Poverty, Inequality, and Development

AEB 4906

Development Economics

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Poverty, Inequality, and Development

- Outline:
  - Measurement of Poverty and Inequality
  - Economic characteristics of poverty groups
  - Why is inequality a problem?
  - Relationship between growth and inequality
  - Relationship between growth and poverty

Measuring Inequality and Poverty

- Measuring Inequality:
  - Personal or size distribution of income deals with the individual persons or households and the total income they receive
  - Functional or factor share distribution of income uses the share of total national income that each of the factors of production receives

Personal or size distribution of income

- Quintiles and Deciles
- Lorenz Curve
- Gini Coefficients
- Coefficient of Variation (CV)

Quintiles and Deciles

- Divide the population into successive quintiles or deciles according to ascending income levels and then determine the proportion of N.I received by each income group
- Common measure of income inequality is the ratio of incomes received by the top 20% and bottom 40% of the population

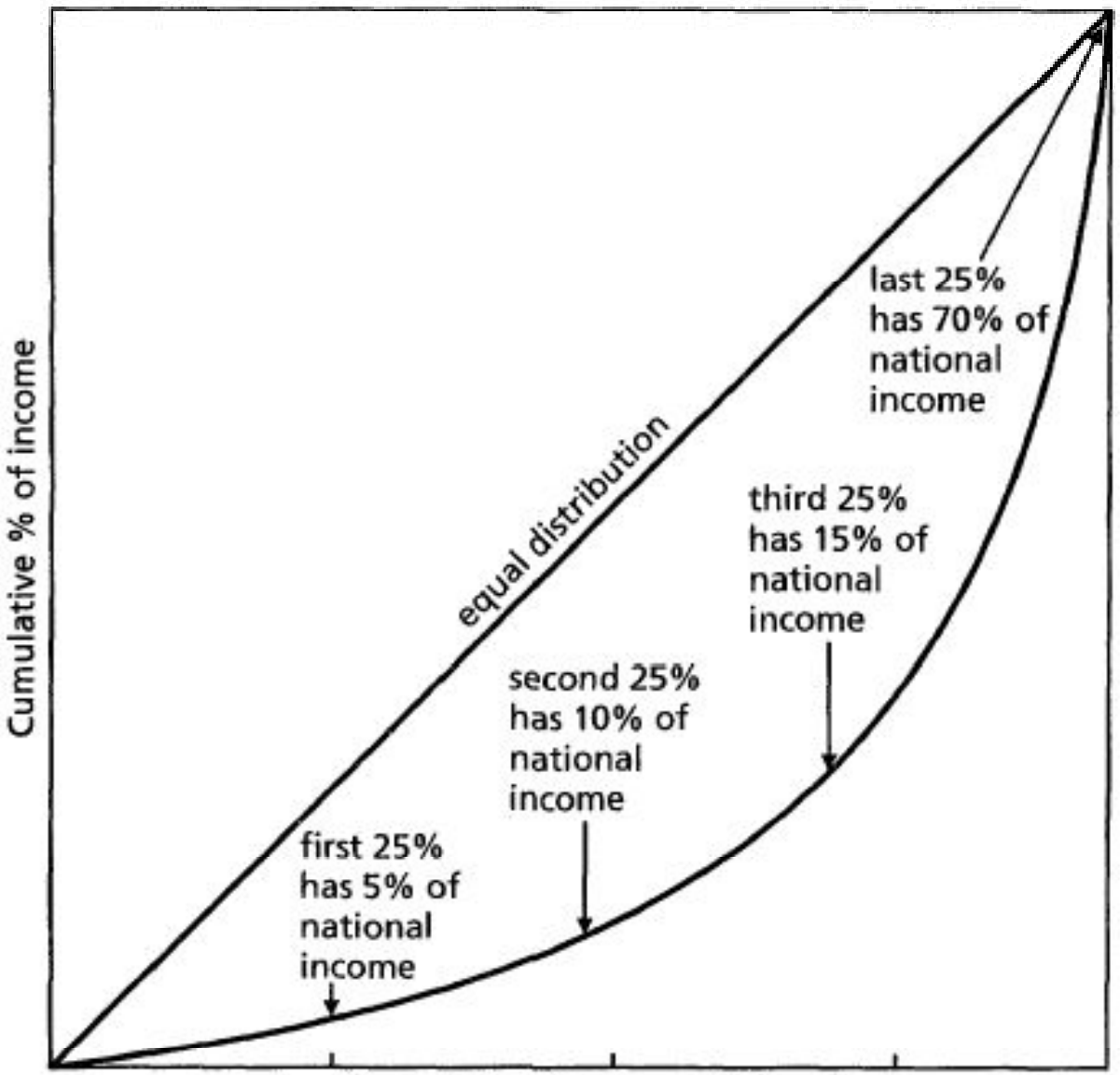
Selected Income Distribution Estimate

Country	Lowest 10%	Quintile					Highest 10%	Year
		1st	2nd	3rd	4th	5th		
Bangladesh	3.7	8.6	12.1	15.6	21.0	42.7	27.9	2000
Brazil	0.9	2.8	6.4	11.0	18.7	61.1	44.8	2004
China	1.6	4.3	8.5	13.3	21.7	51.9	34.9	2004
Colombia	0.74	2.48	6.20	10.60	18.05	62.67	46.90	2003
Costa Rica	1.0	3.5	8.2	13.1	21.2	54.1	37.4	2003
Guatemala	0.9	2.9	7.0	11.6	19.0	59.5	43.4	2002
Honduras	1.2	3.4	7.1	11.6	19.6	58.3		2003
India	3.6	8.1	11.3	14.9	20.4	45.3	31.1	2005
Jamaica	2.1	5.3	9.2	13.2	20.6	51.6	35.8	2004
Pakistan	4.0	9.3	13.0	16.3	21.1	40.3	26.3	2002
Peru	1.3	3.7	7.7	12.2	19.7	56.7	40.9	2003
Philippines	2.2	5.4	9.1	13.6	21.3	50.6	34.2	2003
South Africa	1.4	3.5	6.3	10.0	18.0	62.2	44.7	2000
Tanzania	2.9	7.3	12.0	16.1	22.3	42.4	26.9	2001
Zambia	1.2	3.6	7.9	12.6	20.8	55.1	38.8	2004
Japan	4.8	10.6	14.2	17.6	22.0	35.7	21.7	1993
United States	1.9	5.4	10.7	15.7	22.4	45.8	29.9	2000

Source: Data derived from World Bank, *World Development Indicators, 2007* (Washington, D.C., World Bank, 2007), tab. 2.7, pp. 66–68.

