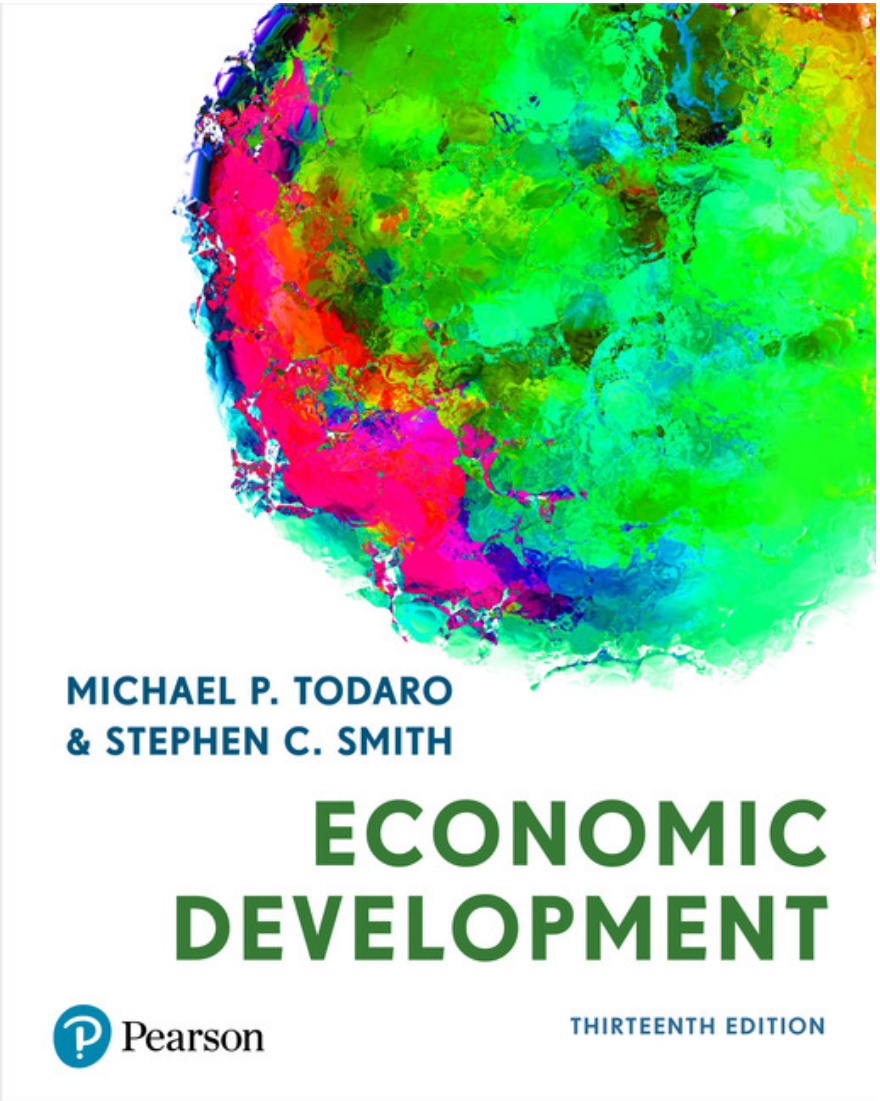
Economic Development

Thirteenth Edition



Chapter 5

Poverty, Inequality, and Development

Pearson

Omissions

- Omit: functional distributions, calculating the poverty headcount and Foster-Greer-Thorbecke index, Dualistic Development, details of Multi-Dimensional Poverty Index. Omit the appendix
- As always refer to these class notes.

No society can surely be flourishing and happy, of which by far the greater part of the numbers are poor and miserable. (Adam Smith , 1776)

Viewed through the lens of human development, the global village appears deeply divided between the streets of the haves and those of the have-nots. (Human Development Report, UN, 2006)

Distribution and Development: Eight Critical Questions

1. How can we best measure inequality and poverty?
2. What is the extent of relative inequality in developing countries; how is this related to the extent of poverty?
3. Who are the poor, and what are their economic characteristics?
4. What determines the nature of economic growth—that is, who benefits from economic growth, and why?

Distribution and Development: Eight Critical Questions (Continued)

5. Are rapid economic growth and more equal income distribution compatible or conflicting objectives? Is rapid growth achievable only at a cost of greater income inequality or can lessening income disparities contribute to higher growth rates?
6. Do the poor benefit from growth, and does this depend on the type of growth a developing country experiences? What might be done to help the poor benefit more?
7. What is so bad about extreme inequality?
8. What kinds of policies are required to reduce the magnitude and extent of absolute poverty?

A Capabilities and Distribution-Based Social Welfare Framework

- *Placing Chapter 5 in the development and capabilities framework of Chapter 1…*
- Generally, we may think of welfare as a function, ***W = W(Y, E, H, M, Other…),***
- Where ***Y***=standard of living, ***E***=Education, ***H***=Health, ***M*** =Empowerment, and ***Other*** represents additional factors representing important capabilities
- Income, health, education indicators are averages; but distribution also matters

- In chapters 3 and 4, we focus most on ***Y*** (income, or permanent income from wealth, or broadly living standards), through frameworks such as:
  - Growth models
  - More complex constraints on growth including coordination failures
  - Growth diagnostics
- In chapters 3 and 4, we used average incomes, Y, as the outcome variable

A Capabilities and Distribution-Based Social Welfare Framework (Continued)

- Here, we first consider distribution of Y, expanding from averages to address:
  - (Relative) Inequality of Income
  - (Absolute) Income Poverty
- In the first part of Chapter 5, our welfare framework becomes:

  W = W(Y, I, P)
- Then we study multidimensional poverty with three deprivations: in health, education, and income (or assets)
- In Chapter 8 we examine health and education inequality

According to the World Bank Global Poverty Update April 2022(estimates)

- Approximately 8.6% of the world population lives under $1.90 per day vs. 36% in 1990.
- Approximately 23.2% lives under $3.20 per day vs. 55.3% in 1990
- Approximately 42.9% lives under $5.50 per day vs. 67.1% in 1990

(note old standards were $1-1.25 a day and $2 a day)

Inequality and poverty are present in ALL countries;

developed and developing.

Note: rising inflation and the economic impacts of COVID-19 could reverse this trend.

Source: https://blogs.worldbank.org/opendata/april-2022-global-poverty-update-world-bank

5.1 Measuring Inequality and Poverty

- Measuring Inequality
  - Size distributions (quintiles, deciles): shows amount of income received by various classes of families or individudals. (we usually use household income)
  - Lorenz curves
  - Gini coefficients and aggregate measures of inequality

