Taxes: Equity vs. Efficiency Part I

The only difference between death and taxes is that death doesn't get worse every time Congress meets.

Will Rogers

What Is Income?

There are several ways to measure income.

Personal Income

- Personal income (PI) is income received by households before payment of personal taxes.
- Personal income is not a complete measure of income.

Personal Income

- Many goods and services are distributed directly as in-kind income.
  - In-kind income - goods and services received directly, without payment in a market transaction

Wealth

- The distribution of wealth is also important in determining access to goods and services.
  - Wealth - the market value of assets

Wealth

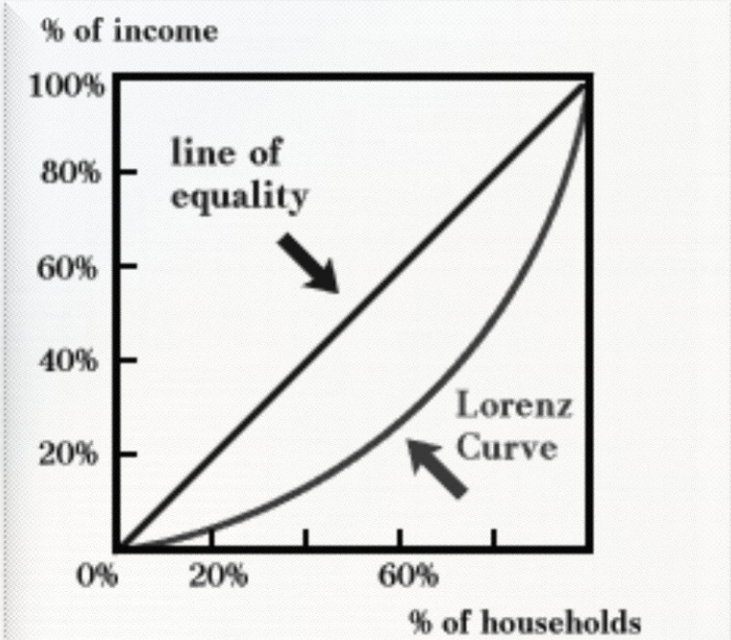
- Wealth represents a stock of potential purchasing power.
- Income statistics tell us how this year's flow of purchasing power (income) is being distributed.

The Size Distribution of Income

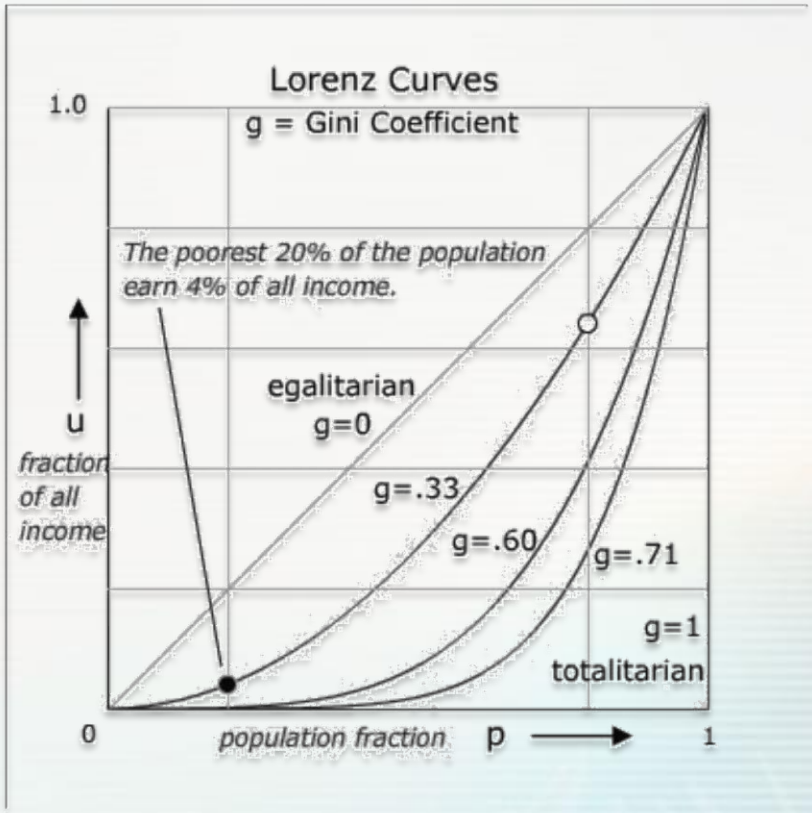
- **Size distribution of income** is the way total personal income is divided up among households or income classes.
- **Income share** is the proportion of total income received by a particular group.

The Lorenz Curve

- The **Lorenz curve** is a graphic illustration of the cumulative size distribution of income.
- It contrasts complete equality with the actual distribution of income.



A Lorenz Curve illustrates inequality



The Lorenz Curve

The greater the area between the Lorenz curve and the diagonal, the more inequality exists.

