

Chapter 6: Inequality and Poverty

- More than 1.4 billion people, or 1 out of five people, live below the absolute **PovertyLine** of 1.25 dollars a day.
- What is the role of the government in development?
- 2.6 billion people live under 2 dollars per day.
- Within country inequality contributes to this poverty rate.
 - For example, Mexico's richest 20% have almost 15 times the income of the poorest 20%.

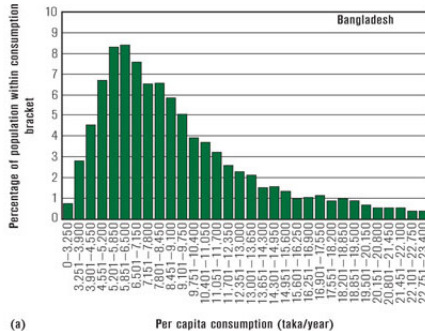
Measuring Inequality

- To measure inequality, it is easier to just look at household consumption distributions than income.
- For those in farming communities, it also may help to look at wealth which includes those assets.
- High unskilled labor wages indicates low inequality. Large returns on capital does not.

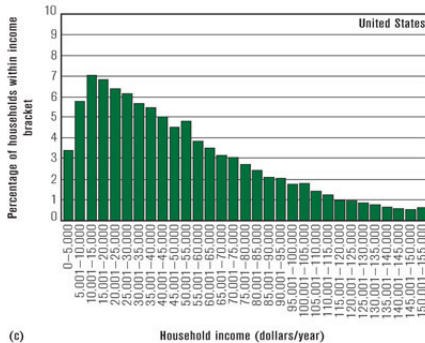
Measuring Inequality

- *Frequency distributions*-tells us how many families or individuals receive difference amounts of income.
- Easiest way to see distribution, which is usually lognormal.
- *Size distributions*-tell us the share of total consumption or income received by different groups of households, ranked according to their consumption or income level.

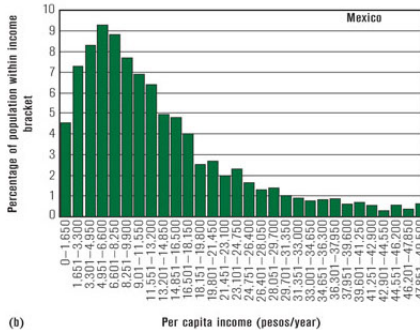
Frequency Distributions



Frequency Distributions



Frequency Distributions



Size Distribution

TABLE 6-1 Size Distributions of Consumption or Income within Quintiles in Bangladesh, Mexico, and the United States, 2000s

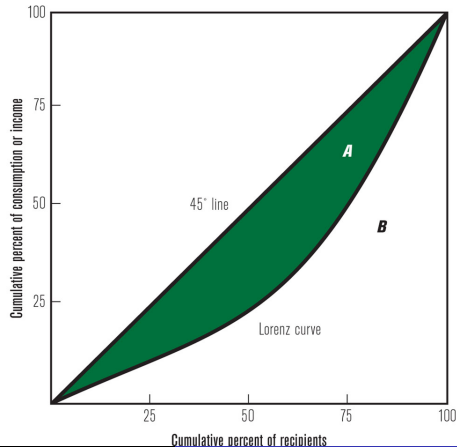
QUINTILE	SHARE OF TOTAL CONSUMPTION OR INCOME		
	BANGLADESH	MEXICO	UNITED STATES
Bottom 20%	9.0	3.5	3.4
Second 20%	12.5	8.2	8.7
Third 20%	16.0	13.3	14.8
Fourth 20%	21.5	21.2	23.4
Top 20%	41.0	53.7	49.8

Sources: Collaboration with Claudio E. Montenegro, World Bank; *U.S. Current Population Survey* (March 2004).

Lorenz Curve

- Named after Max Lorenz
- Uses data from size distributions.
- First, draw a 45 degree line on a graph with the cumulative percent of recipients on the x-axis and the cumulative percent of consumption or income on the y-axis.
- The Lorenz Curve then maps the share of income that each cumulative percentage of recipients.

