Examining Kenya's Household Consumption, Causal Factors and Economic Policy Measures to Address Gaps in Consumption

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Abstract- ***This paper examines Kenya's household consumption expenditure causal variables for a period of 40 years from 1984 to 2023, estimating the consumption function as a function of consumer price index, exchange rate, the country's GDP rates, and population size. The objective of this study is to investigate the factors affecting the consumption behaviour and also seeks to understand Kenya's consumption patterns over-time. OLS method was used to analyse consumption causal factors. The independent variables in the model accounts for 99.64% variation in consumption expenditure, this is as per calculated R-squared, indicating the best fit. The following economic policies were recommended to improve consumption in Kenya: fostering stable economic growth, human capital investment for example education, management of inflation rate, having a stable exchange rate, implement tax cut measures, implementations of social nets programs, investment in agricultural sector to boost farm yield, address negative externalities of population growth, monetary policy intervention, balanced regional development, and investment in modern technology.***

Indexed Terms- ***Consumption, GDP, exchange rate, population, consumer price index and disposal income.***

I. INTRODUCTION

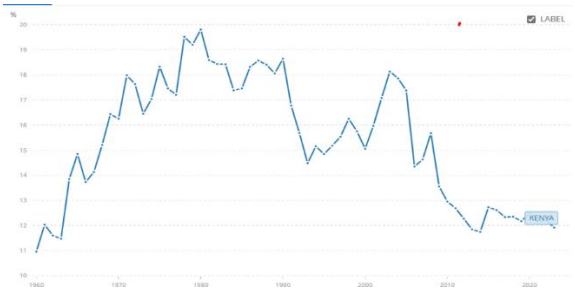
Consumption refers to the use of goods and services by households. Consumption is the main goal of economic activity, and that the level of consumption per person is viewed as a central measure of an economy's performance, (Neoclassical economists). Normally, when income increases, consumption increases but by a lower margin as compared to increase in income, in what is known as marginal propensity to consume. Consumption is a powerful driver of economic growth acting like lifeblood to an economy. The consumption function traces aggregate consumption expenditure related to factors such as income, interest rates and so on (Wikipedia, n.d). It is fundamental to note that consumption constitutes the largest proportion of the Gross Domestic Product, GDP, in most countries. It is imperative to investigate the factors that influence household consumption in an economy just like Kenya. For developed economies like Germany, France, USA, Canada and United Kingdom (UK), the consumption of luxury commodities such as cars, expensive gold watches, jewelleries, perfumes and rings is relatively higher compared to developing countries, whose majority of the population still live below the poverty line. Households in developing countries spend most of their income on basic goods such as food and clothing. The equation below shows the convectional country's aggregate demand:

Aggregate demand = Household consumption + Business investment + Government spending + Net exports

The above illustrates the amount money spend on all goods and services in a country at a given market price and specific period, which could be measured quarterly or yearly.

Individual consumption function is given by $C=\alpha+b(Y-T_t+T_p)$, where Y is the income received minus taxes (T_t) on income plus transfer payment (T_p) received if any to the household.

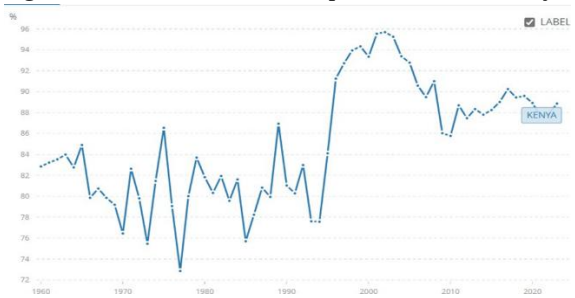
Figure 01: Kenya consumption expenditure proportion of the GDP



Source: World Bank

Kenya consumption as seen from figure 01 above, was on the rise from 1960s to early 1980s stimulated possibly by robust economic growth and population growth and started shrinking from 1980s to 1990s punctuated by significant fluctuations. The fluctuations could be as a result of economic instability, inflation and structural policy adjustments in the country. It can be noted from mid 1990s to 2010 consumption significantly declined and stabilized at the bottom from 2020s, with an average of 12% of the GDP. The decline in consumption from the graph above could be due to diversion of collected tax revenues to service the external debts especially the Eurobond which was maturing in June 2024 causing internal consumption shocks reflected by soaring commodity prices exacerbated by rise in petroleum products and depreciation of the Kenyan shilling and geopolitical and economic dynamics globally for example Ukraine invasion by Russia 2022, Middle-East war and COVID-19 pandemic shocks. (Kenyan total debt to GDP was 70% by March 2024-Kenya National Treasury).

