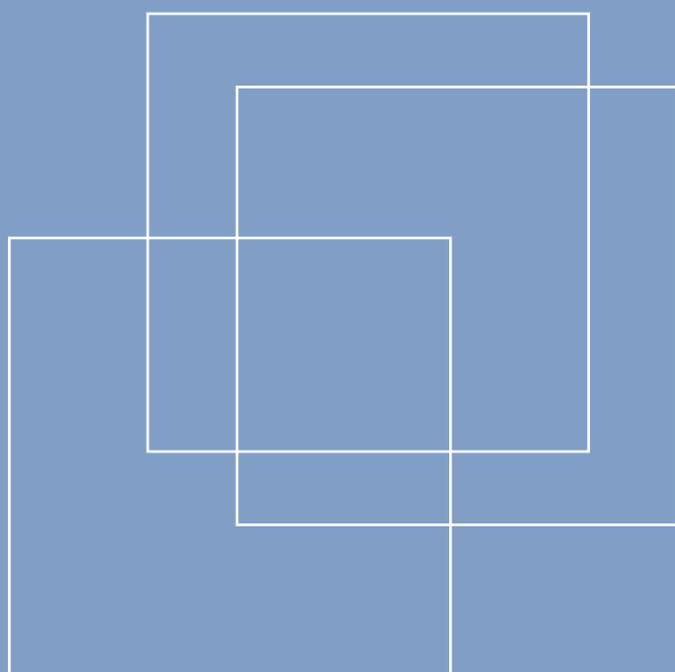




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Understanding the drivers of the youth
labour market in Kenya

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Abstract

This paper identifies the macro and microeconomic determinants of youth unemployment and inactivity rates. It finds that although the size of the youth cohort does have significant implications for the status of youth in the labour market, aggregate labour market conditions have a greater influence. The paper also finds a large gap between the youth and the overall employment elasticities in the country. This implies that although fostering economic growth and ensuring economic sustainability are important, they are not sufficient to address youth challenges. Efforts will need to be focused on improving the youth employment content of growth. The results from the microeconomic analysis show that boosting tertiary school attendance and providing targeted vocational training to young people (particularly women) would be the most effective measures for improving youth employability in the country.

Keywords: Kenya, youth inactivity, youth unemployment

JEL classification: J13; J21; J23; J24

1 Introduction

These are complex and challenging times for young people in the global economy. Kenya is no exception where young women and men account for 37 per cent of the working-age population but their participation in total employment makes up for less than 20 per cent. The gap between youth and adult employment rates in 2011 placed Kenya among the countries with the largest disparities between youth and adult rates in the region and among the lowest in terms of employment rates for youth. Due to the sluggish rate of youth employment creation and the struggle to find jobs, some young people have become discouraged and have started to leave the labour market. Keeping young people out of the labour market has significant detrimental consequences for individuals, but it also has negative effects on social, economic and development prospects for the country as a whole. Indeed, discouragement and dissatisfaction, especially among youth, have the potential of increasing the risk of social discontent to levels capable of leading to uprisings such as those seen during the “Arab Spring”. In fact, the role played by young people in the violence that erupted in Kenya during the post-election crisis of early 2008 brought to the fore the issues and challenges confronting Kenyan youth (e.g. lack of employment opportunities, discouragement and dissatisfaction with their prospects and their role in society).

Despite the severity of the youth labour market situation in Kenya, the root causes of the challenge remain largely unexplained. Numerous studies exist that analyse the characteristics of the youth labour market in Africa (Page, 2012) and in Kenya (UNDP, 2013; Pollin, 2009), as well as its consequences in terms of poverty and social exclusion (AfDB et al., 2012 and 2011). However, so far, no evidence has been put forward about the specific factors that drive youth unemployment and inactivity in the country. This paper aims to fill this void. From a macroeconomic perspective the paper explores the determinants of youth labour markets in Kenya, the extent to which they influence fluctuations in – and the sensitivity of – youth unemployment and inactivity, and what is their relative weight. From a microeconomic point of view, the paper assesses the individual characteristics of youth in Kenya that could increase their odds of finding a job. As such, the contribution of our analysis is to provide a comprehensive understanding of the macroeconomic and individual elements that determine youth unemployment and inactivity in Kenya.

The paper is structured as follows. Section 2 provides a review of the literature on the determinants of youth labour market status. Section 3 describes the labour market and social context within which young Kenyans live today and discusses the evolution of the labour market during the last decade. This section sets the scene by discussing the deep challenges youth face in Kenya when entering the labour market. Section 4 examines empirically the different macroeconomic and individual factors affecting youth employment with a view to discussing the ones that are important for the youth labour market challenges. Finally, Section 5 concludes and provides some policy.

2 Literature review

Youth unemployment has been widely researched in the economic literature (Blanchflower and Freeman, 1999 and 2007; O’Higgins, 2001; Anyanwu, 2013; Brixiová and Kangoye, 2013) and the prevalent approaches can be divided into two groups depending on whether they are analysed from a macroeconomic or microeconomic point of view.

From the macroeconomic perspective, youth unemployment is determined by the overall characteristics of youth labour markets. These principally include aggregate demand, the size of the youth labour force and youth wages (O'Higgins, 2001). Aggregate demand affects youth unemployment in the same direction that it affects overall unemployment. A fall in aggregate demand will lead to a fall in the demand for labour in general and therefore for youth as well. As such, adult unemployment and employment rates are commonly used as proxy of aggregate demand factors since they capture the overall effect. However, there is a general consensus in labour economics that youth unemployment is more sensitive than adult unemployment to changes in aggregate demand. A number of studies explain why fluctuations in aggregate demand affect young people disproportionately. Youth are more vulnerable to being laid off because they often have more precarious contracts, they are not subject to employment protection legislation or they are cheaper for firms to fire because having fewer skills they embody lower levels of investment on training (Bell and Blanchflower, 2011a). Research also has shown that during periods of recession firms react by freezing the hiring process before starting the procedure of redundancies, which affects youth disproportionately given that they account for the majority of jobseekers (Shimer, 2012; Pissarides, 1986). Even if workers are still being hired, during crises, firms may become more selective, something that may lock young candidates in an experience trap (Caroleo and Pastore, 2007). Thus, youth unemployment is particularly sensitive to aggregate demand fluctuations (Choudhry et al., 2012). In addition, there is some evidence that youth are on average less efficient in searching for a job (Bell and Blanchflower, 2011b). This is especially important given that there are long-term economic costs and social consequences of joblessness, and that the pace of recovery for youth employment is expected to be slower than that of adults (ILO, 2010).

The second major contributor to youth status in employment is the size of the youth cohort: the higher the number of youth entering the labour market, the higher the number of jobs that will need to be created. Although this straightforward intuition has been confirmed by several studies (Bertola, et al. 2007; Perugini and Signorelli, 2010), there is no consensus as to the importance of youth cohort size in determining youth unemployment. Indeed, while some studies find aggregate demand factors to be more important than demographic ones (O'Higgins, 2003, 2012); others affirm that in the presence of the former the size of the youth cohort has no significant impact (Korenman and Neumark, 1997).

In addition to relative cohort size and aggregate demand, institutional features of labour markets, that is the levels of employment protection and wages, are also important components of youth unemployment. Following a standard macroeconomic approach, an increase in wages is likely to have a negative impact on youth unemployment, because the higher the wages of youth workers the higher the incentives of firms to hire their adult counterparts. However, this intuitive appeal would imply that young workers are close substitutes for adult workers, which would be a very strong assumption. By contrast, if young and adult workers are complementary then young workers' wages will have no effect on adult wages and on the amount of young labour hired (O'Higgins, 2001).¹

¹ There is also a large literature on the impact of minimum wages on youth in particular, although no consensus has been reached. Many studies have found minimum wages to have a negative impact on youth employment (e.g. Neumark and Wascher, 2008), while other have failed to find any sort of negative effects of minimum wages on employment for youth (e.g. Allegretto et al., 2011). Marked contrasts in the results are determined, not only by the models and techniques considered, but also by particular features of each case studied, such as its location and sector. For the specific case of Kenya, a study carried out based on the 1998/99 labour force data showed that minimum wages in Kenya had stronger effects in the non-agricultural industry, where

From the microeconomic perspective, characteristics of young individuals could also affect their chances of finding a job. The influence of gender, race and birthplace differences on youth labour market outcomes has come to be widely acknowledged, and these factors are generally included in most recent estimations (e.g. Caliendo et al., 2011; Nordstrom, 2011). However, the one characteristic that is generally considered to be a prime determinant of labour market success is human capital endowment. According to the human capital theory, individuals that are better educated or that have more professional experience are more apt to be successful when looking for a job (Becker, 1975; Mincer, 1974). Indeed, education credentials are used by employers to select workers because better-educated candidates can be trained for specific jobs more quickly and at a lower cost (Thurow, 1975) and can perform better under unstable and changing conditions (Schultz, 1975). It should be noted that although educational attainment is the most direct measurement of human capital, other important components exist which young people usually lack as well. Carmeci and Mauro (2003) found that knowledge acquired through formal education is not sufficiently attractive for firms since these schooling skills are not directly transferable into the soft skills necessary to be productive in the workplace. The literature on the individual determinants of youth unemployment has also stressed the important role of a person's family background. Verhaeghe et al. (2012) argue that family members' occupations or status in the labour market can affect the individual's employment prospects. This is because of the professional network that might arise from the jobs and acquaintances of family members (Zhang and Zhao, 2011).

