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# The Effect of Interest Rate on Kenya's Economic Performance

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**Abstract:** *The main objective of this paper is to examine the effect of interest rate on Kenya's economic performance where Time-series data from Central Bank of Kenya for the period of 1995-2015 is employed. The methodology employed in this paper includes the descriptive statistics, correlation and regression analysis to examine the effect. The paper establishes theoretical foundations drawn from economic related theories, fisher's theory and Keynes liquidity theory to design a basic framework for descriptive investigation to the specific case of interest rate and economic performance. The descriptive results shows that there has been a very high volatility in both interest and inflation rates since 1995 and 2005 respectively with interest rate hitting as low as 12.53% and as high as 33.79% while inflation rates hitting as low as 1.96 % to as high as 16.30%. GDP growth hit the lowest point of -2.14% and the highest of 4.30. Correlation coefficient technique is employed to establish the strength and direction of the relationship between interest rate and economic performance. The results from regression analysis reveals that interest rate has a negative impact on economic performance in Kenya at 5 percent level ( $r=-0.738$ ,  $\text{Beta}=0.437$ ,  $t=1.99$ ,  $p<0.05$ ). Moreover, the paper finds out that the degree of responsiveness of GDP to changes in the interest rate is large. The paper recommends that there is need for the government to control the country's interest rate as it is found that it negatively affect the economic performance of the country.*

## 1. INTRODUCTION

According to Corb (2012) interest rate is a major economic factor that influence the economic growth in an economy. He further argued that interest rate is an economic tool used by central bank of Kenya to control inflation and to boost economic development. Control of the inflation or deflation in the economy is a major role entrusted to the CBK by the government. The rationale behind the need to control the interest charged on credit or any other financial instrument is based on the need to control economic patterns that has great effects to the society (Giovanni, 2006), he further argues that holding all factors constant, controlling and



setting of rates has a big economic implication to the economic performance hence creating for a need of a rational decision making process within the industry.

Mlachila, (2002) explains that poor decisions on interest rate has significant effect to the economic performance in all industry but greatly on the financial sectors. Interest rate is a monetary tool used by Central Bank of Kenya, He says that, if Central Bank increases its interest rate to financial institution it signal the same to financial institution, therefore financial institution do the same. This is not difference from Giovanni (2012) who argued that high interest set by central bank means that other financial institution will have to charge also high because they are all profit motivated hence affecting economic performance at large. According to Adebisi(2004) and Felicia (2011), banks do grant loans and advances to individuals, business organizations as well as government in order to enable them embark on investment and development activities as a means of aiding their growth in particular or contributing toward the economic development of a country in general .

Therefore the effect of interest rate on economic performance cannot be overemphasized and motivated by this economic controversial, this paper also investigates the effect of interest rate on economic performance in Kenya

### **1.1 Statement of the Problem**

Interest rate has been fluctuating with period of time since 90s, which adversely affect the economy of Kenya. Within the framework of macroeconomic models, this faces uncertainty in the form of disturbances to both aggregate demand and supply. Depreciation determines aggregate demand through exports and determines aggregate supply through cost of imported inputs of production.

Studies conducted in developed and middle income countries, have explored the impact of interest rate fluctuations on commercial banks and economic growth. A broad debate has rose in the field of economics about the problem of interest rate fluctuations in many parts of the world. In Kenya, the subject has been at the center of the current economic policy, which involves policy makers, business community and academic researchers. They all point out the harmful effects of fluctuations of interest rate observed in the country's currency market. However, there is no consensus on whether such volatility in interest rate has influenced the Kenyan Economic Growth. It is in this context that the research is carried out.

### **1.2 Objective of the Study**

To examine the effect of interest rate on economic performance in Kenya.

### **Literature Review**

Theoretically, there are several theories linking interest rate to economic performance. Fisher's Theory named after the American economist Fisher (1930). Fisher theory suggest that changes in the short term interest rate occur principally because of the changes in expected rate of inflation. Mishkin,(2010), reiterate that a principle reason for the changes in the interest rate becomes changes in the rate of inflation, thus we write  $r=I-p$  where  $r$  is the real interest rate,  $I$  is the nominal interest rate and  $p$  is the rate of inflation. As well, the Keynes Liquidity Preference Theory of interest Rate attempts to link interest rate to economic performance. According to the theory investors will always prefer short term securities to long term securities. In uncertain world, then saving and investment may be much influenced by expectations and exogenous shocks than by the underlying real forces. One possible



response of the risk averse savers is to vary the form in which they hold their financial wealth depending on what they think is likely to happen to asset prices. They are likely to vary the average liquidity of their portfolios. Keynes (1973), defined liquidity preference theory as the rate of interest set forth in the general theory of employment, interest and money. The rate of interest depends on the present supply of money and the demand schedule for the present claim on money in terms of a deferred claim. Says that,” The rate of interest depends on the demand and supply of money “(Keynes 1937, 1973). In Keynes view, the primary way that interest rate affect the level of aggregate output is through their effects on their planned investment spending. Profit seeking organizations make investments in physical capital (machines, factories and the raw materials) as long as they expect to earn more from the physical capital than the interest cost of a loan to finance investment.

