

# Permanent Income Hypotheses and Life Cycle Income Hypotheses to Study Consumption Behavior

Dr. Suhasini Parashar

Associate Professor, Department of Business Administration  
Maharaja Surajmal Institution, New Delhi, India

DOI:10.37648/ijtbm.v14i01.002

<sup>1</sup>Received: 29 November 2023; Accepted: 28 January 2024; Published: 05 February 2024

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## ABSTRACT

Behavioral economists introduced that individuals find it not easy to plan for the future, which leads them to save too little to maintain their level of consumption during work time and after it. Consumption for consumers depends on financial wealth and savings at the micro and macro levels. There are various functions within the area of economics and forecast changes by variables that affect consumption, these are income, taste, and preference. The J. M. Keynesian view (since 1936) of the Absolute Theory of Consumption for consumption- income relationship, as money in a country is spent overall by consumers. The contemporary theory of consumption was developed independently by James Duesenbery's (1949) Relative Income Hypotheses, by Milton Friedman (1957) as the Permanent Theory of Consumption, and by Franco Modigliani (1957) as the Life Cycle Theory of Consumption. This article focuses on, studying consumption behavior to explain the psychology of consumers in absolute terms, relative income hypotheses family to family, permanent and long-life effect of income on consumption behavior based on real income under an uncertain environment in the modern view.

**Keywords:** *Absolute Behavior; Hypotheses; Income; Relative.*

## INTRODUCTION

### Absolute Income Hypotheses

The consumption function was introduced by John Maynard Keynes (1936) who explained the function could be used to predict total aggregate consumption expenditures concerning income. Under the absolute income hypothesis, consumption is determined by the absolute level of income. The short-run consumption function, then, represents the fundamental link between income and consumption. The typical tendency to consume and the rate at which that tendency changes determine how humans feel about spending money they don't have. The willingness of families to buy goods and services at a specific income level over a specific time period is represented by John Maynard Keynes. It is represented as  $C = f(Y)$ ; where  $C =$  Consumption,  $Y =$  National Income, and  $f =$  Functional Relationship. Besides, it is influenced by subjective factors like consumer habits, preferences, etc. Consumption function represents  $C = a + b Y_d$ ,

The Keynesian consumption function expresses the level of consumer spending depending on ,

(a)  $Y_d =$  disposable income (income after Government intervention – Benefits, and Taxes)

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<sup>1</sup> **How to cite the article:** Parashar S. (February 2024); Parent Income Hypotheses and Life Cycle Income Hypotheses to Study Consumption Behavior; *International Journal of Transformations in Business Management*, Vol 14, Issue 1, 14-21, DOI: <http://doi.org/10.37648/ijtbm.v14i01.002>

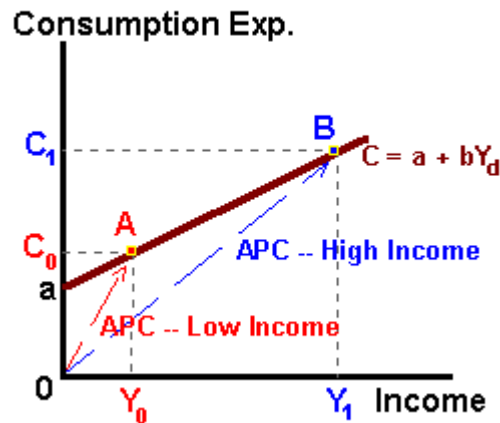
(b)  $a$  = autonomous consumption (consumption when income is zero, even with no income, borrow to be able to buy food or spend on infrastructure).

(c)  $b$  = marginal propensity to consume (the percentage of extra income that is spent).

(d)  $b_y$  -also known as induced consumption.

(e)  $Y$ -Income,  $d$ -Disposable Income (Real Income= $Y$ -Taxes)

Fig. 1



In Fig.1 , Consumption is primarily determined by the level of disposable income ( $Y_d$ ) ( $Y$ -Taxes) .

(a) Higher  $Y_d$  leads to higher consumer spending. As income rises, consumer spending will rise. However, spending will increase at a lower rate than income.

(b) At low incomes, people will spend a high proportion of their income. The average propensity to consume could be one or greater than one. So people spend everything they have. When low-income, they cannot have the luxury and can save. A person needs to spend everything on essentials.

(c) As incomes rise, people can afford the luxury of saving a higher proportion of their income.

