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Modelling Economic Determinants of Youth Unemployment in Kenya

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Abstract

Youth unemployment is a challenge to both developing and developed countries. The "youth bulge" and attending challenges of unemployment resulting in social evils and political violence (rioting, civil war and terrorism) are evident in Kenya. This study therefore analyzes the economic determinants of youth unemployment in Kenya using macroeconomic data from 1979 to 2012 by investigating empirical relationship among youth unemployment, gross domestic product, population, foreign direct investment, and external debt. The study used times series Autoregressive Distributed Lag model (ARDL) to test the long run effects of economic determinants of youth unemployment. At 5% significance level, empirical results indicate that unit increase in population by 1.1%; unit increase in foreign direct investment reduces youth unemployment by 0.00024%; unit increase in previous youth unemployment rate reduces current unemployment rate by 0.12%. Contrarily, *1% gross domestic product increases youth unemployment rate by 0.00559%.* The study revealed that population growth; foreign direct investment, gross domestic product, and external debt have long run relationship with youth unemployment rate. This study therefore gives insights into possible solutions considering interplay of macroeconomic factors.

Keywords: youth unemployment, youth bulge, economic determinants, modelling

INTRODUCTION

According to Davidson (1998) unemployment occurs when a person who is actively searching for employment is unable to find work. The most frequently cited measure of unemployment is the unemployment rate. This is the number of unemployed persons divided by the number of people in the labour force. Youth unemployment therefore is derived from labour force minus employed persons under youth age bracket. The global unemployment rate is 11.7 % while global youth unemployment rate is 23.6 %. Both Okojie (2003) and Kabaklarli et al (2011) studies in Nigeria and Turkey respectively noted that youth unemployment rate is two times higher than that of adults. OECD (2010) estimated global youth unemployment rate to be 27.3% while in Africa it stood at 36.7%. The youth unemployment rate in sub- Saharan African is estimated to be over 36 %.

Youth unemployment is a vital challenge for both developed and developing countries Kabaklarli et al (2011). The Kenya constitution defines youth as persons between the ages of 18 and 34. In Kenya, the youth constitute 35% of the population. The youth in Kenya are experiencing much higher unemployment rates (67%) than the rest of the Kenyan population (34%) (Munga and Onsomu, 2014): this includes a small formal sector alongside a large informal sector. Over the 30% of those on wage employment are casuals. Based on the Kenya Population Census (2009) and statistics from Ministry of Education, Science and Technology (MoEST), the table below shows figures of population of youth in school going age and actual numbers attending school.

Table 1: Statistics of youth of school going age out of school and attending school

Age	Population in millions	Enrolment in education in millions
Age 6 years	1.5	1.3 class one
6-13	10.5	10 primary school
14-17	4.5	2 Secondary school
18-23	5	0.5 Tertiary education.

Data Source MoEST (2014)

These figures reveal that 89% of youth entering labour markets have no formal training, thus lack employable skills; 800,000 entering youth age have no skills; 1.2 million youth enter labour market without formal training or skills; and at age 24 only 11% have formal training ADEA(2014). As such, education is a key mitigating factor in youth unemployment in Kenya. The unemployment rate and the disappearance of certain jobs in the Kenyan work place is a major concern that needs urgent attention Ponge (2013).

Table2: Employment status of youth with various levels of education

Education	Formal employment	Informal	Students	Unemployed
Primary	4%	54%	14%	14%
Secondary	12%	40%	26%	15%
Tertiary	31%	9%	52%	8%

Data source for the table MoEST (2014)

In the recent past, several interventions have been carried out to solve the youth unemployment crisis with minimal success. They include *Kazi kwa vijana* , Youth Enterprise Development Fund (YEPF), and preferential procurement presidential decree which isolates 30% of all government tenders to young people. This paper looks only into economic determinants of youth unemployment in Kenya.