Lorenz curves

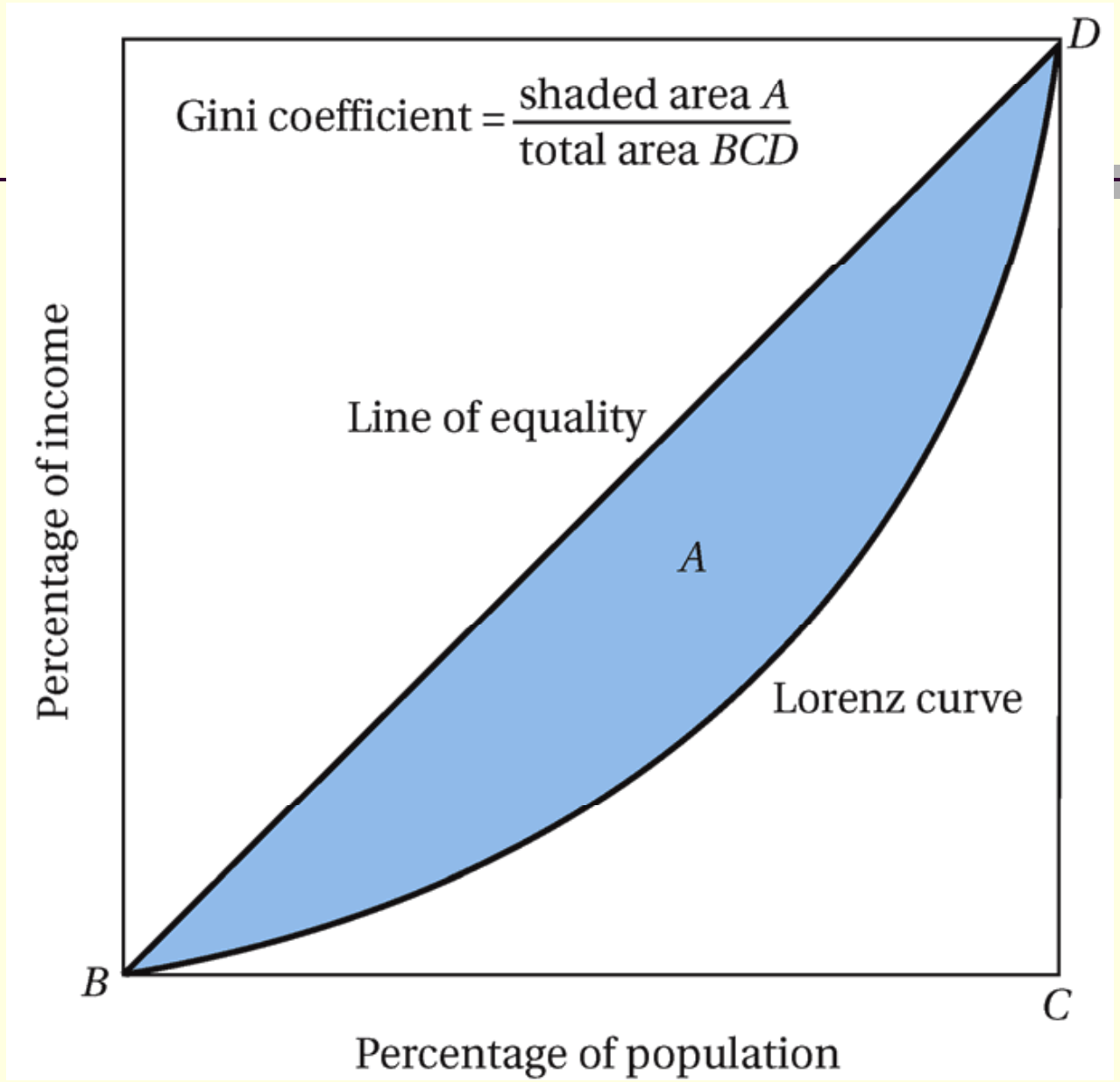
- Show the actual quantitative relationship between the percentage of income recipients and the percentage of total income they received during a time period (year)
- Depict the variance of the size distribution of income from perfect equality



Lorenz curve

Gini coefficient

- Is measured graphically by dividing the area between the perfect equality line and the Lorenz curve by the total area lying to the right of the equality line in a Lorenz curve diagram
- Ranges in value from 0 (perfect equality) to 1 (perfect inequality)
- Satisfies the properties of anonymity, scale independence, population independence, and transfer principles


Gini coefficient = shaded area A / total area BCD
D
Line of equality
A
Lorenz curve
B
C
Percentage of income
Percentage of population

Country	Income Per Capita (U.S. $, 2005)	Gini Coefficient	Survey Year for Gini Calculation
Low Income			
Ethiopia	160	30.0	2000
Mozambique	310	47.3	2003
Cambodia	380	41.7	2004
Zambia	490	50.8	2004
Nigeria	560	43.7	2003
Pakistan	690	30.6	2002
India	720	36.8	2005
Côte d'Ivoire	840	44.6	2002
Lower Middle Income			
Bolivia	1,010	60.1	2002
Cameroon	1,010	44.6	2001
Egypt	1,250	34.4	2000
Indonesia	1,280	34.3	2002
Bulgaria	3,450	29.2	2003
Brazil	3,460	57.0	2004
Upper Middle Income			
Argentina	4,470	51.3	2004
South Africa	4,960	57.8	2000
Mexico	7,310	46.1	2004
Hungary	10,030	26.9	2002
Upper Income			
Spain	25,360	34.7	2000
Germany	34,580	28.3	2000
United States	43,740	40.8	2000
Norway	59,590	25.8	2000

Sources: World Bank, *World Development Report, 2007* (New York: Oxfrod University Press, 2007), tab. 1; World Bank, *World Development Indicators, 2007* (Washington, D.C.: World Bank, 2007), tab. 2.7.

Coefficient of Variation (CV)

- Is sample SD divided by the sample mean also satisfies the properties of anonymity, scale independence, population independence, and transfer principles

Functional distribution

- Influence of non-market forces minimizes the application of this measure
- All inequality measures are measuring relative income

Measuring Absolute Poverty

- A situation where a population or sections of the population are able to maintain minimum levels of living (IPL)
- Absolute poverty is measured using
  - Headcount (H)
  - Headcount Index (H/N)
  - Poverty Gap (total income shortfall)
  - FGT Index has desirable properties of a poverty measure

Total poverty gap

- Total poverty gap

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

- Where Y_p is the absolute poverty line
- Y_i is income of person *I*

FGT Index

- The **Foster-Greer-Thorbecke** metric is a generalized measure of poverty within an economy. It combines information on the extent of poverty (as measured by the Headcount ratio), the intensity of poverty (as measured by the Total Poverty Gap) and inequality among the poor (as measured by the Gini and the coefficient of variation for the poor).