The Lorenz Curve

- The ratio of the shaded area in the Lorenz curve to the area of the triangle formed by the diagonal is called the Gini coefficient.
- The Gini coefficient is a mathematical summary of inequality based on the Lorenz curve.

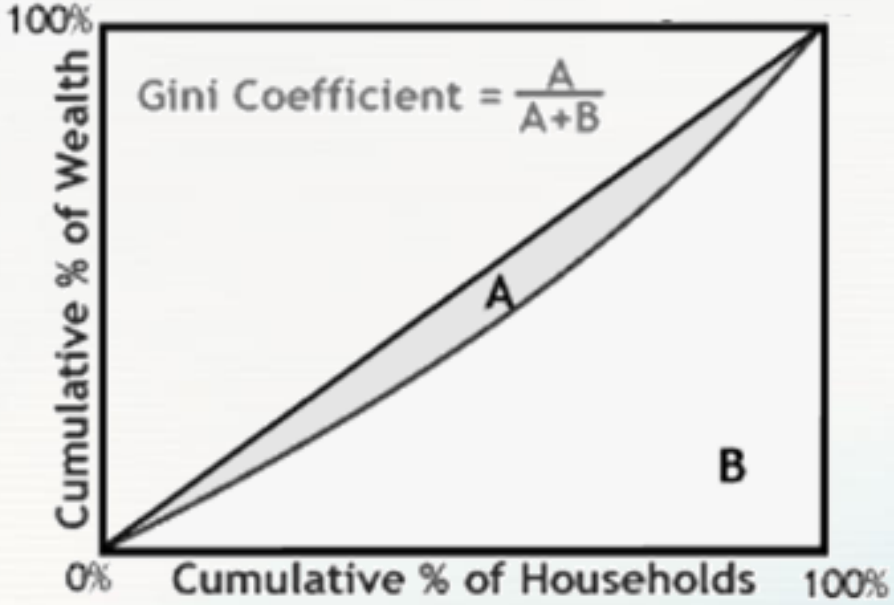
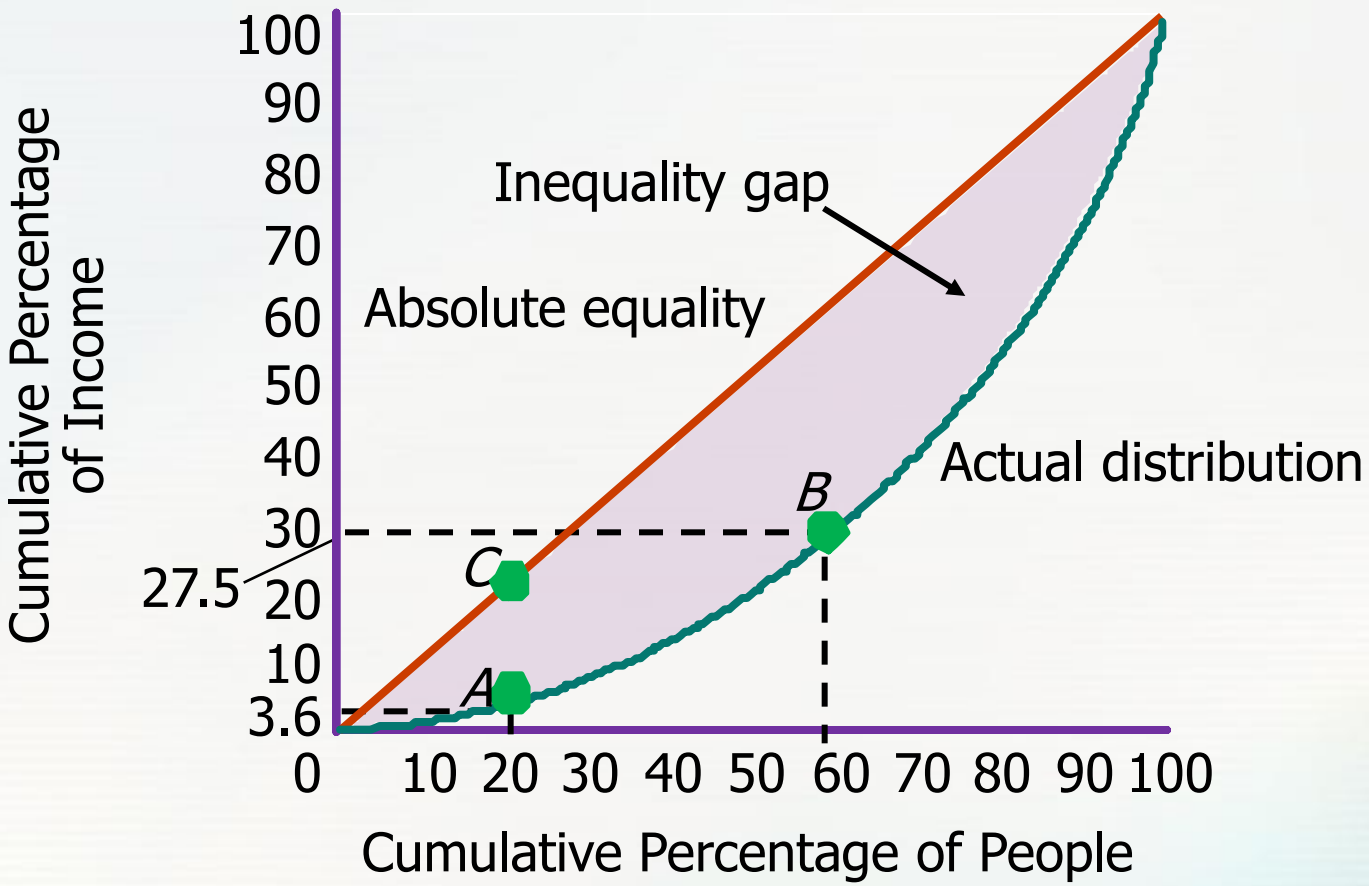
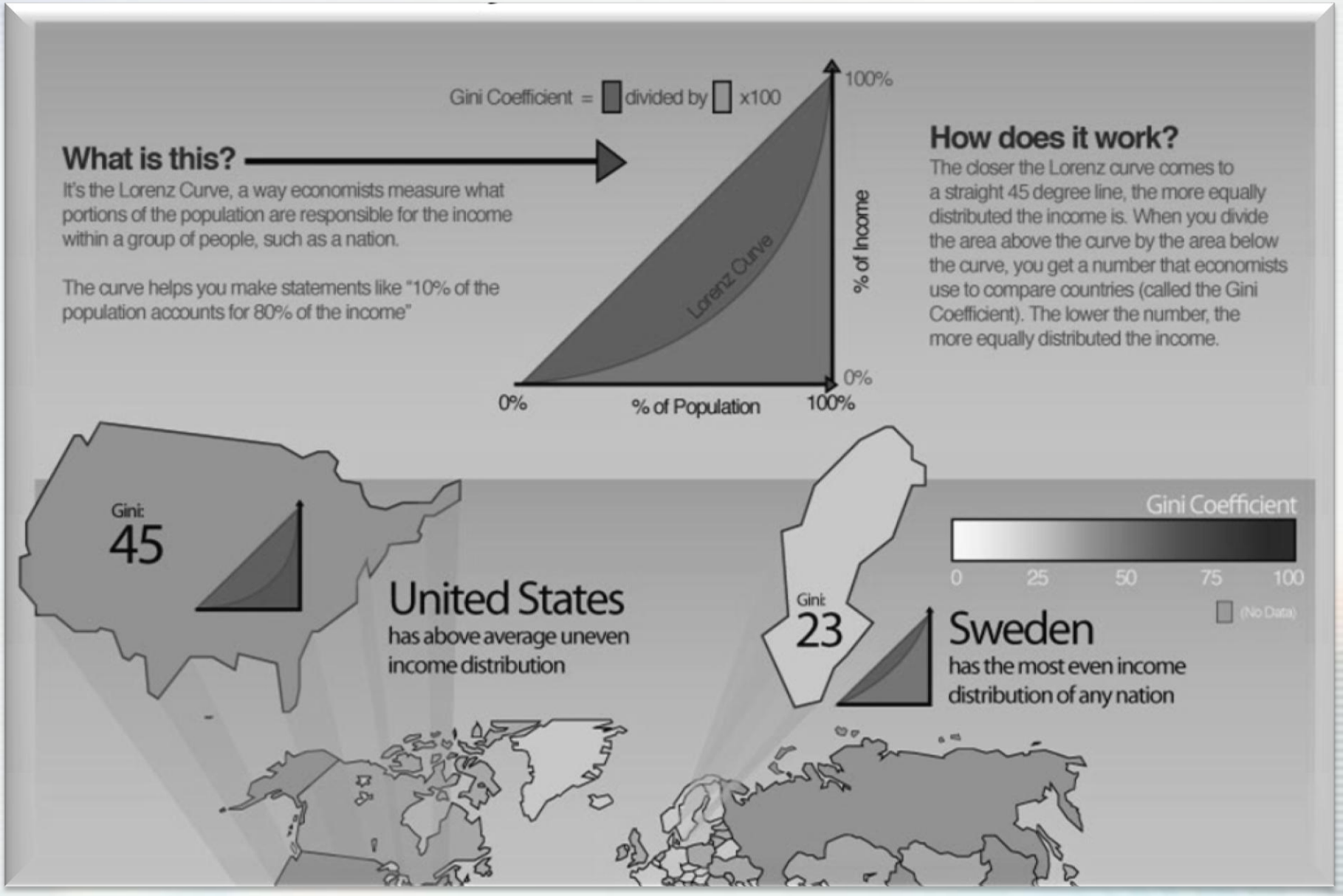


