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Change and Rigidity in Youth Employment Patterns in Malawi

Todd Benson, Alvina Erman, and Bob Baulch

6.1 Introduction

In the over fifty years since attaining independence, Malawi's population has continued to grow strongly, increasing from just over 4 million in 1966 to 17.6 million in 2018. Yet, most of the population continues to reside in rural areas pursuing agricultural livelihoods—at the last census in 2018, only 16 per cent of the population lived in cities or towns. Due to high fertility rates, Malawi has one of the youngest age structures in the world with 43.9 per cent of its population being under the age of 15, and 34.3 per cent being between 15 and 34 years of age (NSO 2018). In 2017, the agriculture sector contributed 26 per cent of the total Gross Domestic Product (GDP) of Malawi's economy (World Bank 2019). While the significance of agriculture has dropped from 50 years ago when the sector provided one-half of total economic output, Malawi's economy remains among the 15 national economies globally that are most dependent upon agriculture. Although the service sector has grown significantly over the past 20 years, with a small manufacturing sector and limited non-agricultural natural resources to exploit economically, agricultural production remains at the centre of most economic production and household livelihoods. This is most evident in how the workforce of the country is allocated across sectors. Estimates from the 2013 Malawi Integrated Household Panel Survey (IHPS) are that 87.0 per cent of those of working age (15 to 64 years) are employed in agriculture.[1]

The factors that might push Malawians out of agriculture and into employment in other sectors have only intensified with time. Although dropping fertility rates may result in the population growth rate starting to decline soon, the annual population growth rate has been above 2.8 per cent for the last two decades. The 2008 to 2018 intercensal annual growth rate was 2.9 per cent (NSO 2018). With

[1] Estimate based on author analysis of 2013 IHPS. Using a stricter definition of employment—those engaged exclusively in subsistence agricultural production for less than 48 hours a week were not considered employed, an employed individual could work only in a single sector, and a strict one week recall period was used—estimates from the 2013 Malawi Labour Force Survey are that 64.1 per cent of those who are of working age and are employed worked in agriculture (NSO 2014).

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this continued significant growth in the population and a large share of the population remaining in agriculture, there is increasing land pressure: the average farm size in Malawi now is around 1.0 ha per household, with a median value close to 0.8 ha (Ricker-Gilbert, Jumbe, and Chamberlin 2014, NSO 2010). The low-input, low-output smallholder farming systems that dominate agriculture in Malawi result in many observers today echoing concerns expressed by observers since the colonial period as to whether most Malawians will be able to obtain sustainable livelihoods primarily from agriculture for much longer.

In parallel, some factors that might attract Malawians in the labour force to seek employment outside of agriculture have also intensified. Growth in the economy of Malawi since 2000 has been slowly positive overall, if erratic from year to year. Average annual growth in GDP between 2000 and 2017 was 4.3 per cent. The services sector has expanded significantly over this period rising from a 43 per cent share of the economy in 2000 to 52 per cent in 2017, while the industrial sector has remained relatively stable to declining slightly, contributing 14 per cent of Malawi's economic output in 2017 (World Bank 2019). At the same time, stocks of human capital have improved since the introduction of free primary education in 1994. While problems related to the quality of instruction and of available facilities continue to plague education in Malawi, the improved access to schooling since has resulted in sharp increases in educational attainment among younger youth (ages 15 to 24 years), particularly for females (World Bank 2010).

The government of Malawi has also invested significant resources to enhance agricultural productivity over the past 10 years, particularly through the Farm Input Subsidy Programme (FISP). The increased maize production resulting from FISP has contributed to agricultural sector growth. There is also evidence that reasonably significant second-round benefits have been achieved through FISP that are linked to the increased economic activity, lower food prices, and increased demand for labour the programme fostered (Arndt, Pauw, and Thurlow 2016). Although all independent assessments conclude that the programme could be implemented more efficiently and achieve significantly broader impact, particularly at farm level (Lunduka, Ricker-Gilbert, and Fisher 2013), FISP has the potential to propel the sector towards sustained improvements in agricultural productivity. This in turn should allow for increased investment in other areas of the economy and release considerable labour, including that of youth, from farming households to work elsewhere other than in agriculture.

In this chapter, we seek to better understand how the changes in and interplay of these factors affect the employment choices of Malawians in the workforce. Might we now see some movement of labour out of agriculture into other sectors, particularly services, even if slight and in its earliest stages? We also seek to determine whether the youth of Malawi are central to any changes occurring in employment patterns in the country, possibly drawing upon their increased levels of training, benefitting from higher agricultural production levels overall linked

to FISP, and responding to increased pressures to obtain a livelihood elsewhere than on increasingly small agriculture landholdings. Are Malawi's youth entering the workforce in a different manner than previous generations?

Through analysis primarily of data from the Malawi Integrated Household Survey (IHS) series, in this chapter we examine changes in employment among those of working age in Malawi. First, using data from three IHS surveys—2004, 2010, and 2013—we examine how strong are movements of labour, if any, out of agriculture and into industry and services. In making this assessment, we disaggregate our analysis by whether the workers are younger youth (ages 15 to 24 years), older youth (25 to 34 years), or non-youth (35 to 64 years); resident in rural or urban areas; and female or male. This first analysis is based on categorizing each working age individual in our analytical data sets into a single employment category in the manner that the National Statistical Office of Malawi uses to analyse the data it collects on labour force participation.

We then extend this analysis to investigate the factors associated with the type of employment an individual has using the 2010 IHS-3 survey data. The analysis, based on an econometric multinomial logit model, permits a multivariate assessment of the factors associated with an individual choosing a particular pattern of employment, including working in several sectors simultaneously, for example, working in both farming and petty trading (services). Here too, the analysis considers the age of the individual to determine whether the correlates of youth engagement in the workforce are comparable to those of their elders.

To summarize the results of our analysis, we find little evidence of any significant processes of transformation in the structure of Malawi's economy or of youth being in the vanguard of any changes in cross-sectoral patterns of employment. While there has been some increase in employment in the services sector between 2004 and 2013, it is older youth and non-youth, particularly males, who are engaging in such work. In contrast, younger youth are extending the length of their schooling. Although we find that higher educational attainment is strongly associated with nonfarm employment, agriculture remains the sector into which most youth first obtain employment. There are still few high-quality jobs in Malawi in which well-trained Malawians can use their skills productively.

6.2 Economic, Demographic, and Educational Trends in Malawi

Malawi has experienced moderate, if erratic economic growth over the past 15 years. While between 2000 and 2015 the economy contracted only in one year (2001), economic growth was lower than population growth in six years (Figure 6.1). Given the significance of agriculture in the economy, overall annual economic growth broadly tracks the annual growth of the agriculture sector—the correlation

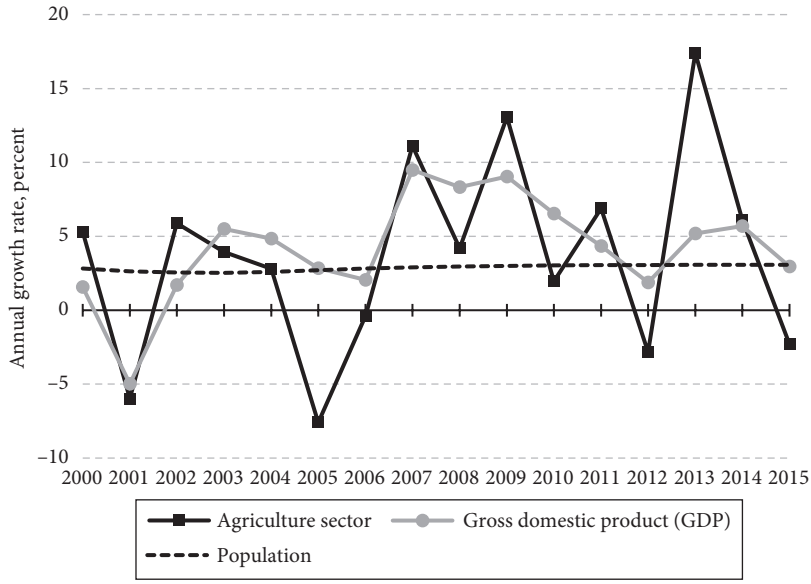


Figure 6.1. Malawi's agriculture sector, economy, and population, annual growth, 2000 to 2015

Source: World Bank, 2019.

coefficient between the two time series over this period is 0.63. Growth trends in the agricultural sector are more volatile than those of the economy as a whole, reflecting the exposure of the sector to adverse weather-related production shocks. Total value added in the agriculture sector fell from year to year five times between 2000 and 2015, primarily because of droughts or erratic rainfall, exacerbated in 2012 by weak economic conditions in Malawi's economy more broadly.

Greater economic growth is needed. Malawi has one of the fastest growing populations in the world, with a population of 17.6 million in 2018, a more than four-fold increase in fifty years from just over 4 million when Malawi conducted its first post-independence Census in 1966. Projections from the 2008 Census estimate that the population will be about 45 million by 2050. Although population growth rates should begin declining in coming decades, nonetheless the share of the population that is made up by youth aged 15 to 34 years will increase slightly from 34.2 per cent at the last census in 2018 to a peak of just over 35 per cent in around 2043, before beginning to decline. However, the youth population of Malawi will continue to grow for many decades thereafter. Currently, the number of youth is growing by about 170,000 persons per year. Projection estimates are that by 2050 this number will rise to 370,000 (NSO 2011a).

