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Lending Rates and its impact on Economic Growth in Kenya

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Abstract
After the liberalization of interest rates in Kenya in 1992, there has been an upward trend in the interest rates. Therefore, there is a need to investigate the factors influencing lending interest rates and their impacts on the general performance of the economy. This study examined various factors influencing lending interest rates and their impacts on the general performance of the economy. Specifically, it: investigates the effects of international interest rates on local lending interest rates in Kenya and determines the effects of budget deficit financing on lending interest rates. Annual secondary time series data spanning from 1980 to 2010 obtained from the World Bank annual reports, IMF annual reports, annual government publications and reports and other relevant publications were used. This data was parametrically analyzed using EVIEWS to present descriptive and inferential statistics. Unit roots, cointergration tests and the Error Correction Model were carried out to investigate the dynamic behavior of the model. Results of the study indicates that the impact of budget deficit and inflation on interest rates in Kenya were positive and significant. This implies that any attempt to control the rise in interest rates must pay attention to expansionary macroeconomic policies and reduce the budget deficit. Such policies should address structural and non-structural causes of inflation. For instance, it involves enacting policies to reduce the cost of doing business in Kenya.
Keywords: Lending rates, Economic growth and Error Correction Model

1.0 INTRODUCTION

According to Kenya Parliamentary Budget office (PBO) (2011), recent movements in interest rates, inflation and exchange rates reveal real dangers to economic stability. In a liberalized financial system, where the government finances its deficits via domestic borrowing, public sector will compete with the private sector for loans. This puts upward pressure on interest rates (Ndun'gu, 2008). The World Bank (1993) opined that in economies where financial markets are not repressed, higher deficits financed by domestic debt increase domestic real interest rates when external borrowing is not possible. However, if financial markets are integrated with world capital markets, higher domestic borrowing results in international capital inflows and higher foreign debt. Thus the impact on domestic real interest rates will not be much. Moreover, in countries where the financial markets are repressed (that is, interest rate control, compulsory public debt placements, and controls on external capital flows), given a fixed nominal interest rate, fiscal deficits raise inflation, resulting in repressed (even negative) real interest rates (World Bank, 1993).

Kenya's experience with the financial reform process shows a widening interest rate spread following the interest rate liberalization in 1992 period (Ngugi, 2001). This period is characterized by high implicit costs with tight monetary policy achieved through increased reserve and cash ratios. In addition, financial institutions witnessed declining profitability, non-performing loans and distress borrowing. The Treasury bill rate increased as the government relied heavily on the domestic market to finance its fiscal deficit, while the expansionary fiscal policy resulted in increased inflation and tightening of monetary policy. The market was still dominated by commercial banks, especially with the conversion of non-bank financial institutions (NBFIs) and the sluggish

development of the capital market. Finally, the period was characterized by macroeconomic and financial instability and yet-to-be accomplished legal reforms.

For a long time, the government of Kenya has promoted a rapid economic growth through public investment, encouragement of smallholder agricultural production and incentives for private industrial investment (Mendoza, 2007). Gross domestic product grew at an annual average of 6.6% from 1963 to 1973. Between 1974 and 1990, however, Kenya's economic performance declined. Kenya's inward-looking policy of import substitution and rising oil prices made Kenya's manufacturing sector uncompetitive. The government began a massive intrusion into the private sector. Lack of export incentives, tight import controls and high interest rates made the domestic environment less attractive for investment. In 1993, the government of Kenya began a program of economic reform and liberalization. The government eliminated price controls and import licensing, removed foreign exchange controls, privatized a range of publicly owned companies, reduced the number of civil servants and introduced conservative fiscal and monetary policies. From 1994 to 1996, Kenya's real GDP growth rate averaged just over 4% a year.

