Scarcity and Production Possibilities

Economics 120: Global Macroeconomics

Goals

1. Define what is economics and goals of macroeconomics
2. Apply scarcity and production possibilities concepts to...
   - defining economics,
   - describing possibilities and tradeoffs in an economy, and
   - describe how economies and standards of living can grow.

Reading and Exercises

- Textbook: Introduction to Economics, Module 1
- Textbook: Production possibilities, Module 3
- "Makeshift Cuisinart Makes a Lot Possible in Impoverished Mali" by Roger Thurow, *The Wall Street Journal*, July 26, 2002. **Posted on Canvas**
- **Canvas Quiz due Wed Sept 8, 11:59 PM**.
  Multiple-choice, 10 questions, unlimited attempts allowed, only best score counts
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What is economics?

- Economics is the study of the allocation of scarce resources.
- **Resource**: broadly defined as anything that is used in production or is consumed.
- **Scarcity**: a resource is considered scarce when there is not enough to satisfy everyone's wants at a zero price.
- Microeconomics (ECO 110) studies how individual consumers and producers make optimal choices with scarce resources.
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Factors of production

- **Factors of production:** scarce resources that are used in the production of goods.
- **Land**: any natural resource (such as land, forest, oil) that is used for production.
- **Labor**: time people spend employed in producing goods, as well as the physical and mental talents of people.
- **Capital**: physically manufactured goods used in the production of other goods and services. Eg. buildings for businesses, factories, machines, computers, dump trucks, etc.
  - The process of producing or purchasing new capital goods is called **investment**.
- **Human capital**: Skills, knowledge, and mental talents of people used in production of goods and services

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Production Possibilities Frontier

- Many of the same factors of production can be traded between productions of alternative goods.
- Factors of production are scarce.
- Production possibilities: trade-off when producing two or more different goods.
- Starting assumptions:
  - Full employment and efficient use of all resources
  - Single period in time $\rightarrow$ fixed resources and fixed technology
  - Two goods. Not essential, just makes it easy to draw

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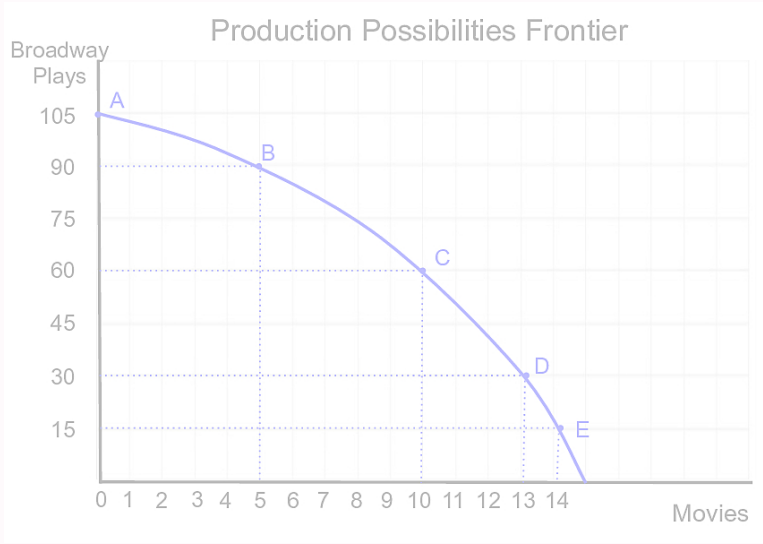
Production Possibilities Example

Production Possibilities Table

Point	Broadway Plays	Movies
A	105	0
B	90	5
C	60	10
D	30	13
E	15	14

Production Possibilities Frontier



Why the tradeoff? Factors of production are scarce!

To produce more movies, move workers, building space, set designs, etc. away from making plays to make movies instead.