Chart: The Lorenz Curve



Income Distribution



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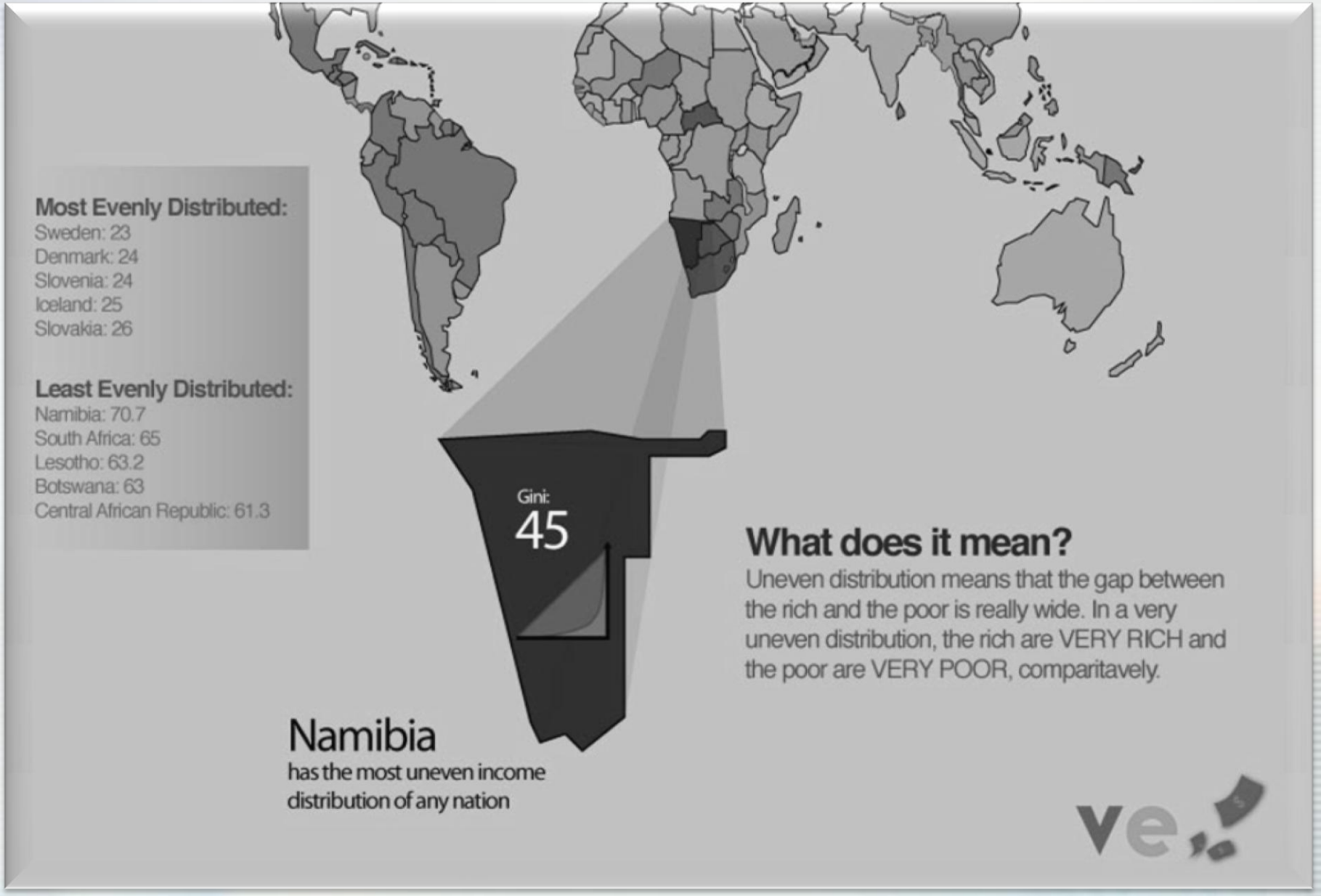


The Call for Intervention

- To many people, large and increasing inequality represents a form of market failure.
  - Market failure – an imperfection in the market mechanism that prevent optimal outcomes

The Call for Intervention

The government could promote greater equality by levying higher taxes on the rich and providing more generous transfer payments to the poor.

Benefits-Received Principle

- Whoever benefits from taxes or government assistance should pay in an amount equal to the benefits received.
- Gasoline (excise) taxes – If you drive a lot you buy a lot of gas and therefore help pay for the roads you drive on.

Ability-to-Pay Principle

- Whoever is better able to pay taxes should pay.
- For example, a rich person should pay more taxes than a poor person because they are more able to pay taxes.