FGT Index

$$P_\alpha = \frac{1}{N}\sum_{i=1}^{H}\left(\frac{Y_p - Y_i}{Y_p}\right)^\alpha$$

- where *z* is an agreed upon poverty line (1$ or 2$), *N* is the number of people in an economy, *H* is the number of poor (those with incomes at or below *z*), Y_i are individual incomes and α is a "sensitivity" parameter. If α is low then the FGT metric weights all the individuals with incomes below z roughly the same. If α is high, those with the lowest incomes (farthest below *z*) are given more weight in the measure. The higher the FGT statistic, the more poverty there is in an economy.

Where poverty has fallen, and where it has not

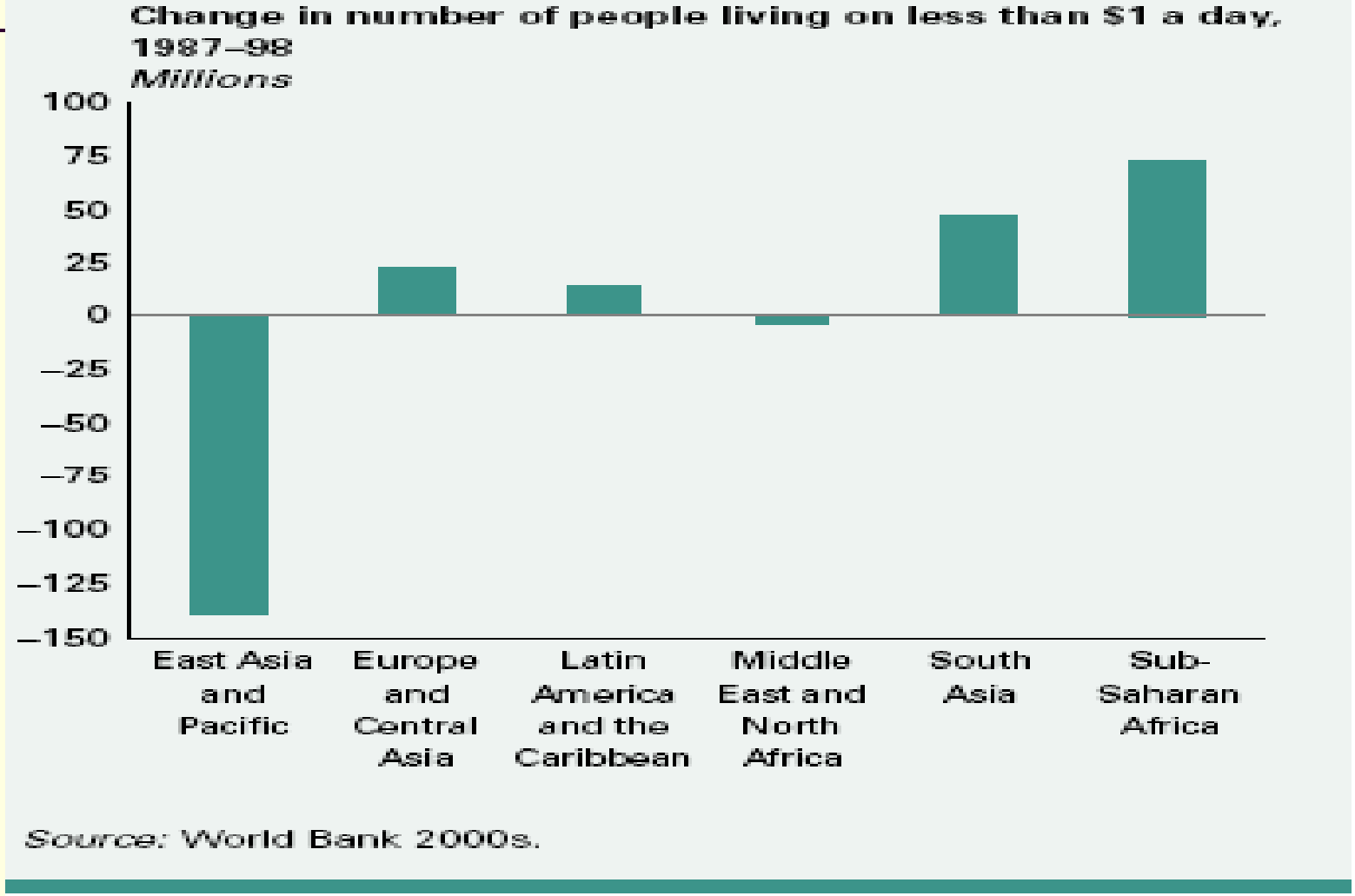


TABLE 6.4 Population, Headcount Ratio, and Poverty Gap at the $1 and $2 Poverty Lines, Selected Countries

	Population			International Poverty Line			
Economy	Millions 2000	Avg. Annual % Growth 1990–2000	Survey Year	Population Below $1 Day %	Poverty Gap at $1 Day %	Population Below $2 a Day %	Poverty Gap at $2 Day %
Armenia	4	0.8	1996	7.8	1.7	34.0	11.3
Bangladesh	130	1.6	1996	29.1	5.9	77.8	31.8
Bolivia	8	2.4	1997	29.4	15.2	51.4	27.8
Botswana	2	2.3	1985–86	33.3	12.5	61.4	30.7
Brazil	170	1.4	1997	9.0	2.1	25.4	9.8
Burkina Faso	11	2.4	1994	61.2	25.5	85.8	50.9
Central African Republic	4	2.0	1993	66.6	38.1	84.0	58.4
China	1,261	1.1	1998	18.5	4.2	53.7	21.0
Colombia	42	1.9	1996	11.0	3.2	28.7	11.6
Costa Rica	4	2.0	1997	6.9	2.0	23.3	8.5
Côte d'Ivoire	16	3.0	1995	12.3	2.4	49.4	16.8
Dominican Republic	9	1.9	1996	3.2	0.7	16.0	5.0
Ecuador	13	2.1	1995	20.2	5.8	52.3	21.2
Egypt, Arab Rep.	64	2.0	1995	3.1	0.3	52.7	13.9
El Salvador	6	2.1	1997	26.0	9.7	54.0	25.3
Estonia	1	−0.9	1998	<2	<0.5	5.2	0.8
Ethiopia	64	2.3	1995	31.3	8.0	76.4	32.9
Ghana	19	2.6	1998	38.8	3.4	74.6	16.1
Guatemala	11	2.6	1998	10.0	2.2	33.8	11.8
Honduras	6	2.8	1996	40.5	17.5	68.8	36.9
Hungary	10	−0.3	1998	<2	<0.5	7.3	1.7
India	1,016	1.8	1997	44.2	12.0	86.2	41.4
Indonesia	210	1.7	1999	7.7	1.0	55.3	16.5
Jamaica	3	0.9	1996	3.2	0.7	25.2	6.9
Kazakhstan	15	−0.9	1996	1.5	0.3	15.3	3.9
Kenya	30	2.4	1994	26.5	9.0	62.3	27.5
Lao PDR	5	2.6	1997	26.3	6.3	73.2	29.6
Lesotho	2	2.2	1993	43.1	20.3	65.7	38.1
Madagascar	16	2.9	1997	63.4	26.9	89.0	53.2
Mali	11	2.5	1994	72.8	37.4	90.6	60.5
Mauritania	3	2.8	1995	28.6	9.1	68.7	29.6
Mexico	98	1.6	1996	12.2	3.5	34.8	13.2
Moldova	4	−0.2	1997	11.3	3.0	38.4	14.0