It is broadly understood that the determinants of youth unemployment are population, foreign direct investment, external debt, gross domestic product, private investment, productivity, education and technology. However, this study looked into GDP, Extenal Debt, Population Growth, and Foreign Direct Investment.

SCOPE OF THE STUDY

The study considered only modelling determinants of youth unemployment in Kenya and not beyond. Also the study looked into role of education in youth unemployment. However, the empirical mathematical models did not factor in education.

LIMITATIONS OF THE STUDY

The study did not consider gender and cultural influence on youth unemployment. Also private investment is a macroeconomic factor that was not included in the models developed by the study.

LITERATURE REVIEW

According to Levin (2012) there is positive relationship between employment rates and countries economic development. On this, Dimian (2011) reported that youth unemployment rate has negative impact to country's gross domestic products. Kabaklarli et al (2011) noted that when the economic activity is healthy and developing, employment as well as youth employment will be better. However, economic meltdown and crises affect employment as well as youth unemployment negatively. Msigwa and Kipesha (2013), youth employment result into increased aggregate demand as well as increase in capital formation. Further on this ILO (2011) argues that youth are likely to spend a higher percentage of their income on goods and services, which boost the countries' aggregate demand: thus economic growth. In addition, ILO (2011) explains that employed youth who receive higher salaries make savings and invest or deposit them in banks. The argument follows that, the savings result in increase in pool of capital which can be used to finance SME and start small businesses thereby boosting a counties economic development. To this Kabaklarli et al (2011) posit that young people have a marginal propensity to consume more than adults, therefore, increasing unemployment rate in young people negatively affects consumption, total investment and as a result GDP.

On a different note, studies show that youth employment reduces the social costs within the societies by decrease in violence, criminal activities, drug addiction as well as prostitution which reduce social costs in the country McLean Hilker and Fraser (2009, a quoted by Msigwa and Kipesha). From previous studies considered herein, increase in GDP reduces youth unemployment.

It is assumed that increase in external debt leads to decrease in unemployment. However, high public debts may be counter-productive in that it attracts associated tax increase which reduces investment and consumption expenses; with less youth employment and lower GDP growth rates Maqbool et al (2013).

Population growth leads to increase in unemployment. Youth represents an important cohort of Kenya's population ADEA (2014).The number of youth almost tripled from 4.94 million in 1979 to 13.67 in 2009. Kenya's population is projected to be 46.33 million in 2015 and 69.93 million by 2030. This implies that youth will be 35.35% in 2015 and 35.18% in of population 2030. In 2009 the youth population expressed as a percentage of adult is 66.6%.

When youth population grows by margin the labour market cannot absorb, youth unemployment increases. Maqbool et al (2013) noted that rapid increase in population raises many socio-economic problems in the economy: it increases unemployment and accumulates the backlog of unemployment.

Macbool et al (2013), in his study in Pakistan, notes that there are more entrants into labour market than number of jobs created. This is also the case in Kenya. Every year, there 200,000 youth who never attended primary school, 300,000 who drop out primary school,250,000 who complete primary school but do not join secondary school, 180,000 secondary school drop outs, 250,000 who finish secondary schools but do not join tertiary institutions,45,000 who drop out of tertiary institutions, and 155,000 who complete tertiary institutions. This implies that 1.2 million youth enter job market annually while only less than 500,000 jobs are created annually. For instance, the target for total job creation in 2008 was 425,000 but the actual jobs created were 467,300 of which 433,500 were in the informal sector, 33,700 were wage employees in modern establishments and 100 were self employed (Kenya Country Report for the 2014 Ministerial Conference on Youth Employment, 2014).

Table 3 showing statistics of youth entering job market annually

Level of Education	Numbers
No education	200,000
Drop out of primary	300,000
Complete Primary	250,000
Drop out of secondary	180,00
Complete Secondary	250,000
Drop out of tertiary education	45,000
Complete Tertiary education	155,000
Total	**1,380,000**

The assumption is that foreign direct investment (FDI) too has a negative relationship with youth unemployment Kabaklarli et al (2011). Mostly, foreign investors use local human resource in daily activities of the operations of their firms. This results in increased employment.

