KEYNES' CONSUMPTION FUNCTION

The consumption function or propensity to consume refers to income-consumption relationship. It is a "functional relationship between two aggregates, i.e., total consumption and gross national income." Symbolically, the relationship is represented as $C = f(Y)$, where C is consumption, Y is income, and f is the functional relationship. Thus the consumption function indicates a functional relationship between C and Y, where C is the dependent by Y is the independent variable, i.e., C is determined by Y. This relationship is based on the ceteris paribus (other things being equal) assumption, as such only income-consumption relationship is considered and all possible influences on consumption are held constant.

In fact, the propensity to consume or consumption function is a schedule of the various amounts of consumption expenditure corresponding to different levels of income. A hypothetical consumption schedule is given in Table I.

TABLE I : CONSUMPTION SCHEDULE

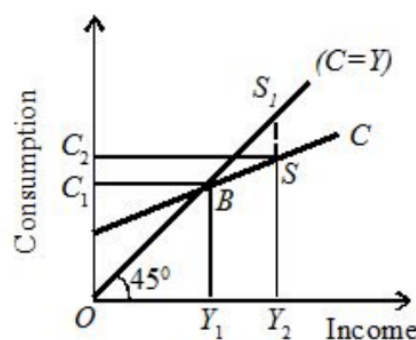| Income (Rs Crores)	Consumption
(Y)	C = f(Y)
0	20
60	70
120	120
180	170
240	220
300	270
360	320

Fig. 1.

Table I shows that consumption is an increasing function of income because consumption expenditure increases with increase in income. Here it is shown that when income is zero during the depression, people spend out of their past savings on consumption because they must eat in order to live. When income is generated in the economy to the extent of Rs 60 crores, it is not sufficient to meet the consumption expenditure of the community so that the consumption expenditure of Rs 70 crores is still above the income amounting to Rs 60 crores (Rs 10 crores are dis-saved). When both consumption expenditure and income equal Rs 120 crores, it is the basic consumption level. After this, income is shown to increase by 60 crores and consumption by 50 crores. This implies a stable consumption function during the short-run as assumed by Keynes. Figure 1 illustrates the consumption function diagrammatically. In the diagram, income is measured horizontally and consumption is measured vertically. 45° is the unity-line where at all levels income and consumption are equal. The C curve is a linear consumption function based on the assumption that consumption changes by the same amount (Rs 50 crores). Its upward slope to the right indicates that consumption is an increasing function of income. B is the break-even point where C=Y or $OY_1 = OC_1$. When income rises to OY_1 consumption also increases to OC_2, but the increase in consumption is

less than the increase in income, C1C2 < Y1Y2 . The portion of income not consumed is saved as shown by the vertical distance between 45° line and C curve, i.e., SS1 . "Thus the consumption function measures not only the amount spent on consumption but also the amount saved. This is because the propensity to save is merely the propensity not to consume. The 45° line may therefore be regarded as a zero-saving line, and the shape and position of the C curve indicate the division of income between consumption and saving."

PROPERTIES OR TECHNICAL ATTRIBUTES OF THE CONSUMPTION FUNCTION

The consumption function has two technical attributes or properties:

   (i)   the average propensity to consume
   (ii)   (ii) the marginal propensity to consume.

(1) **The Average propensity to Consume**: "The average propensity to consume may be defined as the ratio of consumption expenditure to any particular level of income." It is found by dividing consumption expenditure by income, or APC = C/Y. It is expressed as the percentage or proportion of income consumed. The APC at various income levels is shown in column 3 of Table II. The APC declines as income increases because the proportion of income spent on consumption decreases. But reverse is the case with APS (average propensity to save) which increases with increase in income (see column 4). Thus the APC also tells us about the the average propensity to save, APS=1—APC.