Figure 02: Household Consumption Trends in Kenya.



Source: World Bank

The figure 02 above illustrates the Kenyan household consumption patterns. The consumption expenditure takes away the larger portion of individual's income, which is close to 90% of their income according to the figure above, leaving very little to save or invest. Non-saving and investment by individual(s) due to lack of income, as much of it is consumed, explains why large section of the Kenyan populace are still trapped within the vicious cycle of poverty. According to Kenya Poverty and Equity Assessment Report 2023, 37.3% of the Kenya population are still leaving below the poverty line, this translates to 21M out of the total population of 55M (World Bank). Kenya finance Bill 2023 introduced a raft of taxes for instance housing tax of 1.5% of employees' gross monthly salary, an increase in medical insurance deductions towards SHIF from Ksh 500-1000 to a rate of 2.75% of employee's salary, increase of VAT on petroleum products from 8% to 16% and National Social Security Fund (NSSF) statutory deduction of Ksh 200 to 6% of the employee's salary. These new tax measures significantly reduced the employee's disposal income and hence, reduced savings and consumption, some struggling to afford basic needs, pushing the majority of them towards the poverty line. The low rate of consumption has a spiral effect to investment, industrial growth and economic distress.

Figure 03: Household consumption expenditure in the US

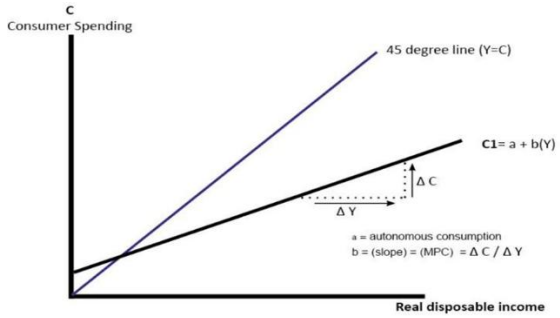
The figure 03 above shows household consumption expenditure trends in US from early 1950s, according to Federal Reserve Economic Data (FRED). Household consumption pattern is not steady, fluctuates with prevailing macroeconomic condition in the country and geopolitical dynamics globally. Household consumption was at the lowest moment between early 1950s and 1970s fluctuating between 60% and 65%. Household consumption accounts to more than 67% of the GDP in the US. This means that

household in US can save and invest about 23% of their income, compared to Kenya whose household consumption expenditure is close 90% of their total income and saves less than 10% of their come. Though, the two countries cannot be measured on the same scale in terms of economic growth but the comparison helps us draw lessons why US economy is stable and growing faster compared to African countries economies. For example, the US consumption expenditure accounts for around 60% of its GDP (U.S Bureau of Economic Analysis, 2023) as compared to Kenya which is about 12% in 2023 according to the World Bank. This partly explains why Kenyan economy has not industrialized.

II. LITERATURE REVIEW ON CONSUMPTION

According to Keynesian, consumption expenditure is a function of disposal income, autonomous consumption and marginal propensity to consume. Consumption is therefore determined by individual's income. The consumption mathematical relationship can be used to establish the country's consumption as a function of the country's national income. According to Keynesian, consumption is determined by the formula: $C=\alpha+bY$ where C is consumption expenditure, Y is the current income and b is the marginal propensity to consume. An increase in income leads to an increase in consumption but in less proportion, posits Keynes. In the long run, marginal propensity to consume and average propensity to consume are assumed to be equal and constant, and not far from one, that is, within the range of 0.85 and 0.95, (Kuznets, ibid 1942). Public expenditure as a component of national income, Y, stimulates aggregate demand in an economy, as the households feel wealthier, (Chakraborty, 2006). Kuznets obtained these results after conducting a long run consumption function using US' time series data from 1897 to 1938. The consumption equation according to Keynesian can be represented as shown below.

Figure 04: Consumption Function



Keynes (1936) postulates that to pull the economy out of recession, the government needs to increase its spending expenditure and lower the tax rates to stimulate household consumption and private sector investment.

The permanent income hypothesis was attributed to Friedman (1957). Friedman posits that the consumers base their consumption decisions based on expenditure from retirement savings and that individuals have both permanent and transitory income. The households consider their spending needs and future incomes over the reminder of their lifetimes, (Aundo and Modiglian, 1963; Brumberg and Modiglian, 1954). This sentiment is in line with the life-cycle hypothesis of consumer behavior. The households also make consumption decisions relative to the rest of the population, (Duesenberry's Relative Income Hypothesis).

Methodology

This study uses OLS method to analyse the household consumption variables, partly because it provides a simple and efficient way to estimate the parameters of a linear regression model, essentially enabling finding the line of the best fit and test of the overall significance of the model much easier.