Financial theory predicts an increase in interest rates in a post liberalization period in Kenya (Martin, 2010). Therefore, the changes in interest rates assumed a rising trend. Interest rate liberalization was mounted amidst increasing inflationary pressure and deteriorating economic conditions, indicating a failure to meet the prerequisite for successful financial reform. Inflationary pressure was attributed to the expansionary fiscal policy, which saw an increase in money supply. In addition, the financing of the fiscal deficit shifted to the domestic market using treasury bills. It is quite apparent that only large increases in the Central Bank Rate (CBR) may have an effect on inflation and exchange rates (Oyaro, 2003). The rise in the CBR presents a danger to the economy. Banks will have interest rate increases which may breach the 30% level. Primarily, high interest rates curb business investments and innovation. Rising interest rates increase loan defaults in the banking system and bank vulnerability. It also causes sharp contractions in growth and worsens unemployment and poverty situations.

Kenya's experience shows a rise in interest rate spread during the financial reform and subsequent financial liberalization process, which suggests the failure to meet the prerequisites for successful financial liberalization (Ndun'gu, 2011). Interest rates were liberalized amidst inflationary pressure, declining economic growth, financial instability, the failure to sustain fiscal discipline and lack of proper sequencing of the shift to use monetary policy tools.The question is; what major factors have contributed to the growth in the interest rates in Kenya? What policy measures should the government use so as to control the unnecessary growth in the interest rates? Therefore, this paper assessed lending rates and its impact on economic growth in Kenya and specifically it investigated the effects of international interest rates on local lending interest rates in Kenya as well as the effects of budget deficit financing on lending interest rates.

2.0 MATERIALS AND METHODS

2.1 Research Design

This paper followed a quantitative research strategy. This helped to explore the past Kenya's data on fiscal deficits, USA interest rates and domestic interest rates. The study was concerned with finding major factors contributing to changes in interest rates.

2.2 Data Collection and Sources

Document analysis was the main tool for data collection. The selection of this tool was guided by the nature of data to be collected and by the objectives of the study. It was an annual time series data spanning from 1980 to 2010 collected from the Central Bank of Kenya, the Kenya Bureau of Statistics, other government publications, IMF and the World Bank publications. In addition, these sources provided records of the past fiscal deficits for Kenyan economy, USA interest rates and the domestic lending interest rates. This time series data were used to analyze the performances of the Kenyan economy.

2.3 Methods of Data Analysis

2.3.1 Theoretical Model

This study is modeled on the Keynesian liquidity preference theory (General theory) advanced by Keynes. The theory postulates that, the level of interest rates in the economy would be reached by the interaction of money supply (government expenditure) and money demand (liquidity preference). Keynes challenged the Classical Quantity theory on the grounds that the interest rate was not the reward for saving but was rather an inducement to part with liquidity. The Keynesian approach discarded certain aspects of the quantity theory ideas and developed others in a new and distinctive format. On the demand for money, it elaborated on the earlier Cambridge approach and also rearranged its presentation in terms of the motives for holding money.

This treatment in terms of motives eventually led to the modern treatment of the demand for money in terms of four motives: transactions, speculative, precautionary and buffer stock. The Keynesian emphasis on money as an asset, held as an alternative to bonds, also led to Friedman's analysis of the demand for money as an asset, thereby bringing this approach to money demand into the folds of the classical paradigm. At the

macroeconomic level, Keynesian analysis made commodity market analysis, based on consumption, investment and the multiplier, a core part of macroeconomics. The Keynesian approach also integrated the analysis of the monetary sector into the complete macroeconomic model for the economy. This contribution was based on the concept of the multiplier, which was unknown in the traditional classical period.

2.3.2 Empirical Model

This study used a multivariate regression model to examine the effects of independent variables on the lending interest rates. As argued by Bhalla (1995) and Deepak et al., (2002), given that most interest rates are highly correlated, the domestic lending rates were used as a statistical proxy for the nominal interest rates. Thus, the econometric model expressed interest rates (INT) as a function of fiscal deficits (GFD) and International Interest Rates (INTR).Thus, the model was specified as:

INT = f(GFD, INTR) …… (1)

Moreover, international interest rate (INTR) proxied by the United States interest rate was expected to influence the domestic lending interest rates; therefore it was included in the interest rate model.