Diagrammatically, the average propensity to consume is any one point on the C curve. In Figure 2 Panel (A), point R measures the APC of the C curve which is OC1 /OY1 . The flattening of the C curve to the right shows declining APC.
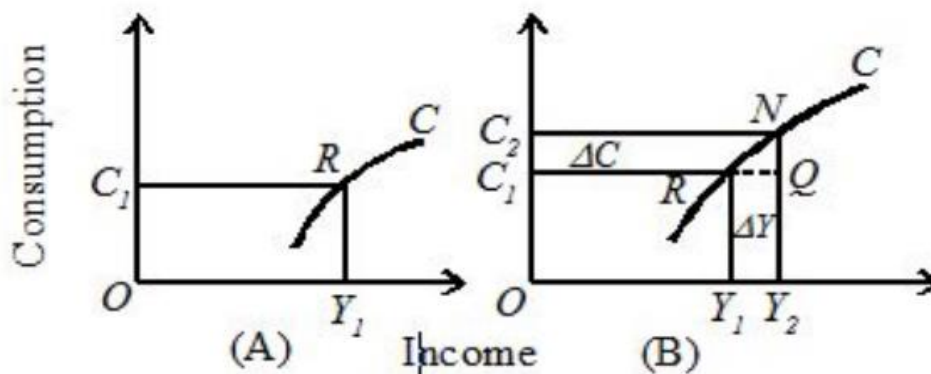

Fig. 2.

(2) **The Marginal Propensity to Consume :**"The marginal propensity to consume may be defined as the ratio of the change in consumption to the change in income or as the rate of change in the average propensity to consume as income changes."3 It can be found by dividing change in consumption by a change in income, or MPC = $\Delta C/\Delta Y$. The MPC is constant at all levels of income as shown in column 5 of Table II. It is 0.83 or 83 per cent because the ratio of change in cosumption to change in income is $\Delta C/\Delta Y$ = 50/60. The marginal propensity to save can be derived from the MPC by the

formula 1–MPC. It is 0.17 in our example (see column 6). Diagrammatically, the marginal propensity to consume is measured by the gradient or slope of the C curve. This is shown in Panel (B) by NQ/RQ where NQ is change in consumption (ΔC) and RQ is change in income (ΔY) or C1C2 /Y1Y2 .

Significance of MPC :

The MPC is the rate of change in the APC. When income increases, the MPC falls but more than the APC. Contrariwise, when income falls, the MPC rises and the APC also rises but at a slower rate than the former. Such changes are only possible during cyclical fluctuations whereas in the short-run there is change in the MPC and MPC<APC

TABLE II

(Rs. Crores)

(1) Income Y	(2) Consump-tion(C)	(3) APC=C/Y	(4) APS=S/Y (1-APC)	(5) MPC= $\Delta C/\Delta Y$	(6) MPS=$\Delta S/\Delta Y$ (1-MPC)
120	120	$\dfrac{120}{120}$ = 1 or 100%	0	—	—
180	170	$\dfrac{170}{180}$ = 0.92 or 0.92%	0.08	$\dfrac{50}{60}$ = 0.83	0.17
240	220	$\dfrac{220}{240}$ = 0.91 or 91%	0.09	$\dfrac{50}{60}$ = 0.83	0.17
300	270	$\dfrac{270}{300}$ = 0.90 or 90%	0.10	$\dfrac{50}{60}$ = 0.82	0.17
360	320	$\dfrac{320}{360}$ = 0.88 or 88%	0.12	$\dfrac{50}{60}$ = 0.83 or 83%	0.17

Keynes is concerned primarily with the MPC, for his analysis pertains to the shor-run while the APC is useful in the long-run analysis. The post-Keynesian economists have come to the conclusion that over the long-run APC and MPC are equal and approximate 0.9. In the Keynesian analysis the MPC is given more prominence. Its value is assumed to be positive and less than unity which means that when income increases the whole of it is not spent on consumption. On the contrary, when income falls, consumption expenditure does not decline in the same proportion and never becomes zero. The Keynesian hypothesis that the marginal propensity to consume is positive but less than unity($O < \Delta C/\Delta Y < 1$) is of great

analytical and practical significance. Besides telling us that consumption is an increasing function of income and it increases by less than the increment of income, this hypothesis helps in explaining

(a) the theoretical possibility of general over production or 'underemployment equilibrium,' and also

(b) the relative stability of a highly developed industrial economy. For it is implied that the gap between income and consumption at all high levels of income is too wide to be easily filled by investment with the possible consequence that the economy may fluctuate around an underemployment equilibrium."Thus the economic significance of the MPC lies in filling the gap between income and consumption through planned investment to maintain the desired level of income. Further, its importance lies in the multiplier theory. Th higher the MPC, the higher the multiplier and vice versa. The MPC is low in the case of the rich people and high in the case of the poor. This accounts for high MPC in underdeveloped countries and low in advanced countries.

