

Property Rights and Power: Efficiency and Equity

BCPM0058. ECONOMICS

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Lecture 5

CONTEXT

Unit 2 time Institutions can affect the income that people receive for their work.

Unit 4 Institutions (the rules of the game) matter for social outcomes.

What other factors *determine* final outcomes?

How do we *evaluate* final outcomes?

How can we *improve* final outcomes?

KEY QUESTIONS

What is efficiency?

What is equity?

*Can they be measured **objectively** or need to be assessed **subjectively**?*

EFFICIENCY

Pareto Efficiency:

“you can’t make anyone better off without making anyone worse off”

“No stone left unturned”

In practice:

Production: produce the most one can with given inputs

All the inputs used in the best possible way

Exchange: makes the best exchange possible

No surplus left on the table during bargaining

EQUITY

What is *fair*?

“subjective” versus “objective”

Allocations can be considered unfair for two reasons:

Inequality of *outcome*

Wealth, well-being

Inequality of *process*

Opportunities, social norms

Rawls' veil of ignorance: Taking an impartial perspective

CAFE RULES

Institutions: “Rules of the game”

Efficiency or equity

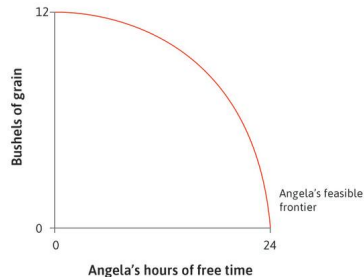


ANGELA THE FARMER

Angela faces a tradeoff
between grain and free time.

Initially, she farms the land by
herself and keeps all the grain.

Optimal allocation is where
marginal rate of substitution
equals marginal rate of
transformation

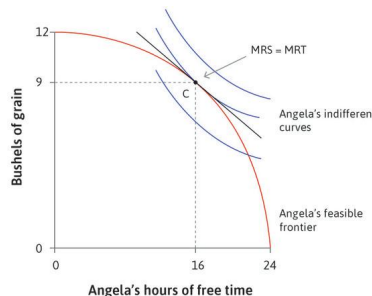


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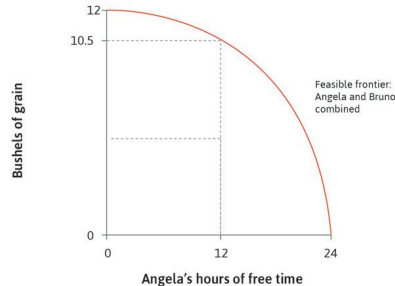
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BRUNO

Bruno is not a farmer, but
wants some of Angela's grain.

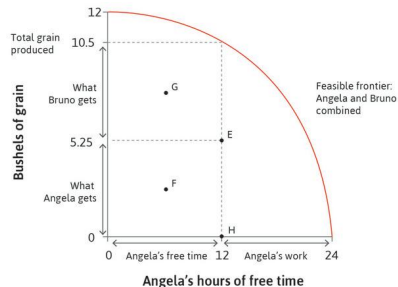
The combined feasible set
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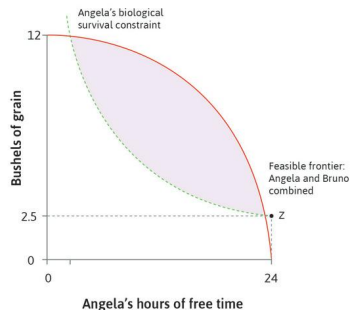


BIOLOGICAL SURVIVAL

Feasible frontier shows all the technically feasible outcomes (limited by technology).

Biological survival constraint shows all the biologically feasible outcomes

Feasible allocations are given by the intersection of these constraints.

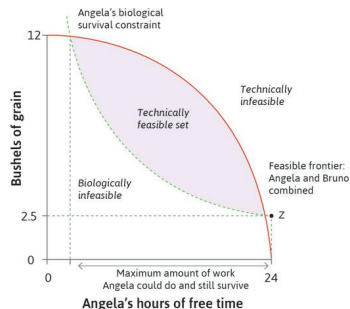


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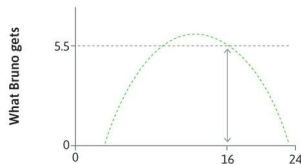
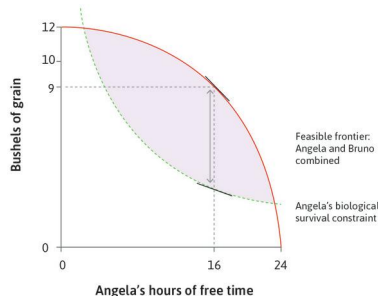


