# Taxation and Inflation in Kenya

Dr. Evans Ovamba Kiganda (PhD)[1*], Dr. Scholastica Odhiambo (PhD)[2], Dr. Nelson Obange (PhD)[3]
[1]*Lecturer Kaimosi Friends University College (KAFUCO), P.O. Box 1926 – 40100 Kisumu, Kenya*
[2,3]*Lecturer, Department of Economics, Maseno University, Kenya*
**Corresponding author*

***Abstract:*** **- Taxes remain a major source of revenue for a country and can have several impacts on the economy. Studies examining the influence of taxation on inflation have reported mixed results and did not break down taxation into its components. This creates uncertainty with regard to the influence of taxation components like excise duty (ED), import duty (ID), income tax (IT) and Value Added Tax (VAT) on inflation. This study's objective was to establish the influence of taxation on inflation in Kenya to bridge the knowledge gap. Monthly time series data from Central Bank of Kenya spanning 132 months from 2005 to 2015 was used for analysis based on variance decomposition and impulse response analysis. Results indicated that total tax had a positive influence on inflation. However, influence was highly due to indirect taxes. In view of this, the study recommends adoption of fiscal policy that target reduction in taxation that are likely to lower production costs leading to a reduction in inflation in Kenya.**

***Keywords:*** **Inflation, taxation, Kenya**

## I. INTRODUCTION

Taxes remain a major source of revenue for a country and can have several impacts on economic performance. According to the tax competition theory, a reduction in tax rate of capital causes increased investment into a nation since taxation is a costs for the investor (Hakim & Bujang, 2012). In particular, to increase incomes, governments choose to increase direct and indirect tax rates which include IT, VAT, ED and ID (Gautier & Lalliard, 2014). According to European Central Bank (2011), fiscal policy adjustments involving variations in taxation, may have a direct and immediate influence on inflation. However, likely influence remains debatable where some analysts claim that tax reduction can spur economic growth while others argue it can increase interest rate which lowers investment confidence and in so doing reduce output (Romer & Romer, 2010).

According to Gautier and Lalliard (2014) fluctuations in taxation impact inflation since the after-tax price paid by the consumer is the sum of the before-tax price and imposed taxes. Numerous studies involving developing nations have been carried out to establish the influence that taxation has on inflation. Such studies include those done by Patoli *et al.* (2012), Bashir *et al*. (2011), Rizvi *et al.* (2012), Ahmed *et al*.(2014), Khan *et al.* (2007), Rehman and Khan (2015), Arif and Ali (2012). These studies reported mixed results, did not break down taxation into its components. Specifically, they did not disaggregate taxation into its constituents such as ED, ID, IT and VAT. This implied uncertainty with regard to the influence of taxation components on inflation and specifically how ED, ID, IT and VAT influence inflation. This study's objective was to establish the influence of taxation on inflation in Kenya to bridge the knowledge gap.

## II. LITERATURE REVIEW

A review of studies interogating how taxation relate with inflation indicate the use of diverse methodologies ranging from simple OLS to more robust techniques of Johansen cointegration, Vector Error Correction, Granger causality tests among others. Identified studies like those conducted by Patoli *et al.* (2012), Rizvi *et al.* (2012), Khan *et al.* (2007), Bashir *et al*. (2011), Ahmed *et al*.(2014), Rehman and Khan (2015), Arif and Ali (2012) indicated a focus on Asian Countries of Pakistan and Bangladesh. The findings showed mixed results that cannot be generaized to another country. For instance, Patoli *et al.* (2012), Rizvi *et al.* (2012), Khan *et al.* (2007), Ahmed *et al*.(2014), Rehman and Khan (2015) found a positive influence while Bashir *et al*. (2011) established a negative influence.

An important observation from the studies is that none tried to split total tax into its constituents and none involved any African country. This makes it complicated to tell the influence ED, ID, IT and VAT will have on inflation from the African countries perspective since the findings in Asia canot be generalized to Africa. Therefor, the studies were inconclusive in analyzing the influence of taxation on inflation thus a justification for a study for the study.

## III. METHODOLOGY

The study employed impulse and variance decomposition to examine the influence of taxation of inflation. The techniques were useful in singling out which the tax component that has most significant influence on inflation in Kenya. Monthly time series data for the period 2005 to 2015 spanning 132 months from the Central Bank of Kenya was used in analysis.