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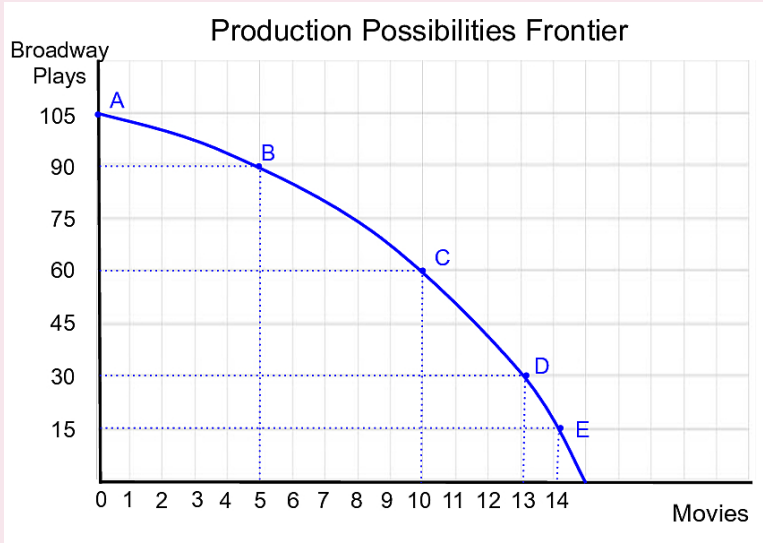

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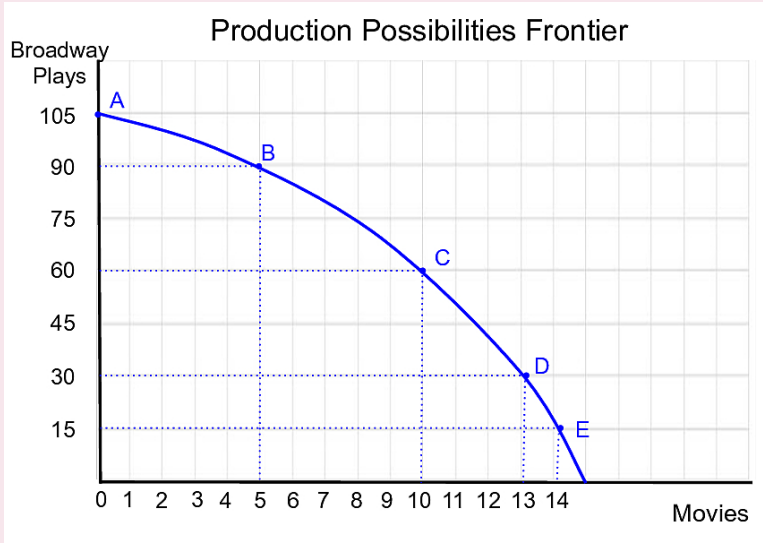

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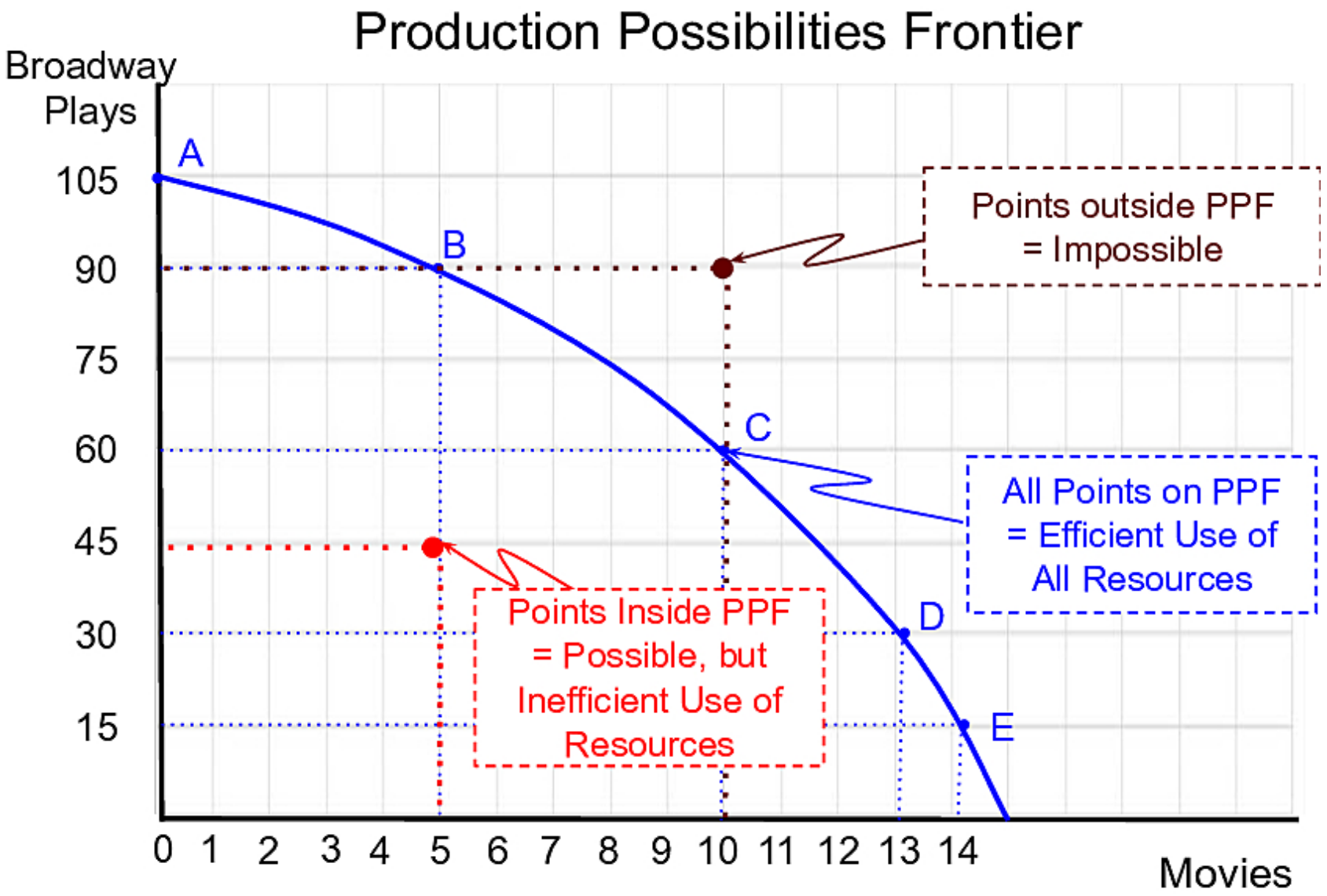
Efficiency, Possibilities, and Impossibilities



