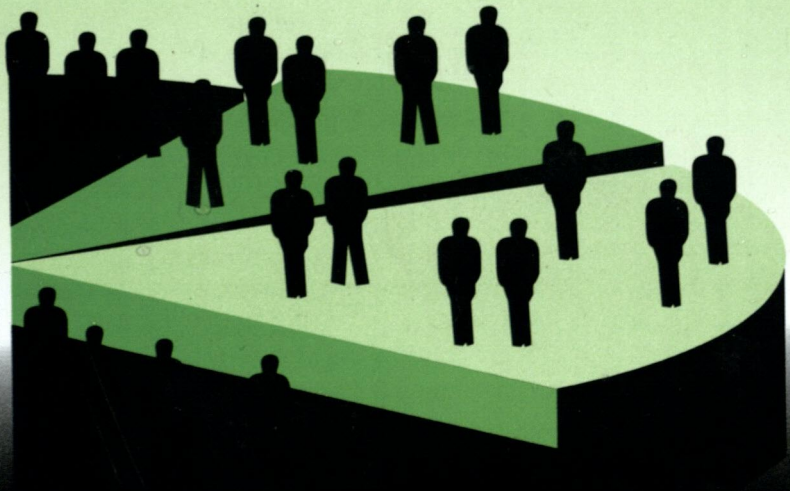
Consumer Behaviour in North East India

James L.T. Thanga



Consumer expenditure is a good measure of standard of living of the people. An increase in total per capita consumer expenditure at constant prices becomes the good indicator of the improvement of standard of living. The book analyzes consumer behaviour, in the allocation of resources to various goods and services, in North East India with special reference to Mizoram. Engel's Law has been taken as underpinning theoretical assumption as declining share of food as consumer's expenditure rises. Various consumption items are classified into necessities and luxuries by estimating their respective expenditure elasticities. The book examines the consumption behaviour of the people in various income classes. In another context, it also examines rural-urban disparities in consumption behaviour. The book may be useful for research scholars, students of economics and management, and the policy makers.

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Introduction

Consumption economics is a branch of economics that focuses on consumer's behaviour as they allocate economic resources to satisfy their wants. Consumption economists make use of a generally accepted or standard body of economic theory about the behaviour of individual consumers and some theory pertinent to total or aggregate consumption for a large group of people, as in a whole country. In addition, researchers and economists carry on empirical investigation resulting into basic understandings about consumption trends and variations emerge from this research. Consumption economics focuses on economic behaviour and economic phenomena, i.e. on the allocation of scarce resources and on the value of goods and services purchased by individual consumers and by groups of consumers.

Consumption economics has been evolving from two lines of economic theory; microeconomic theory of consumer behaviour and macroeconomic theory related consumption behaviour.

1.1 MICROECONOMIC THEORY OF CONSUMER BEHAVIOUR

Economic theory of consumer behaviour was synthesized by Alfred Marshall towards the end of the 19th century from the ideas of the classical economists and the proponents of the marginal utility. Marshall identified consumption with the relationship between consumer choice making and the determination of market prices. At the same time, attention had been given to the relationship effect of family income on consumer behaviour at micro level towards the end of the 19th century.

The concept of utility is basic to the standard theory of consumer behaviour, and most of the formal economics of consumption is built on it. As empirical economics and the science of psychology developed, the impossibility of measuring utility in cardinal numbers caused a cardinal utility explanation of consumer behaviour to lose favour. An ordering

approach, caused indifferences analysis, has gained much favour, especially since J.R. Hicks gave it new impetus by his 1939 exposition in value and capital.

Microeconomic approach consists of two well-known studies: family budget data analysis and market demand analysis. Family budget analysis deals with the cross-section relationship between income levels and the pattern of consumption as across categories of goods and services holding other variables constant. The first well-known family budget analysis was done by Ernst Engel in 1857. The market demand analysis, on the other hand, uses time-series data to analyze the price-demand relationship.

The microeconomic theory of demand has been, systematically, analyzed by economists such as Allen (1935), Hicks (1939) and Samuelson (1947). Empirical investigation has been undertaken to test the theories by several economists such as Schultz (1938), Wold (1943-44 and 1953), Stone (1954), Prais and Houthakker (1955), Houthakker (1957) and others. Family budget analysis generally involved in the estimation of Engel's Curves and the corresponding expenditure elasticities for various groups of commodities. In India, most of the studies on consumption behaviour have been concentrated on estimation of expenditure elasticities for different groups of items using cross-sectional data. Estimation and analysis of expenditure elasticities in India have been done by several Indian economists like Iyengar, *et al.* (1960 and 1968), Sinha (1966), Gupta (1968), Coondoo (1969 and 1975), Singh and Singh (1971), Upender (1998), Prasad (2001).

1.2 MACROECONOMIC THEORY OF CONSUMPTION

The subdivision of economics into micro and macro theory is largely a Post-World War II development. Before 1940 most economic theory pertinent to consumption by large groups of people, as for example, the entire population was developed from the theory of behaviour of an individual consumer by direct generalization. What the individual consumer would do in response to price alternatives or income changes was assumed to hold true for all consumers in a market or country. This assumption ignored differences among individuals and a variety of problems in summing or aggregating over many people and often over several slightly different products. Aggregate consumption has featured in macro-models since Keynes (1936). Keynes postulated the consumption function as the relationship between consumption and disposable income. Macroeconomic approach concentrates on the income-consumption relationship in aggregative form.

The theoretical work of Keynes on the consumption function led to the statistical estimation of the propensity to consume by Kuznets (1946) and Goldsmith (1955). Inspired by the findings of Kuznets and Goldsmith, several economists tried to refine aggregate consumption theory. The most influential attempt on the refinement of Keynesian consumption function had been made by Duessenberry (1949), Friedman (1957), Brumberg, Modigliani and Ando (1954, 1963). At the same time, the consumption function of India have been estimated and analyzed by several Indian economists like Narasimham (1956), Iyengar and Moorthy (1959), Roy Choudhury (1968), Gupta (1970), Mammon (1982)

1.3 PATTERN OF CONSUMER EXPENDITURE IN INDIA

According to the 62nd NSS Round in 2005-06, nearly 19 per cent of the Indian rural population belonged to households with monthly per capita consumption expenditure (MPCE) less than Rs. 365 that is, spending less than Rs. 12 per person per day on consumption, at 2005-06 prices. For rural Orissa and Chhattisgarh, the percentage of population with such low consumption expenditure levels was as high as 44 per cent. For Madhya Pradesh, Jharkhand and Bihar, the percentage was in the range 29-34 per cent. In urban India, where expenditure levels were higher, 22 per cent of the population belonged to households with monthly per capita expenditure less than Rs. 580 (about Rs. 19 per person per day). In urban Bihar, 56 per cent of the urban populations were in this category. In urban Orissa and Uttar Pradesh, the percentage was 36-38 per cent, and in all other major States it was under 30 per cent. Average monthly per capita consumer expenditure (average MPCE) in 2005-06 was Rs. 625 in rural India and Rs. 1171 in urban India at 2005-06 prices.