(*continued*)

Characteristics of Poverty Groups

- Rural poverty
- Women and poverty
- Ethnic minorities and poverty

TABLE 6.5 Rural Poverty as a Percentage of Total Poverty

Region and Country	Rural Population as a Percentage of the Total	Rural Poor as a Percentage of the Total
Sub-Saharan Africa		
Ghana	65	80
Ivory Coast	57	86
Kenya	80	96
Asia		
India	77	79
Indonesia	73	91
Malaysia	62	80
Philippines	60	67
Thailand	70	80
Latin America		
Guatemala	59	66
Mexico	31	37
Panama	50	59
Peru	44	52
Venezuela	15	20

Source: World Bank, *World Development Report, 1990: Poverty* (New York: Oxford University Press, 1990), tab. 2.2. Reprinted with permission.

TABLE 6.6 Indigenous Poverty in Latin America

	Percentage of Population below the Poverty Line	
Country	Indigenous	Nonindigenous
Bolivia	64.3	48.1
Guatemala	86.6	53.9
Mexico	80.6	17.9
Peru	79.0	49.7

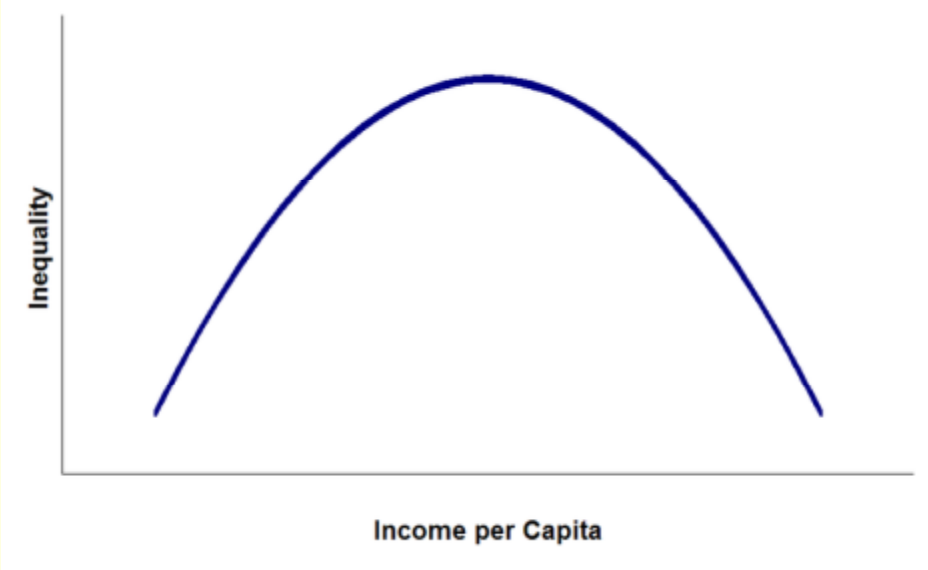
Source: George Psacharopoulos and Harry A. Patrinos, "Indigenous people and poverty in Latin America," *Finance and Development* 31 (March 1994): 41. Reprinted with permission.

Why is inequality bad?

- Extreme inequality leads to economic inefficiency and curtails growth
- Extreme inequality undermines social stability and solidarity
- Extreme inequality is viewed as unfair

Kuznets' Inverted- U Hypothesis

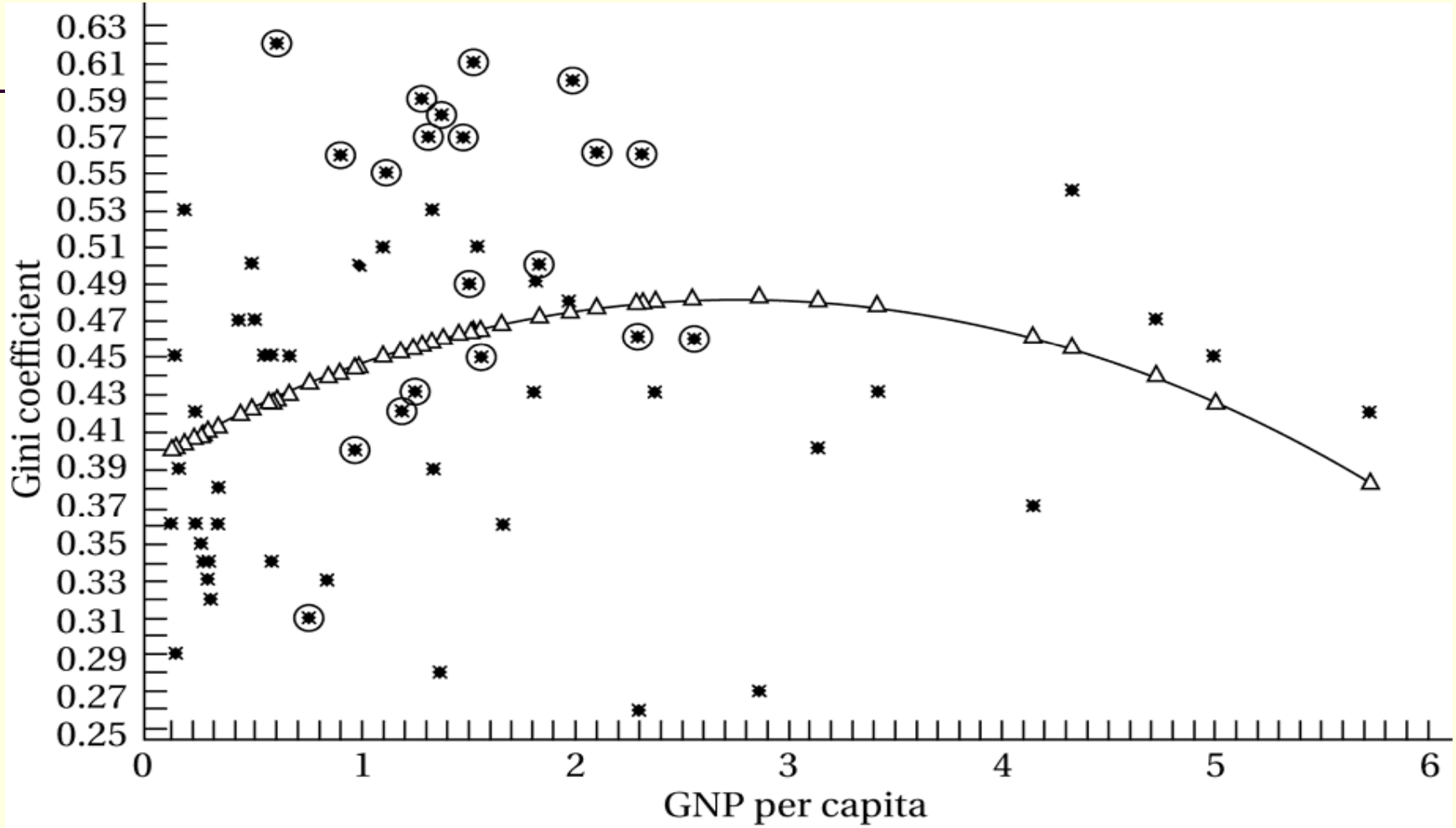
- In the early stages of growth, distribution of income will tend to worsen, where as later stages it will improve