(d) People with high incomes have a lower average propensity to spend .

### Reasons

The consumption increases due to,

(a) It may shift because of migration from rural to urban areas which tends to increase consumption even in the absence of an increase in income.

(b) City dwellers consume a higher proportion of their income than persons who live in rural areas. (c) The introduction of new goods, it is claimed, stimulates consumption as these goods come to be regarded as essential for the good life.

Arthur Smithies, and James Tobin's absolute income hypotheses also known as drift hypotheses explain basic long-run income consumption relationship is non proportional with the consumption income ratio ( $C/Y$ ) falling with the increase in income based on time series data. It is of utmost practical importance for economic growth and stability of the economy to know basic consumption function is proportional or non-proportional. James Tobin has argued that

the short-run consumption function shifts upward over time because of increases in the nation's wealth. By wealth, Tobin means liquid assets, mainly cash, bank deposits, and savings bonds. An increase in asset holdings, all other things being equal, increases consumption. Consequently, he believes that the growth of the nation's asset holdings, along with income, may have been sufficient to account for the upward shifts, hence the constancy of the average propensity to consume over time.

### **LIMITATIONS OF CONSUMPTION FUNCTION**

In the real world, people are influenced by other factors

- (i) Life cycle factors ( students more likely to borrow and spend during study period).
- (ii) Behavioral factors ( people may be influenced by general optimism).

Consumption is primarily determined by levels of income but also other factors such as:

- (a) Dependents such as children ,
- (b) Expectations of future income,
- (c) Total wealth,
- (d) Stage in the life cycle
- (e) Marginal propensity to consume

### **RELATIVE INCOME HYPOTHESES**

The book *Income, Saving, and the Theory of Consumer Behavior*, written by American economist James Duesenberry, was published in 1949. It challenged Keynes' notion of consumption behavior by introducing psychological factors associated with habit formation and social interdependencies based on relative income concerns. The relative income hypothesis states that an individual interest in consumption and saving is influenced more by their income than others. The level of consumption obtained in a previous time also influences current consumption, in addition to current absolute and relative income levels. Once a family attains a certain level of consumption, they find it challenging to lower it. The intensity of any individual's desire to increase his consumption expenditure is determined by the ratio of his expenditure to some weighted averages of the expenditures of others with whom they interact. The relative income hypothesis has four important components,

- (a) Individuals are more concerned with their relative well-being than their absolute well-being,
- (b) Poor people spend a greater portion of their income than rich people to narrow the consumption gap,
- (c) Current absolute and relative income levels and previous consumption levels determine present consumption,
- (d) Consumption within a family is influenced by its income compared to other families .
- (e) People are more concerned with their income and consumption compared to those around them than with their past income and consumption patterns. Therefore, lower-income people may spend more of their earnings than their peers of higher socio-economic status to reduce the disparity in their consumption levels and quality of living.

The tendency to consume in a household varies, and in the short run and long run people's capacity to spend is based not only on current income or past income but also on all sources permanent and lifetime income .

### **PERMANENT INCOME HYPOTHESES**

Economist M. Friedman, who was awarded the Nobel Prize in 1957, developed the persistent income theory. Milton Friedman created the permanent income hypothesis, which holds that rather than basing consumption on current after-tax income, consumer spending is determined by projected future income. According to the permanent income

hypothesis, consumers will make purchases that are in line with their anticipated long-term average income. The amount of permanent income that can be spent without risk is then considered to represent the level of predicted long-term income. A worker will only start saving money to guard against future income drops if their present income is more than what they expect their permanent income to be. Milton believed that people will consume based on an estimate of their future income as opposed to what Keynesian economics proposed, people will consume based on their in-the-moment after-tax income. Milton's basis was that individuals prefer to smooth their consumption rather than change as a result of short-term fluctuations in income.

### Spending Habits and Permanent Income Hypothesis

Workers are aware that they are likely to gain an income bonus at the end of a particular pay period, it is plausible that the worker's spending in advance of that bonus may change in anticipation of the additional earnings. It is also possible that workers may choose to not increase their spending based solely on a short-term windfall. They make efforts to increase their savings, based on the expected increase in income through inheritance. Their expenditures could change to take advantage of the anticipated influx of funds, but theory explains, that they may maintain their current spending levels to save the supplemental assets and to invest those funds to provide long-term growth of their money rather than spend it immediately on disposable products and services. Observed values of aggregate income 'Y' can be divided into two separate components:

(a)'YP' Permanent (or projected levels of) Income ,

(b)'YT ' Transitory (or unexpected changes in) Income. Thus,

$$Y = YP + YT.$$

The transitory component has an expected value of zero ( $E[YT_t] = 0$ ) reflecting the notion that over time transitory gains are offset by future transitory losses and vice-versa. Thus in the long run observed levels of income Y are equal to permanent income YP.