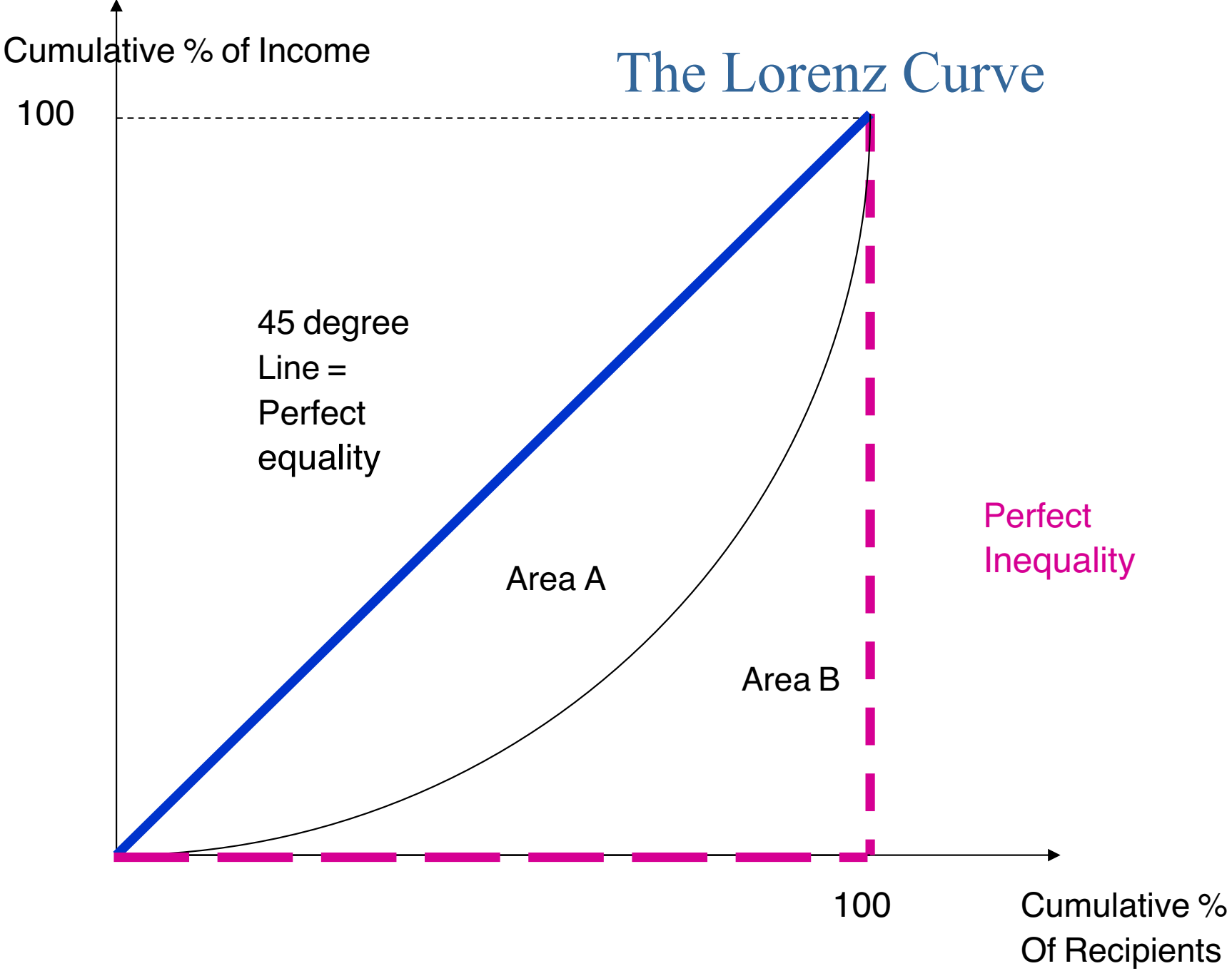
Desirable Properties for Measures of Relative Inequality

- **Anonymity:** measure should not depend on who has higher income; e.g. whether we believe the rich or poor to be good or bad people
- **Scale independence**: inequality measures should not depend on size of the economy – want a measure of income dispersion
- **Population independence principle**: an inequality measure should not be based on the number of income recipients
- **Transfer principle** - all other incomes constant, if transfer income from a richer to a poorer person (not so much that the poorer person is now richer than the originally rich person), resulting new income distribution is more equal
- Gini coefficient

Table 5.1
Typical Size Distribution of Personal Income in a Developing Country by Income Shares—Quintiles and Deciles

Individuals	Personal Income (money units)	Share of Total Income (%)	
		Quintiles	Deciles
1	0.8		
2	1.0		1.8
3	1.4		
4	1.8	5	3.2
5	1.9		
6	2.0		3.9
7	2.4		
8	2.7	9	5.1
9	2.8		
10	3.0		5.8
11	3.4		
12	3.8	13	7.2
13	4.2		
14	4.8		9.0
15	5.9		
16	7.1	22	13.0
17	10.5		
18	12.0		22.5
19	13.5		
20	15.0	51	28.5
Total (national income)	100.0	100	100.0

