ECON 216
Economy of Ghana II

Session 7 - Poverty and Inequality I: Definition and Measurement

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Session Overview

❑This session explains the multidimensional nature of poverty as well as the various measures of poverty. The reduction of poverty has for years attracted the attention of governments and international donors, as well as researchers, yet there is no common consensus on guidelines for measuring and estimating poverty. The session also provides definition for income inequality and its measurements.

❑The elimination of widespread poverty and increasing inequality is at the core of global development efforts.

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Session Overview

❑ ***At the end of the session, the student will***

❑ Be able to identify and explain the different definitions of poverty used in the literature.

❑ Identify the various characteristics of poverty and be able to determine who can be term as poor.

❑ Analyse the weakness and strength of the various measurement of poverty.

❑ Understand the definition and measurements of income inequality.

❑ Identify strength and weakness of these measurements.

❑ Be able to explain the concept of poverty, equity, equality and inequality

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Session Outline

The key topics to be covered in this session are as follows:

❑ Topic One: Definition of Poverty

❑ Topic Two: Measurements of Poverty

❑ Topic Three: Definition of Inequality

❑ Topic Four: Measurements of Inequality

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Reading List

❑ Ghana. Statistical Service. (2014). *Poverty Profile in Ghana, 2005 - 2013*. Ghana Statistical Service.

❑ Ghana. Statistical Service. (2007). *Pattern and trends of poverty in Ghana, 1991-2006*. Ghana Statistical Service.

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Topic One

DEFINING POVERTY

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How do we define poverty?

❑ Traditionally, poverty has been defined in terms of individual's level of income.

❑ For instance, poverty is measured on a scale, with the most extreme form of poverty being measured as those who live on $1.25 per day or less.

❑ In response to this, development programmes have always been centred on job creation, GDP growth and other economic policies that could be measured through changes in income.

❑ Poverty is a multidimensional phenomena. Poverty is therefore difficult to operationalise.

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How do we define poverty?

❑ However, a basic definition of poverty is that: A person is poor if he/she lacks or has low level of the basic essentials of life, *food, shelter and clothing*.

❑ Thus, poverty refers to the lack of *basic conditions* necessary for *dignified human living*. This definition is based on the ability of persons to meet their basic needs.

❑ Other definitions of poverty are based on a capabilities approach put forward by Amartya Sen – renowned Development Economist

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How do we define poverty?

❑ Sen's capabilities approach points that development should focus on maximising what an individual can choose to achieve in life, such as the ability to choose the many different cultural values and practices to adopt etc.

❑ Choices made by an individual affect his/her well-being which is defined as the actual enjoyment from those choices derived from the range of options available to them.

❑ Unlike other approaches, the capability and well-being approach look at the range of options available for the individual to choose from and the freedom to exercise that choice.

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How do we define poverty?

❑ If assessed in this manner, then our approach to poverty will be holistic and far-reaching. It will not be viewed just from the economic point of view but include measures of human rights and access.

❑ Sen proposed that there are five general freedoms which underpins capabilities, the derogation of which will give rise to deprivation or poverty:

- Political freedom including civil rights;

- Economic facilities which includes access to credit;

- Social opportunities which include arrangements for access to health care, education and other social services;

- Transparency in relations between people, as well as between people and governments; and

- Protective security which includes social and economic safety nets such as unemployment benefits and famine and emergency relief.

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❑ Poverty in terms of the ability to live a life characterised by active participation in society and a sense of security.

❑ It has a political implications - governments are supposed to deal with it.

❑ It has social implications - poverty can be a source of shame and low status for individuals (Low self esteem).

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How do we define poverty?

❑ Using this assessment, poverty is no longer confined to the issue of income and education but rather examines whether an individual derives benefits from the full range of choices and has the actual ability to realise the choice that the individual has made.

❑ Using the capability approach, *poverty is now seen as deprivation of choices available for an individual to live the life they have reason to value and also the deprivation of the individual's abilities to exercise that choice.*

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Absolute vs Relative Poverty

❑ Poverty can be viewed:
  ❑ Absolute or relative
  ❑ Objective or subjective

❑ Absolute poverty is based on a measurement of the absolute minimum expenditure a person requires for biological survival. Refers to a set standard which is the same in all countries and which does not change over time

❑ Based on an absolute measure, the World Bank identifies:

❑ Extreme poverty applies to individuals living on less than **US$1.25** per day in PPP terms. Moderate poverty as living on **less than $1.90 a day**

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Absolute vs Relative Poverty

❑ Refers to a standard which is defined in terms of the society in which an individual lives and which therefore differs between countries and over time.