Studies on determinants of unemployment indicate that there are internal and external factors that determine youth unemployment Maqbool et al (2013). The internal factors revolve around labour market fundamentals affecting labour supply and demand. These internal factors comprise workers and trade union preferences, bargaining powers, firms, technology, and market power.

To begin with, Valadkhani (2003) modelled major determinants of Iran unemployment using data between 1968 and 2000. He used consumer price index, output gap, total investment and the exchange rate as variables. He found out that these factors determine the variations in the unemployment rate.

In addition Kalim (2003) analyzed the statistical relationship between unemployment, population and GDP using dataset for 13years from 1986-1999. The result revealed that there was a positive relationship between unemployment and population and inverse relationship between unemployment and GDP over a period of 1986-1999. The results indicated that both GDP and population growth are major contributors of unemployment in the economy.

On the same note, Aktar and Shahnaz (2005), as quoted by Maqbool et al (2013), examined the determinants of youth unemployment using data from 1991-2004. The findings revealed that growth rate of GDP, growth of service sector and private sector investment had greater impact than public sector investment to reduce youth employment. Arguing that these ignored key macroeconomic variables in model that may be responsible for youth unemployment, they incorporated population, GDP, private investment (PI), Foreign Direct Investment (FDI), and External Debt (ED) as determinants of youth unemployment. The findings revealed that there was high youth unemployment due to low GDP and investment in general.

Further still, Eita and Eshipala (2010) used 1971-2007 data and found out that if actual GDP is below potential GDP, there will be an increase in unemployment as an increase in the cost of labour increases unemployment. They also revealed that there was a negative relationship between employment and investment (both FDI and PI).

Moreover, Kabaklarli et al (2011) used youth unemployment rate as dependent variable, whereas GDP, Price Index, Gross Fixed Capital Formation and Productivity as explanatory variables as was done by Eita and Eshipala (2010). The results indicated that inflation and productivity had positive effects on youth unemployment whereas GDP and investment had negative effects on the long-run.

Lastly, Maqbool et al (2013) outlined external factors as macroeconomic policies and institutional changes related to fiscal and monetary policies and market. Muhammad et al (2013) worked on determinants of unemployment by considering GDP, inflation, population, and FDI. In the study, GDP and FDI results revealed that youth employment rate has inverse relationship with inflation, GDP, FDI. However, population growth and youth unemployment rate have positive relationship.

METHODOLOGY

The study used World Bank annual macroeconomic data covering period from 1979 to 2012. The data included GDP, Youth Unemployment Rate, Foreign Direct Investment, Private Investment and External Debt. These variables were derived from Maqbool et al (2013; Kabaklarli et al (2011); Eita and Eshipala (2010); and Valadkhani (2003) where youth unemployment rate is modelled as a function of GDP, External Debt, Population, and Foreign Direct Investment.

The variables used are defined as follows:-

***Youth Unemployment*:** The dependent variable which is derived from labour force minus employed persons under youth age bracket. Unemployment occurs when an individual is able and willing to find work but is without work at that particular time.

$$LabourForce - Employed\ Youth\ Population = Youth\ Unemployment\ (UN)$$

Population: Total persons of the country. Population growth leads to increase in unemployment.

Gross Domestic Product (GDP): The total market value of all final goods and services produced annually within the boundaries of a country. The study verifies

relationship between GDP and youth unemployment rate.

***External Debt*:** Is the total debt in a country owed to foreign citizens, firms and institutions. The debt includes money owed to private commercial banks, other governments, or international financial institutions, such as IMF and World Bank.

Foreign Direct Investment (FDI): Is defined as a company from a country making a physical investment into building a factory in another country. In other words, it is the establishment of an enterprise by a foreigner.

The variables were converted into natural logarithmic form as recommended by Kabaklarli et al (2011) and other studies.

