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**THE NEXUS BETWEEN ECONOMIC INSTITUTION AND  
UNEMPLOYMENT: EVIDENCE FROM SUB-SAHARA AFRICA (SSA)**

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*ABSTRACT*

*This study examines the nexus between economic institutions and unemployment using an unbalanced panel data for 37 Sub-Sahara African (SSA) countries between 1995 and 2018. Panel cointegration regression techniques of the Dynamic Fixed Effects (DFE) and Pool Mean Group (PMG) methods are used to gauge the models. The most consistent method is chosen based on the Hausman specification test. Our empirical results reveal that economic institutions have no significant impact on unemployment in the short run. We however found significant and negative impact of economic institutions on total, male and female unemployment in the long run. This suggests that it takes time for institutional reform to impact on unemployment. Thus, to reduce unemployment in the long run, it is imperative to improve on economic institutions that would grantee more free economy. Free economy encourages and protects private enterprises, promotes free movement of capital, labour and goods as well as maintains effective government and stable macroeconomic.*

**Keywords:** *Economic Institution, Unemployment, Sub-Saharan Africa*

**JEL Classification:** J60, J68, P48

## **1. Introduction**

There is a huge literature on the link between institutions and unemployment, but still there is limitation on our understanding of unemployment behavior due a number of reasons. First, most of the existing studies focused on the influence of labour market institutions ignoring the effects of other forms of institutions. Meanwhile, some studies have not find robust relationship between labour market institutions and unemployment. Therefore, as argued by Betcherman (2000) and Schettkat and Sun (2009) credible explanation of unemployment must look beyond labour market policies and institutions as focusing on only labour market institutions would not yield adequate understanding of causes of unemployment. Second, most studies on the link between institutions and unemployment used either OECD or other developed countries sample, with scanty evidence from Africa. However, the effects of economic institutions generally could vary across regions and overtime. Thus, generalizing the findings from developed countries for Sub-Sahara African (SSA) countries and other developing countries may be misleading. Hence, this paper intends to examine the nexus between economics institutions and unemployment using SSA sample. Specifically, the objectives of the paper are two folds: first, examine the impact of economic institutions on total, male as well as female unemployment in SSA; and second, investigate if the impact of economic institution on unemployment differs across sub-regions of SSA.

Unemployment is an age long problem which confront all economies across the world irrespective of the level of income. In fact, the 2018 unemployment statistics reported by the International Labour Organization (ILO) depicts paradoxical revelation where average unemployment rate in high income countries is higher than in low income countries. The average total unemployment rate in World Low Income countries is 3.7 while it is 4.0, 6.0 and 5.3 in Lower Middle Income, Upper Middle Income and High Income countries respectively. Similarly, the average total unemployment in African Low Income countries is 3.4 which is less than the African average of 6.8. The average in Lower Middle Income

and Upper Middle Income countries in Africa are 8.01 and 21.2 respectively. This recent statistic provided by ILO debunk the idea that more income would lead to lower unemployment. Therefore, investigating the institutional causes of unemployment is still relevant as ever before.

The rest of the paper is organized in five sections. Section two present brief literature review, stylize facts, model specification and estimation technique, empirical results and concluding remarks are presented in sections three, four, five and six respectively.

## **2. Brief Literature Review**

There is huge literature on the effect of labour market institutions on unemployment, though without consensus. Among those who find significant effect, Nickell, Nunziata and Ochel (2005) find that about 55% of unemployment in Europe since the 1960s to first half of the 1990s is explained by changes in labour market institutions. Also, Marelli, Choudhry and Signorelli (2013), find that labour market institutions have significant and robust impact on unemployment particularly youth unemployment. Dority and Fuess (2007) find that joblessness is still significantly related to labour market institutions in recent time as it was in the 1980s though with different effects. Griffith, Harrison and Macartney (2007) though find product market reforms to be the major determinants of unemployment in OECD countries, the influence of product market institutions is more effective in countries with better labour market institutions. Jackman, Pissarides, Savouri, Kapteyn and Lambert (1990) equally find out that the substantial reduction of unemployment in most OECD countries is due to the reforms of labour market institutions. The findings of Blanchard and Wolfers (2000) suggest that while rise in unemployment among OECD countries can be explained by shocks, the cross-country differences in unemployment rates can only be explained by labour market institutions. However, the interaction between shocks and institutions can explain both the evolution and heterogeneity of unemployment in OECD countries. Flaig and Rottmann (2009) explain the link between labour market institutions and unemployment as such that less free labour market institutions lead to less labour-

intensive production, hence, unemployment can largely be explained by labour market institutions and the employment threshold also depend on labour market institutions.

On the other hand, Baccaro and Rei (2007) does not find much robust evidence of either direct or indirect effects of labour market institutions on unemployment rather they find unemployment to be largely influence by monetary policies and institutions. The results of Betcherman (2000) also suggest that the effect of different labour market policies and institutions on unemployment is by no means as simple as the conventional wisdom suggests. That the unemployment in Canada cannot be explain solely by labour market policies and institutions, thus, he suggested that credible explanation for Canada's unemployment must look beyond labour market policies and institutions. Similarly, Schettkat and Sun (2009) argue that emphasizing on labour market institutions as the only explanation of unemployment in European countries while ignoring other predictors such as monetary policies is inadequate. Stockhammer and Klär (2011) equally show that the effects of Labour market institutions on unemployment is relatively minor.