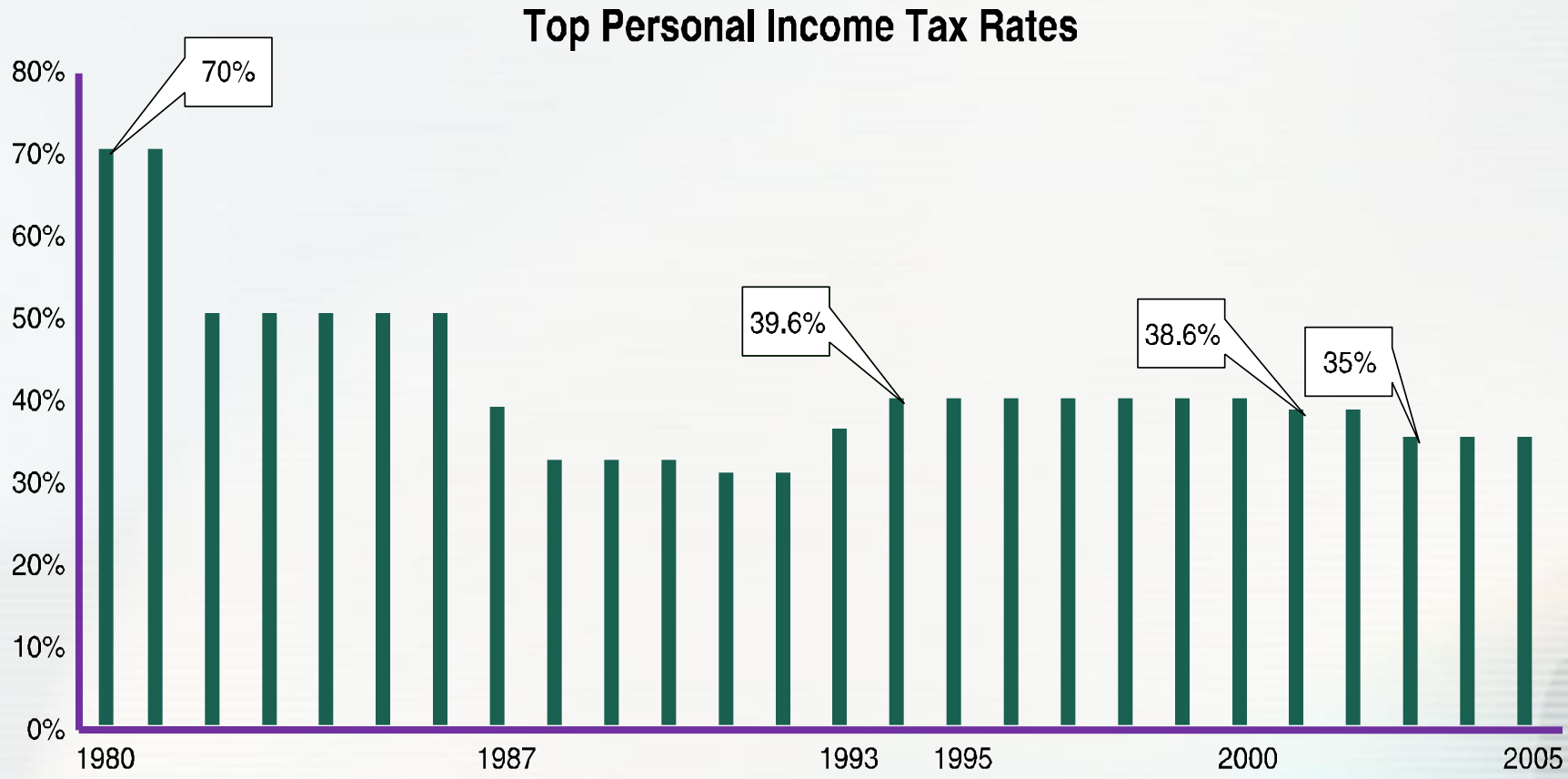
The Federal Income Tax

- **Personal income tax** – tax a person pays on their income
- **Corporate income tax** – tax corporations pay on their profits
- The federal income tax is designed to be progressive.
  - **Progressive tax** - a tax system in which tax rates rise as incomes rise

The Federal Income Tax

- Progressivity is achieved by imposing increasing marginal tax rates on higher incomes.
  - Marginal tax rate - the tax rate imposed on the last (marginal) dollar of income