In Kenya, there is a significant amount of research that has been carried out on the field of youth unemployment to analyse its trends and consequences. However, little attention has been paid so far to the factors that drive youth unemployment and inactivity and as such, the relative low youth employment rate remains largely unexplained. This paper aims to contribute to this void by investigating the macroeconomic and microeconomic drivers of youth unemployment and inactivity in Kenya.

3 Trends and Composition of Youth Employment in Kenya²

3.1 Distribution of youth in the population and in employment

A significant proportion of the population in Sub-Saharan Africa (SSA) and, in particular, in Kenya is below the age of 25. In 2011, there were more than 8.5 million people between the ages of 15 and 24 in Kenya, comprising 37.4 per cent of the working-age population and rising to over two-thirds when the population under the age of 34 is considered (Figure 1).³ This is close to 2 percentage points higher than the share of youth observed in Africa as a whole (35.5 per cent) and around 11 percentage points higher than the world figure (26.5 per cent). As such, Kenya has an expansive population pyramid (high and

minimum wages were found to be positively associated with wages of low-educated workers and women (Andalón and Pagés, 2008).

² Data on labour force participation, employment-to-population ratio and inactivity rates used in this section were obtained from the Key Indicators of the Labour Market (KILM) database of the ILO. For Kenya, indicators correspond to estimates (due to the lack of available annual information), which are derived using multivariate regression techniques to impute missing values at the country level (ILO, 2011, box 2).

³ Although the international definition of youth comprises individuals aged 15 to 24, a detailed analysis of different labour market variables by age cohort shows that the group of people aged 25 to 34 sometimes presents clearly distinctive patterns, which are interesting to consider. Thus, the analysis in this paper will take into account, whenever possible, an enlarged sample of youth (15-34), differentiating always between the two youth cohorts. The enlarged group also complies better with the official definition of youth used by the Government of Kenya, which includes individuals between the ages of 15 and 30 years.

low proportion of younger and older people, respectively) as opposed to the constrictive population pyramid (low proportion of young people and ageing population) observed for the world as a whole.

In addition, Kenya's population continues to grow at a rapid pace. According to UN World Population Prospects (UNDESA, 2011), by 2050 the number of youth in Kenya will reach 17.9 million, which is more than double the figure of 2011, 18.4 per cent of the estimated overall population and 30 per cent of the estimated working-age population. This means as well that between 2011 and 2050, working-age population will increase, on average, by more than 950,000 people per year.⁴ This fact highlights the urgent need to create employment opportunities for new labour market entrants but also the challenge that Kenya faces of having to align the growth of employment with that of the population.⁵

Despite this fact, young people in Kenya are underrepresented among the employed population. In fact, persons aged 15 to 24 accounted for less than 20 per cent of total employment in 2011,⁶ 17 percentage points below their share in the working-age population. As such, the youth employment rate in the country, i.e. the employment-to-population ratio, is less than half the adult employment rate and one of the lowest youth employment rates in the region (Figure 2, panel A).

In fact, the gap between youth and adult employment rates reached 43 percentage points in 2011, placing Kenya among the countries with the largest disparities between youth and adults in SSA – the gap in the country is more than twice than that observed in the region as a whole. Moreover, at 32.5 per cent in 2011 the youth employment-to-population ratio in Kenya was 15 percentage points below the average observed for SSA as a whole. Further, between 2000 and 2005, the youth employment rate fell by close to 4 percentage points, stabilizing at around 32 per cent thereafter.

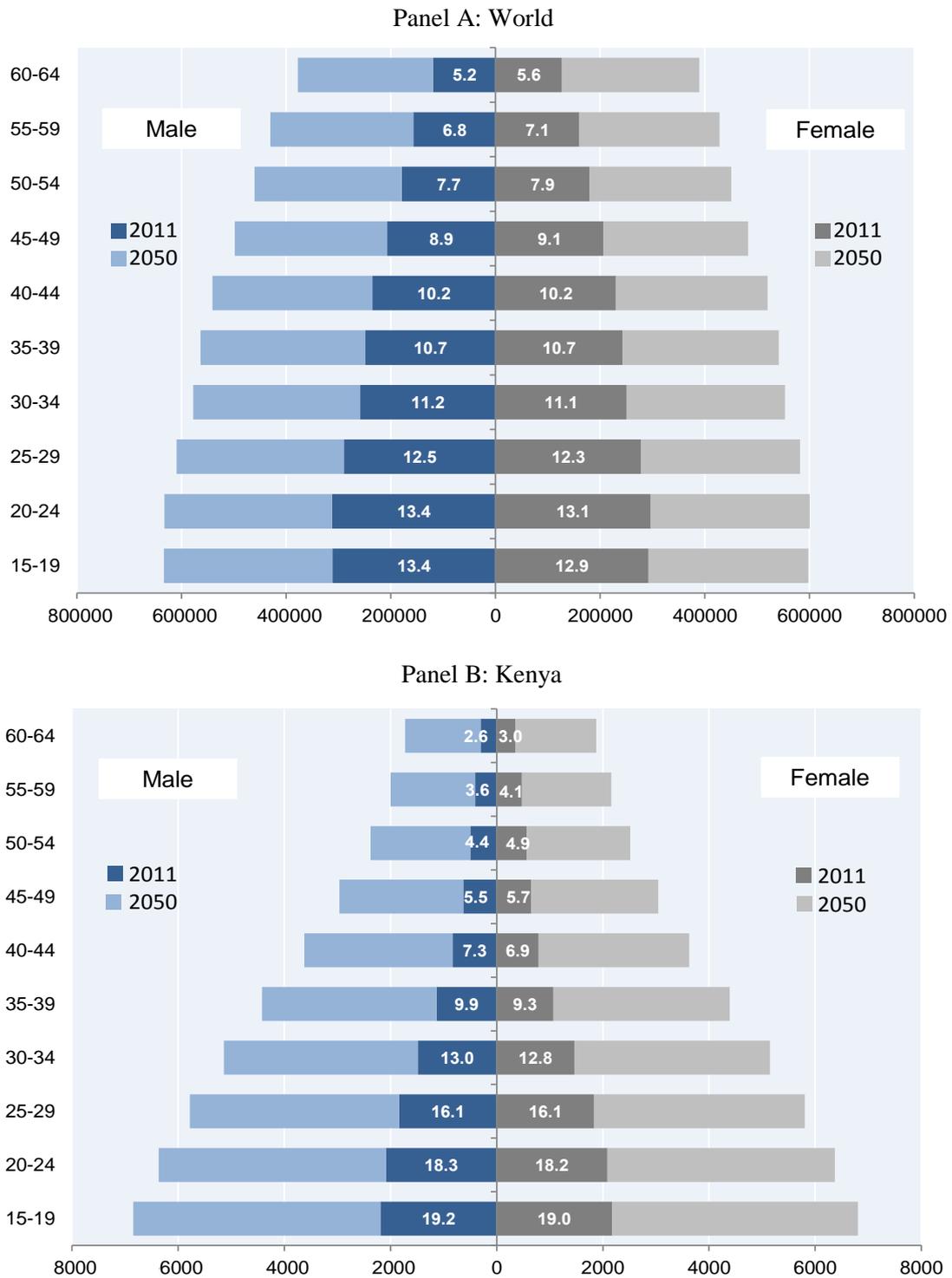
Young women are particularly affected by low employment-to-population ratios. In 2011, the ratio for young women in Kenya (29.5 per cent) was even lower than that of young men (36 per cent). Moreover, the gender gap in terms of workforce participation is higher in Kenya than in SSA as a whole – while the employment rate for young women in Kenya was 15.5 percentage points lower than in SSA, it was 13.6 percentage points lower for the case of young men (Figure 2, panel B). This situation is explained by a lower participation of young women in the labour force rather than by higher unemployment rates. A number of cultural and political factors (e.g. cultural prejudices and discriminatory policies such as customary laws and norms prevent women from obtaining land, credit, education, information and health care) explain the additional difficulties that young women face on entering and remaining in the job market (Okojie, 2003). Moreover, differences in literacy and access to education between female and male children play a key role in explaining gender gaps among youth in both employment and labour force participation rates (World Bank, 2009; ECA, 2011).