COERCION: BRUNO THE ARMED BANDIT

Institutions:

suppose Bruno can take as much of Angela's grain as he wants

Allocation that maximises Bruno's economic rent is where the slope of the biological constraint equals the slope of the feasible frontier

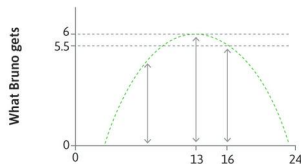
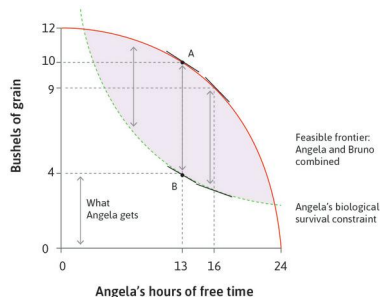


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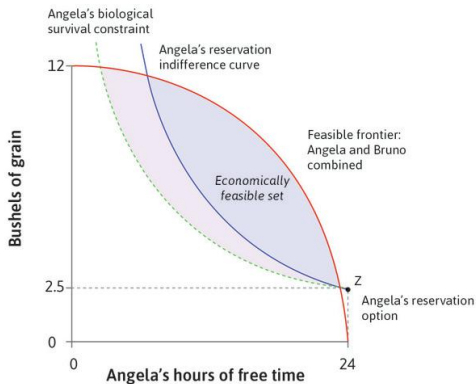
Allocation that *maximises Bruno's economic rent* is where the slope of the biological constraint equals the slope of the feasible frontier



How parties divide up the joint surplus depends on:

Each party's *reservation option* (*opportunity cost*)

The *relative bargaining power* between the parties



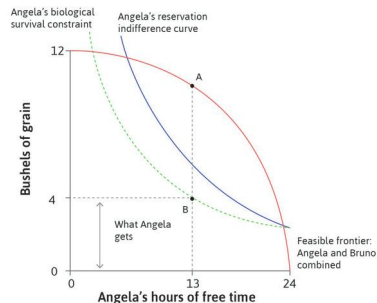
Economically feasible set: all possible allocations that benefit both parties.

COERCION: BRUNO THE LANDLORD

Institutions:

Bruno, the landlord, owns the land and bargains for the rent

Joint surplus is *maximised* where the slope of the reservation indifference curve equals the slope of feasible frontier.

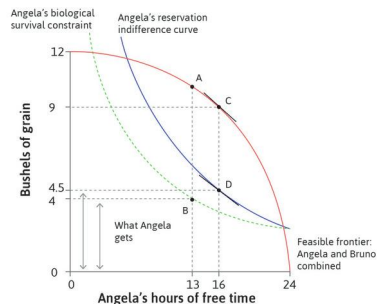


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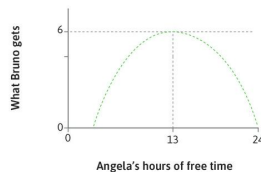
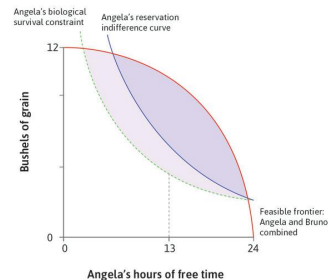
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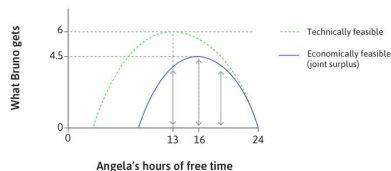
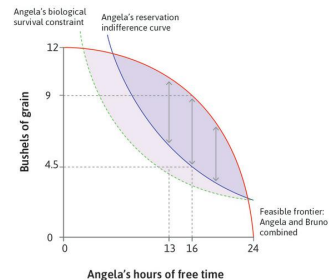
TECHNICAL FEASIBILITY

Technical Feasibility: technology and biology determine which allocations are technically feasible. (Pareto-improving).



ECONOMIC FEASIBILITY

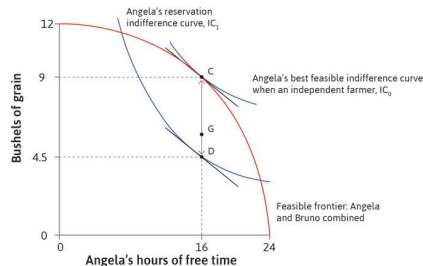
Economic Feasibility (joint surplus): institutions and policies help determine which allocations are economically feasible (Pareto-improving).



THE PARETO EFFICIENCY CURVE

Pareto efficiency curve: the set of all Pareto efficient allocations

The joint surplus is the same, but the distribution of the surplus differs at each point on the curve.