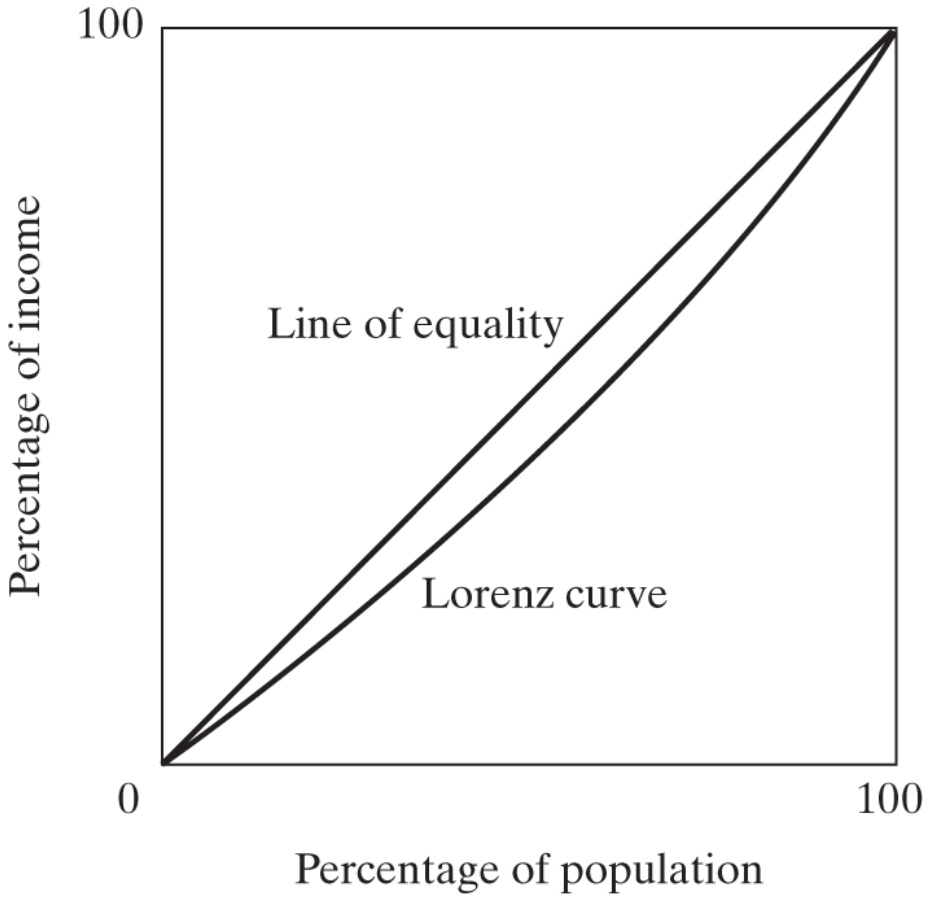
The Lorenz Curve



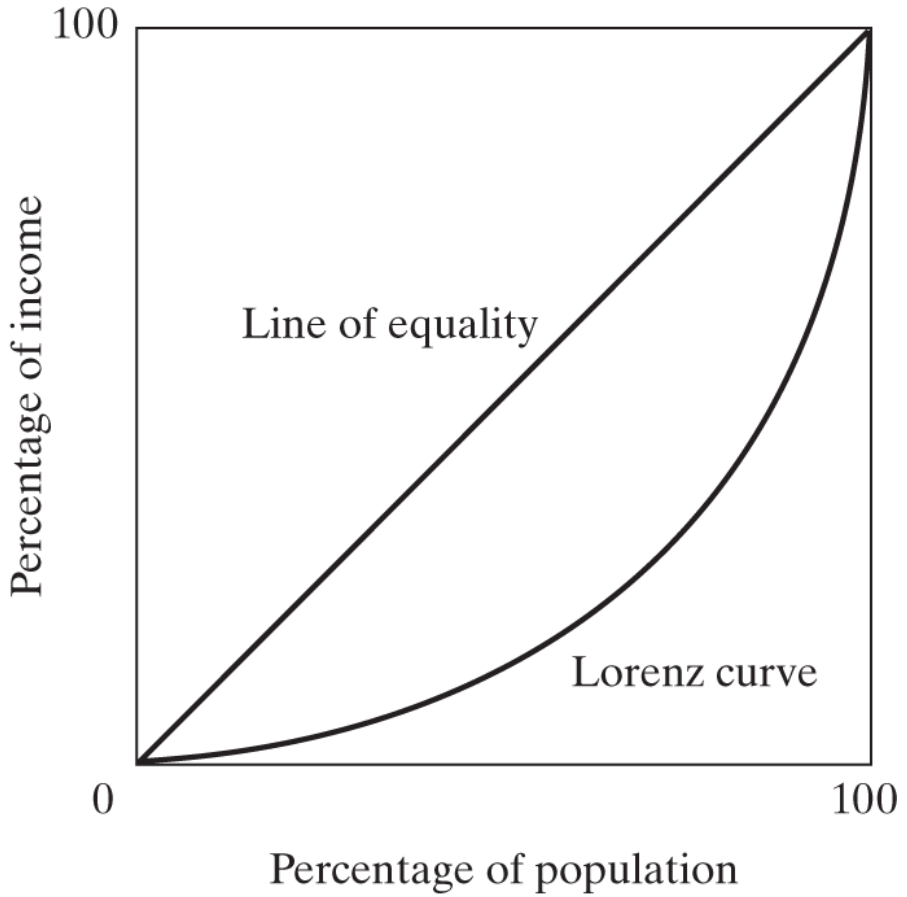
- If everyone had the same income, the Lorenz curve would equal the 45 degree line.
- Inequality increases as the Lorenz curve bends away from the 45 degree line (leading to the area A getting larger).

- A/(A+B) = Gini coefficient
- Where A represents the area between the 45 degree line and the Lorenz curve and area B represents the area between the Lorenz curve and the outside of the box.

Figure 5.2
The Greater the Curvature of the Lorenz Line, the Greater the Relative Degree of Inequality



(a) A relatively equal distribution



(b) A relatively unequal distribution

The Gini Coefficient

- Equation= $\frac{\text{value of area A}}{\text{Value of area A + B}}$

- It will range from a value of 0 (perfect equality) to a value of 1 (perfect inequality)

- Note that the value of area A + area B always equals 0.5.

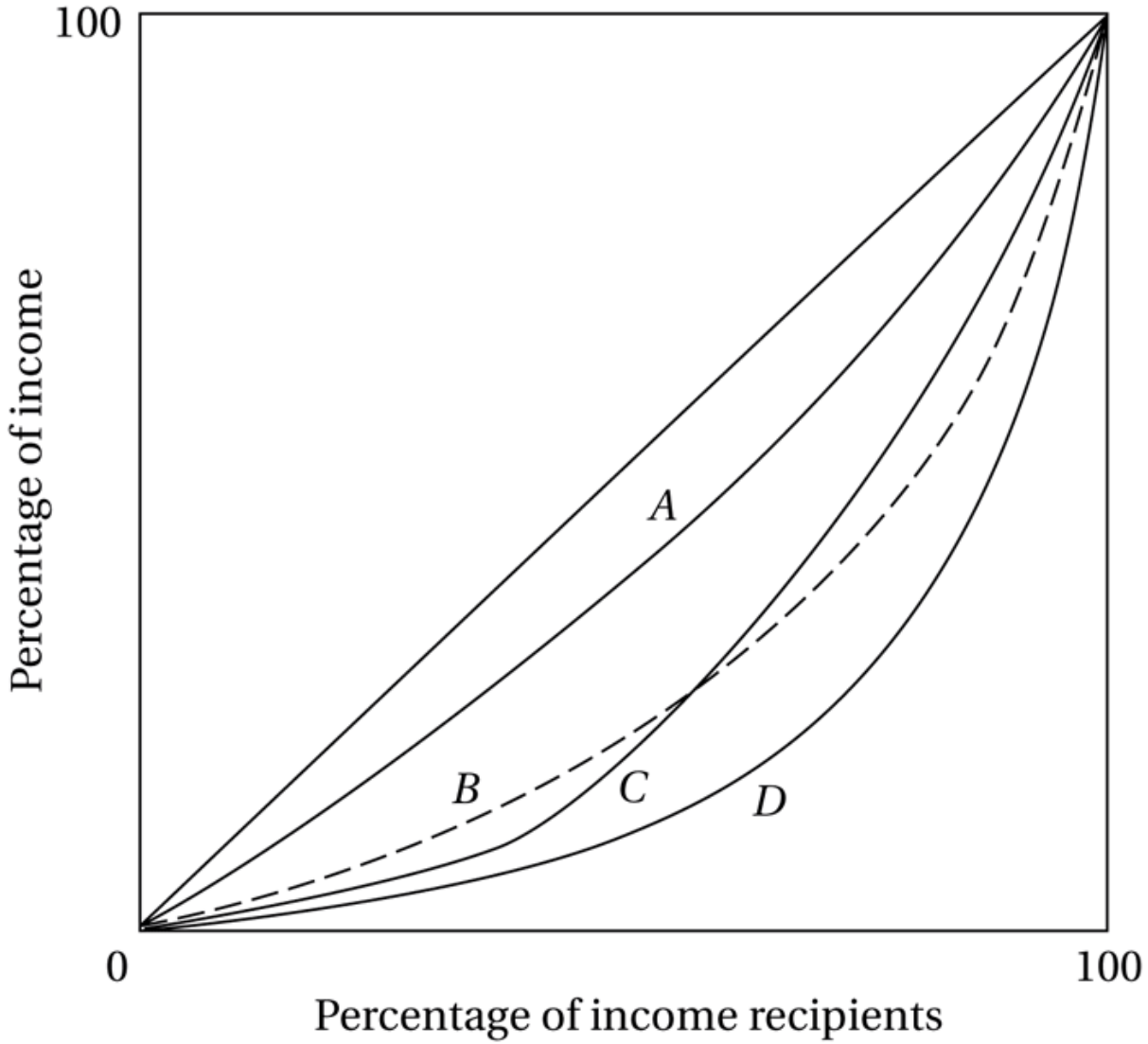
Sample Gini Coefficients

- Relatively Low
  - Egypt, Cambodia, Croatia
- Relatively High
  - Zambia, Iran, Malaysia, Brazil
  - South Africa, the US
  - https://worldpopulationreview.com/country-rankings/gini-coefficient-by-country

- **Problems with using the Gini and the Lorenz curve:**

- 1) Lorenz curves can intersect
- 2) Curves with different shapes can generate the same Gini ratio.
- 3) the measure is fairly sensitive to the distribution changes

Figure 5.4 Four Possible Lorenz Curves



Curve A= Most equal
Curve D= Least equal
What about The other 2?

Monotonicity and Distributional Sensitivity

- **Monotonicity principle**: If you add income to someone below the poverty line, all other incomes held constant, poverty is bettered.
- **Distributional sensitivity principle**: if you transfer income from a poor person to a richer person (even if the "richer" person is also below the poverty line), the resulting economy is deemed poorer

- These principles clarify what is lacking in some widely used measures such as the simple headcount and headcount ratio

5.2 Measuring Absolute Poverty

- Headcount Index: *H/N*
  - Where *H* is the number of persons who are poor and N is the total number of people in the economy; H/N is the *fraction who are poor*
- Does not meet desirable properties and accordingly is likely to cause incentive problems.

