The Whimsical World of Microeconomics

The Economic Way of Thinking

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What is Economics?

Economics: the study of how people choose to use their **limited resources** to satisfy their **unlimited** wants.

- not always directly concerned with the stock market, politics, or even money
- when you are trying to make the most of what you have…you are doing ***economics.***

An ***economy*** is a system use to manage those limited resources

Scarcity:

The situation which exists when there are not enough resources to meet human wants

Economics:

The study of how people choose to use scarce resources to satisfy their wants

Scarcity → Economics

Economic Systems

The way a **society** uses scarce resources to satisfy its peoples unlimited wants

Today's Objectives:

- Explain the connection between economics and scarcity
- Differentiate the micro and macro economic perspectives
- Identify the difference between positive and normative economics

Key Terms:

Economics	Microeconomics	Positive
Scarcity	Macroeconomics	Normative

Economic Perspectives

Microeconomics:

Studying the particular aspects of an economy: such as the price-cost relationship of a firm.

Macroeconomics:

broad and general aspects of an economy: such as the relationship between the income and investments of a country as a whole.

Microeconomics -The Sherlock Holmes of the Marketplace :

Uncovering the mysteries of individual decision-making and market interactions.

What is Microeconomics?

Microeconomics is like being a detective of the marketplace. *It's all about uncovering the hidden forces behind individual decision-making, the interactions between buyers and sellers, and the way these decisions shape the economy on a smaller scale.*

Microeconomics focuses on the behavior of individuals, households, and firms in making decisions regarding the allocation of resources. It examines how these actors interact in markets to determine prices and quantities of goods and services exchanged.

Role of Microeconomics:

Microeconomics plays a crucial role in informing policy decisions, business strategies, and everyday choices. By understanding the principles of microeconomics, we can make more informed decisions as consumers, producers, and policymakers.

Key Takeaway:

Microeconomics provides a framework for understanding how individuals and firms make choices in a world of scarcity, and how these choices collectively shape the economy. It's about unraveling the complexities of everyday decisions and discovering the hidden logic behind market behavior.

Economic Interpretations

Positive

Way of describing and explaining economics as it is

Normative

Way of describing and explaining economic behavior as it ought to be

Positive Economics: a type of economic analysis that describes **how things are**. It is objective and fact based.

Positive Economic statements do not have to be correct, but they do need to have the ability to be proved or disproved.

Normative Economics: a type of economic analysis that describes how things **should be.** It is subjective and based on opinions and value judgements.

Paradox of Values

"A cynic is someone who knows the price of everything and the values of nothing." **Oscar Wilde.**

Mastercard ads
https://www.youtube.com/watch?v=Q_6stXKGuHo
https://www.youtube.com/watch?v=y1UE42JEt9k

The World of Economics

The influence of economics extends far beyond its traditional domain like business and finance. Here's a look at how economics intersects with and influences other disciplines:

The World of Politics and Political Science: Economics and political science often intersect in the study of political economy, which examines the relationship between political institutions and economic outcomes. Concepts like public choice theory analyze how political actors make decisions based on self-interest, while economic models inform policies on taxation, government spending, and regulation.

Game Theory and Strategic Decision-Making: During the Cuban Missile Crisis, the United States and the Soviet Union were engaged in a high-stakes game of brinkmanship, with the world on the brink of nuclear war. From a microeconomic perspective, we can analyze the crisis through the lens of game theory, particularly the concept of strategic interaction between rational actors.

The World of Economics (continued)

Technology and Innovation: Economics of innovation studies the drivers and consequences of technological change, including research and development, intellectual property rights, and innovation policy. Economic analysis guides decisions on investment in innovation, technology adoption, and the impact of disruptive technologies on markets and industries.

Strategic Interactions in Tech Business: Game theory provides a framework for analyzing strategic interactions among firms in the technology sector. Companies must make decisions regarding pricing, product differentiation, and market entry while considering the responses of competitors. Concepts like Nash equilibrium and dominant strategies help firms anticipate competitive behavior and devise optimal strategies.

