# ECO111 : Lecture 23

28 September 2024

SCENARIO D: Property Rights, Rule of Law, & Right to Vote

- Suppose now, Angela has the right to vote.
- She convinces the institution that makes policies to ensure she gets 4.5 bushels of grain and work no more than 4 hours a day.
- Her, consumption lies at the IC above the reservation IC and she is better off than the earlier scenario where we did not explicitly consider the rule of law.
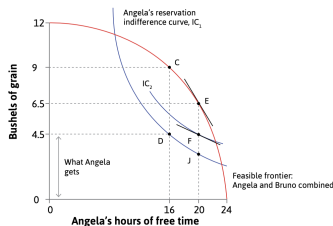
- Here, Angela's bargaining power has increased.

Economic Rents

- Angela's bargaining power increased, while Bruno's declined.
- Angela is better off at F than she was at D. Thus she is receiving an economic rent.
- Economic rent is what one gets above their reservation option.
- Bruno's reservation option if Angela does not share crops is to get nothing. Hence, whatever he gets in the allocation contract with Angela is his economic rent.
- Angela's economic rent is the difference in the bushels of grain received at point J and point F.
- Economic rent can be thought of in two different ways:
    1. *What would Angela give up to be under a better law.*
   2. *What she would pay to pass a new law and keep it in force.*

Bargaining to an Efficient Sharing of the Surplus

Scenario D

- At F, the allocation is not on the efficiency curve or the contract curve.
- At F, Angela works for 4 hours, gets 4.5 bushels of grains, while Bruno gets the remaining 2 bushels of grain.
- Given, the implementation of the law and Angela's reservation option is to work for 4 hours a day, Angela can work longer hours and produce more than 6.5 bushels of grains and provide Bruno only the 2 bushels as in the earlier condition.
- Angela could increase her economic surplus by choosing to produce more under the new rule of law.

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Scenario D
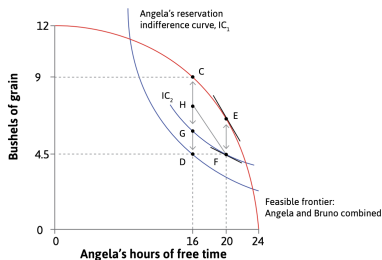
- As we saw earlier the maximum joint surplus is at point C, where Angela works for 8 hours and produce 9 bushels of grain. Here MRT = MRS of the reservation IC.

- There is a movement away from the allocation at D where Bruno had the bargaining power.
  1. *The move from D to F is facilitated by the rule of law. This move was not win-win as Bruno lost some surplus while Angela benefited by shifting to a higher IC*
  2. Once the rule of law made Angela produce at E and allocation at F, there were many win-win possibilities available.
- All allocations between G and H, along the efficiency curve is a win-win situation.
- Angela produces at C, to maximize her economic surplus while sharing with Bruno CH = EF = 2 bushels of grain.
- Here Bruno's economic surplus remains at 2 bushels of grain as was at F.

Contd...

- Bruno reasons that at H, he is no better than he was at point F.
- Angela's reservation option with the new legislation is working 4 hours a day unlike earlier where it was working 0 hours a day.
- Bruno proposes that Angela pay him 2.5 bushels instead of 2 bushels, so that she can work his land.
- The negotiation works as long as Bruno asks for less than GH.
- The new deal implies Angela produces at MRT = MRS, ie., at C and shares the crop at any point between G and H. Since the new allocation lies on the efficiency curve, it is a pareto improvement from what was the allocation at F.
- Where along GH would the exact allocation be shall depend on the relative bargaining power of both of them.
- There is a potential to achieve a fairer outcome under rule of law.

Measuring Economic Inequality

- We were talking about Pareto efficiency until now.
- What about fairness or equality?
- Pareto efficient outcomes can be highly unequal.
- In the scenarios we saw above, the inequalities arose from difference in:
  1. Bargaining power.
  2. **Endowments**: what they each owned before the social interaction. It can be a characteristic of the individual in the transaction or ownership of a property.
- Differences in endowment and institutions can also affect the bargaining power of the individual in the social interactions.
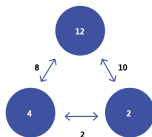
Gini Coefficient

- In the last three scenarios we saw, the allocation of different crop shares of what was produced to Bruno, caused differences in the level of inequality between Bruno and Angela.
- **GINI COEFFICIENT** is a measure of inequality of any quantity (income, wealth, property, etc.,) varying between 0 (no inequality) to 1 (totally unequal - a single person receiving all the quantity).
- Gini coefficient is a superior measure of inequality than the rich/poor ratio and 90/10 ratio as all individuals' income is considered here, and not just of the richest 10 percentile or poorest 10 percentile.

- Consider an economy with three individuals, with incomes as shown inside the circles.

$$Gini\ Coefficient = \frac{1}{2}[\frac{Average\ of\ differences\ of\ incomes}{Average\ of\ incomes}]$$

Lorenz Curve

- A graphical representation of inequality of wealth, income, etc.,
- Arrange individuals in ascending order of their income.
- Plot the cumulative share of the income against the cumulative share of the population.
- For complete equality the Lorenz curve would be a straight line with slope 1. Why?
- The degree by the Lorenz curve falls short of this perfectly equal cure is a measure of inequality.

Lorenz Curve
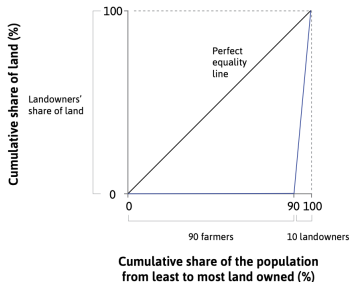
- The height of the Lorenz curve at any point on the horizontal axis shows the fraction of income owned by the fraction of the population indicated by that point on the horizontal axis.
- If the Lorenz curve is closer to the 45° line, then the distribution is more equal than when it is farther away from the 45° line

Gini Coefficient and Lorenz Curve

$$Gini\ Coefficient = \frac{Area\ between\ the\ Lorenz\ curve\ \&\ 45^o\ line}{Area\ under\ 45^o\ line}$$

- A society with very few extremely rich people and everyone else moderately well-off might have the same Gini coefficient as a society with very few extremely poor and everyone else moderately well-off