Reasons for the inverted- U curve

- In early stages of development, when investment in physical capital is the main mechanism of economic growth, inequality encourages growth by allocating resources towards those who save and invest the most.
- Whereas in mature economies human capital accrual, or an estimate of cost that has been incurred but not yet paid, takes the place of physical capital accrual as the main source of growth, and inequality slows growth by lowering education standards because poor people lack finance for their education in imperfect credit markets.

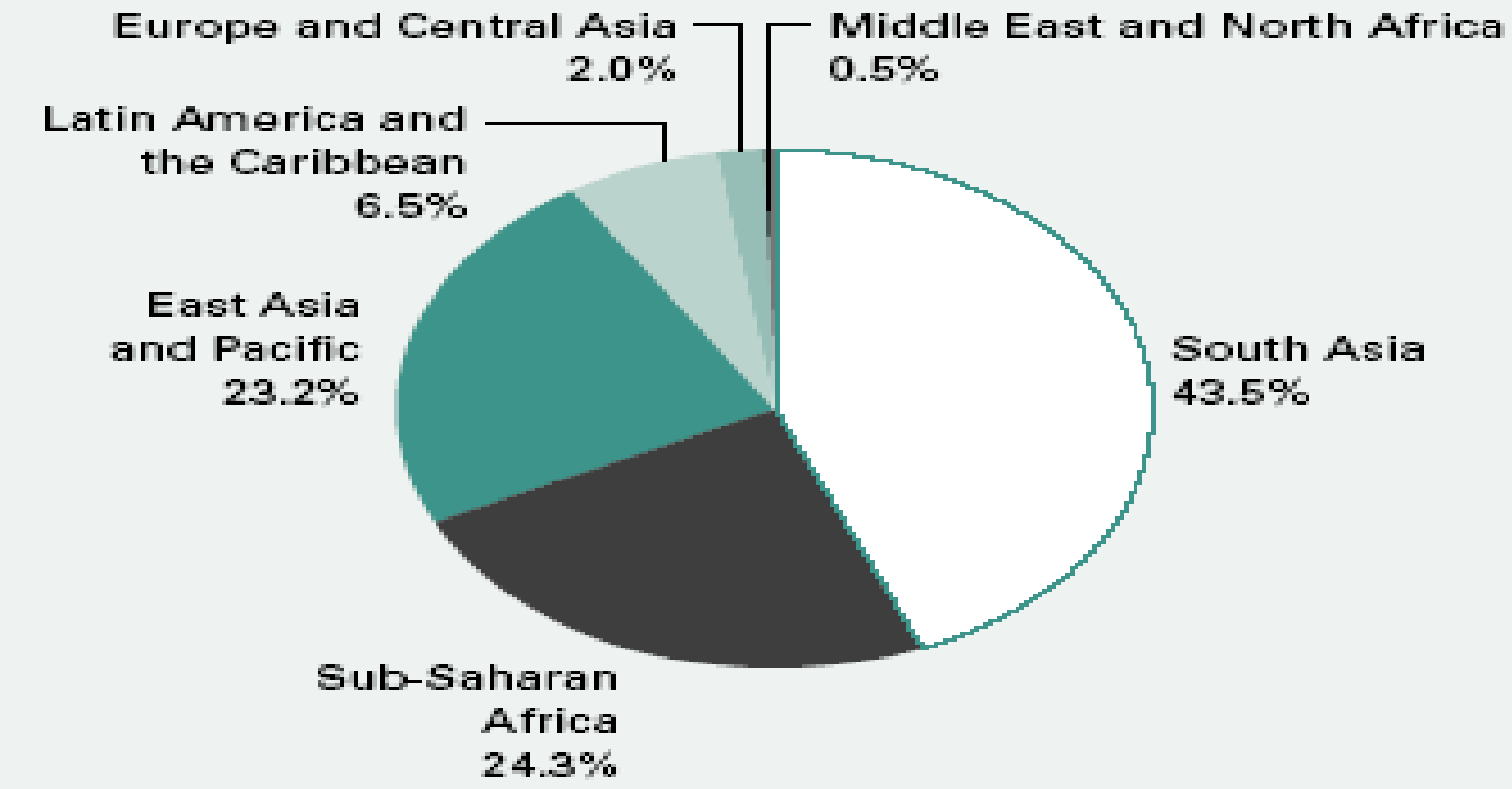
Kuznets Curve with Latin American Countries Identified



