Impact of Interest Rate on Household Consumption in Tanzania

Daud Mkali Fadhil and Naifin A. Rajab

1Department of Accounting and Finance, Zanzibar Social Security Fund, Zanzibar, Tanzania.

Authors' contributions

This study was conducted in collaboration between both authors. Author DMF designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author NAR managed the analyses of the study and the literature searches. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JEMT/2021/v27i830361

Editor(s):
(1) Dr. Choi Sang Long, Raffles University Iskandar, Malaysia.

Reviewers:
(1) Zeynep Çolak, Canakkale on Sekiz Mart University, Turkey.
(2) Muhammad Usman, Abban Gafai Education Resource Centre, Nigeria.
(3) Changsheng Liao, Fujian University of Technology, China.

Complete Peer review History: https://www.sdiarticle4.com/review-history/74962

Received 11 August 2021
Accepted 22 October 2021
Published 27 October 2021

ABSTRACT

This study seeks to determine the exact impact of interest rate on household consumption in Tanzania and identify the direction of causality between the variables. Although there have been few studies which explore the issue of interest rate and consumption, their method, time scope and geographical location has been different. This study aim to examine the relationship between interest rate on deposit and household expenditure in Tanzania using the annual time series data from the period 1990–2017 and employing Dynamic Ordinary Least Square (DOLS) and Granger causality test for testing causal relationship between the variables. The result revealed that there is a negative relationship between interest rate on deposit and consumption for the Tanzania. Additionally, it is observed from the estimate results that interest rate had an insignificant effect on consumption. Furthermore, the granger causality test results have shown that there is bidirectional causal relationship between interest rate and consumption. Furthermore, the result also shows that income and consumption are positively related and statistical significant at 5%. In addition, the findings supported Keynesian's Absolute Income hypothesis which emphasis consumption being a positive function of disposable income. The study recommends that there is the need for government to take urgent steps to implement policies like poverty reduction strategies, agriculture policy and Five Years Development Plans in order to improve the income base of most of households.

*Corresponding author: E-mail: daud.fadhil@yahoo.com;
1. BACKGROUND OF THE STUDY

Interest can be defined as the payment made to a lender by a borrower for the use of a sum of money for a certain period of time. Theoretically, when interest rate rises, consumption tends to decrease, which means that an important demand component declines. These elasticities have wide-ranging implications for monetary policy, business cycles, and tax incentives for saving [1]. The elasticities of consumption and saving to interest rate depend on the model parameters such as the intertemporal elasticity of substitution. In a simple sense, consumption is defined as the total demand for all consumer goods and services in a particular economy expressed in monetary terms. Consumption is generally known as the spending by households on goods and services like clothing, food items, entertainment, health services, and acquisition of assets among others. Accordingly, financing such expenditures or having effective demand for such goods and services someone must have money or income. Consumption function is therefore expressed primarily as income dependent behaviour of total consumption.

The level that a person can make consumption may be interpreted as the outcome of a decision-making process he or she makes over the time structure of the allocation of their income. Ekong and Ekong [2] argued that the effect of financial markets on the activities of household consumption and other related activities can only be captured through interest rate fluctuations. The interest rate under this perception takes the form of any return on income that will influence households to postpone present consumption for future ones. Viewed from this perspective, higher interest rates are expected to compress current consumption for future ones even as low interest rates are expected to push-up present consumption at the expense of future ones.

1.2 Factors Influencing Consumption

Surrounding consumer behaviour are many influencing factors which affect the manner in which customers act and reason during the purchasing process. There are cultural, social, personal and psychological factors persuading the consumers’ purchasing behaviour.

1.2.1 Cultural influence

Culture has a significantly powerful influence on consumers’ views with regards to any product. The recognition of cultural backgrounds can have greater impact on the understanding of consumption choice of people. These happen in order to satisfy the needs of the people within a particular society. As a phenomenon, culture

Keywords: Granger causality; consumption; interest rate; GDP and disposable income.
consists of values, ethics, traditions of people and also objects/symbol made or appreciated by certain group. Culture is a base for our values, behaviour, beliefs, priorities and certain perceptions towards different products. All these distinctiveness create the values of what the consumer represents and the way of consumer's actions in today's society [5]. The uniqueness of culture among group of people influences the behavior of consumers. In many cases, consumers turn to purchase products and services that are in equilibrium with the preferences, values, and norms of their culture. On the other hand, culture is constantly developing processes and the beliefs, values, views and social systems change with time as well [6].

1.2.2 Social influence

Many people in today's world are influencing the consumer's buying behavior. In relation to social factors, several social factors affect consumer's behaviour which comprises of the family, reference groups, status and social roles. Reference groups combine all groups that have direct or indirect impact influencing control on a person's beliefs or actions. Again, reference groups are persuading people to new actions and manners, affect their beliefs, values and self-recognition, and make certain need for correspondence that may influence their choice of product or brand. These group expectations are affecting the purchasing of consumers behaviour. However, individuals at this stage aim to accomplish the group expectations and adjust their behaviour in order to suite their status or role [7].

Family is another significant strong element of society which is to a large extent influence on consumer buying behaviour. Person normally adopts the parents’ attitude towards economics, politics, self-esteem and religion. Homes with husband or a wife and children play direct influence on the consumer characteristics. Kotler [7] point out the roles and proportional influence between wife, children and husband vary within different cultures.

1.2.3 Personal factors

Another factor which has an influence on consumer's buying behaviour includes personal characteristics such as age, life cycle, economic and occupational conditions. The desires and needs of peoples changes alongside as they grow up. In today’s competitive environment, marketers are often targeting products for similar age groups. Consumers within the same age group tend to have similarities in their buying behaviour as the experienced related understanding of events and development [3]. Furthermore, differences in behaviour between age groups influence attitudes towards specific categories of products or brand loyalty status with a change [7]. Occupation also defines the level of personal income, which influences the preference of brands and interest in certain services [7].

1.2.4 Psychological influence

In addition to cultural, personal and social influence discussed above, there is psychological factor that influencing consumer purchasing behaviour. This normally involves elements such as motivation, learning, belief, attitudes and perception. As an individual characteristic, motivation portrays one's action or behaviour. Abraham Maslow [8] explains motivation as hierarchical levels within a pyramid where consumers' needs are positioned from the most pressing to the least valuable. The main categories of the pyramid comprise of basic physiological and safety needs up, followed by the needs for socializing, esteem and self-actualization. According to Kotler [7], the psychology of human being is that the basic needs are considered and satisfied before other needs are recognized.