Chart: Changes in Marginal Tax Rates



Efficiency Concerns

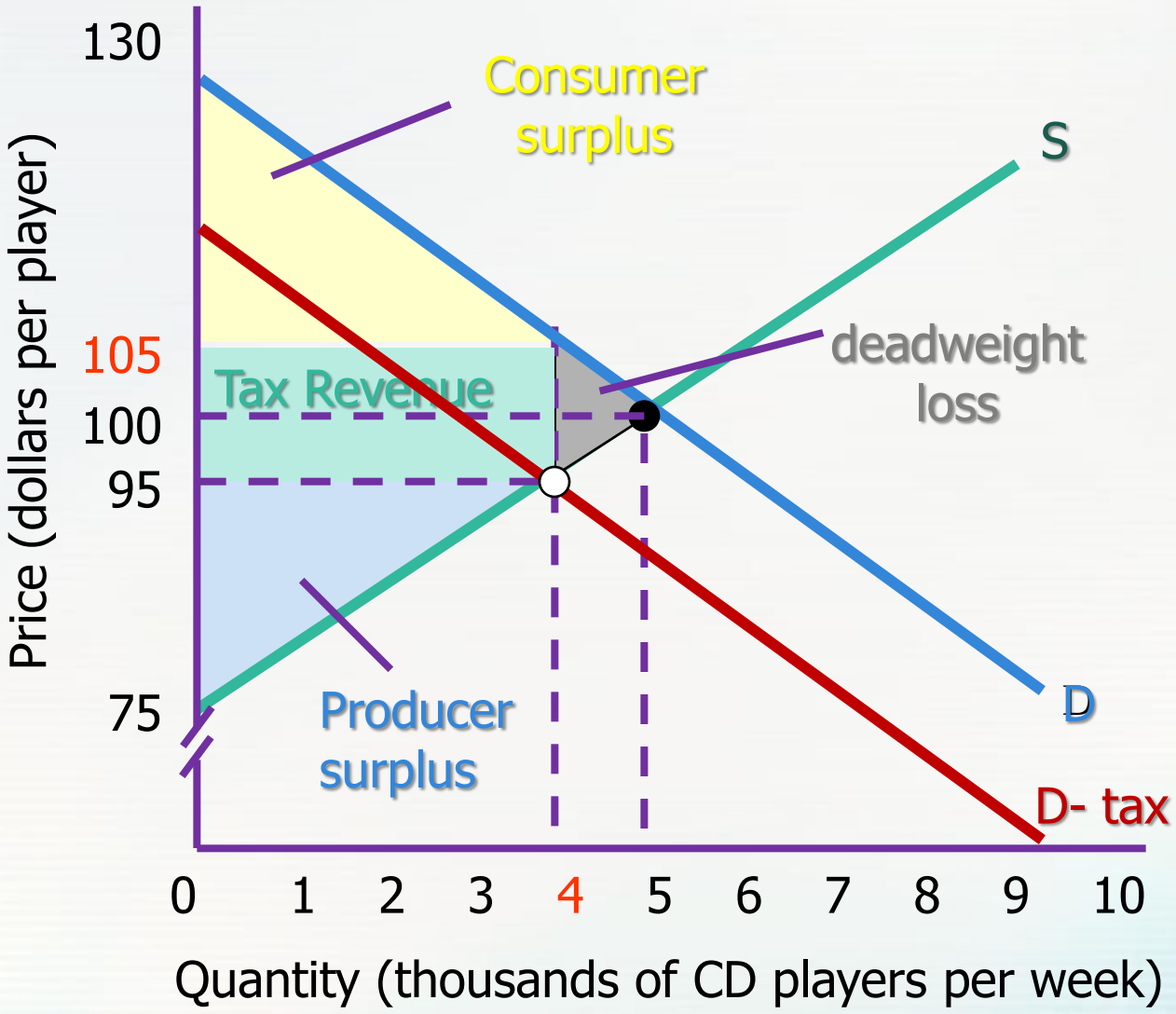
- A progressive tax system raises concerns about efficiency.
- High marginal tax rates may reduce the incentive to work, produce or invest.

Taxes and Efficiency

Inefficiency - tax puts a wedge between marginal benefit and marginal cost

$$MB > MC$$

Chart: Taxes and Efficiency



Sales Taxes in Practice

To minimize deadweight loss, tax goods with low elasticity of demand (very price inelastic).

Why?