Unintended Policy Incentives of Using Headcount Measures

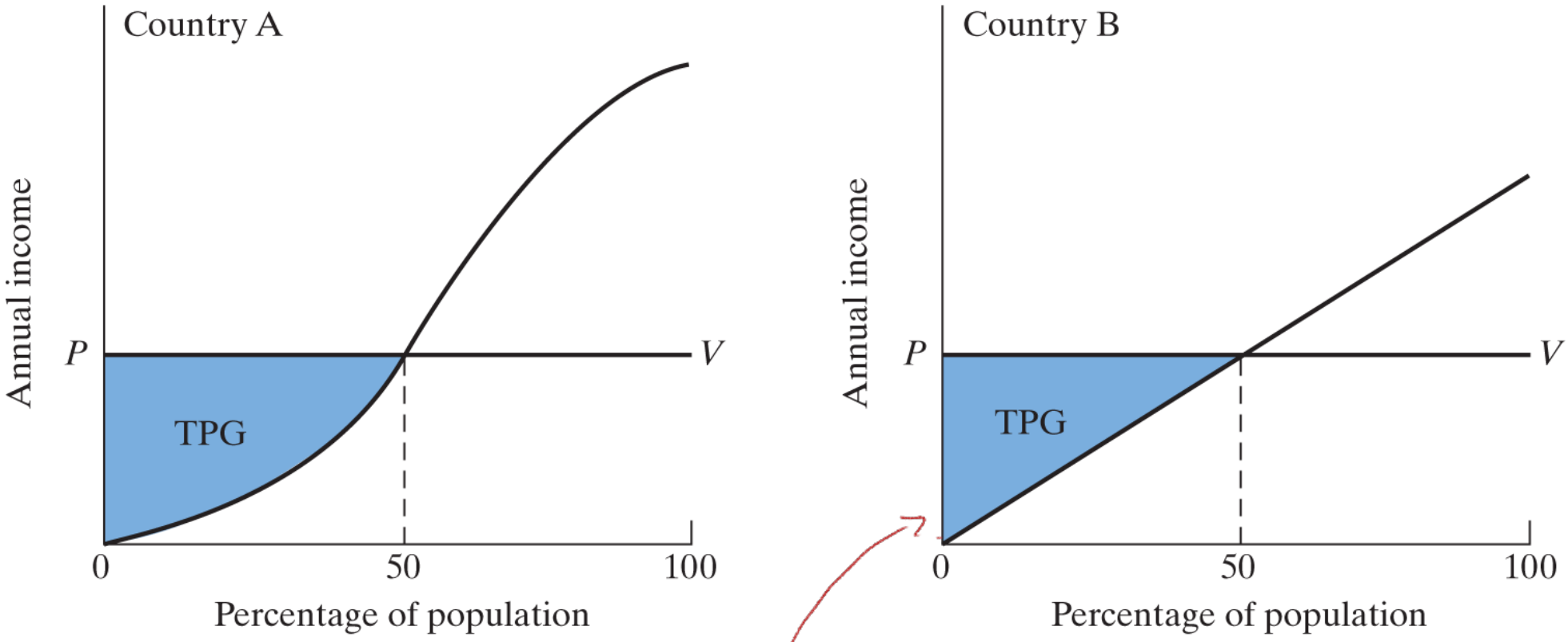
- When agencies are told their mission includes poverty reduction…
- Measuring poverty by headcount or fraction poor creates incentive to report improvements in these measures; this plausibly focuses efforts toward those closer to poverty line
- Circumstantial evidence:
  - Incumbent politicians frame poverty progress in terms of headcount or fraction – staff would anticipate and want favorable results - by this measure - to report
  - Government policy exhibits “urban bias,” e.g. emphasizing job creation for the poor in cities - who are closer to the poverty line
  - Reports: NGOs work near main roads, or district towns, easier-to-reach; if so, people assisted are less poor on average

5.2 Measuring Absolute Poverty

- Total poverty gap:
  - Where Y_p is the absolute poverty line; and Y_i the income of the ith poor person (note we will not calculate this or the Foster-Greer-Thorbecke Index). Measures the extent to which each person's income falls below the absolute poverty line…

$$\text{TPG} = \sum_{i=1}^{H} \left(Y_p - Y_i\right)$$

Figure 5.5
Measuring the Total Poverty Gap



5.2 Measuring Absolute Poverty

- Average poverty gap (APG):

$$\text{APG} = \frac{\text{TPG}}{N}$$

  - Where ***N*** is number of persons in the economy
  - TPG is total poverty gap
  - Note: normalized poverty gap, NPG = APG/ Y_p

5.2 Measuring Absolute Poverty (Continued)

- Measuring Absolute Poverty
  - Average income shortfall (AIS):

$$\text{AIS} = \frac{\text{TPG}}{H}$$

  - Where H is number of poor persons
  - TPG is total poverty gap
  - Note: Normalized income shortfall, NIS = AIS/ Y_p

5.2 Poverty, Inequality, and Social Welfare

- What's So Bad about Extreme Inequality?
- Note that this can be due to very few people at the top who are very rich and/or a lot of people at the bottom who are poor
- What are the economic arguments?

Why is inequality bad?

- leads to economic inefficiency
- leads to low credit rating: lower saving, less investment.
- rich tends to invest abord
- social unrest.

Country	Gini Coefficient	Income per Capita (2017 $, PPP)
Low Income		
Liberia	35.3	1,383
Malawi	44.7	1,026
Rwanda	43.7	1,904
Uganda	42.8	2,037
Lower-Middle Income		
Bangladesh	32.4	4,143
Bolivia	44.6	8,057
Honduras	51.1	5,021
Kyrgyz Republic	26.8	4,659
Upper-Middle Income		
Argentina	42.0	22,697
Georgia	36.6	12,382
North Macedonia	34.5	14,760
Paraguay	47.9	11,668
High Income		
Canada (2013)	33.8	46,217
Greece	35.0	28,602
Panama	50.4	27,195
United States	41.4	60,024

Source: World development indicators.

Poverty, Inequality, and Social Welfare

- Dualistic Development and Shifting Lorenz Curves: Some Stylized Typologies
  - Traditional sector enrichment (see Figure 5.6)
  - Modern sector enrichment (see Figure 5.7)
  - Modern sector enlargement (see Figure 5.8)
  - Note: there is an “interaction effect” between modern sector enlargement and enrichment (if someone moving to the modern sector also gets the modern sector “raise” received by those already in that sector…)