The model in a linear form is as follows;

$$INT = \beta_0 + \beta_1 GFD + \beta_2 INTR + \mu \quad \ldots\ldots\ldots\ldots (2)$$

Where;

INT =Domestic Lending Interest rates (%), **GFD=** Government fiscal Deficit (Billions of Kshs), **INTR** = International Interest Rates (%), **μ=** Error term, (β_1 and β_2) **=** beta coefficients and β_0**=** constant

Econometric approaches were employed to estimate the numerical values of the coefficients of the relationships. Also, an evaluation of the model to test the reliability of the model was necessary. Statistical test, the econometric test and the a priori economic test were carried out. The first category made use of the coefficient of determination to determine how well the estimated relation fitted the data. The second tests played the role of determination of the statistical significance of the individual coefficients of the model. These include the standard error test, the standard normal distribution, student t-test and the confidence interval test. The a priori economic tests are associated with the signs and magnitudes of the coefficients in the model. The coefficient of skewness was used to test the normality of the data. The Jarque-Bera test statistic was used to test the null hypothesis.

3.0 RESULTS AND DISCUSSIONS

3.1 Descriptive Results

Table 3.1: Descriptive Results

Statistic	GFD	INTR	INT
Mean	-3.08	8.43	18.85
Median	-3.16	8.27	15.83
Maximum	1.76	18.87	36.24
Minimum	-8.60	3.25	10.58
Std. Dev.	2.27	3.48	6.99
Skewness	-0.15	1.01	1.12
Kurtosis	3.01	4.37	3.05
Jarque-Bera	0.12	7.67	6.45
Probability	0.94	0.02	0.04
Observations	31	31	31

Source: Author's Computation, 2013

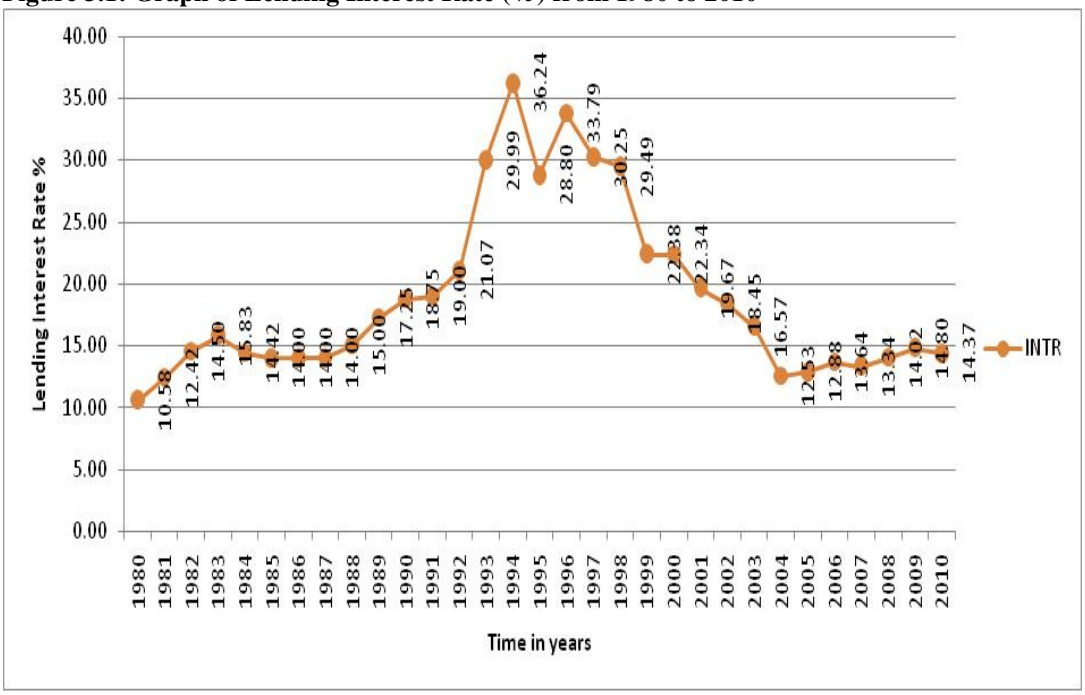
Table 3.1 above shows the descriptive features of the data. The skewness displayed in table 3.1 indicates that the distribution of the variables was normal. All the skewness coefficients were between +2 and -2. However, the kurtosis coefficients indicate that all the variables had a leptokurtic distribution. The observation was because the kurtosis was beyond -3 and +3 rule of the thumb which implies lack of normality. Since skewness and Kurtosis coefficient were not conclusive on whether the data was normal or not, the Jacque Bera test offered a more conclusive test on normality.

