UNIT 8: KEYNESIAN CONSUMPTION FUNCTION

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8.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- put forward the meaning of Keynesian Consumption function
- discuss the Fundamental Psychological Law of Consumption
- define the meaning of Average Propensity to Consume (APC) and Marginal Propensity to Consume
- discuss how to calculate APC and MPC
- explain the factors that affect the consumption function.

8.2 INTRODUCTION

This unit is concerned with familiarizing the student with some basic concepts about Keynesian consumption function, Fundamental psychological law of consumption, average propensity to consume and

marginal propensity to consume and factors affecting consumption function etc.

The Keynesian consumption function specifies the relationship between the income and consumption of an economy. It states that consumption expenditure is a function of the absolute current income. The consumption function explains the inter-relationship between consumption expenditure and level of income of consumers.

The Fundamental psychological law of consumption is an explanation of the psychological tendencies of the people with respect to consumption spending when there is change in income. It states that there is a tendency on the part of the people to spend on consumption but less than the full increment of income.

The average propensity to consume is defined as the ratio of the consumption expenditure to any particular level of income.

The marginal propensity to consume is nothing but the ratio of the change in the consumption with respect to change in income.

There are different factors which affect consumption spending such as change in the wage level, windfall gains and losses, changes in fiscal policy of the government, changes in consumer attitudes and expectations, the distribution of income, stock of consumer durables, relative prices of goods, change in the rate of interest, and financial policies of the government and corporations etc.

Detailed discussion of these topics is presented in the sections below.

8.3 INCOME-CONSUMPTION RELATIONSHIP

As discussed in the previous section, consumption function specifies the relationship between consumption expenditure and level of income. There are different economists around the world who explain this inter-relationship between these two variables. The classical economist Adam Smith also mentioned about consumption function. Another economist, Ernst Engle, on the basis of family budget studies in 1857, formulated the law of consumption which specified the changes in the consumption behavior of the people in response to the changes in their incomes. Prof Malthus and

Wicksell also mentioned about consumption function in business cycle literature. The classical economist Alfred Marshall also explicitly recognized the existence of a relationship between savings and aggregate income of the consumer. Marshall analyzed the relationship essentially from the viewpoint of long-run growth rather than short-run cyclical variations.

But, it was Keynes who actually demonstrates the theoretical significance of the consumption and income relationship in a more systematic manner. According to Keynes, consumption expenditure is the function of the absolute current income. We express this relationship in a functional form as given below:

$C = f(Y)$

Where, C is the consumption expenditure, and Y is the income of the consumer.

8.4 FUNDAMENTAL PSYCHOLOGICAL LAW OF CONSUMPTION

From the above discussion, we have learned about meaning and functional form of the consumption function. In this section of the chapter, a discussion is carried out regarding fundamental psychological law of consumption. Keynes propounded the fundamental psychological law of consumption which states that there is a tendency on the part of the people to spend on consumption less than the full increment of income. It tries to explain the psychological tendencies of the people with respect to consumption spending. Given the level of income and propensity to consume, this law explains how the people allocate their incomes between consumption and saving.

In the words of Keynes:

> "The Fundamental psychological law upon which we are entitled to depend with great confidence both a prior from our knowledge of human nature and from the detailed facts of experience, is that men are disposed as a rule and on the average to increase their consumption as their income increases but not as much as the increase in their income."

Let us discuss three proposition of Keynes psychological law of consumption.

The first proposition of Keynes psychological law of consumption states that when the aggregate income increases, consumption expenditure also increases but by a somewhat smaller amount. This proposition means

$$\partial c < \partial y$$

or and $\partial C > 0$.

Here, = Change in consumption expenditure.

= Change in Income of the consumer.

In other words, Marginal propensity to consume is positive but less than unity in normal circumstances.