❑ It can include lack of:

  ❑ Educational opportunity

  ❑ Material possessions

  ❑ Health care

  ❑ Good quality housing

  ❑ Civil Rights

  ❑ Social opportunity

❑ *Relative poverty is frequently used to measure wealth disparities in wealthier nations.*

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Topic Two

MEASUREMENTS OF POVERTY

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Measurements of Poverty

❑ In this session, we shall understand the ways poverty can be measured

❑ The measurements of poverty include:
- Headcount ratio
- The poverty gap
- The square poverty gap

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➢ The headcount ratio (H) is the ratio of the population who are poor. H is dependent on knowing the poverty line, the level of income below which an individual is considered to be poor.

➢ This is the share of the population whose income or consumption is below the poverty line

➢ **_H = q/n, where 0<=H=<1_**
  q = the number of people whose income falls below the poverty line, say 50
  n = is the total number of people in the economy, say 100
  H = 50/100 = ½

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➢ While H is easy to measure it does not tell us the **_depth of poverty_**, that is, the extent of poverty

➢ To be able to do this, we make a critical assumption that all household members enjoy the same level of well-being. This assumption may not hold in many situations.

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The Poverty Gap

❑ The Poverty Gap addresses some of the challenges of the headcount ratio.

❑ This measures the total income necessary to raise everyone who is below the poverty line up to that line. The indicator measures the average income shortfall of all the poor as a proportion of the poverty line.

❑ It is the mean shortfall of the total population from the poverty line expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence.

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❑ The poverty gap is measured as

$$PG = \frac{1}{N}\sum_{1}^{N}[(Z - Y_i)/z], \text{ where}$$

Yi = income of the individual i.

Z = the poverty line

N = total number of people

➤ The sum of these poverty gaps gives the minimum cost of eliminating poverty, if transfers were perfectly targeted.

➤ The poverty line is the minimum income required to meet the basic requirements for biological survival.

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➢ The squared *poverty gap ("poverty severity") index* (P2) averages the squares of the poverty gaps relative to the poverty line. It is one of the Foster-Greer-Thorbecke (FGT) class of poverty measures that may be written as:

$$PG = \frac{1}{N}\sum_{1}^{N}[(Z - Y_i)/z]^{\alpha}$$

➢ where N is the size of the sample, z is the poverty line, $(Z - Y_i)$ is the poverty gap and α is a parameter; when α is larger the index puts more weight on the position of the poorest.

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Topic Three

DEFINITION OF INEQUALITY

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What does Inequality mean?

❑ So far, we have understood the meaning and measurement of poverty. We will now look at the meaning and measurement of inequality.

❑ Economic Inequality refers to difference in how assets, wealth, or income are distributed among individuals and/or populations. It is also described as the gap between rich and poor.

❑ Income inequality is also referred to as wealth disparity, wealth and income differences, or the wealth gap.

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Why should we be concerned with Inequality?

❑ There are three major reasons why economists are concerned with inequality

  ➢ High income inequality leads to economic inefficiency

  ➢ Extreme income disparities undermine social stability and solidarity.

  ➢ Finally, extreme inequality is generally viewed as unfair. High inequality reduces social welfare

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Topic Four

MEASUREMENT OF INEQUALITY

Measurement of Inequality

In the previous topic, we defined inequality and learnt how to use deciles and quintiles to measure income inequality.

In this topic, we will discuss other measures of inequality. The measures include

❑ Absolute Inequality
❑ Relative Inequality
❑ Lorenz Curve
❑ Gini Coefficient

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Quintiles and Deciles

❑ The distribution of the incomes can be grouped into five called quintiles or into ten called deciles. This will assist in knowing what proportion of income is received by each group. In Table 1, the first column shows the 20 persons, col. 2 shows their incomes, col 3 shows incomes grouped into 5 cumulatively while the last shows incomes groups into 10 cumulatively.

❑ If incomes of 20 persons are grouped into 5, it means we group 4 people separately. If the 20 incomes are grouped into 10, it means we group 2 persons' incomes. From Table 1 the sum of the first 4 poorest persons make 5. This group is called the 5th quintile. The next sum 9 is the 4th quartile.

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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

Note: Measure of inequality = ratio of top 20% to bottom 40% = 51/14 = 3.64.