Observed short-run behavior is explained through the value of transitory income for different income groups.

(a)Transitory income is assumed to be negative reflecting the notion that over time transitory losses exceed transitory gains for low-income groups of individuals:

$$YTL < 0 \rightarrow YL < YPL$$

(b) The value of transitory income is equal to zero over time such that observed and permanent income take the same value for middle-income groups:

$$YTM = 0 \rightarrow YM = YPM$$

(c) Transitory gains exceed transitory losses such that transitory income is on average positive over time for high-income groups,

$$YTH > 0 \rightarrow YH > YPH$$

The impact of this transitory component can be used to develop a short-run consumption function. The Permanent Income Hypothesis provides a framework for understanding how households will likely react to changes in income in making near-term consumption spending decisions .

### Liquidity and the Permanent Income Hypothesis

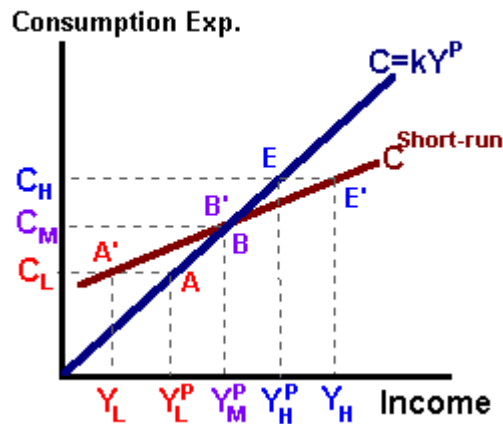
The individual's liquidity may have an impact on their expectations for future income. Those without assets might already have a spending habit that is unaffected by their income, either present or future. Changes over time, however—through incremental salary raises or the assumption of new long-term jobs that bring higher, sustained pay—can lead to changes in permanent income. With their expectations elevated, employees may allow their expenditures to scale up in turn. It suggests that consumers will attempt to smooth consumption over their lifetime as

borrowing as a student, and running down savings in retirement. In Fig.2, People tendency to consume ,based on permanent income (Yp) Permanent Income Hypotheses consumption expenditure is proportional to permanent income,

$$C = k YP$$

Such that the parameter k, a constant, represents both the average propensity to consume and the marginal propensity to consume. This consumption function is described more accurately as a long-run consumption function consistent with the observed long-run results of consumption behavior. In Fig.2 ,Income at low(YL), at medium (LM), at High (LH) respectively with effective consumption CL.CM.CH