Moreover, some few studies investigated the influence of broad economic institutions rather than narrowly looking at the impact of labour institutions only. For example, using data from 87 countries over the period 1980-2003, Feldman (2007) finds that economic freedom substantially reduces unemployment, especially among women and young people. And that small government sector and a legal system characterized by an independent judiciary, impartial courts, and an effective protection of property rights influence unemployment the most. Garrett and Rhine (2010) has similar finding when they examine the effect of economic freedom on U.S. state employment growth. They find that states with greater economic freedom – defined as the protection of private property and private markets operating with minimal government interference – experienced greater rates of employment growth. Cebula, Foley and Capener (2016) show that the unemployment rate is a decreasing function of the overall average level of economic institutions. Prachkovski (2016) equally shows that quality of governance has significant effect on youth unemployment.

It is revealing from the literature review that there is no significant work on the link between institutions and unemployment in SSA, hence, this study becomes imperative.

**3. Stylize Facts**

According to International Labour Organization (ILO), there are more than one million new entrants into the jobless population annually in Sub-Saharan Africa. This number is largely made up of graduates from various higher institutions of learning including university. This high level of unemployment has implications on different aspects of socio economic life of a nation. The trend in the level of total, male and female unemployment is presented in figure 1.

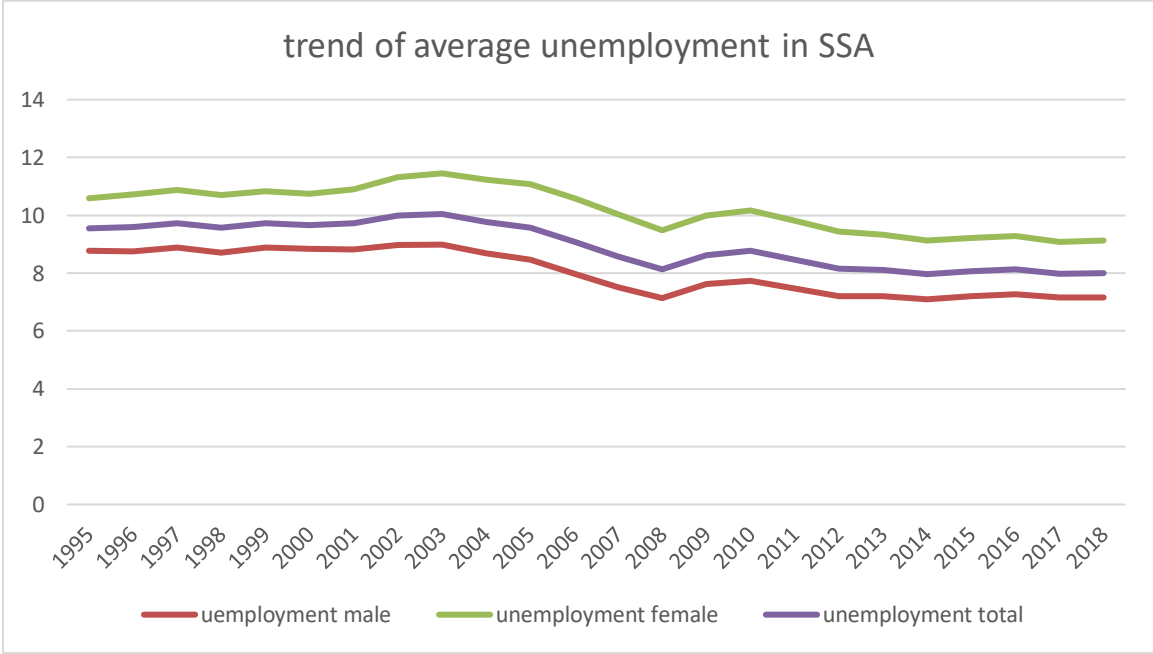


Figure 1: Trend of average male, female & total unemployment in Sub-Saharan Africa (1995 – 2018)

The figure reveals that total unemployment in the region remains almost steady over the period as it hovers between 8 and 10 percent. The male unemployment rate is lower than the total unemployment rate for the entire period whereas the female unemployment is

above the total unemployment rate for the entire period. From the sub-regional unemployment comparison, Figure 2 indicates that the level of unemployment consistently remains highest in the southern Africa followed by central African and West Africa. East Africa has the least rate of unemployment within the period under consideration.