Study Model

The study used time series autoregressive distributed lag (ARDL) for analysis of long-run relations. The general form of ARDL with both dependent and independent variables lagged up to *p* and *q* respectively:

$$y_t = \delta + \theta_t y_{t-1} + \cdots + \theta_t y_{t-p} + \delta_0 x_t + \delta_1 x_{t-1} + \cdots + \delta_q x_{t-q} + \epsilon_t \quad (1)$$

Where: y_t is the dependent variable, x_t independent variable δ is the impact multiplier, θ_t is the distributed lag weight of x_t ,ϵ_t is the error term, *p* is the lag length of y_t ,*q* is the lag length of x_t.

Assumptions of ARDL

1. $y_t = \delta + \theta_t y_{t-1} + \cdots + \theta_t y_{t-p} + \delta_0 x_t + \delta_1 x_{t-1} + \cdots + \delta_q x_{t-q} + \epsilon_t$
   $t = q+1, \ldots, T$
2. *y* and *x* are stationary random variables and ϵ_t is independent of current past and future values of *x*.
3. $E(\epsilon_t) = 0$, $Var(\epsilon_t) = \sigma^2$, $Cov(\epsilon_t, \epsilon_s) = 0, t \neq s$, $\epsilon_t \sim N(0, \sigma^2)$

Length of Lags p and q

The study used Akaike Information Criterion (AIC) and Schwartz Criterion (SC).

This involves choosing lags *p* and *q* that minimizes the sum of squared errors (SSE) subject to increase in number of parameters. Increasing lag lengths increases the number of parameters but reduces SSE.

$$AIC = \ln\left(\frac{SSE}{T}\right) + \frac{2K}{T} \quad (2)$$

Where $K = p + q + 2$, the number of coefficients estimated.

$$SC = \ln\left(\frac{SSE}{T}\right) + \frac{Kln(T)}{T} \quad (3)$$

Since $Kln(T)/T > 2K/T \; for \; T > 8$ the SC restricts additional lags more than AIC.

The functional form of the model is as:

$UN = f(GDP, POP, FDI, EXD)$ (4)

And the DL form is:

$$lnUN_t = \beta_0 + \beta_1 \Delta lnPOP_t + \beta_2 \Delta lnGDP_t + \beta_3 \Delta lnFDI_t + \beta_4 \Delta lnED_t + \epsilon_t \quad (5)$$

The ARDL form has previous values of $lnUN_t$ as part of explanatory variables.

$$lnUN_t = \beta_0 + \beta_1 \Delta lnlUN_{t-i} + \beta_2 \Delta lnPOP_t + \beta_3 \Delta lnGDP_t + \beta_4 \Delta lnFDI_t + \beta_5 \Delta lnED_t + \epsilon_t \quad (6)$$

When every variable is lagged up to t-j

$$lnUN_t = \beta_0 + \beta_1 \Delta lnlUN_{t-i} + \beta_2 \Delta lnPOP_{t-j} + \beta_3 \Delta lnGDP_{t-j} + \beta_4 \Delta lnFDI_{t-j} + \beta_5 \Delta lnED_{t-j} + \epsilon_{t-j} \quad (7)$$

The advantage of this method is that variables do not have to be classified into I(0) 0r I(1). The study uses ARDL approach to analyze variables. Stationarity test is carried out to ensure that there is no serial correlation among variables used in the regression. The Augmented Dickey-Fuller test is employed to investigate stationarity status of each variable. The Philip-Perron test is not used for the reasons that it ignores serial correlation. Whereas both test deals with serial correlation and heteroskedasticity, Phillip-Perron ignores serial correlation.

Other Advantages of ARDL Model include the following

- The model captures dynamic effects from lagged *x*'s and *y*'s
- If sufficient number of lags of x's and y's are included serial correlation can be eliminated.
- ARDL can be transformed into one with lagged x's only which extends into infinite past, that is, infinite distributed lag.