Opportunity costs

Opportunity Cost

Quantity of production of one good that must be given up to produce *one additional unit* of another good.

Formula

$$\text{Op Cost of Movies} = \frac{\text{Qty of Plays Given Up}}{\text{Qty of Movies Gained}}$$

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B	90	5	(105-90) / (5-0) = 3 plays
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Opportunity Cost and Slope of PPF

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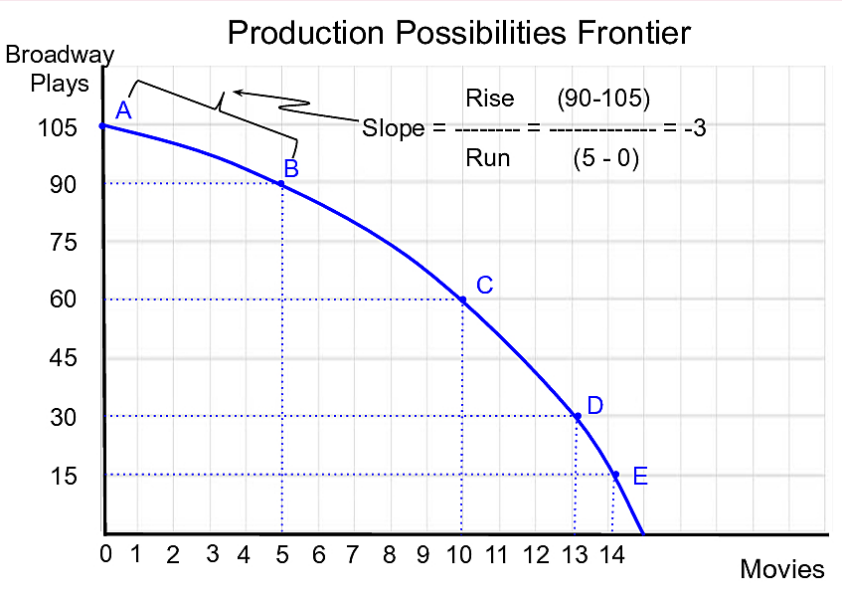