⁴ This figure takes into account the new youth entering the working-age but also adults who have exceeded 65 years of age, who would otherwise fall outside the working-age range.

⁵ This means as well that the dependency ratio in Kenya will decrease by more than 20 percentage points between 2013 and 2050. This process is known in the literature as first demographic dividend and is a window of opportunity for the country. During this period, the working-age population temporarily grows more rapidly than the population dependent on it, freeing up resources for investment in economic development. However, how much of the first dividend is realized depends on the implementation of effective policies.

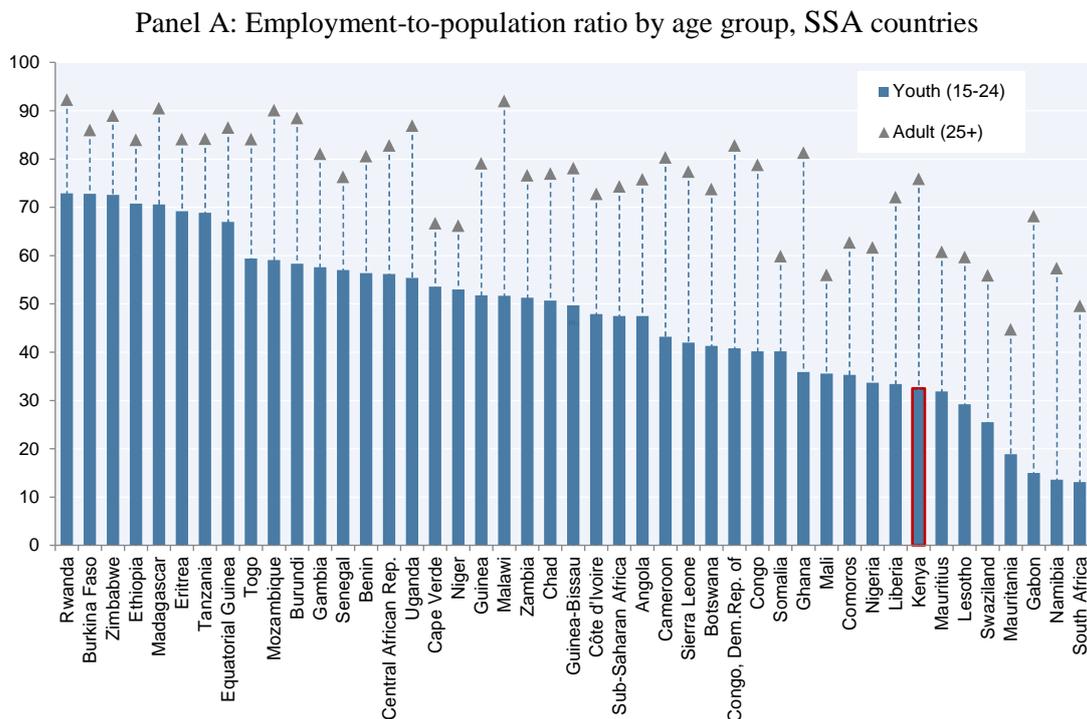
⁶ Due to the unavailability of information by age group, it is not possible to include figures on employment and employment-to-population for the youth aged 15-34.

Figure 1: Working-age population by sex and age group, 2011 and 2050 (in thousands)

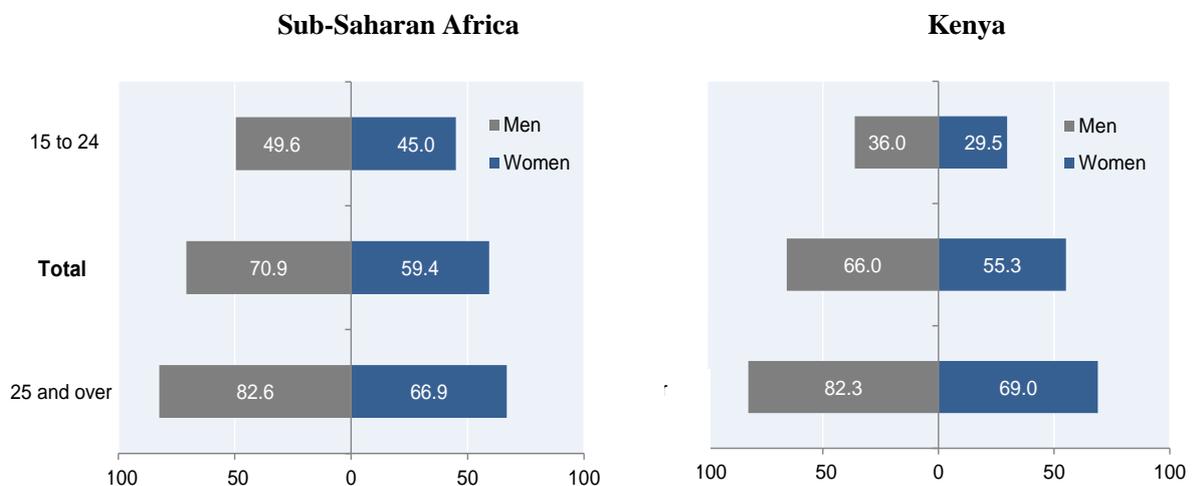


Note: Values in bars show the share of each age group in the total working-age population (15-64).
 Source: United Nations Population Division, Department of Economic and Social Affairs (UNDESA, 2011).

Figure 2: Employment-to-population ratio by age group and gender, 2011 (percentage)



Panel B: Employment-to-population ratio by age group and gender



Source: KILM (ILO, 2011).

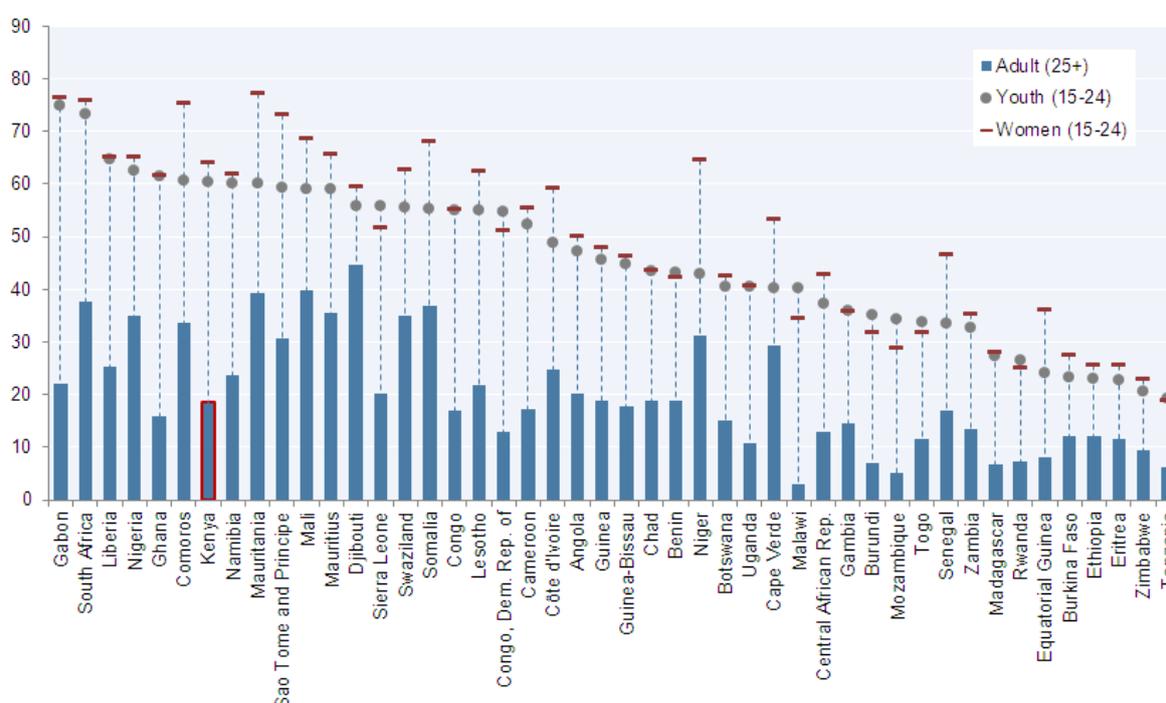
3.2 Causes and consequences of the sluggish growth of youth employment

Falling employment rates among the youth are mainly explained by the slowdown in employment, as opposed to rising numbers of the young population. In fact, employment growth among people aged 15 to 24 fell from 1.7 to 0.5 per cent during the 5 years to 2011. During the same period, the growth in the population of youth has in fact slowed down, albeit slowly from 1.6 to 1 per cent. In comparison, job creation among adults more or less matched growth in the adult population over the same period, with

employment rates remaining almost the same between 2006 and 2011. In fact, employment creation picked up slightly in 2011, growing at 3.9 per cent compared to 3.6 per cent in 2006. Overall employment growth has remained stable at 3.2 per cent since 2006, while total working-age population growth has marginally increased from 2.7 to 2.8 per cent during the period 2006 to 2011.

