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ARTICLE

Inflation and Unemployment Trade-off: Is Phillips Curve True for African Developing Countries? Evidence from Sudan

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ABSTRACT

The relationship between wage inflation and unemployment (Phillips Curve) is controversial in economic thought, and the controversy is centered around whether there is always a trade-off or not. If this relationship is negative it is called The short-run Fillips Curve. However, in the long run, this relationship may probable not exist. The matter of how inflation and unemployment influence economic growth, is debatably among macroeconomic policymakers. This study examines the behavior of the Phillips Curve in Sudan and its effect on economic growth.

1. Introduction

The relationship between inflation and unemployment (The Phillips Curve) is considered a vital instrument of macroeconomic analysis. The study of the Phillips Curve gives signals for policymakers in assessing the overall performance of the economy. The history of economics thought witnessed a controversy about the relationship between inflation and unemployment. In the short run, an increase in wage inflation may reduce unemployment (a trade-off between inflation and unemployment). While in the long run, it is probably to be unrelated. Another issue that needs more investigation is to what extend the components of this curve affect economic growth. This study aims to examine the relationship between inflation and unemployment and recognize how it influences economic growth in Sudan.

2. Literature Review

The term Inflation measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly [1]. ILO defines the unemployment rate as a rate which gives us "the number of unemployed persons as a percentage of the labor force (the total number of people employed plus unemployed)". Also, unemployed workers are those who are currently not working but are willing and able to work for pay, currently available to work, and have actively searched for work [2]. The gross domestic product (GDP) is defined in the literature as the gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products [3].

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Historically, British economist A.W. Phillips considered the first economist who investigated the relationship between the unemployment rate and the rate of money wage changes. His study found that inflation and unemployment have a stable and inverse relationship. Nevertheless, it is expected that economic growth would generate inflation and more work opportunities, which decreases unemployment [4].

In 1958 Phillips examined the relationship between wage inflation and unemployment by an equation taking the following form [5]:

$$w = f(U) \quad (1)$$

In the short run, the relationship between wage inflation rate and unemployment is predictable to be negative.

$$w = f(U) = -a + bU^{-c} \quad (2)$$

Where:

w: wage inflation rates

U: Actual unemployment rates.

Introducing natural rate of unemployment to equation (1) we get

$$P_t = P_{t-1}[1 - b(U_t - U^*)] \quad (3)$$

Where:

U_t and U^* are the actual and natural levels of unemployment;

b is a coefficient indicating the response of wage's fluctuation or changes to the labor market situation;

P_t and P_{t-1} are respectively the prices or wage inflation rates in the current and past periods. Fitting equation (3) to the scatter of annual observations on wage inflation rates(w) and unemployment rates (U) for the UK economy for the period 1948-1957. Philips's study found that observations lay close to his fitted curve, showing its apparent long-term empirical stability.

The Key idea of the Phillips Curve (1958) implies that wage inflation (w) is a function of the excess demand for labor as measured by the unemployment rate (U).When unemployment falls below its natural rate it may lead to a more rapid increase in wages and vice versa[6].

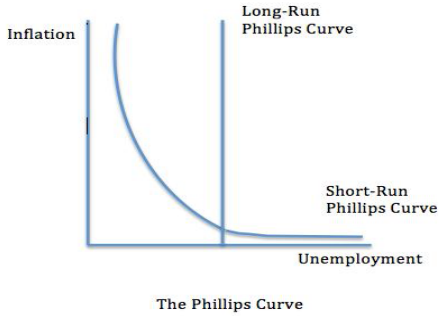

Figure 1. Short/Long-term Phillips Curve [7]

The Phillips curve in Figure 1 displays that if the government in the short term selects the monetary policy to targeting inflation or unemployment, it has to decide whether to choose higher inflation or higher unemployment. The reason is that high unemployment may lead to a reduction in production size, incomes, and purchasing power, which in turn leads to worsening the standards of living because of the increasing pricing of goods and services.

In addition to Phillips curve, many empirical studies were conducted on the relationship between inflation and unem-ployment. Some of the results of these studies found a negative relationship between inflation and unemployment. However, other studies disagree with the results of the Phillips study. After a decade of analysis by Phillips, the idea of a relatively stable long-run trade-off between price inflation and unemployment was firmly built into policy analysis in the United States and other countries. Such a long-run trade-off was at the core of most prominent macro-econometric models as of 1969 [8].