Estimation of Parameters

Let $Ly_t = y_{t-1}$

When the variable is lagged twice:

$$L(y_t) = Ly_{t-1} = y_{t-2} = L^2 y_{t-2}$$

$$L^s y_t = y_{t-s}$$

Re-writing the ARDL in terms of lag operator notation:

$$y_t = \delta + \theta_1 L y_t + \theta_2 L^2 y_t + \cdots + \theta_p L^p y_t + \delta_0 x_t + \delta_1 L x_t + \delta_2 L^2 x_t + \cdots + \delta_q L^q x_t + \epsilon_t \quad (8)$$

Collecting terms that contain y_t on the left hand side and factoring out x_t and y_t:

$$\left(1 - \theta_1 L - \theta_2 L^2 - \cdots - \theta_p L^p\right) y_t = \delta + (\delta_0 + \delta_1 L + \delta_2 L^2 + \cdots + \delta_q L^q) x_t + \epsilon_t \quad (9)$$

From Okun's Law:

$$DU_t = \delta + \theta_1 DU_{t-1} + \delta_0 G_t + \delta_1 G_{t-1} + \epsilon_t \quad (10)$$

This can be factored as:

$$(1-\theta_1 L)DU_t = \delta + (\delta_0 + \delta_1 L)G_t + \epsilon_t \quad (11)$$

We now define inverse of $(1-\theta_1 L)$ which becomes $(1-\theta_1 L)^{-1}$

Such that $(1-\theta_1 L)(1-\theta_1 L)^{-1} = 1$

Substituting in (10)

$$DU_t = (1-\theta_1 L)^{-1}\delta + (1-\theta_1 L)^{-1}(\delta_0 + \delta_1 L)G_t + (1-\theta_1 L)^{-1}\epsilon_t \quad (12)$$

We equate this to infinite distributed lag:

$$DU_t = \alpha + \beta_0 G_t + \beta_1 G_{t-1} + \beta_2 G_{t-2} + \beta_3 G_{t-3} + \cdots + \epsilon_t \quad (13)$$

$$DU_t = \alpha + (\beta_0 + \beta_1 L + \beta_2 L^2 + \beta_3 L^3 + \cdots)G_t + \epsilon_t \quad (14)$$

Since (13) and ((14) are identical:

$$\alpha = (1-\theta_1 L)^{-1}\delta \quad (15)$$

$$\beta_0 + \beta_1 L + \beta_2 L^2 + \beta_3 L^3 + \cdots = (1-\theta_1 L)^{-1}(\delta_0 + \delta_1 L) \quad (16)$$

$$e_t = (1-\theta_1 L)^{-1}\epsilon_t \quad (17)$$

From (16)

$\alpha = \frac{\delta}{1-\theta_1}$ which implies $(1-\theta_1)\alpha = \delta$

In order to estimate β_s we multiply (3.18) by $(1-\theta_1 L)$

$$\delta_0 + \delta_1 L = (1-\theta_1 L)(\beta_0 + \beta_1 L + \beta_2 L^2 + \beta_3 L^3 + \cdots) = \beta_0 + \beta_1 L + \beta_2 L^2 + \beta_3 L^3 \cdots - \beta_0\theta_1 L - \beta_1\theta_1 L^2 - \beta_2\theta_1 L^3 - \cdots = \beta_0 + (\beta_1 - \beta_0\theta_1)L + (\beta_2 - \beta_1\theta_1)L^2 + (\beta_3 - \beta_2\theta_1)L^3 + \cdots \quad (18)$$

$$\delta_0 + \delta_1 L + 0L^2 + 0L^3 = \beta_0 + (\beta_1 - \beta_0\theta_1)L + (\beta_2 - \beta_1\theta_1)L^2 + (\beta_3 - \beta_2\theta_1)L^3 + \cdots \quad (19)$$

