinh et others, 2012, are correct—that with modest improvements in policies, sub-Saharan African countries could experience a large jump in manufacturing output for export—how would this change the scenario projected above? What might be the employment prospects for sub-Saharan Africa’s youth in these countries in 2015–20 if indeed the game changed i.e. just as other East Asian countries picked up manufacturing industries and jobs from Japan and South Korea in the 1980s and 1990s, sub-Saharan Africa would pick up these industries and jobs from East Asia from 2015 forward.

Asian countries have shown a tremendous increase in manufacturing employment over the past two decades, reflecting both very strong growth in industrial output and a high employment intensity of industry output (Table 7). In particular, the estimated employment elasticity of output growth in the industrial sector was over 1—implying that

**Table 7. Selected Countries:  
Industry Growth, Average 2000–10  
(Percent)**

Bangladesh	7.4
Cambodia	12.3
Philippines	4.4
Vietnam	9.3
<b>Total</b>	<b>6.8</b>

Source: CEIC Asia database.

<sup>20</sup> The countries used by McKinsey are Egypt, Indonesia, Malaysia, Mexico, Pakistan, Philippines, South Korea, Thailand, and Turkey.

employment grew faster than output and thus average labor productivity in the industrial sector fell. In other words, the new industries that came in had a lower capital intensity than the existing stock (including the ones that left).

This development could have been partly the result of privatization policies which killed off a more capital intensive public sector, or simply reflected new investment that went into lower skill, higher labor intensive industries (e.g. the garment industry in Bangladesh). Policies in sub-Saharan Africa which stimulated a high growth rate of investment in manufacturing combined with higher labor intensity would indeed represent a new trend in the economic development of sub-Saharan Africa—a changed game.

To test the possible implications for the employment transformation in sub-Saharan Africa of such a “game change”, this recent Asian experience in low income and lower-middle income countries is simulated.<sup>21</sup> In this simulation, the wage employment elasticity is raised to 1.2 to match the historical wage employment elasticity estimated for Bangladesh, Cambodia and Vietnam. The industrial growth projection for low income and lower-middle income countries is also revised upward to 10 percent per annum over the 2015–20 period (Table 8). This figure is slightly above the median and average industry growth rate experienced by Bangladesh, Cambodia, and Vietnam over the most recent decade (9.3 percent per annum).

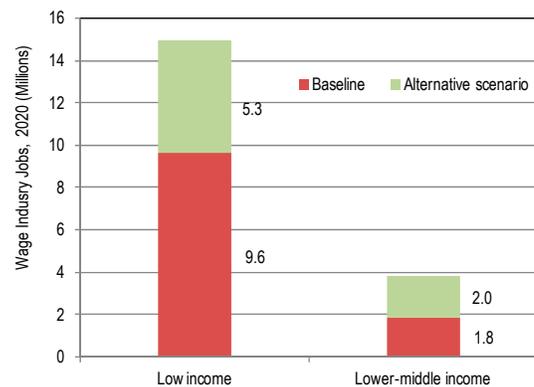
**Table 8. Sub-Saharan Africa: Industry Growth**  
(Percent)

	Average 2015–20	Alternative scenario
Lower-middle income	6.9	10.0
Low income	7.3	10.0

Source: IMF, African Department database.

Converting this scenario into the number of net new wage jobs created would yield an additional 7 million wage jobs- 5 million among low income countries and two million among lower-middle income countries (Figure 11). While this increase in wage employment is quite impressive, it would still leave the total at about 40 million, considerably below the 54 million estimated by McKinsey based on the emerging market data. It means that about 4 percent more new entrants are able to become employed in this sector. Moreover, it would have

