Aggregate Expenditure and Equilibrium Output

Part 2

Consumption Theories

So far…We have study the consumption theory of Keynes, which is also known as “Absolute Income Hypothesis”.

- Absolute Income Hypothesis: real consumption (i.e. adjusted for inflation) is a function of real disposable income, and as income rises, consumption will also rise but not necessarily at the same rate (i.e. $0 < MPC < 1$).

We also have other theories of consumption.

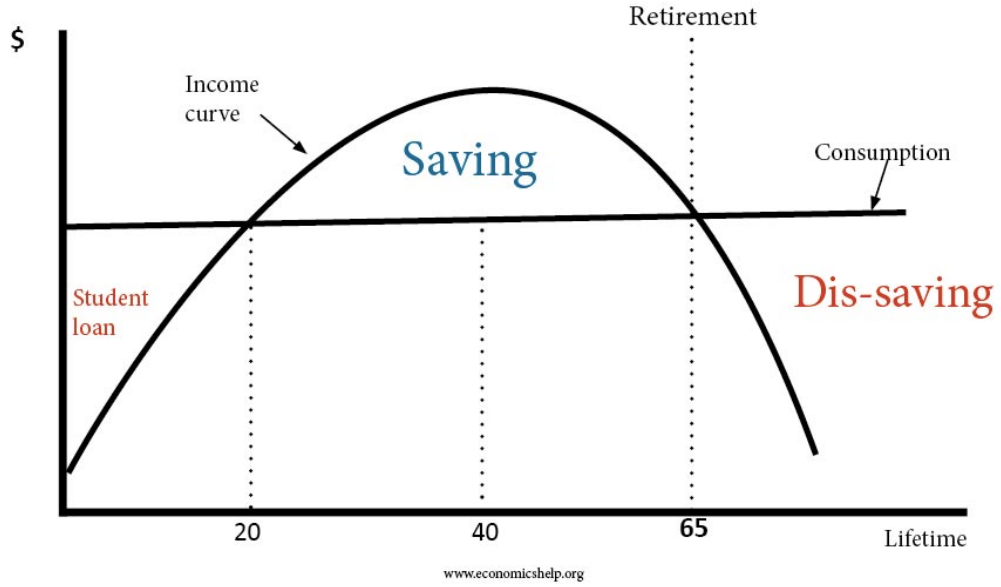
Consumption Theories

- Relative Income Hypothesis (by James Duesenberry): an individual's consumption is dictated by his income in relation to others, i.e. people will care about their social status.

Example: a typical person is happier if he or she got a $100 weekly wage rise and others only got $50 than receiving a $150 increase while everybody else received the same $150 increase.

Consumption Theories

- Life-Cycle Hypothesis (by Franco Modigliani): individuals plan their consumption and savings behavior over their life-cycle, and they intend to smooth their consumption over their lifetimes.



Consumption Theories

- Permanent Income Hypothesis (by Milton Friedman): a person's consumption is determined not just by their current income but also by their expected income in future years—their "permanent income", changes of which will lead to changes in consumption patterns.

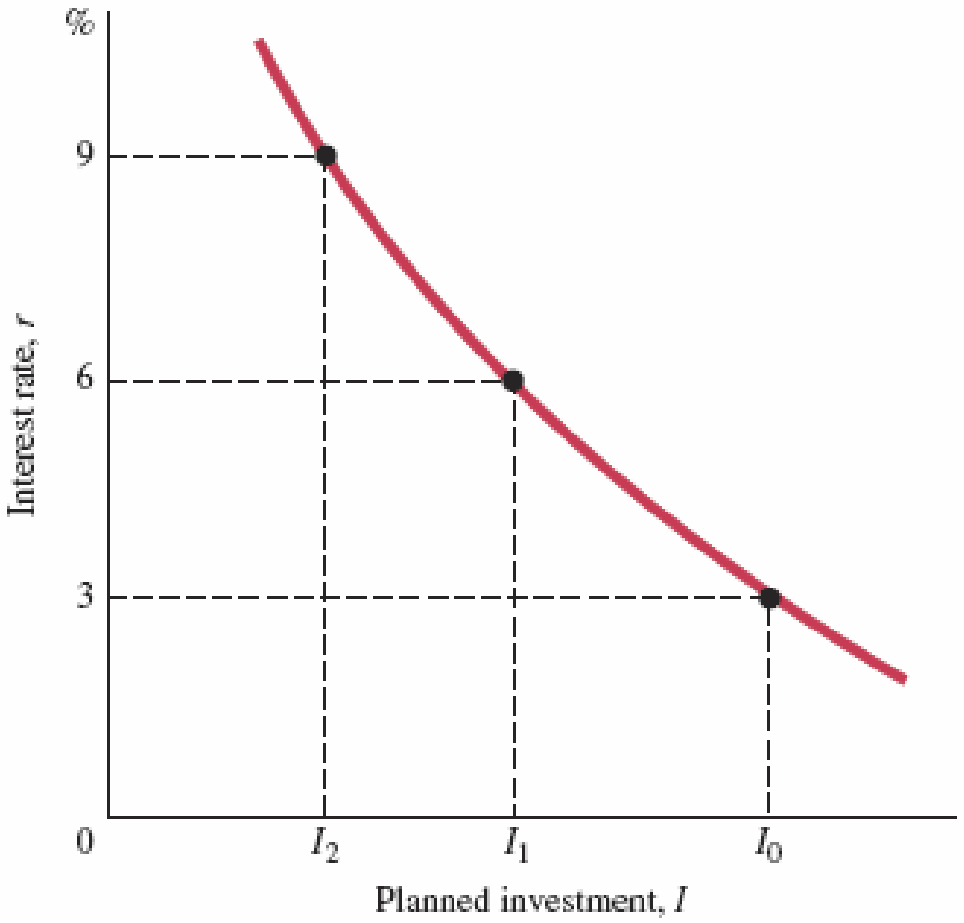
Planned Investment (*I*) versus Actual Investment