Platform Competition: Platforms such as Google, Facebook, and Amazon operate in highly competitive environments where network effects and economies of scale are crucial. Game theory models help understand the dynamics of platform competition, including the battle for users, data, and advertising revenue. Strategies like pricing, bundling, and exclusivity arrangements are analyzed through game-theoretic lenses.

Patent Races and Innovation: In industries like technology, firms engage in patent races to secure intellectual property rights and gain a competitive advantage. Game theory models of innovation races help analyze firms' decisions regarding research and development investments, timing of product releases, and defensive patenting strategies.

The World of Economics (continued)

Auctions and Bidding Strategies: Online auctions, such as those on eBay or in digital advertising markets, rely on game theory principles to optimize bidding strategies and allocate resources efficiently. Auction formats like sealed-bid auctions, ascending auctions, and Vickrey auctions are designed to incentivize truthful bidding and maximize auction revenue.

Cybersecurity and Defense Strategies: Game theory is applied to cybersecurity to model interactions between attackers and defenders in systems and networks. Security games analyze potential attack scenarios, defensive measures, and resource allocation strategies to mitigate cyber threats and vulnerabilities. Strategies like penetration testing, intrusion detection, and incident response are informed by game-theoretic approaches.

Algorithmic Decision-Making: In algorithmic decision-making systems, game theory helps analyze interactions between automated agents, such as search engine algorithms, recommendation systems, and automated trading algorithms. These systems optimize decisions based on feedback loops, user behavior, and environmental factors, often employing game-theoretic frameworks to achieve desired outcomes.

Blockchain and Cryptoeconomics: Cryptocurrencies and blockchain technologies leverage game theory to incentivize decentralized consensus mechanisms and ensure system security and integrity. Concepts like proof-of-work, proof-of-stake, and Byzantine fault tolerance are designed to align the interests of network participants and prevent malicious behavior.

Machine Learning and Multi-Agent Systems: Game theory informs the design of multi-agent systems and reinforcement learning algorithms, where autonomous agents interact in complex environments. Cooperative game theory models cooperation and coordination among agents, while non-cooperative game theory analyzes strategic interactions and competitive behavior.

The World of Economics (continued)

Sociology: Economics and sociology share common interests in understanding human behavior and social phenomena. Sociologists often incorporate economic theories and methodologies to study topics like social stratification, inequality, and labor markets. Conversely, economists may use sociological insights to inform their understanding of social norms, institutions, and cultural factors that shape economic behavior.

Psychology: Behavioral economics, a fusion of economics and psychology, explores how cognitive biases and psychological factors influence economic decision-making. Concepts like loss aversion, framing effects, and bounded rationality challenge traditional economic assumptions of rationality and provide a more nuanced understanding of human behavior.

Environmental Science: Environmental economics applies economic principles to environmental issues, such as pollution, natural resource management, and climate change. Economic tools like cost-benefit analysis help policymakers evaluate environmental policies and trade-offs between economic growth and environmental sustainability.

Healthcare: Health economics examines the allocation of healthcare resources, healthcare financing, and the efficiency of healthcare delivery systems. Economic analysis guides decisions on healthcare spending, insurance coverage, and the pricing of medical services, contributing to debates on universal healthcare, healthcare reform, and pharmaceutical pricing.

The World of Economics (continued)

Education: Economics of education investigates the economic factors influencing educational outcomes, such as student performance, school choice, and education policy effectiveness. Economic research informs debates on education funding, school accountability, and the returns to education in terms of employment and income.

International trade policies: Economic theories of comparative advantage, trade agreements, and exchange rate policies inform diplomatic negotiations, international trade policies, and strategies for economic development and cooperation.

Urban Planning and Development: Urban economics studies the economic aspects of cities and regions, such as land use, transportation, and housing markets. Economic analysis informs urban planning decisions, infrastructure investments, and policies to address issues like urban sprawl, gentrification, and affordable housing.

Law and Economics: Law and economics applies economic principles to legal issues, analyzing the efficiency and effectiveness of legal rules and institutions. Economic analysis informs legal decision-making, regulatory policy, and the design of incentives to promote desirable behaviors and outcomes.