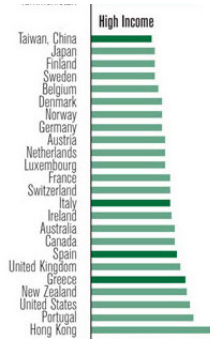
Lorenz Curve



Lorenz Curve

- What would more inequality look like?
- What would no inequality look like?
- Gini coefficient = $\frac{A}{A+B}$
- A small A means a small Gini coefficient. What are the bounds of the Gini coefficient?

Gini Coefficient



Khartoum, Sudan



South Sudan



Growth and Inequality

- Does growth cause inequality?
- The Surplus Labor model says that we need high earnings on capital in order to incentive initial savings that jumpstarts growth.
- No established patterned between growth and inequality in the data.

Growth and Inequality

- Inequality may also slow growth.
 - Access to capital decreases, which limits the growth of worthwhile projects.
 - Hoarding Effect.
 - Rent seeking behavior (i.e. lobbying).
- Societies are less happy with inequality.

Measuring Poverty

- *Absolute poverty*-when individuals are unable to afford basic life sustaining resources
- *Poverty line*-a cutoff value of earnings for measuring poverty.
- Income is the easiest way to define poverty, but we also use education, health, and standard of living to define poverty.
- Usually between 1 to 2 dollars a day.

Methods of Reporting Poverty

- How many people are below the poverty line.
- *Headcount index*-how many people are below the poverty line. Usually, expressed as a ratio to total population.
- *Poverty gap*-how many people fall below the poverty line and how far they are from that poverty line.

Calculating the Poverty Gap

- The poverty gap measures the severity of poverty.
- $PG = \left[\frac{PL - MC}{PL} \right] H$
 - where PL is the poverty line
 - MC is the mean consumption per capita of all individuals below the poverty line
 - H is the head count index

Calculating the Poverty Gap

- $\left[\frac{PL - MC}{PL} \right]$ tells us the relatively how far the average poor person is from the poverty line.
- Head count index tells us the ratio of the population that is poor.
- Thus, the head count index weighs gap an individual person as to the poverty line to give us an estimate of the poor population's distance to the poverty line.

Comparative Statics of the Poverty Gap

$$PG = \left[\frac{PL - MC}{PL} \right] H$$

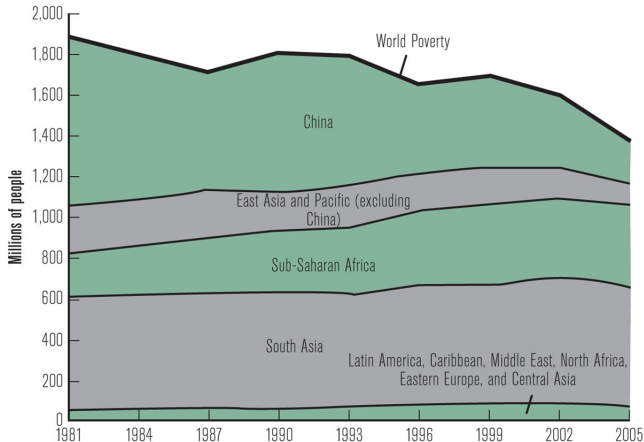
- $\frac{\partial PG}{\partial PL} = \left[\frac{1}{PL} \right] H - \left[\frac{PL - MC}{PL^2} \right] H = \left[\frac{MC}{PL^2} \right] H$
- Thus, raising the poverty line makes the poverty gap seem smaller.
- $\frac{\partial PG}{\partial MC} = \left[\frac{-1}{PL} \right] H$
- Thus, an increase in the mean consumption per capita of poor people decreases the poverty gap.

Comparative Statics of the Poverty Gap

$$PG = \left[\frac{PL - MC}{PL} \right] H$$

- $\frac{\partial PG}{\partial H} = \left[\frac{PL - MC}{PL} \right]$
- Thus, a reduction in the amount of poor decreases the poverty gap.