KEYNES'S PSYCHOLOGICAL LAW OF CONSUMPTION

Keynes propounded the fundamental psychological law of consumption which forms the basis of the consumption function. He wrote, "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 by as much as the increase in their income." The law implies that there is a tendency on the part of the people to spend on consumption less than the full increment of income.

Propositions of the Law This law has three related propositions:

(1) When income increases, consumption expenditure also increases but by a smaller amount. The reason is that as income increases, our wants are satisfied side by side, so that the need to spend more on consumer goods diminishes. It does not mean that the consumption expenditure falls with the increase in income. In fact, the consumption expenditure increases with increase in income but less than proportionately.

(2) The increased income will be divided in some proportion between consumption expenditure and saving. This follows from the above proposition because when the whole of increased income is not spent on consumption, the remaining is saved. In this way, consumption and saving move together.

(3) Increase in income always leads to an increase in both consumption and saving. This means that increased income is unlikely to lead either to fall in consumption or saving than before. This is based on the above propositions because as income increases consumption also increases but by a smaller amount than before which leads to an increase in saving. Thus with increased income both consumption and saving increase.

The three propositions of the law can be explained with the help of the following Table III.

TABLE III
(Rs Crores)

Income (Y)	Consumption (C)	Savings (S=Y—C)
0	20	—20
60	70	—10
120	120	0
180	170	10
240	220	20
300	270	30
360	320	40

Proposition (1) : Income increases by Rs 60 crores and the increase in consumption is by Rs 50 crores. The consumption expenditure is, however, increasing with increase in income, i.e., Rs 170, 220, 270 and 320 crores against Rs 180, 240, 300 and 360 crores respectively.

Proposition (2) : The increased income of Rs 60 crores in each case is divided in some proportion between consumption and saving(i.e., Rs 50 crores and Rs 10 crores).

Proposition (3) : As income increases from Rs 120 to 180, 240, 300 and 360 crores, consumption also increases from Rs 120 to 170, 220, 270, 320 crores, along with increase in saving from Rs 0 to 10, 20, 30 and 40 crores respectively. With increase in income neither consumption nor saving have fallen.
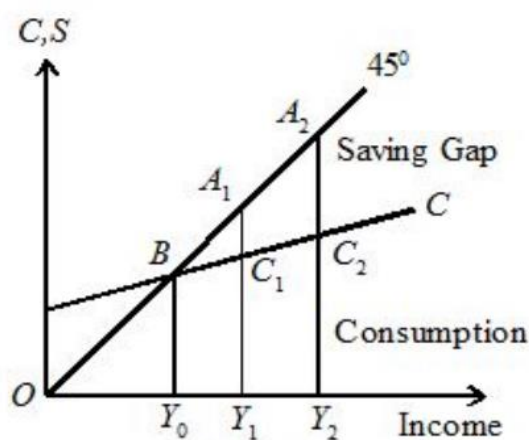

Fig. 3.

Diagrammatically, the three propositions are explained in Figure 3. Here, income is measured horizontally and consumption and saving are measured on the vertical axis. C is the consumption function curve and 45° line represents income.

Proposition (1): When income increases from OY0 to OY1 consumption also increases from BY0 to C1Y1 but the increase in consumption is less than the increase in income, i.e., C1Y1 < A1Y1 (=OY1) by A1C1 .

Proposition (2): When income increases to OY1 and OY2 , it is divided in some proportion between consumption C1Y1 and C2Y2 and saving A1C1 and A2C2 respectively.

Proposition (3): Increases in income to OY1 and OY2 lead to increased consumption C2Y2 > C1Y1 and increased saving A2C2>A1C1 than before. It is clear from the widening area below the C curve and saving gap between 45° line and C curve.

Assumptions

Keynes's Law is based on the following assumptions:

1**. It assumes a Constant Psychological and Institutional Complex :**This law is based on the assumption that the psychological and institutional complexes influencing consumption expenditure remain constant. Such complexes are income distribution, tastes, habits, social customs, price movements, population growth, etc. In the short run, they do not change and consumption depends on income alone. The constancy of these complexes is the fundamental cause of the stable consumption function.