### **Empirical Review**

Boldbaatar (2006) carried paper to examine effect of interest rate spreads on economic performance. The paper revealed that the effect of interest rate is significant on economic performance. The findings of the paper indicate that the increase in the interest consequences affected price of commodities at large. Reserve requirements are also costly for customers but statutory reserve remuneration appears to mitigate this burden effectively, at least in some countries. Consolidation through mergers and acquisitions can give banks the market power to operate with higher spreads, contributing to long term stability and profitability of banks.

Adofu and Audu (2010) used ordinary least square method to ascertain the assessment of the effects of interest rate deregulation in enhancing agricultural productivity in Nigeria. The paper found out that interest rate play a significant role in enhancing economic activities and as such, monetary authorities should ensure appropriate determination of interest rate level that will break the double - edge effect of interest rate on savers and local investors.

A paper by Ngetich and Wanjau (2011) to assess on the effects of interest rate spread on the level of non-performing assets in Kenya commercial banks. The paper sought to establish the effects of interest rate spread on the level of non-performing Assets in commercial banks in Kenya They adopted a descriptive research design on a sample of all commercial banks in Kenya operating by 2008 which were 43 in number. The paper used questionnaires to collect data from primary source data sources and secondary data, collected from Bank supervision report, to augment the primary data findings. Paper used both quantitative and qualitative techniques in data analysis to establish relationship between the interest rate and loan non-performance. The paper result shows significant effect of interest rate on economic growth.

According Ngugi (2013) in his paper on interest rate spread in Kenya to investigated impact financial intermediaries' inefficiency. The paper collected from 43 financial institutions operating in Kenya economy and analyzed using various methods. The paper found that the wedge between the lending and deposit rates also proxy's efficiency of the intermediation process. For example, under perfect competition the wedge is narrower, composed only of the transaction cost, while in an imperfect market, the wedge is wider, reflecting inefficiency in market operation.



## 2. METHODOLOGY

In order to investigate the effect of interest rate on economic performance in Kenya, the researcher modified the following regression model adopted from Khan and Senhadji, (2001) for the analysis of threshold level of inflation for Bangladesh

$$GDP_t = \beta_0 + \beta_1 IR_t + \beta_2 D(IR_t - K) + \beta_2 INFL_t + U_t \quad (1)$$

Where GDP stands for Gross domestic product, INFL= Inflation, IR= interest rate  $U_t$  = error term, D= Dummy variable, and K is the threshold level of inflation (the rate of inflation at which structural break occurs). The model by Khan and Senhadji, (2001) is modified to examine the effect of interest on economic performance in Kenya as follows:

$$GDP_t = \beta_0 + \beta_1 IR_t + \beta_2 INFL_t + U_t \quad (2)$$

Where, GDP= Growth rate of real Gross Domestic Product, IR= Interest rate, INFL= Inflation,  $U_t$  = error term and  $\beta_0$  and  $\beta_1$  are parameters.

### 2.1 Definition of Variables

- i. Gross domestic product: is the value of goods produced and services provided in a country during one year
- ii. Inflation: is the rate at which the general level of prices for goods and services is rising and consequently, the purchasing power of currency is falling
- iii. Interest rate is the cost: of borrowing money or conversely the income earned from lending money

### 2.2 Data Analysis

To achieve the objectives of this paper, the researchers used regression model, each for one objective. The paper used descriptive statistics, correlation and regression analysis to investigate the effect and relationship of interest rate on economic performance.

## 3. RESULTS AND DISCUSION

### 3.1 Descriptive Analysis

Table 1 shows the summary statistics on the variables used in the paper. The data ranges from 1995 to 2015.

Table 1 Summary Statistics					
N		Minimum	Maximum	Mean	Std. Deviation
YEAR	21	1995.00	2015.00	2005.0000	6.20484
INFLATION	21	1.96	16.30	8.9195	3.52189
REAL GDP	21	-2.14	4.30	.9703	1.89991
INTEREST RATE	21	12.53	33.79	18.9971	6.43111

The interest rate has 21 observations with a mean of 12.53 and a standard deviation of 6.4311. The results shows that inflation rate has 21 observations with a mean rate of 8.9195



and a standard deviation of 3.52189 and Real GDP growth had also 21 observations with a mean of 0.9703 and a standard deviation of 1.89991.