The principal investments that the government of Malawi have made to enable youth to obtain good jobs so that they are able to meet the needs of their households are through providing free primary education. While politically it has

proven extremely popular, the programme has been subject to continual criticism since its launch for the poor quality of education provided using existing facilities to teach the large numbers of new students enrolling. The government and its development partners have invested heavily in teacher training and in building classrooms over the past 20 years. However, due to large numbers of primary students repeating classes or dropping out, it was found that in 2007 the system provided 23 student-years of instruction for every student successfully completing the eight years of primary education (World Bank 2010).

Despite the inefficiencies in implementation, the free primary education programme has resulted in improved educational outcomes. The years of education successfully completed for the 15 to 24 years age-cohort increased by 1.2 years between the 1998 and 2008 Censuses from 5.0 to 6.2 years (analysis by authors). Tracer studies done as part of the World Bank 2010 study demonstrated strong social returns (for example, improvements in social behaviours and health outcomes), particularly for primary education. Private financial returns to education in Malawi obtained through the labour market also were found to be significant at all levels of education, but being especially large at higher levels of educational attainment (World Bank 2010). As has been recognized for many generations, education remains a powerful means to achieving economic well-being in Malawi.

However, despite continuing public investment to improve the education system, coupled with significant resources allocated to efforts to increase the productivity of the agriculture sector, and in context of fair, although not stellar, economic growth over the past 15 years, there is as yet little evidence to show that there has been any growth in employment in higher productivity jobs. We now examine more closely the evolution in the structure of employment over this period and how Malawi's youth choose to engage in the workforce using three rounds of data from the Malawi IHS series for individuals of working age—ages 15 to 64 years.

6.3 Structure of and Trends in Employment in Malawi, 2004 to 2013

6.3.1 Data

We rely on the last three IHS surveys for our analysis—2004, 2010, and 2013.[2] These three multitopic household surveys have very similar questionnaires so

[2] Malawi has several nationally representative data sets that include information on employment. These include the 1998 and 2008 Malawi Population and Housing Censuses, the 2013 Labour Force Survey, and four rounds of the IHS survey series, starting in 1998 with the IHS-1 and continuing with the IHS-2 in 2004, IHS-3 in 2010, and the Integrated Household Panel Survey (IHPS) in 2013, the last involving a repeat enumeration of a large sub-set of the IHS-3 sample. These data sets were created by the National Statistical Office (NSO) of the government of Malawi.

that we were able to categorize individuals of working age in the survey samples into comparable employment categories. Moreover, the fact that the third round of the IHPS in 2013 was a panel survey of a subset of the sample for the second round in 2010 allowed us to trace changes in how individuals enumerated in both surveys engaged in the workforce over time.

The IHS surveys are the principal living standard measurement surveys for Malawi. The nationally representative samples for the surveys are selected using a two-stage cluster sampling approach. Using the districts of Malawi and the four major urban centers as strata, enumeration areas (EA) within each stratum are randomly selected with the probability of selection being proportional to the population of the EA. Either 16 or 20 households, depending on the survey round, were then randomly selected in each selected EA to make up a survey sample. The IHS-2 and IHS-3 surveys were administered over 12 to 13 months to capture annual seasonal variation in household consumption and expenditures, while the IHPS was administered over a nine-month period. Table 6.1 provides selected descriptive statistics on the three IHS surveys.

The employment categorization scheme used in our analysis is that of the International Labour Organization, which was used for the analysis by NSO of the 2013 Malawi Labour Force Survey. The *working age population* is defined as those aged 15 to 64 years. Within the working age population, we further distinguish *younger youth* aged 15 to 24 years, *older youth* aged 25 to 34 years, and *non-youth* aged 35 to 64 years. These individuals are categorized as being either *economically active* or *not economically active* depending on whether they are

Table 6.1. Sample size and period of administration of Malawi Integrated Household Surveys used

	IHS-2	IHS-3	IHPS
Sample size, households	11,280	12,271	4,000
Working age (15 to 64 years of age) sample size, individuals	25,144	27,842	10,349
Survey administration period	March 2004 to March 2005	March 2010 to March 2011	April 2013 to December 2013

Source: Analysis by authors of IHS-2, IHS-3, and IHPS.

To characterize the structure of employment in Malawi, given their universal coverage, our preference was to use the censuses, together with the Labour Force Survey. However, the questionnaires for the two censuses were sufficiently different that we were unable to categorize the working age population enumerated in each into similarly defined employment groups. Similar problems were observed in trying to combine either census with the 2013 Labour Force Survey to further assess trends in employment. The 1998 IHS-1 questionnaire differs significantly from those of the other IHS survey rounds, so it also was excluded from our analysis.

engaged in economic activities or actively seeking employment in such activities. The economically active are further disaggregated into *employed* and *unemployed*, depending upon whether they are working or not working, but actively seeking work, respectively. The employed can be further disaggregated into the economic sector of employment—*agriculture*, *industry*, or *services*. Similarly, the not economically active can be further disaggregated into students, homemakers, retired or ill individuals, or otherwise not economically active. In the analysis here, for the not economically active category we focus on *students* and all *other not economically active*.

As the IHS surveys are not specifically designed to examine questions of employment, the specific criteria used to assign an individual to one category or another differed from those used in the analysis of the 2013 Labour Force Survey. Information was used from both the household and the agricultural questionnaires of the IHS surveys. In doing so, we privileged certain information in assigning an individual to an employment category. Individuals who had stated that they were students; were not working, but actively seeking work; or were formally employed (primarily for a wage) were assigned to the student, unemployed, and employed categories, respectively, even if the individual also reported that they had also engaged, most commonly, in agricultural production. Similarly, individuals who worked on a non-agricultural household enterprise, even if also engaged in farming, were considered to be employed in either the industrial or services sector, depending on the nature of the household enterprise. However, in our analytical data set, we compiled information on individuals who reported working in more than one sector, as this information on employment in multiple sectors is among the information used to create the dependent variable for the multinomial logit analysis discussed later.

In addition, employment surveys typically involve strict recall periods of the previous one week to determine the employment status of survey respondents. The data used from the IHS surveys for our analysis, however, involved varying recall periods—for farming activities, this typically was for the previous twelve months. As working age individuals are much more likely to report having worked sometime over the past year than over the past week, our approach results in a larger share of individuals being categorized as employed, rather than 'not economically active' (if not students), than is found in employment surveys. Given these differences, we emphasize that the results of our employment categorization should not be considered comparable to, for example, seemingly similar results from the 2013 Labour Force Survey or the most recent population censuses for Malawi. However, we are confident that our approach to assigning working age members of the IHS survey samples to employment categories allows for valid comparisons to be made over the three rounds of the IHS examined.

6.3.2 Results

6.3.2.1 Structure of Employment in Malawi in 2013

The share of the population by working age population age group (younger youth, older youth, and non-youth) assigned to each employment category estimated from a weighted analysis of the 2013 IHPS data is presented in Figure 6.2 as a 100 per cent bar chart. The continued dominance of agricultural employment in Malawi is apparent. Among the older youth and non-youth, over 70 per cent of all individuals are working in agriculture, and 87 per cent of those who are employed work in agriculture. Even among the younger youth, while students are the largest employment category for this age group, most younger youth who are not students work in agriculture. Across all age groups, females are more likely than men to work on the farm. Given the customary land tenure system that provides access to land for almost all Malawians, agriculture is observed to be the default employment category for all, including for many individuals residing in urban centres.

The shares of each population group employed in industry and services are relatively small compared to agriculture. In urban areas, shares of those employed in the nonfarm sectors are higher, particularly for services.[3] Moreover, of those employed, the share of older youth and non-youth working in industry and services is somewhat higher than it is for the younger youth. This suggests that younger youth immediately upon entering the workforce are unable to readily obtain work outside of agriculture.

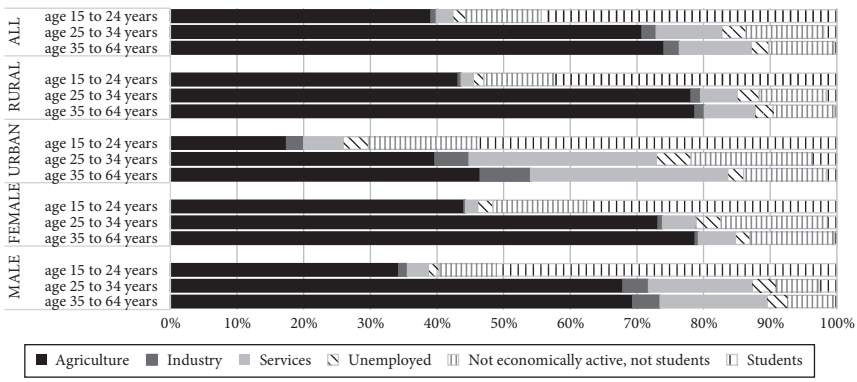


Figure 6.2. Malawi 2013, size of employment categories by age cohort, disaggregated by rural and urban and by male and female, percentage share of population

Source: Analysis by authors of 2013 Malawi Integrated Household Panel Survey. Weighted analysis.

