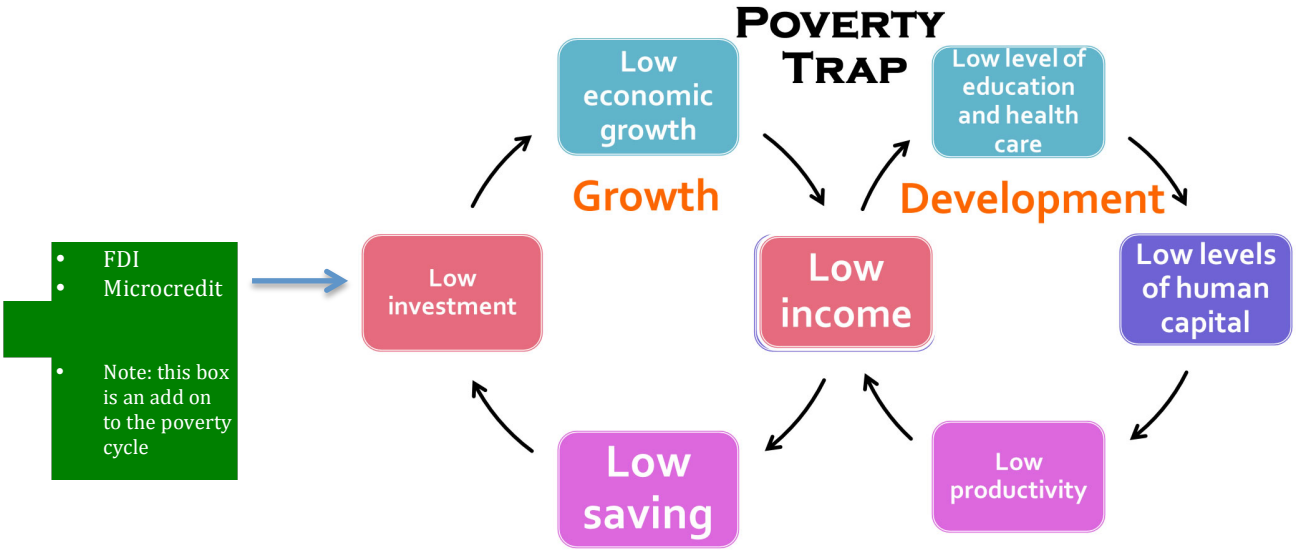
6 Key diagrams for development

Webnote 470

1. Poverty trap/cycle
2. PPC
3. Supply and demand showing increased total revenue after a firm uses microcredit to grow the business
4. Lorenz curve
5. AS/AD model
6. Macroeconomic circular flow of income

Development: 6 Key diagrams

1.Poverty Cylcle/Trap



The Poverty Trap is a diagram used to show how LEDC (poor nations) become trapped in poverty due to a wide range of factors which result in LOW INOME as show at the intersection of the two cycles. The factors include low investment, low saving, low levels of merit goods (education and healthcare) etc. For example, if economic growth occurs through investment then Poverty reduction can take place through this improved investment: e.g. microcredit or FDI (FDI is multi national corporations investing in poor countries.)

Note: it is useful to show the entry point of the investment and note effect on the development cycle

2. PPC Production Possibilities Curve

Fig 1

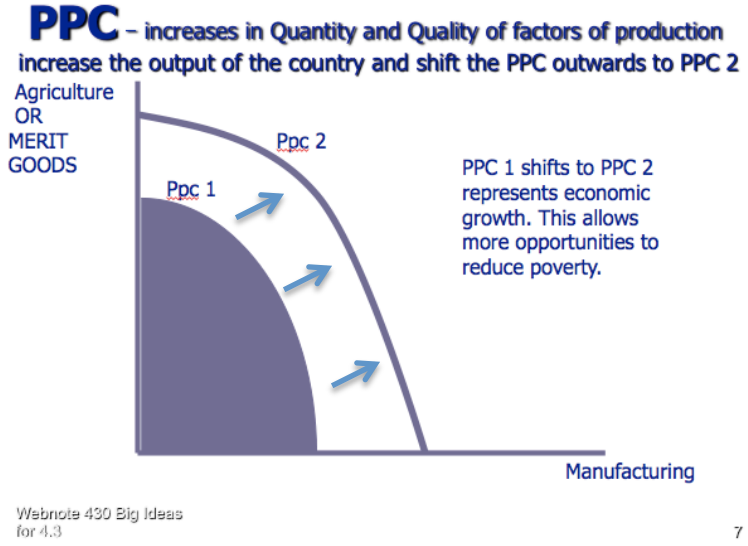


FIG 1:
The PPC is versatile and can be used to show many problems/solutions in macroeconomics. The important thing is to label the axes carefully.
Poverty reduction through economic growth as economy shifts from PPC 1 to PPC 2.