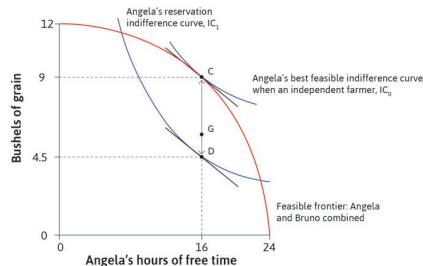
THE PARETO BARGAINING

The allocation chosen will be on the *Pareto efficiency curve* (line CD).

At C, *Angela gets all the surplus*.

At D, *Bruno gets all the surplus*.

In any other point on the curve, *Angela and Bruno split the surplus*, and each receive a rent.

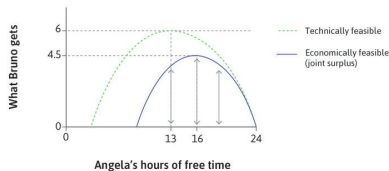
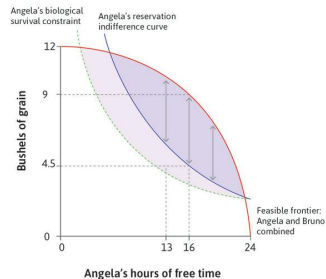


INSTITUTIONS

Institutions and policies affect the size of the surplus and its distribution.

Institutions can *change the slope or shift* the reservation curve

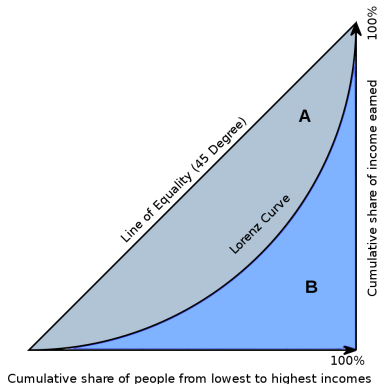
Institutions can *reshape* the feasible frontier



LORENZO CURVE

horizontal axis: percentage of people

vertical axis: cumulative percentage of total income earned by the percentage of people on the horizontal axis.

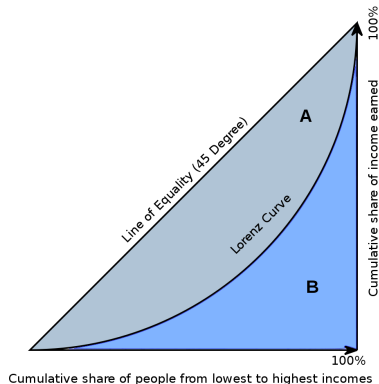


GINI COEFFICIENT

Lorenz curve: Shows the extent of inequality and allows comparison of distributions.

Gini coefficient: a measure of inequality.

$$g = \frac{A}{A+B}$$

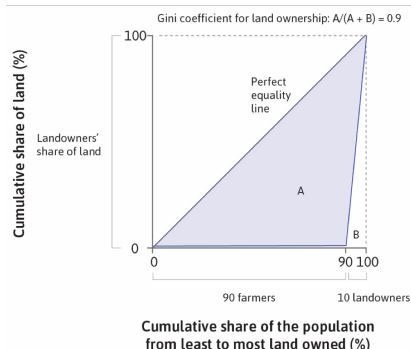


GINI COEFFICIENT RANGE

g ranges from
0 (perfect equality) to
1 (maximum inequality).

*Feudal society: 90% earned
nothing and 10% earned
everything.*

$$g = 0.9$$



OPERATION BARGA

West Bengal before 1973,

Land distribution *extremely unequal*

A few landowners (*zamindars*) owned all the land.

Sharecropper farmers (*bargadars*)

leased land to farm and in return

owed half their crop output to the landowners.

High proportion lived below the poverty line

OPERATION BARGRA

In 1978,

Newly elected government *adopted new laws:*

Bargadars could keep up to 75% of their crop.

Bargadars were protected from eviction by landowners if they paid 25%.

Law gave

bargadars had more incentive to *work hard*

bargadars had more incentive to *invest in land*

Inequality decreased after the programme was implemented

Yield of rice increased in comparison to neighbouring areas

SHARECROPPING EXAMPLE

Landlords own the land but don't want farm on it.

Sharecropper farmers grow crops on the land.