The above shows that, overall, employment growth is higher than that of the working-age population but only because the gains of adults, in terms of employment growth, are offsetting losses borne by youth. Among the youth, there was a slow-down in the growth of working-age population but it was outpaced by a sharper deceleration in employment growth. Both the disparities and the muted youth employment growth, clearly illustrate the substantial difficulties young men and women face in their efforts to join and stay active in the labour market.

Figure 3: Inactivity rate by age group, 2011 (percentage)



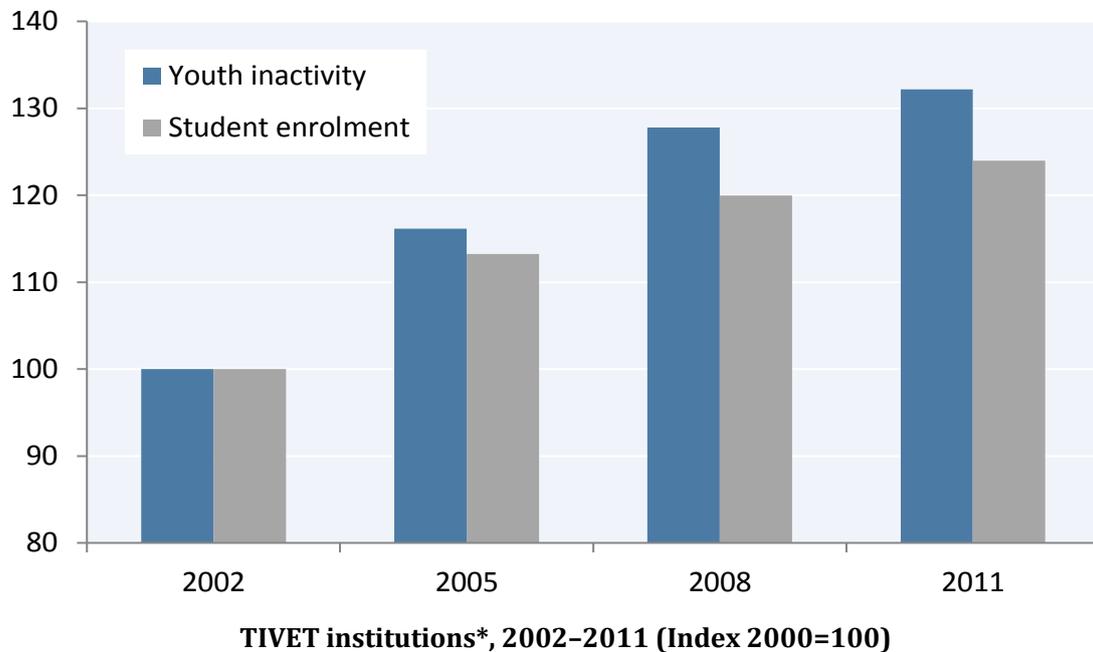
Source: Authors calculations based on KILM (ILO, 2011).

The lack of employment among the youth has several consequences. Due to the sluggish employment creation and the struggle to find jobs, some of the youth have become discouraged and have started to leave the labour market entirely. Indeed, in 2011 the inactivity rate for people aged 15 to 24 in Kenya reached 60.3 per cent— an increase of 4.8 percentage points from the 55.5 per cent in 2000 (Figure 3).⁷ Moreover, Kenya’s youth inactivity rate in 2011 was close to 42 percentage points above that of adults aged 25 or more in the country (18.6 per cent) and 14 percentage points above the youth inactivity rate in SSA as a whole (46.4 per cent). This places Kenya as the seventh SSA country with the greatest fall

⁷ The inactivity rate for people aged 15 to 34 attained 42.4% in 2011, which is 1.8 percentage points more than the 2000 figure (40.6%). Although this figure is significantly lower than that of youth aged 15 to 24, it is still 24.4 percentage points above the adult (people aged 35 or more) inactivity rate.

in youth labour force participation rates during the decade. The problem was especially acute among young women, who appear to be the most vulnerable group. Indeed, the inactivity rate for women aged 15 to 24 was 64.2 per cent in 2011.

Figure 4 Change in youth inactivity (15-24) and student enrolment in universities and



* TIVET institutions include national polytechnics, technical training institutes, institutes of technology and youth polytechnics. Youth Polytechnics are alternative to Kenyan colleges (tertiary education institutions), which provide both academic education and accredited vocational training courses.
Source: Authors calculations based on KILM (ILO, 2011) and Kenya Economic Surveys.

As some studies indicate, low employment-to-population ratios and low participation rates may be explained by high school enrolment, in which case the fact that young people are underrepresented among the employed population would not necessarily be negative. Unfortunately, this does not seem to be the phenomenon observed in Kenya. Kenya's primary and secondary school enrolment rates have been increasing and have already exceeded those of SSA as a whole (14 and 21 percentage points higher, respectively); yet, the tertiary school enrolment rate (which is the most direct substitute for youth employment) remained as low as 4 per cent in 2009. This is 3 percentage points below the average observed for SSA as a whole, whereas youth employment-to-population ratio is considerably lower – 15 percentage points. Furthermore, even though student enrolment in universities and Technical, Industrial and Vocational Educational Training (TIVET) institutions increased over the past decade, the increase in youth inactivity was higher.⁸ Between 2002 and 2011, student enrolment in tertiary education increased by 24 per cent, while youth inactivity increased by 32.2 per cent (Figure 4). This suggests that part of the increase in youth inactivity can be linked to the rise in the number of young people discouraged from participating in the labour force.

⁸ Lack of data in Kenya, did not allow for the direct analysis of the number of youth who are discouraged (those who are not participating in the labour force but would rather be working) or that are not in employment, education or training (NEET). Figure 4, however, illustrates the difference in trends in youth inactivity and enrolment in tertiary education and by approximation, shows the importance of discouragement.

4 Understanding the drivers of the Kenyan youth labour market

The above section has shown that the youth in Kenya have not participated equally in the gains from growth. Indeed, not only is employment not growing fast enough, but the few jobs available to youth are of lower quality, since they entail a higher risk of falling into working-poverty. Notwithstanding, there is little understanding as to what are the root causes of such problems. Some studies exist that look at the evolution of labour market variables (AfDB et al., 2012 and 2011) or that provide an in depth analysis of the characteristics of the youth labour market (UNDP, 2013; Pollin, 2009). However, there is no study (to our knowledge) that looks at the determinants of the youth labour market challenge in Kenya particularly.

This section identifies the determinants of youth unemployment and inactivity rates, which can be analysed at different levels. From a macroeconomic perspective questions relate to the characteristics of youth labour markets, the extent to which they influence fluctuations in – and the sensitivity of – youth unemployment, and what is their relative weight. From a microeconomic point of view, the aim is to assess the individual characteristics of youth in Kenya that could increase their odds of finding a job. With this in mind, this section examines the different macroeconomic and individual elements affecting youth employment.

4.1 Macroeconomic determinants of youth unemployment and inactivity rates

As discussed earlier, youth unemployment and inactivity rates, from a macroeconomic point of view, are determined mainly by aggregate demand and the size of the labour force. To assess the determinants of youth labour market performance in Kenya, we estimate the impact of aggregate demand and cohort size on the rate of youth that have fallen outside employment – i.e. unemployed and inactive youth – during the past 20 years. This analysis assesses the size of the elasticity of youth not in employment with respect to changes in their cohort size and in aggregate demand, as well as the relative importance of each of these factors specifically for Kenya. The analysis draws on a time-series econometric model based on annual data for Kenya during the period 1990–2011. A detailed description of the variables and sources is presented in Annex 1, Table A1.