Cost-Benefit Analysis

Write down a list of things you would do today if you didn't come to university

Trade-off:

- the exchange of one thing for another
- the choice between alternative uses for a given quantity of a given resources

Cost-Benefit Analysis

Going to University

Opportunity Cost

Explicit

Tuition, books, transportation, pens, etc.

Implicit

Money that could've been made working

Trade-off

Everything else you could've been doing

Working
Pursuing different careers
World Traveling

Opportunity Cost

Now, choose the 1 thing you would have done and write down the cost of that activity

Opportunity Cost: The most desirable thing you give up when you make a choice

The **opportunity** to do something, **cost** you what?

Making Choices

Guns

Butter

Production Possibility Curve

(Frontier)

PPC:

Illustrates alternative ways to use a societies resources

Assumptions:

1- Resources are fixed

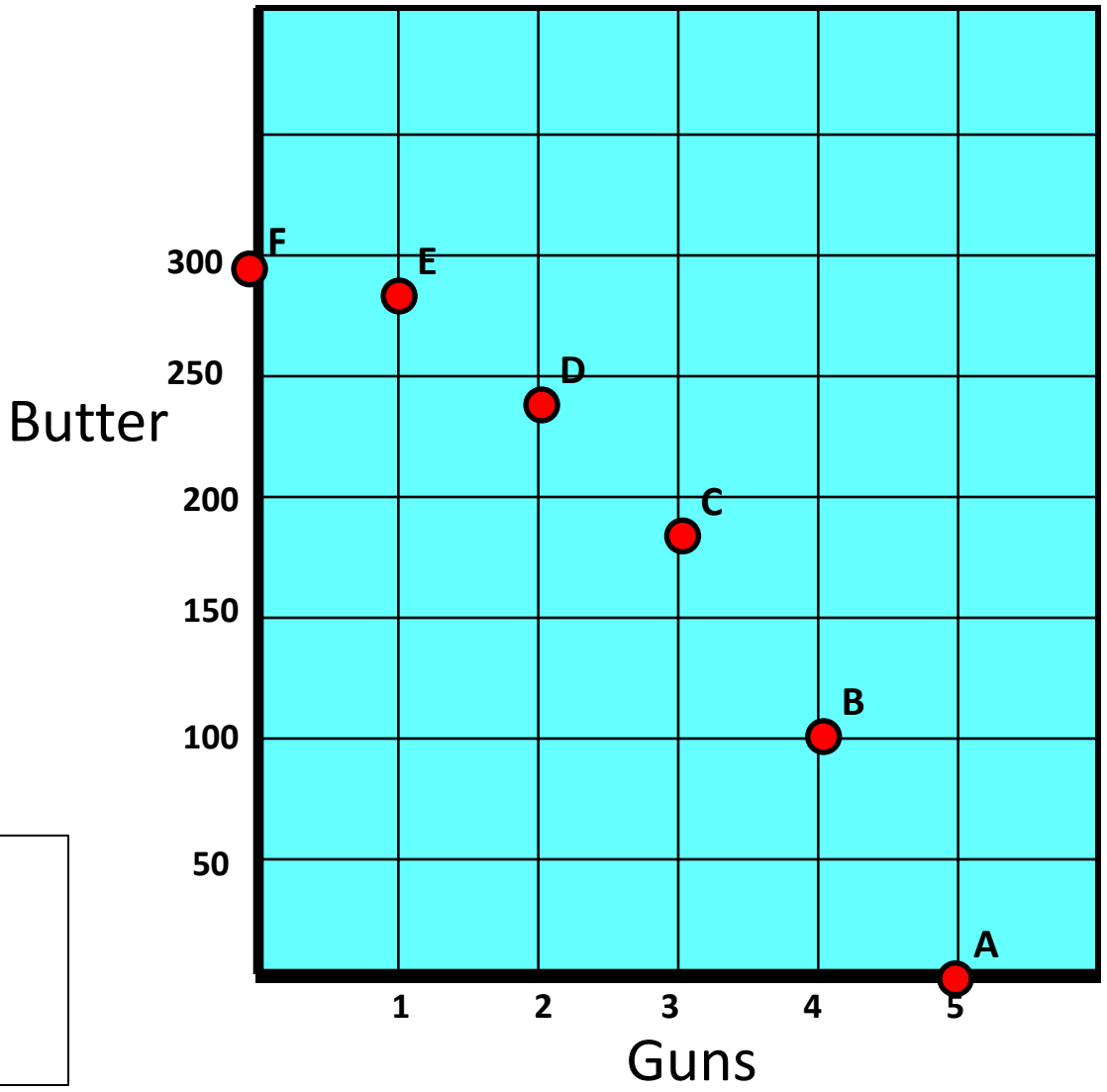
2- Full employment