	Farmers	Landlords
Proportion	$n\%$	$(1 - n)\%$

Contract

Farmers keep s proportion of the output

Landlord gets $1 - s$ portion of the output

Output:

Each *farmers* produces output: q

	Farmers	Landlords
Income	sq	$(1 - s)q$

SHARECROPPING EXAMPLE

100 people in the economy

farmers $n \cdot 100$
Landlords $(1 - n) \cdot 100$

	<i>Farmer</i>	<i>Landlord</i>
<i>Contracted share</i>	s	$1 - s$
<i>Number</i>	$n \cdot 100$	$(1 - n) \cdot 100$
<i>Total output</i>	$n \cdot 100 \cdot q$	
<i>Income</i>	$s \cdot n \cdot 100 \cdot q$	$(1 - s) \cdot (1 - n) \cdot 100 \cdot q$

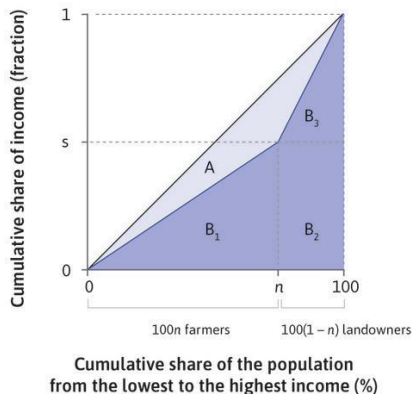
GINI COEFFICIENT

Gini coefficient:

$$g = \frac{\text{Light blue area}}{\text{Light \& dark blue area}}$$

$$g = \frac{A}{A + B}$$
$$= \frac{A}{B_1 + B_2 + B_3}$$

Inequality increases as A increases



GINI COEFFICIENT

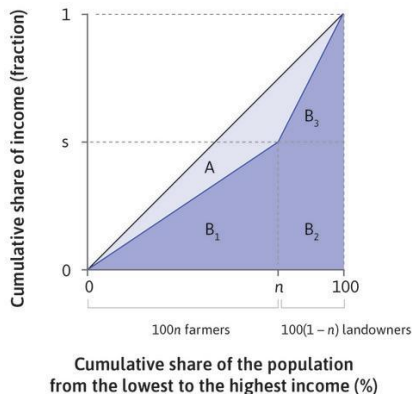
Slope of line separating
area A from B1 $\frac{s}{n}$

Slope of line separating
area A from B3 $\frac{1-s}{1-n}$

*Inequality increases as n increases
and s decreases.*

*Operation Bagra decreased
inequality by increasing s .*

*Other land reform programmes
have tried to decrease n .*



GINI COEFFICIENT

$$g = \frac{A}{B_1 + B_2 + B_3}$$

$$A = \frac{1}{2} - B$$

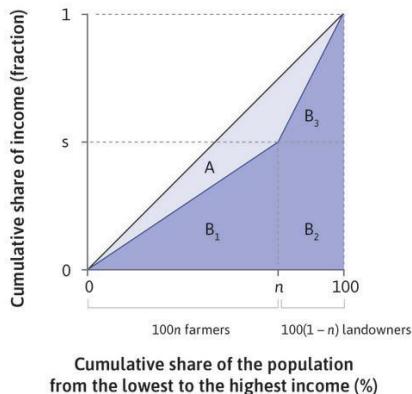
$$B_1 = \frac{ns}{2}$$

$$B_2 = (1 - n)s$$

$$B_3 = \frac{(1 - n)(1 - s)}{2}$$

$$g = n - s$$

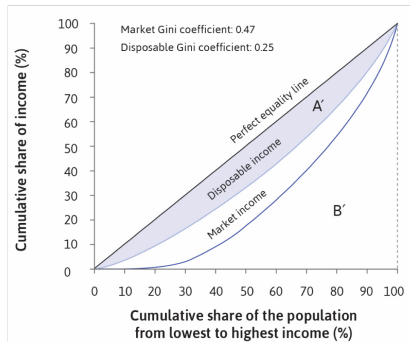
Inequality is increasing in n and decreasing in s .



REDISTRIBUTIVE POLICIES

Redistributive government policies (income tax and transfers) can result in greater equality.

Cross-country differences in inequality could be due to effectiveness of redistributive policies.



OPERATION BAGRA

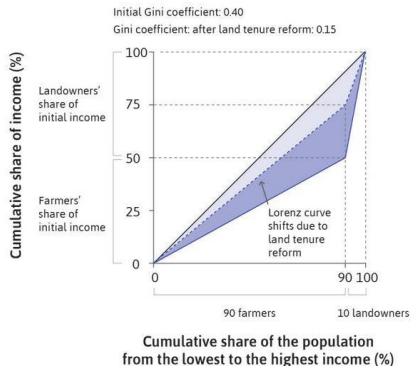
Land tenure reform allowed farmers to

keep a greater share of their crop and

protected them from eviction

Increased s and maybe decreased n

Moved the income distribution closer to diagonal



SUMMARY

Two criteria used to evaluate outcomes

Objective: Pareto efficiency

Subjective: Fairness

Allocations depend on *preferences, power and institutions*

Institutions can determine *reservation options and bargaining power*

Gini coefficient measures the *inequality* of allocations

Public policies can make allocations more *efficient or fairer*