❑ Relative inequality is the ratio of the bottom 40% of the population to the top 20%. This is a measure of the degree of inequality between the two extremes of the very poor and the very rich in society. From Table 1, this is $(14/51) = 0.27$

❑ If the top 20% is divided by the bottom 40%, we get $3.62 = 51/14$. This is the same. The first ratio, 0.27 implies that every GHC 1 that a rich person in the first quintile gets, a poor person in the bottom 40% gets GHc 0.27.

❑ The second ratio, 3.62 implies that every GHc 1 a poor person in the bottom 40% gets, a rich person in the 1st quintile gets GHC 3.62. The two interpretations are equivalent.

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❑ The absolute inequality measure compares the aggregate income of the lowest quintile with those in the highest quintile. Sometimes the income of the lowest 40% (4th and 5th quintiles) is compared with the highest quintile (1st quintile). From Table 1, the poorest 40% of the population have about 14% (5 + 9)/100 * 100 = 14 of the income of the 20 people.

❑ Also the richest 20% of the population have about 51% (51/100 *100=51) of the income of the 20 people.

❑ These income comparisons of the poor and the rich give an idea on income inequality of the country.

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The Lorenz Curve

❑ The Lorenz Curve is the graphical measurement of inequality in an economy. This is shown in Fig. 1. The vertical axis measures the percentage of income while the horizontal measures the percentage of income recipients.

❑ From Gig. 1, as the Lorenz curve moves away from the diagonal perfect equality, the degree of inequality increases and vice versa. If the Lorenz curve coincides with the diagonal then there is perfect equality in the economy or every person has the same amount of income. In the situation where one person receives all the income with all the others receiving nothing, perfect inequality, the Lorenz curve coincides with the lower and right-hand borders of the diagram.

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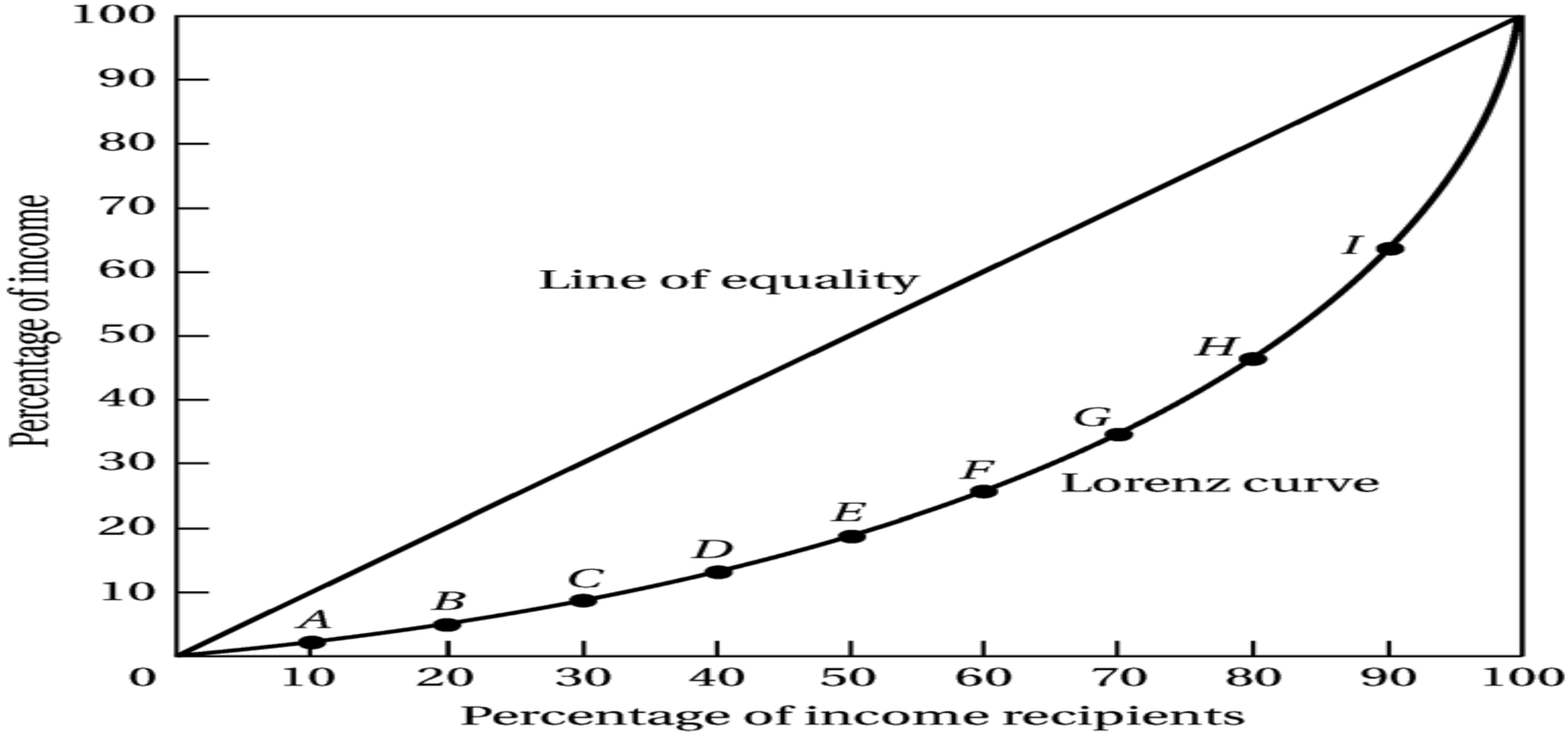
Measurement of Inequality