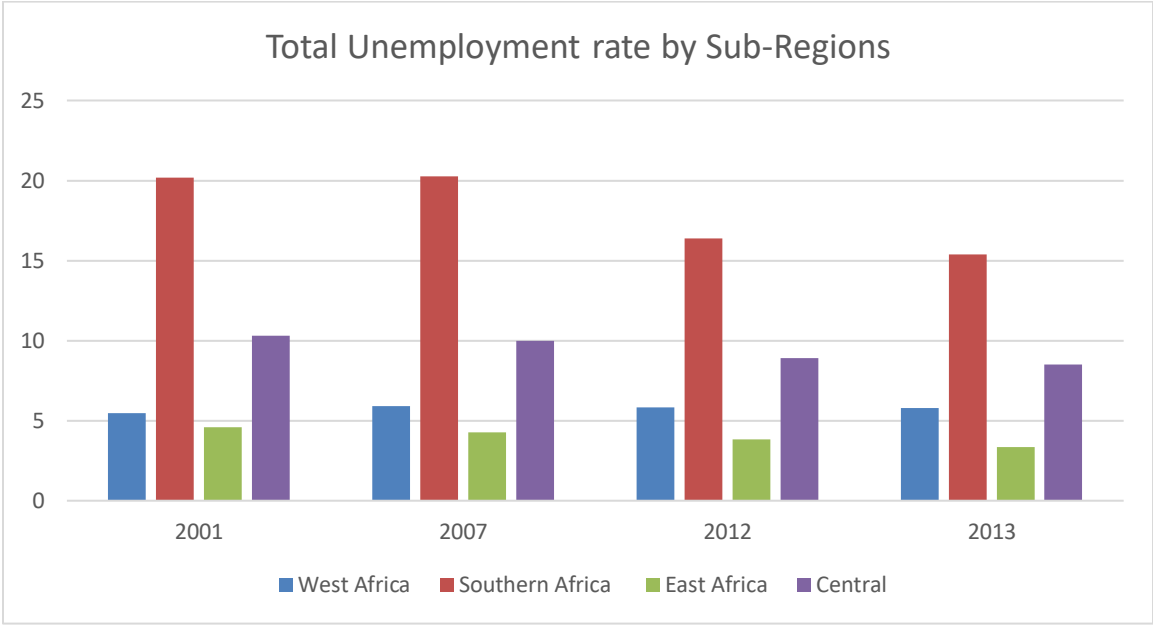


Figure 2: Total Unemployment by sub-regions (1995 – 2018)

The trend of the average SSA economic freedom for the period 1995 to 2018 is shown in figure 3. It reveals that the economic freedom on average in SSA hovers around 52 and 56 points within the period. It was lowest in 1996 and highest in 2016 from where it's now trending downward.

Figure 3 display average economic freedom in SSA countries. The figure depicts that the average economic freedom is within value of the index which ranges from 0 to 100. The average performance is less than 60 point, it's just above 50. The trend over time is also fluctuating which may be accounted for by policy inconsistencies and political instability

often experienced in SSA countries. Also, the negative trend from 2016 upfront shows that measures should be put in place to reverse the trend.

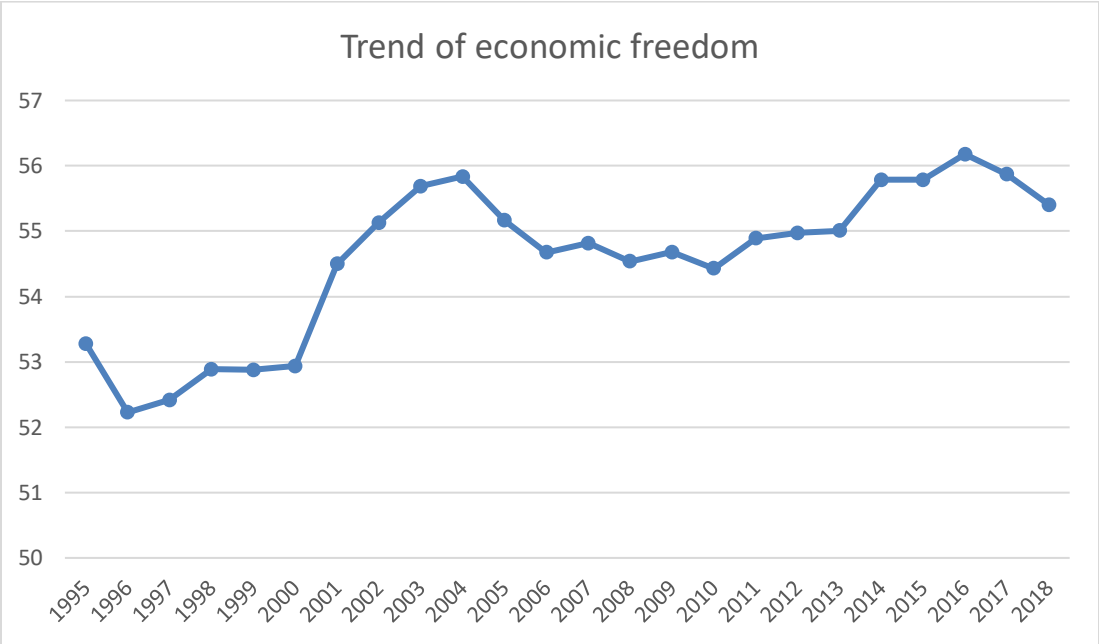


Fig 3: Trend of economic freedom in SSA (1995 – 2018)

In figure 4, economic freedom across different regions in SSA is presented, East Africa enjoys the best and most consistently improved economic freedom for the years under review. The region recorded average score of 53.72 point between 1995 and 2000. The score increased to 59.91 point over the years 2013 and 2018. This is followed by West Africa with slightly increasing economic freedom from the lowest score of 52.87 between 1995 and 2000 to an average score of 56.37 point between 2013 and 2018.