Data analysis

According to this study while examining consumption situation in Kenya, will consider household consumption as a mathematical function of consumer price index (CPI), exchange rate, GDP growth rate, and the population (N) of the country. The aforementioned relationship between consumption and the causal variables is denoted as follows:

Household consumption= $\beta_0+\beta_1$CPI+β_2Exchange rate+β_3GDP+β_4N+e Where N denotes population of the country and e is the error in the model.

Table 01: Regression analysis of household consumption in Kenya

Dependent Variable: HOUSEHOLD_CONSUMPTION_EXPENDITURE__CURRENT_US$_BILLION_
Method: Least Squares
Date: 01/15/25 Time: 09:44
Sample: 1 40
Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.584401	2.147273	3.532109	0.0012
CPI	0.012804	0.011861	1.079586	0.2877
EXCHANGE_RATE_AGAINST_USD	0.106033	0.014398	7.364544	0.0000
GDP_GROWTH_RATE__USD_	0.304473	0.013204	23.05907	0.0000
POPULATION__MILLION_	-0.243779	0.108355	-2.249817	0.0309

R-squared	0.996414	Mean dependent var	19.49750
Adjusted R-squared	0.996004	S.D. dependent var	12.76971
S.E. of regression	0.807217	Akaike info criterion	2.526019
Sum squared resid	22.80595	Schwarz criterion	2.737129
Log likelihood	-45.52039	Hannan-Quinn criter.	2.602350
F-statistic	2431.230	Durbin-Watson stat	0.887439
Prob(F-statistic)	0.000000		

Household Consumption=7.5844+0.0128CPI +0.1060Exchange Rate+0.3045GDP-0.2448N+e

Holding consumer price index, exchange rate, GDP and population constant, the household consumption expenditure would be US$ 7.58 billion. A unit increase in the consumer price index leads to US $ 0.0128 billion increase in the household consumption expenditure while holding other variables constant. A unit increase in exchange rate leads to US $ 0.106 billion increase in household consumption, holding other variables constant. The increase in the exchange rate signifies the depreciation in the local currency against the USD. It can be noted from the model that a 1% increase in the country's GDP would lead to US$ 0.304 billion increase in the household consumption expenditure, holding other variables constant and for every 1 million increase in population, household expenditure is predicted to reduce by US$ 0.2438 billion, holding other variables constant.

It is significant we test the overall statistical significance of the model for its fitness for policy making. Will test individual parameters' statistical significance using calculated t-statistic against a two-tail critical values at 5% and then the overall significance of the model using F-test statistic. Critical value of t-statistic is 2.042 ($t_{critical}$ n-k, 5%=t40-5,0.05, t35,0.05=2.042). T-statistic for β_0=3.5321, 3.5321>2.042 ($P_{value}<p_{critical}$, 0.0012<0.05), implies that the constant denoted by β_0 is statistically significant at 5%. T-statistic for CPI is 1.0796<2.042, ($P_{value}>P_{critical}$, 0.2877>0.05), this implies consumer price index is not statistically significant in the model or statistically significant in explaining the variations in the household consumption. T-statistic for exchange rate is 7.365>2.042, ($P_{value}<P_{critical}$, 0.0<0.05), implies that exchange rate is statistically significant in influencing household consumption expenditure. GDP growth rate T-statistic is 23.06>2.042, ($P_{value}<P_{critical}$, 0.0<0.05), implies that the GDP is a strong causal factor to the household consumption expenditure. Population statistic -2.2498>-2.042, (0.031<0.05), implies that the population has statistical significance in influencing household consumption expenditure. The negative sign may indicate diminishing per-capital consumption as population increases.

The overall significance of the model is tested using F-statistic. $F_{calculated}>F_{crictical}$, which is 2431.23>2.336, ($P_{value}<P_{critical}$, 0.0<0.05). This implies that the overall model is statistically significant in explaining the household consumption expenditure in Kenya. The R-squared is 99.64%, meaning the study variables within the model account for 99.64% variations in household consumption in Kenya. This indicate a strong influence the independent variables have towards the dependent variable household consumption.

III. ECONOMIC IMPLICATION OF THE MODEL

A depreciation of the local currency against the USD leads to increased household consumption expenditure because the imports become more expensive leading to imported inflation causing inflationary pressure to the local economy.

Economic growth significantly increases household consumption, higher GDP growth rates leads to increased household incomes, increased jobs which in turn leads to increased household disposal income and this implies that households can afford more bundles of goods and services and that the firms will be forced to increase their production capacity to meet the increasing demand, this multiplier effects leads to new growth curve for the country.