Number of People Living Below \$1.25 a Day



Absolute Poverty by Region

TABLE 6-2 Absolute Poverty* by Region, 1981-2005

REGION	NUMBER OF POOR (MILLIONS)			HEAD-COUNT INDEX (PERCENT)			POVERTY GAP (PERCENT)		
	1981	1990	2005	1981	1990	2005	1981	1990	2005
East Asia (China only)	1,071.5 (835.1)	873.3 (683.2)	316.2 (207.7)	77.7 (84)	54.7 (60.2)	16.8 (15.9)	35.5 (39.3)	18.2 (20.7)	4.0 (4.0)
South Asia	548.3	579.2	595.6	59.4	51.7	40.3	19.6	15.2	10.3
Sub-Saharan Africa	213.7	299.1	390.6	53.7	57.9	51.2	22.9	26.6	21.1
Latin America and Caribbean	42.0	42.9	46.1	11.5	9.8	8.4	4.0	3.6	3.2
Middle East and North Africa	13.7	9.7	11.0	7.9	4.3	3.6	1.6	0.9	0.8
Eastern Europe and Central Asia	7.1	9.1	17.3	1.7	2.0	3.7	0.4	0.6	1.1
Total†	1,896.2	1,813.4	1,376.7	51.8	41.6	25.2	21.3	14.2	7.6
(Total excluding China)	(1,061.1)	(1,130.2)	(1,169.0)	(39.8)	(35.0)	(28.2)	(n.a.)‡	(n.a.)	(n.a.)

*Absolute poverty refers to a poverty line of \$1.25 a day (PPP, 2005).

†Total refers to low- and middle-income nations only.

Dissenting Opinions

- Angus Deaton
- \$1.25 a day is too high.
- Using this as a cutoff raises the level of poor by half a billion in 2005 compared to previous methods. This difference is too large.

Dissenting Opinions

- \$1.25 was picked using only 15 countries.
- Instead, we should use a weighted average of national poverty lines from way more countries.
- This method gets us a poverty line of \$1.
- Lant Pritchett sees the \$1.25 as too low and should serve a level of destitution with \$2 as the level of extreme poverty and \$15 a day as the global poverty level.

Poverty Today

- Following the 2018 financial crisis, the World Bank estimated that 64 million people in developing nations were pushed into "extreme poverty."
- The 21st century is the first time that the majority of the world's population lives in an urban area.
- Rural poverty rate tends to be higher than urban poverty rate due to a lack of opportunities.

Gender Inequality

- Women are disadvantaged relative to men in devo nations.
- Women have less access to property rights and are often denied inheritance.
- Girls have less access to education and the labor market discriminates against women.

Strategies to Reduce Poverty

In the 1990 World Bank's World Development Report, three strategies were outlined:

- Promote market-oriented economic growth.
- Direct basic health and education services to the poor.
- Develop a social safety net.

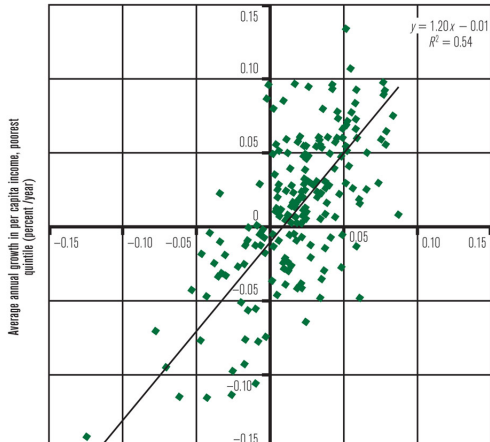
Strategies to Reduce Poverty

- These policies caused labor-demanding growth, which benefits the poor. Why?
- These strategies promote overall growth which causes growth for the poor.
- United Nations Development Programme (UNDP) showed concerns over that policy makers were too focus on growth rather than reducing poverty.

Growth is Good

- Inequality does not systematically increase with economic growth.
- As long as GDP grows faster than population, avg incomes in each quintile usually increase.
- Immiserizing growth-the poor witness a decline in their average incomes despite growth in the economy.

Growth is Good?



Pro Poor Growth

- pro poor growth-the situation in which income growth among the poor is faster than average income growth.
- A problem with this definition lies in it favoring circumstance in which the incomes of the poor grow faster than income regardless over situations where average income grows faster...even if the incomes of the poor grow by a lot.
- Pro-poor growth does not represent a choice between being pro-growth and being pro-poor.

Pro Poor Growth

- Competition can be seen as exploiting poor people, since it brings low wages.
- Washington Consensus stresses the use of competition and free markets.
- Competition and the free market often promote growth, ex. 1980's China's farming industry went from commune style to profit style.