From (18)

$$\delta_0 = \beta_0 \quad ,\delta_1 = \beta_1 - \beta_0\theta_1, \quad \beta_1 = \delta_1 + \beta_0\beta_1;$$
$$0 = \beta_2 - \beta_1\theta_1; \beta_2 = \beta_1\theta_1; 0 = \beta_3 - \beta_2\theta_1,$$

DATA ANALYSIS AND RESULTS

Testing for stationarity

Unit root test

$H_0: r = 0$ the series is stationary

$H1: r < 0$ the series is nonstaionary

Table 4: The Augmented Dickey-Fuller (ADF) Test results

Variable	Level	Tau	Order
$lnUN_t$	-0.1773	-2.8425	I(1)
$lnPOP_t$	-0.02048	-3.7388	I(1)
$lnGDP_t$	0.1655	0.7943	I(1)
$lnFDI_t$	-o.1604	-2.111	I(1)
$lnED_t$	0.1522	-2.0178	I(1)

The results indicate that all the variables are I(1) stationary.

VAR Lag selection Criteria

Table 5: VAR selection Criteria results

Lag	Loglik	LR	AIC	BIC	HQC
1	113.6815	-	-7.011709*	-6.780421*	-6.936315*
2	113.6816	0.9858	-6.947203	-6.6696	-6.8567

VAR system, maximum lag order 2

The asterisks below indicate the best (that is, minimized) values of the respective information criteria, AIC = Akaikecriterion,BIC = Schwarz Bayesian criterion and HQC = Hannan-Quinn criterion. In this case the best lag is 1.