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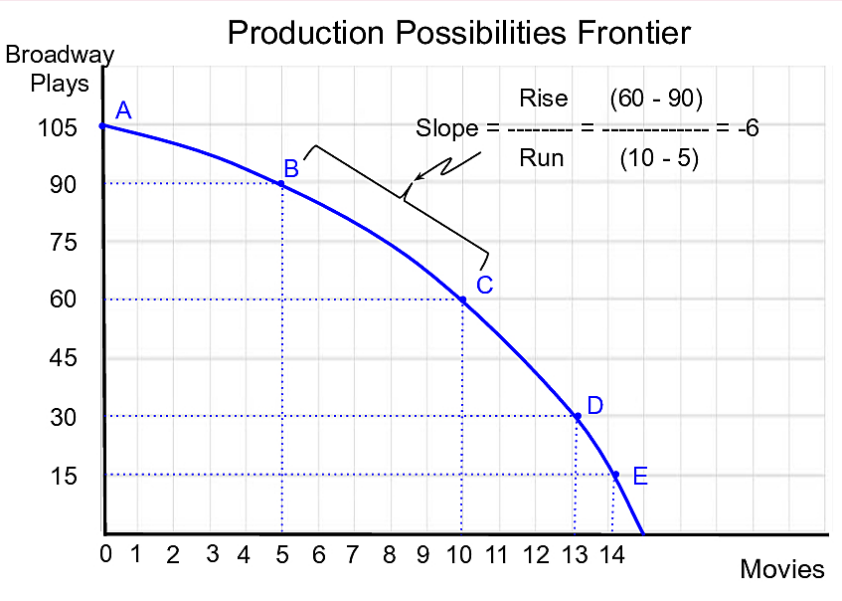

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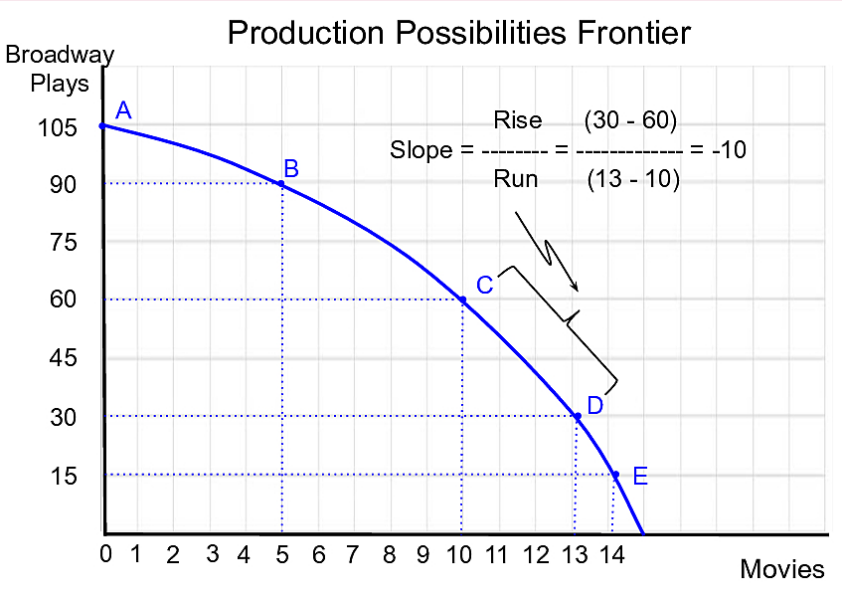

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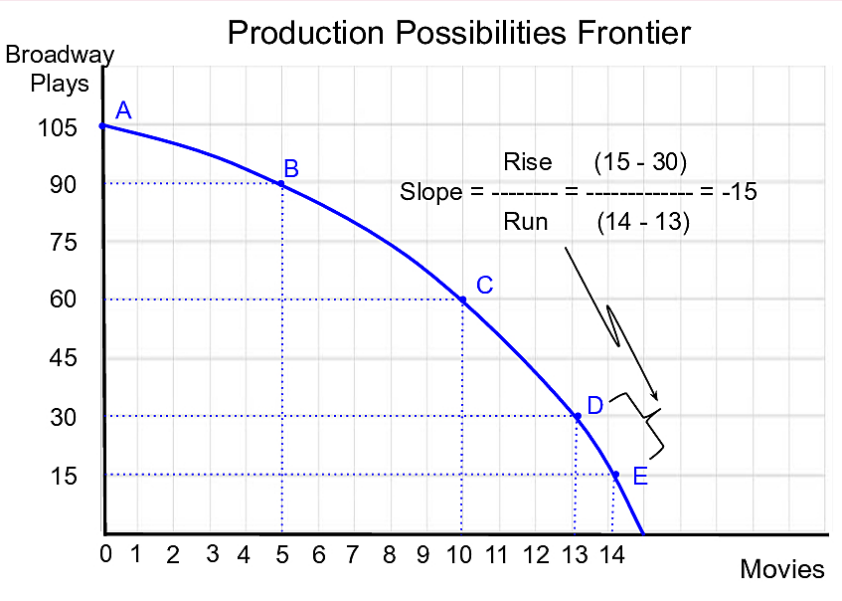

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Relationship between PPFs and Opportunity Costs

Relationship

- The absolute value of the slope of the PPF = opportunity cost of good on horizontal axis
- Bowed-out shape (steeper slope as x increases) $\rightarrow$ increasing opportunity cost

Law of Increasing Opportunity Costs

- As production of one good increases, the opportunity cost of producing that good increases
- It holds for **both the x-variable good and the y-variable good**.