1.3 Current Situation on Household Consumption in Tanzania

Household’s consumption expenditure is the major component of cumulative demand in an economy. The level of community’s expenditure on consumption is determined by a numbers of factors such as household income, taste and preferences, current and expected prices, expected future income, interest rates, advertising, inflation and availability of food. Personal consumption expenditure can be classified into four different categories namely durable goods, non-durable goods, semi-durable goods and services.

In Tanzania, during 1990 consumption expenditure increase overtime to approximate 105% as a percentage of GDP, and in 1991 the percentage of consumption expenditure was still the same. In 1992 the consumption expenditure increased to approximate 109% as a percentage of GDP. In the year 1993 the household
consumption expenditure increased to approximate 111% as a percentage of GDP. During the year 1994 the household consumption expenditure started to decrease to 105% as a percentage of GDP. From the year 1995 the household consumption expenditure continue to decrease to approximate 96%. However, household final consumption expenditure, (% of GDP) in Tanzania was reported at approximate 75% in 2017, according to the World Bank collection of development indicators, compiled from officially recognized sources. Fig. 1 depict that the final household expenditure as percentage of GDP was dropping from 100 percent in 1990 to approximate 75 percent in 2017. This situation is contributed by the devaluation of domestic currency [9].

Based on the monetary policy condition with regard to interest rate, it is perceived that in the recent years, some developing countries have allowed market forces to play a greater role in their economies. Thus, liberalization of the financial sector so that interest rate is allowed to be set by the market forces in Tanzania became important. This was hoped to develop financial markets so that credit can be allocated more efficiently. Ogundipe and Alege [10] argued that the effectiveness of monetary policy depends on the adjustment response of Central Banks short-term interest rate on the real interest rates charged by commercial banks and eventually on macroeconomic indicators of consumption and investment in the economy.

During the 1970s and 1980s, Tanzania’s financial system was highly repressed and uncompetitive due to many factors. It was operated with government controls of prices, use of selective and directed credit controls, it exhibited high operating costs, commercial banking was highly concentrated in the public sector, state ownership and restricted entry, inefficiency were rampant as a result, there were a lot of non-performing assets. The economy also experienced high inflation rates, which worsened inter-mediation. Nevertheless, financial reforms of 1991 in Tanzania were most dramatic and changed completely the way the financial institutions were operating in Tanzania. Like other developing countries, Tanzania Government intervention in setting interest rates, exchange rates, and allocating credit was withdrawn, ultimately, deposit interest rate decline due to the introduction of reforms. Tanzania implemented a financial sector reform in 1991, the program that aimed at increasing financial intermediation, and promoting competitiveness, efficiency and stability of the domestic financial system. The Fig. 2 shows that the Deposit Interest Rate in Tanzania reaching the highest in 1995 that accounted to approximate 25 percent that was caused by the restructuring efforts made by the Government and in 2003 was the lowest record of approximate 3 percent. However, in 2012 to 2017 the trend is stabilized.

1.4 Statement of the Problem

Economists postulate that whenever there is an increase in interest rate on deposit consumers tends to increase their savings thereby reducing their consumption to take advantage of the increase in interest rate on deposit. Some economists are of the opinion that, income exerts greater effect on consumption compared to interest rate on deposit. Theories on consumption also confirm this assertion. Tanzania, over the years, has been experiencing periods of high consumption of food, clothes and shelter due to increases in the price of goods and services, which reduces the purchasing power of the household. Keynes [11] made three salient points from his proposition. First, consumption expenditure be determined mainly by absolute income for the current period. Second, consumption is a positive function of the absolute level of current income, and third, the more income derived, the more the consumption expenditure. In addition, people consume wide range of consumables goods ranging from durable and non-durable goods. The amount of income received by peoples from works they undertake have greater influences on the level of consumption they can make. Furthermore, understanding the response of personal consumption to changes in interest rates is central to many issues in economic policy like savings, lending as well as investment.

Likewise the figures above indicated that in Tanzania both interest rate on deposit and final household expenditure as a percentage of GDP are going at the same direction. Both interest rate and household spending are decreasing overtime. In order to analyze the effects in which changes in the interest rate level have on the real economy, it is therefore important to know the extent to which they exert an influence on households’ consumption expenditure. Nevertheless, in recent years there has been substantial debate on the relationship between
interest rate and consumption. Meanwhile, deposit interest rate in the country is not attractive enough for Tanzanians to save and therefore consumes more than savings. The study will look particularly at this critical issue.

1.5 Objective of the Study

The general objective of this study is to investigate the effect of deposit interest rate on household consumption in Tanzania.

![Graph of Final Household Consumption Expenditure](image1)

**Fig. 1. Final household consumption expenditure**
*Source: Author Compilation from World Bank, 2018*

![Graph of Deposit Interest rate](image2)

**Fig. 2. Interest rate**
*Source: Author Compilation from World Bank, 2018*
Based on this general objective, the study will have the following specific objectives:

i. To examine the effect of interest rate on household consumption in Tanzania
ii. To examine the causal relationship between deposit interest rate and household consumption in Tanzania

1.6 Research Hypothesis

i. There is no effect of deposit interest rate and household consumption in Tanzania
ii. There is no granger causality between interest rate and household consumption in Tanzania

1.7 Significance of the Study

First, it is an indisputable fact that the target of every economy is to attain the highest possible level of growth. A rise in economic growth implies a rise in welfare of the people. For this reason, governments of developing countries over the years have been pursuing policies that would lead to economic growth. Obviously, the role of economic variables (such as interest rate on deposits, GDP per Capita and inflation rate) effect on household consumption in achieving economic growth cannot be ignored.

Second, the study will serve as an imperial foundation for further research work into this area of study applicable to different locations or regions elsewhere. It will also help the government or authorities responsible for implementing policies to know the effect interest rate on deposits have on household consumption, knowing this effect will help them to draw policies to control changes in interest rate on deposits.

Third, the study will also help the policymakers to find the suitable strategies that may improve the income base of most of households that will lead to boost the economy of the state through consumption. On the other hand, because savings in Tanzania is very low, which compels the government and investors to attract loans from foreign donors and banks leaving the country with huge external debts. The study is of a great concern to government and policy makers to reduce the burden of external debt to Government and investors.