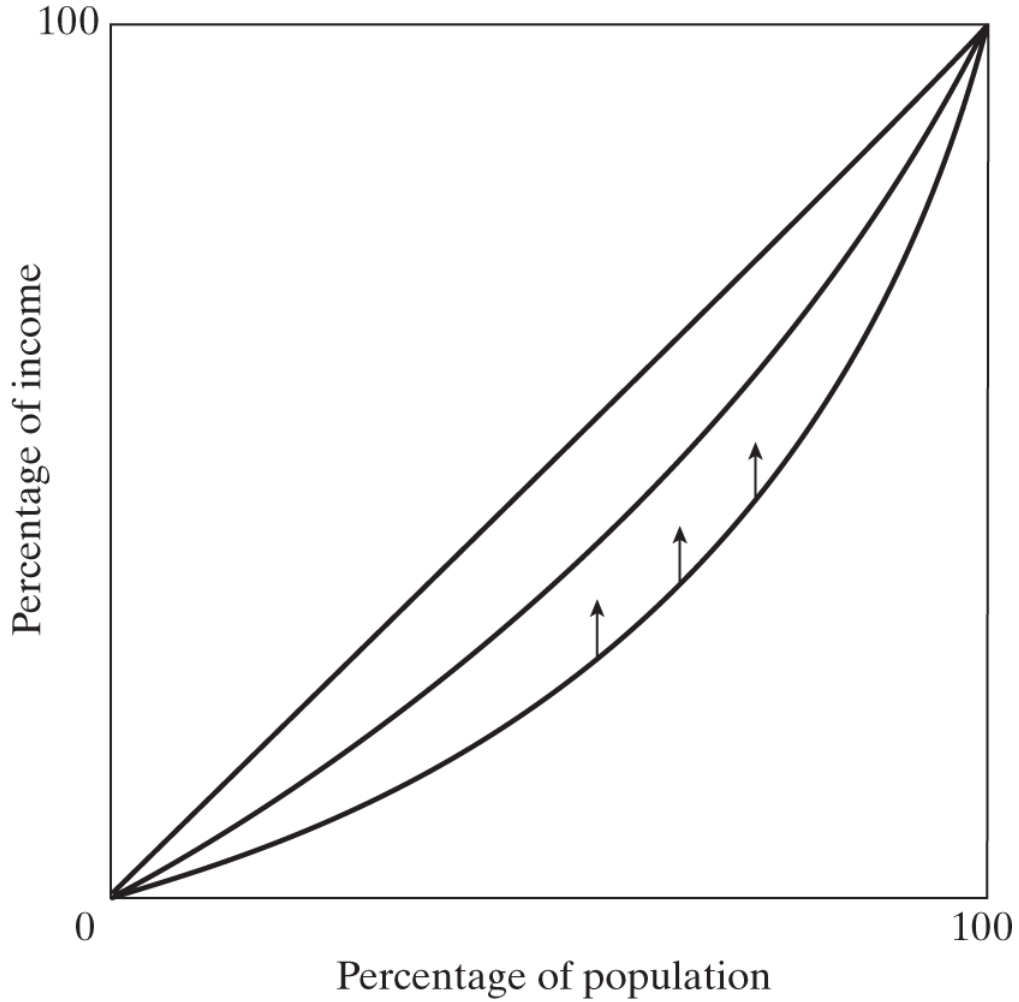
Traditional Sector Enrichment

- All of the benefits of growth are divided among traditional sector workers with little or no growth in the modern sector.

- Eg. Policies focusing on decreasing absolute poverty with relatively low growth rates

leads to a reduction in inequality.

Figure 5.6
Improved Income Distribution under the Traditional-Sector Enrichment Growth Typology

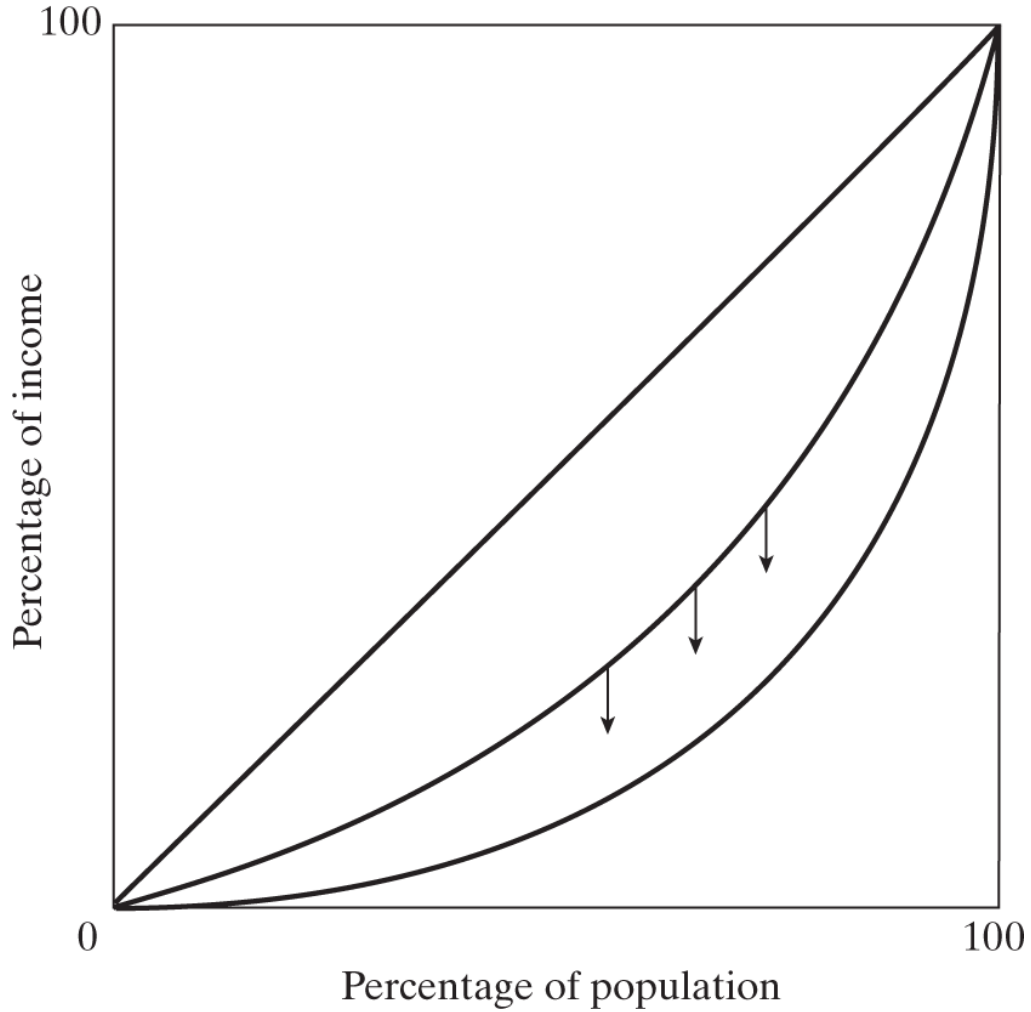


Modern Sector Enrichment

- Growth is limited to a fixed # of people in the modern sector and in the traditional sector, both wages and number of workers remain constant.

leads to rising in inequality.

Figure 5.7
Worsened Income Distribution under the Modern-Sector Enrichment Growth Typology