Southern Africa recorded slightly high but inconsistent economic freedom which fluctuates over the period under review. It rose from an average of 53.79 between 1995 and 2000 to 55.65 points respectively. Central Africa recorded the least performance in economic institutions among the sub-regions as it recorded average score of 48.46 point between 1995 and 2000, 52.24 point between 2001 and 2006, 49.77 point between 2007 and 2012, while it recorded 48.42 point between 2013 and 2018.



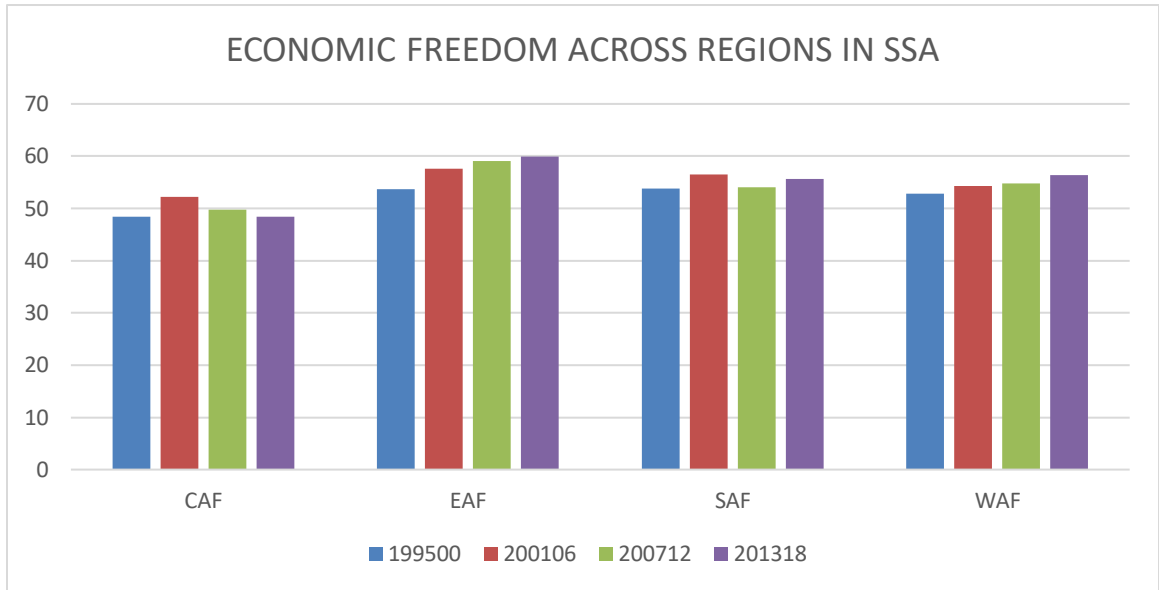


Fig 4: Sub-regional unemployment rate in SSA

#### 4. Model Specification and Estimation Technique

The study employs non-stationary heterogeneous panel regression technique (also called long run panel cointegration technique) due to the relatively large T and N that characterized the data of the study. The technique is recommended for macro panel model where T is greater than 20 years (see Eberhardt & Teal, 2011) and N is also large. Long run panel cointegration approach is an extension of the times series model to the panel model with large T. There are three alternatives techniques for the long run panel cointegration namely; Mean Group (MG henceforth), Pool Mean Group (PMG henceforth) and Dynamic Fixed Effects (DFE henceforth). Both MG and DFE are two opposite extremes while PMG is intermediate. MG assumes heterogeneous slope and intercept coefficient and thus derives long-run parameters by averaging the long run parameters of the ARDL for individual countries. DFE imposes the homogenous slope coefficients but allows constant intercepts to vary across countries. PMG imposes assumption of short run

heterogenous slope coefficients and long run homogenous slope coefficients. The most efficient of the alternatives would be determined using familiar Hausman specification test. The three alternatives are attributed to Pesaran & Smith (1995), Pesaran, Shin & Smith (1997) and Pesaran, Shin & Smith (1999) who stated that the three techniques are consistence when both T and N are large. Even though they are based on different assumptions, all the three employ Autoregressive Distributed Lag (ARDL) framework where the series are combination of I(0) and I(1). The baseline model for this study is thus expressed as

$$\begin{aligned}
 UNEMP_{it} = & \sigma_0 + \sum_{j=1}^p \eta_{1i} UNEMP_{it-1} + \sum_{j=0}^{q_1} \alpha_{ij} LRGDP_{it-j} + \sum_{j=0}^{q_2} \gamma_{ij} INF_{it-j} \\
 & + \sum_{j=0}^{q_3} \delta_{ij} EI_{it-j} + U_{it}
 \end{aligned}$$

$i = 1, 2, \dots, N; t = 1, 2, \dots, T.$  (1)

Where;  $UNEMP_{it}$  is unemployment rate in country  $i$  at time  $t$ ,  $EI_{it}$  is economic institutions,  $LRGDP_{it}$  is natural logarithm of Real GDP,  $INF_{it}$  is inflation rate. The error term  $U_{it}$  comprises of individual country effects  $\mu_i$  and the Gauss Markov error term  $\varepsilon_{it}$ .