❑Gini Coefficient

It is the quantitative measurement of income inequality. It is the ratio of the area between the diagonal and the Lorenz curve divided by the total area of the triangle in which the curve lies shown in Fig 2. In Fig 2, it is the area A divided by the triangle BCD. It varies from 0, perfect equality, to 1 perfect inequality. The higher the value of the Gini coefficient, the higher the curve sags away from the line of equality and the higher the level of inequality.

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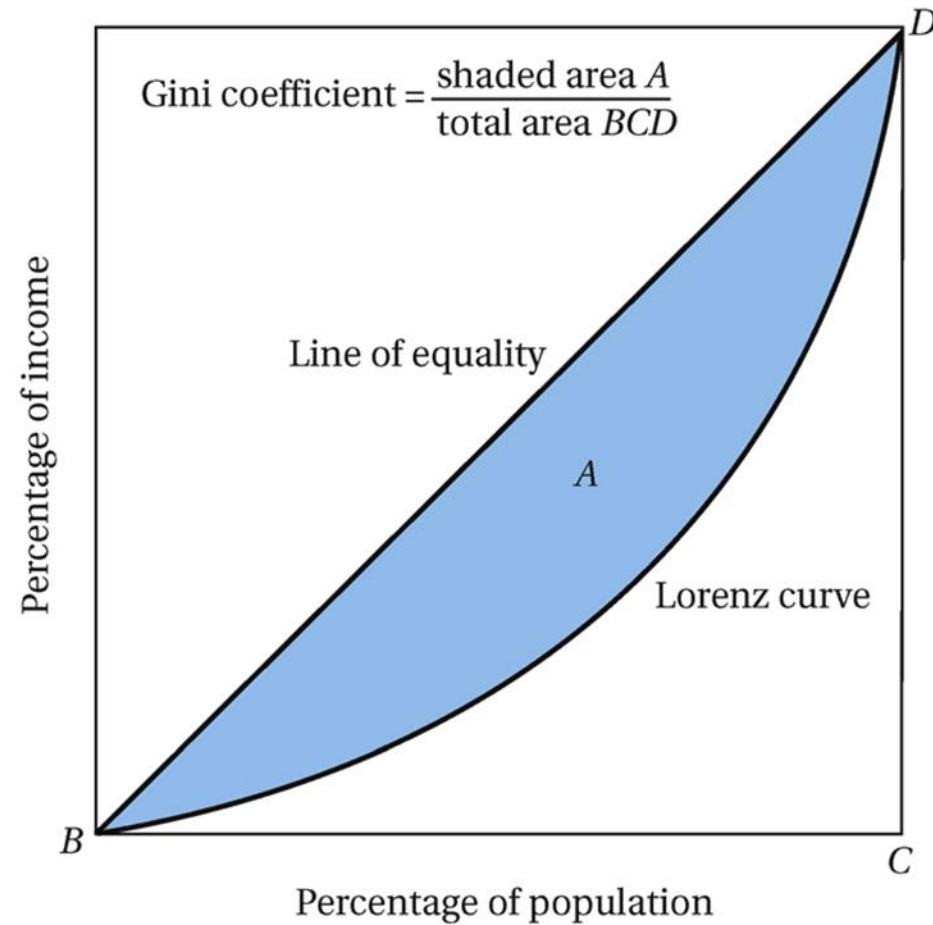
References

❑ TODARO, M. P., & SMITH, S. C. (2009). *Economic development*. Boston, Pearson Addison Wesley.

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