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THE IMPACT OF INFLATION ON ECONOMIC GROWTH CASE STUDY OF SOMALIA

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Abstract

This study investigates the impact of inflation on the economic growth of Somalia over the period 1991 to 2015. Typically, this relationship has been analyzed using simple correlations and deterministic models. In this analysis, a tri-variate model is used, incorporating the unemployment rate into the framework for analysis, we capture the policy trade-off between managing inflation at a low rate and targeting low unemployment as described by the Phillip curve hypothesis. After checking the series for unit root by using the Augmented Dickey-Fuller (ADF) and Phillip-Perron (PP) tests, we identified that all the variables are stationary at the first difference, that is I~(1). Furthermore, Engle-Granger Cointegration test was employed to check if there is a long-run equilibrium between the variables, results from this test showed that the variables were Co- integrated, which means a long-run equilibrium exists between the variables. The study explores the existence of a negative relationship between inflation and economic growth in Somalia. In addition, we estimate the vector error correction model and the result indicates there is convergence among the variables in the long run. The speed of adjustment or the value of the coefficient for error correction term was just under fifty percent which indicates almost 50% of the deviation of the inflation from its short-run equilibrium level is corrected each year.

Keywords: Inflation, Unemployment, Economic Growth.

INTRODUCTION

One of the most critical macroeconomic issues among policy makers, macroeconomists and central bank specialists is to discover the relationship between the inflation and economic growth through maintaining price stability and growth together in an economy (Barro 1995:166). In both theoretically and empirically, there is a large debate in the relationship between inflation and economic growth. The idea on relationship between these two macroeconomic variables depends on the economic situation of world. In classical era , inflation reduces firms profit level and saving through increasing the costs so that inflation has negative impact on economic growth (Gokal V. & Hanif S, 2004).

During the rise of the Keynesian economics, after the Great Depression, the Keynesian policies were actualized by nations of the world. Expanding aggregate demand, expanded production as well as increased the general price level. Inflation was not considered as a danger to the economy until the 1970's, but it was considered to have a positive impact on economic growth. This is shown in the empirical study of Philips (1958) which was quickly adopted by Keynesians in 1950's. "According to Phillips Curve, inflation has a positive reaction to economic growth and is negatively related to unemployment. However, this world economic condition survived only until the 1970's" (Snowdon and Vane 2005: 134 – 40). In the 1970's, came out that nations with high rates of inflation begun to display bring lower rates of economic growth. Because of this reason the view that high level of inflation is positively related with

The Seybold Report
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economic growth was substituted by the way that high level inflation is negatively related to the growth (Friedman 1976: 270-73). The latter view is well known as the monetarist view of macro-economics. The conflicting views in the relationship between inflation and growth are not only in the theoretical literature but also exist in empirical findings based on the macroeconomic and development condition of the countries under study. Among the various observational examinations the discoveries of Khan and Senhadji (2001) reveals that the economy of developing nations can oblige higher inflation than that of developed ones.

After 1991, inflation in Somalia rose enormously because of absence of a cohesive government and substantial amounts of foreign-printed currency injected into the economy while central bank of Somali should not intervene in the foreign currency market, except to smooth out what are perceived to be disorderly market conditions. Aside from the monetary expansion, the prices rose as a result of higher fuel prices and food insecurity (Sibel Kulaksiz, 2006). In general, "inflation can be defined as the rise in the level of prices maintained over a given period in an economy. In other words, it refers to the general rise in the price of various goods or services thus leading to a fall in the purchasing power of a countries currency", (Lipsey R.G. & Chrystal K.A., 1995). "Inflation is an economic situation and it occurs where an increase in the supply of money is greater than the amount of goods and services produced in a country", (Piana V, 2002).

According to (Umaru A. & Zubairu A., 2012) "Inflation is categorized into various degrees and they are as follows: hyperinflation (3 digits % points), extremely high inflation (50 % to 100%), chronic inflation (15% to 30%), high inflation (30% to 50%), moderate inflation (5% to 25%-30%) and low inflation (1%-2% to 5%)." According to (Brieuc monfort &Cristian B.Mulder, 2008), There are two major determining factors of inflation: 1) Demand-pull inflation shows up in an economy when aggregate demand is higher than aggregate supply, 2) Cost push inflation: It develops in an economy as a result of increase in cost of basic inputs of the production process. The main objective of this study is to empirically evaluate the impact of inflation on the Somalia's economy.