The second proposition of Keynes's law states that an increment in income will be divided in certain proportion between consumption spending and saving. The second proposition is nothing but the corollary of the first proposition. This proposition can be explained in terms of a equation as shown below.

$$\frac{\partial C}{\partial Y} \langle 1 = \partial C + \partial S$$

where, = Change in Savings of the consumers

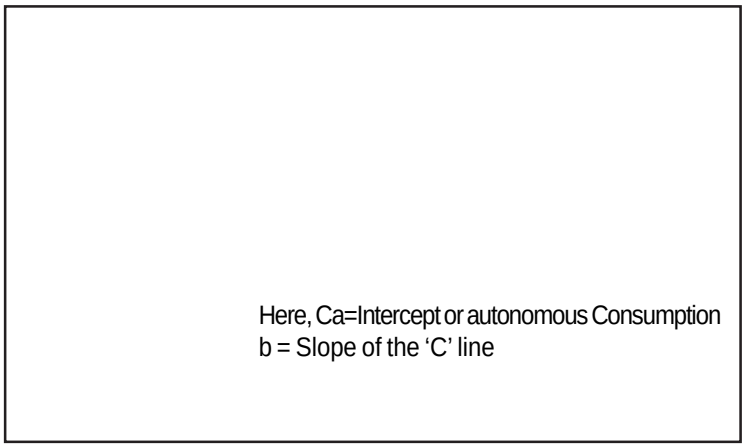
The third proposition states that an increment in income is unlikely to lead either to less saving or less spending than before. In other words, this proposition emphasizes the short run stability of the consumption function.

Thus, we can say that the Keynesian consumption function, which is based on the above psychological law of consumption, exhibits the relationship between consumption and current disposable income. It can be expressed in the form of an equation as $C = Ca + bY_d$, $0 <b<1$.

Where, c = consumption, Ca= autonomous consumption, b= Marginal Propensity to consume, Y_d = disposable income.

The equation clearly indicates that the consumption function is non-proportional and linear. Non-proportional because of its autonomous component and linear because it gives rise to a straight line, due to constant MPC (b). The diagrammatic representation of this consumption function is given by Figure 8.1.

Figure 8.1: Keynesian Consumption Curve



These three propositions of the law can also be explained with the help of the hypothetical example as provided in table 8.1.

Table 8.1: Consumption and Income Schedule of the Consumers

(In Rs. Crore)

Disposable Income (Y)	Consumption C = f(Y)	Savings (S = Y – C)
0	30	-30
70	80	-10
130	130	00
190	180	10
250	230	20
310	280	30
370	330	40

As shown in table 8.1, consumption expenditure is an increasing function of income. It can be seen from the table that when income of the consumers is zero, people spend out of their savings or taking credit from different sources. As income increases, consumption expenditure also increases, but at a decreasing rate. It can be seen from table 8.1 that as income increases by 60 crore, the consumption expenditure is also increases by 50 crore. The remaining Rs. 10 crore goes to savings.



CHECK YOUR PROGRESS

Q 1: State whether the following statements are true (T) or false (F).

(a) Keynes propounded the Fundamental Psychological law of Consumption. (T/F)

(b) Consumption function is the ratio of consumption expenditure to income of the consumer. (T/F)

Q 2: What do you mean by consumption function? (Answer in about 30 words) .....

.....

.....

8.5 AVERAGE AND MARGINAL PROPENSITY TO CONSUME

From the above discussion, we have learned about Keynesian psychological law of consumption and its properties. In this section, a discussion is carried out on the technical attributes of the consumption function.

The consumption function has two technical attributes or properties.

- **The Average Propensity to consume:** The average propensity to consume is defined as the ratio of consumption expenditure to total income of the consumer. It is calculated as a consumption expenditure as a percentage of total income of the consumer. Average propesity to consume (APC) is always expressed as the percentage or proportion of income consumed. Symbolically, it can be expressed as:

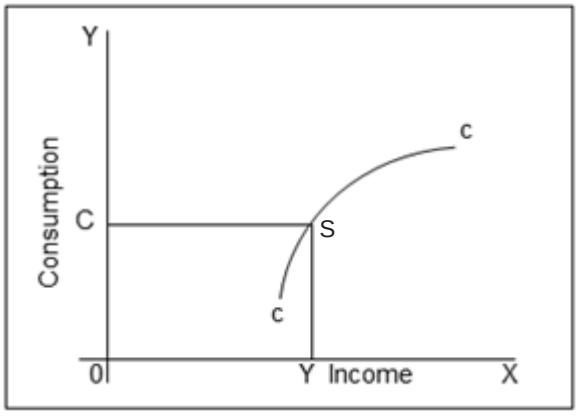
  Average Propensity to Consume $(\text{APC}) = \frac{C}{Y}$ —— —(1)

  Where, C = Consumption Expenditure, Y = Income of the consumer.