Canadian Phillips Curve for 1957-1990 exhibited a sharp structural shift towards a high degree of unemployment hysteresis after 1972, implying that macro-policy, which aims at lower and more stable inflation, is then shown to make unemployment higher[9]. The Phillips Curve from the American Perspective resulted in a positive correlation between inflation and unemployment in the 1970s. This result conflicts with the original theory of the Phillips Curve [10].The reason is that the American economists had a solid tendency to enforce the linearity assumption on the data. Therefore, their study provides some empirical estimates of Phillips curve for the United States and uses some illustrative simulations to contrast the policy suggestions of the two models (linearity and non-linearity Phillips curves) [11].

In the late twentieth century, some economists and researchers tried to explain why the estimated results of the Phillips curve/equation differ from one period to another or from one region to another. The different versions of the Phillips curve involved a lack of classical dichotomy, effective Keynesian policies, and neoclassical synthesis. Moreover, the neutrality of money and price flexibility had come full circle from the classical era until the new classical school [12]. The theory of the Phillips curve focused on the difference between the "formation" of inflation expectations and the "incorporation" of inflation expectations. Empirical studies of the Phillips curve have shown that the inclusion of inflation expectations provides a welfare economics rationale for Keynesian policies that decrease unemployment at the time of higher cost of inflation [13]. The difficulty

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of estimating the natural rate of unemployment during the slow recovery is still a matter for economists and macroeconomic policymakers [14].

The greatest failure in the history of the Phillips curve occurred in the mid-1970s when the predicted negative relation between wage inflation rate and unemployment may turn out out to be wrong. A study on Greece economy for the data covering the period 1980-2010 indicated a causal relationship between inflation and unemployment [15]. Another study conducted in the Russian Federation from 1999 through to 2015 concludes that Phillips Curve is not applicable for the Russian situation [16]. The Philippines' Philip's Curve for the period 1950-2017 exhibited a strong positive correlation between unemployment and inflation. The Philippian Government needs to implement policy tools in such a way that GDP and annual wage rate positively influence the unemployment rate and inflation rate [17].

The difference in the methodologies and models used to formulate the relationship between inflation and unemployment considers one of the most vital factors leading to differences in the output of the models [18]. In the year 2008, the economist called Gordon reviewed the views of Friedman on the Phillips curve based on a half century's perspective. Gordon used the methodology of the triangle model to explain the positive correlation of unemployment and inflation throughout the 1970s. The parameters of the model continued relatively unchanged during the 1980s and 1990s [19]. Many new models contributed to the literature by introducing the concept of a cumulated wage gap. The gap between inflation and unemployment indicates arising cumulative gap between the current wage and maximum wage value in the past [20]. Therefore, the core issue is about how to strike a balance between wage inflation and unemployment [21].

It is difficult to formulate appropriate economic policies in African countries, so the relationship between the target inflation rate and the unemployment rate could be positive or negative. Godwin and Johnson (2017) assessed the validity of Philip's Curve hypothesis in the Sub-Saharan African region during 1991-2015. The result shows that Philip's Curve (that is, unemployment-inflation trade-off) does not apply to the Sub-Saharan African countries [22]. Besides, data of the Nigerian economy from 1970-2011 displayed a positive relationship between inflation and unemployment in Nigeria- this is called Lon-Run Philip's Curve [23]. This situation raises the question of why inflation follows a seemingly exogenous process, unconnected to the output gap, leading economists or policymakers in African developing countries to argue that the Phillips curve is ineffective. The reason is simply that the matter regards the monetary policy itself [24].

Discussion of the literature review showed a debuted and variation in the conclusions and results related to the relationship between inflation and unemployment and their effects on economic growth. The differences might be attributed to the difference in the application of methodologies and models used to examines the inflation and unemployment trade-off. However, analysis of the Phillips Curve exhibits a different direction in its relation to macro-policies. This study wishes to inspect the Fillips Curve and its implications for economic growth in Sudan.