The Jarque-Bera test statistic tested the null hypothesis that the distribution of the variables was not significantly different from normal. The resultant p values from the test were higher than the conventional p value of 0.05 for GFD which indicates that there was a high probability that the null hypothesis was true. It therefore implies that the GFD is normally distributed while INTR and INT were not normally distributed. The lack of normality implies that the data had extreme values/outliers and hence the need to transform the variables into log forms. However, since the majority of the variables were proportions, ratios or percentages it may not be plausible to conduct logs as such logs would be negative. In addition, the log of negative numbers (GFD) is undefined. For those two reasons, the variables were not converted into their log forms.

A graphical illustration (figure 3.1) of the lending interest rate from the year 1980 to year 2010

indicated that there was a gradual rise in the lending interest from 1980 to early 1990's. However, there was a sharp rise in lending rates from the year 1991 to the year 1995 with the highest interest rate (36.24%) being recorded in the year 1995. The surge in interest rates was as a result of macroeconomic problems associated with excessive growth of money supply and the Goldenberg scandal.

Figure 3.1: Graph of Lending Interest Rate (%) from 1980 to 2010

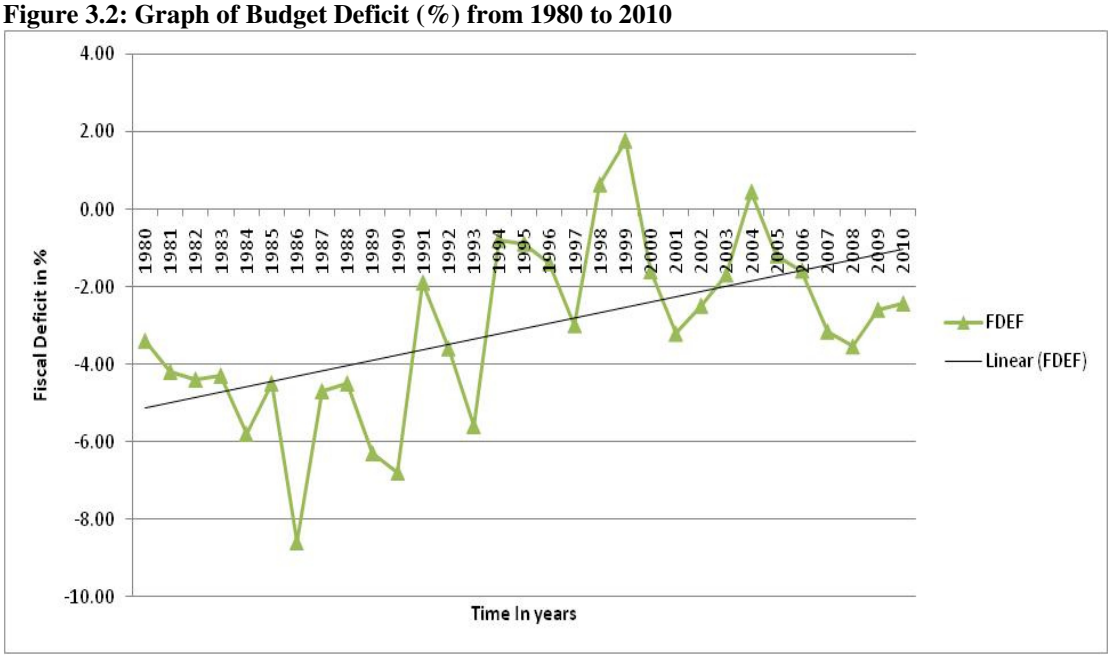


Source: Author's Computation, 2013

The lending rates started declining after 1995. The government was keen to grow the economy under the ERS, the government reduced cash reserve ratios (CRR) sharply leading to a fall in interest rates and rate spreads. Due to the reduction of CRR, lending rates fell from about 18.45 percent in 2002 to close at 12.53 percent in 2004.