In 2005-06, on the average, rural Indian spent 53 per cent of their total expenditure on food; while urban Indian spend 40 per cent on food. Value of average food consumption per person in urban areas was within the range Rs. 451-Rs. 500 per month in 7 out of 17 major States. In respect of rural food consumption, 13 major States belonged to the range Rs. 251-400. In rural India, the share of food in total consumer expenditure varied from 44 per cent in Punjab and Kerala to 60 per cent in Assam and 61 per cent in Bihar and Jharkhand. In urban India the share of food was 51 per cent in Bihar and 36-45 per cent in all other major States.

Rural and urban households differed little in the share of the budget allocated to fuel and light (10% for rural, 9% for urban), clothing, including bedding and footwear (7% for rural, 6% for urban), and medical

care (7% for rural, 6% for urban). Rural and urban households differed noticeably in the share of the budget allocated to cereals (17% for rural, 10% for urban), rent (less than 0.5% for rural, 6% for urban), education (3% for rural, 6% for urban), and miscellaneous consumer services including transport and telephone (8% for rural, 14% for urban).

1.3 SCOPE

Empirical study of consumption behaviour generally has three aspects: one, the estimation and analysis of Engel's Curves and the corresponding expenditure elasticities of demand for various items of consumption; two, estimation of demand function and price elasticities of demand; and three, the estimation of aggregate consumption function and the corresponding propensities to consume. Due to the limited availability of time series data on price and quantity demanded for various selected commodity groups for analysis, we do not cover market demand analysis in this book. Accordingly, the study of consumption behaviour in this book used Engel's Law and Keynesian Absolute Income Hypothesis and the subsequent development of consumption function as the underpinning theoretical assumptions. Side by side with the estimated propensities to consume, the saving propensities have been estimated.

1.4 RELEVANCE

The relevance of the study of consumption behaviour arises from the special circumstances of the developing nations like India. The present work analyses the consumption function as applied to the estimation of various expenditure elasticities from the cross-section data of Mizoram state. The estimates of expenditure elasticities are relevant for the producers of various goods and services in the economy. The producers can increase or reduce the quantity of their production according to the projection of demand for the commodities by the estimated consumption function (or Engel's function) or expenditure elasticities. Hence, the estimates can be a basis for the production decision in the economy.

For the government, especially in a developing country, which is trying to secure self-sufficiency in food production, the estimate of consumption function or expenditure elasticity for food items is quite relevant. Projection of future food demand would enable the government to allocate resources to meet the future requirement of its food demand in the economy. Estimates of expenditure elasticities would enable us to identify various commodities into necessity, semi-luxury and luxury items in the

state. This would help the government to achieve its policy of reducing inequality through taxation. Thus, the government can formulate more efficient and effective tax policy to reduce tax burden of the poor.

The estimate of aggregate consumption function is helpful to predict the saving potential of the economy with the changing level of income. Knowledge of future levels of savings will enable the government to decide on the precise investment policies to increase the rate of growth of the economy. Further, estimated propensities to consume can be used to determine or estimate the possible impact of developmental activities undertaken by the government on the income generation and the standard of living through the working of multiplier.

In addition to the estimates of expenditure elasticities for various commodities and marginal propensities, the analysis of the trend of per capita expenditure in NER would enable us to asses the improvement of standard of living in the region. It will also reveal the growing inequalities of rural and urban areas, and inequalities of income and consumption among the people. This will enable the government to pursue right policy measure to achieve an all time objective of growth with social justice.

1.5 OBJECTIVES

The analysis of consumption behaviour on the basis of the fitted Engel's curves helps us in classifying various food and nonfood items as necessities, luxuries and semi-luxuries which would indirectly enable us to asses the aspects of the consumers in NER and in Mizoram in particular regarding their habits, tastes and preferences. The study of consumption behaviour has been made with the following objectives:

(i) To analyze the trend of per capita consumer expenditure, the standard of living by implication, in North-Eastern Region along with the growing rural-urban disparities in income and consumption.

(ii) To review the general patterns of consumer expenditure in various states of NER.

(iii) To classify the various consumption items of the people in Mizoram into necessities, luxuries and semi-luxuries by estimating their respective expenditure elasticities.

(iv) To examine the extent of class difference between various monthly consumers expenditure (MPCE) classes in consumption of various commodities in Mizoram as well as the extent of inequalities in consumption or income.

(v) To examine the rural-urban difference in the consumption behaviour on various goods and services.
(vi) To study the saving behaviour side by side with the estimated aggregate consumption behaviour in Mizoram.

1.6 HYPOTHESES

Proposed hypotheses to be tested in this study are the following:

(i) Consumption expenditure increases with an increase in income, but less than proportionately.
(ii) The proportion of expenditure spent on food decreases as the consumer's expenditure increases.
(iii) There is a significant difference in the consumption behaviour between rural and urban areas.
(iv) Saving is the rising function of income. In other words, as income increases the rate of saving also increases.

1.7 METHODOLOGY

1.7.1 Collection of Empirical Data

Data used in the present study is primarily based on the sample survey conducted in Mizoram by the author during July-August 2007. In the process of generating empirical data on this survey, the method of multi-stage sampling was adopted for both rural and urban areas. Multi-stage sampling consists of the selection of sample from each stage on a simple random basis.

In rural areas, a randomly selected 4 Rural Development (RD) Blocks constitutes the first-stage units. From these 4 Blocks, 11 villages were selected to constitute the second-stage sampling units. From these selected villages, 179 households were selected as the ultimate-sampling units. The required information was obtained from each of this household through schedule questionnaires and direct interview with the respondent. The survey covered 1093 person from 179 rural households.

