

1 Evolution of inequality (based on Exam 2015)

1. Discuss some factors that can explain why there is inequality in labor earnings among ordinary wage earners. To what extent can these factors explain the increase in inequality observed in many Western countries since the 1980s?
2. Discuss the evolution of top incomes relative to mean incomes over the same period. What can explain these changes?

2 The Gini coefficient

The Gini coefficient can be calculated as

$$G_1 = \frac{\sum_i \sum_j |x_i - x_j|}{2n^2\mu} \quad (1)$$

$$G_2 = \frac{2 \sum_i ix_i}{n^2\mu} - \frac{n+1}{n} \quad (2)$$

$$G_3 = 2 \times \text{Area under the Lorenz curve} \quad (3)$$

1. Show that G_1 can be rewritten as G_2
Hint: It may be useful to start with $n = 3$ to see the structure
2. Show that G_3 can be rewritten G_2
Hint: Divide the area under the Lorenz curve into a series of trapezoids with width $1/n$ and height $\frac{x_i+x_{i+1}}{2}$
3. Explain how Aaberge et al. (2018) construct a counterfactual income distribution to study the effect of assortative mating on inequality. What are the strengths and weaknesses of this approach?
4. Explain how they can claim that there is more assortative mating in the bottom of the income distribution in Northern Europe and more assortative mating at the top in many Middle Income countries. Why is this the case?