[3] Urban areas include the four major cities of Malawi, district headquarters (*bomas*), and other gazetted towns. In the 2008 Census, 15.3 per cent of the population were enumerated as residents of urban areas, of which 78 per cent lived in the four major cities– Lilongwe, Blantyre, Zomba, and Mzuzu.

Unemployment is not common in Malawi. Following the statistical definition of unemployment used in the analysis of the 2013 Labour Force Survey for Malawi, any individual of working age in the survey sample who reported not having worked over the past four weeks, but who was actively looking for work, was categorized as unemployed. Such individuals in the sample were categorized as unemployed for the analysis here regardless of whether they indicated elsewhere in the survey that they had worked in some capacity before the four-week recall period used to assess unemployment. However, few individuals were categorized as such.

In the report on the 2013 Labour Force Survey, it is asserted that this strict definition of unemployment is not useful in the Malawi context, since the country's underdeveloped labour markets make it quite difficult to actively seek work (NSO 2014). More importantly, with broad access to small plots of agricultural land through the dominant customary land tenure system, most individuals can engage in farming to provide for some of their basic subsistence. However, given the small agricultural landholdings and the strongly seasonal pattern of rainfed agricultural production, they are unable to farm fulltime at a scale sufficient to meet all their welfare needs. In consequence, there is significant underemployment. Many working Malawians are unable to use their abilities sufficiently productively to meet their own needs or those of their households, or to expand Malawi's economy. The low unemployment figure obtained in our analysis masks this deficiency in the quantity and quality of employment available for both youth and older workers.

Over a quarter of Malawi's working age population are economically inactive. However, there are strong age-specific patterns to those who fall into this category. More than half of younger youth are economically inactive, given that so many are students. However, most students end their education by age 20, so the proportion of students in older age categories is very small. For older youth and non-youth, the share of the not economically active is relatively small, reflecting in part the long recall period used to flexibly define employment in this analysis. Nonetheless, in these age groups, women are more likely than men to be not economically active, as are those residing in urban areas relative to those in rural areas. For women, this may reflect maternal responsibilities, particularly for older youth. For urban dwellers, the higher rates of individuals not being economically active relative to rural residents likely reflects the greater barriers to employment in towns and cities, where opportunities for obtaining work, particularly formal employment, remain quite restricted, particularly in industry.

Many younger youth are continuing their education. This results in significant differences in cross-sectional employment patterns between younger and older youth. However, comparing older youth to non-youth, the patterns of employment in Figure 6.2 do not show that older youth participate in the workforce in Malawi in any qualitatively different manner than do non-youth. The only exception to

this is for women, in that, relative to non-youth women, those in the older youth age category are more likely to be not economically active, likely due to their increased maternal responsibilities at this point in their life-cycle.

6.3.2.2 Evidence of Structural Shifts in Employment in Malawi, 2004 to 2013

While Figure 6.2 provides a static, cross-sectoral overview of employment among the working age in Malawi in 2013, the details presented in Table 6.2 sketch out what changes, if any, have occurred in employment patterns between 2004, 2010, and 2013. While information is presented for the three years for which we have data from the IHS series, our examination here primarily focuses on differences in the compound annual growth rate between 2004 and 2013 in the number of individuals who fall in each employment category reported.

Growth in the number of employed is less than growth in the working age population for all age groups. This is primarily due to higher growth over this period in the share of the population that is not economically active and, within this category, particularly due to growth in the number of students among young adults.

For those employed, the share working in the agriculture sector, by far the largest sector of employment, is relatively stable across the three points in time overall and when disaggregated by sex—around 94 per cent of all women employed consistently worked in agriculture over this period, while around 80 per cent of men did so. There is little evidence in these data sets that any movement of labour out of agriculture is occurring in Malawi. While we can point to small changes that might encourage one to see the start of such a process, particularly with the modest growth of employment in services, these changes are not sufficiently large as yet to convince any observer that a process of structural change in Malawi's economy is now gaining momentum.

This tabular analysis does not provide evidence that the substantial public investment in agricultural productivity in Malawi since 2005 through the Farm Input Subsidy Programme has resulted in any obvious changes in how people allocate their labour, whether into or out of agriculture. While more detailed, multivariate econometric analyses may more clearly link FISP impacts on farm household productivity with employment choices, particularly among working age members, these links are unlikely to be especially strong.

The sector in which growth in employment is seen is in services, and this growth is primarily among the older youth and the non-youth. For the younger youth, there has been a reduction in employment across all sectors, as increasing numbers maintain their student status. Growth rates for all sectors of employment for younger youth are lower than the rate of growth in the working age population for this age group, reflecting increasing delays in their entering the workforce. Nationally, agriculture is the dominant sector for those younger youth who enter into employment. Two factors likely account for this. First, many of the

Table 6.2. Malawi, change in size of employment categories by age cohort, disaggregated by rural and urban and by male and female

	Ages 15 to 64 years				Younger youth, ages 15 to 24				Older youth, ages 25 to 34				Non-youth, ages 35 to 64			
	2004	2010	2013	Annual growth, 2004–13, %	2004	2010	2013	Annual growth, 2004–13, %	2004	2010	2013	Annual growth, 2004–13, %	2004	2010	2013	Annual growth, 2004–13, %
NATIONAL Working age population, '000s	5,975	6,871	7,207	2.1	2,338	2,556	2,771	1.9	1,603	1,980	2,024	2.6	2,034	2,335	2,412	1.9
Employed, % share of working age population	76.7	72.8	69.2	0.9	53.7	46.6	43.0	−0.6	90.0	85.6	83.4	1.8	92.7	90.6	87.5	1.2
Agriculture, % share of employed	85.3	87.1	87.0	1.0	89.8	93.1	92.4	−0.3	82.0	83.8	85.6	2.1	84.7	86.3	85.0	1.1
Industry, % share of employed	5.8	3.2	2.4	−8.6	4.0	1.6	1.8	−9.1	7.3	4.3	2.6	−9.5	5.9	3.4	2.6	−7.6
Services, % share of employed	8.9	9.7	10.6	2.8	6.1	5.3	5.8	−1.2	10.7	11.9	11.9	2.8	9.4	10.3	12.4	4.2
Unemployed, % share of working age pop.	0.7	1.3	2.6	18.1	0.9	1.4	2.0	11.0	0.9	2.0	3.5	19.9	0.4	0.8	2.6	27.2
Not economically active, % share of working age pop.	22.6	25.9	28.2	4.7	45.4	52.0	55.1	4.1	9.1	12.4	13.1	6.8	6.9	8.6	9.9	6.1
Students, % share of not economically active	13.9	15.7	17.6	4.8	34.9	40.7	43.9	4.5	1.0	1.8	1.9	10.8	0.1	0.3	0.5	27.5

Continued

Table 6.2. Continued

	Ages 15 to 64 years				Younger youth, ages 15 to 24				Older youth, ages 25 to 34				Non-youth, ages 35 to 64			
	2004	2010	2013	Annual growth, 2004–13, %	2004	2010	2013	Annual growth, 2004–13, %	2004	2010	2013	Annual growth, 2004–13, %	2004	2010	2013	Annual growth, 2004–13, %
RURAL Working age population, '000s	4,804	5,683	5,925	2.4	1,855	2,118	2,316	2.5	1,249	1,570	1,587	2.7	1,700	1,995	2,022	1.9
Employed, % share of working age population	80.4	75.9	70.6	0.9	58.8	50.4	45.6	−0.4	93.4	89.6	85.2	1.6	94.3	92.4	87.8	1.1
Agriculture, % share of employed	89.9	92.3	91.8	1.1	93.3	96.3	95.0	−0.2	88.1	90.3	91.9	2.1	89.0	91.4	89.7	1.2
Industry, % share of employed	5.1	2.3	1.5	−12.2	3.4	1.0	0.9	−13.6	6.4	3.1	1.7	−12.6	5.2	2.3	1.6	−11.4
Services, % share of employed	5.0	5.5	6.8	4.3	3.3	2.7	4.0	1.8	5.5	6.7	6.4	3.3	5.8	6.2	8.7	5.7
Not economically active, % share of working age pop.	19.4	23.2	27.0	6.2	40.9	48.9	52.8	5.5	6.4	9.3	11.6	9.7	5.5	6.9	9.5	8.4
Students, % share of not economically active	13.2	15.3	17.1	5.4	33.5	40.0	42.4	5.2	0.9	1.3	1.6	10.0	0.0	0.2	0.3	30.8
URBAN Working age population, '000s	1,171	1,187	1,282	1.0	483	438	455	−0.7	354	410	436	2.4	334	339	390	1.7
Employed, % share of working age population	61.8	57.8	62.7	1.2	34.1	28.6	29.5	−2.2	77.8	70.4	76.8	2.2	84.6	80.2	85.8	1.9