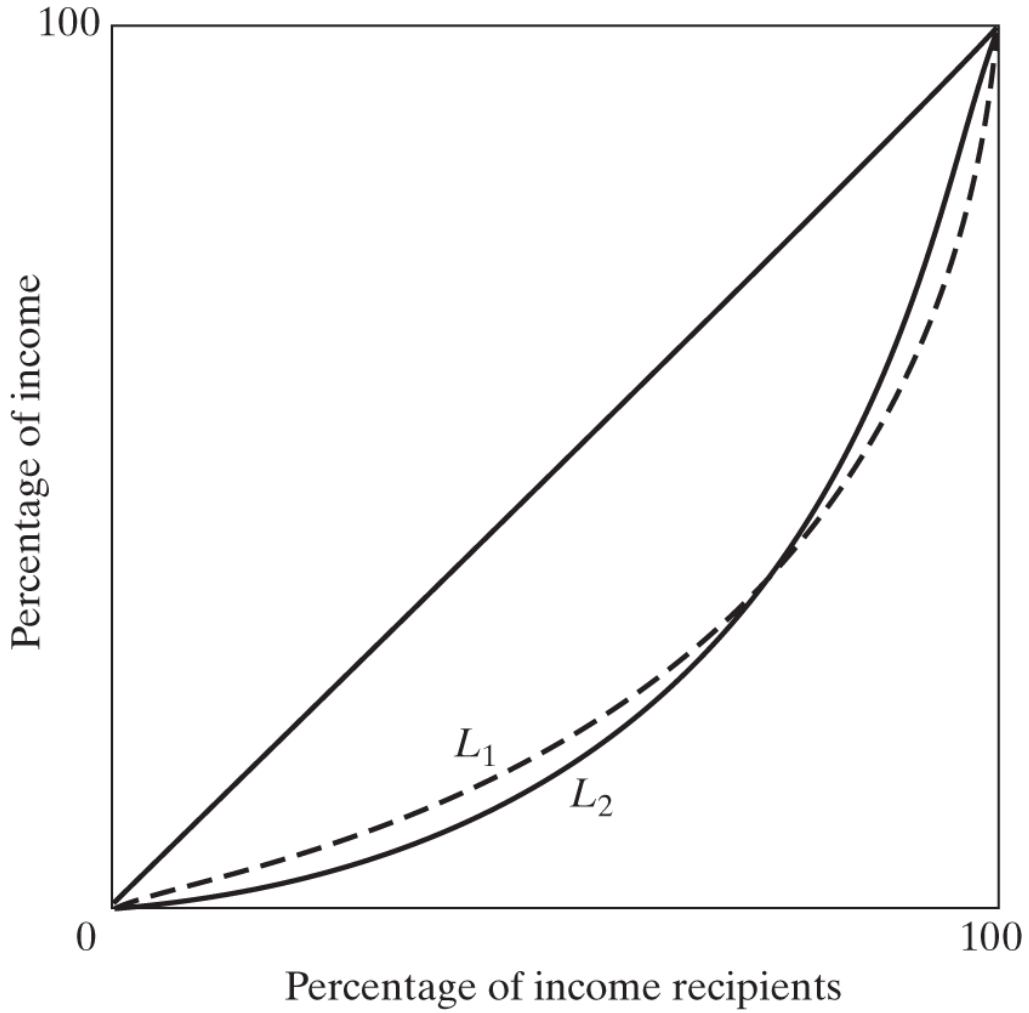
Modern Sector Growth

- Enlarging the size of the modern sector with wages being relatively constant in both sectors
- Viewed as Lorenz curves crossing

inequality keeps

Figure 5.8
Crossing Lorenz Curves in the Modern-Sector Enlargement Growth Typology

Poverty decreases
A little in L_1 and
increases
A little in L_2



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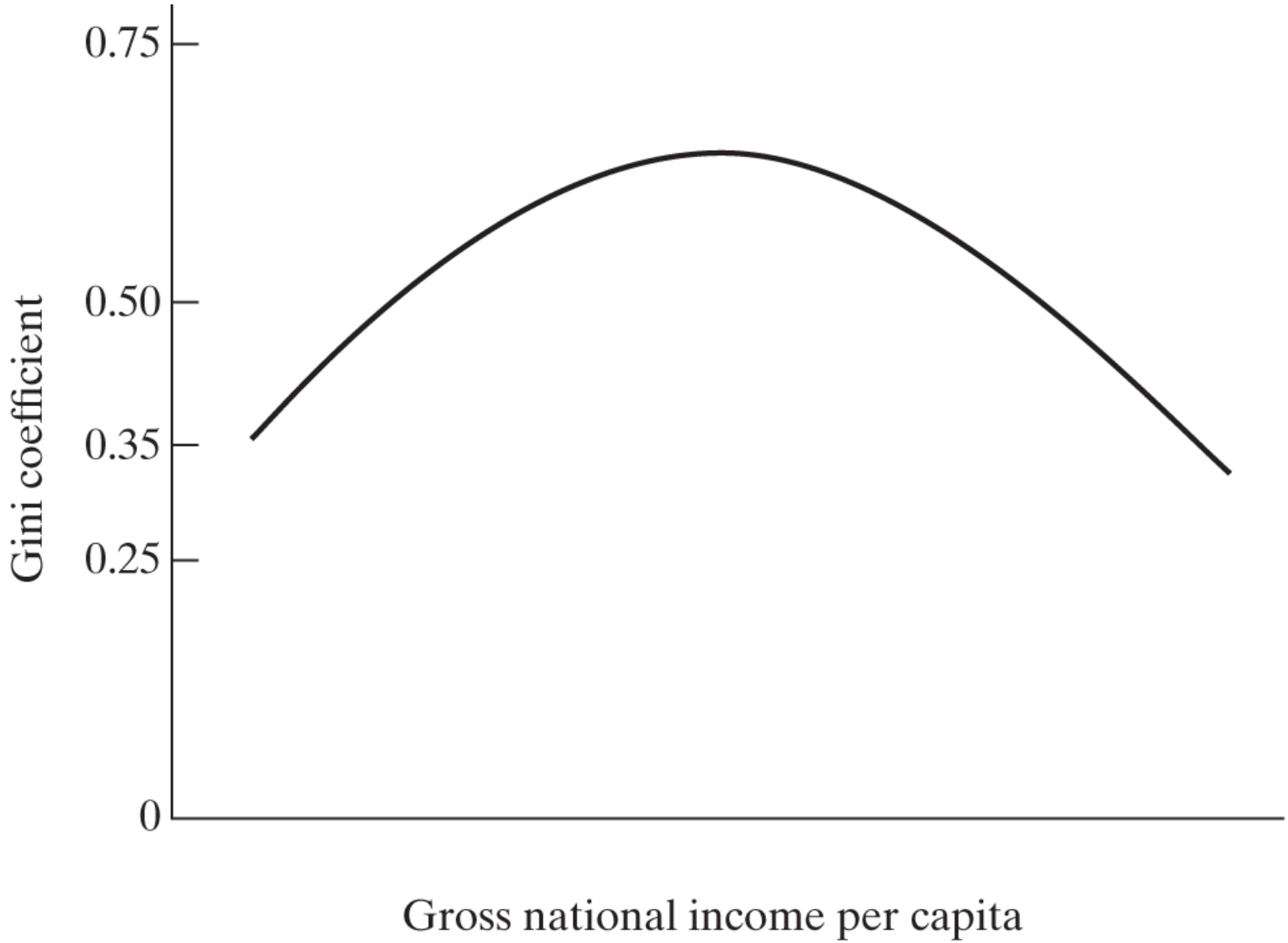
5.3 Poverty, Inequality, and Social Welfare

- Kuznets' Inverted-U Hypothesis- inequality gets worse before it gets better
- **Why?**
- Is this inevitable?
- The inverted-U could be consistent with modern sector enlargement growth, but not traditional or modern sector enrichment growth, depends if there is eventually positive trick-down effects.

Figure 5.9
The "Inverted-U" Kuznets Curve



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What's good about inequality?

could reflect real GDP growth
create incentive for risk taking.

5.4 Absolute Poverty: Extent and Magnitude.

- Progress on Extreme Poverty
  - Clear progress on $1.25-a-day headcount (old standard, now $1.90)
  - Less progress on $2.00-per-day headcount (see Figure 5.14) (old standard, now $3.20)
  - Incidence of extreme poverty is uneven
- Relationship between Growth and Poverty
  - Association between growth and poverty reduction
  - When it is inclusive, growth reduces poverty
  - Lower extreme poverty may also lead to higher growth

Poverty Measures

Basic Human Needs (BHN) and Social Indicators

- rather than just looking at income, look at minimum levels of nutrition, health, clothing, etc.