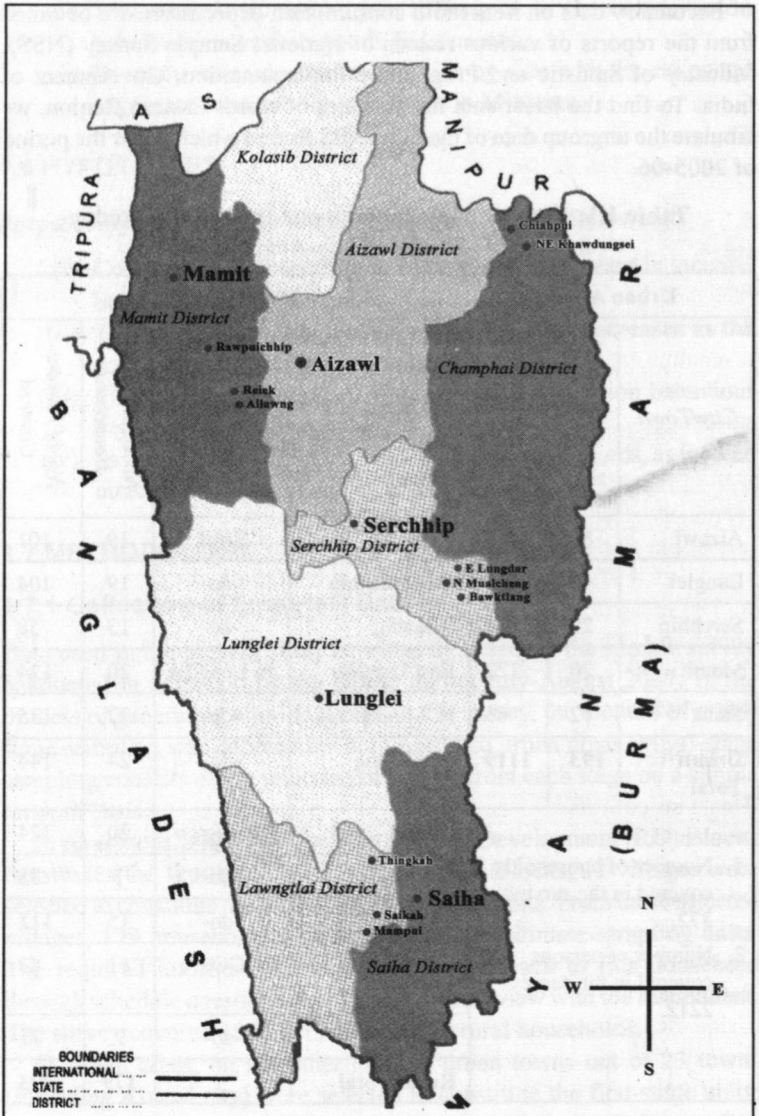
In urban areas, on the other hand, 5 urban towns out of 23 towns (including Aizawl city) were selected to constitute the first-stage units. From these towns, 193 households were selected as the final sampling units. The required information was obtained from each of the selected household. The survey covered 4 urban towns and 1193 person from 193 households. Details of the villages, towns and number of households covered in the study are given in Table 1.1.

Secondary data on household consumption expenditure are obtained from the reports of various rounds of National Sample Survey (NSS), Ministry of Statistic and Programme Implementation, Government of India. To find the latest data for all states of North-Eastern Region, we tabulate the ungroup data of the 62nd NSS Round which cover the period of 2005-06.

Table 1.1: Number of Households and Persons Covered in the Sample Survey of July-August, 2007

Urban Areas			**Rural Areas**			
City/Town	*No. of Sampled Households*	*No. of Persons Covered*	*Villages*	*RD Block*	*No. of Sampled Households*	*No. of Persons Covered*
Aizawl	86	496	Reiek	Reiek	19	101
Lunglei	46	251	Rawpuichhip	-do-	19	104
Serchhip	29	184	Ailawng	-do-	13	58
Mamit	20	122	East Lungdar	E. Lungdar	20	124
Saiha	12	66	N. Mualcheng	-do-	22	135
Urban Total	**193**	**1119**	Bawktlang	-do-	24	144
1. Number of households covered in the survey: 372. 2. Number of persons covered in the survey: 2212.			Saikah	Lawngtlai	20	124
			Mampui	-do-	7	38
			Thingkah	-do-	15	111
			N.E. Khawdungsei	NGOPA	11	83
			Chiahpui	-do-	9	71
			Rural Total		**179**	**1093**

As far as the per capita income of the state is concerned, the required information are obtained from Economic Survey published by Ministry of Statistics and Programme Implementation, Government of India, Statistical Handbook of Mizoram published by the directorate of



Geographical Location of Sample Villages/Town/City

Economics and Statistics, Government of Mizoram and the Basic Statistics of North-Eastern Region published by North-Eastern Council, Ministry

of Home Affairs, Govt. of India. The series of Wholesale Price Indices for Food and Nonfood items are obtained from the 'Wholesale Price Index, Published by Economic Advisory Council, Ministry of Industries, Government of India. In addition to these, the required data are generated from various sources like Reports of Population Census, Published and unpublished articles, etc.

1.8.2 Classification of Household Consumer Expenditure Data

In the sample survey conducted during July-August, 2007, household expenditures are obtained from two broad household items of consumption, namely, expenditure on food items and non-food items. Food item includes (a) beverages, (b) meat, (c) vegetables, (d) cereals, salt, sugar and edible oils. Similarly, non-food item includes (a) pan, tobacco and intoxicants, (b) health care, (c) entertainments and telecommunication, (d) clothing and housing, (e) education, (f) transportation, and (g) miscellaneous. The total monetary value of the household monthly consumption on each of the item divided by household size gives the total monthly per capita expenditure (MPCE).

The expenditure on each of the item is estimated on the basis of its consumption during the reference period. Reference periods are allotted to different items on the basis of the length of time on which the consumption can be recalled.

1.8.3 Methods of Analysis

The data so collected in the survey are analyzed and compared using regression technique, Analysis of Variance (ANOVA) technique, Analysis of Covariance (ANOCOVA) technique and the Chow Test.

The present study considered per capita monthly consumer expenditure and its dis-aggregation into broad expenditure groups. The Ordinary Least Squares (OLS) method is used for estimation of regression equations. Parameters are estimated by using linear and log-linear Engel's functions. Using the estimated parameters of Engel's functions, we finally calculate the expenditure elasticities for each group. In the process of estimation of Engel's curves we used the total consumer expenditure as an independent variable. The effect of family sizes on household consumption behaviour have also been analyzed using double-log Engel curve where family size is used as one of the explanatory variables.

