

Production, income & spending

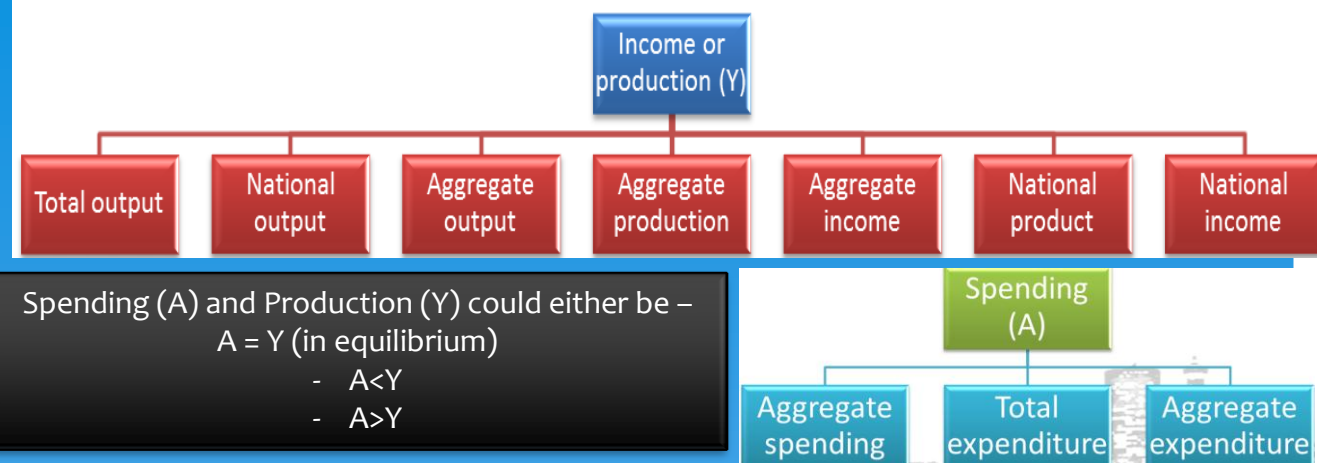
In theory Production, income & spending should be equal BUT not the case in reality for instance when consumers save money instead of spending it.
(Flow variables change constantly)

When Production > Spending

- * Inventories will increase.
- * Producers making more than consumers are buying.
- * Signal to Producers to produce less
- * Reduction in production = less inventories

When Production < Spending

- * Inventories will decrease.
- * Producers not making enough for consumers to buy



LAWS

John Baptise LAW:
Production = Spending (ALWAYS!)
• Supply creates own demand

John Maynard Keynes:
Spending causes Production

Basic Assumptions

Spending (A):

- What consumers buy: CONSUMPTION SPENDING (C)
- What firms buy: INVESTMENT SPENDING (I)

If Equilibrium is $A=Y$ and $A=C+I$ (No G or foreign sector) THEN Equilibrium is $Y=C+I$

* Model is used to predict working of economy (ex ante) and record what already happened (ex post)

Consumer Spending:

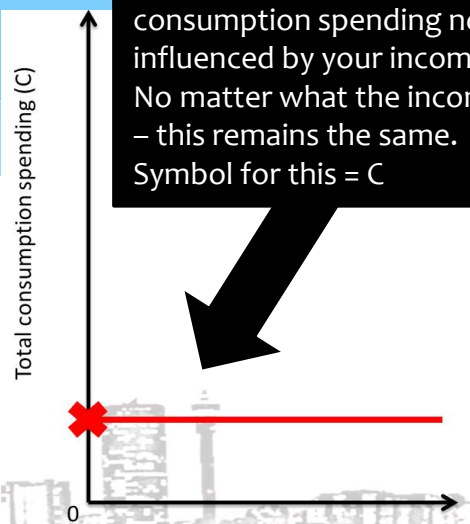
- Consumers buy different types of things
- Large and stable part of total spending

CONSUMPTION FUNCTION:

- Relationship between consumer spending and income

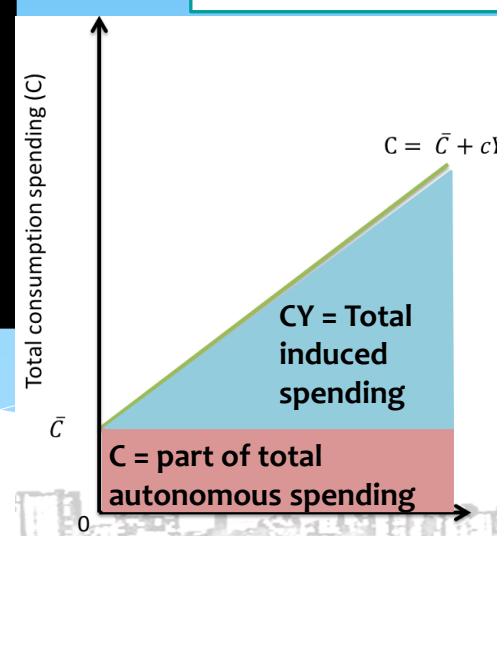
- THREE important characteristics
1. Positive (even if Income = 0)
 2. Consumption increase when income increase
 3. When income increase consumption will increase BUT by less than increase in income

AUTONOMOUS Assumption: even if someone doesn't earn income they will still need to consume goods (food, clothing)
This is the part of your consumption spending not influenced by your income. No matter what the income – this remains the same.
Symbol for this = \bar{C}



Keynesian Economics

An economic theory of total spending in the economy and its effects on output and inflation. Keynesian economics was developed by the British economist John Maynard Keynes during the 1930s in an attempt to understand the Great Depression. Subsequently, the term “Keynesian economics” was used to refer to the concept that optimal economic performance could be achieved – and economic slumps prevented – by influencing aggregate demand through activist stabilization and economic intervention policies by the government. Keynesian economics is considered to be a “demand-side” theory that focuses on changes in the economy over the short run.



Induced component:
Part of your consumption spending that is influenced by Income
 $C = \bar{C} + cY$

This is also known as the MPC, shown by the small letter 'c'

Remember this “?” will be smaller than one (due to characteristic 3)

Slope of line = how much spending will increase if income increase with 1 unit

Assumption	Implication
There are only households & firms	There are only consumption and investment spending. $A = C + I$
For now, there is no government (will be added in following study units)	At this time, the model cannot be used to analyse the government expenditure or taxes
For now, there is no foreign sector (will be added in following study units)	At this time, the model cannot be used to analyse the exports, imports, trade policy, etc.
Prices are given	At this time, the model cannot be used to analyse inflation
Wages are given	At this time, the model cannot be used to analyse the labour market
Spending drives economic activity	Supply has a passive role in the model

TWO groups of SPENDING:

- 1. Autonomous**
 - Not affected by income in any way
 - Determines the intercept of the expenditure line
- 2. Induced**
 - Directly influenced by income
 - Determines slope of expenditure line

Investment Spending (IS):

- Highly volatile
- Investment by firms depend on various factors (interest rate, cost of cap goods, etc.)
- With high interest rate investment spending will be low (borrowing funds is expensive)
- Low interest rate = high investment
- IS not influenced by income
- Part of autonomous spending

Household options:

- Save or Spend money**
E.G. if household has income of R1 then:
- Amount they spend will be their **marginal propensity to consume (MPC)**
 - Amount saved will be **marginal propensity to save (MPS)**
 - Thus: **MPC + MPS = 1**

- 1 & 2 take S to left and Y to right (shuffle equation)
- 3&4 Put consumption function in the equation
- 5 Multiply the brackets out.
- 6 Reshuffle equation again
- 7 Take out Y (NB! Saving not = spending)
8. Substitute to get final equation