Fig.2



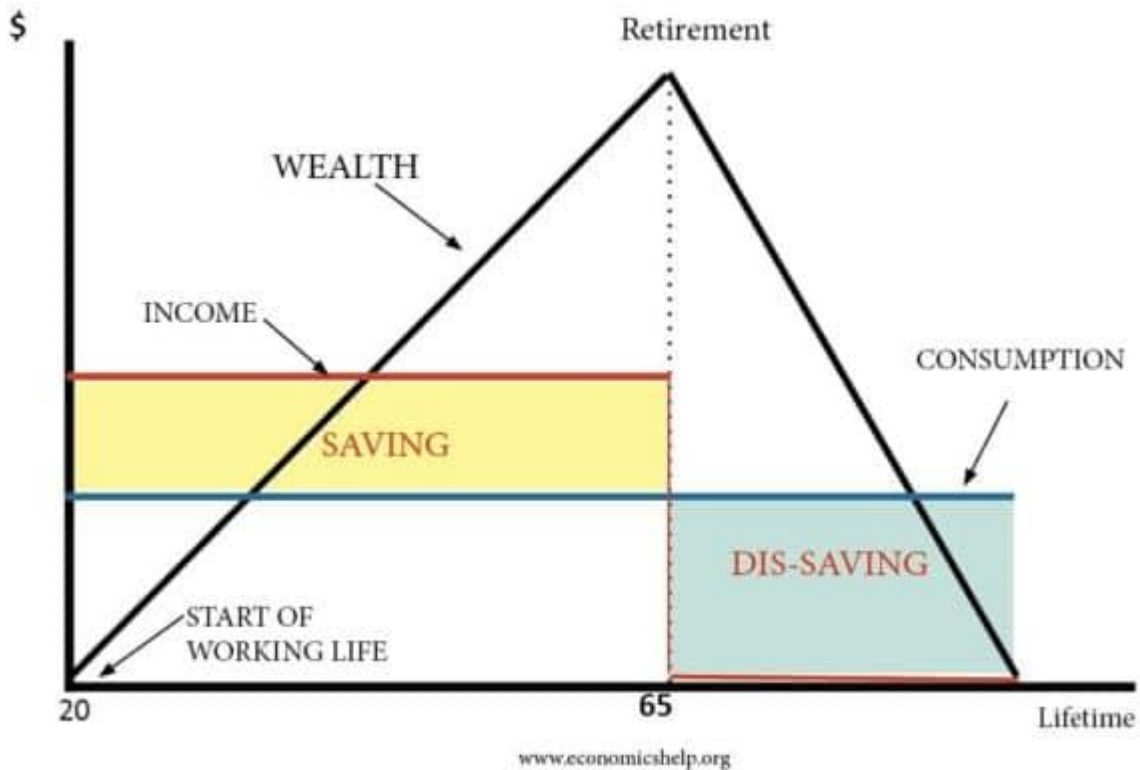
### LIFE CYCLE HYPOTHESES

The Life-cycle hypothesis was developed by Franco Modigliani in 1957. The theory states that individuals seek to smooth consumption throughout a lifetime – borrowing in times of low income and saving during periods of high income. According to this hypotheses , people seek to maintain roughly the same level of consumption throughout their lifetimes at micro and macro levels by taking on debt or liquidating assets early and late in life (when their income is low) and saving during their prime earning years when their income is high . Individuals save and spend their income over their lifetimes and simply personal preference.. The graph in Fig.3 , Wealth in the Life-Cycle Hypothesis,

- (i)As individuals save from the age of 20 to 65 (working life).
- (ii)It is rational to borrow to fund education as a student.
- (iii)A person during working life, pays off student loans and begins saving for retirement.
- (iv)During working life, saving enables one to maintain similar levels of income during retirement.
- (v) It illustrates how wealth will increase during working years before declining in retirement.

In Fig., According to the theory, the number of years till retirement, estimated lifetime earnings, and wealth will all affect consumption. Consumption will depend on, C= Consumption, W=Wealth, R=Years until Retirement (Remaining Years of Work), Y=Income, T=Remaining Years of Life.

Fig.3



It emphasizes that consumption will depend on both wealth and income for the entire economy. It implies that when an aging population, with more people in retirement, then wealth/savings in the economy will be run down. Before life-cycle theories, it was assumed that consumption was a function of income. For example, the Keynesian Consumption Function saw a more direct link between income and spending. However, this failed to account for how consumption may vary depending on the position in the cycle. As,

- (a) Diminishing marginal utility of income - There is a declining marginal benefit to spending additional money during one's working years if income is high.
- (b) In old age, it's harder to work and make money. Life Cycle makes it possible for people to work hard and cut costs.
- (c) It can be difficult for people to value their money in the long run.
- (d) Retirement planning involves work, foresight, and understanding of financial products like pensions.

#### Criticisms of Life Cycle Theory

- (i) It is assumed that people exhaust their fortune as they age, however this is frequently not the case because many prefer to leave their inheritance to their offspring. A strong attachment to riches and a reluctance to let it go can also exist. It makes the supposition that individuals are logical and proactive. According to behavioral economics, there are several reasons why people choose not to plan.
- (ii) People may lack the self-control to reduce spending now and save more for the future.

(iii) Life-cycle is easier for people on high incomes. They are more likely to have financial knowledge, and also they have the luxury of being able to save. People on low incomes, with high credit card debts, may feel there is no disposable income to save.

(iv) Individuals may prefer to smooth out leisure – working fewer hours during working age, and continuing to work part-time in retirement.

(v) Government means-tested benefits for old-age people may provide an incentive not to save because lower savings will lead to more social security payments.