**3.2 Correlation Analysis Between Gdp and Interest Rate**

The researcher performed Pearson's product correlation as illustrated in the summary table 2 to determine the degree of relationships between the explanatory variables. The coefficient (r) is a measure of the strength of the association between the two variables.

Table2 : Correlation Analysis

		INFLATION	GDP	INTEREST RATE
INFLATION	Pearson Correlation	1	0.563	-0.738
	Sig. (2-tailed)		0.481	0.009
	N	21	21	21
GDP	Pearson Correlation	0.563	1	-0.875**
	Sig. (2-tailed)	0.481		0.000
	N	21	21	21
INTEREST RATE	Pearson Correlation	-0.738	-0.875**	1
	Sig. (2-tailed)	0.009	0.000	
	N	21	21	21

The research findings in table 2 above indicate that the relationship between economic performance (GDP) and interest rate is significant at a significance level of 5% and 95% confidence interval. The highest (very strong negative) correlation is found between GDP and interest rate (r=-0.875 p=0.000).

**3.3 Effect of Interest rate on Economic Performance in Kenya over the Period 1995-2015**

The paper sought to investigate the effect of interest on economic performance in Kenya. The paper applied regression techniques as explained in model chapter three above. To quantify the extent of the effect, the researcher measured effect of interest rate on economic performance using linear regression equation as illustrated in table 3 below.

Table 3 Coefficient of Determination Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.876a	.768	.742	0.8184
a. Predictors: (Constant), INFLATION, INTEREST RATE				

The independent two variables (interest rate and inflation) that are studied, explain only 74.2% of the economic performance in Kenya as indicated by the adjusted R squared. This therefore means that other Kenya factors not studied in this research contribute 25.8% of the economic performance in Kenya.



Table 4: Effect of Interest rate on Economic Performance in Kenya over the Period 1995-2015					
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.677	7.328	1.845	1.993	.012
INFLATION	-0.028	0.118	-0.053	-0.241	.012
INTEREST RATE	-0.129	0.065	-0.437	-1.993	.005

a. Dependent Variable: REAL GDP

According to the findings, interest rate returned significant coefficients to model a regression equation while inflation showed an insignificant effect at a 5% level of confidence. The coefficient of multiple determination R-square value is 0.742; this means about 74.2% of the variation of the response variable, which is Real GDP, can be explained by the two predictor variables. The regression equation appears to be substantially useful for making predictions since the value of R<sup>2</sup> at 0.742 is very close to 1.

With regard to regression analysis, the paper conducts a multiple regression analysis so as to determine the effect of inflation and interest rate on economic growth in Kenya. As per the table 1 above, the equation ( $GDP_t = \beta_0 + \beta_1 IR_t + \beta_2 INFL_t + U_t$ ) becomes:

$$GDP_t = 3.677 - 0.129IR - 0.028INFL \quad (3)$$

Where GDP<sub>t</sub> is the dependent variable (Economic performance), IR is interest rate, INFL is inflation rate. The estimated equation above uncovers the impact of interest on Kenyan GDP. As the general interest rate goes up by one unit, economic growth (GDP) goes down by 0.129 units. Moreover, the summary of the results showed that the effect of interest rate on economic performance is statistically significant at a 5 percent level (Beta=0.437, t=1.99, p<0.05).

#### 4. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

##### 4.1 Summary of Findings

The main objective of this paper is to examine the effect of interest rate on Kenya's economic performance. The descriptive results showed that there has been a very high volatility in both interest and inflation rates since 1995 and 2005 respectively with interest rate hitting as low as 12.53% and as high as 33.79% while inflation rates hitting as low as 1.96% to as high as 16.30%. GDP growth hit the lowest point of -2.14% and the highest of 4.30%.

The results from regression analysis revealed that interest rate has a negative impact on economic performance in Kenya at the 5 percent level (r=-0.738, Beta=0.437, t=1.99, p<0.05). This indicates that inflation is harmful to economic performance in Kenya.

##### 4.2 Conclusion

The paper sought to investigate the effect of interest rate on economic performance in Kenya. The paper found out that interest rate and inflation variations explain 74.2% variation on economic performance in Kenya. With regard to regression analysis in determining the effect of interest rate, the paper concludes that the effect of interest rate on economic performance is



statistically significant at the 5 percent level ( $\text{Beta}=0.437$ ,  $t=1.99$ ,  $p<0.05$ ) Therefore, the paper concludes that the interest rate has an inverse impact on economic growth.

#### **4.3 Recommendation**

Based on the findings and conclusion, the paper recommends that there is need for the government to control the country interest rate as it is found that interest rate negatively affect the economic performance of the country. The government should adopt policies that will help Kenya regulate interest rate and increase money circulation in economy.

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