Chart: Efficiency and Inelastic Demand

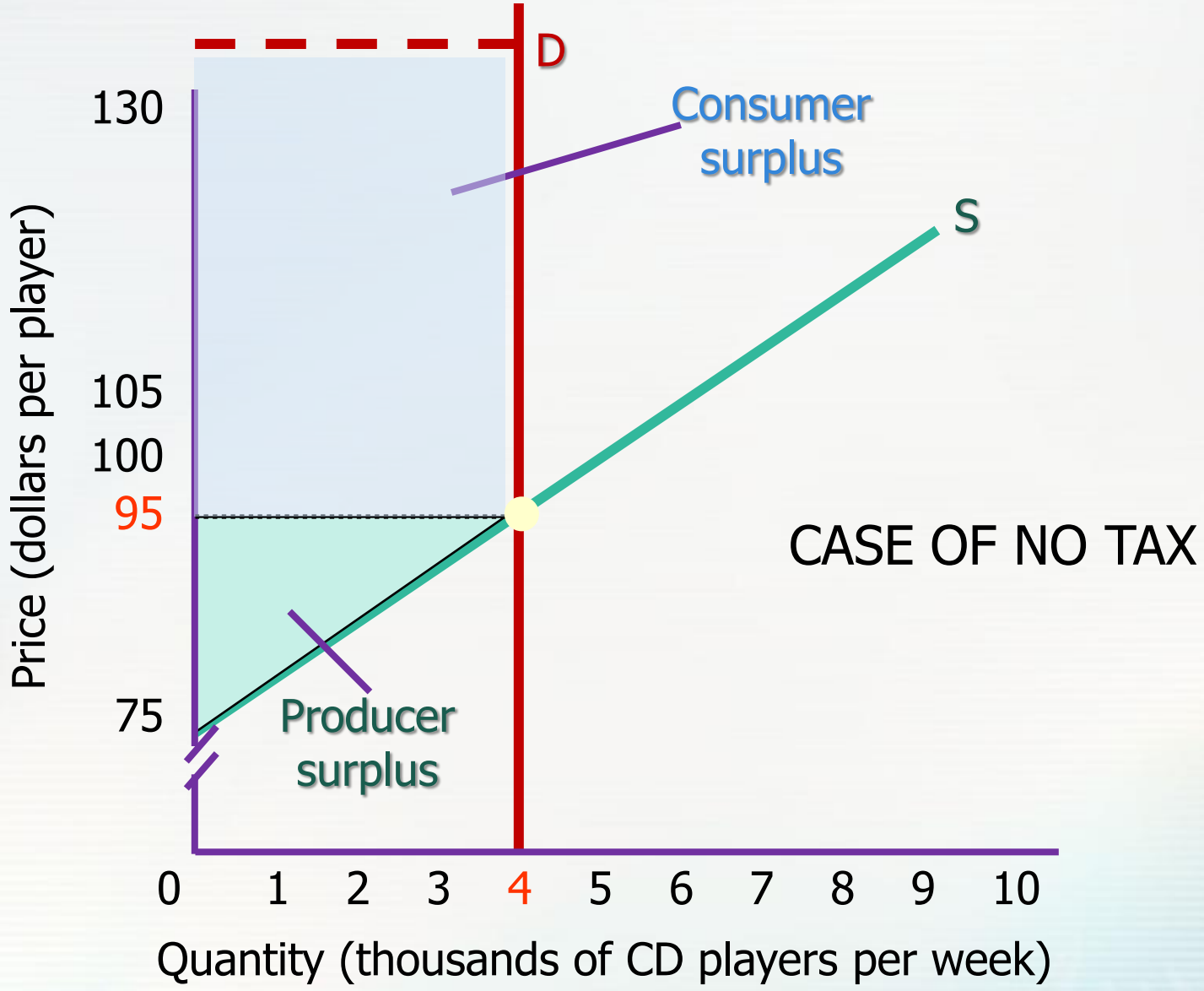
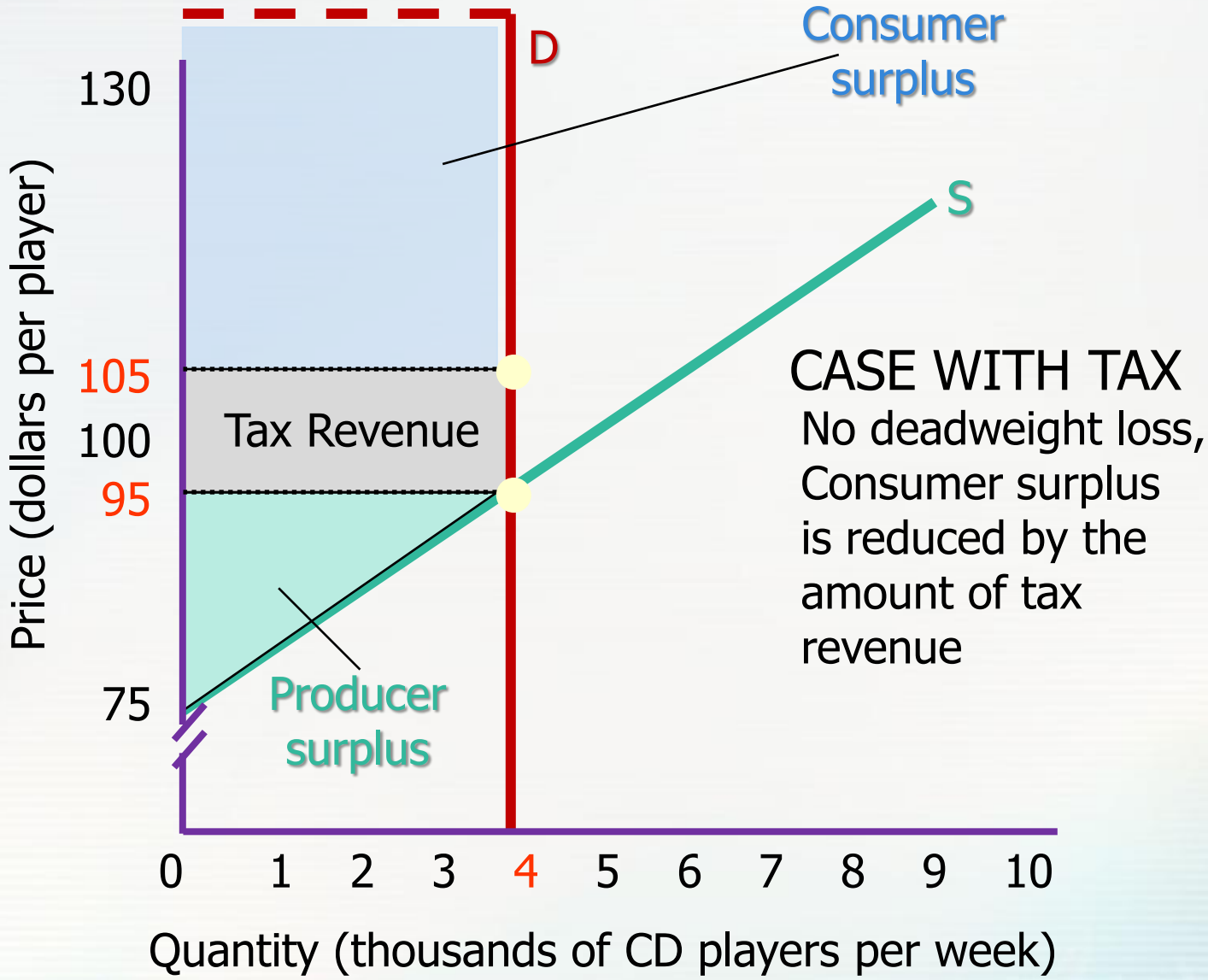