3. Background of Sudan Economy

Sudan has a different economic and demographic situation compared to some African developing countries.

3.1 Basic Economic Indicators of Sudan

Table 1 displays the key economic indicators of Sudan (1989-2019) indicating inflation rate, unemployment rate and GDP growth rate. Table 2 presents a comparison between Sudan, Egypt, Eritrea, Kenya, Uganda, Chad, and Angola in terms of the average value of the economic indicators for the period 1989-2019.

Table 1. Key Indicators of Sudan Economy (1989-2019)

Year	Inflation Rate (InfR)	Unemployment Rate (UnR)	GDP Growth Rate (GDPR)
1989	65.3	17.2	1.4
1990	-0.90	16.6	0.8
1991	123.6	16	7.0
1992	117.6	15.4	5.5
1993	101.3	15.8	2.8
1994	115.5	15.2	3.5
1995	69	14.6	8.9
1996	86.8	14	5.5
1997	47.2	13.5	6.1
1998	24.6	13	8.2
1999	17.2	12.5	4.2
2000	7.10	15.2	8.4
2001	4.9	15	10.9
2002	22.2	15.9	5.9
2003	6.5	15.8	6.3
2004	9.4	16.2	5.1
2005	8.5	17	5.6
2006	7.2	17.5	6.5
2007	14.8	16.8	5.7
2008	14.3	16	3.8
2009	11.2	14.9	-2.8
2010	13.1	13.7	3.9
2011	18.1	12	-3.2
2012	35.6	14.8	-17
2013	37.1	15.2	2.0
2014	36.9	19.8	4.7
2015	16.9	21.6	1.9
2016	17.8	20.6	3.5
2017	32.4	19.6	0.7
2018	63.3	19.5	-2.3
2019	51	22.1	-2.5

Source [25]: ILO and CBOS Annual Reports

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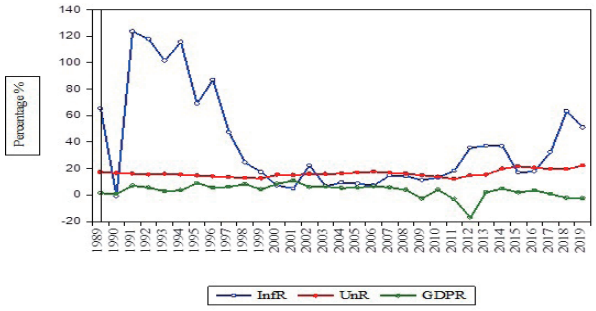

Figure 2. Key Indicators of Sudan Economy (1989-2019)
Source: Made by author using Eviews.10- based on data on Table 1

Table 1 and Figure 2 show that the inflation rate of Sudan during the period (1989-2019) ranges between (%-0.9 - %123). Additionally, the unemployment rate ranges between (%12-%22.1) during this period. The GDP growth rate ranges between (% -2.3 to %10.9). As a result, Sudan's economy was affected by hyperinflation and high unemployment.

Table 2. Key Indicators of Sudan Economy Compared to some African Countries

Country	Inflation Rate (InfR)	Unemployment Rate (UnR)	GDP Growth Rate
Sudan	38.5	16.2	3.2
Egypt	13	11	4
Eritrea	3.7	6.71	5.1
Kenya	4.56	2.56	5.14
Uganda	6.5	2.45	5.17
Chad	2.3	1.82	3.12
Angola	32.1	7.2	1.9

Average Value (1989-2019)
Source[26]: ILO and CBOS Annual Reports

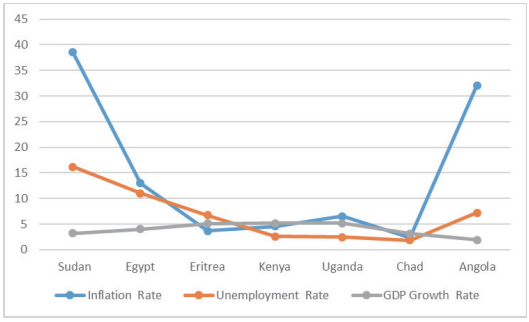

Figure 3. Key Economic Indicators of Selected African Countries
Average Value (1989-2019)
Source: Made by author based on data on Table 2

Table 2 and Figure 3 show that Sudan achieved the highest rates of inflation and unemployment of %38.5 and %16.2 respectively during the period 1989-2019 compared to Egypt, Eritrea, Kenya, Uganda, Chad, and Angola. As for the economic growth, Angola achieved the lowest rate of %1.9 compared to the other African country in the group.