- Inventory is the stock of goods, awaiting sale.
- **planned investment (*I*)** Those additions to capital stock and inventory that are planned by firms.
- **actual investment** The actual amount of investment that takes place; it includes items such as unplanned changes in inventories.
- If a firm overestimates how much it will sell in a period, it will end up with more inventory than it planned to have.

Planned Investment and the Interest Rate (*r*)

- Increasing the interest rate, *ceteris paribus*, is likely to reduce the level of planned investment spending.
- When the interest rate falls, it becomes less costly to borrow, and more investment projects are likely to be undertaken.

Planned Investment Schedule



Planned investment spending is a negative function of the interest rate. An increase in the interest rate from 3% to 6% reduces planned investment from I_0 to I_1.

Other Determinants of Planned Investment

- The decision of a firm on how much to invest depends, among other things, on its expectation of future sales.
- The optimism or pessimism of entrepreneurs about the future course of the economy can have an important effect on current planned investment.
- Keynes used the phrase *animal spirits* to describe the feelings of entrepreneurs, i.e. their instincts and emotions that possibly guide human behavior.

The Determination of Equilibrium Output (Income) *(1 of 3)*

- **equilibrium** In the macroeconomic goods market, equilibrium occurs when planned aggregate expenditure is equal to aggregate output (demand equals supply).
- **planned (or desired) aggregate expenditure (*AE*)** The total amount the economy plans to spend in a given period, equal to consumption plus planned investment:

$$AE \equiv C + I.$$

- So, equilibrium can also be written:

$$\text{equilibrium: } Y = C + I$$

The Determination of Equilibrium Output (Income)

- Find the equilibrium level of output (income) algebraically:

$$\begin{aligned} Y &= C + I && \text{(equilbrium)} \\ C &= 100 + 0.75Y && \text{(consumption function)} \\ I &= 25 && \text{(planned investment)} \end{aligned}$$

$$Y = \underbrace{100 + 0.75Y}_{C} + \underbrace{25.}_{I}$$

Rearranging terms:

$$\begin{aligned} Y - 0.75Y &= 100 + 25 \\ 0.25Y &= 125 \\ Y &= \frac{125}{0.25} = 500 \end{aligned}$$

The Determination of Equilibrium Output (Income)

- So, equilibrium can also be written:

equilibrium: $Y = C + I$

- The movement toward equilibrium is mostly via changes in inventories inducing changes in production and income.

The Determination of Equilibrium Output (Income)

$$Y > C + I$$

aggregate output > planned aggregate expenditure

If current output exceeds the equilibrium, inventories (unsold output) accumulate, encouraging businesses to cut back on production, moving the economy toward equilibrium.

The Determination of Equilibrium Output (Income)

$$C + I > Y$$

planned aggregate expenditure > aggregate output

Similarly, if the level of production is below the equilibrium, then inventories run down, encouraging an increase in production and thus a move toward equilibrium.

Deriving the Planned Aggregate Expenditure Schedule and Finding Equilibrium*

(1) Aggregate Output (Income) (Y)	(2) Aggregate Consumption (C)	(3) Planned Investment (I)	(4) Planned Aggregate Expenditure (AE) C + I	(5) Unplanned Inventory Change Y−(C + I)	(6) Equilibrium? (Y = AE?)
100	175	25	200	− 100	No
200	250	25	275	− 75	No
400	400	25	425	− 25	No
500	475	25	500	0	Yes
600	550	25	575	+ 25	No
800	700	25	725	+ 75	No
1,000	850	25	875	+ 125	No

* The figures in column 2 are based on the equation $C = 100 + 0.75Y$.

Equilibrium Aggregate Output

Equilibrium occurs when planned aggregate expenditure and aggregate output are equal.

Planned aggregate expenditure is the sum of consumption spending and planned investment spending.

The planned aggregate expenditure function crosses the 45° line at a single point, where $Y = 500$.

The point at which the two lines cross is sometimes called the **Keynesian Cross**.