## IV. RESULTS

Figures 1, 2 and 4 point to a scenario where excise duty, import duty and VAT resulted in explosive positive effect that dampened with a stable path after the 35$^{th}$ month. This positive effect did not fizzle out for the entire period. Figure 3 showed that income tax resulted in explosive negative effect on inflation in Kenya that dampened after the 28$^{th}$ month with a stable path that never fizzled. Figure 5 indicated that total tax had explosive positive effect on inflation in Kenya that

dampened after the 20th month with a stable positive path that did not fizzle out for the period.

The findings imply that a surge in income tax would lead to a decrease in inflation in Kenya while an increase in excise duty, import duty, VAT and total tax leads to an increase in inflation. The findings conformed to the results of Patoli *et al.* (2012), Rizvi *et al.* (2012) and Bashir *et al*. (2011) who investigated the determinants of inflation in Pakistan.

Based on variance decomposition from Tables 1 and 2 results, it was noted that the larger proportion of variance in inflation was due to its own shock at 100% in the first month and reduced over time. The influence of excise duty, import duty, income tax and total tax on inflation in Kenya increased constantly with increase in predicting period. This was evident from the 2nd period at 0.15% for ED, 0.87% for ID, 1.44% for IT and 0.95% for total tax up to the 12th period at 1.86%, 9.02%, 6.12% and 4.41% for excise duty, import duty, income tax and total tax respectively. The influence of VAT on variation in inflation declined continuously with increase in forecasting time from 0.84% in the 2nd period to 0.49% in the 12th period. The findings implied that ED, ID, IT, VAT and total tax are determinants of inflation in Kenya. This corroborates the findings of Bashir *et al.* (2011) and Rizvi *et al.* (2012) who established that taxes were a determinant of inflation in Pakistan.

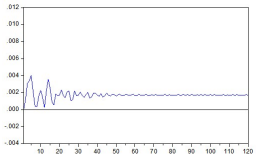

*Figure 1*. Response of inflation to excise duty

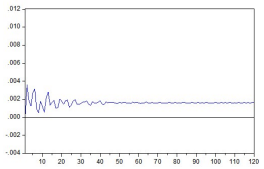

*Figure 2*. Response of inflation to import duty

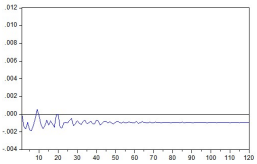

*Figure 3*. Response of inflation to income tax

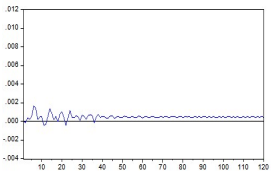

*Figure 4*. Response of inflation to VAT

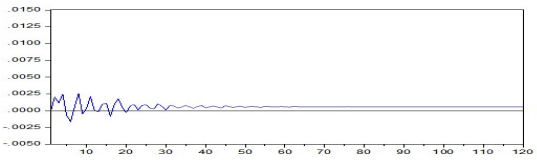

*Figure 5*. Response of inflation to total tax

Table 1: Variance Decomposition of Inflation- Disaggregate Analysis

| Period | S.E. | INFM | ED | ID | IT | VAT |
|---|---|---|---|---|---|---|
| 1 | 0 | 100 | 0 | 0 | 0 | 0 |
| 2 | 0 | 85 | 0 | 1 | 1 | 1 |
| 3 | 0 | 78 | 0 | 5 | 3 | 1 |
| 4 | 0 | 74 | 1 | 8 | 7 | 1 |
| 5 | 0 | 67 | 1 | 11 | 7 | 0 |
| 6 | 0 | 62 | 1 | 11 | 7 | 1 |
| 7 | 0 | 62 | 1 | 10 | 6 | 0 |
| 8 | 0 | 63 | 1 | 9 | 7 | 0 |
| 9 | 0 | 62 | 1 | 9 | 7 | 0 |
| 10 | 0 | 62 | 2 | 10 | 6 | 0 |
| 11 | 0 | 63 | 2 | 10 | 6 | 0 |
| 12 | 0 | 62 | 2 | 9 | 6 | 0 |