Following Korenman and Neumark (1997), an equation has been estimated to assess the effects of labour demand and supply variables on the rate of youth not in employment. In its reduced form, the rate of youth not in employment depends on aggregate demand factors and on the relative cohort size (which captures the demographic factor). In particular, the equation is formulated as follows:

$$YNE_t = \beta_0 + \beta_1 RCS_t + \beta_2 AD_t + \varepsilon_t \quad (1)$$

where, YNE corresponds to the rate of youth not in employment and RCS to the relative cohort size. AD corresponds to aggregate demand factors that are captured by the adult unemployment and employment rates in the first specification of the model and by the annual growth rate of real GDP in the second specification.

Traditionally, adult labour market outcomes have been used as proxies to control for aggregate demand factors (e.g. Korenman and Neumark, 1997; O’Higgins, 2003). However, it is known that adult rates are not likely to eliminate all aggregate influences because, in general, youth labour market variables are more sensitive to cycles (Clark and Summers, 1982). Moreover, the relationship between

employment and output is weaker in developing countries, such as Kenya, because people ought to work one way or another to earn their livings. As such, a second specification was estimated using the annual growth rate of real GDP, which is a more exogenous measure of the business cycle. A number of GDP lags were also included in the estimation to capture potential labour market rigidities that are expected to characterize the Kenyan labour market. Importantly, the impact of the relative cohort size on youth non-employment rate could also be affected by changes in school enrolment rates, since low employment-to-population ratio and low participation rate could be explained by high school enrolment. To take this into account, the equation was estimated controlling for secondary and tertiary school enrolment; yet, both variables yield non-significant results.

The equation was estimated using ordinary least squares (OLS) and the results of the exercise are presented in Table 1. The first column reports OLS estimates controlling for possible heteroskedasticity using the robust option available. The second column reports OLS estimates adjusted for correlation of the error terms using the Newey-West procedure.

A number of interesting results arise from the analysis. First of all, the equation shows that an increase in the youth population relative to the adult (relative youth cohort) is associated with an increase, albeit small, in the rate of youth not in employment. Indeed, the elasticity of youth not in employment with respect to the size of the cohort is about 0.12, which means that an increase in the relative size of the youth population by 10 per cent would raise the number of youth in either unemployment or inactivity by around 1.2 per cent. These results are consistent with those predicted by the cohort crowding hypothesis (Easterlin, 1961), although the estimated coefficient in this analysis is small in comparison with international standards – analyses carried out for the EU 15 and the OECD have found elasticities of the order of 0.5 (Korenman and Neumark, 1997) and 0.6 (O’Higgins, 2003), respectively. However, as already pointed out, the growth rate of young people in total working-age has fallen during the last 10 years in Kenya, reducing the pressure of this factor on employment growth. Considering this, it seems intuitively correct for other factors to have a higher relative importance than the cohort size in determining the share of youth not in employment. In line with this, the first estimation of the model shows that both variables capturing the influence of aggregate demand factors (the adult unemployment and employment rates) have a large and significant impact on the rate of youth not in employment. The results show that a 1 per cent increase in the adult unemployment rate would produce a 3.5 per cent increase in the rate of youth not in employment and a 1 per cent decrease in the adult employment rate would produce an increase in the rate of youth not in employment of the order of 2.8 per cent. These results are reinforced by the outcomes of the second estimation. The effect of real output growth is highly significant at time t , and its effects are still strongly felt by the labour market some years down the road. This finding suggests the existence of labour market rigidities in the country, which seem to be responsible for the relatively slow adjustment of employment to output variations. Although the size of the youth cohort does have significant implications for the status of youth in the labour market, aggregate labour market conditions have a greater influence.

Table 1: Regression results of macroeconomic determinants of youth unemployment

<i>Estimation 1</i>	Rate of youth not in employment	
	OLS regression with robust standard errors	OLS regression with Newey-West standard errors
Relative cohort size	0.115 (0.054)**	0.115 (0.064)*
Adult unemployment rate	3.523 (1.187)***	3.523 (1.194)***
Adult employment rate	-2.810 (0.171)***	-2.810 (0.189)***
Constant	9.134 (2.805)***	9.134 (2.896)***
<i>Estimation 2</i>		
Relative cohort size	0.065 (0.015)***	0.065 (0.016)***
Real GDP, annual growth rate	-0.057 (0.019)**	-0.056 (0.017)***
Lag 1	-0.036 (0.019)*	-0.036 (0.016)**
Lag 2	-0.054 (0.017)***	-0.054 (0.017)***
Lag 3	-0.048 (0.015)***	-0.048 (0.016)***
Constant	-2.85 (1.002)***	-2.85 (1.077)**

Notes: All variables are controlled for non-stationarity. Standard errors are in parentheses. Significance levels: *significant at 10 per cent; **significant at 5 per cent; ***significant at 1 per cent.

In the first estimation, all the variables are included in natural logarithms. R-squared: 98.1 per cent.

In the second estimation, the dependent variable has been defined as the variation of the rate of youth not in employment between t and $t-1$. R-squared: 89.8 per cent.

The two estimations were controlled for multicollinearity, following the estat VIF command and collin test. Results from both tests show VIF values considerably lower than the rule of thumb of 10, implying that no further investigation is needed regarding this problem. Importantly, in the first estimation, the variable *adult employment rate* with a VIF value of 2.77 is at the limit of the strict rule of thumb of 2.5 that some researchers use.

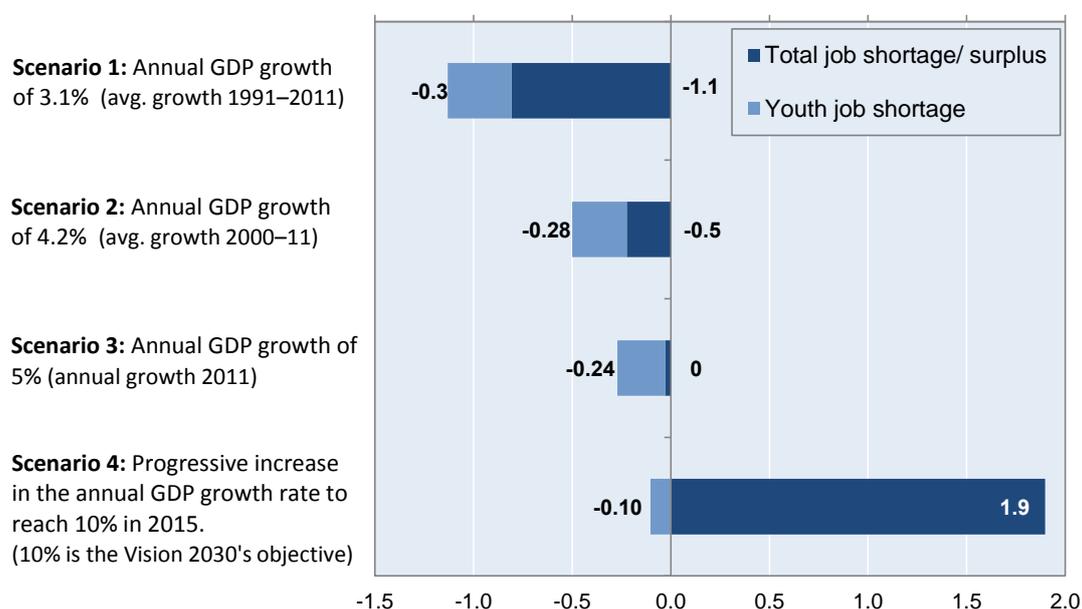
Source: Authors estimates based on KILM, UN Population Division and WEO databases.

The finding from this analysis helps us to bring out the issues and put them in a perspective. Indeed, the employment elasticity of economic growth during the past 20 years has been around 0.9 in Kenya – interestingly the youth employment elasticity is only around 0.4 during the same period.⁹ Assuming the overall employment elasticity remains constant a number of scenarios can be calculated on the basis of

⁹ These output-employment elasticities have been estimated through the long-term relationship between output and employment during the last 20 years (from 1991 to 2011). Employment data were gathered from KILM database (ILO, 2011) and real GDP data from the WEO database of the IMF (IMF, 2012). It is important to note, that while elasticities provide an idea of the employment response to growth, they do not account for the quality of jobs created in the economy – they cannot distinguish between formal and informal sector jobs or between part-time and full-time employment.

this analysis¹⁰ to show the level of growth that would be necessary to close the overall and youth employment gap. For example, if growth remains at 3.1 per cent per annum (average growth during the period 1991–2011) over the next four years (Scenario 1), employment growth will not be able to absorb the growing working-age population (**Error! Reference source not found.**). On the contrary, this would produce a shortage of 1.1 million jobs by 2015 – of which, around 325 thousand would correspond to a youth job shortage. Likewise, if growth remains at 4.2 per cent per annum (average growth during the last decade) over the next four years (Scenario 2), the total shortage of jobs would amount to around 500 thousand – and that of youth to close to 280 thousand – by 2015. Hence, Kenya will require an annual rate of economic growth of about 5 per cent to absorb the growing working-age population (Scenario 3). However, neither this would ensure enough youth job creation. In fact, given the lower youth employment elasticity, an annual growth of 5 per cent would still leave a youth job shortage of around 240 thousand. In fact, the youth job shortage would only be closed – keeping the actual youth employment elasticity – if the average annual GDP growth rate increased progressively to reach 10 per cent in 2015. Not only would an annual 10 per cent economic growth close the youth job shortage, but it would also produce a total surplus of around 1.9 million jobs by 2015. However, given Kenya’s average GDP growth of 3.1 per cent per annum during the last two decades, attaining such a high and sustained rate of growth seems like a complicated task.