2. LITERATURE REVIEW

2.1 Theoretical Literature Review

Consumption is one of the major components of aggregate demand. Consumption decisions have strong influence on the growth of an economy. It is an unarguable fact that consumption is among the basic determinants of aggregate economic activities. However, there is no clear cut procedure as to how to measure the consumption level of an economy. There are various schools of thought concerning the consumption behavior of a rational consumer. In addition, there are several theories which describe the concept of interest rate and consumption, the following are the important theories which relate with interest rate and consumption:

**Keynesian’s Absolute Income Hypothesis:** Keynes specified a simple linear consumption with consumption being a positive function of disposable income in his book titled “The General theory of money, interest rate and employment” [11]. Thus, as disposable income increases result into increases in consumption expenditure. Though consumption depends on disposable income, there is a part of consumption, which does not depend on disposable income, and this is called the autonomous consumption. From the Keynes fundamental psychological law, consumers increase their consumption as their income increases but not as much as the increase in their income. The average propensity to consume which is the ratio of total consumption to total income falls as the level of income increases.

**Relative Income Hypothesis:** James Duesenberry was one of the economists who provided a major challenge to the absolute income hypothesis. In his book “Income, Saving and the theory of Consumer Behaviour” [13] Duesenberry proposed an alternative theory, called the relative income hypothesis for reconciling the non-proportional (short run) and proportional (long run) consumption functions. Relative income hypothesis states that “the satisfaction an individual derives from a given consumption level depends on its relative magnitude in the society (e.g., relative to the average consumption) rather than its absolute level”.
Duesenberry proposes an individual consumption function that depends on the current income of other people and as a result, for any given relative income distribution, the percentage of income saved by a family will tend to be unique, invariant, and increasing function of its percentile position in the income distribution. The percentage saved will be independent of the absolute level of income. Duesenberry’s theory was based on the rejection of two implicit assumptions that are household preferences for goods and services were interdependent and that household consumption expenditures were irreversible overtime. Despite its intuitive and empirical success, the relative income hypothesis was quickly replaced by the lifecycle/permanent-income hypothesis of Franco Modigliani and Richard Brumberg [14] and Milton Friedman and Gary Becker [15] as the economists pioneer to understand consumption behavior. Therefore, the relative income hypothesis help to study the behavior of consumption when income of individual changes.

**Intertemporal Choice:** Irving Fisher is an American Economist developed an intertemporal choice model. The theory materialized in the 1940s, after the failure of the Keynesian model. Contrary to Keynes who assumed that current consumption is mainly determined by current income, Irving Fisher proposed a model which explains how rational consumers make choices concerning how much to consume today and save for tomorrow in order to maximize utility. He identified that people had a desire to consume more but are constrained by their income. Thus their budget constraint hindered them from consuming as much as they wanted. He went on to compare consumers’ decision on how much to consume today with how much to save for tomorrow with regards to the total resources available to him. This is known as the Intertemporal Budget Constraint which is based on income of household as main factor of consumption. According to Fisher, consumption at any point in time depends on the present value of current and future income, where future income is discounted by the interest rate. In addition, Fisher suggested that in taking consumption and savings decision, people considers both present and future, so the more people consume in the current period the less they save, the less they save less they will be able to consume in the next period. Deposit rate is major motivating factor for household to save in the current period.

**The Classical Theory of Interest Rate:** The classical theory postulated that interest rate is an equilibrium factor between the demand for and the supply of investment funds. The equality between savings and investment is brought about by the mechanism of interest rate. When saving exceeds investment, rate of interest will fall discouraging savings on one hand and encouraging investment on the other hand. This trend continues operating till equality between savings and investment achieved. Therefore, classical system hold rate of interest as the equilibrium force between savings and investment. Classical economists approach to savings – investment equality is based on the assumption of full employment in the economy system [16].

**Keynesian Theory:** According to Keynesian the determination of interest rate will be found in the money market and these are basically the supply and demand for money. Keynesian theory identified three motives for the desires to hold cash; transaction motive, precautionary motive and speculative motive [17]. The first two motives depends on the level of income, while the rest motive is determined by the level of interest rate. Keynes argues that if there were no interest receivable, people would hold their assets in the form of cash. To get people to hold their wealth in any other form, must be prepared to pay them interest because there is a cost associated with the conversion of the securities into cash.

**The General Equilibrium Approach (Modern):** According to Osofisan [18]. The modern theory of interest rate is more enhanced to both the classical and the Keynesian theories of interest rate. This is because it interests all the four factors that is; savings, investment, the demand for money, and the supply of money successfully. Modern theory of interest postulates that the equilibrium level of money income and the equilibrium level of the rate of interest will be determined by that particular combination of income and the rate of interest at which the double condition of equilibrium stated below occurs given the savings, the investment, the demand for money and the supply of money [19].

2.2 Empirical Literature Review

Various studies have empirically tested the effect of interest rate on household consumption.

Nakagawa and Oshima [20] examined the relationship between real interest rate and
personal consumption in four countries (Japan, USA, UK and France). The study used Consumption-based Capital Asset Pricing Model (C-CAPM) to estimate theoretical relationship between the real interest rate and personal consumption. The study found that there was no clear relationship between the real interest rate and personal consumption because the Japanese people like to save and they do not want to consume by drawing on savings or by taking consumer loans although real interest rates go down. Conversely, the use of consumer credit to purchase durable goods is witnessed every day and everywhere in the big nations like USA and UK. Moreover, this result is consistent with [21] suggested that a reduction in real interest rates caused by inflation expectations would stimulate personal consumption.

Forgha [22] formulated econometric models of consumption and savings functions in Cameroon during the period 1970 to 2007 using cointegration error correction methodology. The study found that disposable income, general price level, expected inflation, interest rate and dependency ratio impacted positively on private consumption and only family wealth had a negative impact while disposable income, numbers of financial institutions and branches, political stability had positive impacts on savings. Interest-inflation rate differential had a negative impact on savings. The pace of adjustment in the consumption function was discovered to be 45.291 percent and that of savings was 35.65 percent.

Kapoor and Shamika [23] explored the effect of interest rate on household consumption in India. The study employed the regression discontinuity approach to estimate the precise causal effect that the interest rate has on consumption of households using monthly consumption data from the Indian National Sample Survey to calculate regression discontinuity estimates, based on age cut-offs. The results revealed an interesting age-wise pattern to the effect of higher interest rate. Apart from that, there is an instantaneous decline in consumption or an intertemporal substitution once interest rate is increased. However, over the long run the effect on consumption is smaller. This could be due to an income effect i.e. consumption increases when income from interest earnings is higher.