3- Technology unchanged

Production Possibilities Curve

Marginal Analysis

Military Weapons	Butter
5	0
4	100
3	180
2	240
1	280
0	300



What is the opportunity cost of increasing **gun** production from 2 – 3?

How to calculate OC?

- Formal definition :

Opportunity cost of each unit of good X=($Y1-Y2$)÷($X1-X2$) units of good Y

- Easy ti

Opportunity cost= $\frac{What\ one\ sacrifice}{What\ one\ gain}$

What To Know About Production Possibilities Curves

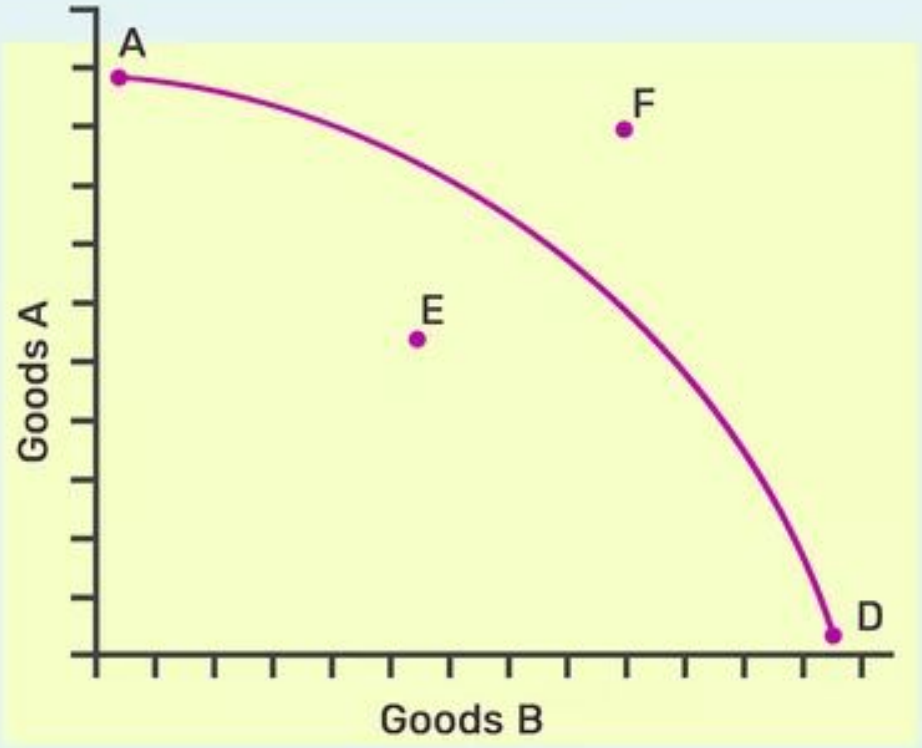
- The points show how much of each good will be produced when resources shift, thus impacting more production of one good and less of the other.
- It doesn't indicate how much of each good should be produced, but the production sacrifice needed to make more of the other good.
- It demonstrates the concept of opportunity cost.

E: All resources are not being used.

F: Any point outside the PPF curve is impossible; more of both goods cannot be produced with current resources.