3.2 Basic Demographic Indicators of Sudan

Table 3 presents some social indicators of Sudan including population growth rate, human development index (HDI), birth rate, and death rate. Table 4 presents comparisons between Sudan, Egypt, Eritrea, Kenya, Uganda, Chad, and Angola in terms of average values of the social indicators throughout 1989-2019.

Table 3. Key Demographic Indicators of Sudan (1989-2019)

Year	Population Growth Rate	HDI	Birth Rate	Death Rate
1989	3.2	0.31	41.9	12.2
1990	3.4	0.33	41.8	12
1991	3.6	0.34	41.7	11.9
1992	3.8	0.34	41.6	11.8
1993	3.8	0.35	41.4	11.7
1994	3.5	0.36	41.2	11.5
1995	3.2	0.37	41	11.3
1996	2.8	0.37	40.7	11.1
1997	2.5	0.38	40.4	10.9
1998	2.3	0.39	40.1	10.7
1999	2.3	0.40	39.8	10.5
2000	2.4	0.40	39.5	10.3
2001	2.5	0.41	39.2	10
2002	2.6	0.42	38.9	9.3
2003	2.6	0.42	38.5	9.6
2004	2.5	0.43	38.1	9.4
2005	2.4	0.44	37.7	9.2
2006	2.3	0.44	37.3	9.0
2007	2.2	0.45	36.8	8.7
2008	2.1	0.46	36.4	8.5
2009	2.2	0.46	35.9	8.3
2010	2.2	0.47	35.5	8.1
2011	2.3	0.48	35	7.9
2012	2.4	0.49	34.6	7.8
2013	2.4	0.48	34.2	7.6
2014	2.4	0.50	33.7	7.5
2015	2.4	0.50	33.3	7.4
2016	2.4	0.50	32.9	7.3
2017	2.4	0.51	32.5	7.3
2018	2.4	0.51	32.2	7.2
2019	2.4	0.51	31.8	7.1

Source [27]: Konema and CBOS Annual Reports

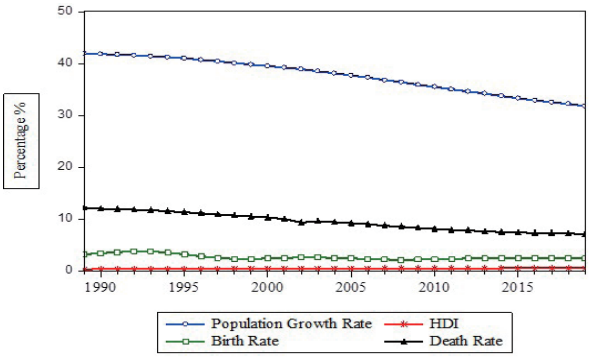

Figure 4. Key Social Indicators of Sudan (1989-2019)
Source: Made by author using Eviews.10- based on data on Table 3

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Table 3 and Figure 4 show that the population growth rate of Sudan ranged between (%2.1-%3.8) during (1989-2019) while HDI ranges between 0.31 and 0.51 during this period. HDI indicates that progress has been severely slowed by the eruption of violent conflict (political instability) between Sudan and South Sudan and the resulting impacts on institutional stability and social capital [28]. In 2019, the birth rate for Sudan was 31.8 per 1,000 people. The birth rate fell gradually from 41.9 per 1,000 people in 1989 to 31.8 per 1,000 people in 2019. The death rate of Sudan declined from 12.2 per 1,000 people in 1989 to 7.1 per 1,000 people in 2019. The signature of the Comprehensive Peace Agreement (CPA) between North and South Sudan in 2005 in Kenya after more that two decades of protracted war may have contributed to the improvement of this indicator [29].

