

# Africa's Evolving Employment Trends: Implications for Economic Transformation

Dr. Felix Kwame Yeboah  
Michigan State University

Prof. Thomas S. Jayne  
Michigan State University

## ABSTRACT

*Using nationally representative data from nine African countries, we document sectoral employment trends and consider the evolving role of agriculture in Africa's economic transformation process. We highlight three key findings: a general decline in farming's share of employment over the past decade; a strong relationship between lagged farm productivity growth and the speed at which the share of the labor force in farming declines; and the moderate potential for agro-processing or other stages of the food system to absorb youth into gainful employment in the coming years. While agro-processing is growing rapidly in percentage terms, its share of overall employment is quite low and hence will not generate nearly as many new jobs as farming. For these reasons, strategies that effectively raise the returns to labor in farming will be critical to fostering successful economic transformation.*

## INTRODUCTION

Sub-Saharan Africa (SSA) has the world's youngest and fastest growing population. Sixty-two percent of the population is below the age of 25. SSA's population is projected to double over the next 35 years, and its share of the global population is projected to rise dramatically --from 12% in 2015 to 23% by 2050 (United Nations, 2016). This huge demographic trend will certainly amplify Africa's political and economic influence on the rest of the world. Over 17 million young Africans will enter into working age each year until 2035 (Losch, 2016). SSA's rapidly growing young labor force offers important opportunities for economic transformation if their talents can be productively utilized within an expanding economy. Conversely, chronic under-employment among such a youthful labor force could lead to stagnant growth, disillusionment and social unrest.

In recognition of these challenges, African governments and development partners have begun implementing various strategies to expand job opportunities and develop new skills for young people. However, these strategies are based on limited evidence about labor market trends in SSA. Previous analysis has focused on the sustainability of Africa's economic recovery and the prospects for

structural transformation (McMillan and Harttgen 2014). The question of employment transformation and its implications for future economic transformation in SSA has received little attention, with several notable exceptions (ILO, 2015; Fox and Thomas, 2016). The role of agriculture within a rapidly transforming Africa is particularly poorly understood. This study therefore documents salient demographic and employment trends in Africa's labor force and considers the evolving role of agriculture in Africa's economic transformation process.

## DATA AND METHODOLOGICAL APPROACH

We utilize nationally representative, multi-year household surveys from Living Standards Measurement Study Surveys, labor force surveys, and sub-samples of population censuses from the Integrated Public Use Microdata Series (IPUMS)<sup>2</sup>. All of these surveys are implemented by the national statistical bureaus of African governments. For each study country, we compute the levels and changes in employment over time in three employment categories: (i) farming, including all activities related to crop and livestock production; (ii) off-farm stages of agri-food systems (AFS), including pre- and post-farm value-addition activities within agricultural value chains; and (iii) non-farm sectors, encompassing all other activities outside the AFS, which are not included in the above two categories such as construction, finance, utilities etc. Employment category classification was based on respondents' stated industry of employment as indicated by the International Standard for Industrial Classification (ISIC). This employment classification scheme allowed us to estimate the relative size and job growth in the AFS, which is envisioned to be a major vehicle for economic transformation in Africa (Filmer and Fox, 2014). We compare sectoral employment trends both in terms of the total number of jobs as stated by survey respondents, and by computing full-time equivalents (FTE). The FTE approach computes the share of individuals' work time over the 12-month survey year that can be allocated to various work activities, providing an estimate of the relative importance of the three sectors to people's livelihoods.

Considering the historical importance of agricultural productivity growth to economic transformation, our analysis focuses on measuring the linkages between agricultural productivity growth and the changes in employment structure over time in SSA. This is done in two stages. First, we report bivariate relationships between agricultural productivity and changes in the share of the labor force in farming. Second, we conducted a time series multivariate analysis using annual data on 11 African countries over the 1995–2011 period from the Africa Sector Dataset<sup>3</sup>. Our model controls for

factors that could plausibly influence agricultural employment shares including population density, country-level governance indicators, road density (tarmac roads per 100 km<sup>2</sup> of land) as proxy for market access conditions, a time trend, and country fixed effects to control for unobserved time-constant heterogeneity. To ensure confidence about the direction of causality, the variables for labor productivity in farming and off-farm sectors were computed as lagged moving averages over the five years prior to the year of the dependent variable, the share of the national labor force in farming.