The sample households are divided into six Monthly Per Capita Consumer Expenditure (MPCE) classes. Separate regressions for all

commodities are estimated in each of the MPCE class. Estimates of regression line represent the consumption behaviour of their respective class. The significance of the difference in consumption behaviour among six classes is tested using the ANOVA technique under the null hypothesis of equal slope (marginal propensity) coefficients for all classes.

Comparative analysis of consumption behaviour between rural and urban areas of Mizoram has been done on the basis of the estimated regressions for both areas. The expenditure elasticities so calculated are used to explain the rural-urban differentials in consumption behaviour. To test the significance of the difference between rural and urban areas, the technique of ANOCOVA has been adopted for all commodities. The null hypothesis underlying ANOCOVA are equal intercept, slope and overall regressions for both areas. Further, the Chow Test has been used to test the equality of marginal propensity to consume for aggregate consumption functions between rural and urban areas of Mizoram.

1.9 CONCEPTUAL FRAMEWORKS

The study being made in this book is primarily based on two theories of consumption behaviour, namely, Engel's Law and Consumption Function.

1.9.1 Engel's Law

Ernst Engel (1821-96) in 1857[1] published an empirical law concerning the relation between income and expenditure on food on the basis of his study on the conditions of production and consumption in the Kingdom of Saxony and this have become the famous Engel's Law. Engel's Law states that the proportion of income spent on food declines as income rises. Its original statement was mainly based on an examination of about two hundred budgets of Belgian labourers collected by Ducpetiaux (1855)[2]. Since then the law has been found to hold in many other budget surveys; similar laws have been formulated for other items of expenditure (Houthakker, 1957)[3].

Engel used total expenditure as a measure of total purchasing power, rather than income, apparently because of difficulties in obtaining data. The ratio of variations in food expenditure to variation in total expenditure is somewhat lower than the ratio of variation in food expenditure to variation of income because part of the variation in income is taken up

by the variation in savings. However, Engel's law is stated in such general term 'income' can be substituted for 'total expenditures' without changing the interpretation.

1.9.2 Engel Curve

For any single commodity, the relation between income and consumption can be summarized in a convenient form for statistical determination known as the Engel Curve. A good is called normal if its consumption increases in response to an increase in income and conversely decreases in response to a decrease in income. In the case of normal good, a positive relationship exists between income and consumption; it follows that Engel curve must have a positive slope. On the other hand, a good is called inferior if its consumption decreases in response to an increase in income and vice versa, if it increases in response to a decrease in income. In case of inferior good Engel Curve is negatively sloped.

1.9.3 Engel Curve and Income Elasticity of Demand

The income elasticity is defined as the proportionate change in the quantity demanded resulting from a proportionate change in income. It is the measure of the degree of sensitivity of consumer purchase of goods to changes in income of the consumer. The most direct measure of the sensitivity of a consumer's purchase of good X to changes in income Y would be the ratio $\Delta X/\Delta Y$. For small changes, ΔX and ΔY, this ratio can be interpreted as the slope of the Engel Curve. We can write this as the derivative dX/dY, where the symbol 'd' indicated the effect of varying the underlying parameter. Symbolically, the income elasticity of demand may be written:

$$h = \frac{dQX}{dY} \cdot \frac{Y}{QX} \qquad \ldots (1.1)$$

The income elasticity is greater than, equal to, or less than unity depending upon whether the slope along the Engel Curve is greater than, equal to, or less than the slope of a ray drawn from the origin to the curve. If income elasticity is negative, the Engel Curve has negative slope.

On the basis of the income elasticity economists divide goods into normal and inferior. Further, Normal goods are subdivided into two sub-groups: just normal and ultra-superior (also known as luxuries). Goods whose income elasticity is between 0 and 1 are just normal; and goods

whose income elasticity is greater than 1 are normal, but they are also known as ultra-superior. In summary, we can state:

(i) If the commodity is inferior, income elasticity is negative. Inferior goods are not often encountered. Recent studies of consumers' responses to changes in income indicate that commodities are either normal or ultra-superior
(ii) Goods such as furniture, cars and whisky are ultra-superior. Goods such as food, clothing and transportation are normal in the sense that consumers always increase consumption of these aggregate goods in response to a rise in their incomes.
(iii) If the commodity is just normal, income elasticity is between 0 and 1.
(iv) If he commodity is normal, but also ultra-superior, income elasticity is greater than 1.

1.9.4 Various Forms of the Engel Functions

This part attempts to give a brief highlight of the various forms of Engel's functions being used in empirical research. It may not be possible to give all forms of Engel's functions used by economists in different parts of the world, but an attempt is made here to give the most commonly used forms of Engel function in empirical research. The various forms of Engel function being used in empirical research are given in Table 1.2 where 'y' denote the money expenditure on particular good or service and 'x' being total income or total expenditure of the consumer.

The choice of particular form of Engel's curves is widely discussed in economic literature, but there is no compromise on what form of Engel's curves is to be used till today. So, the choice of function depends on individual consideration on the basis of goodness of fit, absence of auto-correlation, economic interpretation and computational simplicity.

1.9.5 Absolute Income Hypotheses

J.M. Keyes in his book 'The General Theory of Employment, Interest and Money' (1936)[4] stated the relationship between income and consumption as 'men are disposal, as a rule and on the average to increase their consumption as their income increase, but not by as much the increase in their income". The theory of consumption is an integral part of his General Theory. Keynes was concerned only with total consumption, defined as real consumption expenditure for all goods and services. He clearly stated the hypothesis that (a) real consumption expenditure is a

Table 1.2: Forms of Engel's Functions

Name	*Functions*	*Estimators of Elasticity*
Linear	$y = a + bx$	$b\frac{x}{y}$
Double-log	$\log y = a + b \log x$	B
Quadratic	$y = a + bx + cx^2$	$bx + 2\frac{x^2}{y}$
Semi-log (a)	$\log y = a + bx$	$\frac{b}{y}$
Semi-log (b)	$y = a + b \log x$	bx
Inverse	$y = a - b(\frac{1}{x})$	$\frac{b}{xy}$
Log-inverse	$\log y = a - b\,(1/x)$	$\frac{b}{x}$
Log-log-inverse	$\log y = a + b \log x - c\,(1/x)$	$b + \frac{c}{x}$
Double-log (with family size n)	$\log y = a + b \log x + \log n$	*b (partial elasticity w.r.t. x)* *c (partial elasticity w.r.t n)*

stable function of real income, and (b) The MPC is positive but less than one. Marginal propensity to consume is the ratio of an absolute change in consumption to an absolute change in income.