Table 4. Key Demographic Indicators of Sudan Compared to some African Countries

Country	Population Growth Rate	HDI	Birth Rate	Death Rate
Sudan	2.6	0.42	37.6	9.4
Egypt	2	0.68	27.2	5.01
Eritrea	3.02	0.45	30.3	6.5
Kenya	2.5	0.57	28.9	6.2
Uganda	3.4	0.51	41	7.8
Chad	3.2	0.38	44	13.1
Angola	3.5	0.55	42.9	9.6

Average Value (1989-2019)

Source [30]: World and Regional Statistic

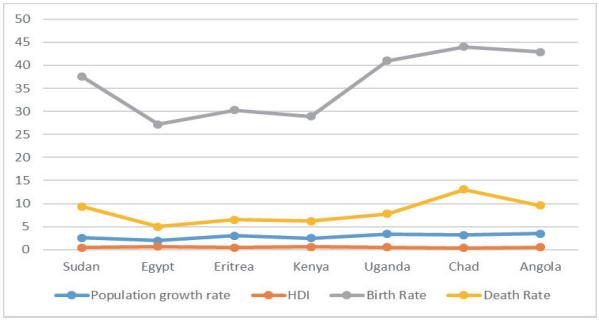

Figure 5. Key Social Indicators of Sudan Compared to some African Countries

Average Value (1989-2019)

Source: Made by author using Eviews.10- based on data on Table 4

Table 4 and Figure 5 show that although Angola achieved a high death rate on average of 9.6 per 1,000 people during 1989-2019, it also achieved the highest population growth rate on average of %3.5 compared to Sudan and the rest of the African countries in the study. Egypt achieved the highest HDI of 0.55 compared the other countries. Sudan has attained HDI on average of 0.42 throughout this period.

4. Methodology and Data

4.1 Models Specifications

The objectives of the study will be achieved by applying two models. The first model (Model-1) aims to examine the relationship between inflation and unemployment (Phillips Curve) in Sudan for the period (1989-2019). The second model (Model-2) measures the effect of inflation and unemployment on the Sudan economy.

The following equation is used to examine the relationship between inflation and unemployment.

$$\text{Inflation} = f(\text{Unemployment}) \quad (4)$$

Equation (4) in the econometric format becomes as shows

$$\text{InfR} = \alpha_0 + \alpha_1 \text{UnR} + \varepsilon \quad (5)$$

Where:

InfR: Inflation rate measured by consumer price index.

UnR: Unemployment rate measured by the number of unemployed persons as a percentage of the labor force.

α_0: The constant term.

α_1: The coefficients of the independent variable (UnR).

ε = Error term.

Equation (6) was used to examine the effect of inflation and unemployment on the economic growth of Sudan for the duration of 1989-2019.

$$\text{Economic Growth of Sudan} = f(\text{Inflation, Unemployment}) \quad (6)$$

Equation (6) in the econometric format becomes as follows:

$$\text{GDPR} = \beta_0 + \beta_1 \text{InfR} + \beta_2 \text{UnR} + \epsilon \quad (7)$$

Where:

GDPR: Gross Domestic Product Rate.

InfR: Already defined in equation (5).

UnR: Already defined in equation (5).

β_0: The constant term.

$\beta_1 and\ \beta_2$: The coefficients of the independent variables (InfR and UnR).

ϵ = Error term.

4.2 Descriptive Statistics

Table 5 displays a summary of the descriptive statistics of inflation (InfR), unemployment (UnR), and GDP growth rate (GDPR) for 31 observations covering the period 1989-2019.

As seen in Table 5, inflation rates (InfR) in Sudan on average were %22.2 and the minimum rate of % -0.9 while the maximum rate was %123. As for unemployment rate (UnR), the average rate was %15.8 and the minimum

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rate was %12 whereas the maximum rate of %22.1. Alternatively, the average growth rate of Sudan(GDPR) during 1989-2019 was %4.2 and the minimum growth rate of % -17 whereas the maximum rate of %10.9.