2**. It assumes the Existence of Normal Conditions :**The law holds good under normal conditions. If, however, the economy is faced with abnormal and extraordinary circumstances like war, revolution or hyperinflation, the law will not operate. People may spend the whole of increased income on consumption.

3**. It assumes the Existence of a Laissez-faire Capitalist Economy :**The law operates in a rich capitalist economy where there is no government intervention. People should be free to spend increased income. In the case of regulation of private enterprise and consumption expenditures by the state, the law breaks down. Thus the law is inoperative in socialist or state controlled and regulated economies.

Professor Kurihara opines that "Keynes's law based on these assumptions may be regarded as a rough approximation to the actual macro-behaviour of free consumers in the normal short period."

IMPLICATIONS OF KEYNES'S LAW (OR IMPORTANCE OF THE CONSUMPTION FUNCTION)

Keynes's psychological law has important implications which in fact point towards the importance of the consumption function because the latter is based on the former. The following are its implications:

1. **Invalidates Say's Law :**Say's Law states that supply creates its own demand. Therefore, there cannot be general overproduction or general unemployment. Keynes's psychological law invalidates Say's Law because as income increases,

consumption also increases but by a smaller amount. In other words, all that is produced (income) is not taken off the market (spent), as income increases. Thus supply fails to create its own demand. Rather it exceeds demand and leads to general overproduction and glut of commodities in the market. As a result, producers stop production and there is mass unemployment.

2. **Need for State Intervention :** As a corollary to the above, the psychological law highlights the need for state intervention. Say's Law is based on the existence of laissez-faire policy and its refutation implies that the economic system is not self-adjusting. So when consumption does not increase by the full increment of income and consequently there is general overproduction and mass unemployment, the necessity of state intervention arises in the economy to avert general overproduction and unemployment through public policy.

3. **Crucial Importance of Investment :**Keynes's psychological law stresses the vital point that people fail to spend on consumption the full increment of income. This tendency creates a gap between income and consumption which can only be filled by either increaed investment or consumption. If either of them fail to rise, output and employment will inevitably fall. Since the consumption function is stable in the short-run, the gap between income and consumption can only be filled by an increase in investment. Thus the psychological law emphasises the crucial role of investment in Keynes's theory. It is the inadequacy of investment which results in unemployment and logically, the remedy to overcome unemployment is increase in investment.

4. **Existence of Underemployment Equilibrium :**Keynes's notion of underemployment equilibrium is also based on the psychological law of consumption. The point of effective demand which determines the equilibrium level of employment is not of full employment but of underemployment because consumers do not spend the full increment of their income on consumption and there remains a deficiency in aggregate demand. Full employment equilibrium level can, however, be reached if the state increases investment to match the gap between income and consumption.

5. **Declining Tendency of the Marginal Efficiency of Capital :**The psychological law also points towards the tendency of declining marginal efficiency of capital in a laissez-faire economy. When income increases and consumption does not increase to the same extent, there is a fall in demand for consumer goods. This results in glut of commondities in the market. The producers will reduce production which will, in turn, bring a decline in the demand for capital goods and hence in the expected rate of profit and business expectations. It implies a decline in the marginal efficiency of capital. It is not possible to arrest this process of declining tendency of marginal efficiency of capital unless th propensity to consume rises. But such a possibility can exist only in the long run when the psychological law of consumption does not hold good.

6. **Danger of Permanent Over-saving or Under-investment Gap:** Keynes's psychological law points out that there is always a danger of an over-saving or under-investment gap appearing in the capitalist economy because as people become rich the gap between income and consumption widens. This long-run tendency of increase in saving and fall in investment is characterised as secular stagnation. When people are rich, their propensity to consume is low and they save more. This implies low demand

which leads to decline in investment. Thus the tendency is for secular stagnation in the economy.

7. **Unique Nature of Income Propagation :** The fact that the entire increased income is not spent on consumption explains the multiplier theory. The multiplier theory or the process of income propagation tells that when an initial injection of investment is made in the economy, it leads to smaller successive increments of income. This is due to the fact that people do not spend their full increment of income on consumption. In fact, the value of multiplier is derived from the marginal propensity to consume, i.e., Multiplier = 1—1/MPC. The higher the MPC, the higher the value of the multiplier, and vice versa.

References:

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