  In general, the APC declines as income of the consumer increases. This is because the proportion of income spent on consumption expenditure decreases with increase in income.

We can also express the average propensity to consume with the help of a Figure 8.2.

Figure 8.2: Average Propensity to Consume



Now, from figure 8.2, we can compute the average propensity to consume at any point on the CC curve. For example, the average propensity to consume at point S is given by $\frac{SY}{OY}$

- **The Marginal Propensity to Consume:** Along with average propensity to consume, a discussion is made regarding marginal propensity to consume. The marginal propensity to consume is defined as the ratio of the change in consumption to the change in income. We can also express marginal propensity to consume as the change in the average propensity to consume as income changes. In other words, marginal propensity to consume is the rate of change in consumption spending.

$$MPC = \frac{\text{Change in Consumption } (C_1C_2)}{\text{Change in Income } (Y_1Y_2)}$$

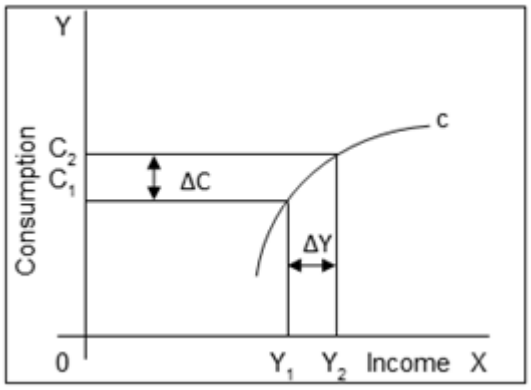
Symbolically, Marginal propensity to consume is expressed as:

$$\text{Marginal Propensity to Consume } (MPC) = \frac{\Delta C}{\Delta Y} \quad \text{.....(2)}$$

where, ΔC represent change in consumption and ΔY represents the change in income.

Like average propensity to consume, marginal propensity to consume can be shown with the help Figure 8.3.

Figure 8.3: Marginal Propensity to Consume



From figure 8.3, we can compute the marginal propensity to consume. As defined above, the marginal propensity to consume is the ratio of the change in consumption with respect to change in income. The change in income is depicted by Y_1Y_2. Similarly, the change in consumption is shown by C_1C_2. Now, we can calculate the marginal propensity to consume by dividing change in consumption (C_1C_2) by change in income (Y_1Y_2). Thus, marginal propensity to consume is

$$\text{MPC} = \frac{\text{Change in Consumption } (C_1C_2)}{\text{Change in Income } (Y_1Y_2)}$$

8.5.1 Significance of APC and MPC

In the above sub-section, we have discussed the meaning of Average and Marginal propensity to consume. We have also analyzed the method of calculation of APC and MPC. In this sub-section of the chapter, a discussion is carried out regarding significance of APC and MPC.

As discussed above, MPC is the rate of change in the APC. Generally, when income increases, the MPC falls but not more than the APC. On the contrary, when income falls, the MPC rises and APC also rises but also at a slower rate. John Maynard Keynes has emphasized on MPC in his psychological law of Consumption. This is due to that fact that Keynes gave importance on short run analysis

in his 'General Theory of Employment, Interest and Money'. In the short run analysis, MPC have more significance than APC. The Keynesian hypothesis that MPC lies between 0 and 1 ($0 < \Delta C / \Delta Y < 1$) has great analytical significance. It helps us to explain the theoretical possibility of general over-production or under-employment equilibrium. Again, the significance of MPC lies in the fact that it helps to explain the multiplier theory. The higher the value of MPC, the higher the multiplier and vice-versa. MPC also helps to explain the consumption behaviour of different sections of people. The MPC is generally found to be low in case of the richer section of the population and high in case of the poorer section of the population.

But the post-Keynesian economists are of the view that over the long run, APC and MPC are equal and approximate to 0.9.

8.5.2 Relation between APC and MPC

In the above sub-section of the chapter, we have discussed the significance of the technical attributes of the consumption function i.e.; APC and MPC. In this section of the chapter, a discussion is carried out about the relation between APC and MPC. As explained in earlier section, APC is the ratio of the consumption expenditure to any particular level of income. MPC is the ratio between the changes in consumption with respect to change in income.