Table 5. Model-1: Descriptive Statistics

Item	InfR	UnR	GDPR
Mean	38.56452	16.22581	3.258065
Median	22.20000	15.80000	4.200000
Maximum	123.6000	22.10000	10.90000
Minimum	-0.900000	12.00000	-17.00000
Std. Dev.	36.71030	2.544925	5.135223
Skewness	1.117799	0.700928	-2.029672
Kurtosis	3.031143	2.926029	8.916411
Jarque-Bera	6.456868	2.545450	66.49783
Probability	0.039619	0.280067	0.000000
Sum	1195.500	503.0000	101.0000
Sum Sq. Dev.	40429.39	194.2994	791.1155
Observations	31	31	31

Source: Own Calculation, based on data on Table 1

4.3 Augmented Dickey-Fuller Test

The Augmented Dickey-Fuller (ADF) test was applied to examine whether the variables (InfR, UnR, and GDPR) are stationary or not. (Table 6) presents the results of Unit Root Test.

Table 6 shows that the set of variable which includes inflation(InfR), unemployment (UnR), and gross domestic product (GDPR) are stationary at 1st difference, 2nd difference, and on the level, respectively, at 5% MacKinnon Critical Value.

5. Results

5.1 Results of Model-1

The results of the estimated parameters of the relationship between inflation and unemployment in Sudan (model-1) are showed in Table 7 below.

5.2 Results of Model-2

Table 8 presents the estimated parameters of the relationship between inflation, unemployment, and Sudan's GDP growth during the period 1989-2019.

6. Discussion

The OLS results shown in Table 7 indicate that the model of Phillips Curve-Sudan is relatively fitted through the negative relation between inflation and unemployment but its set of variables (InfR and UnR) is statistically insignificant. The coefficient of the constant variable achieved is 4.05which indicates a positive relationship between the constant parameter and the InfR. The constant parameter has no significant influence on the model other than reflecting the value of InfR when other independent variables are held constant.

The coefficient of unemployment rate (UnR) exerts insignificant negative effect on the dependent variable InR, which means 1% rise in UnR, might bring %2.6 decrease in InfR. The overall coefficient of determination (R^2) shows that the fitted equation is under evaluation because it has a negative small value of -0.032257. As a final point, the finding revealed that the value of F-statistic is very little with probability >0.05 (about 0.6958390)meaning that model is insignificant. This result agrees with the graphical presentation showed in Figure 3 indicating that inflation and unemployment are randomly correlated. It's a key conclusion which should be understood by policymakers.

Table 6. Stationary Results (ADF Test)

Variables	Level	1st or 2nd diff.	5% cri. Value	P-value at Level	P-value at 1st or 2nd	Status	Variable Form
InfR	-3.679322	-2.998064	-2.568305	0.0627	0.0206	I(2)	D(InfR(-1),2)
UnR	-0.677393	-4.095876	-2.967767	0.8376	0.0036	I(1)	D(UnR)
GDPR	-3.252500	Not Required	-2.963972	0.0266	Not Required	Level	GDPR

Source: Own Calculation, based on data on Table 1

Table 7. OLS Results (Model-1)

Dependent Variable: D(InfR(-1),2): Method: Ordinary Least Squares(OLS)

Date: 05/14/21 Time: 23:25: Sample (adjusted): 1992 2019

Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.050515	9.853281	0.411083	0.684
D(UnR)	-2.674493	6.765552	-0.395310	0.6958
R-squared	0.005974	Mean dependent var		3.467857
Adjusted R-squared	-0.032257	S.D. dependent var		50.74015
S.E. of regression	51.55203	Akaike info criterion		10.79181
Sum squared resid	69097.90	Schwarz criterion		10.88697
Log likelihood	-149.0853	Hannan-Quinn criter.		10.82090
F-statistic	0.156270	Durbin-Watson stat		2.482565
Prob(F-statistic)	0.695839			

Source: Own Calculation, based on data on Table 1

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Table 8. OLS Results (Model-2)

Dependent Variable: GDPR-Method: Ordinary Least Squares(OLS)				
Date: 05/15/21 Time: 01:23-Sample (adjusted): 1992-2019				
Included observations: 28 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.431561	1.040487	3.298035	0.0029
D(InfR(-1),2)	0.001729	0.020642	0.083747	0.9339
D(UnR)	-0.729763	0.714255	-1.021713	0.3167
R-squared	0.041063	Mean dependent var		3.278571
Adjusted R-squared	-0.035652	S.D. dependent var		5.331969
S.E. of regression	5.426184	Akaike info criterion		6.321306
Sum squared resid	736.0869	Schwarz criterion		6.464043
Log likelihood	-85.49829	Hannan-Quinn criter.		6.364942
F-statistic	0.535267	Durbin-Watson stat		1.033135
Prob(F-statistic)	0.592074			