The economic implication of the negative population growth can imply that the country's resources are stretched as the population grows, reducing per capita

income and household consumption, and it further also mean that there is no uniform distribution of wealth, where economic gains from population growth does not translate to increased consumption.

The changes in inflation measured by consumer price index not having a statistical significance could imply that there could be relative stable inflation environment or the households have developed coping up mechanisms to adjust to inflation without drastically altering spending habits.

IV. POLICY OPTIONS TO STIMULATE CONSUMPTION

Stabilization of the country's exchange rate. The exchange rate significantly impacts household consumption, with currency depreciation driving spending upwards. The policy to address this would be to strengthen the foreign exchange reserves to cushion against exchange rate volatility, promote export-oriented industries to reduce balance of trade deficits and reduce dependency on imports. The Kenya government should promote export-oriented industries to reduce trade deficits and dependency on imports. Nonetheless, the government should encourage production and consumption through subsidies for local industries and encouraging the citizens by the phrase "buy-local" campaigns and further, the government should negotiate trade agreements to stabilize external economic relations.

The government should accelerate economic growth. It is worthwhile to note that the GDP growth has a strong and positive impact on household consumption, reflecting the link between economic expansion, income generation and spending. In this regard, the government should invest on infrastructural projects like roads, rail transport for example the standard gauge railway, airways and waterways, this will open many underdeveloped regions for economic development. The government should provide tax incentives and tax breaks for the sectors aligned to national goals like transformative vision 2030 and Millennium Development Goals (MDGs). Tax incentives directed to sectors with higher employment multipliers like manufacturing, agriculture, and service sectors will translate to economic growth. The government should improve access to credit for small and medium enterprises (SMEs) to boost entrepreneurship and further, the government should encourage adoption of innovation and technology to enhance productivity and will equally lower the cost of production.

The government should address the negative effects of increasing population to the economy, population growth can boost economic productivity if properly harnessed through investment in human capital development but can also be a tragedy in waiting for the country if they are not engaged in productive activities. The rising population negatively impacts household consumption, if the country has a lower per capita income growth and insufficient job creation, implying the households have low disposal income, leading to poor standard of living. The government of Kenya should explore the following policy measure to address negative externalities associated with high population growth rates: the government should strengthen family planning programs to manage population growth rates, invest in human capital development for example investment in quality education systems and healthcare to boost productivity. The government should implement income redistribution policies such as progressive taxation, social protection programs like cash transfer programs to elderly, disabled and orphans, this will enhance equitable economic growth. The government should develop urban and rural policy framework to support balanced regional development, reducing pressure on limited resources in highly populated areas.

The government should manage inflation, this will ensure economic stability, ensure predictability of the economy and boost household and investor confidence about the market expectations. The government can use through the Central bank monetary polies such money supply, exchange rate intervention, interest rate, open market operations and bank reserves and fiscal policy instruments such increase or reduce taxes, reduce or increase government expenditure to maintain inflation within set range.

The government should implement tax cutting measures for low and middle income earners, this approach will increase household disposal income, consumers can afford more bundles of goods and

services. The government should also increase the minimum wage and enforce labour laws for example workers bargaining agreements through their unions to improve their earnings.

The government should strengthen social protection systems such as social safety nets, for example unemployment benefits, food assistance, and housing support. The government should introduce conditional cash transfer programs tied to education, health or skill-building initiatives. And also the government should promote inclusive financial systems to ensure all households can save, borrow and invest.

The government should encourage consumption through improved credit access. The government through the central bank can lower the interest rates for commercial banks who then would provide lower interest rate facilities to households and provide affordable credit options. The government should support the microfinance banking institutions to open up branches in unbanked population and also enhance financial literacy to encourage prudent borrowing and spending.

The government should promote sectoral linkages, for example, invest in agriculture to boost rural incomes and consumption, given Kenya is agriculturally based economy. Supporting tourism and the service sector can significantly increase employment and create more employment opportunities for unemployed Kenyans. Job creations would increase household disposable income and hence, consumption.

The government should check regional economic development disparities and direct resources there for example, open up road, electricity, irrigation, and industrial zones, this would spur economic growth in those areas and increase household disposal income and consumption.

The government should invest in digital technologies, this will increase market access, credit, and employment opportunities, indirectly boosting employment creation. Promotion of mobile transfer and e-commerce, digital literacy would increase household participation in the economy.

CONCLUSION

This paper underscores the importance of fostering stable economic growth while managing population increases and maintaining currency stability all of which have direct influence on household consumption expenditure.

Household polices that enhance income and address structural challenges for example equitable resource allocation, job creation, will have greater impact on consumption and overall economic wellbeing for example economic stability and full employment.

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