Pro Poor Growth

- Macroeconomic stability is also a major part of the Washington Consensus.
- Stability brings reduced budget deficits which often is achieved by cutting government expenditures which keeps inflation low but may upset people.
- These programs don't usually help the poor anyways.

Pro Poor Growth

- Trade liberalization brings in FDI.
- Cheap exports put firms out of business but provide cheap products.
- Need to restructure the economy after bringing in trade.

Pro Poor Growth

- NAFTA saw Mexican corn farmers being put out of business.
- Mexican manufacturing expanded though.
- Need to help workers get into the expanding sector.

Income Transfers and Safety Nets

- Conditional cash transfers-giving money with some type of condition attached.
- Ex: Providing households with money if they enroll children in school or visit health clinics.
- Avoids corruption problems with foreign aid.

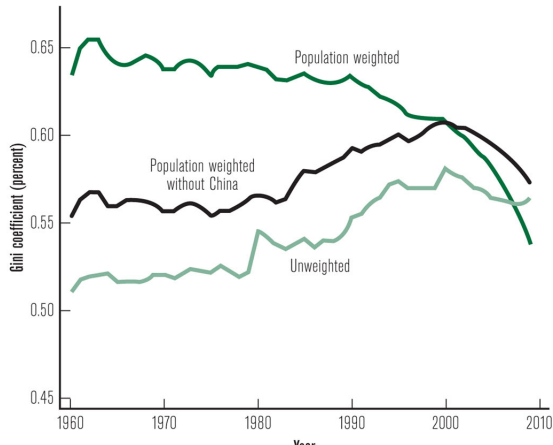
Income Transfers and Safety Nets

- Bolsa Familia Program in Brazil is a CCT.
- Oportunidades in Mexico.
- Also, we have social safety nets means to transfer income but for households who are in a transitionary state (i.e. food stamps).

International Inequality

- International Inequality-inequality found by comparing average incomes across countries.
- You can also use a weighted average (using population) instead of just the average.
- The two measures yield very different results. Why?

Trends in International Inequality



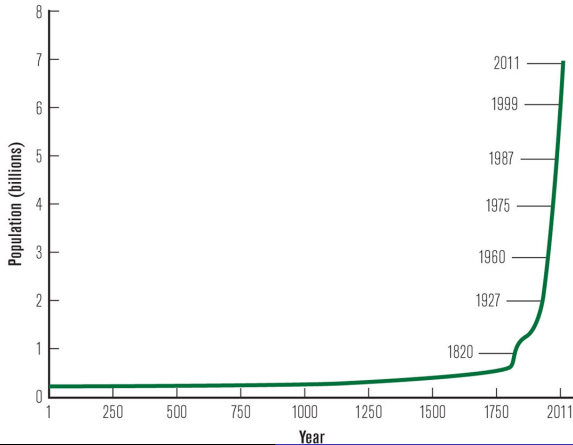
Chapter 7

Population

A History of World Population

- Population growth has been slow to start.
- It took over 10,000 years to reach 1 billion in population in 1820.
- The next billion were added in 110 years.

Population Growth



A History of World Population

- How do we grow so fast? Agriculture helped.
- Population carrying capacity-how much population the earth can handle at a time.
- Industrial revolution helped increase the population even farther.
- By 1945, the population was roughly 2.5 billion.

A History of World Population

- Population explosion- a large increase in population
- After WWII, we continued to grow by a lot.
- We are already pushing well beyond 7 billion.

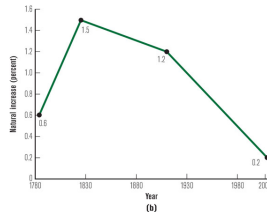
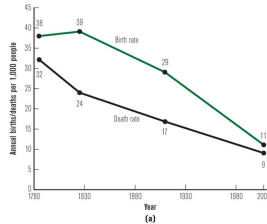
Demographic Transition

- Demographic Transition-transition from high birth and death rates to lower birth and death rates as a country or region develops
- Crude birth rate- the number of live births per year per 1,000 people
- Crude death rate- the number of deaths per year per 1,000 people
- Natural increase of population- the difference between crude birth rate and crude death rate

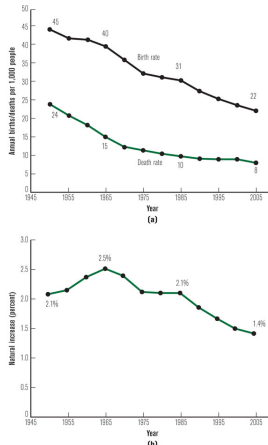
Demographic Transition

- Population growth for a country is then the difference between the rate of natural increase and net migration.
- Population growth for the earth is just the natural increase rate.
- Over time, the birth and death rates decrease.
- Death rates initially decreased faster than birth rates in industrialized countries until population growth has more or less become equal to zero.