Source: Own Calculation, based on data on Table 1

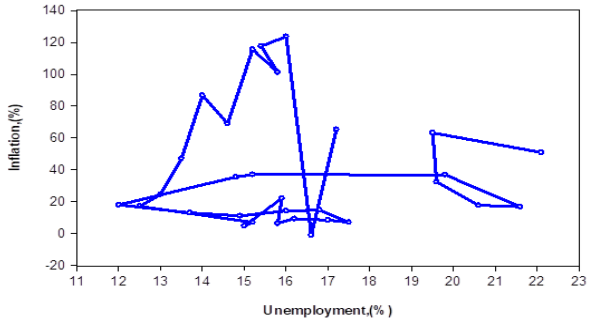

Figure 6. Chart of Fillips Curve-Sudan (1989-2019)
Source: Made by author using Eviews.10- based on data on Table 1

Figure 6 shows that the chart of the Phillips Curve for Sudan during the period 1989-2019 exhibits a random interrelationship between inflation and unemployment (overlap between short/long-term) where there is difficulty in differentiating between the two runs (short and long). Therefore, policymakers need to evaluate and reform macroeconomic policy in Sudan. The results of Ordinary Least Squares (OLS) of the model-2 are presented in Table 8.

The OLS results shown in Table 8 indicate that the coefficient of the constant term appeared with a significant positive sign recording 3.43 and probability<0.05 which indicates a positive relationship between the constant parameter and the GDPR. The constant parameter has a significant influence on the GDPR when other independent variables are held unchanged.

The parameter of inflation rate (InfR) exerts an insignificant positive effect on the dependent variable (annual economic growth rate) or (GDPR) indicating that %1 increase in InfR will lead to an increase of GDPR by %0.001729. However, inflation has an influence on economic growth but with a weak correlation.

The parameter of the unemployment rate (UnR) exerts an insignificant negative effect on GDPR showing that a one percent increase in UnR might bring %0.729 decreases in GDPR. The overall coefficient of determination (R^2)shows that the fitted equation is under evaluation because it has a negative value of -0.035652. Moreover, the value of the F-statistic is very low with probability >0.05 approximately 0.592074 showing that model-2 is insignificant in its relation to inflation and unemployment. Similarly, to model-1, it's the second important signal for policymakers.

7. Conclusions

Based on the discussion of the results, the study found an insignificant negative relationship between inflation and unemployment in Sudan.

There is an insignificant positive relationship between inflation and economic growth in Sudan. Thus, accelerating economic growth in developing countries like Sudan may require the government to spend more on purchasing machinery, and equipment.

There is an insignificant negative relationship between unemployment and economic growth indicating that the macroeconomic policy is a going way, but the degree of its effectiveness still needs more effort by policymakers.

Sudan's economy exhibits a low growth rate of GDP (negative rate for the years 2018-2019) demonstrating that if the government is targeting a low level of unemployment, it needs to spend more for new jobs. If there are insufficient funds, this may force the government to print more money to finance the deficit of the public budget which causes more inflation but unemployment will be reduced.

Regarding the insignificant negative relationship between inflation and unemployment, policymakers in Sudan need to reform and reassess the monetary policy instruments used to target inflation.

The procedures of accelerating economic growth in Sudan during (1989-2001) result in high inflation. This

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situation is normal for developing countries like Sudan. Since borrowing from the public leads to reducing the inflationary effects through issuing government securities. One of the vital sources available for the government is to borrow money from inside monetary stock.

Concerning unemployment, policymakers have the option to invite the private sector to contribute to reducing unemployment by creating new jobs.

It's very difficult for developing countries in the short run to reduce inflation and unemployment simultaneously, so the problem of targeting inflation or unemployment requires good knowledge of the real economic situation, which needs high consideration.

Conflict of Interest

The author undertakes and declared that there will be no conflict to publish the paper. Moreover, it prepared ethically.

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