**Figure 11. Sub-Saharan Africa: Changes in Wage Industry Jobs**



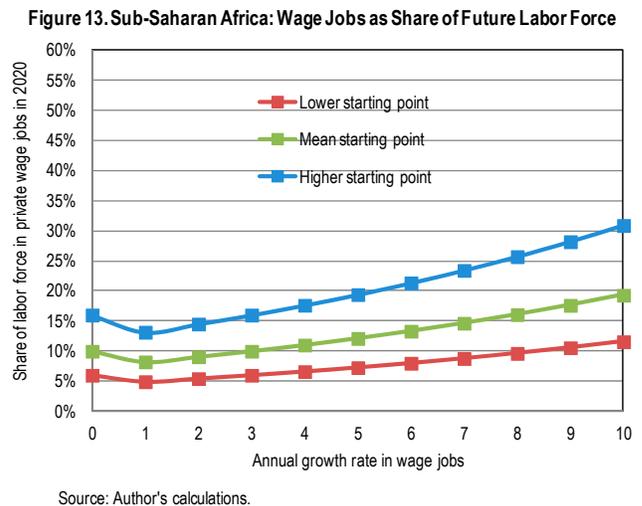
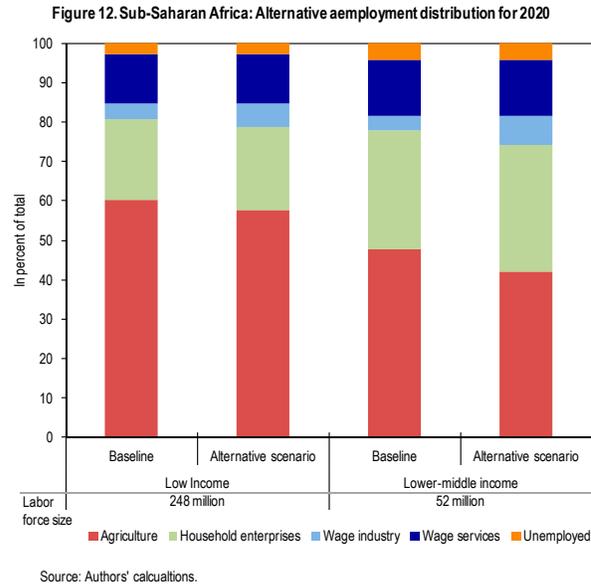
Source: Authors' calculations.

<sup>21</sup> The resource rich countries in were not included in this simulation, as even in East Asia the resource rich countries did not achieve the type of employment transformation simulated here.

little effect on the employment distribution which would remain dominated by agriculture and household enterprises (Figure 12).

The reason the effect by 2020 is small is easy to see (Figure 13). This simulation uses the average rate of growth of the labor force over the period 2010–20 in low and lower middle income sub-Saharan African countries (2.8 percent per annum), and shows what type of change in employment structure is possible given initial conditions. Even with a growth rate of industrial wage jobs of 10 percent per annum for 10 years (or an even higher growth rate for 5 years, as implied by the “game changer scenario”), countries which start with less than 5 percent of employment in this sector can only hope to double the share over 10 years. Once a country gets up to the 15 percent threshold, much more rapid progress is possible. But with sub-Saharan Africa demographics, getting up to this 15 percent threshold will take some time. The fertility rate in Vietnam in 1990 was 3.6, and in Bangladesh today it is 2.2, both well below the average in sub-Saharan Africa today of 4.9. This implies that even with the best policies, employment transformation will come more slowly to sub-Saharan Africa than it did in Asia. These initial conditions mean that it is simply harder to reverse the trend in sub-Saharan Africa.

Of course, the results above ignore the general equilibrium effects of higher industrial wage employment creation. For example, higher incomes in households which did not previously have wage earners could stimulate demand for the goods and services produced by household enterprises, raising employment in this sector. Or, these higher earnings could be plowed back into productivity-increasing investments in agriculture, which could also raise demand for goods produced in other sectors. When these general equilibrium effects are considered, the change in employment structure might be more rapid. Certainly the effect on poverty could be higher than the initial employment effect suggests.



It is beyond the scope of this paper to evaluate exactly which policy changes would be required to achieve the “game changer” scenario. Obviously, the changes required are context specific. They include changes in both the business environment facing manufacturing firms and the human capital of the new entrants. But one outcome is clear: in order to have the falling average labor productivity implied by the high elasticity scenario, average industrial wages also have to fall. This does not necessarily mean lower average earnings in the economy if the marginal employment comes from workers shifting from even lower productivity sectors into industrial wage jobs. However, achieving a fall in average real wages will not be easy, given the high cost of living in SSA urban areas. As Gelb and others, 2013, show, sub-Saharan Africa’s cost disadvantage is especially high in low income countries. This puts a floor under wages in the manufacturing sector, and pushes up other costs as well, requiring higher, not lower, labor productivity. This is yet another reason why the East Asia ‘game changer’ scenario has to be considered an upward bound.