Keynes also proposed two other hypotheses: the marginal propensity to consume (MPC) is less than average propensity that declines at higher levels of income. The Keynesian short-run consumption function is represented by linear equation $C = a + bY_d$ where $a>0$ and $b<1$ (i.e. MPC<1).

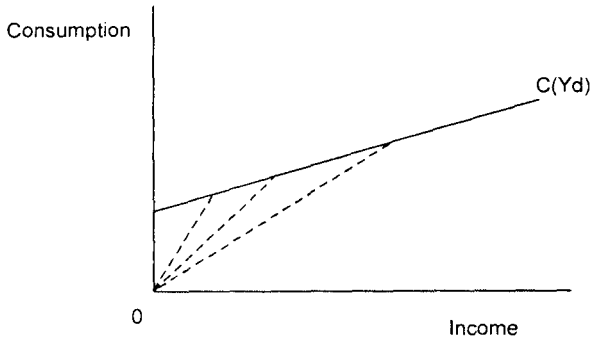


Fig. 1.1

In Figure 1.1, 'b' is the slope of the consumption function (C) or MPC and the slope of the dotted lines drawn from the origin to the consumption function indicate the average propensities to consume (APC) which decrease at higher levels of income. Further, it can be seen from the diagram that the cross-section results of APC>MPC is being realized in the Keynes' Absolute Income Hypotheses.

The Keynesian consumption function, typified in Figure 1, fits admirably two kinds of empirical data. First, economy-wide time series of consumption and income for the period between the two world wars (i.e. 1914-1939) lie along the function of the Keynesian type. Secondly, any cross-section survey of household budget appears to confirm Keynesian Psychological Law at a microeconomic level. After World War II, however, several pieces of evidence cast doubt on the Keynesian consumption function. The reappraisal that followed led to new theories and deeper empirical investigation of the determinants of household consumption. First, extrapolations of statistical consumption functions based on prewar US data to potential postwar income levels greatly underestimated the postwar propensity to consume. Secondly, just as the interwar Keynesian consumption function forecasts too much savings after World War II, it 'back casts' too little saving before World War I.

Recognition of these facts led a number of investigators to formulate and test hypotheses that would explain the above defects and success—broadly speaking, hypotheses that would reconcile the short-run, or cyclical, success of the Keynesian consumption function with its long-run or secular failure. In the early 1940's Samuelson (1943) proposed a 'ratchet' model which stated that consumption grows in the long-run roughly in proportion to income; but during cyclical interruptions of long-run growth, consumers defend living standards already attained, and

consequently consumption follows a flatter (lower MPC) Keynesian path. Following the work of Samuelson, several economists including Duessenberry, Modigliani and Friedman started new theories and hypotheses that are discussed separately in the following section.

1.9.6 The Relative Income Hypotheses

Duessenberry (1949)[5] proposed the relative income hypothesis to reconcile the long run and short-run consumption function. According to this Hypothesis, relative rather than absolute income is the basis for the consumer spending-saving decision. His analysis is based on two relative hypotheses: The first hypotheses is essentially that consumers are not so much concerned with their absolute level of consumption as they are with their consumption relative to the rest of the population. 'Current consumption standards or desires are influenced by other people's consumption behaviour, and desires for future consumption will be influenced in the same way' (Duessenberry, 1949)[6]. This leads to the result that the individual's consumption-income ratio (C/Y) would depend on his position in the income distribution. A person with an income below the average will tend to have a high C/Y ratio, because he is trying to keep up to a national average consumption standard with a below average income. On the other hand, an individual with an above average income will have a lower C/Y ratio.

The second hypothesis is that merely present levels of an absolute and relative income do not influence the present consumption, but also the levels of consumption attained in previous periods. It can also be stated that the ratio of saving to disposable income (S/Y_d) to be the function of current disposable income relative to the highest (peak) disposable income Y_d^*. If in some period t, for instance, disposable income at time t were to fall below previous peak level, consumers would defend their consumption by reducing savings and (S_t/Y_{dt}) would fall. On the other hand, if Y_{dt} were to rise at a relatively steady rate consumption would progressively adjust itself to the new high level of disposable income, and S_t/Y_d would be constant. The resulting consumption function may be written in the following form:

$$\frac{S_t}{Y_{dt}} = a\frac{Y_{dt}}{Y_d^*} + b \quad \text{(Saving function)} \qquad \ldots (1.2)$$

or

$$\frac{C_t}{Y_{dt}} = 1 - \frac{S_t}{Y_d} \quad \text{(Consumption function)} \ldots (1.3)$$

$$= 1 - \left(a \frac{Y_{dt}}{Y_d *} + b \right)$$

Where S_t = Personal saving in period t; Y_{dt} = Disposable personal income in period t and Y_d* = Previous peak disposable income.

1.9.7. The Permanent-Income Hypothesis

Milton Friedman's (1957)[7] permanent income hypothesis is to the effect that permanent consumption is proportional to permanent income. He argues that observed, current income consists of a transitory component and a permanent component and that observed consumption has comparable parts. Permanent income during a given period cannot be observed but is hypothesized to be the discounted value of wealth expected over a consumer unit's lifetime.

In formal terms, Friedman's permanent income hypothesis is stated by the three equations:

$$Y = Y_p + Y_t \quad \ldots (1.4)$$

$$C = C_p + C_t \quad \ldots (1.5)$$

$$C_p = k\,(i, w, u)\, Y_p \quad \ldots (1.6)$$

Where

C = actual consumption in some time period.
C_p = expected value of consumption or permanent consumption.
C_t = transitory consumption.
Y = actual income in the same time period
Y_p = expected value of income or permanent income
Y_t = transitory income.

Equation (1.6) defines a relation between permanent income and permanent consumption. It specifies that the ratio between them is independent of the size of permanent income but does depend on other variables, in particular: (1) the rate of interest (i) or sets of rates of interest at which the consumer unit can borrow or lend; (2) the relative importance of property and non-property income, symbolized by the ratio of nonhuman wealth to income (w); and (3) the factors determining the consumer's tastes and preferences (u) (Friedman, 1957). Further, permanent income hypothesis is based upon the assumptions: (1) there is no correlation between permanent income and transitory income; (2) there is no correlation between permanent consumption and transitory consumption; and (3) there is no correlation between transitory income

and transitory consumption. Symbolically, these assumptions can be stated as $ryy_p = r_{ctcp} = r_{ytct} = 0$

1.9.8 THE LIFE-CYCLE HYPOTHESIS

According to this hypothesis put forward by Ando, Brumberg and Modigliani[8] since the early 1950's, an individual's consumption depends on his life cycle income and the role of saving is to even out fluctuations in the income stream of the individual during his lifetime. The typical income pattern over an individual's lifetime would be a low level in the early years of life, which rises steadily and attains a peak around middle age and thereafter declines to relatively low levels again during the closing years of his life. The reason for this is that an individual's productivity curve also follows a similar pattern: relatively low productivity levels in the beginning and end of his life.