Agriculture, % share of employed	57.0	49.1	57.1	0.6	63.7	61.7	67.4	-2.1	51.2	46.6	54.5	2.6	58.4	45.9	55.6	0.4
Industry, % share of employed	10.2	10.5	8.3	−1.7	8.7	7.0	9.9	−1.2	11.8	11.2	7.0	−3.8	9.8	11.4	9.0	0.0
Services, % share of employed	32.8	40.4	34.5	1.2	27.6	31.3	22.7	−4.8	37.1	42.2	38.6	2.4	31.8	42.7	35.4	2.1
Not economically active, % share of working age pop.	35.6	38.5	33.8	0.4	62.8	66.9	66.8	0.0	18.9	24.5	18.7	2.2	14.1	18.8	12.1	0.1
Students, % share of not economically active	17.1	17.8	19.8	2.6	40.4	44.3	51.4	2.0	1.4	3.5	3.2	12.4	0.2	1.0	1.4	24.6
FEMALE Working age population, '000s	3,039	3,550	3,688	2.2	1,221	1,349	1,379	1.4	785	1,039	1,101	3.8	1,033	1,162	1,208	1.8
Employed, % share of working age population	75.4	71.7	69.2	1.2	57.8	50.8	46.8	−1.0	84.9	81.2	79.7	3.1	89.1	87.6	85.1	1.2
Agriculture, % share of employed	93.3	94.6	93.6	1.0	93.8	96.4	95.6	−0.9	91.5	92.7	92.8	3.0	94.0	95.0	92.9	0.9
Services, % share of employed	4.7	4.6	5.8	3.3	4.7	3.3	3.9	−3.1	5.8	6.0	6.3	3.8	4.0	4.3	6.5	6.8
Not economically active, % share of working age pop.	24.0	27.0	28.2	4.0	41.5	48.0	50.9	3.7	14.4	16.8	16.7	5.5	10.7	11.8	12.7	3.7
Students, % share of not economically active	10.6	13.3	14.4	5.7	26.0	33.8	37.0	5.4	0.5	1.3	1.3	15.6	0.1	0.2	0.4	27.5

Continued

Table 6.2. Continued

	Ages 15 to 64 years				Younger youth, ages 15 to 24				Older youth, ages 25 to 34				Non-youth, ages 35 to 64			
	2004	2010	2013	Annual growth, 2004–13, %	2004	2010	2013	Annual growth, 2004–13, %	2004	2010	2013	Annual growth, 2004–13, %	2004	2010	2013	Annual growth, 2004–13, %
MALE Working age population, '000s	2,936	3,321	3,519	2.0	1,117	1,206	1,392	2.5	818	942	922	1.3	1,001	1,173	1,204	2.1
Employed, % share of working age population	78.1	74.0	69.2	0.7	49.2	42.0	39.2	−0.1	94.9	90.4	87.8	0.5	96.5	93.6	89.8	1.3
Agriculture, % share of employed	77.2	79.2	80.1	1.1	84.6	88.6	88.6	0.5	73.6	74.9	77.8	1.1	75.8	78.2	77.5	1.3
Services, % share of employed	13.2	15.0	15.7	2.6	8.1	8.1	8.0	0.0	15.1	17.8	17.8	2.4	14.7	15.9	17.9	3.4
Not economically active, % share of working age pop.	21.0	24.7	28.2	5.4	49.6	56.6	59.2	4.5	4.1	7.6	8.8	10.4	3.0	5.5	7.2	12.4
Students, % share of not economically active	17.4	18.3	20.9	4.2	44.6	48.4	50.7	3.9	1.4	2.2	2.6	8.6	0.1	0.4	0.5	27.5
Observations (national)	25,144	27,842	10,349	–	9,844	10,427	4,214	–	6,772	8,026	2,847	–	8,528	9,389	3,288	–

Note: Weighted analysis. 'Annual growth' is the compound annual growth rate in the number of individuals who fall in the employment category in question between 2004 and 2013. Sample design corrected standard errors are not reported here, but are available upon request.

Source: Analysis by authors of data from the Malawi Integrated Household Survey (IHS) series for 2004 (IHS-2), 2010 (IHS-3), and 2013 (IHPS).

younger youth, particularly males, are still dependents in their households—analysis of the IHS-3 shows that 56 per cent of females and 80 per cent of males in this age category are dependents, meaning, not household head or spouse of the household head. These dependent household members will be obligated to provide farm labour to the household. Secondly, most younger youth will not have sufficient capital to engage in petty trading, in particular, in the service sector. For younger youth in Malawi, the nonfarm employment sectors are not absorbing their labour. If they are not students, most younger youth work in agriculture.

It is among the older youth that one observes growth in employment in services, even if the absolute numbers involved remain dwarfed by those working in agriculture. The national growth rate for employment of older youth in services, but not agriculture and industry, is higher than the rate of population growth for this age group. Older youth tend to live independently—87 per cent are either a household head or the spouse of a household head—and many will have achieved higher educational levels than did their elders in the non-youth age cohort, providing them with skills that can be used effectively in employment in the services sector. Growth in employment in services for older youth is most notable in rural areas and among men.

Nonetheless, the largest growth in employment in the services sector is among the non-youth. This higher growth in employment in services applies across the board to rural and urban and male and female non-youth, suggesting that broad capital accumulation over time may be a more important factor than education in enabling individuals to find employment in the services sector.

In contrast to growing employment in services and a relatively constant large share of the employed in agriculture, employment in the industrial sector in Malawi declined between 2004 and 2013. This is particularly the case in rural areas, though urban employment in industry has also declined. Malawi's national accounts indicate that the recent performance of the industrial sector has been positive but erratic, with a mean annual growth rate between 2000 and 2014 of 4.0 per cent. However, we may be seeing a reduction in labour-intensive operations in manufacturing being replaced by more capital-intensive operations.

Outside of the employed categories, younger youth in both rural and urban areas increasingly are delaying their entry into employment by extending their education. This is an outcome of the increased access to education for all offered by the free primary education programme. The positive trends in educational attainment between 2004 and 2013 for all working age individuals and by age group are detailed in Table 6.3.

Over this period, the share of younger youth who are students rose from 35 to 44 per cent (Table 6.2). The highest growth rates are seen among women and in rural areas. Although males in the younger youth age category remain more likely to be students, the number of females in this age category who are students is growing faster than for their males counterparts. However, educational attainment

Table 6.3. Changes in educational attainment among working age individuals in Malawi, 2004 to 2013

	Ages 15 to 64 years			Younger youth, ages 15 to 24			Older youth, ages 25 to 34			Non-youth, ages 35 to 64		
	2004	**2010**	**2013**	**2004**	**2010**	**2013**	**2004**	**2010**	**2013**	**2004**	**2010**	**2013**
NATIONAL—Years schooling completed, avg.	5.0	5.8	6.1	6.1	6.7	6.9	5.2	6.3	6.6	3.7	4.5	4.7
Completed primary school, per cent	*23.2*	*27.3*	*29.1*	*27.1*	*30.4*	*32.2*	*26.3*	*32.7*	*33.5*	*16.3*	*19.5*	*21.8*
Completed secondary school, per cent	*4.4*	*7.1*	*7.8*	*3.1*	*4.9*	*5.8*	*6.8*	*10.5*	*10.9*	*4.1*	*6.8*	*7.3*
Rural—Years schooling completed, avg.	4.4	5.3	5.5	5.6	6.3	6.5	4.5	5.7	5.9	3.2	3.9	4.1
Urban—Years schooling completed, avg.	7.5	8.6	8.7	8.0	8.9	9.2	7.9	8.8	8.8	6.4	8.0	7.9
Female—Years schooling completed, avg.	4.1	5.1	5.4	5.6	6.5	6.7	4.0	5.4	5.9	2.5	3.2	3.5
Male—Years schooling completed, avg.	6.0	6.6	6.8	6.6	6.9	7.1	6.4	7.3	7.4	5.0	5.8	5.9
Observations (national)	*25,098*	*27,736*	*10,296*	*9,839*	*10,370*	*4,193*	*6,762*	*7,998*	*2,835*	*8,497*	*9,368*	*3,268*

Note: Weighted analysis. Sample design corrected standard errors are not reported here, but are available upon request.

Source: Analysis by authors of data from the Malawi Integrated Household Survey (IHS) series for 2004 (IHS-2), 2010 (IHS-3), and 2013 (IHPS).

levels differ between rural and urban younger youth. In rural areas, two-thirds of younger youth students are still in primary school, albeit at upper levels. Only one-third of rural younger youth students attend secondary school and almost none attend university or training colleges. In contrast, for urban younger youth who are students, one-third attend primary school, 60 per cent attend secondary school, and 7 per cent are in university or training colleges.

The highest growth rates for the student category are seen among older youth and non-youth. However, note that the number of students in these older groups remains very small. The increase in student numbers in these categories likely reflects the recent expansion in tertiary education opportunities from about 8,400 places nationally in 2008 to 11,600 in 2011 (Mambo et al. 2016). Nonetheless, the student category is unlikely to ever be a significant employment category among these older workers.

We also see high growth rates in the share of the working age population that is unemployed. However, as discussed earlier, the absolute numbers of individuals in this category are few, and the category as narrowly defined here does not reflect the widespread nature of underemployment in Malawi.

Finally, the growth rates computed for the base working population pose a few puzzles. Overall the working age population is growing at 2.1 per cent per year, about one per cent lower than the growth of the population as a whole over the period examined. Emigration out of Malawi may be a factor in this, as emigration for wage labour, whether temporary or permanent, has been an important economic strategy for many Malawians since the colonial period (Coleman 1979, Vail 1983). In the 2008 census, heads of household were asked about household members who had left Malawi in the past ten years. Of the almost 130,000 emigrants enumerated, 61 per cent were men aged 20 to 39 years of age (NSO 2011b). This pattern of age-specific male emigration is consonant with the pattern of working age population growth seen in Table 6.2, which shows that male older youth have the second lowest rate of growth in population among the groups examined. The lowest rate of population growth is among younger youth in urban areas, which shows an absolute decline in numbers between 2004 and 2010. While this may reflect increased educational choices in rural areas, given significant public investment in rural education since 1994, reducing the traditional flow of secondary and post-secondary students of rural origin to urban schools, the determinants of population growth among younger youth in urban centres of Malawi requires additional study.