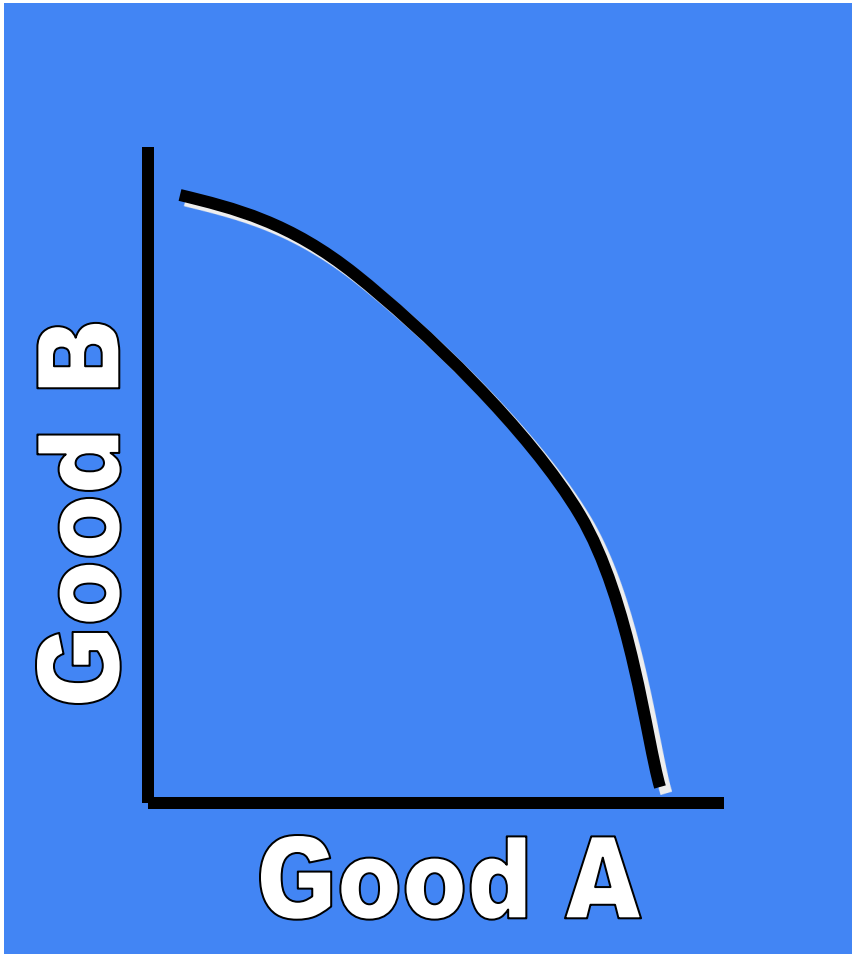
A: More of goods A are being produced and none of goods B are being produced.

D: None of goods A are being produced and more of goods B are being produced.