To explain the long run stability of the average propensity to consume, Ando and Modigliani (1963)[9] build a model of consumption based on several assumptions. If the population distribution by age and income is relatively constant, and taste between present and future consumption are stable through time, we can add up all the individual consumption functions to a stable function, i.e.

$$C_t = K(PV_t) = K\left(\sum \frac{Yt}{(1+r)^t}\right) \qquad \ldots (1.7)$$

Where C is consumption; Y is income; the lower case t indicate time period; and k is the fraction of consumers' Present Value of future income (PV) that they want to consume in period t.

Income is classified into two categories—labour income (Y_L) and property income (Y_p). The present value of income in the current time period can then be written as:

$$PV_0 = \sum_0^T \frac{Y_{tL}}{(1+r)^t} + \sum_0^T \frac{Y_{tp}}{(1+r)^t} \qquad \ldots (1.8)$$

The present value of the property income is assumed to be equal to the value of the property itself at the beginning of the current period. Also the current labour income that is known is isolated from the expected future labour income. These two considerations make:

$$PV_0 = Y_{0L} + \sum_1^T \frac{Y_{tL}}{(1+r)^t} + a_0$$

But the average expected future labour income in time 0 (Y_0^L) is given by:

$$Y_0^L = \frac{\sum_1^T \frac{Y_{tL}}{(1+r)^t}}{T-1}$$

Therefore,

$$\sum_1^T \frac{Y_{tL}}{(1+r)^t} = (T-1)\ Y_0^L \qquad \ldots (1.9)$$

where T–1 is the average remaining life expectation of the population. And hence,

$$PV_0 = Y_0^L + (T-1)\ Y_0^L \qquad \ldots (1.10)$$

Further, to relate average expected future labour income to current labour income, Ando and Modigliani assumed that the former is some multiple of the latter: That is,

$$Y_0^e = \beta\ Y_0^L;\ \beta > 0 \qquad \ldots (1.11)$$

We then have

$$PV_0 = Y_0^L + (T-1)\ \beta Y_0^L + a_0 = [1+\beta\,(T-1)]\ Y_0^L + a_0$$

This gives

$$C_0 = k[1+\beta\,(T-1)]\ Y_0^L + ka_0 \text{ and}$$
$$C_t = k[1+\beta\,(T-1)]\ Y_t^L + ka_t$$
$$\therefore \quad C_t = \alpha\, y_t^L + ka_t \qquad (1.12)$$

Where $\alpha = k[1 + \beta\,(T-1)]$

Dividing both sides of the above equation by Y_t, we get

$$\frac{C_t}{Y_t} = \alpha \frac{Y_{tL}}{Y_t} + k\frac{at}{Y_t} \qquad \ldots (1.13)$$

Hence, $S_t/Y_t = 1 - C_t/Y_t$ will remain constant if C_t/Y_t remains constant. And C_t/Y_t will remain constant if Y_t^L/Y_t the share of labour in the total income and a_t/Y_t, the ratio of assets to income remains more or less constant.

The Ando-Modigliani consumption function also explains the short run fluctuations in consumption. In the short run, assets may be assumed to remain constant. Hence, during a recession, the ratio a_t/Y_t will rise and

hence C_t/Y_t will also rise. Conversely, during a period of prosperity a_t/Y_t will fall and hence so will C_t/Y_t.

The Life Cycle hypothesis thus explains all the three observed phenomena regarding consumption: that MPC<APC in cross section studies; that MPC<APC during business cycles; that APC is constant in the long run. In addition, the hypothesis also brings out the relation between wealth and saving.

1.9.9 The New Theories of the Consumption Function

In addition to the above three hypothesis, the literature of consumption function occupied one of the most important places in economic research. The new theories of the consumption function include the *Normal Income Hypotheses*, the *Proportionality Hypotheses* and the *Rate of Growth Hypotheses*. However, the dates and persons are misleading, as these theories were circulated in mimeograph and widely discussed as early as 1953 (Farrell, 1959)[10].

The Normal Income Hypothesis attempts to clarify the vagueness of the basis of new theories that the consumption in a year not only depends on the income in that year but on the life span resources in order to maximize the utility rationally. But future is always uncertain and rational behaviour in uncertainty seems misleading. The hypothesis is that the current income (y) of a consumer affects consumption (c) through its effect on normal income (γ). Proportionality Hypothesis is related with β, the slope of the consumption function. This theory says that the consumption function would be a straight line passing through the origin. The hypothesis is equivalent to saying that the consumption is proportional to the normal income of an individual consumer. Lastly, the Rate of Growth Hypothesis is pertaining to the long period equilibrium and says that aggregate saving is influenced by the changes in population structure and in per capita real income. In case these factors are readily changing the part of aggregate income saved is proportional to the rate of growth of aggregate real income.

1.10 PROFILE OF NORTH-EASTERN INDIA

1.10.1 The Land

North-Eastern India, synonymously known as North-Eastern Region (NER), comprises of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. It is lying between 21.57°N-29.30°N latitude and 88°E-97.30°E longitude. It cover the total area of 2,62,179 Sq. Km which is 7.9 per cent of the total land area of the country.

It has a strategic location having international boundaries with Myanmar in the East, China in the North, Bangladesh in the South-West and Bhutan in the North-West. The McMahon line separates North East India from Tibet. This region is connected with the rest of India only through a narrow corridor in North Bengal, having an approximate width of 33 km on the eastern side and 21 km on the western side. This narrow corridor is popularly known as the 'Siliguri neck' or the 'Chicken's neck'.