6.3.2.3 Change Over Time in Employment Categories for Individuals of Working Age

The panel nature of the IHS-3 of 2010 and the IHPS of 2013 allow the tracing of changes in employment category for individuals enumerated in both surveys. The results of this analysis are presented in Table 6.4. The dominance of agriculture in employment choice is the principal pattern seen in this table. For any working age

Table 6.4. Change in category of employment between 2010 and 2013 for working age individuals in Malawi, row totals in per cent

Category of employment in 2010	Working age, 15 to 64 years in 2010						Younger youth, 15 to 24 years in 2010					
	Category of employment in 2013											
	Agric	Ind	Serv	Un-empl	Not actv	Stdnt	Agric	Ind	Serv	Un-empl	Not actv	Stdnt
Agriculture	75	1	3	3	11	6	68	0	2	2	13	15
Industry	46	27	13	2	9	2	59	5	30	0	0	6
Services	32	4	52	3	4	5	43	7	31	3	4	12
Unemployed	55	2	6	3	27	8	38	6	3	3	36	14
Not economically active, not student	57	1	6	4	21	11	46	0	4	3	25	21
Student	24	1	4	2	11	59	25	1	2	1	11	60
Total	61	2	7	3	12	15	47	1	3	2	14	33
observations	*5,887*						*2,228*					
	Older youth, 25 to 34 years in 2010						**Non- youth, 35 to 64 years in 2010**					
Agriculture	76	2	4	4	10	5	79	1	3	3	11	2
Industry	39	33	7	0	19	2	49	27	14	5	3	2
Services	28	3	52	5	5	7	32	4	57	1	4	2
Unemployed	52	0	10	4	27	7	86	0	0	0	14	0
Not economically active, not student	62	0	8	5	19	7	66	1	6	3	20	4
Student	20	9	26	8	2	36	5	0	88	0	0	7
Total	66	3	10	4	11	6	71	2	10	3	11	2
observations	*1,643*						*2,016*					

Note: Age ranges based on age at the time of enumeration in 2010 for the earlier IHS-3 survey. Table presents row totals, for example, upper left cell in top-left sub-table indicates that 75 per cent of all working age individuals who were employed in agriculture in 2010 were still employed in agriculture in 2013, while the upper right cell in the same sub-table indicates that 6 per cent of those who were employed in agriculture in 2010 were reported in 2013 to be students.

Source: Analysis by authors of data from the Malawi Integrated Household Survey (IHS) series for working age individuals that can be identified in both the 2010 (IHS-3) and 2013 (IHPS). Weighted estimates.

individual who changed their category of employment between 2010 and 2013, employment in the agriculture sector is the most common employment category destination. The only exceptions to this pattern are for older youth and non-youth students, who were more likely to have obtained employment in the services sector than in agriculture in 2013. However, the numbers of individuals involved in these exceptional categories are few.

Moreover, there is considerable stability in the sector of employment for those employed in agriculture or in the services sector—75 per cent of those in agriculture in 2010 were still in agriculture three years later, and 52 per cent of those in services were still in services. The proportion of those still working in the same sector for agriculture and services goes up with age—non-youth are more likely than older youth to be in the same employment sector and, in turn, older youth are more likely than younger youth to remain in the same sector of employment over the three years. Stability in employment, however, is not seen in the industrial sector, where almost three-quarters of those who were working in the sector in 2010 were no longer doing so in 2013. However, note that the changes for the industrial sector are based on very small numbers overall.

Quite a bit of movement out of the 'not economically active, not student' category is seen, primarily into agriculture, reflecting the insight repeatedly observed earlier in this analysis of agricultural employment being the dominant employment choice for most working age Malawians. Two-thirds of those who move into or out of the 'not economically active, not student' category are female, suggesting that membership in this category may be driven primarily by life cycle stage considerations, notably pregnancy and child care.[4]

The key finding from this analysis is that there is no evidence of a substantial movement of labour out of the agricultural sector of Malawi's economy and into the industry or services sectors between 2004 and 2013. The share of those of working age who are employed who are working in agriculture has remained quite stable over this period at around 87 per cent. However, there has been some growth in employment in the services sector, particularly among older youth and the non-youth. Younger youth aged 15 to 24 years are seen to be extending their period of schooling, but, nonetheless, generally enter into employment in the agriculture sector after they complete their schooling. That older workers are more likely to be employed in the services sector suggests that broad capital accumulation, work experience, or the development of personal social and economic networks over time may be more important factors than education in enabling individuals to find employment outside of agriculture.

[4] Seasonal factors related to agriculture could also account for some of the movement of individuals between employment categories. However, an analysis was done of the IHS-3 data to determine if there was any association between younger youth reporting that they are students and the month in which their household was interviewed. Only those interviewed in April and August showed a significantly higher propensity to be categorized as students, a finding that would appear unrelated to seasonal cropping cycles.

6.4 Analysis of the Determinants of Category of Employment

In this section, a multivariate analysis is used to identify factors potentially associated with the decision by an individual to participate in a specific pattern of employment. We use a multinomial logit (MNL) regression model (Amemiya 1985, Greene 2012) with data for sample members of working age from the 2010 IHS-3 survey.

This analysis involves splitting our sample of working age individuals into six employment categories, including those who are not economically active, and then estimating relative risk ratios for a particular characteristic of a working age individual being associated with that individual being a member of a specific employment category. To gain insights through this analysis into how youth engage in employment in Malawi, we include age range dummy variables in our MNL model.

6.4.1 Data

We use the IHS-3 data from 2010–11 for this analysis. Although this dataset is not as recent as the 2013 IHPS, it has a much larger sample. As our MNL analysis involves examining six categories of working age individuals, some of which are quite small, it is important to have sufficient observations to draw inferences from the covariates of employment choice made by individuals in the smaller categories.

The employment categories that we use as the dependent variable for the MNL model are different from those which were used in the analyses presented earlier. The statistical employment categories used for the earlier analysis, based on definitions of the International Labour Organization, rely upon a relatively restricted understanding of the economic engagements individuals of working age in Malawi might pursue. In particular, that categorization scheme does not allow for individuals to work in more than a single sector, for example, working in both agriculture and services. Such diversification of livelihoods within households and by individuals is relatively common in Malawi. In consequence, for the MNL analysis to identify factors associated with the employment choice of an individual, we developed six broad employment categories consisting of individuals who are

i. employed in agricultural sector only, which is our reference category in the MNL analysis;
ii. employed both in agricultural sector and in household enterprise(s) in the industry or services sectors;
iii. employed both in agricultural sector and in wage employment in the industry or services sectors;

iv. only employed in household enterprise(s) in the industry or services sectors;
v. only employed for wages in the industry or services sector; or
vi. not economically active.

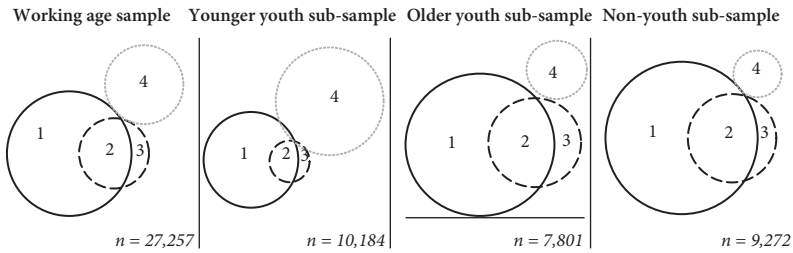
In this employment categorization scheme, we maintain a distinction between informal (categories ii and iv above) and formal (iii and v) employment in the industry and services sectors (see, e.g. Hart 1973, Fox, Senbet, and Simbanegavi 2016). Informal employment is centred on the operations of generally small-scale, minimally-capitalized enterprises within the household that make use primarily of household labour. In contrast, formal employment generally involves an individual having some type of working agreement with an employer with salary and benefits, a specific work location outside the household residence, and regular hours, with payroll taxes and social security payments being made to government agencies as part of the formal working arrangement. Obtaining informal employment is generally easier than obtaining formal wage employment, but the nature of informal employment is less stable. The returns to informal employment are also generally lower than what can be obtained from formal employment. In most developing countries, including Malawi, youth have the greatest opportunities for entering the non-agricultural workforce through informal employment, something they do generally with ambitions to obtain formal employment as soon as possible (ILO 2015).

Note that we exclude from the categorization scheme for our analysis the small number of formally unemployed. Moreover, sample size considerations dictate that we cannot differentiate employment in the industrial sector from employment in the services sector, or single out students from others who are not economically active.

The Venn diagrams in Figure 6.3 provide a graphical representation of how these categories are organized for the working age sample of the IHS-3 as a whole and by youth and non-youth sub-samples. The diagrams, however, do not differentiate those who are employed for wages in the industry or services sectors (formal employment) from those employed in household enterprises (informal employment) in these sectors. The dominance of exclusive agricultural sector employment is apparent in the diagrams, as is the large share of younger youth who are not economically active.