### Analysis of Consumption Function Theory In Practice

Irving Fisher (1963) introduces that current consumption depends on lifetime income and time of income is irrelevant as the consumer can borrow or lend between periods. Fisher's model takes two important assumptions, The assumptions expose, Fisher's model of inter-temporal choice to illustrate,

- (i) The budget constraints faced by consumers,
- (ii) The preferences between current and future consumption,
- (iii) How constraints and preferences can jointly determine consumer decisions regarding optimal consumption and saving over an extended time.
- (iv) The Inter-temporal Budget Constraint: Rational individuals always prefer to increase the quantity or quality of the goods and services they consume.
- (v) However, most people cannot consume as much as they like due to limited income called budget constraints.
- (vi) For the sake of simplicity let us assume that our representative consumer lives for two periods, Consumer's income and consumption in the two periods are  $Y_1$ , and  $C_1$  and  $Y_2$  and  $C_2$ , respectively.

(a) Period 1 represents the consumer's youth life the first period, saving ( $S$ ) is the difference between income and consumption which is expressed as:  $S = Y_1 - C_1$

(b) Period -2 represents the consumer's old age, consumption equals the accumulated saving (which includes the interest ( $r$ ) earned on that saving), plus second-period income which is expressed as  $C_2 = (1 + r)S + Y_2$  Where;  $r$  = real interest rate (i.e., nominal interest adjusted for inflation). Since we do not consider the third period, the consumer is not required to save in the second period.

### CONSUMPTION BEHAVIOR UNDER UNCERTAINTY

The modern version of the Life Cycle Hypotheses and Permanent Income Hypotheses expose the link between income uncertainty and changes in consumption arising from surprise changes in income. Consumers choose consumption every period to maximize lifetime utility subject to total lifetime consumption equal to lifetime resources. The optimal choice is the consumption that equates the marginal utility of consumptions across periods current ( $t$ ) and future ( $t+1$ ), when marginal utility is higher now, consumption shifting increases satisfaction. The actual behavior of consumption exhibits both excess sensitivity (consumption responds strongly to predictable changes in income) and excess smoothness (responds too little to surprise changes in income). The Barro -Ricardo equivalence proposition (Ricardian equivalence) notes that debt represents future taxes. It asserts that debt-financed tax cuts will not have any effect on consumption or aggregate demand.

### CONCLUSION

Behavioral economists have advanced the idea of planning for future consumption and income during and after work time. Consumption depends upon current, past, permanent, and lifetime income (money received from retirement, hereditary property, wealth, etc.). The consumption pattern differs during lifetime as dependent and independent or during Work-life. At macro-view, the classic consumption function suggests consumer spending is wholly determined by income and the changes in income. Keynes' Psychological Law of Consumption, the stability of the consumption function is a cornerstone of Keynesian macroeconomic theory. Most post-Keynesians admit the consumption function is not stable in the long run since consumption patterns change as income rises. Modern view of consumption behavior theory, Life cycle theory of consumer behavior as introduced by Franco Modigliani, how income and liquid cash balances affect an individual's propensity to consume. Life expectancy affects to estimate of wealth throughout life.

Finally, the drop in consumption at the end of the life cycle could be due to necessity. More sophisticated functions may even substitute disposable income and take into account taxes, transfers, and other sources of income. The modern version shows consumption behavior based on real income under an uncertain environment.

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## AUTHOR BIOGRAPHY



Dr. Suhasini Parashar born on 17th November, 1962 in Haryana State of India. She is graduated in Science in 1982, from DAV College, Ambala City (K.U. Kurukshetra) and is qualified as M.A. Economics (1984) and Ph.D. in Economics (with Three years 1986-1989, University Research Scholarship) from Department of Economics, Kurukshetra University, Kurukshetra. She is presently, serving as Associate Professor of Economics in Management in Department of Business Administration, Maharaja Surajmal Institute (Since August 2002 joined as Lecturer and August 2007 as Reader and January 2021 onwards redesignated as Associate Professor), so far has the experience of 27 years in teachings in colleges/Institutes of Kurukshetra University, Delhi University and Guru Gobind Singh Indra Prastha University with, 5 years Research Experience. She is specialized in teachings of subject Business Economics, Business Environment, Money and Banking. She is continuously remain in interest with writings related to areas of Economics and Business Economics contemporary issues and subjective to syllabus of concerned subject. She has published the papers/articles in many National and International Journal, Conference proceedings with ISBN as well as ISSN No.. She has also published paper in National and International Peer Reviewed Journals .She has also attended enough number of Orientation Programmes, Faculty Development Programmes, Workshops and Seminars. She always have interest in Research and development in socio-economic areas.