

An Estimation of the Consumption Function for Kenya Using Keynes' Absolute Income Hypothesis for the Period 1992-2011

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Abstract

This paper presents a consumption function for Kenya for the period 1992 to 2011, estimating total household consumption expenditure against total income. It is based on a study whose main objective was to investigate how consumption expenditure is determined by income according to Keynes' Absolute Income Hypothesis (AIH) for the case of Kenya. The model was tested by ordinary least squares over the period 1992 to 2011. The data was obtained from the World Bank database. The results showed that in Kenya, consumption is determined by income and the AIH was found to work well for the case of Kenya. The author recommends that the government should implement agricultural policies to improve the income base of most households and eradicate poverty and low incomes. The research is significant as it adds to the body of knowledge on the validity of the theories of consumption functions that have been propagated, especially by Keynes, for the case of a developing country like Kenya.

Keywords: consumption function, ordinary least squares, income, keynes, expenditure.

INTRODUCTION

The consumption function refers to the income-consumption relationship. Consumption expenditure varies with changes in income. Normally, when income increases consumption increases but by less than income. The consumption function traces aggregate consumption expenditure related to factors such as income, interest rates etc (Wikipedia, n.d.) Consumption expenditure constitutes the largest proportion of the Gross Domestic Product in most countries. It is imperative to investigate how people spend income in an economy such as Kenya in order to understand consumer behaviour. In developed countries such as the United Kingdom (UK) and United States of America (USA), the consumption of luxury goods is higher while in developing countries they mainly consume basic goods such as food and clothing.

PROBLEM STATEMENT

Since Kenya is a relatively poor country, with 52% of the population living in poverty, most of the income received by most of the poor population is consumed with little savings (Republic of Kenya, 2011). There is thus need to obtain information on the determinants of consumption expenditure because little is understood concerning the various factors affecting it in Kenya. The objective of this paper, therefore, is to test the theory of consumption by Keynes for Kenya and see whether the AIH gives good results for Kenya.

LITERATURE REVIEW

Keynesian AIH, which says that consumption expenditure is related to disposable income, states

that as income increases consumption also increase but less than proportionately. Every increase in income is generally divided into consumption and savings. According to Keynes' (1936) AIH, the marginal propensity to consume (MPC), that is how much extra spending will result from a given increase in income, is positive but less than 1.

In estimating this consumption function in other countries, there have been varied outcomes. Some studies have tested the Keynesian AIH. Davis (1952), using annual data for the USA from 1929 to 1940 estimated that:

$$C_t = 11.45 + 0.78Y_t \quad (1)$$

This function was consistent with the Keynes' AIH since MPC is less than one.

Ferber (1966) carried out empirical studies on US' time-series data on aggregate income and consumption for the periods 1929-1940, 1947-1957 and 1958-1968 and found the following regression results:

$$(1958-1968), C_t = 25.5 + 0.88Y_t \quad (2)$$

$$(1947-1957), C_t = 25.2 + 0.86Y_t \text{ and } (3)$$

$$(1929-1940), C_t = 22.6 + 0.79Y_t \quad (4)$$

These are consistent with the Keynesian consumption function. He found that the regression lines have shifted overtimes. The above short-run consumption functions are known as cyclical consumption functions (Njimanted, 2008).

Kuznets (1942) has conducted a long-run consumption function using US' time series data

from 1897 to 1938. The regression result was in the form

$$C_t = b_0 + b_1 Y_t \quad (5)$$

Kuznets (ibid.) suggests that in the long run, marginal propensity to consume and average propensity to consume are equal and also a constant, not far from one. That is usually between 0.85 and 0.95.

Since the AIH was propagated, many other variables have been added and the theory of the consumption function has undergone some refinements as discussed below.

The Permanent income hypothesis (PIH) is attributed to Friedman (1957) who says that the consumer bases his decision to consume on expenditure from retirement saving decisions. This hypothesis underscores the fact that individuals have both permanent and transitory income (ibid.).

The life-cycle theory of consumer behaviour is articulated by Modigliani. The life-cycle theory assumes that household members allocate their expenditure considering their spending needs and future incomes over the remainder of their lifetimes (Ando and Modigliani, 1963; Brumberg and Modigliani, 1954). The Rational Expectations Hypothesis (REH) was introduced (Gilbert, 1991; Hall, 1978).

Despite the criticisms against the AIH that variables are omitted, it still remains valid. Questions arose from Duesenberry (1949). Duesenberry's Relative Income Hypothesis, which states that consumers base their consumption relative to the rest of the population, was criticized by Tobin (1975).

Another study that refutes AIH is that by Kuznets (1942) in which data from developed countries support the PIH but data from developing does not. Some studies tested PIH for different countries (Modigliani, 1966; Davidson et al., 1978; Ghatak, 1998).

Zuehlke and Payne (1989) have found that the rational expectations PIH could be rejected for 8 developing countries. Chow (1985) has found that for China Rational Expectations (RE) PIH could not be rejected. As demonstrated by Zuehlke and Payne (1989) in developing countries, the REH is questioned for its validity due to lack of efficient credit markets and information flows.

LIMITATION OF THE STUDY

Availability of relevant data is generally a problem in fitting various models in developing countries. The limitation of the research was that there was not enough data available on Kenya to test other consumption function models. Other models did not

fit well the case of developing countries. However, with the data available, the study was able to successfully test the AIH for the case of Kenya.

MATERIALS AND METHODS

The study tests the validity of Keynesian AIH for Kenya using time series data. The Keynesian AIH is tested empirically by using the ordinary least squares. Time series data on household final consumption expenditure and income for Kenya from 1992 to 2011 is used. The source of data is the World Bank database.

The model is:

Linear Consumption Function

$$C_t = b_0 + b_1 Y_t \quad (6)$$

where

C_t is Household consumption expenditure (US\$)

Y_t is income (US\$)

For the linear function

$$MPC = b_1$$

RESULTS AND DISCUSSION

Variables:

Income 0.1168 t-value 9.38

Constant 268.32 t-value 41.30

R-Squared = 0.8761

R-Squared Adjusted = 0.8692

The results were corrected for autocorrelation using the Cochrane-Orcutt procedure (Johnson, 1984).

The coefficient of income was positive as expected. The MPC was positive and less than one and was significant. The variables were significant at both 1% and 5% levels. This agrees with Keynes' (1936) argument that the MPC is positive but less than 1.

The F value is

$$F = 8.244$$

The F value for the null hypothesis was not rejected at 1% level. The F test was used to ascertain structural shift in the consumption function and the function was found to be stable. These findings agree those by Ferber (1966), who estimated the consumption functions in the US for the three different time periods and found that the F for each period indicated stability.

Since the variables are significant, it means that income is indeed a determinant of consumption and there is evidence that the AIH is good enough to be used to fit the data and it is valid for the case of Kenya. The results were that income is a determinant of consumption with a positive MPC less than one. The AIH is therefore important in explaining the income-consumption behaviour in Kenya.

CONCLUSION AND RECOMMENDATIONS

The purpose of the study was to test the consumption function for Kenya and the Keynesian AIH was tested. Evidently, the AIH fits well the case of Kenya, and income is an important determinant of consumption. The government needs to implement agricultural policies to improve the income base of most households and eradicate poverty and low incomes. This is because the F test showed that there is no evidence of structural break in the data and so the consumption function is stable. Therefore, despite the political and economic changes in Kenya over this period, there has not been much change reflected in the parameters tested, that is, income and consumption.

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