Now, Let us explain the relationship between two technical attributes of consumption function i.e., the relation between APC and MPC. This can be explained with the help of a hypothetical example as shown in table 8.2. In this example, we have considered a stable consumption function where income increases by 60 crore and correspondingly consumption expenditure also increases by 50 crore.

Table 8.2: Relation between APC and MPC (Rs in crore)

Income	Consumption	APC = C/Y	APS=1-APC (S/Y)	MPC= C/ Y	MPS = S/ Y (1-MPC)
(1)	(2)	(3)	(4)	(5)	(6)
150	150	150/150 = 1 or 100%	0	_____	_____
210	200	200/210 = 0.95 or 95%	0.05 (1-0.95)	50/60 = 0.83	0.17
270	250	250/270 = 0.93or 93%	0.07(1-0.93)	50/60 = 0.83	0.17
330	300	300/330 = 0.91or 91%	0.09(1-0.91)	50/60 = 0.83	0.17
390	350	350/390 = 0.90Or 90 %	0.10 (1-0.90)	50/60 = 0.83	0.17

Table 8.2 shows how APC and MPC are calculated and relation between APC and MPC. As shown above, column 2 and column 3 of the table shows change in income and change in consumption of the consumers. The APC of the table as shown in column 3 is the ratio of total consumption to total income. It can be clearly seen in table 2 that as income increases, the APC of the consumer gradually decreases. It decreases from 1 to 0.95 as income increases from Rs.150 crore to Rs.210 crore. Similarly, APC decreases from 0.95 to 0.93 as income increases from Rs.210 crore to Rs.270 crore. The Average propensity to Save (APS) as shown in column 4 is calculated from the relation as shown below:

APC + APS = 1.

APS = 1 - APC.

The MPC as shown in column 5 of the table is calculated as the ratio of the change in consumption to change in income. The MPS as shown in column 6 of the table is calculated based on the relation:

MPC + MPS =1.

MPS = 1 – MPC.

8.6 FACTORS AFFECTING CONSUMPTION SPENDING

From the above discussion, we have learned about psychological law of consumption and technical attributes of consumption function. In this section of the chapter, an attempt has been made to analyze the factors which affect the consumption spending.

We can broadly classify factors affecting consumption expenditure into two categories such as subjective factors and objective factors. At first, we will discuss about the subjective factors affecting the consumption spending of the consumers.

8.6.1 Subjective Factors affecting Consumption Spending

The subjective factors of the consumption function determine the slope and position of the consumption expenditure. These subjective factors are psychological characteristics of human beings, different social practices and behavior of the business concern. There are different individual motives of the consumers which refrains them from spending their income such as the desire to save for unforeseen contingencies, the urge to provide for anticipated future needs such as old age, sickness etc, the speculative behavior of the consumer, the desire to enjoy the sense of independence etc.

There are also different business motives which affect the consumption spending of the consumer. Keynes lists four motives such as:

- **Enterprise:** This implies the desire to do big things and to expand.
- **Liquidity:** This motive implies the desire to meet emergencies and difficulties successfully.

- **Increase in Income:** This business motive implies the desire of the consumers to secure large income for successful management of their business.
- **Financial Prudence:** This implies the desire to provide adequate financial resources against depreciation and obsolescence.

8.6.2 Objective Factors affecting Consumption Spending

The objective factors which resulted marked shift in the consumption function are as follows:

- **Windfall Gains and Losses:** The consumption function shifts upward and downward due to unexpected windfall gains and losses. For example, unexpected changes in the stock market leading to gains or losses tend to shift the consumption function.
- **Changes in the Fiscal Policy:** Changes in the fiscal policy in the form of collection of revenue through tax and non-tax measures and public expenditure affect the consumption spending. High rate of commodity taxation adversely affect the consumption function by reducing the disposable income of the people. On the other hand, the policy of progressive taxation along with that of public expenditure on welfare programme helps to shift the consumption function upward by altering the distribution of income.
- **Change in Wages and Salaries:** The change in wages and salaries may shift the consumption function upward and downward. If the workers have the tendency to spend more out of the increased income, it tends to shift the consumption curve upward. But if the increase in income is accompanied by a more than proportionate increase in the price level, then it may lead to shift in consumption curve downward.
- **Change in the Rate of Interest:** Rate of interest is another is another important factor which affects the consumption spending of consumers. Significant changes in the market rate of interest may influence the consumption function indirectly.