The potential factors associated with an individual being a member of a particular employment category that we consider include demographic characteristics, educational attainment, household assets, physical access to markets, and recent experiences of economic shocks.[5] These are described in Table 6.5 for the entire working age sample.

[5] This analysis is based on a cross-sectional data set and involves at least one choice variable (that on FISP) among the explanatory variables. Consequently, while the analysis enables the identification



1 - Employed in agricultural sector only;
2 - Employed in agricultural sector and in the industry or services sectors (not differentiated between employment in household enterprise or for wages);
3 -Employed only in the industry or services sectors (not differentiated between employment in household enterprise or for wages);
4 - Not economically active.

Figure 6.3. Venn diagrams of the relative sizes of the employment categories, for full working age sample and age-based sub-samples

The explanatory variables included in the model have been selected based on research literature assessing determinants of participation in non-agricultural activities, including being not economically active in rural areas in developing countries. Broadly, individuals may choose to engage in nonfarm activities because of the potential benefits, such as high returns or to diversify risk (Lucas and Stark 1985). External shocks and risks associated with agricultural production may also lead to individuals being forced to move away from agriculture and into other sectors. Factors associated with these two distinct scenarios are referred to as 'pull' and 'push' factors. In both scenarios, an individual's labour allocation (both in amount and across sectors) is a function of variables related to incentives—the returns to labour and the relative risks to attaining those returns; and to capacity—human, social, financial, and other assets that make possible one's engagement in a particular type of employment (Reardon et al. 2007). The explanatory variables used in the analysis here are primarily related to capacity, reflecting various assets upon which individuals might draw in pursuing particular forms of employment. Although the distinction is not exact, only the access to markets and the shock-related explanatory variables reflect incentives in any significant manner.

Specifically, the demographic variables included in the MNL model are linked to the broader question of how youth in Malawi enter the workforce. However, we also include two factors that may be associated with an individual not being economically active: whether an individual is a dependent within the household or is a woman who gave birth in the past two years. As gender plays a key role in employment status, being an important determinant of access to land, labour,

of associations between specific factors and the nature of one's employment, it does not permit one to claim any cause-and-effect relationships.

Table 6.5. Dependent and explanatory variables for multinomial logit analysis of determinants of an individual being a member of a particular employment category, working age sample

	Variable	Variable definition	Mean (s.e.)
Dependent categorical variable components:			
	farm_only	Employed in agricultural sector only, 0/1	0.526 *(0.0080)*
	farm_NFent	Employed both in agricultural sector and in household enterprise(s) in the industry or services sectors, 0/1	0.077 *(0.0026)*
	farm_NFwage	Employed both in agricultural sector and in wage employment in the industry or services sectors, 0/1	0.084 *(0.0036)*
	NFent_only	Only employed in household enterprise(s) in the industry or services sectors, 0/1	0.016 *(0.0014)*
	NFwage_only	Only employed for wages in the industry or services sector, 0/1	0.033 *(0.0022)*
	not_econ_active	Not economically active, 0/1	0.264 *(0.0049)*
Explanatory variables:			
Demographic	male	male, 0/1	0.482 *(0.0024)*
	youth15_19	age 15 to 19 years, 0/1	0.206 *(0.0030)*
	youth20_24	age 20 to 24 years, 0/1	0.165 *(0.0031)*
	youth25_29	age 25 to 29 years, 0/1	0.158 *(0.0029)*
	youth30_34	age 30 to 34 years, 0/1	0.128 *(0.0031)*
	dependent	Individual is a dependent within household (not head or spouse of head), 0/1	0.297 *(0.0045)*
	recent_birth	Individual gave birth in past two years, 0/1	0.135 *(0.0027)*
Ethnicity	Chewa_Nyanja	Chewa or Nyanja ethnicity, 0/1	0.632 *(0.0089)*
	Yao_Lomwe	Yao or Lomwe ethnicity, 0/1	0.157 *(0.0075)*
	Tmbka_Ngoni_Tnga	Tumbuka, Ngoni, or Tonga ethnicity, 0/1	0.149 *(0.0067)*
	Other_north	Other northern ethnic groups, 0/1	0.017 *(0.0023)*
	Other_ethnicity	Other ethnic groups, 0/1	0.045 *(0.0033)*
Education	ed_not_fin_prmry	Did not complete primary school, 0/1	0.730 *(0.0070)*
	ed_prmry_cmplt	Completed primary school, 0/1	0.201 *(0.0050)*

Continued

Table 6.5. Continued

	Variable	Variable definition	Mean (s.e.)
Dependent categorical variable components:			
	ed_scndry_cmplt	Completed secondary school, 0/1	0.053 *(0.0025)*
	ed_tertiary	Received tertiary level education—university or vocational, 0/1	0.016 *(0.0020)*
Household wealth	house_perm_mtrl	Individual lives in house constructed with some permanent materials, for example, metal roofing sheets, cement, or tile, 0/1	0.572 *(0.0091)*
Agriculture	land_cap_ha	Household landholding per capita, ha	0.179 *(0.0302)*
	FISP_hh	Member of Farm Input Subsidy Programme beneficiary household, 0/1	0.431 *(0.0083)*
	mid_alt_plt	Resident in Mid-altitude Plateau and Highlands agroecological zone, 0/1	0.757 *(0.0122)*
	Lower_Shire_Valley	Resident in Lower Shire Valley agroecological zone, 0/1	0.045 *(0.0040)*
	Lakeshore	Resident in Lakeshore and Upper Shire Valley agroecological zone, 0/1	0.198 *(0.0123)*
Access to markets	trvl_5k_town_hr	Travel time to nearest urban centre with population above 5,000, hours	0.970 *(0.025)*
	trvl_50k_town_hr	Travel time to nearest urban centre with population above 50,000, hrs	1.790 *(0.031)*
Shocks	shock_idiosync	Household experienced idiosyncratic shock in past 12 months, 0/1	0.273 *(0.0060)*
	drought	Drought in community in past five years, 0/1	0.228 *(0.0145)*
Observations			*27,257*

Source: Analysis by authors of IHS-3 data. Weighted estimates. Standard errors corrected to reflect clustered design of survey sample reported in parentheses.

technology, and other productive assets that will affect the propensity of an individual to obtain employment within a specific category (Andersson Djurfeldt, Djurfeldt, and Bergman Lodin 2013), the model's covariates include the sex of the individual.

We include several dummy variables on ethnicity (based on language spoken in the household). Ethnicity tends to overlap and therefore be highly correlated with other economic and social disadvantages that impact on the employment choices that an individual might exercise. As has been shown in other countries, ethnic disadvantage tends to be both a multidimensional factor and to increase cumulatively over the life course because of the complex interplay of several overlapping layers of disadvantage, which start from conception and continue through adult life (Hall and Patrinos 2014).

We include a range of educational attainment variables to assess the importance of human capital accumulation by an individual on the type of employment obtained. Education is expressed in terms of education levels, as credentialism plays an important role in screening for formal wage jobs in Malawi and many other African countries (Lewin 2009). To capture the effect of household capital stocks on employment choice, we include a dummy variable of whether the individual lived in a house that was at least partly constructed of modern, permanent building materials as a proxy identifier of households that are likely to be able to offer a member financial resources to establish a business. Several dimensions of agricultural production that might affect employment choice are also included, such as agricultural landholding size and whether an individual was a member of a FISP beneficiary household, as well as the broad agroecological potential of the area in which an individual was resident.

Physical access to markets may be expected to influence the extent to which individuals work outside of agriculture (Jonasson and Helfand 2010, Deichmann, Shilpi, and Vakis 2009). We include travel time to the nearest populated area with greater than 5,000 persons and greater than 50,000 persons respectively, as proxies for access to markets at different ends of the market size distribution.

Important factors affecting incentives to diversify away from agriculture include volatile variables such as exogenous shocks (Ellis 2000). We include variables indicating if the household of which the individual is a member experienced an idiosyncratic shock (illness, child birth, death, and so on) in the last year and whether the community in which an individual resides has experienced drought over the past five years.

6.4.2 Multinomial logit results

The results of the MNL model for the six employment categories with the full working age population in the IHS-3 sample are presented in Table 6.6. The results are presented as relative risk ratios (RRRs), which show how a one unit change in an explanatory variable will change the relative probability of an individual being in one employment category relative to the base category. RRRs are analogous to odds-ratios used in bivariate logit models (Long and Freese 2014), with an RRR>1.0 showing an increase in the relative probability of being in a particular employment category and a RRR<1.0 indicating the reverse. The base or reference category for the MNL model is being employed in the agriculture sector only, so all the relative risk ratios are expressed relative to this. For example, in the first row of Table 6.6, an individual being male increases their probability of being employed in both agriculture and a nonfarm enterprise (column 3) by 55.1 per cent, that is, 1.551—1.000, and in a wage job in industry or services by a factor of over three (3.192). In contrast, being a youth aged between 15 and 19 years (row 2)

decreases the relative probability of being employed in all categories except for the not economically active one.

It should be noted that, although the MNL is regarded as the 'work horse' of categorical variable models, it is predicated on the assumption of the independence of irrelevant alternatives (IIA). The IIA assumption states that the odds ratios in the MNL model are independent of the other states (Greene 2012). The validity of the IIA assumption is often questionable in the application of an MNL model to discrete choice issues as in the analysis of employment category choice here. However, we are unable to reject the IIA assumption for our preferred MNL model in Table 6.6, using the Small-Hsaio post-estimation test (Small and Hsaio 1985).