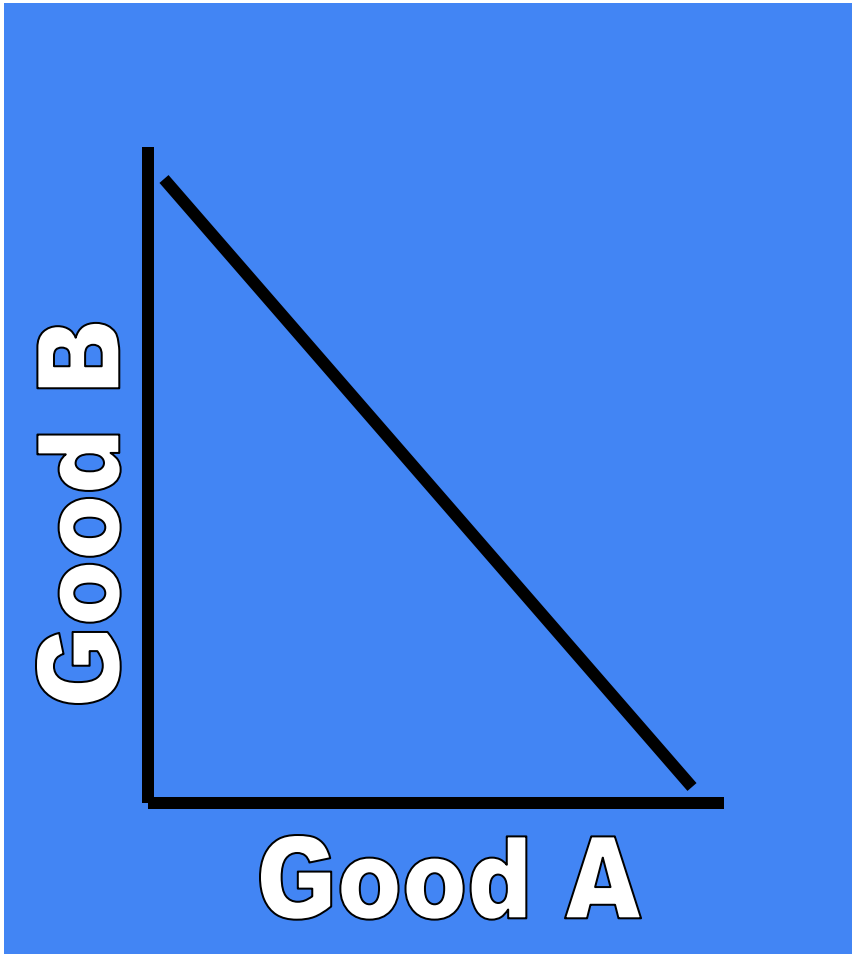
the balance

Increasing opportunity cost per unit of good B

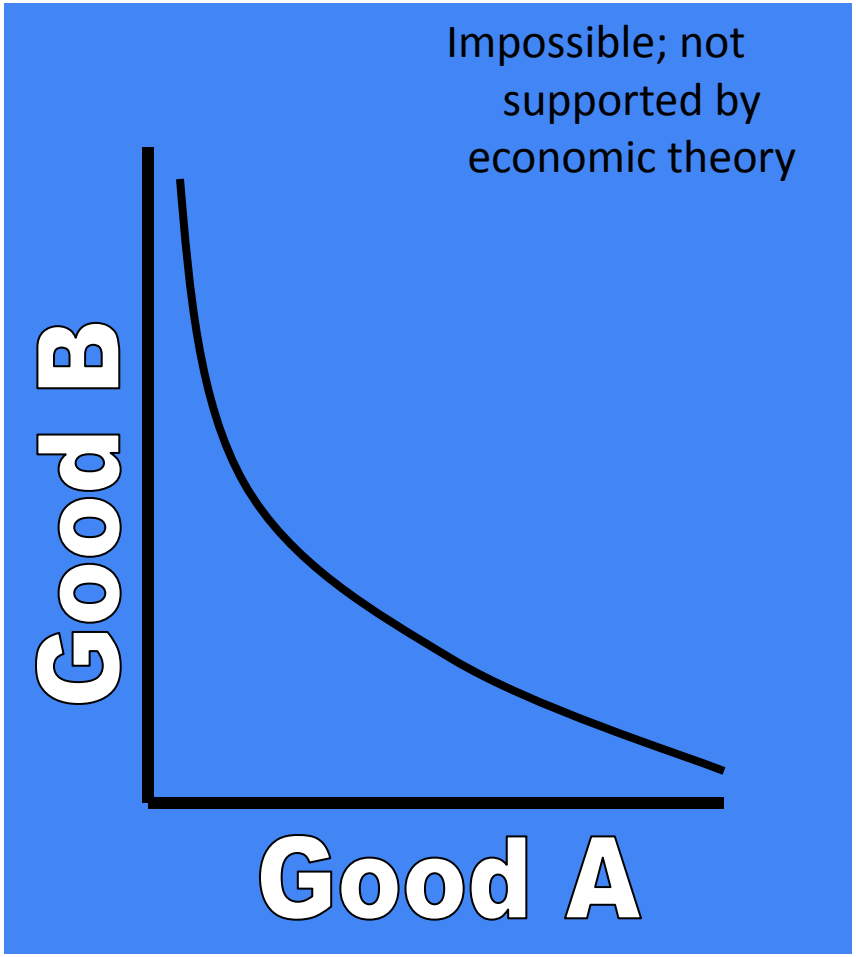


Constant opportunity cost

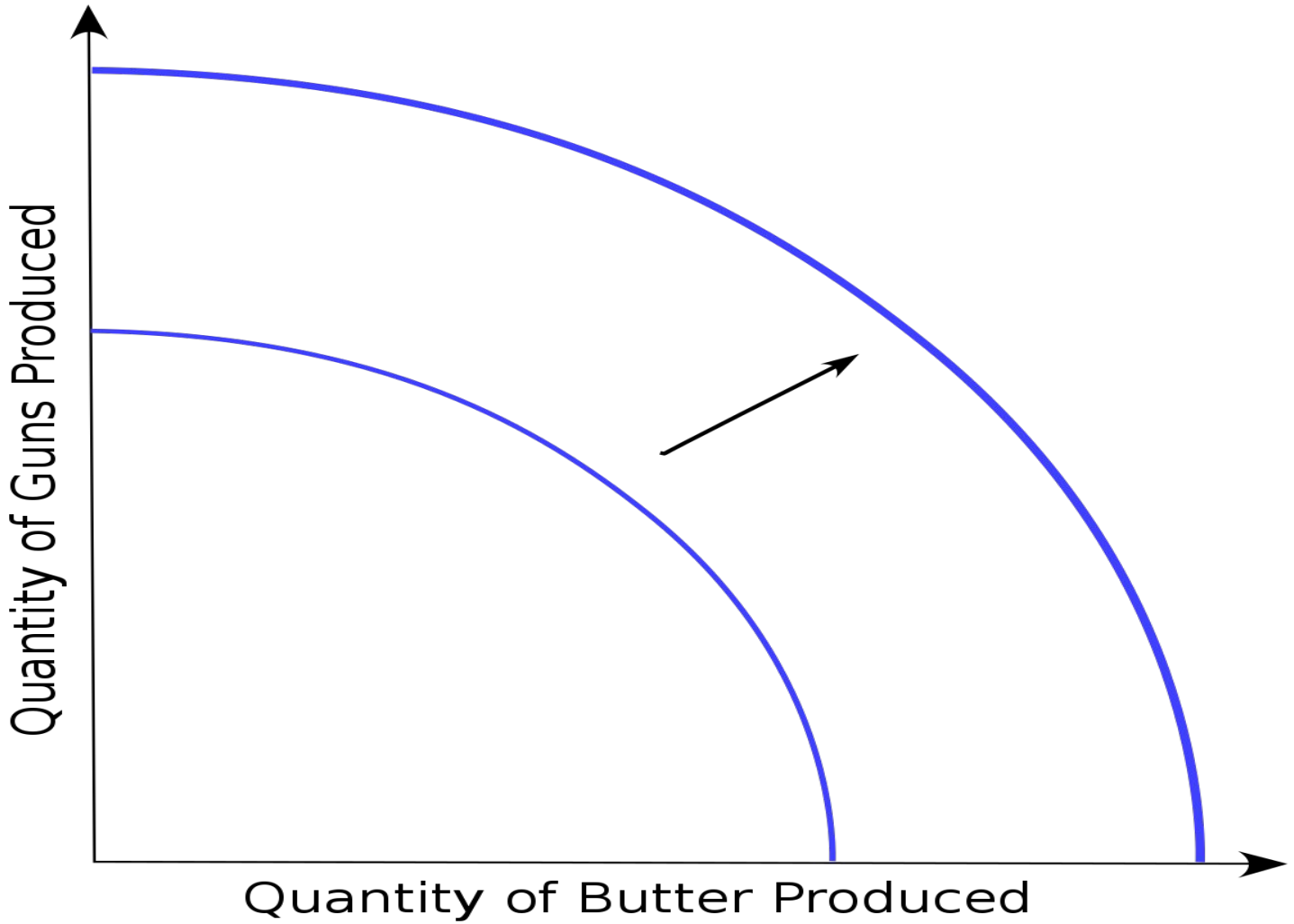
per unit of good B



Decreasing opportunity cost per unit of good B



PPF Expansion



Objectives:

- Differentiate between a trade-off and opportunity cost
- Contrast the difference between increasing opportunity cost and constant opportunity cost
- Explain marginal benefit and marginal cost
- Construct a PPC that displays the concepts of constant and increasing opportunity cost
- Identify the of underutilization, efficient output, and unattainable on a PPC

Key Terms:

Trade-off	Production Possibilities Curve (PPC)	Unattainable
Opportunity Cost		Efficiency
Marginal Benefit		Underutilization