Figure 5: Number of jobs that would be missing by 2015 to absorb the estimated working-age population* given different growth scenarios and existing employment elasticity, total and youth calculations (millions of jobs)



*Existing and projected (2012–15) figures on working-age population come from UNDESA (2011).

Note: Kenya Vision 2030 is a long-term development plan covering the period 2008–2030.

Source: Authors’ calculations based on KILM (ILO, 2011), UNDESA (2011) and IMF (2012).

¹⁰ The simulations presented in this section were constructed by applying the output-employment elasticity to the GDP growth scenarios defined in Figure 5. Figures make reference to the number of jobs needed by 2015 to absorb the growing working-age population, estimated by UNDESA (2011).

Kenya, thus, is confronted with the challenge of ensuring that economic growth is maintained and that macroeconomic instability is avoided (ILO, 2013 forthcoming). However, the country should not forget that increasing the employment intensity of growth (especially for youth) has an important potential for stimulating employment creation. In the case of Kenya, for example, raising the employment elasticity to around 1.1 can be an alternative solution for absorbing the new labour market entrants, even if the rate of economic growth is kept constant. To achieve this objective it is imperative to identify the individual characteristics of Kenyan youth that would increase their odds of finding a job. The following sub-section will examine this in detail.

4.2 Microeconomic determinants of youth and adult unemployment, employment and inactivity rates

Fostering economic growth and ensuring economic sustainability, important as these factors are, will not be sufficient to address youth challenges. As discussed earlier, overall employment has been growing – although at low pace – but the gains have been absorbed mainly by adults rather than by youth. This is reflected by the lower youth employment elasticity (0.4) relative to overall employment elasticity observed in the country (0.9). As such, in order to generate jobs that will be available for the youth, the country will need policies aimed to improve the youth employment content of growth – i.e. the youth employment elasticity.

With this in mind, a micro-econometric analysis was carried out to shed light on the individual characteristics that influence youth's probability of finding employment and the factors that explain the gap between adults and youth. The aim of the exercise is to explore the main variables that influence the probability of youth of being unemployed, employed, self-employed or in inactivity. The analysis draws on a micro-econometric model based on the Kenya Integrated Household Budget Survey (KIHBS) 2005/06 of the Kenya National Bureau of Statistics (KNBS).¹¹ For the purpose of this paper, the analysis focuses on individuals aged 15 or more with available information on employment status¹². The selected sample consists of 36,047 individuals, of which 13,996 (38.8 per cent) are youths aged 15 to 24; 8,272 (22.9 per cent) are youths aged 25 to 34 and 13,780 (38.2 per cent) are adults aged 35 or more.

To analyse the determinants of youth employment status, a multinomial logit model has been estimated with a four level dependent variable adopting the values: 1, for individuals in inactivity during the reference period; 2, for the unemployed; 3, for the employed; and 4, if self-employed. The logit model makes it possible to estimate how individual characteristics influence the probability of appertaining to any of these four categories. The equation estimated can be described as follows:

$$Y_i^* = X_i\beta' + \varepsilon_i$$

where, Y_i^* is the unobserved latent variable, X_i is a vector of the individuals' characteristics, β is the vector of coefficients to be estimated and ε_i is a random error.

¹¹ Data collection for the KIHBS 2005/06 was undertaken during a period of 12 months starting on May 16, 2005. The survey was conducted in 1,343 randomly selected clusters across all districts in Kenya, comprising 861 rural and 482 urban clusters. The database contains information for 13,430 households and 66,709 household members (KNBS, 2007).

¹² The individuals without available information regarding their main activity during the past 7 years (47 missing values in the sample) were excluded from the analysis.

The estimation of the model included the following explanatory variables organized by categories: (i) personal characteristics of individuals included information on sex, age (divided in three groups as explained above) and location (rural, urban); (ii) variables linked to the individuals' family background are introduced to control for the fact that family responsibilities can influence the decision to enter the labour force. This category included, marital status, the presence of the spouse or partner in the household and the presence of children aged less than 15 years; (iii) variables related to human capital endowment are also included: four dummies for the level of education attained (no education, primary schooling, secondary schooling and university degree); a dummy variable indicating if the individual has completed vocational training or not; a dummy variable indicating if the individual is still attending school; and a variable showing if the individual can read or write in another language¹³; (iv) finally, three dummy variables linked to the employment status of other members in the household are introduced: the presence in the household of unemployed family members other than the individual, since additional economic responsibilities can influence the individual's decision of entering the labour force; presence of waged employees, since they could act as informants about labour opportunities; the presence of self-employed in the household, since this can increase the probability of self-employment in the occurrence of setting up a family business (Mlatsheni and Rospabé, 2002).¹⁴ A more detailed description of the variables included in the estimation is presented in Annex 1, Table A2.

In order to estimate the impact of the individuals' age on their employment status, the variable age is included as independent variable in the regression for the whole sample. However, with the aim to capture the difference between youth and adults in the role of individual characteristics, the model is estimated for young people aged 15 to 24 and 25 to 34 and for adults aged 35 or more separately. The marginal effects of the variable on the probability of selecting each labour market situation obtained from the multinomial logit model is presented in Table 2 for the entire sample and by age group in Tables 3 and 4. The estimation is statistically significant, with an acceptable goodness of fit, and most coefficients are highly significant. Moreover, the signs of the variables, and the values of the marginal effects follow expected patterns. Overall, the model pinpoints the age of individuals as one of the main factors determining their status in employment. Indeed, people aged 15 to 24 have 22.4 per cent more chances of being in inactivity than adult people (people aged 35 or more). This difference holds, although it is dramatically reduced, when the wider youth group (25-34) is considered – the probability of being inactive for this group is still 2.9 per cent higher than that of adults. Importantly, the gap in the probability of being in inactivity between youth and adults is not related to the fact that young people

¹³ A large literature on the impact of parents' education on the employment status of the individual exists as well (see, for instance, Schill et al., 1985), which we consider might be relevant for this analysis. However, this was not possible due to the characteristics of the database used in this study. The modules made available to us for the study, only provide data for the educational attainment of parents who live in the same household of the young individuals studied – i.e. leaving aside of parents of youth that live in a different household. In our sample, this means that only 10,415 individuals aged 15 to 34 (46.8%) have available information on their parents' level of education. As such, we did not carry out the analysis since the variable is not representative of the total population.

¹⁴ The literature on youth unemployment has also stressed the importance of household income in explaining the labour market status of individuals (Rice, 1987). Due to the inaccessibility to information related to household income, which is included in the modules "transfers" and "other income" (access to the KIHBS was restricted to 3 modules, namely the household roster and the education and labour modules), we were unable to include this variable in the analysis. However, given the importance of this observation of the literature, we have controlled for the employment status of other members in the household, which can be interpreted as a proxy of how important the job is for the individual (Rees and Gray, 1982).

could still be pursuing their studies, since this factor was controlled for in the analysis.¹⁵ The model also shows that being 15 to 24 years old (compared to being an adult) increases the probability of being unemployed by 8.1 per cent, but it does not when the group 24 to 35 is considered. More importantly, the likelihood of being employed and self-employed is lower for young people –12 and 11.2 per cent lower for youth aged 15 to 24 and 1.8 and 2.4 per cent lower for youth aged 25 to 34, respectively. Thus, even after controlling for variables such as school attendance, educational attainment and vocational training, the highest gap between youth and adults is observed in the probability of being in inactivity and less so, although still important, in the probability of being unemployed.