Note: label the axes carefully. For example if you label the Y axis with education + healthcare then you give the diagram a "development focus." Education + health care are key factors leading to improved development and poverty reduction.

Fig 2

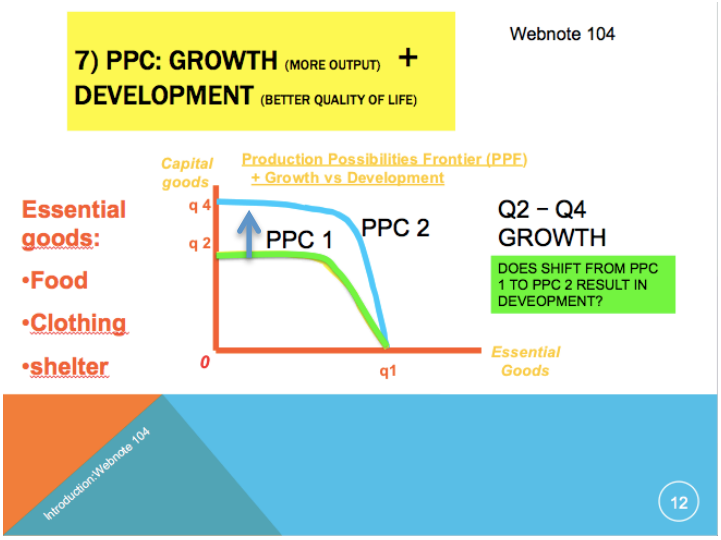
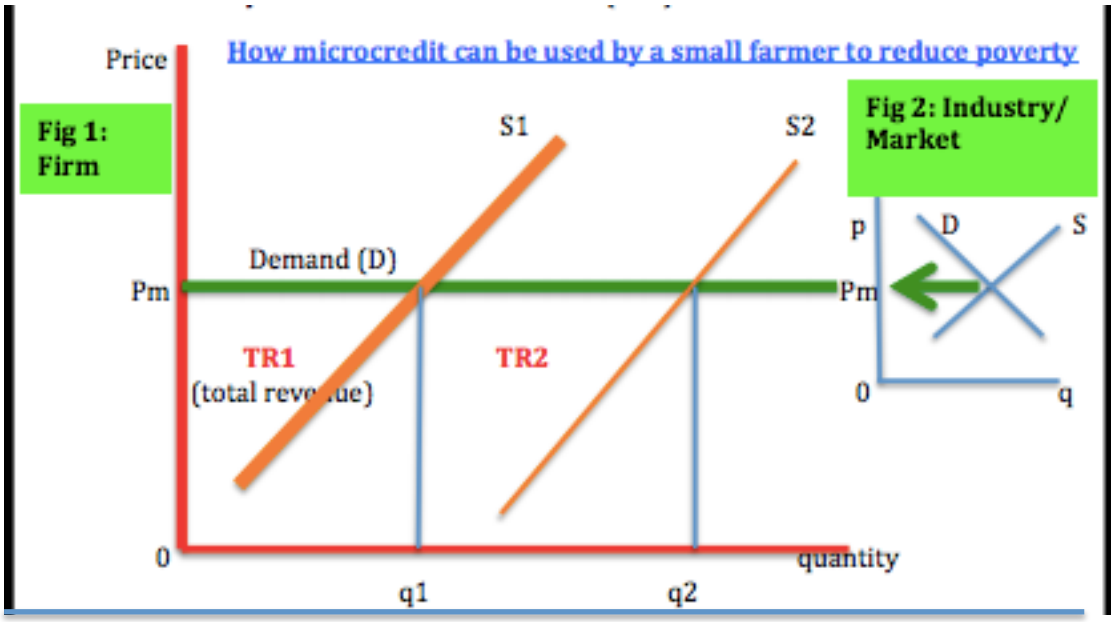


FIG 2:
PPC can be used to show growth with development simply by shifting the PPC outward.