Though, the main aim of the paper is to investigate the effect of economic institutions on unemployment, two important theoretical variables are controlled for. First, within the Keynesian framework it is deficiency of aggregate demand that causes unemployment in an economy particularly in the short run. Hence, RGDP is introduced to capture the effect of aggregate demand on unemployment. The natural log is to minimize the wide variance in RGDP across the countries included in the sample. Second, inflation is included to capture the Philips curve effect of inflation on unemployment. Based on the theoretical proposition of Philips curve, inverse relationship is expected between inflation and unemployment.

In order to examine if the effect of economic institutions on unemployment varies across the sub-regions of SSA interaction variables of economic institutions index and sub-regional dummies are introduced in the model as follows:

$$UNEMP_{it} = \sigma_0 + \sum_{j=1}^p \eta_{1i} UNEMP_{it-1} + \sum_{j=0}^{q_1} \alpha_{ij} LRGDP_{it-j} + \sum_{j=0}^{q_2} \gamma_{ij} INF_{it-j} + \sum_{j=0}^{q_3} \delta_{1ij} EI_{it-j} + \sum_{j=0}^{q_3} \delta_{2ij} EI \times CAD_{it-j} + \mu_i + \varepsilon_{it} \quad (2)$$

$$UNEMP_{it} = \sigma_0 + \sum_{j=1}^p \eta_{1i} UNEMP_{it-1} + \sum_{j=0}^{q_1} \alpha_{ij} LRGDP_{it-j} + \sum_{j=0}^{q_2} \gamma_{ij} INF_{it-j} + \sum_{j=0}^{q_3} \delta_{1ij} EI_{it-j} + \sum_{j=0}^{q_3} \delta_{2ij} EI \times EAD_{it-j} + \mu_i + \varepsilon_{it} \quad (3)$$

$$UNEMP_{it} = \sigma_0 + \sum_{j=1}^p \eta_{1i} UNEMP_{it-1} + \sum_{j=0}^{q_1} \alpha_{ij} LRGDP_{it-j} + \sum_{j=0}^{q_2} \gamma_{ij} INF_{it-j} + \sum_{j=0}^{q_3} \delta_{1ij} EI_{it-j} + \sum_{j=0}^{q_3} \delta_{2ij} EI \times SAD_{it-j} + \mu_i + \varepsilon_{it} \quad (4)$$

$$UNEMP_{it} = \sigma_0 + \sum_{j=1}^p \eta_{1i} UNEMP_{it-1} + \sum_{j=0}^{q_1} \alpha_{ij} LRGDP_{it-j} + \sum_{j=0}^{q_2} \gamma_{ij} INF_{it-j} + \sum_{j=0}^{q_3} \delta_{1ij} EI_{it-j} + \sum_{j=0}^{q_3} \delta_{2ij} EI \times WAD_{it-j} + \mu_i + \varepsilon_{it} \quad (5)$$

Where: WAD = West Africa Dummy, CAD = Central Africa Dummy, EAD = East Africa Dummy, and SAD = Southern Africa Dummy

The baseline model in equation (1) needs to be re-parameterized so that the short-run and long-run dynamic panel model structure can be obtained as follows:

$$\begin{aligned}
\Delta UNEMP_{it} = & (\beta_0 + \psi_i UNEMP_{it-1} + \beta_{1i} LRGDP_{it-1} + \beta_{2i} INF_{it-1} + \beta_{3i} EI_{it-1}) \\
& + \sum_{j=0}^{p-1} \eta_{ij}^* \Delta UNEMP_{it-1} + \sum_{j=0}^{q_1-1} \alpha_{ij}^* \Delta LRGDP_{it-j} + \sum_{j=0}^{q_2-1} \gamma_{ij}^* \Delta INF_{it-j} \\
& + \sum_{j=0}^{q_3-1} \delta_{ij}^* \Delta EI_{it-j} + \mu_i + \varepsilon_{it} \quad (6)
\end{aligned}$$

The short-run slope coefficients for each cross-section equals to  $\alpha_{ij}^*$ ,  $\gamma_{ij}^*$  and  $\delta_{ij}^*$  for log of real GDP, inflation and economic institutions respectively.

By assumption,  $\Delta UNEMP_{it} = \Delta LRGDP_{it-j} = \Delta INF_{it-j} = \Delta EI_{it-j} = 0$  in the long run.