Demographic Transition for Finland



Demographic Transition for Developing Countries



Demographic Transition

- Total fertility rates (TFRs)- how many kids women are having
- Developing nations also saw decreases in the birth and death rate.
- Population growth does not level off though.

Demographic Situation Today

- 16% of the population on earth lives in high-income countries.
- 30% live in East Asia with 20% in China alone.
- Population growth in high income countries is usually attributed to immigration.
- Fertility rates of 2 usually is enough to replace the population. In high income countries, they are around 1.8.

Levels and Trends in the World Population

TABLE 7-1 Levels and Trends in the World Population, 2009

	TOTAL POPULATION		POPULATION GROWTH		
	NUMBER (MILLIONS)	PERCENT OF TOTAL	BIRTH RATE (PER 1,000)	DEATH RATE (PER 1,000)	NATURAL INCREASE (PERCENT)
World	6,775	100	20	8	1.2
<i>Income category</i>					
Low income	846	13	34	11	2.3
Middle income	4,813	71	19	8	1.1
High income	1,117	16	12	8	0.4
<i>Region</i>					
East Asia	1,944	29	14	7	0.7
South Asia	1,568	23	24	7	1.7
Sub-Saharan Africa	840	12	38	14	2.4
Latin America	572	8	18	6	1.2
Europe and Central Asia	404	6	15	11	0.4
Middle East and North Africa	331	5	24	6	1.8

Source: World Bank, "World Development Indicators Online," <http://databank.worldbank.org>.

World Population Trends and Projections

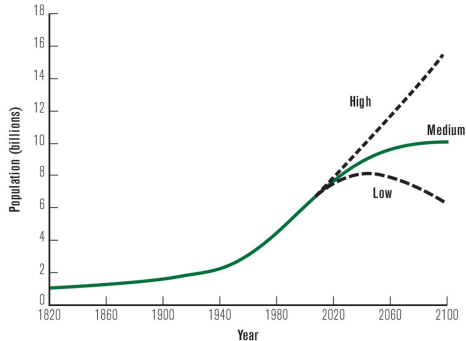


FIGURE 7-4 World Population Historical Trends and Projections

UN population projections for 2000–2100. The scenarios presented here represent different future levels of fertility.

Source: Angus Maddison, “Statistics on World Population, GDP, and Per Capita GDP, 1–2008 AD,” www.ggdc.net/maddison/

Demographic Situation Tomorrow

- High projection-assumes TFR does not drop to replacement levels. Population hits 10.8 billion by 2050 and 15 billion by 2100.
- Middle projection-assumes TFR drops to near replacement levels by 2050. Population hits 9 billion by 2050 and 10 billion by 2100.
- Low projection-assumes TFR goes bellow replacement levels by 2050. Population hits 8.1 billion by 2050 and declines to 6 billion by 2100.

Demographic Situation Tomorrow

Population is projected to increase for three reasons

- A desire for large families
- A failure to achieve the desired number of children
- Population momentum-population has been growing so rapidly that we will continue to experience population growth for decades before leveling off, even if fertility rates drop to 2 tomorrow.

Population Growth

Thomas Malthus

- Thomas Malthus (1766-1834) predicted that with higher wages workers would have children earlier. Thus, population would increase to unsustainable amounts.
- Land constraints would then force food prices to rise, while labor prices fall again. Then, people die.
- Malthus wanted to avoid this, so he recommend "preventive checks," such as marriage age requirements.
- Unlike the predictions of Malthus, birth rates fell as incomes rose.