Likewise, Elder and Halvorsen [24] carried a study on the effect of a cut in the interest rate on consumption and saving in Norway. The research aimed to examine how different Norwegian consumers react to a sharp drop in the interest rates by observing their change in saving rates and also to find out how young households with negative net financial wealth act as current-income consumers, and react differently to a drop in the interest rate than older households. The paper used panel data to examine how entire household consumers react to a sharp drop in the interest rates by observing the change in financial saving. The results revealed that a decrease in interest rate on deposit reduce household savings since Norwegians save less as opposed to increasing their personal consumption particularly in the northern and central regions of Norway.

Smith and Song [25] carried a study on the response of consumption to income, credit and interest rates in Australia. The study wanted to find out the reaction of consumption to income, interest rates and credit growth in Australia and to find the long-run relationship between consumption and permanent income, and estimate the short run response of consumption to income, interest rates and credit variables. The cross sectional data series on consumption and income which were quarterly, and from the chain volume measure series in the Australia Bureau of Statistics National Accounts were used. Results of the study discovered that instrumental variable estimation of Euler equation with fixed coefficients proposed that consumption growth reveals excess sensitivity to income growth compared to interest rate and credit.

Yusuf et al., [26] investigated the influences of interest rate on private consumption behaviour in Nigerian people between the period of 1981 and 2014 using autoregressive distributed lag (ARDL). The results confirm the presence of the relationship between private consumption and its determining factor, except real interest rate and the dummy for the impact of interest rate deregulation.

Some studies provided evidence of existence negative relationship between interest rate and consumption. Osei-Fosu et al. [27]. Examined the effect of interest rate on deposit on household consumption using time series data from 1970 to 2009. The study adopt ARDL bound test to test for cointegration among these variables. The results revealed that there exists a negative relationship between interest rate on deposits and household consumption both in the short run
and in the long run. Though, it was found not significant in the long run compared to the short run.

Furthermore, Ezeji and Ajudua [28] examined the determinants of aggregate consumption expenditure in Nigerian. The study used model which was derived from the Keynesian consumption function using explanatory varies such as income, interest rate, inflation rate and exchange rate. The study employed Johansen cointegration test to check the long run relationship between variables. The research showed positive relationship between consumption expenditure and income and verified that the Nigeria consumption function obeys to Keynesian consumption model and similarly incorporates the idea of other well-known theories as, interest rate, price level and exchange rate were significant variables explaining consumption behaviour in Nigeria.

Christensen [29] examined the impact of interest rate on household consumption and saving in the United States using 200 quarterly observations from 1962 to 2012. The study employed repeated regression and optimization to determine the optimal interest rate that households are comfortable to part their income between consumption and savings. The study revealed that consumption tends to increase at periods of low interest rates than periods of high interest rates thereby justifying the Federal Reserve stance at keeping interest rate low in their economy and justifying the dominant effect of substitution in the consumption-interest rate Euler relationship.

In addition, Jappelli and Padula [30] investigated the relationship between consumption growth, interest rate and financial literacy in a model in which financial sophistication improves the portfolio returns and therefore the incentive to substitute consumption temporarily. The study employed panel data set from Italian household survey of income and wealth from 2006 to 2010 in an appropriate instrumental variable procedure to test an Euler equation. The study revealed that consumption growth is positively correlated with financial literacy through interest rate.

Audu [31] examined the determinants of consumption among rural dwellers of Bayelsa State, Nigeria. Primary data were collected through structured questionnaire that was administered randomly to 5000 selected respondents from rural communities. The dataset were examined and clustered into seven variables to test the two hypotheses. The results showed that current income, expected future income, bank savings, investment in shares, pension fund returns were significant determinants of consumption. Moreover, Ofwona [32] estimated Consumption function for Kenya using Keynes’ Absolute Income Hypothesis for the Period 1992-2011 using ordinary least square approach. The results showed that in Kenya consumption is determined by income and the Absolute Income Hypothesis represented by AIH was found to work well for the case of Kenya.

Apart from the above literatures, some studies examined the causal relationship between consumption and other variables like economic growth. For instance, Mishra [33] investigated the relationship between real consumption expenditure and economic growth in India. The study adopted the cointegration test and the vector error correction regression for the years of 1950 to 2008. The results of the study indicated that there is long-run equilibrium relationship among variables. According to the results of causality test in the error correction model, it has been found that there is unidirectional causal relationship from real consumption expenditure represented by (PCE) to economic growth in the long-run, nevertheless during the short run with applied Granger causality test showed that there is no causality between them.

Sakib-Bin-Amin [34] investigated the causal relationship among consumption expenditure and economic growth in Bangladesh. The study using annual data from 1976-2009. The estimation technique used in the study is Johansen and ARDL cointegration tests. The researcher concluded that there is cointegration between consumption expenditure and economic growth in the long run. The Granger causality test applied in the research discovered a long run unidirectional causal relationship moving from economic growth to consumption expenditure.

Guisan [35] examined the presence of causal relationship between real consumption and real GDP in Mexico and United States. The study using several tests ranging from Granger Causality, Modified Granger Causality, Engle-Granger Cointegration and Hausman. The findings obtained from the Granger Causality test showed that there is no causality between these variables in Mexico but there is bilateral causality
in US. A modified Granger Causality test showed that there is a presence of bidirectional relation in both countries. According to Engle-Granger Cointegration, there is co integrated relationship between consumption and GDP in the US, but the results for the case of Mexico is uncertain.

2.3 Research Gap

Numerous study have been carried out on the impact of deposit interest rate and consumption but they still provided mixed results. Some studies argued that interest rate has positive effect on consumption [32] and some studies indicated that interest rate on deposit has negative effect on consumption [36,27]. In addition, most previous studies have found small effects of interest rates on consumption and saving [37]. Furthermore, there are few studies conducted in Tanzania, most of them used government expenditure variable, therefore, it is necessitate further work to be carried out in order to clarify the impact of deposit interest rate on consumption in developing countries especially in Tanzania. This study intend to explore the relationship between deposit interest rate and household consumption relationship in Tanzania.

3. RESEARCH METHODOLOGY

3.1 Research Design and Data Collection Method

This study is quantitative in nature since it used time series data in order to examine the relationship between interest rate and household consumption in Tanzania. In addition, the study employed annual statistical data obtained from the World Bank online database for the period from 1990 to 2017.

