

Syllabus Reference: 2.3

**Lorenz Curve and the Gini Coefficient**

**A: Focus:**

**Income inequality / Distribution**

Key government objective,  
See webnote 301.  
Applies to DC's and LDC's.

**D:**

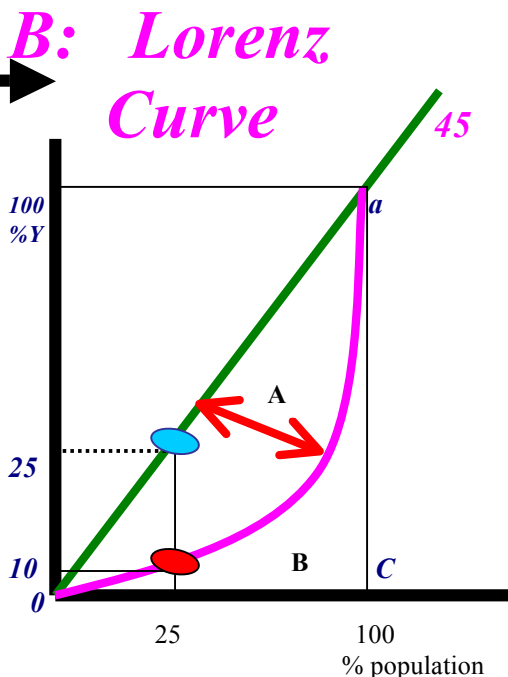
**Understanding the Gini:**  
If the calculation is zero the implication is that income distribution is Perfect i.e. no area existing between the 45 degree diagonal (line of absolute equality) and the Lorenz curve. If the Gini is = 1 then there is complete inequality i.e. one household has all the income  
Also note the following:

1. Gini can be expressed as a decimal, index or a percentage
2. Gini coefficients reflect income before taxes and do not record payments in kind (non monetary benefits). In the UK.
3. Valid comparisons between two Gini coefficients cannot be made if the lines intersect:

**Limitations of Lorenz curve:**

1. The amount of inequality may be misleading. If richer households are able to use their incomes more efficiently than lower income households, the amount of inequality could be understated.
2. When comparing two Lorenz curves, it is not possible to determine which distribution has more inequality if the two curves intersect.
3. An individual's income varies over his lifetime, and this variation is not considered when analyzing inequality using a Lorenz curve. Lorenz curve ignores life cycle effects.

(Max Otto Lorenz, 1905)



(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
Luxemborg		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

**E: Teacher notes**

**Lorenz:** The Lorenz Curve model was developed by economist Max Lorenz in 1905.

- Lorenz uses x and y axes to determine income distribution using a percentage of total population on the X axis and total income on the Y axis.
- A perfect distribution is evident at
- a poor distribution is evident at
- the lower the Lorenz i.e. away from the 45 degree line the greater the inequality See box B
- inequality gap
- 45 degree line represents a line of absolute equality i.e.
- It should be noted that the Gini coefficient is not a perfect measure of income equality as all of the percentile information is condensed into one decimal, index or percentage and therefore two countries with two different Lorenz curves showing two different distributions of income can in fact have the same Gini coefficient

**F: assessment**

HL paper 2 May 2010 (10 marks)

With the aid of a diagram, explain how an increase in transfer payments to the poorest households in a nation is likely to affect the Lorenz curve and the Gini coefficient of that nation.