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Future PPFs: Economic Growth

Factors Affecting PPF

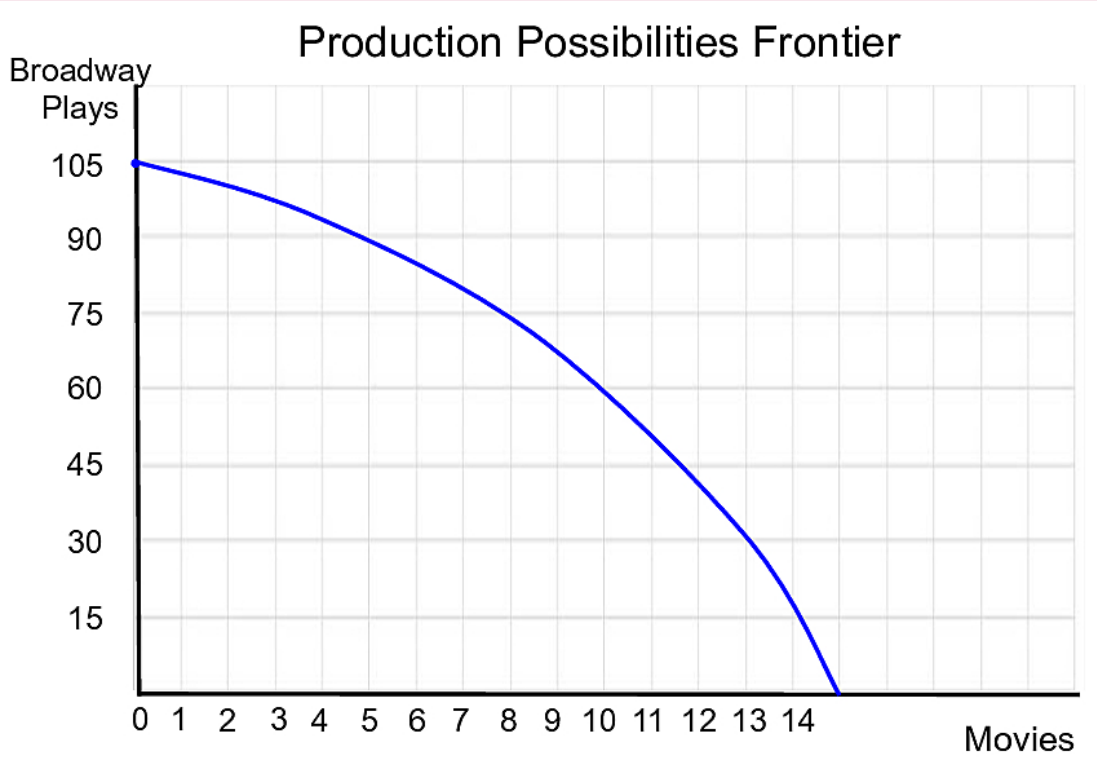
More of everything is possible:

- New technologies
- New production methods
- Discovery of new resources
- More human capital