3.2 Model Specification

According to Keynes developed framework which explain the relationship between consumption and income known as Keynesian absolute income hypothesis specified a consumption function as follows:

\[ C_t = a + bY_t, C_t = f(Y) \]  

Contrary to Keynes, Irving Fisher developed the theory of intertemporal choice in his book Theory of interest (1930) who related consumption to current income, Fisher's model showed how rational forward looking consumers elect consumption for the present and future to maximize their lifetime satisfaction. Based on Fisher, an individual's impatience is determined by four characteristics of his income stream: the size, the time shape, the composition and risk. Moreover, foresight, self-control, habit, expectation of life, and bequest motive (or concern for lives of others) are the five important personal factors which control a person's impatience that in turn determines his time preference [38].

Irving Fisher intertemporal choice model which captured interest rate on deposit was specified as:

\[ C_1 \leq Y_1 - S \]  
\[ C_2 \leq Y_2 + (1+r)S \]

Rearrange functions

\[ Y_1 - C_1 \leq S \]
\[ \frac{C_2}{1+r} - \frac{Y_2}{1+r} \leq S \]

On the contrary, if such borrowing is likely then the person is subject to a single intertemporal budget constraint:

\[ Y_1 - C_1 = \frac{C_2}{1+r} - \frac{Y_2}{1+r} \] 
\[ C_1 + \frac{C_2}{1+r} = Y_1 + \frac{Y_2}{1+r} \]

Varian [39] concluded that where the interest rates are increased. In the condition that the consumer is a net saver, obviously he will save more in the current period because of the substitution effect and make more consumptions in the current period due to the income effect. The net effect thus becomes ambiguous. In the event that the consumer is a net borrower, however, he will be likely to consume less in the moment because of the substitution effect and income effect as a result reducing his overall current consumptions.

Therefore, consumption depends largely on income and interest rate, for the purposes of this study, one more relevant variable was included namely inflation rate. Hence, from the equation
(iii) specify the model for the estimation of interest rate impact toward consumption through the consumption function, by taking consumption (C) as the dependent variable and interest rate (INT), inflation (INF) and Disposable income (Y) as the independent variables. The model can be expressed as follows:

\[ C_t = f(INT, INF, Y) \]  

The above models can be re-written as an econometric model for this study as follow:-

\[ \log C_t = \beta_0 + \beta_1 \log Y_t + \beta_2 \log INT_t + \beta_3 \log INF_t + \mu_t \]

Where:
- \( C_t \) is household consumption at time t,
- \( INT_t \) is the interest rate on deposits at a time t,
- \( INF_t \) is the inflation rate at a time t
- \( Y_t \) is the disposable income (GDP per capita is used as a proxy for income) at time t

\( \beta \) - Represents the slope of coefficient of each variables which shows the amount of unit change in the dependent variable to the one unit change in the independent variable.

\( \mu \) - Represent stochastic error term.

3.3 Variables Descriptions

3.3.1 Dependent variable

**Consumption:** Household final consumption expenditure (formerly private consumption) is the market value of all goods and services, including durable products (such as cars, washing machines, and home computers), purchased by households. It does not include purchases of dwellings but take account of imputed rent for owner-occupied dwellings. In addition, it comprises payments and fees to governments to get permits and licenses. At this point, household consumption expenditure consist of the expenditures of non-profit institutions serving households, even if reported separately by the country. More importantly, this item take account of any statistical discrepancy in the utilization of resources relative to the supply of resources. Data are in constant 2010 U.S. dollars.

3.3.2 Independent variables

**Interest rate:** The study used interest rate deposit as independent variable. Deposit interest rate can be defined as the rate which is paid by commercial or similar banks for demand, time, or savings deposits. The implied terms and conditions in connection to these rates vary from country to country. Though, limiting their comparability. Interest rate on deposit tells us what households receive when they save their monies at the bank. Therefore as interest rate on deposit increases, households will like to earn more on savings therefore they cut down consumption in order to save more. When interest rate on deposit falls they would increase consumption by saving less. Thus, interest rate on deposit expected to have inverse relationship with household consumption.

**Inflation rate:** Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that typical may be fixed or changed at indicated intervals, for instance annual. The Laspeyres formula is generally used. Inflation rate is a reflection of macroeconomic instability. A high rate of inflation is generally reduce consumption because it raises the cost of living and thus lowers the rate of consumption. At low levels of inflation, cost of living falls therefore household consumption increases. Thus, inflation is expected to have inverse relationship with household consumption.

**Disposable Income:** Income of household affect consumption for the particular of time. This study used GDP per capita as proxy of income without deduct the depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 2010 U.S. dollars. Gross domestic Production per Capita measures the standard of living in the country; therefore an increase in GDP per Capita raises the standard of living of the individual and household consumption increases. A fall in GDP per Capita result in the fall in household consumption, all things being equal.

3.4 Empirical Methodology

To estimate cointegration in order to examine the relationship between interest rate and consumption in Tanzania, Dynamic Ordinary Least Square (DOLS) was used, which consist the following step:-

3.4.1 Unit root test

In this stage the estimation procedure to tests the stationarity of the variables was employed in the study. It helps to determine the order of integration of the data series by applying the Augmented Dickey-Fuller (ADF) unit root test,
postulated by Dickey & Fuller [40]. This test adopted in order to find the long-term properties of the variables in the study. If the time series are found to be stationary, it means that their variance, mean and covariance are constant overtime and that the result obtained from the analysis is reliable and can be used to predict future economic activities of the country.

Meanwhile, if the ADF result fails to reject the test in levels but rejects the test in the first difference, it means that the series contains one unit root and is of integrated order one. Furthermore, if the test fails to reject the test in levels and at first difference but rejects it in second differences, it is therefore implies that the series contains two unit roots and is of integrated order two. According to Dickey and Fuller [40], the ADF test involves both the level and first differenced observations by estimating the following three models:

**Test 1: No constant and no trend**
\[ \Delta y_t = (\rho - 1)y_{t-1} + \nu_t = \gamma y_{t-1} + \nu_t \]

**TEST 2: With constant but no trend**
\[ \Delta y_t = \alpha + \gamma y_{t-1} + \nu_t \]

**TEST 3: With constant and with trend**
\[ \Delta y_t = \alpha + \gamma y_{t-1} + \lambda t + \nu_t \]

Where,
\[ \Delta y_t = y_t - y_{t-1} \]

The first difference of the series; \( Y_t \)
\[ Y_{t-1} = (Y_{t-1} - Y_{t-2}) \]

The first difference of \( Y_{t-1} \)
\[ \nu_t \]

Are independent random errors with zero mean

### 3.4.2 Johansen cointegration test

This step follow after completion of unit root testing on time series. The Johansen process is a maximum likelihood method that determines the number of cointegrating vectors in a non-stationary time series Vector Autoregression (VAR) with restrictions imposed known as a vector error correction model (VEC). Two series with 1(1) trends can be cointegrated only if there is genuine relationship between two. Accordingly the standard current methodology for time series regressions is to review all time series involved for integration.