## **VI. Concluding Thoughts**

Over the past decade, the structure of output and employment growth in sub-Saharan African countries was different from other countries at the same level of income. Although growth was not jobless, the transformation of employment out of the household sphere into the modern enterprise sphere has been slower than many had expected. In part, this is because commodity exports, including agricultural products, and overseas transfers of aid and remittances, still drive growth. Labor has left the agricultural sector, especially in the resource rich countries such as Nigeria, but it has moved into the services sector. In the absence of robust demand for labor from the private sector, people have had to find their own opportunities and make their own jobs.

The analysis here suggests that this is a long term trend, even with high growth economic policies. Certainly, countries in sub-Saharan Africa should develop strategies to attract the investment needed in modern labor-intensive firms (in industry or service sectors) to absorb more of the expected new entrants to the labor market. But given the number of people under 15 already born today who will enter into employment over the next 20 years relative to the current size of the nonagricultural wage employment sector, it is unrealistic to expect a more rapid transformation of sub-Saharan African economies into ones dominated by wage employment. This is especially the case in resource rich countries, where only a very small fraction of jobs today are found in private firms.

Sub-Saharan African governments are quite rightly concerned about how to help the large youth population leaving school and entering the labor market find stable employment. However, too often the focus is on the small sub-population which might find a wage job, not on the majority who will not. Such an approach ignores the employment reality in sub-Saharan Africa today, a reality which can only change slowly, given current conditions. For the entrants to the labor force in this decade (and the cohorts which preceded them into the labor force) public policy needs to focus on support mechanisms to help them get established and increase their productivity in nonwage jobs in agriculture and in their own household enterprises.

Of particular importance, though often ignored, is that if productivity and earnings in agriculture do not improve, hope diminishes for the rural sector, where the majority of the population still lives in low and lower-middle income countries. Even the modest employment transformation projected here is unlikely to take place, as there will be fewer opportunities in the household enterprise sector in rural areas and smaller urban areas. This would truly be a disappointing result.

## Appendix

**Table 1: Data Sources**

Country	Date	Survey name
Angola		Projected
Bangladesh	2010	Bangladesh Labor Force Survey
Benin	2003	Questionnaire des Indicateurs Base du Bien-être (QUIBB)
Bolivia	2008	Encuesta Continua de Hogares
Botswana	2009/10	Botswana Core Welfare Indicators (Poverty) Survey
Burkina Faso	2005	Questionnaire des Indicateurs Base du Bien-être (QUIBB)
Burundi		Projected
Cambodia	2008	Cambodia Socio-Economic Survey
Cameroon	2001	Enquête Camerounaise Auprès des Ménages (ECAM-II);
	2007	Enquête Camerounaise Auprès des Ménages (ECAM-III)
Cape Verde	2007	Questionário Unificado de Indicadores Básicos de Bem-Estar (QUIBB)
Central African Rep.		Projected
Chad		Projected
Comoros	2004	Enquête intégrale auprès des ménages (EIM)
Congo, Dem. Rep.	2004/05	Enquete Emploi
Congo, Rep.		Projected
Côte d'Ivoire	2002	Enquête sur le Niveau de Vie des Ménages (ENV);
	2008	and 2008
Equatorial Guinea		Projected
Eritrea		Projected
Ethiopia	2005 and 2010/11	Labour Force Survey; and Household Consumption Expenditure Survey Questionnaire
Gabon	2010	Enquête nationale sur l'emploi et le chômage (ENEC)
Gambia, The		Projected
Ghana	2005 and 2010	Living Standards Survey (GLSS); and Census 2010
Guinea		Projected
Guinea-Bissau		Projected
Kenya	2005	Integrated Household Budget Survey (KIHBS)
Lao	2008	Lao Expenditure and Consumption Survey
Lesotho		Projected
Liberia	2010	Liberia Labour Force Survey
Madagascar		Projected
Malawi	2004	Integrated Household Survey (HIS)
Mali		Projected
Mauritania		Projected