Therefore, the long run coefficients for each of the variables is obtained as

$-\frac{\beta_{1i}}{\psi_i}$ ,  $-\frac{\beta_{2i}}{\psi_i}$  and  $-\frac{\beta_{3i}}{\psi_i}$  for LRGD, INF and EI respectively.

The error correction equivalent of (6) is given by

$$\begin{aligned}
\Delta UNEMP_{it} = & \omega_i \theta_{it-1} + \sum_{j=0}^{p-1} \eta_{ij}^* \Delta UNEMP_{it-1} + \sum_{j=0}^{q_1-1} \alpha_{ij}^* \Delta LRGDP_{it-j} \\
& + \sum_{j=0}^{q_2-1} \gamma_{ij}^* \Delta INF_{it-j} + \sum_{j=0}^{q_3-1} \delta_{ij}^* \Delta EI_{it-j} + \mu_i + \varepsilon_{it} \quad (7)
\end{aligned}$$

Where  $\theta_{it-1}$  is the linear error correction term which is given as:

$$\theta_{i,t-1} = \Delta UNEMP_{it} - \pi_0 - \pi_{1i} LRGDP_{it-j} - \pi_{2i} INF_{it-j} - \pi_{3i} EI_{it-j} \quad (8)$$

The coefficients of the error correction term  $\omega_i$  is the error correcting speed of adjustment while  $\pi_0$ ,  $\pi_{1i}$ ,  $\pi_{2i}$  and  $\pi_{3i}$  represent the long run parameters of the model. When  $\omega_i$  is significant and negative and less than one in absolute value, it implies that co-integration exists.

### Panel Unit Root Test

The Fisher-ADF test is used to examine whether the series are stationary at either level or first difference. The test, which originated from Fisher (1932), was popularized by Choi (2001). The method is suitable for obtaining the unit root with unbalanced panel. The test,

which is based on the extension of time series augmented Dickey-Fuller (ADF) test, has the below structure:

$$\Delta y_{it} = \phi_{it}\pi_i + \rho_i y_{it-1} + \sum_{j=1}^{n_i} \varphi_{ij} y_{i,t-j} + \varepsilon_{it} \quad (9)$$

Where  $\phi_{it}$  contains individual deterministic components (including fixed effect, trend, or mixture of fixed effects and trend) and the test assumes the autoregressive coefficient  $\rho$  to be heterogenous. The null hypothesis of the test is that each of the series is non-stationary across individual ( $H_0: \rho_i = 0$ ) while the alternative hypothesis is that at least one individual in the series is stationary ( $H_1: \rho_i < 0$ ). For robustness check, Fisher PP unit root test method is equally used to confirm the result of Fisher ADF test.

### **Nature and Sources of Data**

Three categories of unemployment were sourced from ILO database, these are Total Unemployment (TUNEMP), Male Unemployment (MUNEMP) and Female Unemployment (FUNEMP). Total unemployment is measured as the number of persons who are unemployed as a percentage of the total number of persons in the labour force. While male/female unemployment rate is the number of unemployed male/female as percentage of total number of male/female in the labour force. Heritage Foundation Economic Freedom is used in this paper as a measure for economic institutions (EI). The Heritage economic freedom consists of four broad components which are Rule of Law; Limited Government; Regulatory Efficiency; and Open Markets. The four components are further made up of ten different indexes. Rule of Law consists of two indexes which are property rights and government integrity; limited government also comprises of fiscal freedom and government spending. While regulatory efficiency contains three indexes vis business freedom, labour freedom and monetary freedom, and open markets is made up of trade freedom, investment freedom, and financial freedom. Real GDP and inflation (INF)

data are sourced from World Development Indicators (WDI) of the World Bank. Natural logarithm of Real GDP (LRGDP) is taken to minimize the wide variation across countries in the sample.

## 5. Empirical Results

The results obtained from the Fisher ADF unit root test and PP panel unit root test are first presented in Table 1. We then present the summary descriptive statistics of the variables in Table 2, while the long run panel cointegration results are presented in Tables 3 and 4. Three competing estimation methods were compare using the Hausman specification test and most consistent among the three is used accordingly.

### Panel Unit Root Results

The results obtained from the Fisher-ADF and PP panel unit test analysis are presented in Table 1. The order of integrations for each variable from ADF test are presented in the 5<sup>th</sup> column while order of integrations from PP test result are presented in column 8. Both results suggest that the series are combination of I(0) and I(1) variables. The presence of at least one I(1) series justifies the use of long run panel cointegration approach in addition to the fact that T and N are both large.