Figure 3.2 is a graphical illustration for government fiscal deficit. The graph indicates that fiscal deficit has gradually declined from the year 1980 to the year 2010. The highest budget deficit was in the year 1986. The highest budget surplus was in the year 1999.

Figure 3.2: Graph of Budget Deficit (%) from 1980 to 2010



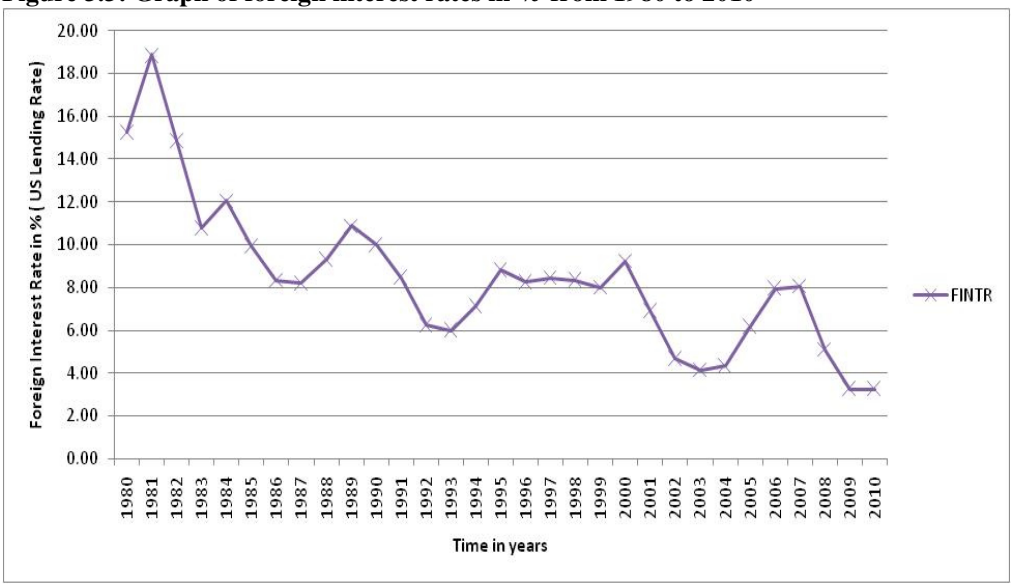
Source: Author's Computation, 2013

The structural adjustment programmes (SAPs) in the late 1980s by IMF and World Bank which advocated for trade liberalizations, currency devaluation, privatization of state owned enterprises, removal of price controls,

cost sharing and a broadening tax base may have been responsible for the increase in the budget deficit in the year 1986. Besides external factors, Kenya's external indebtedness can be partly attributed to internal factors. These mainly are over reliance on primary exports which face low and fluctuating prices yet the market share is saturated and shrinking with no value addition hence deteriorating terms of trade. Corruption and local mismanagement of aid and loans by Kenya has also contributed to the debt escalation seeing that allocation was being done on white elephant projects. Following the 1977 coffee boom, the initial response was to expand public expenditure and since revenue from taxation did not rise as fast, the government resorted to foreign borrowing. When commodity price later fell, expenditure was not reduced accordingly and previous borrowing was supplemented with new borrowing to maintain expenditure levels. The budget deficit had declined from the year 2002 onwards as a result of strict macroeconomic policies and the desire to reduce the high public indebtedness.