Factors affecting the probability of being inactive: The main factors that explain the differences between youth and adults in the probability of being inactive include sex and the level of education attained. The results suggest that gender differences might be limiting the access of young people to the labour market. Indeed, young females have 21.1 per cent more chances of being inactive than young males when they are aged 15 to 24 and 25.7 per cent when aged 25 to 34, while this difference is 15.4 in the case of adults (people aged 35 or more). Surprisingly, the presence of children in the household does not play a role in explaining the level of inactivity of young people (at both age groups), but it increases the probability of being inactive among adult people. Human capital endowment, particularly tertiary education and vocational training, play a crucial role in explaining the differences between youth and adults. Indeed, primary and secondary education reduce the probability of being in inactivity by about 18 and 19 per cent, respectively, in the two youth groups (compared to 16 and 18 per cent in the case of adults). Tertiary education, on the other hand, reduces the probability of being in inactivity by 31 per cent among youth aged 15 to 24 compared to 17 per cent in the case of adults; and vocational training by 8.5 per cent (but has no impact on adult inactivity).¹⁶ The difference in the effect of university education and vocational training between youth and adults could be attributed to the fact that as adults have acquired professional experience and soft-skills, their level of education attainment becomes less important and therefore explains a lower part of the probability of being inactive.

Factors affecting the probability of being employed: Regarding the access to employment, gender inequalities and family responsibilities are important drivers for the older group of youth. Indeed, for youth aged 25 to 34, being a woman and having children reduced the likelihood of being employed by 26 and 8.6 per cent, respectively, compared to 17.1 and 1.2 per cent for the adult population. The impact of these factors is more mitigated in the case of younger youth (15-24), where being a woman affects their employability as much as for adults but having children barely has any impact. Geographical location is another important factor. The results show that young people living in urban areas have 7.8 per cent less chance of being employed than young people living in rural areas. This is not surprising given the difference in youth unemployment rates between the two areas – 38.4 and 19 per cent, respectively – but it reinforces the problem of insufficiency of jobs to accommodate young entrants into

¹⁵ Given that the share of people in education account for 42% of total inactive individuals in our sample, a number of controls were carried out to exclude this factor as an explanation of the gap in the probability of being in inactivity between youth and adults. In order to do this, first, the specific variable was included in the model in order to control for the individuals that are attending school. Second, the model was estimated separately for the whole sample and for each group of age excluding people in education, to isolate possible interactions with other variables and to avoid any influence that this group could have on the results. The results of the two estimations showed no significant differences. All coefficients of the variables of interest remained highly significant and the absolute sizes of the estimated effects changed relatively little between the two estimation techniques.

¹⁶ These two factors affect much less the probability of older youth (24- 35) of being inactive. Indeed, tertiary education reduces the probability of being inactive by 15.6 for this age group and vocational training by 5%.

the labour market. This effect holds in the case of youth aged 25 to 34 living in urban areas that have 2.2 per cent less chances of being employed than their rural counterparts. Moreover, education variables strongly influence the probability of youth of being employed (while they have barely an impact among adults). Tertiary education and vocational training increase the likelihood of having a job by 24 and 7.7 per cent, respectively, in the case of youth aged 15 to 24 and by 36.4 and 9.4 per cent, respectively, in the case of older youth. Interestingly, among adults, a university degree has little impact on employment prospects. This might mean that the level of education necessary to be employed is much higher for youth than for adults, as the youth need to compensate for the lack of professional experience.

It is important to note that having a network greatly increases the probability of youth to be employed. Indeed, the presence of another employed individual in the household raises the likelihood of being employed by 10.1 and 14.5 per cent among youth aged 15 to 24 and older youth (25-34), respectively. This result seems to confirm the insider-outsider concept of job recruitment in the case of young Kenyans.

Factors affecting the probability of being self-employed: Results with respect to the factors that drive the probabilities of being self-employed among the youth are more mitigated. Neither educational attainment, nor the availability of a network or even the sex of individuals has a strong impact on becoming self-employed among the two youth groups. In fact, both primary and secondary educational attainment increases the likelihood of youth of being self-employed by only around 1 per cent. An exception is to be made with regards to tertiary education. While a university degree has no significant impact among the younger youth (15-24), it reduces the probability of being self-employed in the case of the group 25-34 by 22 per cent. Moreover, the availability of a network increases by 2 and 7 per cent the odds of being self-employed among the youth aged 15-24 and 25-34, respectively. Finally, being a woman decreases the probability of being self-employed by close to 2 per cent among younger youth (15-24), but increases slightly the odds of being self-employed for the older youth. This may imply that other variables not present in the model, such as credit availability or entrepreneurial trainings are more important than education and family background. Interestingly, in the case of adults, having another self-employed individual in the household increases the probability of becoming self-employed by 11 per cent.

Table 2: Marginal effects from the Multinomial logit model (entire sample)

	Inactive	Unemployed	Employed	Self-employed
Sex (ref. woman)				
Man	-0.280 (0.007)**	0.024 (0.002)**	0.250 (0.006)**	0.006 (0.004)
Age (ref. adult)				
Youth 15-24	0.224 (0.009)**	0.081 (0.002)**	-0.121 (0.009)**	-0.112 (0.006)**
Youth 25 -34	0.029 (0.009)**	0.01 (0.002)**	-0.018 (0.008)*	-0.024 (0.004)**
Location (ref. rural)				
Urban	0.088 (0.008)**	0.007 (0.002)**	-0.054 (0.007)**	-0.041 (0.004)**
Married	-0.063 (0.015)**	-0.021 (0.004)**	0.063 (0.013)**	0.021 (0.007)**
Living with a partner	0.116 (0.014)**	-0.001 (0.003)	-0.135 (0.012)**	0.021 (0.007)**
Having children	0.064 (0.013)**	-0.003 (0.002)*	0.013 (0.012)	-0.074 (0.006)**
Educational attainment (ref. no education)				
Primary education	-0.279 (0.016)**	0.004 (0.003)	0.250 (0.015)**	0.025 (0.008)**
Secondary education	-0.297 (0.014)**	0.009 (0.004)*	0.298 (0.015)**	-0.010 (0.008)
University education	-0.338 (0.015)**	0.003 (0.006)	0.439 (0.017)**	-0.104 (0.007)**
Vocational training	-0.094 (0.011)**	-0.000 (0.002)	0.118 (0.010)**	-0.024 (0.005)**
School attendance	0.634 (0.005)**	-0.031 (0.001)**	-0.407 (0.005)**	-0.196 (0.004)**
Foreign language	-0.106 (0.014)**	0.005 (0.002)*	0.082 (0.012)**	0.019 (0.006)**
Other unemployed in the family	0.148 (0.017)**	0.101 (0.010)**	-0.157 (0.015)**	-0.092 (0.007)**
Other employees in the family	-0.016 (0.008)*	-0.003 (0.001)*	0.153 (0.008)**	-0.134 (0.005)**
Other self-employed in the family	-0.014 (0.008)*	0.001 (0.001)	-0.042 (0.008)**	0.055 (0.055)**
Number of observations		36,047		
Wald Chi2(48)		11,262.7		
Prob>Chi2		0.000		

Notes: Standard errors are in parentheses. Significance levels: *significant at 5 per cent; **significant at 1 per cent.

Source: Authors estimates based on KIHBS 2005/06.

Table 3: Marginal effects from the Multinomial logit model for youth by age group