Table 2: Variance Decomposition of Inflation in respect to total tax

| Period | S.E. | INFM | TTAX |
|---|---|---|---|
| 1 | 0.012512 | 100.0000 | 0.000000 |
| 2 | 0.013322 | 92.62957 | 0.951693 |
| 3 | 0.013506 | 91.42194 | 0.929215 |
| 4 | 0.014120 | 84.65441 | 2.200366 |
| 5 | 0.014334 | 84.15639 | 2.605583 |
| 6 | 0.014910 | 78.08346 | 2.477499 |
| 7 | 0.015497 | 77.06787 | 2.657765 |
| 8 | 0.016243 | 73.97253 | 3.115008 |
| 9 | 0.016574 | 71.09838 | 3.244860 |
| 10 | 0.016760 | 70.35517 | 3.441639 |
| 11 | 0.017567 | 69.64649 | 3.836533 |
| 12 | 0.017751 | 68.93583 | 4.406968 |

## V. CONCLUSION AND RECOMMENDATIONS

The objective of this study was to establish the influence of taxation on inflation in Kenya based on impulse and variance decomposition analysis. Results indicated an increase in income tax led to a decrease in inflation while an increase in excise duty, import duty, VAT and total tax increased inflation in Kenya. Increased income tax a direct tax decreases disposable income lowering the purchasing power of citizens. This caused surplus supply hence reduced prices. On the other hand, a rise in indirect taxes of excise duty, import duty and VAT and increase in total tax increases the cost of production emanating from increased prices of factors of production. This reduces aggregate supply leading to higher prices because of product shortages in the country. This study concluded that taxation influence inflation in Kenya. On the disaggregate front it was noted that indirect taxes of excise duty, import duty and VAT highly influenced total tax's influence on inflation in Kenya.

The study recommends that the government of Kenya to adopt a fiscal policy that aims at reducing excise duty, import duty, VAT that constitute indirect taxes in Kenya. This will lower the prices for various products occasioned by a decrease in production costs due to a fall in the prices of factors of production hence reducing inflation. Similarly to curtail the purchasing power of citizens, government may raise income tax a direct tax for citizens. This will lower demand resulting from reduced disposable income thus causing prices of products to decline. Reduction in total tax is therefore inevitable to reduce production costs for lower prices hence the achievement of low inflation.

## REFERENCES


[1]. Ahmed, F., Raza, H., Hussain, A., & Lal, I. (2013). Determinant of inflation in Pakistan: An econometrics analysis, using Johansen cointegration approach. *European Journal of Business and Management , **5*** **(30)**, 115-122.

[2]. Ahmed, Q. M., Muhammad, S. D., Noman, M., & Lakhan, G. R. (2014). Determinants of recent inflation in Pakistan: Revisit. *Pakistan Journal of Commerce and Social Sciences , **8*** **(1)**, 170-184.

[3]. Arif, M., & Ali, M. M. (2012). Determinants of inflation in Bangladesh: An empirical investigation. *Journal of Economics and Sustainable Development , **3*** **(12)**, 9-17.

[4]. Bashir, F., Nawaz, S., Yasin, K., Khursheed, U., Khan, J., & Qureshi, M. J. (2011). Determinants of inflation in Pakistan: An econometric analysis using Johansen cointegration approach. *Australian Journal of Business and Management Research , **1*** **(5)**, 71-82.

[5]. Central Bank of Kenya. (2017). *Central bank statistics.* Nairobi: Central Bank of Kenya.

[6]. European Central Bank. (2011). *Econometric and monetary developments: Gauging the impact of indirect taxation on Euro area HICP inflation.* Frankfurt, Germany: European Centra lBank.

[7]. Gautier, E., & Lalliard, A. (2014). *How do VAT changes affect inflation in France?* Paris, France: Banque de France.

[8]. Hakim, T. A., & Bujang, I. (2012). *The impact and consequences of tax revenues' components on economic indicators: Evidence from panel groups data.* InTech.

[9]. Khan, U. R. (2013). Relationship between fluctuated exports and economic growth of Pakistan. *International Journal of Business and Management , **21***, 108-113.

[10]. Rehman, F. U., & Khan, D. (2015). The determinants of food price inflation in Pakistan: An econometric analysis. *Advances in Economics and Business , **3*** **(12)**, 571-576.

[11]. Rizvi, S. B., Mohsin, A. Q., & Zakaria, M. (2012). Factors of inflation on Pakistan economy:An empirical investigation. *Journal of Asian Development Studies , **1*** **(1)**, 30-34.