MODEL FITTING

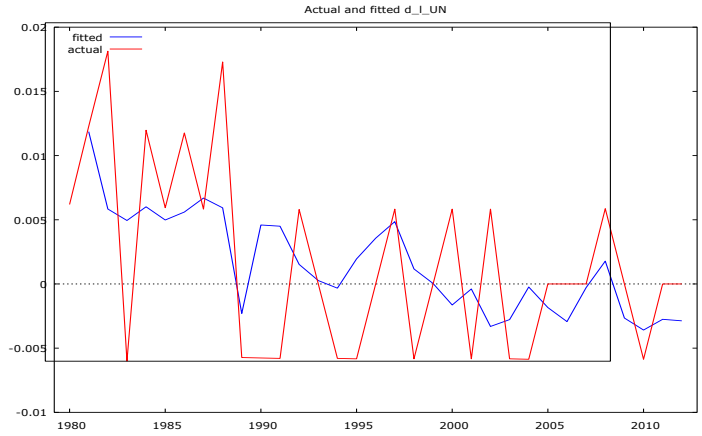

Figure 1: Graph of actual and fitted model

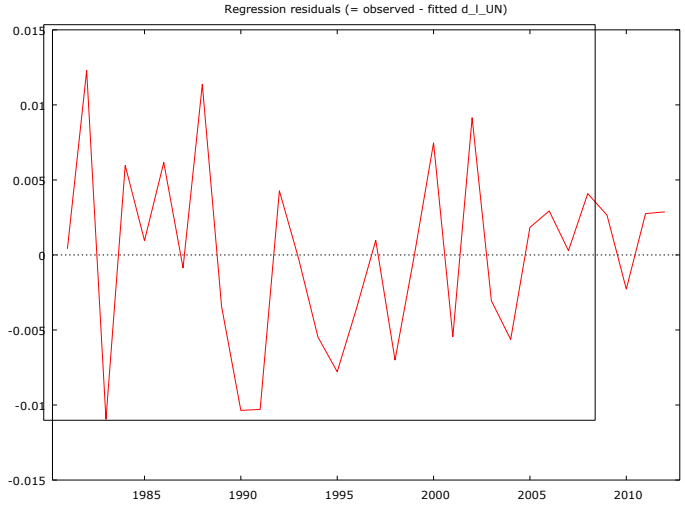

Figure 2: Graph of Regression Residual of Observed and Fitted model

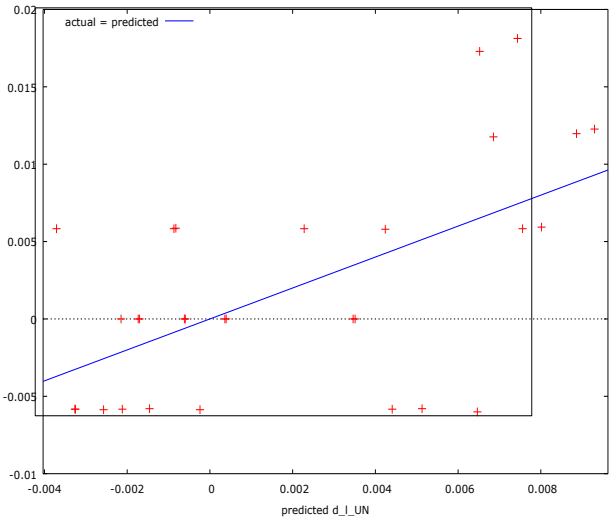

Figure 3: Predicted model

Fitted Model

$$LnUN_t = -0.02920 - 0.12062UN_{t-1} + 0.00559LnGDP_{t-1} - 0.005LnED_{t-1} - 0.00024LnFDI_{t-1} + 1.1LnPOP_{t-1}$$

According to the results, 1% increase in population increases youth unemployment rate by 1.1%; 1% increase in FDI reduces youth unemployment rate by 0.00024%; 1% increase in GDP increases youth unemployment rate by 0.00559% (which is unique); and an increase in immediate previous rate of unemployment by 1% reduces current youth unemployment by 0.12%; and 1% increase in ED reduces youth unemployment rate by 0.005%.

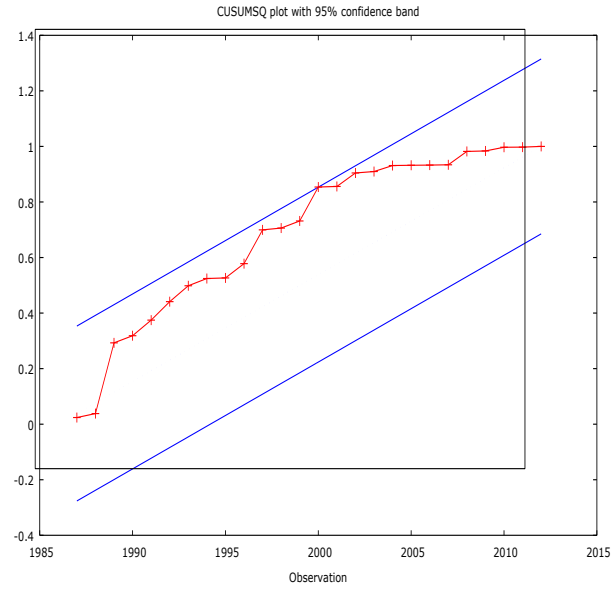

Figure 4: Plot of Cumulative Sum of Squares of Recursive Residuals

DISCUSSION AND CONCLUSION

Youth unemployment is a problem of great concern in developing countries. In Kenya, many economic interventions have been implemented with minimal success. In Sub-saharan Africa youth constitute 75% of total population with estimated unemployment of over 45%. In Kenya, youth constitute 35% of total population and 67% of unemployed persons are youth which poses a real threat in terms of political violence: rioting, terrorism, and civil unrest.

After converting ARDL to multiple linear regression, the CUSUM and CUSUMSQ plots showed that residuals were well within 95% confidence interval. This indicated that the model is very stable. The results showed that 1% increase in population increases youth unemployment by 1.1%; 1% increase in FDI reduces youth unemployment by 0.00024%; 1% increase in GDP increases youth unemployment by 0.00559% (which is unique); 1% increase in ED reduces youth unemployment by 0.005%. The model, ARDL model suggested that an increase in immediate previous rate of unemployment by 1% reduces current youth unemployment by 0.12%.