Basic Human Needs (BHN) Policies

- BHN emphasizes the provision of public services, along with entitlements to the poor to make sure they get access to the service provided.
- Basic commodities: staple foods, water and sanitation, health care, primary and nonformal education and housing

Relationship between Growth and Poverty

- Association between growth and poverty reduction
- When it is inclusive (spread fairly equally), growth reduces poverty
- Lower extreme poverty may also lead to higher growth
- Research suggests that approx 1/3 of the poor are always poor.

Inequality can also reduce growth

- How?

reduce investment

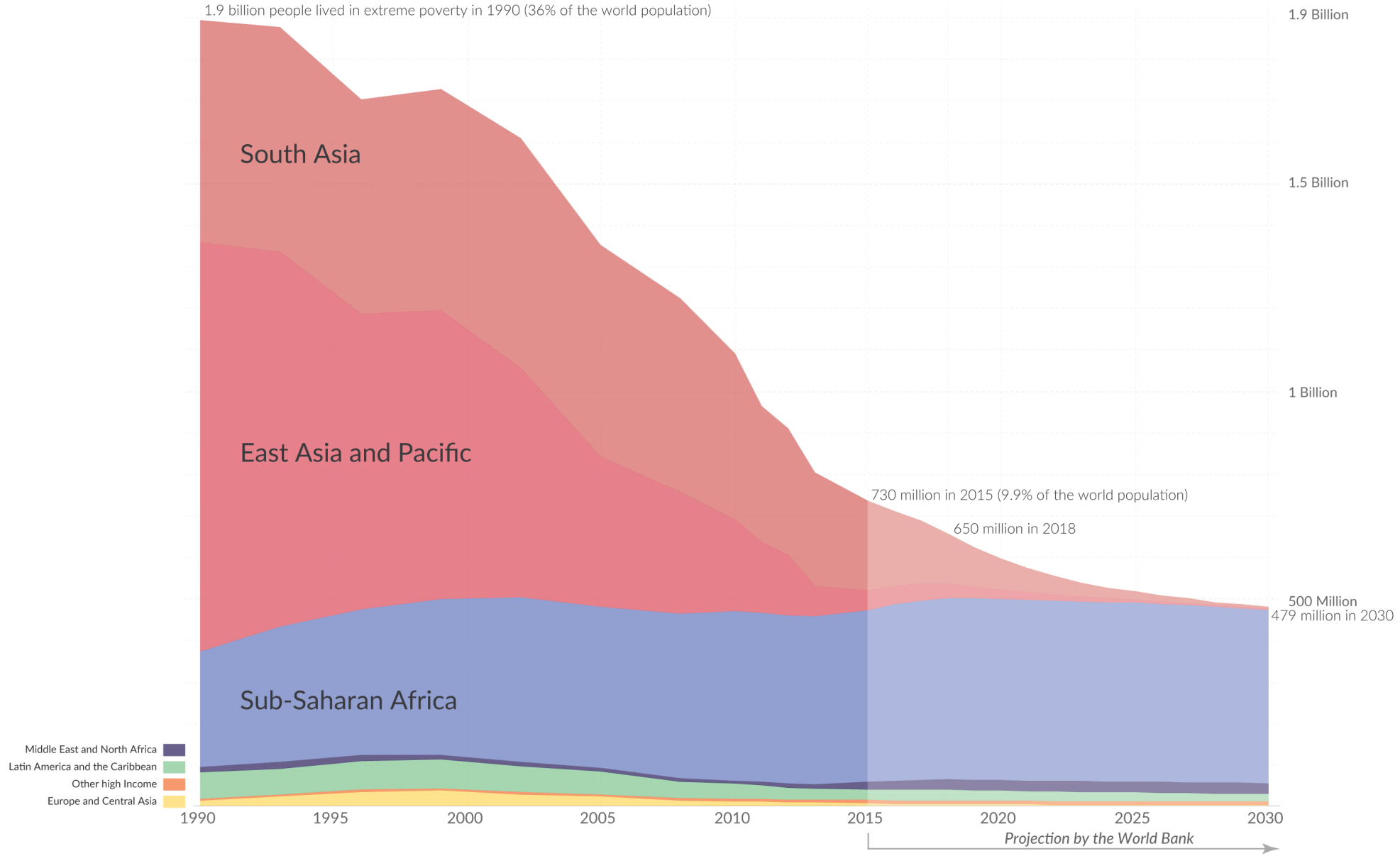
- Ultra poverty differs in terms of depth, length and breadth (how many variables affected)
- Growth can lead to poverty and

decreasing poverty can lead to growth

The number of people in extreme poverty – including projections to 2030

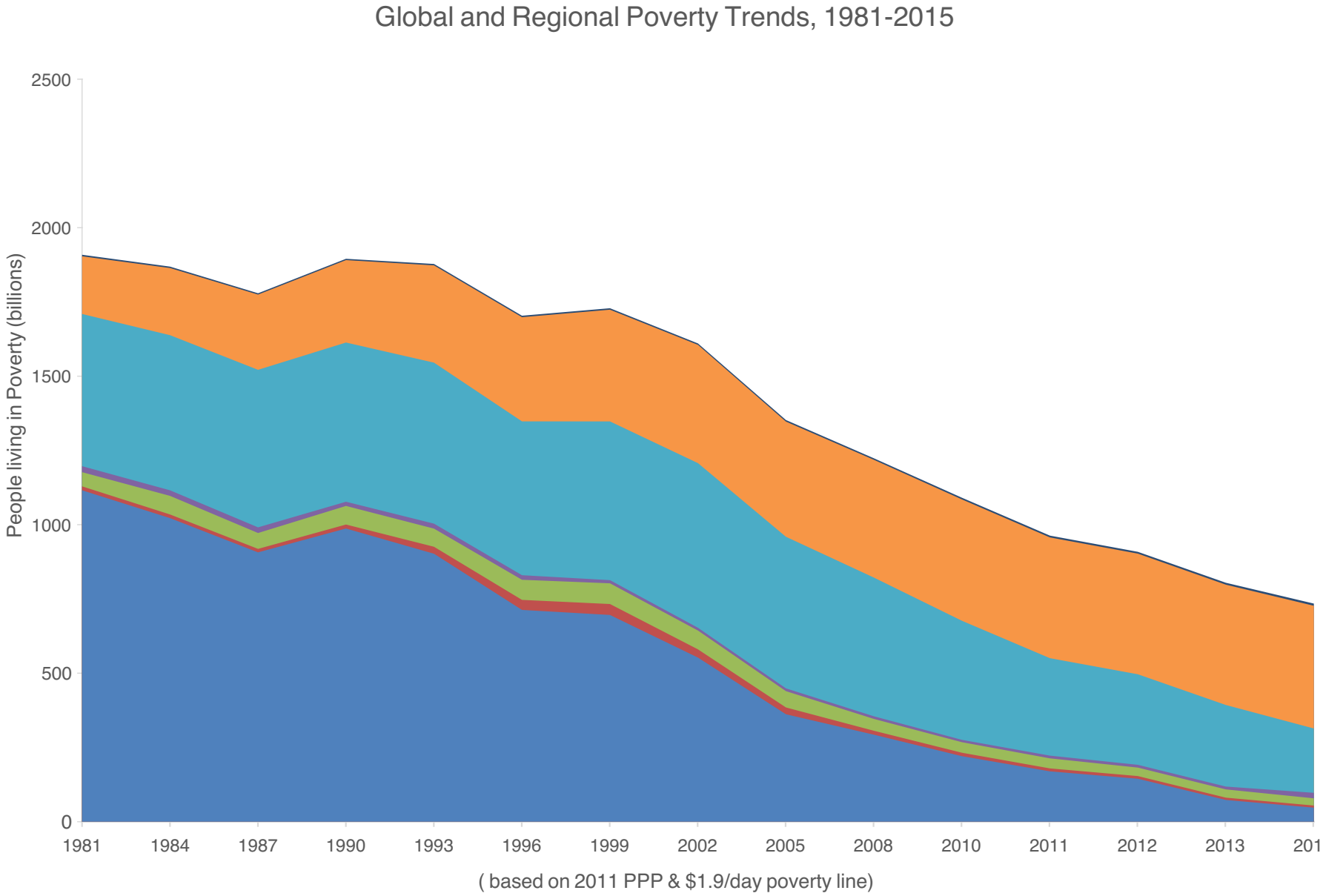
Extreme poverty is defined by the 'international poverty line' as living on less than $1.90/day. This is measured by adjusting for price changes over time and for price differences between countries (PPP adjustment). From 2015 to 2030 the World Bank's projections are shown.