Review of the Literature

There are a lot of empirical investigations to discover the impact of inflation on economic growth all around the word which is used either time series data for a specific country or panel data for several countries. However in this section we discuss some of most popular empirical researches about the relationship between inflation and economic growth. Some researchers find a negative relationship between inflation and growth such as Barro (1995) and Sarel (1995), while others find a positive relation when inflation rate is less than 10 percent and negative relationship when inflation rate is greater than 10 percent like Gosh and Phillips (1998) and Nell (2000), and others discover a positive relationship between inflation and growth such as Ozdemir (2010) and Dotsey & Sarte (2000).

One of those empirical investigations was taken Barro (1995), he used a panel survey focusing 100 countries for thirty years. He utilized different sophisticated statistical and econometric techniques so as to explore this relationship. The result of his research was that there exists a

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.6979829

negative relationship between these two variables. Sarel (1995) stated "that due to modest inflation rates in most countries before the 1970s, most empirical studies conducted at that time show the evidence of a positive relationship between inflation and economic growth and after that, rates started to be high. So, study concluded with negative relationship between inflation and economic growth". According to Gosh and Phillips (1998), covering IMF member countries over 1960 to 1996, they investigated the relationship between inflation and economic growth. They found that a very low inflation rates (less than 2-3 per cent), inflation and growth are positively correlated and there is a negative relationship when the level of inflation is high. Similarly, Nell (2000) also found that inflation rate that less 10 percent may be beneficial for growth, while more than 10 percent inflation appears to be harmful to the economy. Another empirical study was proposed by Ozdemir (2010), he investigated dynamic linkages between inflation uncertainty, inflation and output growth for UK. The result of the study for the full period indicates that inflation uncertainty has a positive impact on the rate of inflation and economic growth. A similar finding to this study is undertaken for US economy by Dotsey & Sarte (2000).

DATA AND METHODOLOGY

Data description

This research seeks to explore the impact of inflation on economic growth in Somalia. The study used the secondary data gathered from the Central Bank of Somalia (CBS), National Bureau of Statistics (NBS), African Development Bank, and World Bank databank (databank.worldbank.org). Although the main source of data is central bank of Somalia (CBS) but due to lack of full confidence we aided some international organization of economy. In the study, the researcher employed a time series data generated annually from Somalia. The data covers the period of 25 years from 1991 to 2015. The study chose this period because of the country's economic situation changed due to lack of strong government and monetary institutions after 1991 when central government were collapsed.

Econometric Modeling

In this study, the headline Gross domestic product was regarded as the dependent variable while Consumer price index and unemployment rate were considered as independent variables.

The model used in this study can be expressed as;

$$\mathbf{GDP_t = f\ (CPI_t,\ UNEMP_t)} \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

Where; GDPt: Gross domestic product to measure growth in economic activities of Somalia; CPI_t: Consumer price index used to denote change in general price level, i.e., inflation; $UNEMP_t$: Unemployment rate used to denote change in unemployment. The model described above can be written in the regression form as follows;

$$\mathbf{GDP_t = \alpha + \beta\ CPI_t + UNEMP_t + \mu_t} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (2)$$

The Seybold Report
ISSN 1533-9211
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As (Gujarati and Porter, 2009) stated converting variables to logarithms is it is important in order to reduce the heteroscedasticity before comparing with standard regression. Thus, the log-linear specification model is as follows:

$$\mathbf{LGDP_t = \alpha + \beta\ LCPI_t + LUNEMP_t + \mu_t} \quad \ldots\ldots\ldots\ldots \quad (3)$$

Where; L represents logarithms. LGDP = Log Gross domestic product
$\mathbf{LCPI_t}$ =Log consumer price index, $\mathbf{LUNEMP_t}$ =log unemployment rate

Stationary test

"For any long run economic analysis, it is important that variables in the regression equations be stationary" (Gujarati, 2009). In a time series analysis, a great deal of attention is given to stationarity of the variables in order to get rid of the problem of spurious regression. "a stochastic process is said to be stationary if its mean and variance are constant over time and the value of the covariance between the two time periods depends only on the distance or gap or lag between the two time periods and not the actual time at which the covariance is computed" (Gujarati, 2009). Let Y_t be a stochastic time series with these properties:

Mean: $E(Yt) = \mu$ …… (4)

Variance: $Var(Yt) = E(Yt - \mu)^2 = \boldsymbol{\sigma^2}$……. (5)

Co-variance: $\gamma_k = E[(Yt - \mu)(Yt + k - \mu)]$ ……... (6)

Where, Yt is a series of random walk γ_k is the auto covariance at lag k

If one or more of the above conditions fail, the stochastic process Yt is said to be non-stationary exhibiting a unit root problem. According to (Koop 2009: 180 – 3), the time series in macroeconomic variables are mostly non- stationary.