Examining the results of our MNL analysis, we find that the sex of the individual is an important component of employment choice. Males dominate employment outside of agriculture. Women are remaining in agriculture to a much greater extent than men, while also experiencing periods of not being economically active more commonly than men.

While the MNL analysis permits a clearer interpretation of employment patterns across age groups than does the earlier tabular analysis, examining the youth components of our model, our MNL results simply confirm the findings from our tabular analysis that younger youth, ages 15 to 24, are either in agriculture or are not economically active. This is seen by the relative risk ratios for individuals of these ages all being significantly less than 1.0 for any employment categories that include nonfarm work. In contrast, the statistically insignificant relative risk ratios across all categories for those aged 25 to 29 years suggest that these somewhat older youth are in something of a transitional period in terms of the nature of their employment, with a clearer pattern being established in the following five years, ages 30 to 35, during which we find these oldest youth more likely to be employed both in agriculture and in the nonfarm sectors, whether informally in household enterprises (more strongly) or formally in wage employment (to a lesser extent). Across all youth age ranges, however, none have a significant probability of obtaining work exclusively in the nonfarm sectors. The youth are not in the vanguard of those Malawians taking up employment, whether informal or formal, in the services and industrial sectors and abandoning agriculture.

The hypothesis from our tabular analysis that women likely move into the category of not being economically active due to recurring maternal responsibilities is not confirmed by the MNL results—having given birth in the last two years is not positively associated with being in this category. We see, however, that women who have recently given birth are also not likely to engage in nonfarm employment of any sort—all relative risk ratios are below 1.0 for this explanatory variable. In contrast, infant care seemingly does not draw a mother away from engaging in farm work, our base employment category for the MNL. However, our expectation that household members, primary youth, who are dependents within a household

Table 6.6. Determinants of employment category for working individuals in Malawi, multinomial logit results presented as relative risk ratios

Explanatory variable category	Explanatory variable (potential determinant)	Employment in agriculture and in household enterprise in industry or services sectors	Employment in agriculture and in wage employ-ment in industry or services sectors	Only employment in household enterprise in industry or services sectors	Only wage employment in industry or services sectors	Not economically active
Demographic	male	1.551*** *(0.1010)*	4.865*** *(0.4143)*	2.327*** *(0.3061)*	3.192*** *(0.3477)*	0.727*** *(0.0384)*
	youth15_19	0.498** *(0.1271)*	0.597* *(0.1282)*	0.193** *(0.0984)*	0.815 *(0.2728)*	8.342*** *(0.7989)*
	youth20_24	0.788* *(0.0770)*	0.682** *(0.0848)*	0.522** *(0.1172)*	0.789 *(0.1527)*	1.718*** *(0.1527)*
	youth25_29	1.139 *(0.0928)*	0.924 *(0.0843)*	0.890 *(0.1506)*	1.213 *(0.1663)*	1.127 *(0.1062)*
	youth30_34	1.433*** *(0.1121)*	1.208* *(0.0999)*	1.092 *(0.1874)*	1.205 *(0.1532)*	1.310* *(0.1439)*
	dependent	0.250*** *(0.0645)*	0.369*** *(0.0584)*	0.173*** *(0.0541)*	0.665* *(0.1143)*	4.240*** *(0.313)*
	recent_birth	0.788* *(0.0726)*	0.435*** *(0.0712)*	0.720 *(0.1787)*	0.369*** *(0.097)*	0.654*** *(0.055)*
Ethnicity	Yao_Lomwe	0.726** *(0.0803)*	0.784* *(0.0865)*	0.868 *(0.2076)*	0.673 *(0.1469)*	0.884 *(0.0788)*
	Tmbka_Ngoni_Tnga	0.841 *(0.0885)*	0.623*** *(0.0729)*	0.412*** *(0.102)*	0.515*** *(0.0898)*	0.971 *(0.0968)*
	Other_north	1.781* *(0.4061)*	1.194 *(0.3058)*	2.655 *(1.6851)*	0.512 *(0.2803)*	2.615*** *(0.4833)*
	Other_ethnicity	1.170 *(0.1749)*	0.804 *(0.1606)*	1.324 *(0.5004)*	1.212 *(0.3073)*	1.524* *(0.2733)*
Education	ed_prmry_cmplt	1.607*** *(0.1232)*	2.302*** *(0.1771)*	2.119*** *(0.3025)*	3.156*** *(0.488)*	2.232*** *(0.1433)*
	ed_scndry_cmplt	1.909*** *(0.3205)*	8.413*** *(1.0385)*	3.808*** *(0.9809)*	14.104*** *(2.4966)*	2.857*** *(0.3941)*
	ed_tertiary	7.716*** *(2.6866)*	76.257*** *(26.7075)*	26.987*** *(13.277)*	200.232*** *(79.1474)*	24.251*** *(9.3287)*
Household wealth	house_perm_mtrl	1.402*** *(0.1011)*	1.479*** *(0.1674)*	2.433*** *(0.5836)*	2.970*** *(0.5276)*	1.634*** *(0.1163)*
Agriculture	land_cap_ha	0.883 *(0.1049)*	0.230*** *(0.0895)*	0.000*** *(0.0000)*	0.000*** *(0.0000)*	1.055* *(0.0275)*
	FISP_hh	0.955 *(0.0649)*	0.603*** *(0.0489)*	0.000*** *(0.0000)*	0.170*** *(0.0376)*	0.616*** *(0.0400)*
	Lower_Shire_Valley	0.728 *(0.1302)*	0.704 *(0.2832)*	0.415 *(0.2400)*	0.610 *(0.2190)*	0.582** *(0.1014)*
	Lakeshore	1.120 *(0.0990)*	0.874 *(0.0962)*	0.908 *(0.2971)*	0.822 *(0.1861)*	0.955 *(0.0872)*
Access to markets	trvl_5k_town_hr	0.854 *(0.0750)*	0.825 *(0.0824)*	0.975 *(0.1825)*	0.817 *(0.1401)*	1.021 *(0.0771)*
	trvl_50k_town_hr	0.946 *(0.0596)*	0.877 *(0.0680)*	0.643** *(0.0979)*	0.683*** *(0.0755)*	0.690*** *(0.0353)*

Continued

Table 6.6. Continued

Explanatory variable category	Explanatory variable (potential determinant)	Employment in agriculture and in household enterprise in industry or services sectors	Employment in agriculture and in wage employ-ment in industry or services sectors	Only employment in household enterprise in industry or services sectors	Only wage employment in industry or services sectors	Not economically active
Shocks	shock_idiosync	1.111 *(0.0927)*	1.223 *(0.1551)*	1.082 *(0.3611)*	0.712 *(0.1268)*	0.840* *(0.0726)*
	drought	1.561*** *(0.1154)*	1.364** *(0.1522)*	1.751** *(0.3393)*	1.392* *(0.2019)*	0.920 *(0.0638)*
	Constant	0.125* *(0.0166)*	0.101* *(0.0143)*	0.184* *(0.0056)*	0.090* *(0.0252)*	0.231* *(0.0287)*
Employment category observations		2,175	2,297	465	984	7,434
Total observations in analytical data set: 27,257; Employed in agricultural sector only (base category): 13,902. pseudo R^2: 0.3110; F(115,623) = 334.50, Prob > F = 0.0000						

Note: The reference employment category is 'Agricultural sector employment only'. For the categorical explanatory variables, the base case for ethnicity is 'Chewa or Nyanja'; for educational attainment, 'Did not complete primary school'; and for agroecological zones, 'Mid-altitude Plateau and Highlands'. Statistical significance of relative risk ratios denoted by * for $p < .05$, ** for $p < .01$, and *** for $p < .001$.

Source: Analysis by authors of IHS-3 data. Weighted estimates. Standard errors corrected to reflect clustered design of survey sample reported in parentheses.

are likely not to be economically active is seen in the model results. Dependent household members of working age are also shown to be unlikely to engage in employment outside of the agricultural sector.

With regards to employment patterns and ethnicity, the Yao and Lomwe, primarily found in the south of the country, and the Tumbuka, Ngoni, and Tonga, primarily in the north (and centre for the Ngoni), are less likely than the Chewa and Nyanja, our base category for ethnicity, to engage in nonfarm activities, whether informal or formal or in combination with farming or not. Identifying the constraints that restrict individuals in these ethnic groups from engagement in work outside of agriculture merits further investigation. These constraints may include lower demand for nonfarm workers in the north and lower educational attainment among the Yao and Lomwe relative to the Chewa and Nyanja.

The important role for education in moving people out of farming and into the nonfarm sectors is consistently and strongly seen in the association between educational attainment and the employment category of an individual—greater educational attainment results in much higher probabilities of working outside of agriculture and in formal, wage-based employment.[6]

There is a strong association between the level of household wealth, as proxied by the quality of housing for an individual, and engagement in any nonfarm employment, with somewhat stronger associations for purely nonfarm employment. This suggests that there are capital or other financial hurdles that may restrict working age individuals from poorer households engaging in nonfarm employment.