Why Do People Have Kids

- Social norms and customs?
- Birth control?
- Economics reasons-kids are low cost household workers

Viewing Childbearing as an Economic Decision: Implication

- Fertility should be higher when kids earn income than when they do not.
- Reducing infant deaths should lower fertility.
- The intro of an institutionalized social security system should lower fertility.
- Fertility should fall when there is an increase in opportunities for women to work in jobs that are incompatible with childbearing.
- Fertility should be higher when income is higher because the explicit costs are more easily borne.

Viewing Childbearing as an Economic Decision: Testing Implications

- We have tons of support for the first four implications.
- However, fertility falls as income increases. Kids are "inferior goods."
- To explain this, Gary Becker of the University of Chicago theorized that couples maximize a joint expected utility function with the goods being: number of kids, child quality, standard consumption goods/services. The function is constrained by parents' time and the cost of purchased goods and services.

Viewing Childbearing as an Economic Decision: Testing Implications

- As income rises, the cost of children goes up as well (opportunity cost)
- The rise costs of the number of children then shifts couples to focus on the quality of children.

Population and Accumulation: Pessimists

- The relationship between population growth and devo is complex.
- Population pessimists-those who perceive population growth as harmful to economic development.
- With lower fertility levels, labor force growth slows which increases capital per worker and thus income.
- Lower fertility rates also means that public funds can be diverted away from education and health expenditures.

Population and Accumulation: Pessimists

- Finally, slower population growth lowers the dependency ratio.
- Dependency ratio- ratio of the non working age population (less than 14 years old or older than 65 years old) to the working age population
- Overall, we should see asset accumulation as fertility falls.

Population and Accumulation

- There is little support for the population pessimist's view.
- Demographic dividend or bonus- opportunity created when a nation with rapid population growth experiences a fall in fertility
- The working age population is growing more rapidly than the youth population as fertility falls, since growth of working age pop depends on birth rates 14 years ago.
- Economy then expands as fertility rates drop, but eventually we have too many elderly people in the population.

Population and Productivity: Optimists

- Population optimists- view population growth as having the potential to increase factor productivity.
- A larger population would yield economies of scale in production and consumption.
- Ex: The return to investment on a road built is higher the more people use it.
- Population pressures can push technological changes.

Population and Productivity: Optimists

- Julian Simon argued that larger populations often contain more entrepreneurs and inventors.
- Empirical support for population optimists is also pretty weak.
- Mainly, there are diseconomies of scale. Too many people in one area can lower productivity for all.
- No real connection between population and technology.

Population and Market Failures

- Population revisionists (neutralists)-there is no one size that fits all on population matters
- Micro model of fertility tells us that individuals have control over their own fertility.
- Humans may make wrong choices based on their failure to see the societal costs and benefits to having kids.
- Large families can be good for you and bad for society, which then becomes bad for you.

Population and Market Failures

- There is also a market failure in the market for contraception-imperfect info, govt, etc
- Rapid pop growth may increase income inequality since lower income households have higher birthrates.
- Rapid pop growth is unlikely overall to hinder devo.

Family Planning

- Family planning is just anything related to reproductive health.
- Usually this is seen as a policy that helps slow population growth, but family planning programs have mixed effects.
- When women desire small families, they use more contraceptives, but there is no way to say that the availability of contraceptives decreases the fertility rate.

Total Fertility Rates by Mother's Education

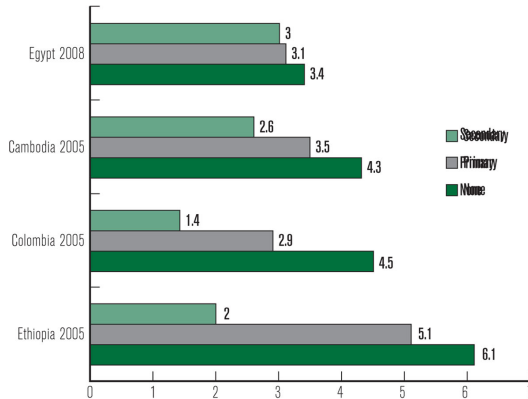


FIGURE 7-5 Total Fertility Rates by Mother's Education

Authoritarian Approaches

- China instituted a one child policy in 1979.
- This was the strongest example of the authoritarian approach to decrease birth rates.
- There was evidence that population would have slowed down regardless of the policy.
- Population problems for the future are mirrored in this example: rising share of elderly.