Equations:

$$Y = S + C$$

$$\therefore S = Y - C$$

but $C = \bar{C} + cY$

$$\therefore S = Y - (\bar{C} + cY)$$

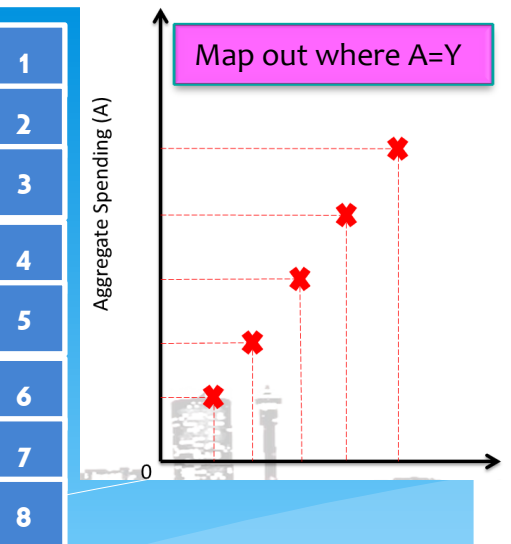
$$= Y - \bar{C} - cY$$

$$= -\bar{C} + Y - cY$$

$$= -\bar{C} + (1 - c)Y$$

but $S = -C$

$$\therefore S = \bar{S} + (1 - c)Y$$



Simple Keynesian model
Closed economy, no Government

- Equilibrium is where A (spending) = Y (production); when inventories is constant
- Total spending = consumption spending = investment spending (in this study unit..)
- **Consumption spending** has autonomous part and induced part ($C = \bar{C} + cY$)
- **Investment spending** = autonomous (as mentioned) ($I = \bar{I}$)

Other ways to express equilibrium income

- Using word:**
- Increase in inventory = excess in supply meaning Production need to increase to meet Equilibrium prod. levels.
 - Decrease in inventory = excess demand meaning production have to increase to meet equilibrium prod. levels.

Algebraic version:

- IF $C = 50 + 0.9Y$
- $I = 45$
- Then the Equilibrium income = ??

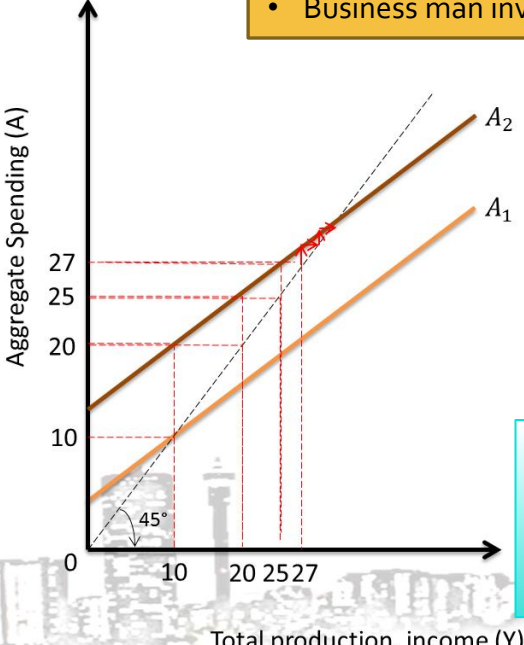
Start with the equil. Condition $A = C + I$ Therefore $Y = C + I$
 $Y = 50 + 0.9Y + 45 = 95 + 0.9Y$
 $Y - 0.9Y = 95 \rightarrow$ divide both side with 0.1 to get Y alone
 $0.1Y = 95$
 $Y_0 = 950 \rightarrow$ **Equilibrium income**

- Using Symbols:**
- Increase in inventory = excess in supply meaning Production need to increase to meet Equilibrium prod. levels.
 - Decrease in inventory = excess demand meaning production have to increase to meet equilibrium prod. levels.

- Using Graphs:**
- Increase in inventory = excess in supply meaning Production need to increase to meet Equilibrium prod. levels.
 - Decrease in inventory = excess demand meaning production have to increase to meet equilibrium prod. levels.

- Using numbers:**
- Increase in inventory = excess in supply meaning Production need to increase to meet Equilibrium prod. levels.
 - Decrease in inventory = excess demand meaning production have to increase to meet equilibrium prod. levels.