Unit root test

To test the stationarity, unit root test became widely popular in time series econometric analysis. The first step involves testing the order of integration of the individual series under consideration. The most popular ones for the test of order of integration are Augmented Dickey-Fuller (ADF) test and the Phillip-Perron (PP). Augmented Dickey-Fuller test relies on rejecting a null hypothesis of unit root (the series are non-stationary) in favor of the alternative hypotheses of stationaarity. The tests are conducted with and without a deterministic trend (t) for each of the series. To start with, a random walk model (RWM) that resembles the Markov first order autoregressive model is assumed. The RWM can be given as in the following equation:

$$Y_t = \rho\ Y_{t-1} + u_t \quad \mathbf{-1 \le \rho \le 1} \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (7)$$

Where, Y_t is a given time series, u_t is the white noise error term. If $\rho=1$ the equation given is said to exhibit unit root and the series is said to be a non-stationary. If, however, $|\rho| \le 1$, that is if the absolute value of ρ is less than one, then it can be shown that the time series Yt is stationary, (Gujarati, porter & Gunasker). We manipulate equation (7) as follows: Subtract Yt−1 from both sides of (7) to obtain:

The Seybold Report
ISSN 1533-9211
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$Y_t - Y_{t-1} = \rho Y_{t-1} - Y_{t-1} + u_t = (\rho - 1)\, Y_{t-1} + u_t$ …… (8)

We can write above equation as the following

$\Delta Yt = \delta Y_{t-1} + u_t$ …….. (9)

Where $\delta = (\rho - 1)$, Δ is the first-difference operator. By using equation (9), we can say: if the estimated slope coefficient in the regression (δ) is negative, then it can be concluded that Yt is stationary. If, on the other hand, the estimated slope coefficient (δ) is zero then the series can be considered as non-stationary. Under the null hypothesis $\delta = 0$ the estimated t-value follows the tau (τ) statistic. The tabular values for the τ-statistic are given by Dickey and Fuller (1979). The critical points in the statistic distribution are larger than those of the t statistic. Interestingly, if the hypothesis that $\delta = 0$ is rejected (i.e. the time series is stationary), we can use the usual (Student's) t test. (Gujarati book of Econometrics).

To allow for the various possibilities, the DF test is estimated in three different forms,

That is, under three different null hypotheses.

Yt is a random walk: $\Delta Y_t = \delta Y_{t-1} + u_t$ …….. (10)

Yt is a random walk with drift: $\Delta Y_t = \beta 1 + \delta Y_{t-1} + ut$ …… (11)

Yt is a random walk with drift

Around a stochastic trend: $\Delta Y_t = \beta 1 + \delta Y_{t-1} + \beta 2t + u_t$…… (12)

Where t is the time or trend variable. In each case the hypothesis is:

Null hypothesis: H_0: $\delta=0$ (i.e. there is a unit root or time series is nonstationary, or it has a stochastic trend) Alternative hypothesis: H_1: $\delta <1$ (i.e. the time series is stationary, or it has deterministic trend).

Co integration Test:

After confirming unit root for time series data, the next stage is to examine whether there exists a long run equilibrium relationship among variables. The presence of long-run equilibrium (stationary) relationships among economic variables is referred to as co-integration which is very significant to avoid the risk of spurious regression. "The regression of a nonstationary time series on another nonstationary time series may produce a spurious regression"(Gujarati 2009). Let us suppose that we consider the $LGDP_t$, $LUNEMP_t$ and $LCPI_t$ time series given. Subjecting these time series individually to unit root analysis, we will find that they both are I(1); that is, they contain a unit root. Suppose, then that, we regress GDP on INF as follows:

$LGDPt = \alpha + \beta\, LCPI_t +$ …….. (13)

We can rewrite the equation as:

$\mu_t = LGDP_t - \alpha - \beta\, LCPIt$ …….. (14)