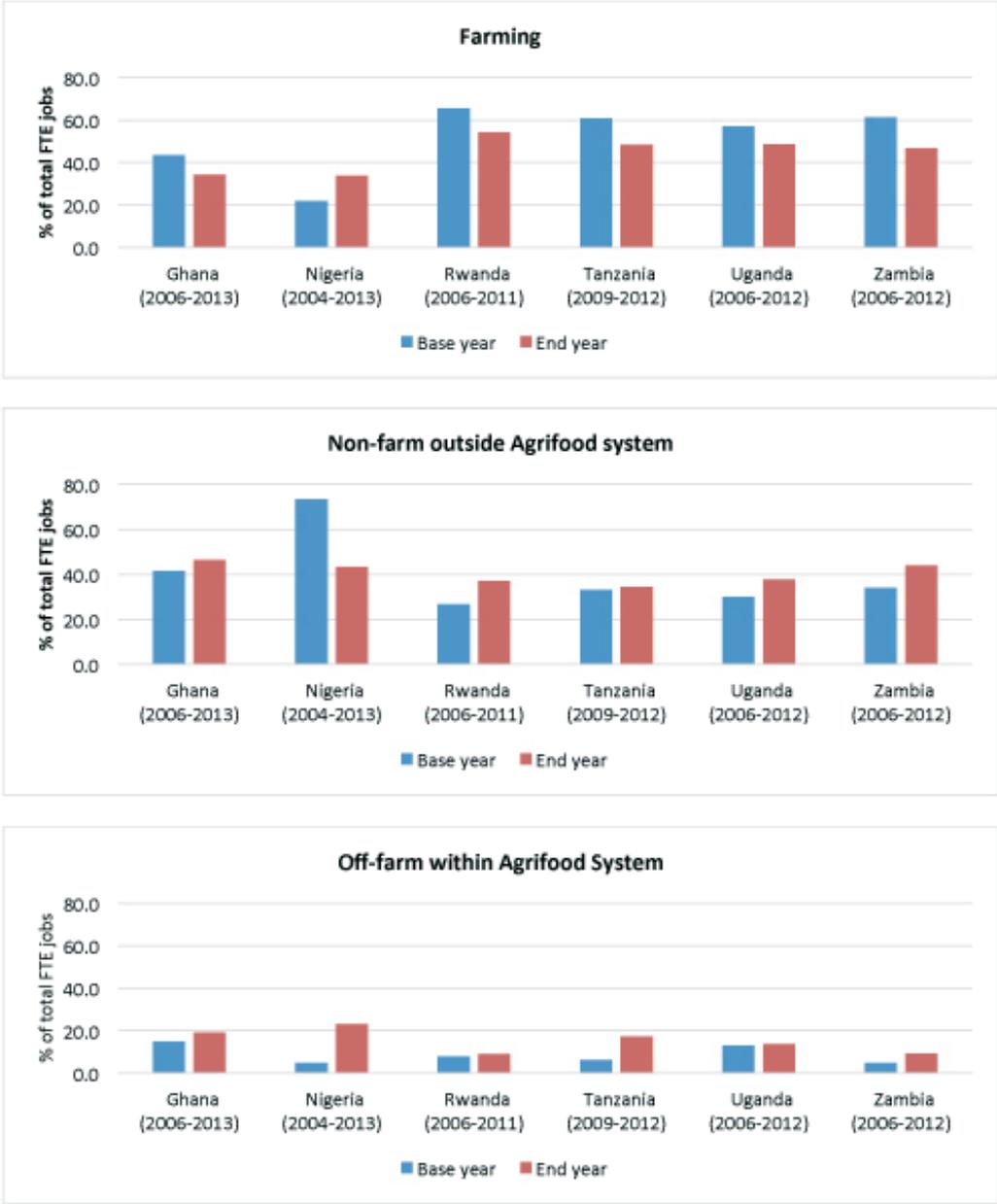


Figure 1. Changes in the share of total FTE jobs in farming, non-farm and off-farm agri-food systems, among the working age population (15–64 years).

Source: Authors, computed from various nationally representative surveys.

We also run a series of alternative models for robustness checks. A detailed description of the data and analytical approach is reported in Yeboah and Jayne (2016).

## RESULTS

While substantial cross-country variability warrant caution against overgeneralization, we observe a general sharp increase over the past 15 years in the pace at which Africans are exiting farming in favor of off-farm activities. In most countries, the number of working-age individuals engaged in farming is still increasing in absolute terms but farming's share of employment is declining over time because of more rapid job growth in the off-farm sectors (Figure 1). The pace of this decline in farming's employment share is particularly pronounced when jobs are computed in terms of FTEs, due to the seasonal nature of farming, but employment trends based on the FTE and job counts are remarkably similar.

