EE211
PRINCIPLES OF MICROECONOMICS

Topic 1: Introduction

About the Instructor

- Name: Phatta Kirdruang
- Education:
  - B.A. (Economics), McGill University, Canada
  - M.A. (Economics), University of British Columbia, Canada
  - Ph.D. (Applied Economics), University of Minnesota, USA
- Fields of interest:
  - Health economics
  - Development economics
  - Labor economics & population economics
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About the Students

- Have you taken microeconomics in high school?
- Have you studied in math-science program? Others?
- Are you from Bangkok? Other regions?
- Anyone from international schools? Thai schools?

** Please fill out student information sheet via google form.**

Course Contents

- Introduction to economics
- Demand, supply, and equilibrium
  - Elasticities
  - Consumer surplus, producer surplus, and market efficiency
  - Applications on demand and supply; government policies
- Theory of consumer choice
- Production and cost in the short and long run
  - Production
  - Cost
- Market structure
- Factor markets
- Market failures

Textbooks & Class Materials

- Textbooks:
  - Mankiw, N.G. ***Principle of Microeconomics***, 9th ed. Thompson South-Western, 2021.
  - Lipsey, R.G., C.T.S. Ragan, and P.A. Storer. ***Economics***, 13th ed. Pearson Addison Wesley, 2008.
  - Pindyck, R. S., & Rubinfeld, D. L. (2018). ***Microeconomics***. Upper Saddle River, N.J: Pearson/Prentice Hall.
- Student resources and supplemental readings are listed in the course syllabus.

- Mindtap (Supplemental)

Course URL: https://login.cengagebrain.com/cb/

Username & Password: TBA

**Lecture notes, practice problems (and solutions) for each topic, and other materials will be uploaded on BE-moodle (Key: 6438).

Course Organization

- Meet online every Tuesday and Thursday, 9:30 – 11:00 am.
- Lectures-based style, with regular quizzes and practice problems
  - Please turn on video and mute your microphone during the lecture.
  - Class participation and own practices are highly encouraged.
  - Students are encouraged to practice online via Mindtap.
- There are two sections, all evaluations are the same.

Teaching Venue & Online Platforms

- Class Venue: Room 302
- Online Platform:

  Zoom Meeting: ID 616 796 8064 (Passcode: 123456)

- Exercises and Covid-19 report:

  Google classroom (class code: vvgx3su)

- Quick communication:

Assessment

- Homework assignment (5%)
- Quizzes (10%) – 4 out of 5 will be counted.
- Midterm Exam (35%) – Sept 29, 2022 (9 – 11 am)
- Final Exam (50%) – Nov 30, 2022 (1:30 – 4:30 pm)

Grading Policy

A	= 4.0 (85 – 100)	Excellent
B+	= 3.5 (80 – 84)	Very Good
B	= 3.0 (75 – 79)	Good
C+	= 2.5 (65 – 74)	Fair
C	= 2.0 (60 – 64)	Adequate
D+	= 1.5 (55 – 59)	Poor
D	= 1.0 (50 – 54)	Very Poor
F	= 0.0 (≤49)	Fail

Goals of This Course

- By the end of the course, the students should:
  - Understand consumer behavior.
  - Understand firm behavior.
  - Analyze different types of market structures (monopoly, oligopoly and a competitive market).
  - Understand how to apply economic principles to a range of policy questions.

- You should develop skills needed to solve the problems related to the above topics, with an emphasis on *intuition.*

Today's Topics

- What is economics?
- The basic economic problems
- Circular flow
- Microeconomics vs. macroeconomics
- Production possibility curve (PPC)
- Economists' tool kits
- Methodology of studying economics

What is Economics?

- *"Economics is a study of mankind in the ordinary business of life."*

  - Alfred Marshall

- "*Economics is the study of how people and society chooses to employ scarce resources that could have alternative uses in order to produce various commodities and distribute them for consumption, now or in the future, among various persons and groups in society.*"

  -Paul A. Samuelson

- Lipsey et al.'s textbook:

Economics is the study of the use of *scarce resources* to satisfy *unlimited human wants*.

Resources

- Resources or factors of production:
  1. Land
  2. Labor
  3. Capital

- Production – The act of making goods and services.
  - Goods are tangible commodities.
  - Services are intangible commodities.