Figure 4.5 is a graphical illustration for foreign interest rate. The US lending rate was taken as a proxy. The graph indicated that the foreign interest rate has gradually declined from the year 1980 to the year 2010.

Figure 3.3: Graph of foreign interest rates in % from 1980 to 2010



Source: Author's Computation, 2013

This implies that the declining international interest rate leads to increase in exchange rates. This in turn leads to an increase in the domestic lending rates.

3.2 Unit Root Tests

Prior to testing for a causal relationship and cointegration between the time series, the first step is to check the stationarity of the variables used in the model. The aim is to verify whether the series had a stationary trend, and, if non-stationary, to establish orders of integration. The study used both Augmented Dickey-Fuller (ADF) and the Phillips-Perron (PP) tests to test for stationarity. The test results of the unit roots are presented in table 3.2 below;

Table 3.2: Unit Root Tests in the Levels

Variable name	ADF test	PP test	1% Level	5% Level	10% Level	Comment
INT	-1.490	-1.490	-3.666	-2.963	-2.620	Non SSSStationary
INTR	-1.825	-1.825	-3.666	-2.963	-2.620	Non Stationary
GFD	-2.82	-2.82	-3.666	-2.963	-2.620	Non Stationary

Source: Author's Computation, 2013

Results in table 3.2 indicate that INT, INTR and GFD are non stationary (i.e presence of unit roots) at 1%, 5% and 10% levels of significance. This calls for first differencing of the non stationary variables.

Table 3.3: Unit Root Tests-First Differencing

Variable name	ADF test	PP test	1% Level	5% Level	10% Level	Comment
ΔINT	-5.14	-5.14	-3.675	-2.967	-2.622	Stationary
ΔINTR	-5.17	-5.17	-3.675	-2.967	-2.622	Stationary
ΔGFD	-6.999	-6.999	-3.675	-2.967	-2.622	Stationary

Source: Author's Computation, 2013

3.3 Co-Integration Tests

After ascertaining the stationarity properties of the series, co integration analysis was done. The first step was to generate the residuals from the long run equation of the non-stationary variables. Then stationarity of the residual was tested using the ADF. The results indicate that the lagged residual is non stationary (i.e. no unit roots). The Engle Granger (EG) test (Table 3.4) of co integration shows that the lagged residuals were non stationary at 1%, 5% and 10% levels which imply that all the variables do not converge to an equilibrium in the long run (i.e. are not co integrated).

Table 3.4: Engle Granger Co-Integration test

ADF Test Statistic	-2.367246	1% Critical Value*	-3.6852
		5% Critical Value	-2.9705
		10% Critical Value	-2.6242

*MacKinnon critical values for rejection of hypothesis of a unit root.
Source: Author's Computation, 2013

Consequently, the Johansen cointegration test was conducted since it is more accurate and superior to Engle Granger test of cointegration. Table 3.5 indicates that the null hypothesis of no cointegration was rejected at 5% (1%) significance level. The likelihood ratio statistic for the null hypothesis of the existence of at most 1 cointegration equation was not larger than the z critical vales at 5% and a 1% level. This implies that at least one cointegration equation exists. This further implies that all the variables converge to an equilibrium in the long run (i.e. are co integrated).

