

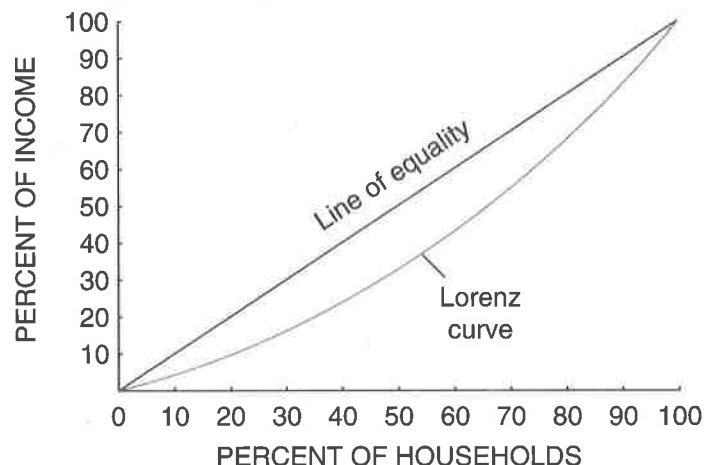
The Lorenz Curve and Gini Coefficient

The labor markets often fail to allocate income equally. Some households earn much income while many more earn little income. Differences in worker productivity, varying trade patterns, patterns of past discrimination, and tax policies are some of the reasons for what economists call *income inequality*. For example, increased demand for workers with at least bachelor's degrees and decreased demand for workers with only high school diplomas have resulted in income inequality as college-educated laborers' income has risen and high school-educated laborers' income has fallen.

Two important measures of income inequality are the Lorenz curve and the Gini coefficient. The *Lorenz curve* is a graph of income inequality that shows what percentage of a country's income is being earned by a percentage of the country's households.



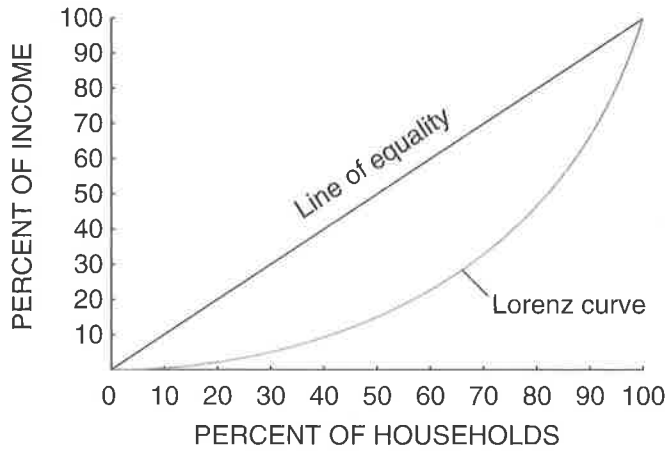
Figure 5-7.1
Lorenz Curve #1



In Figure 5-7.1, the line of equality represents a perfectly even distribution of income. A perfectly even distribution means that 10 percent of the households earn 10 percent of the income, 20 percent of the households earn 20 percent of the income, and so on. The Lorenz curve shows the actual distribution of income. The closer the Lorenz curve is to the line of equality, the more evenly distributed is the income. The more the Lorenz curve sags away from the line of equality, then the more unevenly income is distributed. Figure 5-7.2 shows more income inequality than Figure 5-7.1.



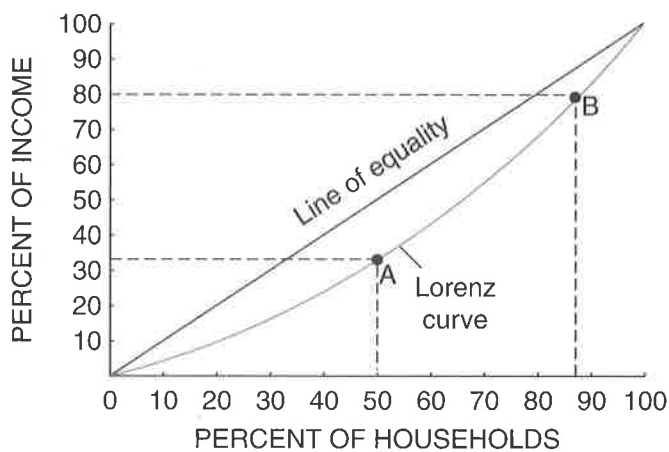
Figure 5-7.2
Lorenz Curve #2



- In Figure 5-7.3, determine the amount of income that is being earned by 50 percent of the households in the country of Maxopia.
33 percent



Figure 5-7.3
Lorenz Curve for the Country of Maxopia



- Now, determine the percentage of income being earned by 88 percent of the households.
80 percent

3. Using Figure 5-7.4, determine the percentage of income being earned by 50 percent of the households and then by 88 percent of the households in the country of Minopia. You may want to use a ruler to help you.