In the example in Fig 2 there is no increase in output of necessities on the Y axis (such as food, housing and clothing) so the conclusion from the diagram is that growth without development occurs. To show growth with development simply reverse the X, Y labels so that the economy is producing more essential goods including food, shelter + clothing.

3. Supply and demand to show a firm increasing total revenue

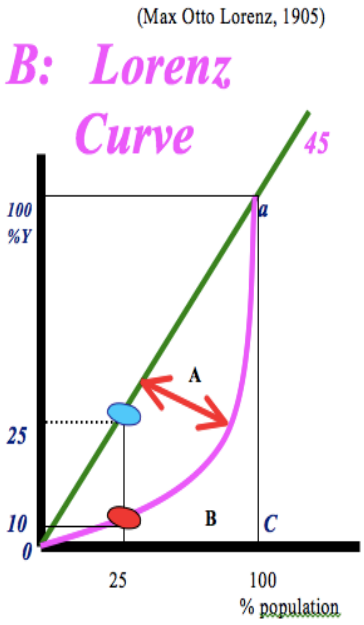


Microeconomics can also be used to show how the market can help to bring about Poverty reduction through micro credit used to grow a small business.

If the firm (a small farmer producing milk in this example) increases its output to Q2 (in figure 1) as a result of borrowing money (microcredit) to buy a second cow then the output of milk increases significantly and the total revenue increases from TR1 to TR1 + TR2. The assumption here is that the farmer can sell all of his output to the market at the market price of Pm (figure 2). The firm is a price taker and can sell all output at the market price. This is possible because the farmer is producing a miniscule amount of the total market supply. This investment (buying the cow) provides significant additional revenue for the farmer so that he/she can now afford more spending on healthcare and education and the level of development increases. Poverty reduction occurs.

4. Lorenz curve showing unequal distribution of income

Note: Lorenz curve can shift so that it is nearer to the 45 degree line (better distribution of income) or it can shift outward and away from the 45 degree line (worse distribution of income). Government can clearly influence the distribution of income using the tax system e.g. direct taxes on income where government can use progressive taxation to allow poorer people keep more of their income after tax i.e. disposable income.



(Corrado Gini)

C: Gini

Concentration Ratio

Formula is

Area of : A/A+B

or

Oa Lorenz curve / oaC

Gini coefficient: Examples

	1980	1990	1994
UK	0.327	0.333	0.345
Spain	0.397	0.381	0.340
Fra	0.417	0.399	0.290
Sweden		2002	0.25
Luxemborug		2002	0.27
Switzerland		2002	0.27
Brazil		2002	0.61

While most developed European nations tend to have Gini coefficients between 0.24 and 0.36, the United States Gini coefficient is above 0.4, indicating that the United States has greater inequality.Characteristics of Gini coefficient

The Lorenz curve shows the distribution of income in a country by comparing the distribution of income represented by the Lorenz curve underneath the 45 degree line. The 45 degree line represents a perfect distribution of income e.g. 25% of the population receives 25% of the national income. Better distribution of income reduces poverty. Red dot shows the problem where 25% receive 10% of the income and poor distribution of income is a typical feature of less developed countries. The range of values is between zero (perfect distribution) on the 45 degree line and the value of 1 which represents a completely unequal distribution of income.

Note: gini coefficient is a numerical representation of the Lorenz curve (banana). It measures the area under the 45 degree line between the Lorenz curve and the 45 degree line as a percentage of the whole range of inequalities represented by A+B. The Formula calculates:

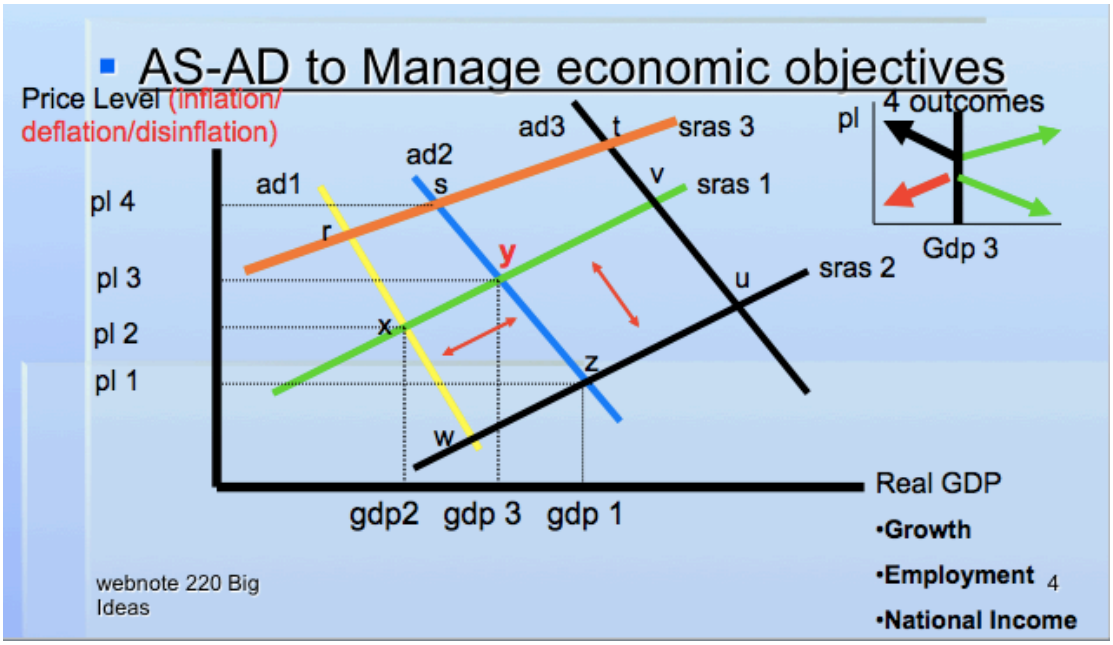
Gini Formula = A/ (A+B) (or A/ triangle aoc)

Formula = A/(A+B) and this calculates the area of A (the banana) as a % of the area of A+B or aoc. A+B or aoc is the area equal to the entire area under the diagonal or the 45 degree line. The area of this triangle represents all possible inequality options. You are then finding a ratio between A and A + B. You will end up with a decimal between 0 and 1 because 0 represents perfect distribution (i.e. on the Lorenz curve where A =0 because there is no inequality so A is on the 45 degree line, therefore A/(A+B) = 0 and 1 represents complete inequality where the numerator (A) would be equal to the entire area of the triangle aoc or A+B and divided by itself A+B it must then be equal to 1.

Note 1: also that if you multiply the decimal result of the formula result by 100 you will get a % and this represents the inequality as a %. This also works to represent the Gini measurement of inequality.

Note 2: It is important to understand that the Gini calculation represents area of A (banana) as a % of area of total inequality represented by A+B or aoc. Therefore the Gini coefficient will most likely be < 1 unless the inequality (banana) is equal to total area of A+B. In this case the Gine coefficient would be =1 but this is most unlikely to occur. The coefficient will lie somewhere between 0 and 1 and LEDC countries will have a value nearer to one.

5. AS/AD model to demonstrate growth and jobs (note this is the short run as/ad)



The AS/AD model is a key macroeconomic diagram and can be used to show some important events in any macroeconomy. The graph shows the total output of final goods and services in an economy and the price level for the level of output. The key events in a macroeconomy are inflation, growth, employment, national income/real GDP (GPD = value of output of economy).