The unique finding that increase in GDP leads to increase in youth unemployment rate could be attributed to many factors. On such factor is that Kenya majorly exports unfinished products or raw materials. In this way, jobs associated with value addition are inadvertently exported. The strange finding of relationship between GDP and youth unemployment rate is consistent with Ajilore and Yinusa (2011) study in Botswana whose findings revealed a “jobless growth” of economy.

This study has associated youth unemployment with economic determinants derived from macroeconomic data. As such, empirical findings reveal a long run relationship between youth unemployment rate, GDP, Foreign Direct Investment, External Debt, and Population growth. The parameters indicate that population has positive effect on youth unemployment rate whereas foreign direct investment and external debt have a negative effect in the long run. The negative relationship between lagged (immediate previous) value of youth unemployment rate and current unemployment rate may result from government intervention to lower rate of unemployment in the current year.

Except for the interesting result of GDP, the findings are consistent with Maqbool et al (2013), Kabaklarli et al (2011), and Valadkhani (2003) which revealed that population has a positive relationship with youth unemployment while foreign direct investment and

external debt have negative relationship with youth unemployment.

RECOMMENDATIONS

- Further research should include private investment as part of variables of determinants of youth unemployment and the role of education.
- Further extensive research should look into relationship between world governance indicators (WGI) and youth unemployment in Kenya. This is to test whether there is significance difference in youth unemployment rate between periods Kenya score low and those whose scores is high in (WGI).
- Both county and national governments should consider policies that encourage foreign direct investment, increasing GDP through value addition, and using external debt resources for investment.
- Youth seeking employment should acquire labour market–sensitive skills through education and vocational training to bridge job-skills gap as well as education-skills mismatch.

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Figure 1: Graph of actual and fitted model
Figure 2: Graph of Regression Residual of Observed and Fitted model
Figure 3: Predicted model
Figure 4: Plot of Cumulative Sum of Squares of Recursive Residuals

DATA USED IN THE STUDY

YEAR	GDP	ED	FDI	UN	POP
1979	6.23	45.28	0.08	16.1	15.66
1980	7.27	48.08	0.08	16.2	16.27
1981	6.85	48.62	0.01	16.4	16.9
1982	6.43	54.52	0.01	16.7	17.56
1983	5.98	62.68	0.02	16.6	18.24
1984	6.19	58.65	0.01	16.8	18.94
1985	6.14	70.56	0.03	16.9	19.66
1986	7.24	65.77	0.03	17.1	20.39
1987	7.97	75.2	0.04	17.2	21.14
1988	8.36	72.33	0.001	17.5	21.9
1989	8.28	73.26	0.06	17.4	22.67
1990	8.57	85.97	0.06	17.3	23.45
1991	8.15	95.83	0.02	17.2	24.24
1992	8.21	87.82	0.01	17.3	25.04
1993	5.75	131.9	0.15	17.3	25.84
1994	7.15	104.99	0.01	17.2	26.63
1995	9.05	83.76	0.04	17.1	27.42
1996	12.05	57.65	0.11	17.1	28.19
1997	13.12	49.95	0.06	17.2	28.94
1998	14.09	48.87	0.03	17.1	29.7
1999	12.9	51.29	0.05	17.1	30.48
2000	12.71	49.21	0.11	17.2	31.29
2001	12.99	43.36	0.01	17.1	32.13
2002	13.15	47.42	0.03	17.2	33.00
2003	14.9	46.97	0.08	17.1	33.91
2004	16.1	43.73	0.05	17	34.83
2005	18.74	34.61	0.02	17	35.79
2006	25.83	29.78	0.05	17	36.76
2007	31.96	27.77	0.73	17	37.75
2008	35.9	25.01	0.1	17.1	38.77
2009	37.02	28.12	0.12	17.1	39.82
2010	40	27.47	0.18	17	40.91
2011	41.95	30.59	0.34	17	42.03
2012	50.33	31.06	0.26	17	43.18