Mauritius	2005 and 2010	Continuous Multi-Purpose Household Survey (CMPHS)
Mongolia	2002	Household Income and Expenditure Survey
Mozambique	2002 and 2008	Inquérito aos Agregados Familiares (IAF); and Inquéritos aos Orçamentos Familiares (IOF)
Namibia	2012	Labor Force Survey
Nicaragua	2005	Encuesta Nacional de Hogares sobre Medición de Nivel de Vida
Niger	2005	Equête Nationale Sur le Budget et la Consommation des Ménage (ENBC)
Nigeria	2004 and 2010	Nigeria Living Standards Survey; and General Household Survey (GHS) - Panel
Philippines	2010	Labour Force Survey
Rwanda	2005 and 2010	Enquête Intégrale sur les Conditions de Vie des Ménages (EICV),
Sao Tome and Principe	2000 and 2010	l'Enquete sur les Conditions de Vie des Menages (ECVM); and Inquéritos aos Orçamentos Familiares (IOF)
Senegal	2000 and 2005	Enquete Senegalaise Aupres des Nenages and Enquete de Suivi de la Pauvreté au Senega (ESAM); and L'Enquête de Suivi de la Pauvreté au Sénégal (ESPS)
Seychelles		Projected
Sierra Leone	2003	Integrated Household Survey (HIS)
Somalia		Projected
South Africa	2005 and 2010	Labor Force Survey (September); and Quarterly Labor Force Survey (QLFS-III)
Sudan & South Sudan		Projected
Swaziland		Projected
Tanzania	2006	Integrated Labour Force Survey (ILFS)
Togo	2006	Questionnaire des Indicateurs Base du Bien-être (QUIBB),
Uganda	2005 and 2010	National Household Survey (UNHS); and National Panel Survey (UNPS)
Vietnam	2008	Vietnam Household Living Standard Survey
Zambia	2010	Living Conditions Monitoring Survey VI (LCMS)
Zimbabwe	2004	Labour Force Survey

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**Table 2. Sub-Saharan Africa: Baseline Estimates of Labor Force Distribution by Country**

Country	Type	Activity type	Share of Labor force, 2005 (percent)	Share of Labor force, 2010 (percent)
Angola	LMI / RR	Agriculture	71.7	60.5
		Household enterprises	17.2	23.9
		Wage industry	0.9	0.9
		Wage services	8.1	12.6
		Total employment	97.9	97.9
		Unemployed	2.1	2.1
		Labor force	100.0	100.0
Benin	LI	Agriculture	40.3	39.5
		Household enterprises	46.5	47.3
		Wage industry	1.2	1.2
		Wage services	8.3	8.4
		Total employment	96.3	96.3
		Unemployed	3.7	3.7
		Labor force	100.0	100.0
Botswana	UMI	Agriculture	17.7	13.9
		Household enterprises	8.1	8.6
		Wage industry	11.7	10.3
		Wage services	45.4	50.7
		Total employment	82.9	83.6
		Unemployed	17.1	16.4
		Labor force	100.0	100.0
Burkina Faso	LI	Agriculture	82.5	81.1
		Household enterprises	9.6	10.5
		Wage industry	1.0	1.0
		Wage services	4.4	4.9
		Total employment	97.5	97.5
		Unemployed	2.5	2.5
		Labor force	100.0	100.0
Burundi	LI	Agriculture	70.1	66.2
		Household enterprises	15.5	17.9
		Wage industry	2.3	2.3
		Wage services	9.4	10.9
		Total employment	97.3	97.3
		Unemployed	2.7	2.7
		Labor force	100.0	100.0