Despite its declining employment share, farming remains extremely important for youth livelihoods for two reasons. First, farming remains the dominant employer of the workforce, accounting for 42% to 67% of all jobs (34%-54% of FTE jobs) and is a major source of new jobs (Figure 1). While off-farm jobs are growing rapidly in percentage terms, they are generally starting from a low initial base, meaning that the absolute number of jobs being created in the off-farm segments of agri-food systems are considerably less than in farming. The off-farm stages of agri-food systems, currently accounts for less than 10% of the jobs held by the youth (15-25 years) and 23% of the working-age population. Farming will remain the single largest employer of the workforce in most countries for at least the next decade.

The second reason why agriculture – farm productivity growth in particular – remains crucial is because it is so important in generating new jobs in the rest of the economy. Consistent with historical industrialization experiences, both our cross-country bivariate and multivariate fixed effects analysis identified lagged labor productivity in agriculture as a significant major driver of sectoral shifts in the labor force. A 10% increase in average agriculture labor productivity over the previous five-year period results in a 1.3 to 2.8% decline in the share of the labor force engaged in agriculture, holding other factors constant (Table 1). Countries that achieved the highest rates of agricultural productivity growth generally experienced the most rapid exit of labor out of farming (Figure 2), and the highest growth in labor productivity in non-agriculture sector. These patterns, also documented in Asia's structural transformation process several decades ago, suggest that the expansion of job opportunities in sub-Saharan Africa will be greatly affected by government policies and programs affecting the rate of productivity growth in farming.

Employment trends observed for the youth are remarkably

similar to that of the total working-age population, regardless of whether we define youth as between 15-24 or 15-35 years of age. This might not be surprising, considering that the 15-24 age range contains roughly 40% of the total workforce, whereas the 15-35 age range contains over 55%. The main difference observed is the high level of economic inactivity among the 15-24 age group primarily due to increased educational enrollment. For instance, in the mid-1990s, Ethiopia was producing roughly 3,000 university graduates per year; by 2015, this figure has mushroomed to over 100,000. Africa's future workforce will have many more years of formal education than ever before. Young Africans may be considerably better placed than prior generations to navigate labor market challenges as long as African governments step up and invest adequately in education quality.

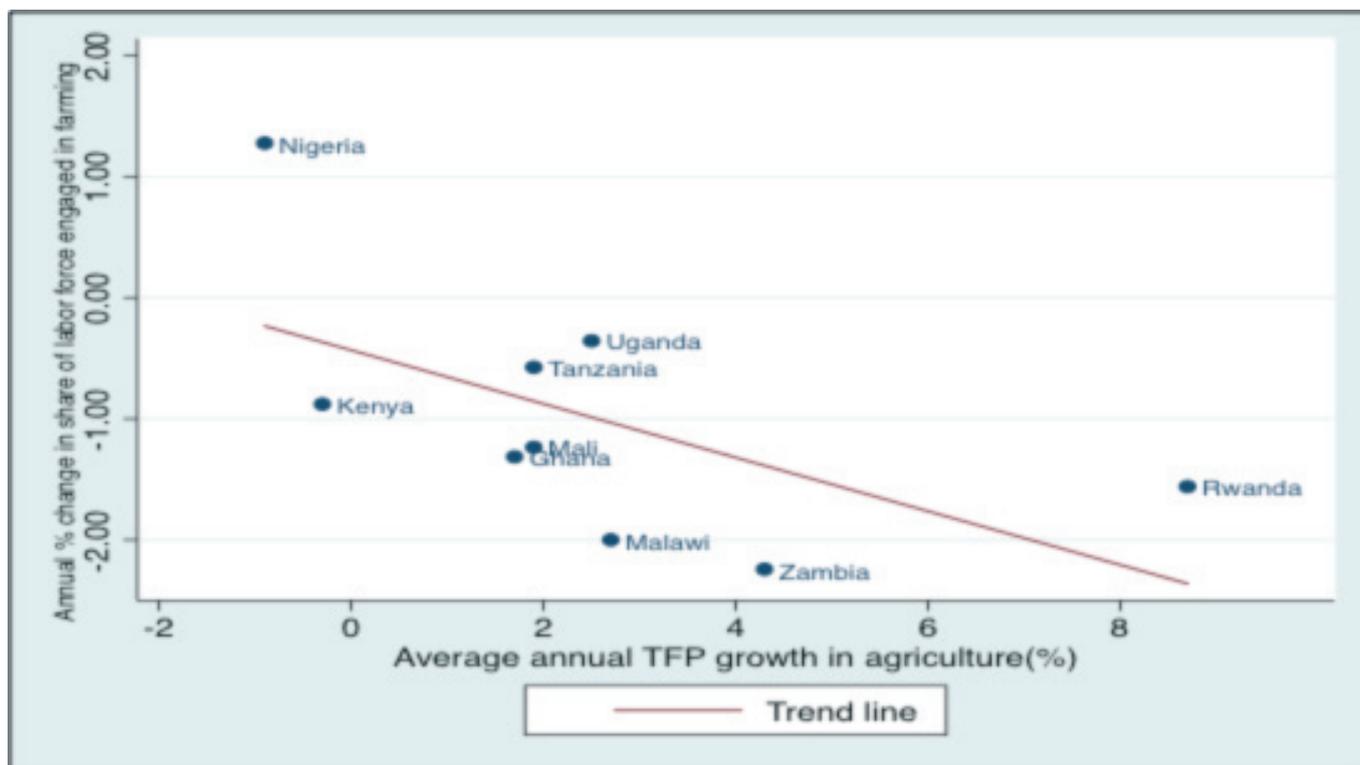
Our analysis also shows that the informal sector will continue