North East India is mostly hilly; it has plains on both sides of the river Brahmaputra and the Himalayan range around it. The region is of strategic importance for the country on account of the fact that nearly 90 per cent of its borders form India's international boundaries. About 70 per cent of the region is hilly, and the topography varies within each state. Mountains and hills cover most of Arunachal Pradesh, Mizoram, Nagaland, Meghalaya, Sikkim and about half of Tripura, one-fifth of Assam and nine-tenth of Manipur. The plains of the region are mainly made up of separate land masses—the Brahmaputra Valley and the Barak Valley in Assam and the Tripura plains in the South. In Manipur, the valley is small, comprising only about 10 per cent of the total area of the state. The Brahmaputra Valley stretches longitudinally for about 730 km, from North Lakhimpur to Dhubri district in Assam. The Barak Valley, formed by the river Barak and its tributaries covers the districts of Cachar, Karimganj and Hailakandi of South Assam. The Tripura plain is an extension of the Ganga-Brahmaputra plain.

1.10.2 Climate

The rainy season in this region generally commences from March and lasts till the middle of October. The total annual rainfall varies significantly in the region. In Khasi and Jaintia Hills, the annual intensity of rainfall reaches the maximum of about 1080-cm around Cherrapunjee and Mawsynram (having highest rainfall in the world). It is significantly low in the rainshadow area of Nagaon district in Assam. About two-thirds of the annual total rainfall occurs during the four monsoon months of June to September.

The North Eastern region has distinct climate variations. The rapid changes in topography result in climate changes within short distance. Generally the daily temperature in the plains of Brahmaputra and the Barak Valley as well as in Tripura and in the western portion of Mizo Hills is about 15°C in January, whereas in other parts of the region, the temperature is between 10°C to 15°C. From April it rises and in July except the south-eastern portion of Mizo hills and Shillong, the mean temperature ranges from 25°C to 27.5°C. During October, daily mean temperature in the hilly areas ranges between 20°C and 25°C, whereas in

Brahmaputra and Barak Valley, Tripurá and the western portion of the Mizo hills it is above 25°C. Further the lowest temperature is experienced below freezing point in the upper Himalayas in Arunachal Pradesh.

1.10.3 The People

The region is marked by uneven spatial distribution of population among the constituent states, the primary reason being that the plains and valleys offer more congenial conditions for absorption of population than the hills and difficult terrains. Apart from Assam and Tripura, the NE states are mostly inhabited by tribes having unique social and cultural practices. Overall, tribals (i.e. Schedule Tribe) account for over 26.9 per cent of the total population of this region. However, in Arunachal Pradesh, Meghalaya, Mizoram and Nagaland, scheduled tribes comprise more than 60 per cent of the population. That is what gives these states a predominantly tribal character. The major religions of the people in this region are Hinduism, Islam, Christianity and Buddhism.

Table 1.3: Total Population, Land Area, Density, Population of Scheduled Castes and Scheduled Tribes and Their Proportions to the Total Population

State	*Total Population*	*Area (Sq. kms)*	*Density (Persons/ Sq. kms)*	*SC (%)*	*ST (%)*
Arunachal Pradesh	1097968	83743	13	0.56	64.2
Assam	26655528	78438	340	6.85	12.4
Manipur	2166788	22327	97	2.77	34.2
Meghalaya	2318822	22429	103	0.48	85.9
Mizoram	888573	21081	42	0.03	94.5
Nagaland	1990036	16579	120		89.1
Sikkim	540851	7096	76	5.02	20.6
Tripura	3199203	10486	305	17.37	31.1
NER Total	**38857769**	**262179**	**148**	**6.40**	**26.93**
All India	**1026443540**	**3166285**	**324**	**16.20**	**8.1**

Source: Primary Census Abstract: Census of India 2001.

As it is given in Table 1.3, the population density of the region was 148 persons per sq. km which is less than the national average of 324. Among the NE states, Arunachal Pradesh has the lowest population density followed by Mizoram; while Assam has the highest followed by Tripura.

Mizoram, as it is given in Table 1.5 has the highest literacy rate at 88.80 per cent, which is the second in India after Kerala; while lowest

literacy rate is observed in Arunachal Pradesh (54.30%), which is below the national average of 62.8 per cent. For the states of Manipur, Meghalaya, Nagaland, Sikkim, Assam and Tripura the literacy rate was in the range 60-75 per cent. In respect of female literacy, it is highest in Mizoram (86.70%) and lowest in Arunachal Pradesh; while it was in the range 54-65 per cent in all other states. The sex ratio is found to be highest in Manipur (978) and lowest in Sikkim (875). Further, according to the 2001 census, more than 70 per cent of the total population lived in rural areas in all States of NER except for Mizoram in which rural population accounted for 50.37 per cent.

Table 1.4: Literacy Rates and Sex Ratios in North-Eastern Region

State	*Population*			*Literacy Rate*			*Sex Ratio*
	Person	*Male*	*Female*	*Person*	*Male*	*Female*	
Arunachal Pradesh	1097968	579941	518027	54.30	63.84	43.54	893
Assam	26655528	13777037	12878491	63.37	71.30	54.60	935
Manipur	2166788	1095634	1071154	70.50	80.30	60.50	978
Meghalaya	2318822	1176087	1142735	62.60	65.40	59.60	972
Mizoram	888573	459109	429464	88.80	90.70	86.70	935
Nagaland	1990036	1047141	942895	66.60	71.20	61.50	900
Sikkim	540851	288484	252367	68.80	76.00	60.40	875
Tripura	3199203	1642225	1556978	73.20	81.00	64.90	948

Source: *Primary Census Abstract*: *Census of India 2001.*

Table 1.5: Distribution of Population by Area-2001 (Persons)

State	*Total*	*Rural*	*Urban*	*Rural (%)*	*Urban (%)*
Arunachal Pradesh	1097961	870087	227881	79.25	20.75
Assam	26655528	23216288	3439240	87.10	12.90
Manipur	2166700	1590820	575968	73.42	26.58
Meghalaya	2318822	1864711	454111	80.42	19.58
Mizoram	888575	447567	441006	50.37	49.63
Nagaland	1990036	1647249	342787	82.77	17.23
Sikkim	540851	480981	59870	88.93	11.07
Tripura	3199203	2653453	545750	82.94	17.06
NER Total	**38857676**	**32771156**	**6086613**	**84.34**	**15.66**
All India	**1.029E+09**	**742490639**	**286119689**	**72.18**	**27.82**

Source: *NER Basic Statistics 2006.*

1.10.4 The Economy

The Net State Domestic Product (NSDP) at Factor Cost and per capita NSDP at constant prices (1999-00 as base year), for all States for the year 1999-00 and 2005-06 are given in Table 1.6. The Per Capita NSDP in North-Eastern India ranged from Rs. 14786.00 in Assam to Rs. 21524 in Sikkim. For the states of Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura, the per capita NSDP was in the range Rs. 14786-21524.