Cameroon	LMI	Agriculture	56.3	58.6
		Household enterprises	26.0	24.5
		Wage industry	2.8	2.8
		Wage services	11.5	10.7
		Total employment	96.6	96.6
		Unemployed	3.4	3.4
		Labor force	100.0	100.0
Cape Verde	UMI	Agriculture	13.7	10.5
		Household enterprises	22.1	22.8
		Wage industry	13.1	13.7
		Wage services	35.5	37.4
		Total employment	84.4	84.5
		Unemployed	15.6	15.5
		Labor force	100.0	100.0
Central African Rep.	LI	Agriculture	70.1	69.3
		Household enterprises	15.5	16.0
		Wage industry	2.3	2.4
		Wage services	9.4	9.6
		Total employment	97.3	97.3
		Unemployed	2.7	2.7
		Labor force	100.0	100.0
Chad	LI / RR	Agriculture	71.7	71.1
		Household enterprises	17.2	17.2
		Wage industry	0.9	0.8
		Wage services	8.1	8.8
		Total employment	97.9	97.9
		Unemployed	2.1	2.1
		Labor force	100.0	100.0
Comoros	LI	Agriculture	78.5	78.4
		Household enterprises	11.1	11.1
		Wage industry	3.5	3.5
		Wage services	6.6	6.8
		Total employment	99.7	99.7
		Unemployed	0.3	0.3
		Labor force	100.0	100.0
Congo, Dem. Rep.	LI / RR	Agriculture	67.8	65.4
		Household enterprises	18.9	20.3
		Wage industry	1.6	1.5
		Wage services	9.5	10.6
		Total employment	97.8	97.8
		Unemployed	2.2	2.2
		Labor force	100.0	100.0

Congo, Rep.	LMI / RR	Agriculture	71.7	70.4
		Household enterprises	17.2	18.0
		Wage industry	0.9	0.8
		Wage services	8.1	8.7
		Total employment	97.9	97.9
		Unemployed	2.1	2.1
		Labor force	100.0	100.0
Cote d'Ivoire	LMI	Agriculture	58.9	70.6
		Household enterprises	24.8	17.9
		Wage industry	2.4	1.8
		Wage services	12.2	8.0
		Total employment	98.3	98.3
		Unemployed	1.7	1.7
		Labor force	100.0	100.0
Equatorial Guinea	UMI	Agriculture	17.7	6.2
		Household enterprises	8.1	9.8
		Wage industry	11.7	10.9
		Wage services	45.4	60.1
		Total employment	82.9	87.0
		Unemployed	17.1	13.0
		Labor force	100.0	100.0
Eritrea	LI	Agriculture	70.1	73.6
		Household enterprises	15.5	13.5
		Wage industry	2.3	1.9
		Wage services	9.4	8.3
		Total employment	97.3	97.3
		Unemployed	2.7	2.7
		Labor force	100.0	100.0
Ethiopia	LI	Agriculture	73.1	70.1
		Household enterprises	14.0	15.5
		Wage industry	1.6	2.3
		Wage services	8.3	9.4
		Total employment	97.0	97.3
		Unemployed	3.0	2.7
		Labor force	100.0	100.0
Gabon	UMI	Agriculture	9.1	7.0
		Household enterprises	26.3	23.9
		Wage industry	10.4	8.7
		Wage services	47.0	44.2
		Total employment	92.8	83.8
		Unemployed	7.2	16.2
		Labor force	100.0	100.0

Gambia, The	LI	Agriculture	70.1	69.6
		Household enterprises	15.5	15.8
		Wage industry	2.3	2.2
		Wage services	9.4	9.6
		Total employment	97.3	97.3
		Unemployed	2.7	2.7
		Labor force	100.0	100.0
Ghana	LMI	Agriculture	53.5	43.0
		Household enterprises	25.7	30.1
		Wage industry	4.1	3.5
		Wage services	13.3	17.7
		Total employment	96.6	94.3
		Unemployed	3.4	5.7
		Labor force	100.0	100.0
Guinea	LI / RR	Agriculture	71.7	73.2
		Household enterprises	17.2	16.2
		Wage industry	0.9	0.8
		Wage services	8.1	7.6
		Total employment	97.9	97.9
		Unemployed	2.1	2.1
		Labor force	100.0	100.0
Guinea-Bissau	LI	Agriculture	70.1	69.6
		Household enterprises	15.5	15.8
		Wage industry	2.3	2.2
		Wage services	9.4	9.7
		Total employment	97.3	97.3
		Unemployed	2.7	2.7
		Labor force	100.0	100.0
Kenya	LI	Agriculture	55.6	51.9
		Household enterprises	13.4	14.8
		Wage industry	5.0	5.5
		Wage services	21.3	23.1
		Total employment	95.3	95.3
		Unemployed	4.7	4.7
		Labor force	100.0	100.0
Lesotho	LMI	Agriculture	54.6	50.1
		Household enterprises	26.2	29.1
		Wage industry	3.2	3.6
		Wage services	12.5	13.7
		Total employment	96.5	96.5
		Unemployed	3.5	3.5
		Labor force	100.0	100.0