Impact

PPF shifts outward

Shift Outward



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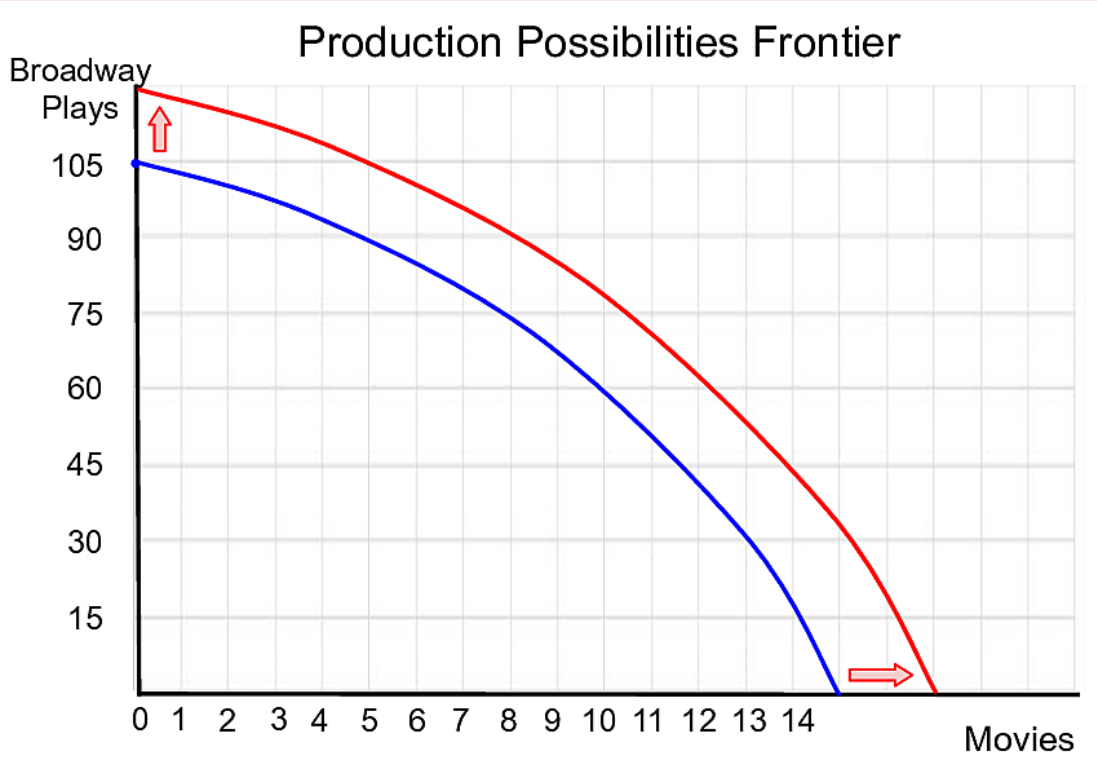

Future PPFs: Industry-Specific Economic Growth

Factor Affecting PPF

New technologies can be specific to one good.

Example:
Advances in CGI (Computer-generated imagery) affects movie production but not Broadway plays.

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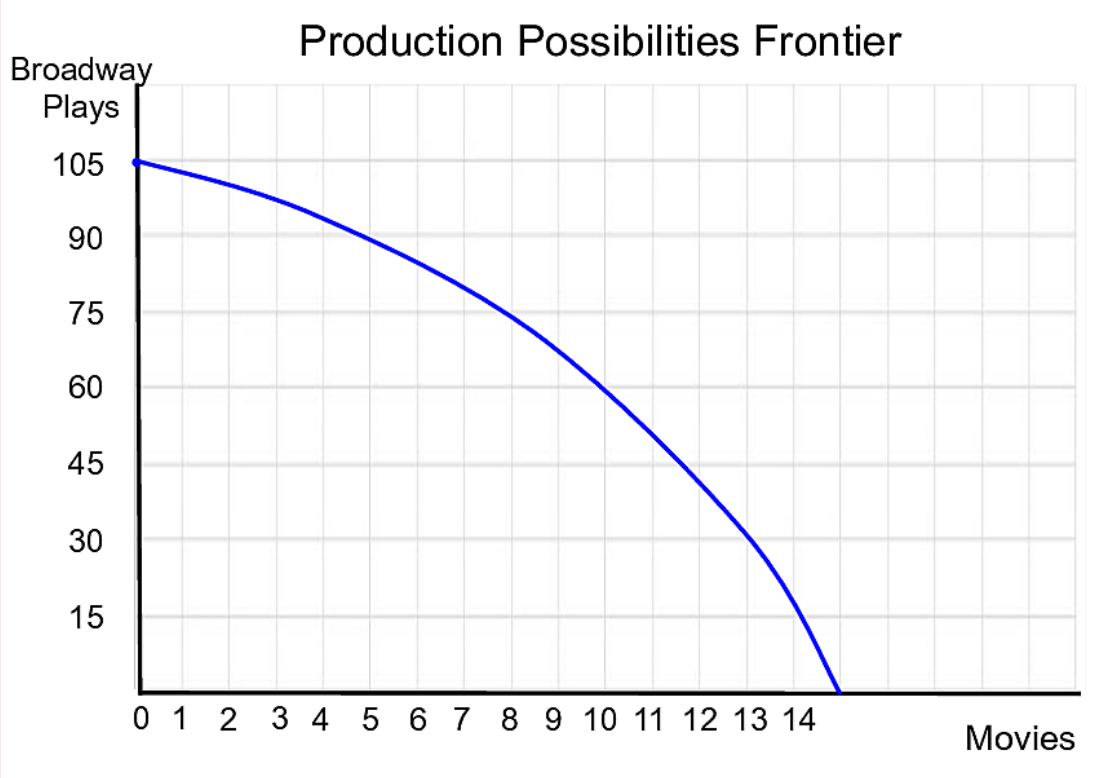