**Table 1: Panel Unit Root Test Results (Fisher ADF Test)**

Variable		Fisher ADF test			Fisher PP unit root test		
		Chi-sq	P-value	Order of Integration	Chi-sq	P-value	Order of Integration
<b>EI</b>	Level	119.8053	0.0006	I(0)	135.521	0.000	I(0)
	1 <sup>st</sup> Diif	161.3932	0.0000		933.317	0.000	
	1 <sup>st</sup> Diif	160.199	0.0000		830.318	0.000	
<b>INF</b>	Level	473.330	0.0000	I(0)	741.992	0.000	I(0)
	1 <sup>st</sup> Diff	1194.115	0.0000		1704.510	0.000	
<b>LRGDP</b>	Level	26.037	1.0000	I(1)	39.773	0.9996	I(1)
	1 <sup>st</sup> Diff	387.459	0.0000		655.788	0.000	
<b>TUNEMP</b>	Level	68.7290	0.6513	I(1)	34.298	1.000	I(1)

	1 <sup>st</sup> Diff	200.9544	0.0000		368.894	0.000	
<b>MUNEMP</b>	Level	97.0583	0.0374	I(0)	44.331	0.998	I(1)
	1 <sup>st</sup> Diff	174.9414	0.0000		406.638	0.000	
<b>FUNEMP</b>	Level	65.3831	0.7525	I(1)	37.764	0.999	I(1)
	1 <sup>st</sup> Diff	175.1009	0.0000		334.803	0.000	

Source: computed by authors

### Summary Statistics

This sub-section presents the summary statistics of the data using some measures of central tendency and dispersion. Basically, the measure of central tendency employed in this section is the mean while standard deviation and range are employed as a measure of dispersion.

Table 2 presents the overall, between and within summary statistics of unemployment, inflation, LRGDP, economic institution. Unemployment has an overall average of 8.96. Among the countries, the standard deviation of total unemployment rate is 7.91; the minimum value is 0.27 and a maximum of 37.94. The between variation of 7.74 against the within variation of 2.06 indicates that total unemployment varies more between countries and this variation largely account for the total variation in unemployment. In order words, it is evident from the results that unemployment varies widely across countries, but the variation of unemployment overtime within a country is small. It means that unemployment is a persistent problem in SSA countries. However, some countries have succeeded in reducing unemployment to 0.27, some countries are still battling with over 37 percent unemployment.

The results further indicate that the average economic institution for SSA within the period stands at 54.66 point with overall standard deviation of 7.91, minimum and maximum score of 21.40 and 77.00 points respectively. The between and within standard deviation of 7.01 and 3.98 indicating that the quality of economic institutions varies more across countries than its variation over time within a country. This points to the fact that there is no much

improvement in economic institution in most SSA countries over time, even though the average score of 54.66 is slightly above average score.

The mean inflation rate is 17.88 on the overall, with a standard deviation of 196.38, the level of inflation in SSA over the sample period ranges from -9.62 minimum to 4145.11 maximum. Across the countries, the standard deviation is 56.39 with a minimum and maximum value of 1.87 and 347.69 respectively. However, over the sample period inflation rate has a standard deviation of 159.70, with a minimum and maximum of 322.54 and 3815.29 respectively. This means inflation actually varies widely both across countries and within country over time.

**Table 2: Panel Data Descriptive Statistics**

Variable		Mean	Std. Dev.	Min	Max
TUNEMP	Overall	8.959	7.914	0.273	37.940
	Between		7.743	0.888	30.373
	Within		2.055	0.906	17.692
RGDP	Overall	28billion	70billion	0.44billion	568billion
	Between		66billion	0.8billion	304billion
	Within		25billion	0.12billion	307billion
INF	Overall	17.878	169.374	-9.616	4145.108
	Between		56.391	1.872	347.694
	Within		159.696	-322.535	3815.292
EI	Overall	54.658	7.906	21.400	77.00
	Between		7.010	36.704	71.660
	Within		3.976	38.093	69.130

Source: computed by authors



### **Presentation and Discussion of Panel Cointegration Regression Results**

The short run and long run regression results of effect of economic institutions on total, male and female unemployment are presented in Table 3, while results of impact of economic institutions on total unemployment across different regions of SSA are presented in Table 4. The Error Correction Term (ECT) is negative and significant in all the regressions, indicating the presence of long–run relationship. From the results in Table 3, economic growth leads to less unemployment in the short–run and the expected negative relationship between inflation and unemployment is evident in the short–run. Meanwhile, the effect of economic institutions is not statistically significant in the short–run.

However, in the long–run economic growth does not have significant effect on unemployment and the inverse relationship between inflation and unemployment which was observed in the short run estimate disappear in the long–run. Contrarily, the long–run relationship is positive, though statistically significant at 10 percent for total and female unemployment. It is only economic institutions which depicts negative significant effect on unemployment. The insignificance of economic institutions in the short–run is not completely strange since the effect of institutional reforms are usually gradual, therefore, we do not expect instantaneous effect of any institutional changes. Arguably thus, only improvement in economic institutions would reduce unemployment in the long–run. This result confirms the conventional wisdom that better institutions would lead to more employment and consequently less unemployment. This argument is based on the fact that better economic institutions incentivize investors to invest and produce good and service which would subsequently lead to more demand for production inputs including labour.

All the sub-regional interaction with economic institutions are not statistically significant in the short-run while only South Africa and West Africa dummies are significant in the long–run. However, the West Africa dummy has positive sign which is contrary to our expectation and it is significant only at 10 percent.