Table 3.5: Johansen cointegration Co-Integration test

Included observations: 30
Test assumption: Linear deterministic trend in the data
Series: GFD INT INTR
Lags interval: No lags

Eigen value	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.947088	147.0576	94.15	103.18	None **
0.611621	58.88395	68.52	76.07	At most 1
0.395828	30.51072	47.21	54.46	At most 2
0.238369	15.39385	29.68	35.65	At most 3
0.213010	7.225052	15.41	20.04	At most 4
0.001295	0.038869	3.76	6.65	At most 5

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Source: Author's Computation, 2013

3.4 Long Run Results

Table 3.6 presents the long run results. An R squared of 0.759 indicated that the overall goodness of fit of the model was satisfactory.

Table 3.6: Long Run Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	28.33539	6.141066	4.614083	0.0001
INTR	1.233299	0.428173	2.880375	0.0145
GFD	1.267987	0.550987	2.301302	0.0300
R-squared	0.759601	Mean dependent var		18.85065
Adjusted R-squared	0.651521	S.D. dependent var		6.989909
S.E. of regression	5.628847	Akaike info criterion		6.465672
Sum squared resid	792.0979	Schwarz criterion		6.743217
Log likelihood	-94.21791	F-statistic		4.252423
Durbin-Watson stat	0.946612	Prob(F-statistic)		0.006186

Source: Author's Computation, 2013

The relationship between foreign interest rate and domestic lending interest rate was positive and significant. This finding is supported by a regression coefficient of 1.233 (p value =0.01). The finding implies that an increase in foreign interest rate by one unit leads to an increase in lending rates by 1.233 units. This was contrary to the findings by (Benice, 2000). Therefore the government should pay attention to the international trends in interest rates while controlling the domestic lending interest rates.

Similarly, the relationship between domestic lending interest rates and government budget deficit was positive and significant. This finding is supported by a regression coefficient of 1.27 (p value =0.03). The finding implies that an increase in budgetary deficit by one unit leads to an increase in lending rates by 1.267 units. The findings agree with those in The World Bank (1993) which opined that in economies where financial markets are not repressed, higher deficits financed by domestic debt increase domestic real interest rates when external borrowing is not possible.

3.6 Error Correction Model

Since the variables in the model linking domestic lending interest rates to the determinants are co integrated, then an error-correction model can be specified to link the short-run and the long-run relationships. Residuals from the co integrating regression are used to generate an error correction term (lagged residuals) which is then inserted into the short-run model. The estimates of the error-correction model are given in table 3.7.

The short run results in table 3.7 indicate that the goodness of fit for the short run model is satisfactory. This was supported by an r squared of 0.539. This implies that 53.9% of variation in short run lending rates is explained by the short run determinants.

However, none of the variables show significance in influencing the short run domestic lending rates. The error correction term (Lagres) measures the speed of adjustment to the long run equilibrium in the dynamic model. The error term is negative (-0.0000623) and statistically not significant at the 5% level. This result implies that there is a gradual adjustment (convergence) to the long run equilibrium. The coefficient of -0.0000623 indicates that 0.00623% of the disequilibria in domestic lending interest rates achieved in one period are corrected in the subsequent period.

Table 3.7: Error Correction Model/Short Run Results

Dependent Variable: DINTR
Method: Least Squares
Included observations: 29 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.182279	1.299136	-0.140308	0.8897
ΔGFD	-0.173859	0.287763	-0.604174	0.5519
ΔINTR	-0.162623	0.372394	-0.436697	0.6666
LAGRES	-6.23E-05	4.30E-05	-1.447725	0.1618
R-squared	0.539011			
Adjusted R-squared	0.421469			

Source: Author's Computation, 2013

4.0 CONCLUSIONS AND RECOMMENDATIONS

This paper presents a strong conviction that budget deficit as well as international interest rates positively and significantly influences the domestic lending interest rates in Kenya. It is necessary for the government to pay attention to budget deficit and international interest rates while controlling the domestic interest rates. Therefore, policy initiatives that wish to keep the lending interest at a low level should also take into consideration the need to reduce the budget deficit.

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