If there are 1(1) series on both sides of the regression relationship, then it's possible for regressions to give misleading results. The possible presence of cointegration must be taken into account when choosing a technique to test hypotheses concerning the relationship between variables having unit roots (i.e. integrated of at least order one). The normal process for testing the hypothesis regarding the relationship between non-stationary variables was to apply ordinary least squares (OLS) regression on the data that had been differenced.

The likelihood ratio (LR) is used for testing the quantity of long run associations, because the Johansen and Juselius maximum likelihood method has little possibility of making errors since it involve only one step in its process unlike two steps in the Engle from Ramirez & Khan (1999).

**The LR intended for the trace test:**
\[ LR = -T \sum \ln (1 - h_i) \]
\[ i = r + 1 \]

Where \( h_r+1,..., h_q \) are the estimated q-r eigenvalues. The null hypothesis to be tested is that there are at most r cointegrating vectors. At

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measure</th>
<th>Expected sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption</td>
<td>Measured by Household final consumption expenditure</td>
<td></td>
</tr>
<tr>
<td>Disposable Income (Y)</td>
<td>Measured by GDP per capita as proxy of Income</td>
<td>+</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>Measured by Annual average of Inflation rate</td>
<td>-</td>
</tr>
<tr>
<td>Interest rate</td>
<td>Measured by rate paid by commercial or similar banks for demand, time, or savings deposits.</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Author’s construction 2018
this point \( r \) is 0, 1, or 2 since the number of cointegrating vectors is less than or equal to \( r \). Therefore, the Ho is tested together with the alternative hypothesis (H1) of \( r+1 \) cointegrating vectors. So, the Ho: \( r = 0 \) and H1: \( r = 1 \) alongside the H1 \( r=2 \) and so forth [41].

### 3.4.3 Dynamic Ordinary Least Square (DOLS)

The endogenous growth theory assumes that Inflation, foreign aid, export, human capital, domestic investment and economic growth are endogenously related. From this fact, it is worthwhile to model their relationship using the appropriate method that would cover this problem of endogeneity. In this sense, the use of Static ordinary least square method (OLS) is not appropriate methods for the following reasons. Firstly, the OLS cannot handle the problem of endogeneity and serial correlation in the error terms, especially higher order form of serial correlations [42-44]. From this fact, the asymptotic properties of OLS become biased and inefficient [42-43]. Therefore, the study used the most appropriate methods, which is dynamic ordinary least square (DOLS), which has been introduced by Saikkonen [45] Stock and Watson [44] and extended to panel analysis by Kao and Chiang (1997). In contrast to OLS, the DOLS estimator is therefore consistent, even if regressors are endogenous. This method favored compared to Static OLS and Johansen and Juselius approach due to the below reasons. Therefore, this study applied the DOLS estimator to estimate the long-run relationships among subsets of variables.

\[
LC_t = \beta_0 + \beta_1LY_t + \beta_2LINF_t + \beta_3LINT_t + \sum_{j=1}^{p} \phi_{ij}Y_{t-j} + \sum_{j=1}^{q} \delta_{ij}\Delta LINF_t + \sum_{j=1}^{p} \phi_{ij}\Delta LINT_t + \epsilon_t
\]

Where \( p \) and \( q \) are the number of lags and leads respectively. The use of lag and lead is to capture serial correlation and endogeneity of the regressors that could result in unbiased estimation. With DOLS, even if the variables are cointegrated and have the problem of endogeneity, the results obtained would still be unbiased.

### 3.4.4 The granger causality test

The last stage of the estimation procedure examines the causality between interest rate and household consumption through the application of the Granger causality test propounded by Engle & Granger [46]. It focused on determining the nature of relationship between the two variables; that is, to determine whether the direction of the relationship is bi-directional, unidirectional, or no causation between the two variables.

The following is the granger causality test model:-

\[
C_t = \sum_{i=1}^{n} \alpha_i M_t - i + \sum_{i=1}^{n} \beta_i C_{t-i} + \mu_t \quad \ldots \quad (i)
\]

\[
INT_t = \sum_{i=1}^{n} \lambda_i C_{t-i} + \sum_{i=1}^{n} \delta_i INT_{t-i} + \mu_2 \quad \ldots \quad (ii)
\]

Testing null hypothesis: H0: \( \alpha = 0 \): \( j=1 \ldots \ldots p \), this hypothesis mean that interest rate does not Granger cause consumption against the alternative hypothesis H1: \( \alpha \neq 0 \): \( j=1 \ldots \ldots p \), this hypothesis mean that interest rate does Granger cause consumption. Similarly, testing H0: \( n = 0 \): \( j=1 \ldots \ldots p \), this hypothesis means that consumption does not Granger cause interest rate against H1: \( n \neq 0 \): \( j=1 \ldots \ldots p \), this hypothesis means that consumption does Granger cause interest rate. If none of the null hypotheses is rejected, it means accept the claims that interest rate does not Granger cause consumption and consumption also does not Granger cause interest rate. This indicates that the two variables are independent of each other. If the first hypothesis is rejected, it shows that interest rate Granger causes consumption. Rejection of the second hypothesis means that the causality runs from consumption to interest rate. If all hypotheses are rejected, there is bi-directional causality between interest rate and consumption.

### 4. FINDINGS AND DISCUSSION

#### 4.1 Descriptive statistics for Variables in the Study

A descriptive statistics including study variables are briefly summarized in Table 1. It contains the mean value of each variable, it’s maximum, minimum, standard deviation and total number of
sample size that are carried out in the study. Generally, the value of all variables used in this study have the lowest standard deviation than the mean value, which explore the slight variation among the studying variables from time to time. Starting with a log of consumption, the average value of consumption in percentage form was 23.36 percent which is almost equivalent to median [23.336] value which justify the existence of normality distribution in this series.