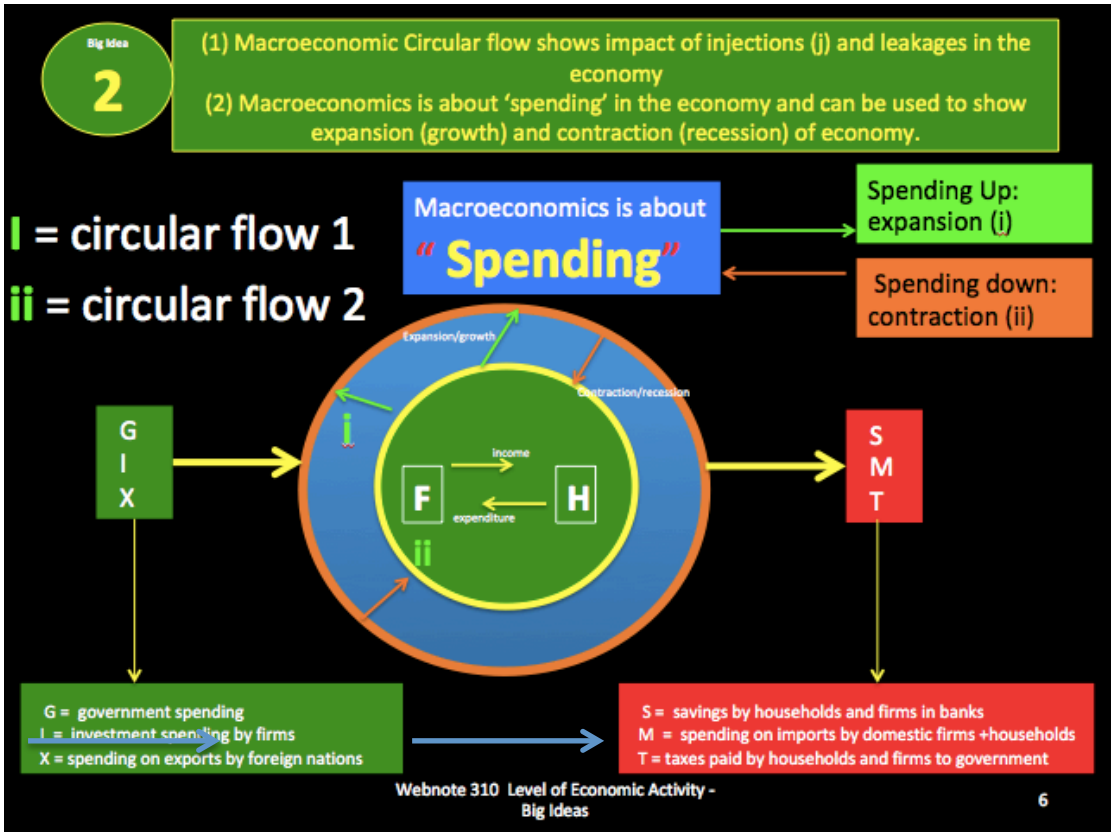
It shows inflationary/deflationary pressure in a whole economy on the **Y axis.**

On the **X axis** the real GDP (real means inflation adjusted value of the output) of the economy is shown and this can be used to record economic growth, the level of employment (a separate AS/AD diagram can also be drawn for the labour force) and national income. It is also possible to comment on the level of employment on the X axis and a separate as/ad can be drawn for the labour force i.e. as/ad for labour.

If you use X as the starting point of an analysis then it can shift to point y as a result of in increase in income (caused by an increase in G or I). The economy could then to s or z depending on how the costs of factors of production change e.g. wages. Wage increases would see a shift to s but a decrease in wages would result in a shift to z. These are useful examples to understand how the AS/AD shifts causing changes in inflation (y axis) and growth on the (x axis). We will study (or have studied) this in more detail in section 3.2 of the syllabus.

6. Macroeconomic Circular flow of income: How does microcredit and FDI affect the economy?

Macroeconomy circular flow of income: what grows and shrinks an economy?



Macreconomic circular flow of income showing injetions and leakages is a very useful diagram to show key events in an economy. Essentially the diagram can be used to show expansionary policy (Circular Flow i to ii) or contractionary policy (Circular Flow ii to i). The government has a key role here and if you study the injections and leakages in the diagram you will see that government spending (G) and taxes (T) have a huge influence in the size of the economy. However the market is also important. Investment (I) and Exports (X) along with Imports (M) and Savings (S) are all carried out in economic markets. It is then a useful diagram to show and understand how the government and the market plays a part in achieving economic growth (expansionary policy) and also what the government can do if the economy is in economic recession (falling GDP). In this case the government could increase G or reduce T. Or maybe the economy has a problem with rising inflation. In this case the government can also take action to help the economy to recover. It can reduce G or increase T to bring about a reduction in spending and therefore there will be less upward pressure on prices due to less scarcity.

Injections: Grow/expand economy Leakages: Shrink/contract the economy.