Star – Actual Data
Triangle – Predicted relationship
Circled – Latin American

Where the developing world's poor live

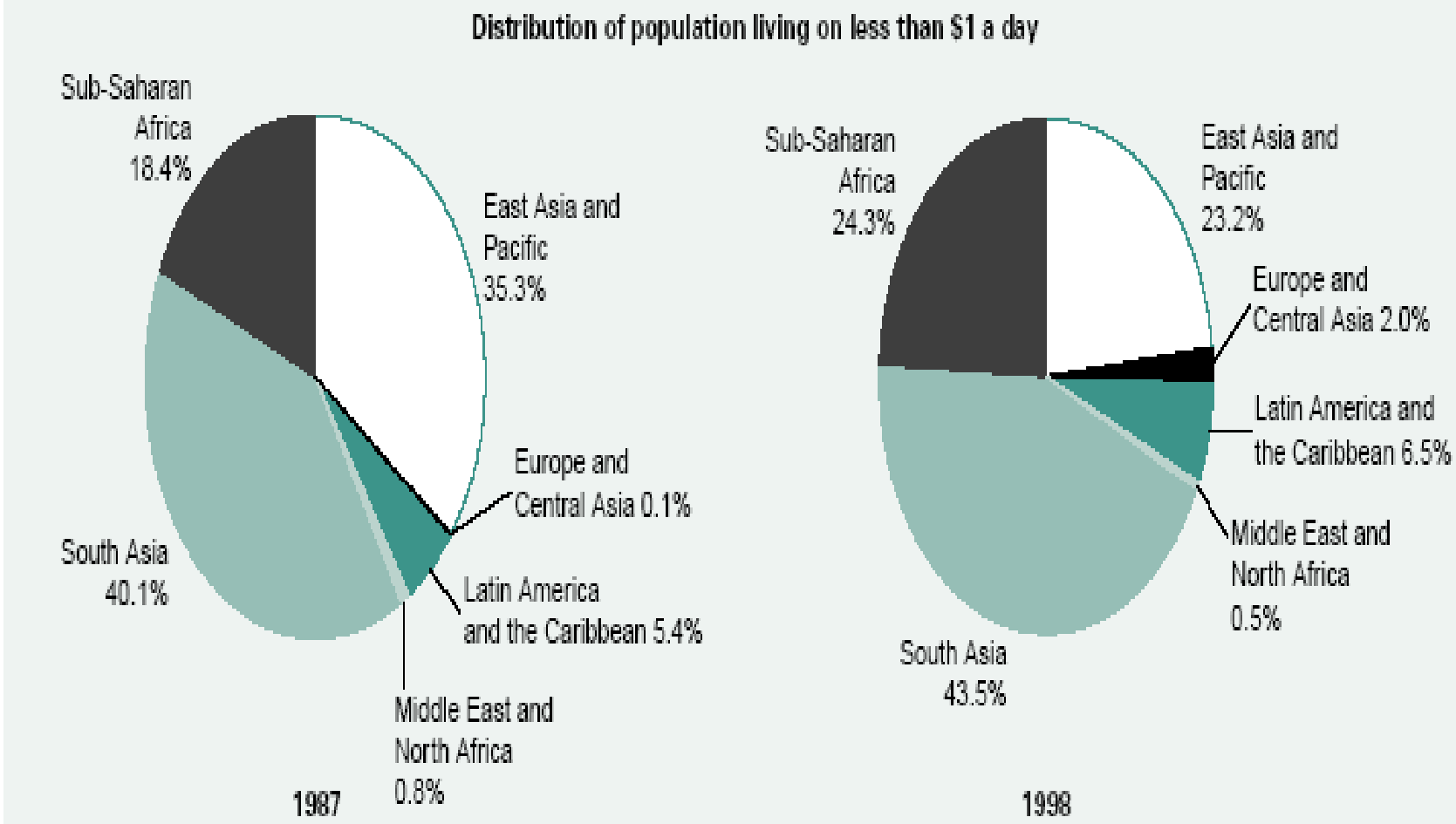
Distribution of population living on less than $1 a day, 1998 (1.2 billion)



Source: World Bank 2000s.

Figure 1.1

Poverty in the developing world is shifting toward South Asia and Sub-Saharan Africa



Source: Chen and Ravallion 2000.

Relation between economic growth and inequality

- Does growth affect the level of inequality?
  - No consensus
- Does initial inequality affect growth?
  - Negative relation between growth and initial inequality in income (refer to Why is inequality bad?)
  - Positive relation between growth and initial inequality (only Forbes found this relation)
  - Initial inequality in assets and human capital negatively affects growth (as it hurts the poor the most)
- *The main flow of causation appears to be initial inequality hampering growth and not the other way round.*

Comparison of Gross National Product Growth Rates and Income Growth Rates of the Bottom 40% of the Population in Selected Less Developed Countries