Moreover, the maximum share of this variable was 24.17 in 2016 which was contributed from increases in real income of household [47], and minimum percent of consumption was 22.48 reported in 1991 due to increment rate of inflation rate (raw data of this study). Moreover, inflation rate (LINF) and interest rate (LINT) maintained the mean value of 2.33 percent and 2.175 percent correspondingly, where in this LINF has the maximum of 3.57869 percent reached in 1990 and minimum is 1.5551 was in 2004 while LINT has the maximum value of 3.2037 percent and minimum share was 1.1144 percent reported in 1995 and 2003 respectively.

Finally, when regard with economic growth (LRGDP), the statistical table below reveals that the percentage rate of economic growth in Tanzania reached its maximum share of 6.7651 and it was in 2016 and the lowest rate of economic growth was reported in 1994 and it was 6.12444 percent, the situation of the lowest rate of growth was because of the insufficient share of foreign investment in a country. Finally, the given descriptive statistics below reveals almost all variables applied in the study are distributed asymmetric and do not suffer with non-normality problem.

4.2 Stationarity Test

The unit root tests were used to check whether the data were stationary or not in order to avoid spurious results, this study carried out unit root tests to test for the stationary of all variables using the ADF test. In order to determine the unit root the following hypothesis were used:

H0: All series are not stationary.
H1: All series are stationary.

The results of unit root test (ADF) in Table 2 indicate that cannot reject the null hypothesis at level. However, after taking first difference are able to reject the null hypothesis. Therefore, the results strongly indicate that all the variables are stationary at first difference I (1) and confirm that cointegration test can be used to estimate the results of Fiscal Spending and economic growth in long run.

Tables 3 and 4 show the results for unit root test (ADF) constant without trend. The results indicate that cannot reject the null hypothesis of unit root at level. Yet, after taking first difference we are able to reject the null hypothesis of unit root. Hence, the results strongly indicate that all the variables are stationary at first difference I (1).

4.3 Cointegration Analysis: Johansen Cointegration Test

After detecting that all series are integrated at order one I (1), the study applied Johansen’s maximum likelihood estimation to test for cointegration in order to test the existence of long-run relationship among the non-stationary variables. The Johansen test generally comprises two test known as “Trace statistics” and “Maximum eigen value”.

From the results of cointegration both Max Eigen and Trace test indicate that there is long run relationship between variables. So, it reject null hypothesis at none and at most 1 for first model and at none and most 1 for second model but since probability is greater than 0.05, in both Max Eigen and Trace test, so the study accept the null hypothesis.

4.4 Relationship between Interest Rate and Consumption

Based on DOLS estimator, Table 5 presents the results of interest and consumption for the Tanzania. The estimation needs to include the leads and lags so as to keep away from the autocorrelation problem and to capture the endogeneity of the independent variables. Therefore, the estimation used set of the lags and leads, by using two years lags and two years leads DOLS in order to get the robust results using the model selection criteria.

The estimated DOLS result shows that there is a negative relationship between interest rate on deposit and consumption for the Tanzania economy and this is consistent to a priori expectation. Additionally, it is observed from the estimates results that interest rate on deposit
had an insignificant effect on consumption in Tanzania. However, the result is not surprising in the case of Tanzania. This is because, in recent time, the Tanzania economy has experienced a steady and progressive of reform on financial system especial to increase interest rate on deposit to attract more saving so that to reduce liquidity problem in Tanzania.

Table 2. Descriptive statistics for variables in the study

<table>
<thead>
<tr>
<th></th>
<th>LCONS</th>
<th>LINF</th>
<th>LINT</th>
<th>LRGDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>23.36614</td>
<td>2.331184</td>
<td>2.175456</td>
<td>6.383140</td>
</tr>
<tr>
<td>Median</td>
<td>23.33684</td>
<td>2.064401</td>
<td>2.135751</td>
<td>6.342970</td>
</tr>
<tr>
<td>Maximum</td>
<td>24.17406</td>
<td>3.578955</td>
<td>3.203762</td>
<td>6.765107</td>
</tr>
<tr>
<td>Minimum</td>
<td>22.48465</td>
<td>1.55151</td>
<td>1.114451</td>
<td>6.124449</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.507080</td>
<td>0.67992</td>
<td>0.519299</td>
<td>0.220434</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>1.381661</td>
<td>2.908243</td>
<td>0.230271</td>
<td>2.704021</td>
</tr>
<tr>
<td>Probability</td>
<td>0.501160</td>
<td>0.233605</td>
<td>0.891245</td>
<td>0.258720</td>
</tr>
<tr>
<td>Sum</td>
<td>654.2519</td>
<td>65.27315</td>
<td>60.91276</td>
<td>178.7279</td>
</tr>
<tr>
<td>Observations</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
</tr>
</tbody>
</table>

Table 3. Unit root results (level)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Constant without trend</th>
<th>ADF TEST</th>
<th>P-Value at 5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC</td>
<td>-1.565417</td>
<td>0.4854</td>
<td></td>
</tr>
<tr>
<td>LINT</td>
<td>-2.022921</td>
<td>0.2758</td>
<td></td>
</tr>
<tr>
<td>LINF</td>
<td>-1.693089</td>
<td>0.4228</td>
<td></td>
</tr>
<tr>
<td>LRGDP</td>
<td>-1.446188</td>
<td>0.5428</td>
<td></td>
</tr>
</tbody>
</table>

Table 4. Unit root results (first difference)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Constant without trend</th>
<th>ADF TEST</th>
<th>P-Value at 5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC</td>
<td>-4.382329</td>
<td>0.0021</td>
<td></td>
</tr>
<tr>
<td>LINT</td>
<td>-3.611621</td>
<td>0.0129</td>
<td></td>
</tr>
<tr>
<td>LINF</td>
<td>-4.351681</td>
<td>0.0023</td>
<td></td>
</tr>
<tr>
<td>LRGDP</td>
<td>-2.888733</td>
<td>0.0621</td>
<td></td>
</tr>
</tbody>
</table>

Table 5. Cointegration results

<table>
<thead>
<tr>
<th>Hypothesized</th>
<th>Trace</th>
<th>Max-Eigen</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of CE(s)</td>
<td>Statistic</td>
<td>Critical Value</td>
</tr>
<tr>
<td>None</td>
<td>67.71009</td>
<td>47.85613</td>
</tr>
<tr>
<td>At most 1</td>
<td>31.77567</td>
<td>29.79707</td>
</tr>
<tr>
<td>At most 2</td>
<td>2.849662</td>
<td>15.49472</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.254462</td>
<td>3.841466</td>
</tr>
</tbody>
</table>