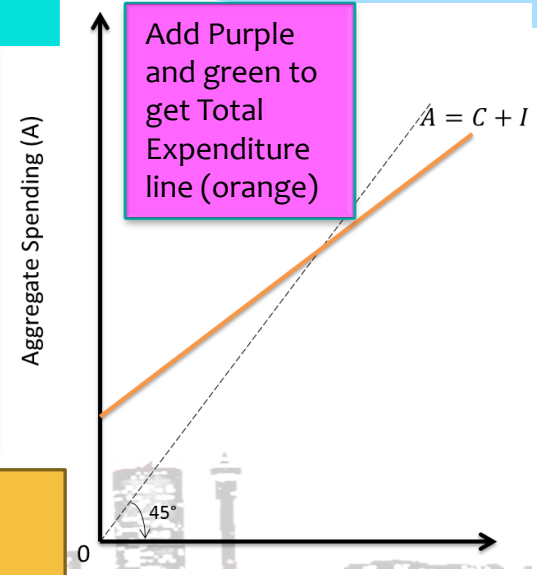
- Multiplier:**
- Investment has ripple effect in the economy.
 - E.g. when business invests money in building a new office block:
 - Business man invests R10 mill.



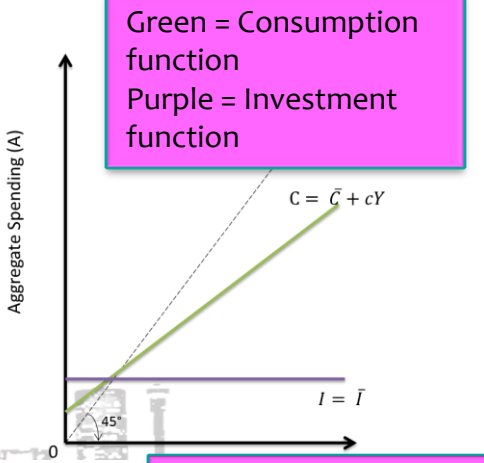
Aggregate spending increase with R10 mill
To ensure Equilibrium is reached the following happens:

- Production increases
- Spending increase
- * This happens until equilibrium is reached

REMEMBER: in the consumption function:
 $C = \bar{C} + cY$
The small C is a synonym for MPC



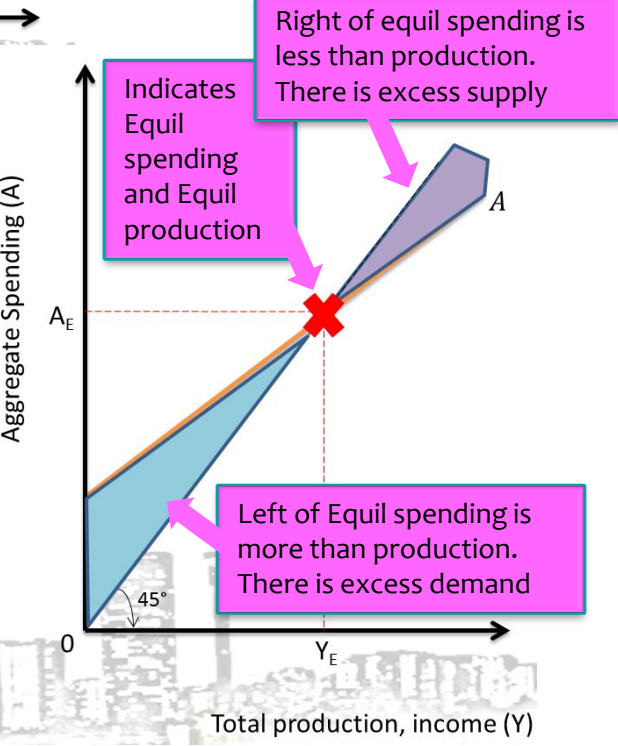
Add Purple and green to get Total Expenditure line (orange)



Green = Consumption function
Purple = Investment function

Investment had a great impact on the economy.
Calculation:
Equation for Multiplier = $\alpha = \frac{1}{1 - MPC}$

Example: MPC = 0.8 (Provided)
*Calculate the multiplier:

$$= \frac{1}{1 - 0.8} = \frac{1}{0.2} = 5$$


Right of equil spending is less than production. There is excess supply

Indicates Equil spending and Equil production

Left of Equil spending is more than production. There is excess demand