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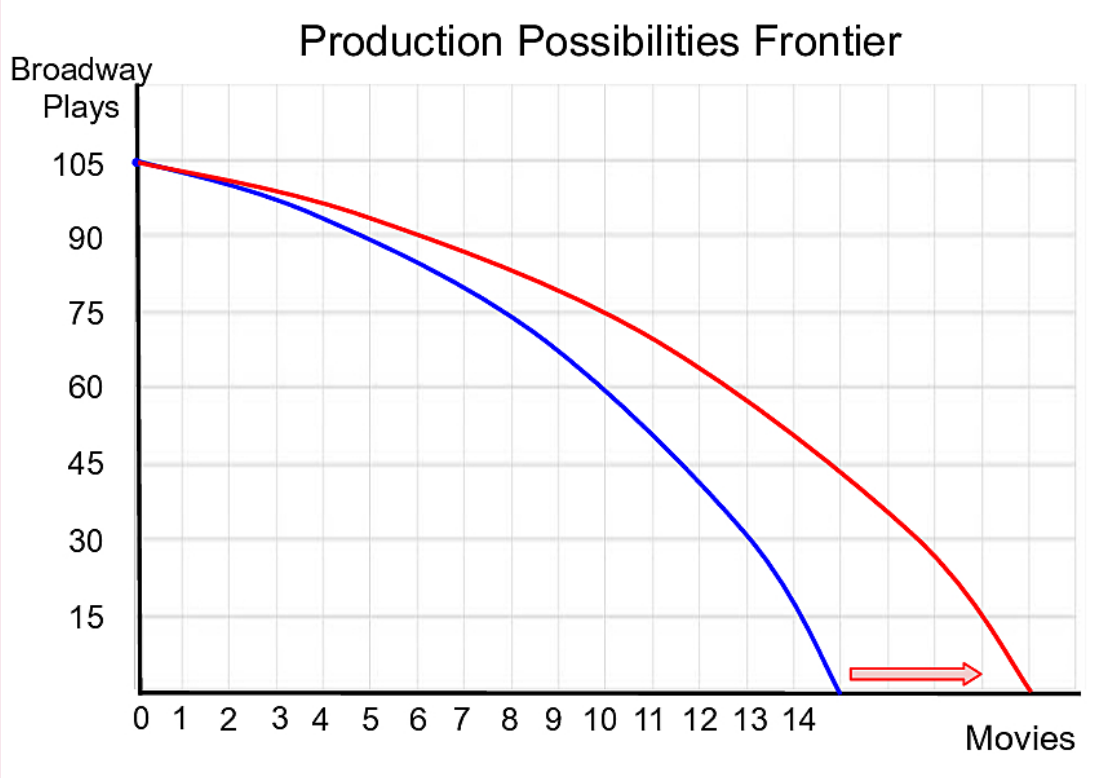

Future PPFs: Economic Contractions

Factor Affecting PPF

Destruction of resources from war and natural disasters makes less of everything possible