Our World in Data



Data source: World Bank data from 1990 to 2015. The projections from 2015 to 2030 are published in the World Bank report *Poverty and Shared Prosperity 2018*.
This is a visualization from OurWorldinData.org, where you find data and research on how the world is changing.

Figure 5.12
Global and Regional Poverty Trends, 1981–2015



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Multi-Dimensional Poverty Index

- The MPI incorporates 3 dimensions at the household level: health, education and wealth
- - takes into account negative interaction effects when people have multiple deprivations (similar to the HDI)
- MPI focuses on deprivations in health, education, and standard of living; and each receives equal (that is one-third of the overall total) weight.

Social exclusion/injustice, associated with poverty, likely causes economic stagnation

- Social exclusion/injustice, which is associated with poverty, also likely causes economic stagnation in the long run
  - Political and social reform needed to overcome constraints to access to land, water, basic resource-based livelihood opportunities
  - Elite control of natural resources translates to social and political power to protect elite interests that may be inconsistent with modernization
  - Inadequate voice for the poor who know their public goods needs

5.5 Economic Characteristics of High-Poverty Groups

- Rural poverty
- Women and poverty
- Ethnic minorities, indigenous populations
- Disproportionately children
  - Malnourished, less likely to receive medical services, clean water, sanitation
  - Less access to education, property rights

Empirically

- Empirically we tend to see rapid growth (over 5%) benefiting both the poor and nonpoor and we see economic decline affecting both the poor and nonpoor (in terms of income). However, there are exceptions = ***immiserizing growth.***

How do you think this might be possible?

Labor and Inclusive Development: The Quality of Jobs

- Most people receive income primarily from labour, that is, from the work that they do
- Approximately 3.3 billion people currently work
- But having work does not mean having a ***wage***
- In most developing countries, a minority of labour income is from conventional “jobs”
- Close to half engaged in self-employment
- Wage labour often low-productivity work, with irregular incomes
- Thus, high inequality in labour markets can serve to magnify other forms of inequalities

The Broad Importance of High- Quality Jobs

- The type of work a person does largely constrains their possibilities of getting *future* higher income
- Broadly, jobs help people gain and maintain capabilities
- Skills and attitudes people develop at jobs affect [how others perceive] their capabilities in other spheres
- People with jobs that develop multiple capabilities are more engaged in civic affairs

Policies and Programs

- Policy can:
  - Reduce constraints on job creation, such as building needed infrastructure,
  - Ensure incentives do not hinder quality job creation
  - But reforming some laws – and even more so norms – is more difficult
    - Example: those discouraging women from working
  - Programs for employment when jobs are scarce can help, but need careful design and implementation

5.6 Policy Options on Income Inequality and Poverty: Some Basic Considerations (Continued)

- Policy options
  - Changing relative factor prices (labour vs. capital)
  - Progressive redistribution of asset ownership
  - Progressive taxation (eg. tax rates and wealth taxes)
  - Transfer payments and public provision of goods and services
- A focus on workfare vs welfare programs

Improving Opportunities for the Poor

- 1) The Goal of Expanding basic education and health services
  → improves productivity
  → increases opportunities and improves literacy

2) Rural infrastructure improvements

- rural agricultural supports (as most of the population live in rural areas)

Eg. Building new roads

Income Transfers and Safety Nets

- 3) Food subsidization/distribution/price ceilings
- This helps as it lowers the price paid BUT one problem is the

Other Types of Gov't Policies and/or Goals

1) Measures to make labour cheaper relative to capital, leading to Labour increasing.

- How could we do this?

2) Dynamic redistribution of assets by encouraging those which the poor can own, such as improved agricultural land or small shops

- Microfinance is one option, what else?

Cont'd

- 4) More progressive taxation, tax breaks, subsidies
- 5) Public (gov't) provision of consumption goods, such as basic foods
- 6) Intervention in commodity markets to aid poor producers and consumers. HOW?
- 7) Development of new technologies which improve productivity of low income workers.
- 8) Minimum wages: specific policy but increases the price of labour
- Think of advantages and disadvantages of these policies. Which would you recommend?

- Many LDCs collect at least 20% of GDP in gov't revenue
  - Tax Systems can be less
  - Indirect Taxes can be somewhat

Workfare vs Welfare? Basic cost effectiveness considerations

- Workfare, such as a ***Food for Work Program***, are more likely to represent a better policy than welfare on a current program efficiency basis when these criteria are met:
  1. It is harder to screen the poor without a workfare requirement
  2. Poor workers have lower opportunity cost of time (so the economy loses little output when they work in the program)
  3. Non-poor workers have higher opportunity cost of time (so they are unlikely to participate to get the benefits)
  4. The fraction of the population living in poverty is smaller (so the extra costs of a universal welfare scheme would be high)

  Note: Each of the above are factors in the efficiency tradeoff:

  – All these factors *must be accounted for together* to determine whether welfare or workfare is comparatively more efficient

Applying Insights from Behavioral Economics to Address Poverty

- Research findings: “Cognitive Tax of Poverty”
- Impact of poverty on anxiety and mental illness
- Implications for program design

A Hidden "Cognitive Tax of Poverty"

- Cognitive challenges increase with stress
- For the poor, sources of stress include financial worries, persistent noise, air pollution, disrupted sleep, chronic pain
- Stress and environment-linked deficits in cognitive functions include focused internal and external attention, inhibitory control, cognitive flexibility, planning

- Rich nations need to do more to alleviate poverty
- How?

Sachs, *End of Poverty* quote

- *The greatest tragedy of our time is that about 1/6 of humanity is not even on the development ladder. A large number of the extreme poor are caught in a poverty trap, unable on their own to escape from extreme material deprivation.*
- *They are trapped by disease, physical isolation, climate stress, environmental degradation and by extreme poverty itself.*

- *Even though life-saving solutions exist ….these families and their governments simply lack the financial means to make these critical investments.*
- *The world's poor know about the development ladder: they are tantalized by images of affluence from halfway around the world. But they are not able to get a first foothold on the ladder, and so cannot even begin the climb out of poverty.*

- Source: Jeffrey Sachs, "The End of Poverty: economic possibilities for our time", New York: Penguin Press, 2005, p. 19-20.

Concepts for Review

- Absolute poverty
- Asset ownership
- Character of economic growth
- Disposable income
- Factor share distribution of income
- Factors of production
- Gini coefficient
- Income inequality
- Indirect taxes
- Kuznets curve

Concepts for Review (Continued)

- Lorenz curve
- Multidimensional poverty index (MPI)
- Personal distribution of income
- Progressive income tax
- Public consumption
- Redistribution policies
- Regressive tax
- Size distribution of income
- Subsidy
- Total poverty gap (TPG)
- Workfare programs