Introduction to Economics I
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What Is General Equilibrium Theory?

General equilibrium theory, or Walrasian general equilibrium, attempts to explain the functioning of the macroeconomy as a whole, rather than as collections of individual market phenomena.

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What Is General Equilibrium Theory?

The theory was first developed by the French economist Leon Walras in the late 19th century.

It stands in contrast with partial equilibrium theory, or Marshallian partial equilibrium, which only analyzes specific markets or sectors.

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Definition of Pareto efficiency

Pareto efficiency is said to occur when it is impossible to make one party better off without making someone worse off.

A Pareto improvement is said to occur when at least one individual becomes better off without anyone becoming worse off.

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Pareto efficiency and Market failure

Market failure is an inefficient allocation of resources in a free market. Market failure implies Pareto inefficiency – because it is possible to improve.

For example, the over-consumption of demerit goods (drugs/tobacco) leads to external costs to non-smokers and also early death for smokers. A tax on cigarettes could encourage people to quit smoking, and raise revenue for treating smoking-related diseases.

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Pareto efficiency and equity

An outcome may be seen as a Pareto improvement, but, it doesn't mean this is a satisfactory outcome or fair. There could still be inequality after a Pareto improvement.

A society could have Pareto efficiency but large degrees of inequality. Suppose there is a pie and three people; the most equitable solution would be to divide into three equal parts. But, if it was cut in half and shared amongst two people, it would be seen as Pareto efficient – because the third person doesn't lose out – (even though he doesn't share in the pie).

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Simple Example of Pareto Efficiency - I

Consider the following background information for an allocation problem:

•Two types of goods: Apples and oranges (same number of each good).
•Two individuals: Tina and John.

Consider the preferences for each individual:
•Tina does not have a preference for apples or oranges (Tina is indifferent between apples and oranges).
•John has a preference for apples over oranges.

Consider the following allocation:
•Apples are all allocated to Tina.
•Oranges are all allocated to John.

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Simple Example of Pareto Efficiency - I

Is the allocation above Pareto efficient?
To determine whether an allocation is a Pareto efficiency, it is important to determine if a Pareto improvement is possible. As in, is there a way to make an individual better off without making someone else worse off?

In the example above, a Pareto improvement is possible. If the allocation of oranges went to John and the allocation of apples went to Tina, John would be better off while no one would be worse off.

Therefore, the current allocation of apples to Tina and oranges to John is Pareto **inefficient**. For the allocation to be Pareto efficient, apples should be allocated to John and oranges should be allocated to Tina.

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Simple Example of Pareto Efficiency - II

Consider the following background information for an allocation problem:

One type of good: A chocolate bar.

Two individuals: Tina and John.

Consider the preferences for each individual:

Tina prefers as much of the chocolate bar as possible.

John prefers as much of the chocolate bar as possible.

Consider three potential allocations:

1. A chocolate bar is all allocated to Tina.
2. A chocolate bar is all allocated to John.
3. A chocolate bar is half allocated to Tina and half allocated to John.

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Simple Example of Pareto Efficiency - II

Is each allocation above Pareto efficient?

Since each individual prefers as much of the chocolate bar as possible, there is not an allocation that makes an individual better off without making someone else worse off. Therefore:

1. Is Pareto efficient
2. Is Pareto efficient
3. Is Pareto efficient

4. Consider that a chocolate bar is half allocated to Tina and 1/4 allocated to John.

This allocation is NOT Pareto efficient, since ¼ of resources are not used, and by allocating that amount of chocolate bar either Tina or John makes them better off without maling someone else worse off.