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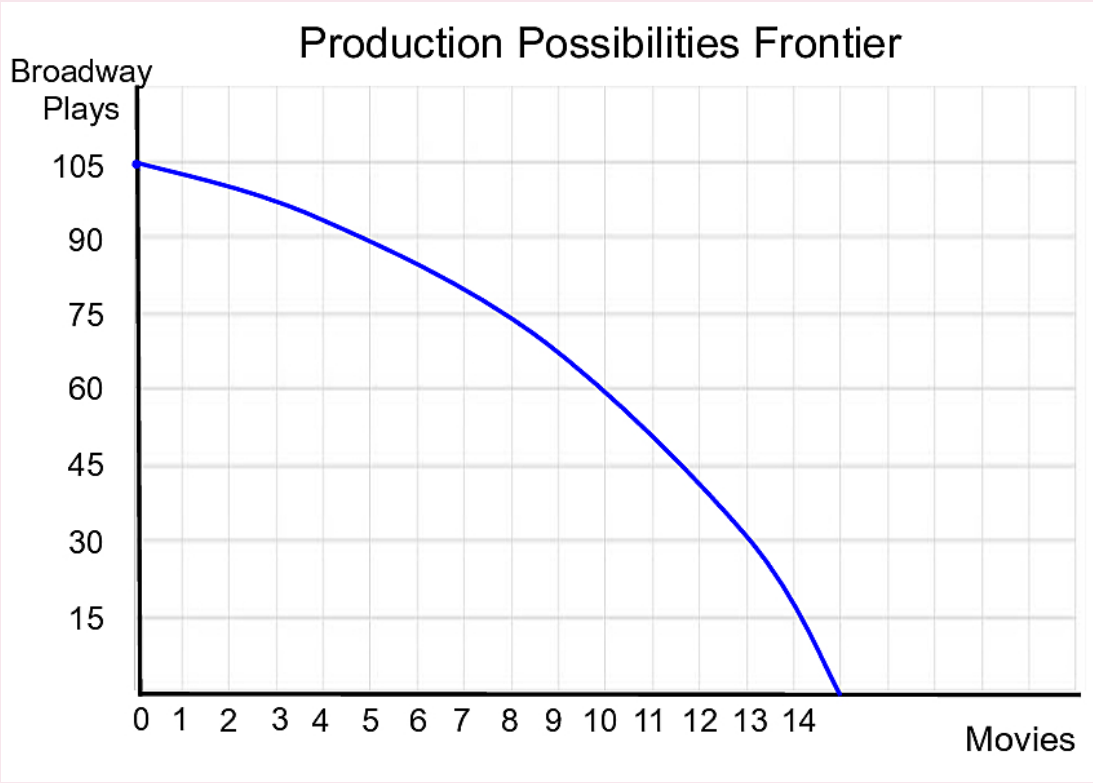

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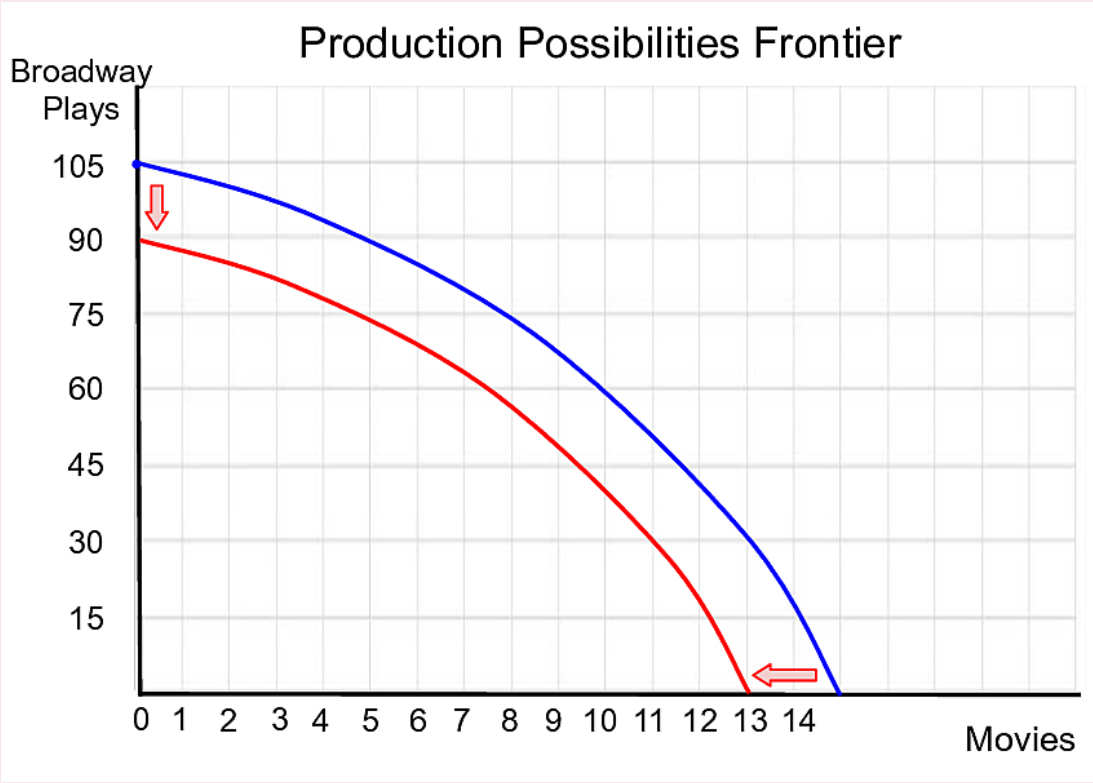

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