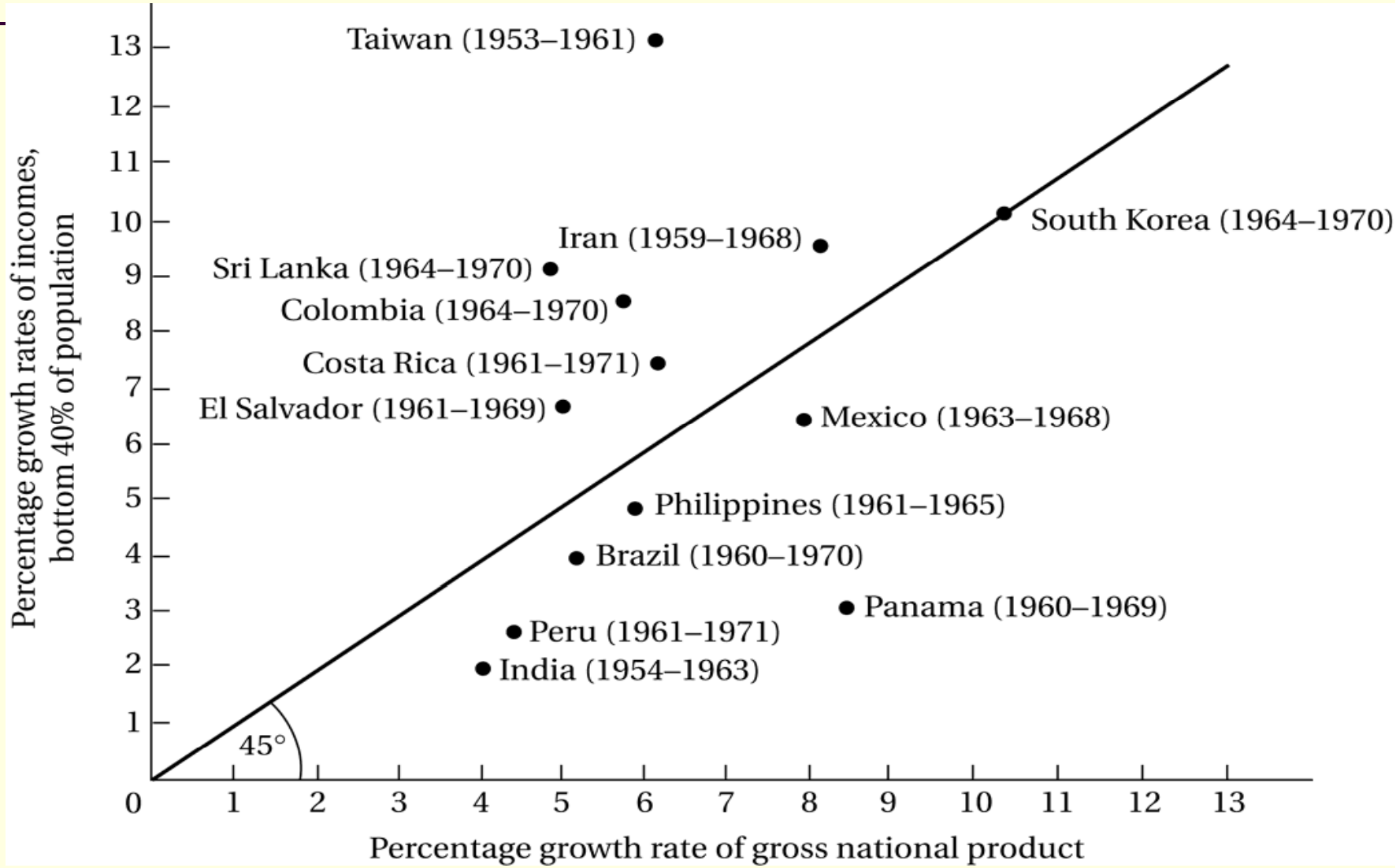
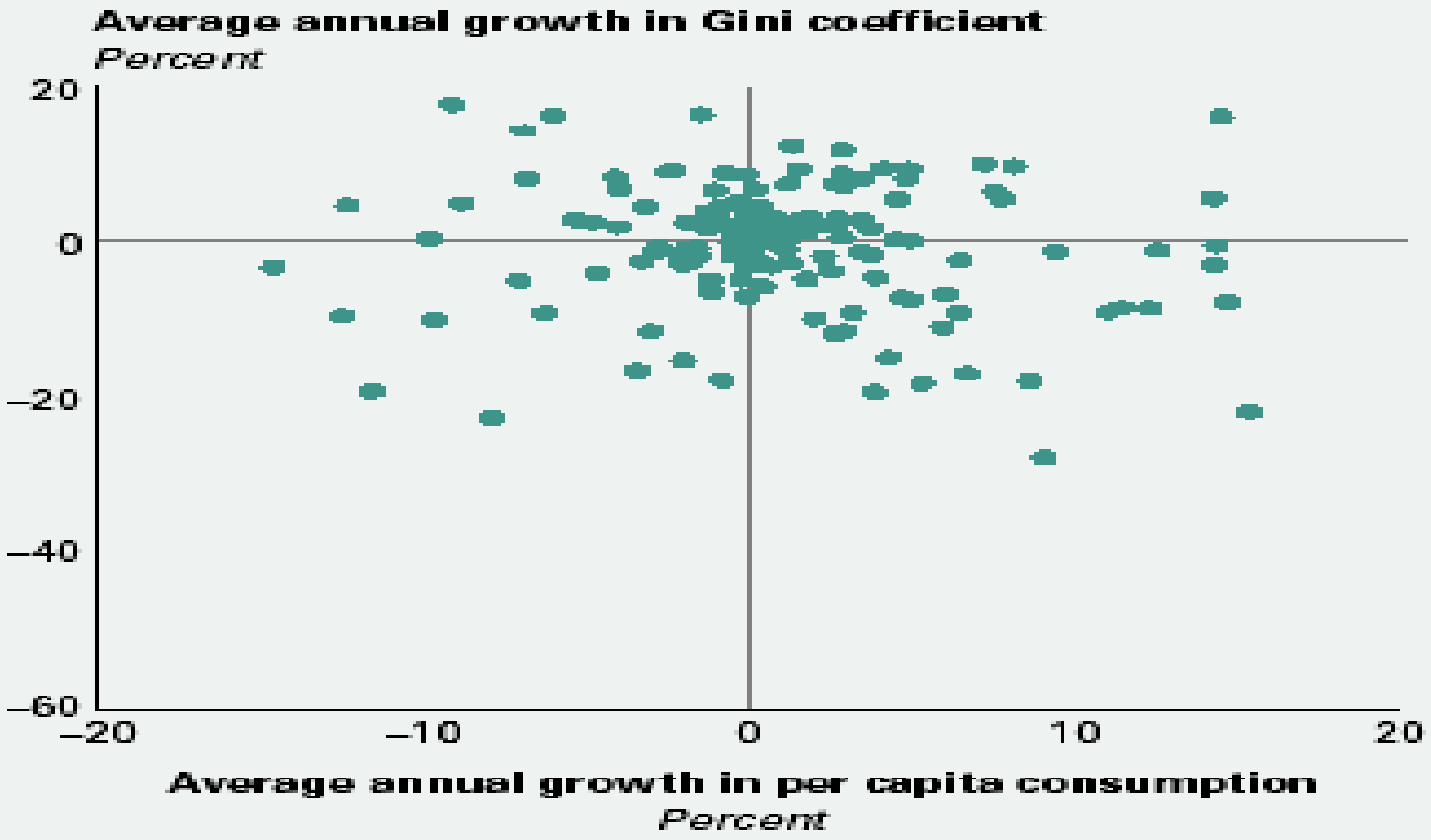


Figure 3.5
Inequality varied widely in the 1980s and 1990s but showed no systematic association with growth