	Youth (15-24)				Youth (25-34)			
	Inactive	Unemployed	Employed	Self-employed	Inactive	Unemployed	Employed	Self-employed
Sex (ref. woman)								
Man	-0.211 (0.009)**	0.016 (0.002)**	0.179 (0.009)**	0.016 (0.002)**	-0.257 (0.011)**	0.033 (0.004)**	0.260 (0.013)**	-0.036 (0.011)**
Location (ref. rural)								
Urban	0.080 (0.009)**	0.003 (0.001)*	-0.078 (0.008)**	-0.006 (0.002)**	0.045 (0.011)**	0.011 (0.004)**	-0.022 (0.013)*	-0.034 (0.011)**
Married	-0.003 (0.027)	-0.008 (0.003)**	-0.014 (0.025)	0.025 (0.007)**	-0.040 (0.023)*	-0.038 (0.011)**	0.015 (0.024)	0.063 (0.020)**
Living with a partner	0.086 (0.023)**	-0.001 (0.005)	-0.081 (0.021)**	-0.004 (0.003)	0.071 (0.019)**	-0.015 (0.008)*	-0.119 (0.022)**	0.062 (0.018)**
Having children	-0.019 (0.012)	0.001 (0.001)	0.029 (0.011)*	-0.010 (0.002)**	0.018 (0.024)	-0.009 (0.005)*	-0.086 (0.028)**	-0.095 (0.023)**
Educational attainment (ref. no education)								
Primary education	-0.177 (0.023)**	0.006 (0.003)*	0.162 (0.021)**	0.009 (0.004)**	-0.175 (0.025)**	0.001 (0.009)	0.166 (0.035)**	0.008 (0.028)
Secondary education	-0.191 (0.032)**	0.015 (0.006)*	0.174 (0.031)**	0.002 (0.004)	-0.192 (0.021)**	0.003 (0.010)	0.217 (0.034)**	-0.028 (0.028)
University education	-0.313 (0.073)**	0.076 (0.047)	0.240 (0.077)**	-0.003 (0.018)	-0.156 (0.017)**	0.012 (0.017)	0.364 (0.030)**	-0.221 (0.017)**
Vocational training	-0.085 (0.018)**	0.003 (0.002)	0.077 (0.017)**	0.005 (0.003)	-0.050 (0.013)**	0.005 (0.004)	0.094 (0.015)**	-0.050 (0.013)**
School attendance	0.583 (0.007)**	-0.060 (0.003)**	-0.445 (0.007)**	-0.078 (0.004)**	0.601 (0.030)**	-0.029 (0.003)**	-0.371 (0.023)**	-0.201 (0.019)**
Foreign language	-0.038 (0.018)*	0.006 (0.002)**	0.032 (0.017)*	-0.000 (0.003)	-0.128 (0.025)**	0.009 (0.007)	0.099 (0.029)**	0.020 (0.022)
Other unemployed in the household	0.069 (0.014)**	0.044 (0.007)**	-0.099 (0.011)**	-0.014 (0.002)**	0.087 (0.033)**	0.213 (0.032)**	-0.135 (0.036)**	-0.164 (0.022)**
Other employees in the household	-0.072 (0.009)**	-0.003 (0.001)*	0.101 (0.008)**	-0.027 (0.003)**	0.064 (0.012)**	-0.001 (0.004)	0.145 (0.015)**	-0.208 (0.011)**
Other self-employed in the household	-0.033 (0.009)**	0.001 (0.001)	0.015 (0.009)*	0.018 (0.002)**	0.054 (0.013)**	0.009 (0.004)*	-0.135 (0.015)**	0.073 (0.014)**
Number of observations	13,996				8,272			
Wald Chi2(42)	4,448.5				2,186.7			
Prob>Chi2	0.000				0.000			

Notes: Standard errors are in parentheses. Significance levels: *significant at 5 per cent; **significant at 1 per cent.

Source: Authors estimates based on KIHBS 2005/06.

Table 4: Marginal effects from the Multinomial logit model for adults

	Adult (35 or more)			
	Inactive	Unemployed	Employed	Self-employed
Sex (ref. woman)				
Man	-0.154 (0.010)**	0.014 (0.002)**	0.171 (0.011)**	-0.031 (0.011)**
Location (ref. rural)				
Urban	0.082 (0.011)**	0.007 (0.002)**	0.009 (0.011)	-0.098 (0.010)**
Married	-0.055 (0.016)**	-0.009 (0.004)*	0.091 (0.016)**	-0.026 (0.017)
Living with a partner	0.069 (0.014)**	0.003 (0.002)	-0.129 (0.015)**	0.058 (0.014)**
Having children	0.296 (0.029)**	-0.006 (0.002)**	-0.012 (0.026)**	-0.177 (0.022)**
Educational attainment (ref. no education)				
Primary education	-0.164 (0.015)**	-0.001 (0.002)	0.185 (0.020)**	-0.020 (0.018)
Secondary education	-0.186 (0.012)**	-0.004 (0.004)*	0.269 (0.020)**	-0.079 (0.017)**
University education	-0.169 (0.015)**	-0.014 (0.001)**	0.023 (0.025)**	-0.240 (0.020)**
Vocational training	-0.015 (0.013)	-0.005 (0.002)*	0.109 (0.013)**	-0.089 (0.013)**
School attendance	0.155 (0.061)*	-0.002 (0.009)	0.119 (0.060)*	-0.272 (0.032)**
Foreign language	-0.084 (0.014)**	-0.003 (0.002)	0.049 (0.016)**	0.037 (0.014)**
Other unemployed in the household	0.258 (0.050)**	0.097 (0.028)**	-0.178 (0.042)**	-0.176 (0.035)**
Other employees in the household	-0.025 (0.012)*	-0.001 (0.002)	0.257 (0.015)**	-0.232 (0.010)**
Other self-employed in the household	-0.035 (0.012)**	-0.003 (0.002)	-0.074 (0.015)**	0.111 (0.015)**
Number of observations		13,780		
Wald Chi2(42)		24,140.2		
Prob>Chi2		0.000		

Notes: Standard errors are in parentheses. Significance levels: *significant at 5 per cent; **significant at 1 per cent.

Source: Authors estimates based on KIHBS 2005/06.

5 Conclusions

This paper shows that young women and men have not participated equally in the gains from economic growth. There has been little understanding in Kenya as to what are the root causes of youth labour market challenges. This paper examines the macro and microeconomic determinants affecting youth labour markets and tries to fill this gap. It finds, first, that not so much the number of young people entering the labour market as the insufficiency of employment growth, which is keeping young people out of employment. In other words, aggregate labour market conditions – rather than the youth cohort size – have a greater influence in the status of youth in the labour market. Indeed, while a 1 per cent increase in the relative size of the youth population would raise the number of youth in either unemployment or inactivity by around 0.12 per cent, a similar increase in the adult unemployment or employment rate (used as proxy for aggregate demand conditions in the first specification of the model) would produce a 3.5 per cent increase and 2.8 per cent decrease, respectively, in the rate of youth not in employment.

Importantly, these findings also highlight the fact that while overall employment has been growing – although at low pace – the gains have been absorbed mainly by adults rather than by youth. This is reflected by the lower youth employment elasticity (0.4) relative to overall employment elasticity observed in the country (0.9). As a result, keeping the prevalent employment elasticities, the youth job shortage would only be closed if the average annual GDP growth rate increased progressively to reach 10 per cent in 2015, which seems highly unlikely given the country's past performance. In consequence, fostering economic growth and ensuring economic sustainability, important as these factors are, will not be sufficient to address youth challenges. Efforts will also need to be made to improve the employment content of growth.

In this regard, the microeconometric analysis presented in this paper shows that measures should focus mainly on improving the employability of young females (15–24), since they have 21.1 per cent more chances of being inactive than young males and 26 per cent less chances of being employed (compared to 17.1 per cent less chances for the adult population). Moreover, human capital endowment plays an important role in explaining the gap between youth and adults in accessing the labour market and it is tertiary education and vocational training that play a crucial role in explaining these differences. These factors reduce the probability of being in inactivity by 31 and 8.5 per cent, respectively, and increase the likelihood of having a job by 24 and 7.7 per cent, respectively. Finally, having a network in the household has also important effects for youth employment. Indeed, the presence of another employed individual in the household greatly increases the probability of youth to be employed and also the probability of being self-employed, although to a lesser extent.

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Appendix: Definitions of variables used in the regression analyses

Table A1: Definitions and sources of variables used in the macroeconometric analysis

Variable	Definition	Source
Rate of youth not in employment	Population aged 15 to 24 that is either unemployed or in inactivity, as a percentage of the total population aged 15 to 24.	KILM database
Relative cohort size	Ratio of the population aged 15 to 24 to the population aged 25 or more.	UN Population Division
Adult employment rate	Population aged 25 or more that is employed as a percentage of the total population aged 25 or more.	KILM database
Adult unemployment rate	Population aged 25 or more that is unemployed as a percentage of the total labour force aged 25 or more.	KILM database
Real Gross Domestic Product	Gross domestic product, constant prices, annual growth rate	WEO database

Table A2: Definitions and sources of variables used in the microeconometric analysis

Variable	Definition
Dependent:	
Employment status	=1 if inactive; =2 if unemployed; =3 if waged employee; =4 if self-employed
Independent:	
Sex	= dummy variable: male, female
Age	= dummy variable: 15-24; 25-34; 35 or more
Location	= dummy variable: urban, rural
Marital Status	= 1 if married
Living with a partner	= 1 if the spouse/partner currently lives in the household
Having children	= 1 if there are children aged 15 years or less in the household
No education	= 1 if the individual has not completed any level of schooling
Primary education	= 1 if the highest educational attainment of the individual is primary school
Secondary education	= 1 if the highest educational attainment of the individual is secondary school
University education	= 1 if the highest educational attainment of the individual is university
Vocational training	= 1 if the individual has completed vocational training
School attending	= 1 if the individual is currently attending school
Language	= 1 if the individual can read or write in another language
Other unemployed in the household	= 1 if members in the household are unemployed
Other employee in the household	= 1 if members in the household are employees
Other self-employed in the household	= 1 if members in the household are self-employed