Liberia	LI	Agriculture	59.1	54.2
		Household enterprises	30.5	34.0
		Wage industry	3.2	3.4
		Wage services	4.6	5.3
		Total employment	97.4	96.8
		Unemployed	2.6	3.2
		Labor force	100.0	100.0
Madagascar	LI	Agriculture	70.1	71.6
		Household enterprises	15.5	14.6
		Wage industry	2.3	2.3
		Wage services	9.4	8.7
		Total employment	97.3	97.3
		Unemployed	2.7	2.7
		Labor force	100.0	100.0
Malawi	LI	Agriculture	72.7	67.5
		Household enterprises	15.8	18.6
		Wage industry	3.2	4.7
		Wage services	8.0	8.8
		Total employment	99.7	99.7
		Unemployed	0.3	0.3
		Labor force	100.0	100.0
Mali	LI	Agriculture	70.1	46.0
		Household enterprises	15.5	33.9
		Wage industry	2.3	2.8
		Wage services	9.4	14.6
		Total employment	97.3	97.3
		Unemployed	2.7	2.7
		Labor force	100.0	100.0
Mauritania	LMI	Agriculture	54.6	53.5
		Household enterprises	26.2	26.9
		Wage industry	3.2	2.9
		Wage services	12.5	13.1
		Total employment	96.5	96.5
		Unemployed	3.5	3.5
		Labor force	100.0	100.0
Mauritius	UMI	Agriculture	7.9	7.9
		Household enterprises	15.3	15.3
		Wage industry	21.3	21.3
		Wage services	47.8	47.8
		Total employment	92.3	92.2
		Unemployed	7.7	7.8
		Labor force	100.0	100.0

Mozambique	LI	Agriculture	79.3	80.9
		Household enterprises	8.2	7.5
		Wage industry	2.5	2.2
		Wage services	8.4	7.7
		Total employment	98.4	98.4
		Unemployed	1.6	1.6
		Labor force	100.0	100.0
Namibia	UMI	Agriculture	12.2	12.0
		Household enterprises	16.3	17.1
		Wage industry	14.3	14.3
		Wage services	45.7	49.6
		Total employment	88.5	93.0
		Unemployed	11.5	7.0
		Labor force	100.0	100.0
Niger	LI	Agriculture	69.7	70.5
		Household enterprises	21.6	20.9
		Wage industry	1.1	1.1
		Wage services	4.4	4.2
		Total employment	96.8	96.8
		Unemployed	3.2	3.2
		Labor force	100.0	100.0
Nigeria	LMI / RR	Agriculture	74.1	53.5
		Household enterprises	17.0	33.6
		Wage industry	0.6	1.4
		Wage services	7.3	10.3
		Total employment	99.0	98.8
		Unemployed	1.0	1.2
		Labor force	100.0	100.0
Rwanda	LI	Agriculture	77.4	72.6
		Household enterprises	8.9	9.9
		Wage industry	3.5	5.3
		Wage services	9.2	11.5
		Total employment	99.0	99.4
		Unemployed	1.0	0.6
		Labor force	100.0	100.0
Senegal	LMI	Agriculture	47.9	48.6
		Household enterprises	29.3	28.9
		Wage industry	3.1	3.1
		Wage services	12.4	12.1
		Total employment	92.7	92.7
		Unemployed	7.3	7.3
		Labor force	100.0	100.0