Turning to the results for the agriculture-related determinants, larger landholdings are associated with a lower propensity to be in nonfarm wage employment.[7] The significant relative risk ratio in the third column of results in Table 6.6 shows that wage employment is quite strongly associated with smaller landholdings. The results from separate MNL models for the age-defined sub-samples (not presented here) show that this is particularly the case for older youth and non-youth workers, rather than for younger youth, many of whom are dependents within their households. This is evidence that declining landholding size, driven in large part by population pressure, potentially is a significant push factor propelling heads of farming households and their spouses to seek a portion of the livelihoods for their households in wage labour off-farm.

[6] We also find that higher educational attainment is associated with a greater likelihood of not being economically active. However, this result primarily reflects current students at higher grade levels in the IHS-3 sample.

[7] The results on the landholding size variable for the two exclusively nonfarm employment categories (columns 5 and 6 in Table 6.6) should be disregarded, as these individuals principally will come from non-agricultural households.

Our MNL results provide no evidence that the receipt of Farm Input Subsidy Programme (FISP) benefits by a household in the cropping season prior to the IHS-3 survey resulted in individuals in that household being more likely to obtain work outside of agriculture. The significant association between a household having received FISP benefits and working age individuals in such households being unlikely to be employed both in agriculture and in nonfarm wage labour (column 4 in Table 6.6) can be interpreted in two ways: first, as the receipt of FISP benefits forestalling the need for an individual to engage in wage labour off-farm or, secondly, as simply reflecting the targeting of FISP, the eligibility criteria for which include the requirement that beneficiary households be fulltime farmers with no formal employment off-farm.

We do not find any effect of broad agroecological potential on employment choice. The base category is the relatively productive Mid-altitude Plateau and Highland agroecological zone. However, residence in the Lower Shire Valley zone or the Lakeshore (which here includes the Upper Shire Valley) zones, both of which experience more erratic or lower rainfall and are subject to more weather-related shocks than is seen in the Mid-altitude Plateau and Highland zone, does not result in a significantly different pattern of employment choice among those of working age.

The variables on market access (travel time) to small (5,000 population and up) and large (over 50,000 population) urban centres provide contrasting results. While the overall pattern for small population centres is that the longer it takes for an individual to travel to a small centre, the less likely they are to engage in nonfarm activities, this relationship is weak, with the relative risk ratios for most categories not being statistically significant. In contrast, poor access to large urban centres is strongly negatively associated with nonfarm employment. Given that larger urban centres are where most formal nonfarm employment opportunities are concentrated, this result is not surprising—improved access to a greater number of nonfarm employment opportunities will pull people out of exclusive agricultural employment. However, the limited impact of smaller population centres in rural areas on the employment choices of individuals located close to them calls into question whether these smaller towns have much of a role to play in changing labour patterns in Malawi and contributing to a structural transformation of the economy.

Finally, with regards to an individual experiencing a recent economic shock, we find that idiosyncratic shocks are not strongly associated with a propensity to engage in nonfarm employment, but are negatively associated with being not economically active. This may be a result of important variability in the economic significance of the shocks households reported experiencing, with this variability not being captured in the dummy variable used in the model, or through social community and kin networks effectively assisting households to cope with such shocks, minimizing the need for any workers in the household to seek out new

employment. In contrast, individuals residing in communities that experienced drought are shown to be much more likely to engage in nonfarm employment either exclusively or in combination with farming. The shocks to agriculture-based livelihoods brought about by droughts provide incentives for individuals and households to diversify their economic activities beyond agriculture alone. As such, this result implies that if droughts in Malawi increase either in frequency or severity under climate change, they are likely to constitute an important push factor that encourages people to diversify their employment beyond agriculture.

To summarize the findings from our multinomial logit modelling of employment choice in Malawi, we find further confirmation that younger youth are not implicated in any shift in the sectoral composition of employment in Malawi. Older youth and non-youth, particularly males, are more central to such shifts. Educational attainment is strongly associated with employment outside of agriculture. This suggests that there are incentives associated with employment in the industry services and sectors operating to 'pull' people out of agriculture. However, the model results also show that small agricultural landholdings and experience of drought are factors 'pushing' people out of agriculture to seek nonfarm employment, whether on a part-time or exclusive basis or under formal (wage-labour) or informal (household enterprise) arrangements.

6.5 Discussion

This close analysis of patterns and trends in employment in Malawi does not provide evidence that the youth of Malawi are central to the slight shift in employment into the services sector observed over the period 2004 to 2013. The largest increase in share of those employed working in the services sector is among the non-youth group aged 35 to 64 years. Over this period, younger youth aged 15 to 24 are seen to increasingly choose to stay out of employment and extend their period of education. Those younger youth who are in the labour force, meaning, no longer in education, are much more likely to be working in agriculture than in the nonfarm sectors. This employment pattern reflects the fact that most of these younger youth remain dependents within their households and, for those coming from farming households, are expected to contribute their labour to family farm operations. Youth that are increasingly engaging in nonfarm employment are older males, those between 30 and 34 years of age. However, the sectoral share of employment of older youth is very similar to the share of the non-youth. In consequence, we find little evidence that there has been much change in how youth enter the workforce in Malawi.

The historical pattern of agriculture being the principal sector of engagement for those entering the workforce remains in place. Although we see some small movements of labour into the services sector, particularly by older workers,

there is scant evidence of structural transformation in Malawi's economy. The share of those employed who work in agriculture remained relatively stable from 2004 to 2013, while a significant decline in the share of those who work in the industrial sector is observed. This decline balances to a large degree any increase in the share of workers in services, leaving the share in the agricultural sector comparatively fixed. Our analysis of employment in Malawi dampens hopeful thoughts that we might be seeing the start of a transformation in the structure of Malawi's economy. The structure remains dominated by agriculture, as it has been for generations.

Working in the nonfarm sectors is a step that increasing numbers of workers, but still relatively few, will take later in their work lives after they have built the financial capital, experience, and social networks needed to succeed outside of agriculture. The factors that push Malawians out of agriculture, some of which we have identified in our analysis, will continue to intensify due to rapid population growth. The government should take actions and undertake public investments that increasingly will pull people out of farming.

These include continued investments in education to improve access and quality. The strong association between educational attainment and engagement in remunerative formal nonfarm employment is clear and has been recognized for generations. In consequence, the free primary education programme of government over the past 20 years has played a role in the increasing share of older youth employed outside of agriculture. Maintaining high levels of investment in education is likely to be a factor in turning the small trickle of older youth seeking employment in the nonfarm sectors into a much more substantial flow.

However, while we see that younger youth are delaying their entry into employment in order to study further and higher educational attainment is strongly associated with improved chances for young people to find non-agricultural sector jobs, still agriculture remains the entry point for most Malawians entering employment. While better training may equip young farmers to adopt improved agricultural technologies and be more productive, we find mixed, if somewhat encouraging evidence in analysis of the IHS-3 of this being the case. Thirteen per cent of farming households headed by younger youth (ages 15 to 24 years) received a visit from an agricultural extension agent in the previous year and 21 per cent used inorganic fertilizer, compared to 17 and 29 per cent, respectively, of farming households headed by those aged 25 to 64 years of age. However, when the youth category is expanded to include those up to age 34 years, the pattern is reversed—households headed by youth ages 15 to 34 years are more likely than households headed by non-youth to receive visits from extension agents (20 per cent for youth-headed households, as against 15 per cent for non-youth headed households) and to use inorganic fertilizer (33 per cent, as against 25 per cent). This pattern is consistent with younger youth engaged in agricultural employment, as they become heads of their own households, having a greater propensity than their parents' generation to seek out and use improved farming techniques.

But for those Malawian youth who seek work outside of farming, it remains the case that for most education alone is not sufficient to enable them to obtain nonfarm employment. There are relatively few high-quality jobs in Malawi in which well-trained Malawians can use their skills productively. Designing programmes and incentives to supply such jobs should be as pressing a public policy concern for the government of Malawi as improving the skills of the population through improved education services. Many of the jobs which are being created in the nonfarm sectors today are relatively low productivity and offer little more in terms of economic output than can be achieved in smallholder farming. There is a foreign direct investment element to creating higher productivity jobs, as investors can provide the technology and access to markets upon which such jobs often will be based. Government can facilitate such increased investment from outside of Malawi. Government will also need to continue its efforts to upgrade energy and transport infrastructure and significantly increase its investments in urban development, as most of these new jobs will be located in the cities of Malawi and will require reliable power and better connections to regional and global markets.

Finally, while government needs to act in a manner that puts in place adequate incentives for all Malawians to find and engage in sufficiently remunerative work in any of the three sectors of the economy, agriculture will remain the sector in which most Malawians are employed for the foreseeable future. Consequently, it is important that public investments made to support growth and to promote change in the structure of the economy of Malawi do not neglect agriculture, particularly investments that strengthen its linkages with the industry and services sectors. Increased value-addition activities on agricultural products that involve more complex processing techniques and an expansion in the range of commodities used and products manufactured are likely to be central components in any structural transformation of the economy that results in significant expansion in employment in both the industry and services sectors. In consequence, we should expect that any growth in employment in the nonfarm sectors will primarily find its origins in a more vibrant, diverse, and productive agriculture sector. While balancing public investments across the three economic sectors is necessary, the level of effort being made to improve the productivity, linkages, and commercial prospects of Malawian agriculture should be increased.

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