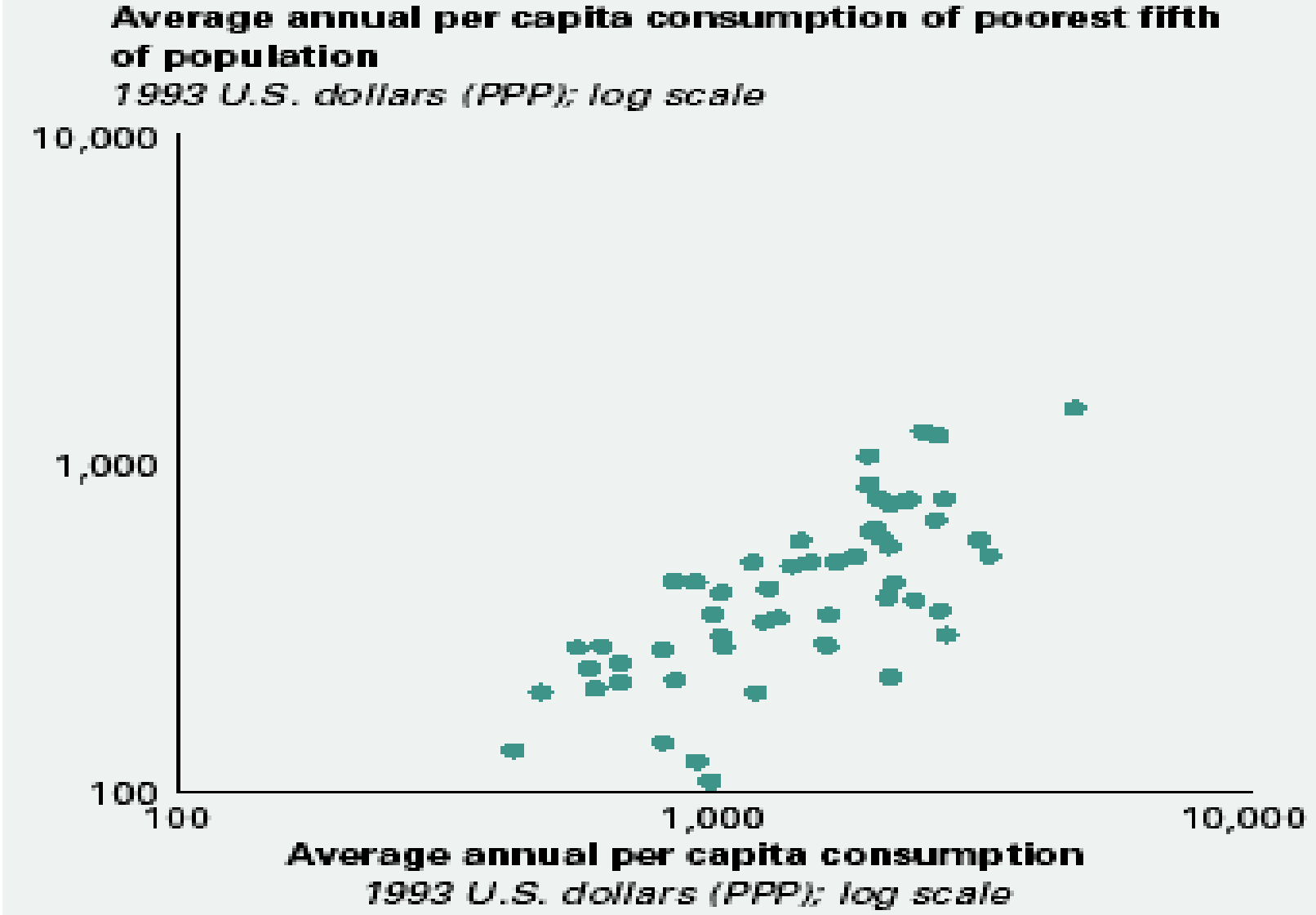


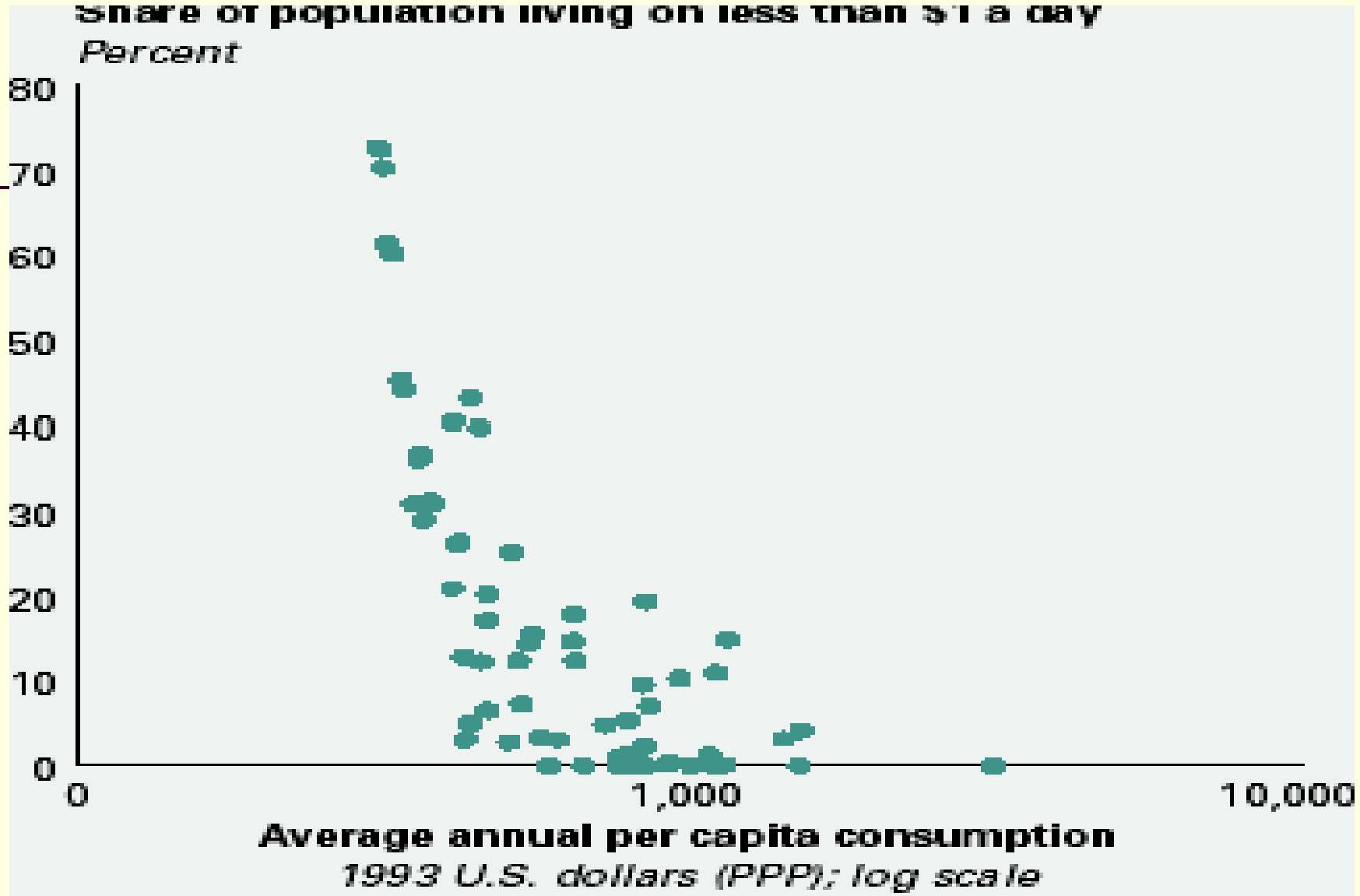
Note: The data cover 65 developing countries.
Source: World Bank staff estimates based on data from Chen and Ravallion (2000).

Relation between economic growth and poverty

- Traditionally, it was considered that there is trade-off between growth and poverty.
- Why are similar rates of growth associated with different rates of poverty reduction?
  - Redistribution of growth benefits reduces poverty
  - Initial inequality in income enhances poverty
  - Sectoral composition of growth (agriculture versus modern, rural versus urban)
- *Efforts to reduce poverty lead to higher growth and higher growth leads to reduction in poverty.*

In general, the wealthier a country, the lower the incidence of poverty





lote: The data cover 65 developing countries and refer to various ears in the 1990s.

The Range of Policy Options: Some Basic Considerations

- Altering the functional distribution of income through policies designed to change relative factor prices
  - Removal of factor price distortions
- Modifying the size distribution through progressive redistribution of asset ownership
  - Redistribution policies such as land reform

The Range of Policy Options: Some Basic Considerations

- Reducing the size distribution at the upper levels through progressive income and wealth taxes
  - Direct progressive income taxes
  - Indirect taxes
- Direct transfer payments and the public provision of goods and services
  - Workfare programs superior to welfare and handouts.