**Table 3: Impact of Economic Institutions on Total, Male and Female Unemployment**

<b>Short – Run Results</b>			
Variable	Total Unemployment	Male Unemployment	Female Unemployment
ECT	-0.0944*** (0.0136)	-0.0966*** (0.0151)	-0.0827*** (0.0133)
D.LRGDP	-0.456** (0.194)	- 0.4490** (0.188.)	-0.528** (0.247)
D.INF	-0.0006*** (0.0002)	- 0.0006*** (0.0002)	-0.0006*** (0.0002)
D.EI	0.0057 (0.0125)	00158 (0.0124)	0.0060 (0.0162)
<b>Long – Run Results</b>			
Variable	Total Unemployment	Male Unemployment	Female Unemployment
LRGDP	-0.731 (0.767)	0.4220 (0.7840)	-1.1303 (1.0950)
INF	0.0034* (0.0019)	0.0026 (0.0017)	0.0044* (0.0025)
EI	-0.177** (0.0778)	-0.145** (0.0697)	-0.209** (0.0990)
Constant	3.255** (1.604)	2.799* (1.574)	4.141** (1.919)
MG vs DFE	0.12	0.22	0.52
PMG vs DFE	0.91	24.78***	4.91
MG vs PMG	0.59	2.97	80.26***
Consistent method	DFE	PMG	DFE

Source: Author's computation, 2019, Standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4: Effect of Economic Institutions Across Different Sub-Regions in SSA**

<b>Short Run Results</b>					
<b>VARIABLES</b>	<b>SSA</b>	<b>CAF</b>	<b>EAF</b>	<b>SAF</b>	<b>WAF</b>
ECT	-0.0944*** (0.0136)	-0.0944*** (0.0136)	-0.0948*** (0.0136)	-0.0981*** (0.0137)	-0.0966*** (0.0137)
D.LRGDP	-0.456** (0.194)	-0.451** (0.195)	-0.461** (0.194)	-0.482** (0.194)	-0.447** (0.194)
D.INF	-0.0006*** (0.0002)	-0.0006*** (0.0002)	-0.0006*** (0.0002)	-0.0005*** (0.0002)	-0.0006*** (0.0002)
D.EI	0.00573 (0.0125)	0.00155 (0.0135)	0.00584 (0.0140)	0.00434 (0.0146)	0.0119 (0.0159)
D.EI*CAD		0.0302 (0.0356)			
D.EI*EAD			0.0015 (0.0306)		
D.EI*SAD				0.0009 (0.0283)	
D.EI*WAD					-0.0188 (0.0256)
<b>Long Run Estimates</b>					
<b>VARIABLES</b>	<b>SSA</b>	<b>CAF</b>	<b>EAF</b>	<b>SAF</b>	<b>WAF</b>
LRGDP	-0.731 (0.767)	-0.765 (0.778)	-0.789 (0.766)	-0.817 (0.738)	-0.866 (0.750)
INF	0.00343* (0.00196)	0.00345* (0.00197)	0.00310 (0.00198)	0.00172 (0.00198)	0.00290 (0.00193)
EI	-0.172** (0.0778)	-0.160* (0.0821)	-0.218** (0.0898)	-0.0399 (0.0878)	-0.249*** (0.0887)
EI*CAD		-0.120 (0.248)			
EI*EAD			0.170 (0.158)		
EI*SAD				-0.376** (0.148)	
EI*WAD					0.291* (0.156)
Constant	3.255** (1.640)	3.357** (1.668)	3.429** (1.650)	3.367** (1.642)	3.451** (1.642)
Hausman test:					
MG vs DFE	0.12	1.21	0.28	0.13	-3.53
PMG vs DFE	-4.91	1.21	-0.195000	NA	NA
MG vs PMG	0.59	-12.95	236534.21***	NA	NA
Consistent method	DFE	DFE	DFE	DFE	DFE

Source: Author's computation, 2019, Standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## **6. Concluding remark**

The paper examined the impact of economic institutions on total, male and female unemployment using SSA sample over a period 1995 to 2018. The paper employs the panel cointegration regression techniques to gauge the model. Based on the regression results, we do not find significant relationship between economic institutions and the three categories of unemployment in the short run. However, overall economic freedom has significant negative impact on total, male and female unemployment in the long run. The implication is that economic institutional reform does not have instantaneous impact on unemployment. Thus, winning the war against unemployment in the long run economic institutional reform in terms of more economic freedom is crucial.

A number of policy implications can be deduced from the findings of this study particularly policies relating to economic freedom. To reduce unemployment significantly in the long-run in SSA countries, there is need to pursue policies that will promote economic freedom which ensures individuals in the economy to actualize their potentials. This can be achieved by creating enabling free-market environment which encourages the most efficient allocation of resources by incentivizing majority of people to become educated, to save, to invest, to innovate and to adopt new technologies. Hence, by making the economy freer, private investment is promoted. As investment booms in an economy more factors of production including labour will be engaged, thus, more people who hitherto are unemployed but willing to work will get employed.

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