Table 1.6: Net State Domestic Product at Factor Cost by Industry of Origin and Per Capita NSDP at 1999-2000 Prices in North-Eastern India

States	*NSDP at Factor Cost by Industry Origin (Rs. Lac)*			*Per Capita NSDP (in Rs)*		
	1999-00	*2004-05*	*2005-06*	*1990-00*	*2004-05*	*2005-06*
Arunachal Pradesh	150380	224121	233030	13990	19336	18390
Assam	3201066	3977716	4214971	12282	14149	14786
Manipur	295411	407036	452195	13260	16482	17950
Meghalaya	326851	431755	449175	14347	17618	18459
Mizoram	140951	183939	196496	16443	18904	19691
Nagaland	255618	430420	–	13819	18147	18318
Sikkim	76536	110194	119121	14119	19825	21524
Tripura	449557	663924	719741	14890	19332	20609

Source: Central Statistical Organisation (CSO).

http://db.nedfi.com/content/nsdp-north-east-states

The economy of North-Eastern India is basically agrarian with low industrial activities where public expenditure is the main driving force of the economy. From the percentage distribution of NSDP in North-Eastern States, given in Table 1.7, for the year 2002-03, agriculture and allied activities remains the main component of states' incomes. Its share ranged from 23.66 per cent in Sikkim to 35.82 per cent in Arunachal Pradesh. The share of agriculture and allied activities in the NSDP was in the ranged 24-35 per cent in all other states. The contributions of industrial sector are more or less considerable in the states of Assam (15.33%), Meghalaya (8.96%) Manipur (7.68%); while it is not considerable in all other states. At the same time, the contribution of service sector is very high in all states of the region. It ranged from 49.83 per cent in Assam to

Table 1.7: Components of NSDP at Factor Cost by Industry of Origin at Constant Price (Base: 1993-94 = 100) for the year 2002-2003

Sates	*Rs. Crore*			*Percentage Share*		
	Agricul-ture and Allied Activity	*Industry*	*Service*	*Agricul-ture and Allied Activity*	*Industry*	*Service*
Arunachal Pradesh	625.00	72.80	1047.00	35.82	4.17	60.01
Assam	11678.00	5139.00	16700.00	34.84	15.33	49.83
Manipur	989.10	248.60	2001.00	30.54	7.68	61.78
Meghalaya	1045.40	356.40	2574.00	26.29	8.96	64.74
Mizoram	490.90	43.60	1493.00	24.21	2.15	73.64
Nagaland	1484.60	6.90	2967.00	33.30	0.15	66.55
Sikkim	262.80	61.50	786.40	23.66	5.54	70.80
Tripura	1823.60	220.80	4040.00	29.97	3.63	66.40

Source: *Central Statistical Organisation (CSO).*

http://db.nedfi.com/content/nsdp-north-east-states

73.64 per cent in Mizoram. The major crops cultivated in North-Eastern Region are tea and rice; and the major minerals are coal, petroleum and natural gas.

NOTES

1. Engel, Ernst (1857): *Die Production and Consumtionswerhaltnisse des Konigreichs Sachsen.* Dresden.
2. *Ducpetiaux* (1855): Budgets econoiques des classes ouvricres en Belgique, Brussel.
3. Houthakker, H.S. (1957): An International Comparison of Household Expenditure Patterns, Commemorating the Centenary of Engel's Law. *Econometrica*, Vol. 25, No. 4 (Oct.), pp. 532-551.
4. Keynes, J.M. (1936): *The General Theory of Employment, Interest and Money.* Macmillan, New York.
5. Duessenberry, James (1949): *Income, Saving and the Theory of Consumer Behaviour.* Harvard University Press, Cambridge, Massachussets, 1967.
6. *Ibid.*

7. Friedman, Milton (1957): *A Theory of Consumption Function.* Oxford & BH Publishing Co. New Delhi, 1970.
8. Modigliani, Franco and Richard Brumberg (1963): *Utility Analysis and Consumption Function: An Interpretation of Cross section data.* Post Keynesian Economics, Rutgers Univ. Press. pp. 388-436; and Modigliani, F. and A. Ando: The Life Cycle Hypothesis of Saving: Aggregate Implications and Tests. *American Economic Review*, Vol. 53, (1963) pp. 56-83.
9. *Ibid.*
10. Farrel, M.J. (1959): *The New Theories of Consumption Function.* Economic Journal Vol. 69, pp. 678-696.

REFERENCES

1. Stigler, George J. (1954): The Early History of Empirical Studies of Consumer Behaviour. *The Journal of Political Economy*, Vol. LXII, April, pp. 95-113.
2. Upender, M. (1998): Estimates of Expenditure Elasticities of Demand. *Finance India,* Vol. XII, No. 3, September.
3. Sinha, R.P. (1966): An Analysis of Food Expenditure in India. *Journal of Farm Economics*, Vol. 48, No. 1 (Feb.), pp. 113-123.
4. Gupta, D.B. (1968): A Comparison of Consumption Patterns in Uttar Pradesh and Madras—A study of inter-regional variations with reference to India. *Indian Economic Review*, New Series, 3, pp. 129-144
5. Prasad, A.R. (2001): *Consumption Behaviour in India: Theory and Evidence*. Reliance Publishing House, New Delhi pp. 342-343.
6. Rudra, A. (1972): *Survey of Research on Consumption, Saving sand Capital Formation.* The Data Base of Indian Economy. Indian Econometric Society, New Delhi.
7. Rudra, A. (1976): Consumption, Savings and Capital Formation—A Trend Report, in Lakdawala, D.T. (ed.), *A Survey of Research in Economics, Vol. 2, Macro-economics*, (ICSSR Project), Allied Publishers, New Delhi, pp. 47-123.
8. Samuelson, P.A.: The Simple Mathematics of Income Determination, in *Income, Employment, and Public Policy* (W.W. Norton, 1948), Reprinted in W.L. Johnson and D.R. Kamerschen (Eds.), *Macroeconomics: Selected Readings* (Houghton Miffin 1970), pp. 39-49.

9. North-Eastern Council (2006): *Basic Statistics of North Eastern Region.* Ministry of Home Affairs, Govt. of India.
10. Ackley, G. (1969): *Macroeconomic Theory.* MacMillan Company, New York.
11. Koutsoyannis, A. (1979): *Modern Microeconomics.* 2nd ed. McMillan, Hongkong.