**Table 1. Determinants of changes in agricultural employment shares over time**

	Fixed effect model	
	(i)	(ii)
Log lag labor productivity in agriculture	-0.133* (-2.15)	-0.284** (-2.77)
Log lag labor productivity in non-agriculture	-0.0121 (-0.23)	-0.176 (-1.89)
<b>Other covariates</b>		
Index of governance (lagged)	-0.0205 (-0.45)	0.0698 (1.06)
Time trend	-0.00961*** (-4.62)	-0.00458 (-0.96)
Population density	-0.00181 (-1.51)	-0.00475 (-1.89)
Road density	-	-0.000260 (-0.21)
Constant	-0.519** (-3.07)	0.0690 (0.20)
Number of observations	161	78
Number of Countries	11	10
Adjusted/Overall R-square	0.71	0.87
Time period	1995-2011	1995-2011

t statistics in parentheses" \* p<0.05 , \*\*\* p<0.01 \*\*\* p<0.0001.

Countries included: Botswana, Ethiopia, Ghana, Kenya, Mauritius, Malawi, Nigeria, Senegal, Tanzania, South Africa and Zambia



**Figure 2.** Relationship between total factor productivity growth in farming and annual changes in the share of labor force engaged in farming.

Source: Authors. Mean annual agricultural TFP growth rates for 2003–2012 from USDA TFP dataset (Fuglie 2015); Spearman Correlation coefficient = -0.6862,  $prob > |z| = 0.0412$ .

to be a key feature of African labor markets for the foreseeable future. There is rapid percentage growth in wage jobs, particularly in the private sector, which is now the dominant supplier of wage jobs. However, growth in wage employment in both the private and public sectors is starting from low initial bases and even in the most optimistic growth scenario will not generate enough jobs to employ more than a small fraction of the rapidly expanding labor force. The slow pace of demographic transition and prevailing low educational and skill levels among a large portion of Africa's expanding labor force imply that a rapid transition into well-paying formal wage jobs in the off-farm sector in the near future is nearly infeasible. Consequently, the majority of the new entrants to the labor market will most likely end up working in informal enterprises, whose growth is highly dependent on multiplier effects from agricultural growth. African policy makers may thus need to re-orient their policies to recognize informal enterprises as a viable livelihood option and institute productivity enhancing strategies to harness employment gains from this sector.

## CONCLUSIONS

African economies have experienced significant economic transformation since 2000. Farming's employment shares are declining but the sector's influence on livelihood and economic growth remains crucial. Farming is still the single largest employer and will be called upon to absorb a significant share of Africa's rapidly growing workforce into gainful employment. Moreover, the pace of job expansion in the rest of the economy will remain closely linked to on-farm productivity growth. As demonstrated in most other parts of the world, the sheer number of people engaged in farming and its strong growth linkages with the rest of the economy imply that public investment directed at increasing productivity in farming holds considerable prospects for broad-based and inclusive economic growth and transformation. Consequently, public investments in agricultural productivity growth offer a major entry point for African governments to expand employment opportunities. However, Africa must do better here. Asian farmers benefit from the fact that their governments spend over 8

times more annually on agricultural Research and Development on average than African governments (Pardey et al., 2006). Strategies promoting farm productivity growth must also be appropriate for the millions of smallholder farmers to participate in and contribute to the region's economic transition.

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## NOTES

1. The authors gratefully acknowledge support for this study from The MasterCard Foundation, the Bill and Melinda Gates Foundation, and USAID's Bureau for Food Security.

2. Specific surveys used are Ghana's Living Standard Survey (GLSS 5 and 6); Nigeria's Living Standard Survey (2004) and General Household Survey (2013); Rwanda's Integrated Household Living Survey (EICV 2 and 3); Tanzania National Panel Survey (2008, 2012); Uganda's National Panel Survey (2005, 2012); Zambia's Labor force surveys (2005, 2012).

3. Africa sector data is compiled by the Groningen Growth and Development Center and is available at <http://www.rug.nl/ggdc/productivity/10-sector/>