Chart: Efficiency and Inelastic Demand



CASE WITH TAX

No deadweight loss, Consumer surplus is reduced by the amount of tax revenue

Tax Elasticity

- The degree of conflict between equity and efficiency depends on how responsive market participants are to higher tax rates.
- This response is summarized using the tax elasticity of supply.

Tax Elasticity

The **tax elasticity of supply** is the percentage change in quantity supplied divided by the percentage change in tax rates.

$$\text{tax elasticity of supply} = \frac{\text{\% change in quantity supplied}}{\text{\% change in tax rate}}$$

Equity Concerns

- Critics raise questions about how well the federal income tax promotes equity.
- What appears to be a progressive tax structure in theory turns out to be a lot less progressive in practice.

Loopholes

The progressive tax rates described in the tax code apply to "taxable" income, not to all income.

taxable income = *gross income* -- *exemptions and deductions*

Loopholes

The purpose of itemized deductions is to encourage specific economic activities and reduce potential hardships.

Loopholes

- These deductions may violate the principles of vertical or horizontal equity.
  - vertical equity – principle that people with higher incomes should pay more taxes
  - horizontal equity – principle that people with equal incomes should pay equal taxes

Nominal vs. Effective Tax Rates

The loopholes created by exemptions, deductions, and tax credits create a distinction between gross economic income and taxable income.

Nominal vs. Effective Tax Rates

- The **nominal tax rate** is calculated by dividing taxes paid by taxable income.
- The **effective tax rate** is calculated by dividing taxes paid by total income.

Nominal vs. Effective Tax Rates

- The gap between the nominal tax rate and the effective tax rate is a reflection of loopholes in the tax code.
- It is also the source of vertical and horizontal inequities.

Tax-Induced Misallocations

- Tax loopholes not only foster inequity but encourage inefficiency as well.
- Tax preferences induce resource shifts into tax-preferred activities.

A Shrinking Tax Base

- As deductions, exemptions, and credits accumulate, the tax base shrinks.
- The **tax base** is the amount of income or property directly subject to nominal tax rates.

tax revenue = average tax rate X tax base

The 1986 Tax Reform Act

- The basic features of the Tax Reform Act (TRA) of 1986 included:
  - loophole closing.
  - reductions in marginal tax rates.
  - fewer tax brackets.
  - tax relief for the poor.
  - shift from personal to corporate taxes.

Base Broadening

- The elimination or reduction of scores of tax preferences increased the tax base by almost 25 percent.
- By doing so, the TRA eliminated many sources of vertical and horizontal inequities.

Rate Reductions

- By broadening the tax base, the TRA made it possible to reduce tax rates.
- The cut in the top tax rate from 50 to 28 percent was intended to stimulate a greater supply of labor and capital.

CONTINUED IN TAXES: EQUITY VS. EFFICIENCY PART II