The Seybold Report
ISSN 1533-9211
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Suppose we now subject u_t to unit root analysis and find that it is stationary; that is, it is I(0).This is an interesting situation, for although GDP_t and INF_{Lt} are individually I(1), that is, they have stochastic trends, their linear combination (3.14) is I(0). "The linear combination cancels out the stochastic trends in the two series. As a result, a regression of Growth on inflation as in (3.13) would be meaningful (i.e., not spurious). In this case we say that the two variables are co-integrated. Economically speaking, two variables will be co-integrated if they have a long-term, or equilibrium, relationship between them" (Gujarati 2009). "Testing the existence of co integration, Augmented Engel-Granger (AEG) test usually helps to identify the presence of co integration. Engel and Granger (1987) pointed out that a linear combination of two or more non-stationary variables may be stationary. If such a stationary combination exists, then the non-stationary time series are said to be co-integrated. The VAR is based on co-integration test using the methodology developed in Johansen (1991, 1995)".

Error correction Mechanism (ECM)

If LGDP and LCPI are co-integrated; that is, there is a long term or equilibrium, relationship between the two variables so in short term may be disequilibrium." The error correction mechanism (ECM) developed by Engle and Granger is a means of reconciling the short-run behavior of an economic variable with its long-run behavior"(Gujarati 2009). Vector Error Correction Model (VECM) examines the dynamic adjustment of variables both in the long and short run to their equilibrium state. Short term dynamics which is a measure of deviation fromsteady state is determined by Error correction model. If the series are co-integrated, it means there is a long-term equilibrium relationship between them so VECM is applied in order to evaluate the short run of the co-integrated series. A negative and significant coefficient of the ECM (i.e. t-l) indicates that any short term fluctuation between variables will give rise to a stable long run relationship between the variables.

Analysis and discussion

Unit Root Results

To avoid estimating a spurious regression model, we check the stationarity of the series before doing any analysis. To check for stationarity, we apply the unit root test that includes the Augmented Dickey Fuller (ADF) and Phillips Perron (PP) methodology. The result of Augmented Dickey Fuller (ADF) unit root test is summarized in Table 1 at levels and 2 at their first differences.

The Seybold Report
ISSN 1533-9211
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Table 1: ADF test Results at Levels

Variable	ADF Test Statistics z(t)	1% Critical Value level of significance	5% Critical Value level of significance	10% Critical value level of significance	p-value for Z(t)	Decision
LGDP	-0.158	-3.750	-3.000	-2.630	0.9698	Do not reject the null hypothesis
LCPI	-1.821	-3.750	-3.000	-2.630	0.3702	Do not reject the null hypothesis
LUNEMP	-0.914	-3.750	-3.000	-2.630	0.7834	Do not reject null hypothesis

Table 2: The ADF test results at the first difference

Variable	ADF Test Statistics z(t)	1% Critical Value level of significance	5% Critical Value level of significance	10% Critical value level of significance	p-value for Z(t)	Decision
dLGDP	-4.229	-3.750	-3.000	-2.630	0.0006	Reject the null hypothesis
dLCPI	-5.902	-3.750	-3.000	-2.630	0.0000	Reject the null hypothesis
Dlunemp	-4.355	-3.750	-3.000	-2.630	0.0004	Reject the null hypothesis

The ADF unit root test estimated in Table 1 reveals that log (GDP), log (CPI) and log () have a unit root (feature of some stochastic processes that can cause problems in statistical inference involving time series models), which means the variables are non-stationary in levels. This can be seen by comparing the observed values (in absolute terms) of the ADF test statistics with the critical values (also in absolute terms) of the test statistics at the 1%, 5% and 10% level of significance. Result from table 1 gives strong evidence of non stationarity in all variables. Therefore, the null hypothesis is accepted and it is sufficient to conclude that there is a presence of unit root in the variables at levels and this cause problem in the model. The presented findings in table 1 consists the log of GDP, Inflation and unemployment is non-stationary confirming the importance of including some transformation to turn variables into stationary. If the time series data is non-stationary, the estimation will either give spurious results or the variables may be related in the long-run. In order to avoid the spurious regression effects the first difference of the model is shown in the following table. Taking a look at Table 2, all variables become stationary at their first differences. As a result of the above result, all the variables were differenced once and the ADF test were conducted on them a shown in table 2, the coefficients compared with the critical values (1%, 5% and 10%) reveals that all the variables were stationary at first difference and on the basis of this, the null hypothesis of non-stationary is rejected and while the alternative hypothesis is accepted. t is safe to conclude that the variables are stationary. This implies that the variables are integrated of order one, i.e. I (1).