Seychelles	UMI	Agriculture	17.7	13.3
		Household enterprises	8.1	8.0
		Wage industry	11.7	11.5
		Wage services	45.4	45.9
		Total employment	82.9	78.6
		Unemployed	17.1	21.4
		Labor force	100.0	100.0
Sierra Leone	LI	Agriculture	74.5	74.1
		Household enterprises	16.4	16.6
		Wage industry	1.0	0.9
		Wage services	7.1	7.4
		Total employment	99.0	99.0
		Unemployed	1.0	1.0
		Labor force	100.0	100.0
Somalia	LI	Agriculture	70.1	66.1
		Household enterprises	15.5	18.7
		Wage industry	2.3	2.7
		Wage services	9.4	11.5
		Total employment	97.3	99.0
		Unemployed	2.7	1.0
		Labor force	100.0	100.0
South Africa	UMI	Agriculture	4.0	3.6
		Household enterprises	9.8	11.4
		Wage industry	16.3	14.8
		Wage services	42.6	45.0
		Total employment	72.7	74.7
		Unemployed	27.3	25.3
		Labor force	100.0	100.0
Sudan	LMI / RR	Agriculture	71.7	62.0
		Household enterprises	17.2	21.0
		Wage industry	0.9	0.8
		Wage services	8.1	11.2
		Total employment	97.9	95.0
		Unemployed	2.1	5.0
		Labor force	100.0	100.0
Swaziland	LMI	Agriculture	54.6	53.4
		Household enterprises	26.2	27.0
		Wage industry	3.2	2.8
		Wage services	12.5	13.3
		Total employment	96.5	96.5
		Unemployed	3.5	3.5
		Labor force	100.0	100.0

São Tomé & Príncipe	LMI	Agriculture	30.1	21.1
		Household enterprises	23.8	23.2
		Wage industry	8.4	10.2
		Wage services	28.2	31.3
		Total employment	90.5	85.8
		Unemployed	9.5	14.2
		Labor force	100.0	100.0
Tanzania	LI	Agriculture	69.8	64.9
		Household enterprises	16.5	19.6
		Wage industry	1.6	2.0
		Wage services	7.5	8.9
		Total employment	95.4	95.4
		Unemployed	4.6	4.6
		Labor force	100.0	100.0
Togo	LI	Agriculture	50.8	54.6
		Household enterprises	34.9	31.9
		Wage industry	2.1	2.1
		Wage services	7.7	6.9
		Total employment	95.5	95.5
		Unemployed	4.5	4.5
		Labor force	100.0	100.0
Uganda	LI	Agriculture	73.0	71.6
		Household enterprises	14.9	14.7
		Wage industry	2.1	3.0
		Wage services	9.0	10.3
		Total employment	99.0	99.5
		Unemployed	1.0	0.5
		Labor force	100.0	100.0
Zambia	LMI / RR	Agriculture	59.4	60.1
		Household enterprises	13.8	15.3
		Wage industry	2.8	2.8
		Wage services	12.3	13.5
		Total employment	88.3	91.6
		Unemployed	11.7	8.4
		Labor force	100.0	100.0
Zimbabwe	LI	Agriculture	70.2	71.0
		Household enterprises	15.5	15.1
		Wage industry	2.3	2.2
		Wage services	9.4	9.2
		Total employment	97.4	97.4
		Unemployed	2.6	2.6
		Labor force	100.0	100.0

Sub-Saharan Africa total	Agriculture	65.2	59.3
	Household enterprises	17.1	21.4
	Wage industry	2.7	2.8
	Wage services	11.2	12.6
	Total employment	96.2	96.1
	Unemployed	3.8	3.9
	Labor force	100.0	100.0

Note: Economies are classified according to the 2011 GNI per capita World Bank Atlas methodology: LI "Low-income" \$1,025 or less; LMI "Lower-middle Income", \$1,026–\$4,035"; UMI "Upper-middle income", \$4,036–\$12,475. Finally, RR "Resource rich" countries are those whose ratio of resource exports to total exports was above 80 percent between 2008–12.

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