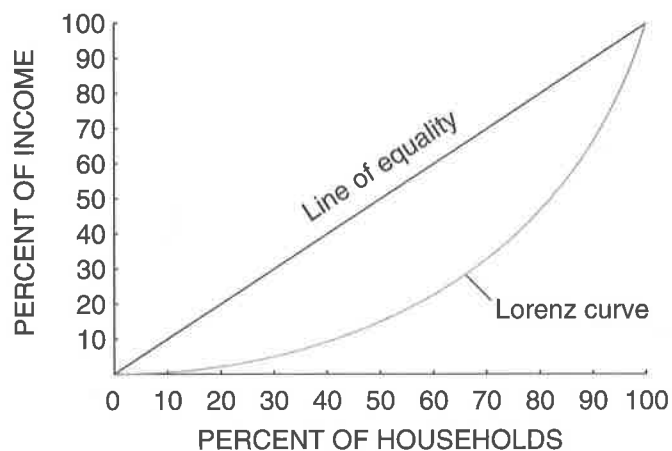
(A) 50 percent of households earn about 12 percent of the income.

(B) 88 percent of households earn about 62 percent of the income.



Figure 5-7.4

Lorenz Curve for the Country of Minopia



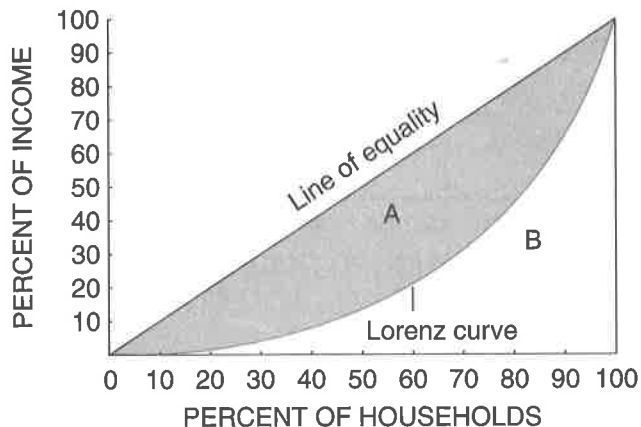
4. Compare your results from Questions 1 and 2 with your results from Questions 3A and 3B. Which country has more income equality—Maxopia or Minopia?

Maxopia has more income equality; its Lorenz curve is closer to the line of equality.

Another measure of income inequality is the *Gini coefficient*. The Gini coefficient compares the area between the line of equality and the Lorenz curve (as seen in area A in Figure 5-7.5) with the total area under the line of equality (the sum of areas A and B in Figure 5-7.5).



Figure 5-7.5
Lorenz Curve #5



In Figure 5-7.5, the Gini coefficient = $A/(A + B)$. The coefficient ranges from 0 to 1. A Gini coefficient of 0 indicates perfect income equality, while a Gini coefficient of 1 indicates perfect income inequality because just one household is earning 100 percent of the income.

5. As the area of A increases relative to the area of B, what is happening to income inequality?
Income inequality is increasing.

6. If the country Economica has a Gini coefficient of 0.5, while the country Graphland has a Gini coefficient of 0.75, then in which country is income more evenly distributed?
Economica's income is more evenly distributed.

7. Assume that Economica has a Gini coefficient of 0.5. If Economica's government imposes a redistributive income tax on the top 50 percent of households, then how will the following change:
 - (A) The Lorenz curve ***will move closer to the line of equality.***
 - (B) The Gini coefficient ***will get closer to zero.***
 - (C) The line of equality ***will not change.***
 - (D) The income distribution of Economica ***will be more equal.***