The Seybold Report
ISSN 1533-9211
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In the results in Table 2, we can comfortably reject the presence of unit root because the test Statistic (-4.229, -5.902, -4.355) are more negative than the critical value (-3.000) at 5% even at 1% level of significance we have the same result. The result of Phillips-Perron (pp**)** unit root test is summarized in Table 3 at levels and their first differences. The results shows the null hypothesis is rejected at first differences i.e. all variables in the model are non-stationary at levels but all are integrated of order one, i.e. I (1).

Table 3: PP test Results at Levels and first differences.

Variable	PP(ADF) Test Statistics z(t)	1% Critical Value level of significance	5% Critical Value level of significance	10% Critical value level of significance	p-value for Z(t)	Decision
LGDP	-0.186	-3.750	-3.000	-2.630	0.9402	Do not reject the null hypothesis
LCPI	-1.589	-3.750	-3.000	-2.630	0.4890	Do not reject the null hypothesis
LUNEM	-1.122	-3.750	-3.000	-2.630	0.7062	Do not reject the null hypothesis
dLGDP	-4.221	-3.750	-3.000	-2.630	0.0006	reject the null hypothesis
dLCPI	-6.497	-3.750	-3.000	-2.630	0.0000	reject the null hypothesis
Dlunemp	-4.378	-3.750	-3.000	-2.630	0.0003	reject the null hypothesis

Cointegration test for Long Run Relationship

Testing for co integration is a necessary step to check if one is modeling empirically meaningful relationships. If there is no co integration of the variables, the model will result into spurious regression. Cointegration highlights the existence of long run equilibrium which converges over time. All individual variables found to exhibit stochastic process I (1). Results in unit root test section show the applicability of Augmented Engle-Granger test in testing long run relationship of the variables under study. Results of cointegration tests and estimates of the co integrating parameters are reported in following table:

Table 4: Augmented Engle-Granger test for Cointegration

Residuals from Regression of;	Computed □□(=t) Statistics	Engle-Granger 1% Critical□□Value	Engle-Granger 5% Critical□□Value	Engle-Granger 10% Critical□□Value
LGDP and LCPI	-5.782	-4.415*	-3.615	-3.234
LGDP and LUNEMP	-4.320	-4.320	-3.615*	-3.234

The Seybold Report
ISSN 1533-9211
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The table shows that growth rates and inflation rates are co integrated. The empirical evidence also implies that there is a long-run relationship between growth rates and inflation rates.

The result shows the residual values represented by the GDP and Inflation (-5.782) which is less than the Engle-Granger (-4.415) at the 1% level. There is evidence of significant long run equilibrium between GDP and Inflation rate at 1% level. Moreover, in testing the existence of cointegration between the CPI and Unemployment, the computed t **(=t)** (-4.320) is less than the critical value (-3.615) at the 5% level. Therefore, the null hypothesis is rejected and concludes that GDP possess a long run relation to the Inflation and unemployment rates. The kind of this relationship will be showed in the next section.

Table 5: long run results

Log(GDP)	Coefficients	std. Error	t-statistic	Prob.
Constant	9.607653	.0725223	132.48	0.000
LCPI	-.0870406	.0242045	-3.60	0.002
LUNEMP	-.1209246	.0567046	-2.13	0.044
R-squared = 0.5283 Adj R-squared = 0.4854 Prob. (F stat) = 0.0003 Root MSE = 0.5242 Durbin-Watson Stat= 0.6512423				

The result of study reveals that there is a significant negative relationship between inflation and economic growth. According to the results of table 5, it can be said that by increase of inflation rate, economic growth is reduced and coefficient of inflation rate in the estimated model equals to -0.087 which means inflation has negative impact on economic growth .In addition unemployment has a negative impact on economic growth of Somalia in the studied period. $GDP_t = 9.6 - 0.087\ CPI_t\ 0-.12UNEMP_t + \hat{U}$

As shown above, the coefficient of determination R^2 is 0.5283. This result implies that on the average about 54.83% of variations in economic growth in Somalia within the period under review is systematically explained by changes in these explanatory variables. Thus, about 47.17% variations in economic growth in Somalia remain unexplained by these explanatory variables. The unexplained variations are attributed to other external factors not included in the model. The Durbin – Watson (DW) value of 0.651 suggests that there is no presence of autocorrelation.