The rise in the rate of interest will lead to fall in the price of bonds, thereby tending to discourage the propensity to save of the consumers. Rate of interest may also have the effect of substituting one type of asset for another.

- **Financial Policies of the Corporations:** The financial policies of the different corporation and companies with regard to income retention, dividend payments, and reinvestments tend to affect the consumption function of the consumer. For example, if the corporation keeps more money in the form of reserves, dividends payments to the shareholders will be less, this will have the effect of reducing the income of the shareholders and the consumption function will shift downward.
- **Behaviour of the people towards Savings:** The peoples' attitudes towards savings also affect consumption spending. If the consumers value future consumption more than present consumption, they will tend to save more and vice-versa. This tendency is further contributed by the life insurance scheme, provident fund and other social insurance scheme etc. In general, in an economy where MPS is high, the consumption function is comparatively low.
- **Pattern of Distribution of Income:** The pattern of distribution of income is an important variable affecting the consumption function. If the community has large income inequalities, the consumption function is low because rich people have low propensity to save and the poor with a very low income are unable to spend more on consumption. If the Government through different progressive measures reduces the inequalities of income and wealth of the people, the consumption function will shift upward.
- **Duesenberry Hypothesis:** James Duesenberry also explains the consumption behavior of the people. Duesenberry has propounded the relative income hypothesis. In this hypothesis, he mentioned about the impact of demonstration effect on the

consumption function. The demonstration effect explains the tendency of the people to emulate the consumption pattern of one's rich neighbours. In such cases, consumption preferences are inter-dependent.

CHECK YOUR PROGRESS

Q 3: State whether the following statements are true (T) or false (F).

(a) The average propensity to save and average propensity to consumption can be explained by the relation APC + APS = 1. (T/F)

(b) The distribution of income is an important factors affecting consumption spending of the consumer. (T/F)

Q 4: Mention any one difference between APC and MPC. (Answer in about 30 words). .....

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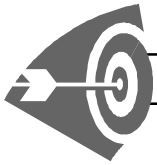
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8.7 LET US SUM UP

- Consumption function exhibits the relationship between consumption and income of the consumer.
- The Keynes psychological law of consumption states that when income increases, consumption expenditure also increases, but by a smaller amount. The increased income will be divided in some proportion between consumption expenditure and savings.
- There are two technical attributes of consumption function known as average propensity to consume and marginal propensity to consume.
- The average propensity to consume is defined as the ratio between the consumption expenditure to any particular level of income.
- The marginal propensity to consume is the ratio of the change in consumption expenditure to change in income.

- There are different factors which affect the consumption spending of the consumer. These factors can be broadly classified into two categories such as subjective and objective factors.



8.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: (a) True (b) True

Ans to Q No 2: APC is the ratio of the consumption expenditure to a particular level of income. MPC is nothing but the change in consumption spending to change in income.

Ans to Q No 3: (a) True (b) True

Ans to Q No 4: One of the differences between APC and MPC is that the APC is the ratio between the consumption expenditure to any particular level of income whereas MPC is change in APC as income changes.



8.9 FURTHER READING

1) Jhingan, M. L. (2014). *Advanced Economic Theory. New Delhi:* Vrinda Publication Pvt. Limited

2) Gupta, R.D., & Rana, A.S. (2009). *Keynes and Post-Keynesian Economics*, Jalandhar: Kalyani Publisher.

3) Rana, K.C. & Verma, K.N. (2009). *Macroeconomic Analysis*, Jalandhar: Vishal Publications.

8.10 MODEL QUESTIONS

A. Short Questions (Answer each question in about 150 words)

Q 1: Briefly disucs the concept of Marginal propensity to consume.

Q 2: What is a Consumption Function? Explain briefly.

B. Long Questions (Answer each question in about 300-500 words)

Q 1: Discuss the factors which lead to change in Consumption Spending of a consumer?

Q 2: Explain the Fundamental Psychological law of Consumption.

Q 3: What are the technical attributes of the consumption function? Explain it with the help of a suitable diagram.

Q 4: Explain the relation between APC and MPC with the help of a hypothetical example.

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