Table 6. DOLS estimates of the long run effect of interest rate on Consumption for Tanzania

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINF</td>
<td>0.286411</td>
<td>0.140590</td>
<td>2.037209</td>
<td>0.1113</td>
</tr>
<tr>
<td>LINT</td>
<td>-0.130119</td>
<td>0.278653</td>
<td>-0.46957</td>
<td>0.6648</td>
</tr>
<tr>
<td>LRGDP</td>
<td>1.926688</td>
<td>0.244928</td>
<td>7.866333</td>
<td>0.0014*</td>
</tr>
<tr>
<td>C</td>
<td>10.49230</td>
<td>1.152167</td>
<td>9.106576</td>
<td>0.008</td>
</tr>
</tbody>
</table>

Source: Authors computation, 2018. Note * Significant at the 0.05 level
### Table 7. Granger causality results

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINF does not Granger Cause LCONS</td>
<td>22</td>
<td>3.02524</td>
<td>0.0663**</td>
</tr>
<tr>
<td>LCONS does not Granger Cause LINF</td>
<td>22</td>
<td>0.93740</td>
<td>0.5132</td>
</tr>
<tr>
<td>LINT does not Granger Cause LCONS</td>
<td>22</td>
<td>2.86390</td>
<td>0.0760**</td>
</tr>
<tr>
<td>LCONS does not Granger Cause LINT</td>
<td>22</td>
<td>3.11384</td>
<td>0.0616**</td>
</tr>
<tr>
<td>LRGDP does not Granger Cause LCONS</td>
<td>22</td>
<td>2.79326</td>
<td>0.0807**</td>
</tr>
<tr>
<td>LCONS does not Granger Cause LRGDP</td>
<td>22</td>
<td>7.07348</td>
<td>0.0051*</td>
</tr>
</tbody>
</table>

Note: * and ** represent statistical significance at 5% and 10% respectively.

Source: Author computation, 2018

The implication of this is that the household consumption in Tanzania economy is insensitive to the interest rate condition in the economy. This result is consistent with previous studies which found that interest rate does not have a significant impact on the consumption [36,27].

Furthermore, the result also shows that real GDP and consumption are positively related and statistical significant at 5%. This reveals that an increase in GDP will increase the consumption of household in Tanzania. This finding is consistent with the findings of [48] and [32]. In addition, the findings supported Keynesian’s Absolute Income hypothesis which emphasis consumption being a positive function of disposable income.

With respect to other explanatory variables, it was observed that inflation rate had an insignificant positive impact on consumption with coefficient values 0.28641 percent. The implication of this is that, inflation has less impact on the consumption for the case of Tanzania. The finding is inconsistent with the Osei-Fosu et al. [27] who found that inflation has significant positive impact on consumption for the case of Ghana. The higher inflationary rate can badly affect the purchasing power of the households. The households cannot buy the basic necessities of life.

4.5 Granger Causality

Based on the cointegration results, it can be ascertained that variables are cointegrated, and therefore, are causally related. The Granger causality method is used to test the direction of causality among the variables. Table 6 below shows the results of granger causality that there is a causal relationship between interest rate on deposit and consumption in bi-direction so that changes in the interest rate have effects on consumption and tests showed causal there was effect of changes in consumption on interest rate in Tanzania. This means that an increase or a decrease in interest rate can affect and causes the consumption at 10% significant level. On the other hand, consumption Granger Cause interest rate.

Meanwhile, the result shows that there is bidirectional causality between real GDP and consumption in Tanzania, hence both consumption and real GDP were caused each other. GDP granger cause consumption at 10% significant level and consumption granger cause GDP at 5% significant level. In contrast, the result shows there is bidirectional causality between inflation and consumption in Tanzania, so that changes in the inflation rate have effects on consumption and consumption have effect on inflation significant at 10% level, this means that consumption spending will fluctuate in short run where the fluctuation of inflation will take place.

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The issue of interest rate and consumption have been included in the debate in developing countries like Tanzania since it covers an important area in macroeconomics, which have tried to explain the causal relationship between household consumption and interest rate as well as the effect of interest rate on household consumption in Tanzania. The study used annual data from World Bank online database 2018 for the period 1990 to 2017. Furthermore the knowledge of the relationship between interest rate and consumption is regarded as a benchmark for policy makers since consumption is a key determinant of economic growth of the nation. More important, this study investigated the impact of other essential variables like inflation and disposable income on consumption in Tanzania.
A DOLS estimate was used to test the first hypothesis of no significant long run relationship between interest rate and consumption in Tanzania during period of the study. The null hypothesis was rejected as the result showed that a long run relationship exist between interest rate and consumption. In addition, the findings supported Keynesian’s Absolute Income hypothesis which emphasis consumption being a positive function of disposable income. On the other hand, the granger causality test was employed to test the second hypothesis of no causal relationship between interest rate and consumption in Tanzania. The null hypothesis is accepted as the result shows bidirectional causal relationship between interest rate and consumption in Tanzania.

5.2 Recommendation

Since consumption is effected by fluctuation of interest rate and inflation. Hence, there is the need for government to take urgent steps to implement policies like poverty reduction strategies, agriculture policy and Five Years Development Plans in order to improve the income base of most of households which, stimulate consumer spending. The government should continue to take financial reforms based on monetary policy in order to stabilize economy and promote personal consumption in Tanzania which help to contribute towards the economic growth of the country.

This study recommends for further study to be done by segregating consumption spend in different spending in order to help the policy maker in making appropriate policy intervention.

CONSENT

As per international standard or university standard, respondents’ written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

15. Friedman M, Becker GS. A statistical illusion in judging Keynesian models.


18. Ososfian AO. An asset portfolio management model for Nigerian Commercial Banks; a case study, Department of Economics, University of Ibadan, MBA Project Report; 1993.


23. Kapoor M, Shamika R. The Effect of Interest Rate on Household Consumption; Evidence from a Natural Experiment in India, Indian school of Business, Hyderabad, India; 2009.


38. Thaler, Richard H. Irving Fisher: Modern Behavioral Economist” (PDF). The


46. Engle R, & Granger C. Co-integration and error correction: Representation, estimation and testing. Econometric 55(2) pp.251-276; 1987


© 2021 Fadhil and Rajab; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle4.com/review-history/74962