The Error Correction Model

Table 6: The Estimation Result of the Error Correction Model

	Coefficients.	Std. Err.	z	P>|z|
Dlgdp	-.3943501	.270717	-1.46	0.145
Dlcpi	-.0015745	.0203666	-0.08	0.938
Dlunemp	.0085207	.0656854	0.13	0.897
Cons	.0068255	0065227	. 1.05	0.295
Error-correction	-.4466994	3848159	-1.16	0.246

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.6979829

The term error-correction relates to the fact that last-periods deviation from a long-run equilibrium, the error, influences its short-run dynamics. Thus ECMs directly estimate the speed at which a dependent variable returns to equilibrium after a change in other variables.

The speed of this adjustment however is determined by the magnitude of the coefficient. Based on the result of table 4.6, the value of the coefficient for the error correction term is - 0.4466994 implying 44.67% of the shock to the rate of inflation is adjusted in each year.

The coefficient indicates a feedback of about 44.67% of the previous year's disequilibrium in consumer price index (inflation) which is due to long run deviations in economic growth. From the analysis through VECM values, it is deduced that economic growth and Consumer price index are more co-integrated.

Major Findings

This study has been attempted to empirically explore the impact of inflation on economic growth of Somalia i.e. real gross domestic product in Somalia. Time series data were collected annually for important variables for the period of 1991-2015. The study made use of the Augmented Dickey fuller (ADF), Phillips-Perron (PP) unit root tests and the Engle - Granger co-integration test were used. VECM is used for adjustment of short term error toward balanced and long term economic growth. The results generated empirically for the ADF and PP unit test showed that at the level form, all the variables are non-stationary but showed that they were stationary at first difference and integrated of order one. Engle - Granger cointegration test was employed to check if there is long run equilibrium between the variables, results from this test showed that the variables were cointegrated, meaning long run equilibrium exists between the variables. The study explores the existence of a significant negative relationship between inflation and economic growth in Somalia.

The increase of inflation rate will bring the decrease of economic growth, coefficient of inflation rate in the estimated model equals to -0.087 which means one unit increase in inflation will induce 0.087 decreases in economic growth. In addition unemployment has a significant negative impact on Somalia's economic growth in the studied period. The coefficient of unemployment rate in the regression results is -0.1209 that states one unit increase in unemployment will bring 12% decrease in the growth of the economy in the country. To sum up the regression results, both Inflation and Unemployment have a negative impact on economic growth in Somalia. Based on the result of table 4.6, the speed of adjustment or the value of the coefficient for error correction term was - 0.44669 that indicates 44.67% of the shock to the rate of inflation is adjusted in each year. The coefficient indicates a feedback of about 44.67% of the previous year's disequilibrium in consumer price index (inflation) which is due to long run deviations in economic growth. From the analysis through VECM values, it is deduced that economic growth and Consumer price index are more co-integrated.

CONCLUSION

The main objective of this study is to empirically evaluate the impact of inflation on the Somalia's economic growth through finding out the existence of long run relationship between

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these two macroeconomic variables. The methodology employed in this study is the cointegration that describes the existence of long run relationship between variables.

We used the GDP as the perfect proxy for economic growth and CPI as indicator of inflation to examine the relationship for period 1991-2015.It has found that inflation are affecting significantly to economic growth in long run, and there is a negative relationship between inflation and economic growth. Furthermore Unemployment is the only exogenous variable used in the study, also the result showed the existence of negative relation between unemployment and economic growth.

Recommendation

This study provides an important policy recommendation for macro-economic policy makers of Somalia and the country's central bank:

1. Taking policies tend to reduce inflation can cause a rise in unemployment rate of the country in short run, so in formulating the inflation targeting policies, the central authority should take a long-term structural view of the economy and the benefits of its policies.
2. The results of the study also show that inflation expectation is the independent variable in the inflation model that largely explains the rate of inflation. Such findings signal the need for researchers and policy makers to work on inflation expectation in order to control the inflation rate.
3. The findings have reported that as unemployment increases; it significantly decreases economic gross in the long run and short run. in order to bring growth in the economy the authority should create jobs to reduce the rate of unemployment in the country.

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