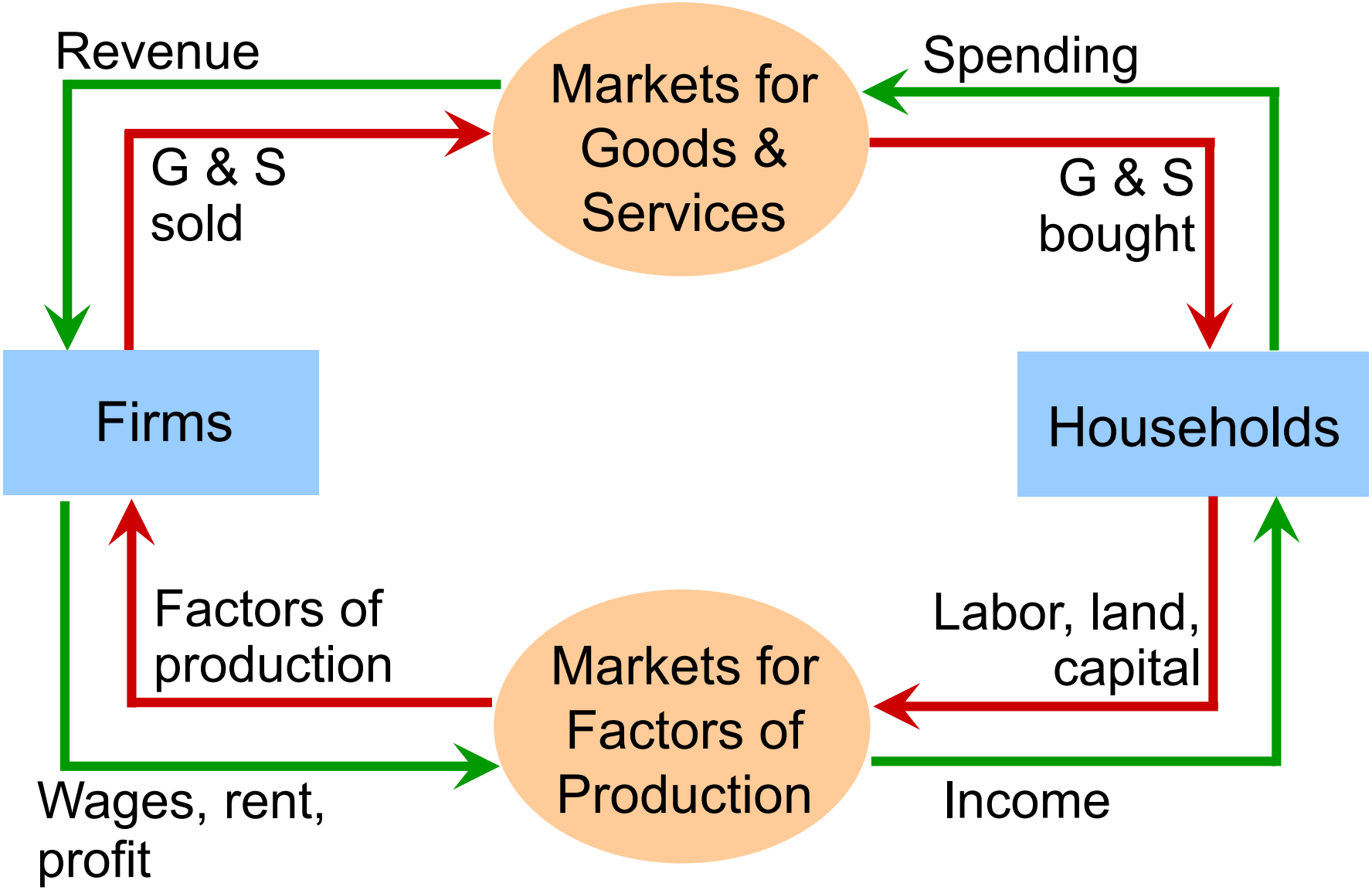
- Consumption – The act of using goods and services to satisfy wants.

Basic Economic Problems

- What to produce?
  - Problem of resource allocation
- How to produce?
  - Problem of production
- For whom to produce?
  - Problem of distribution

- The allocation of resources is affected by the workings of the *price system* and government policies.

The Circular-Flow Diagram



Microeconomics vs. Macroeconomics

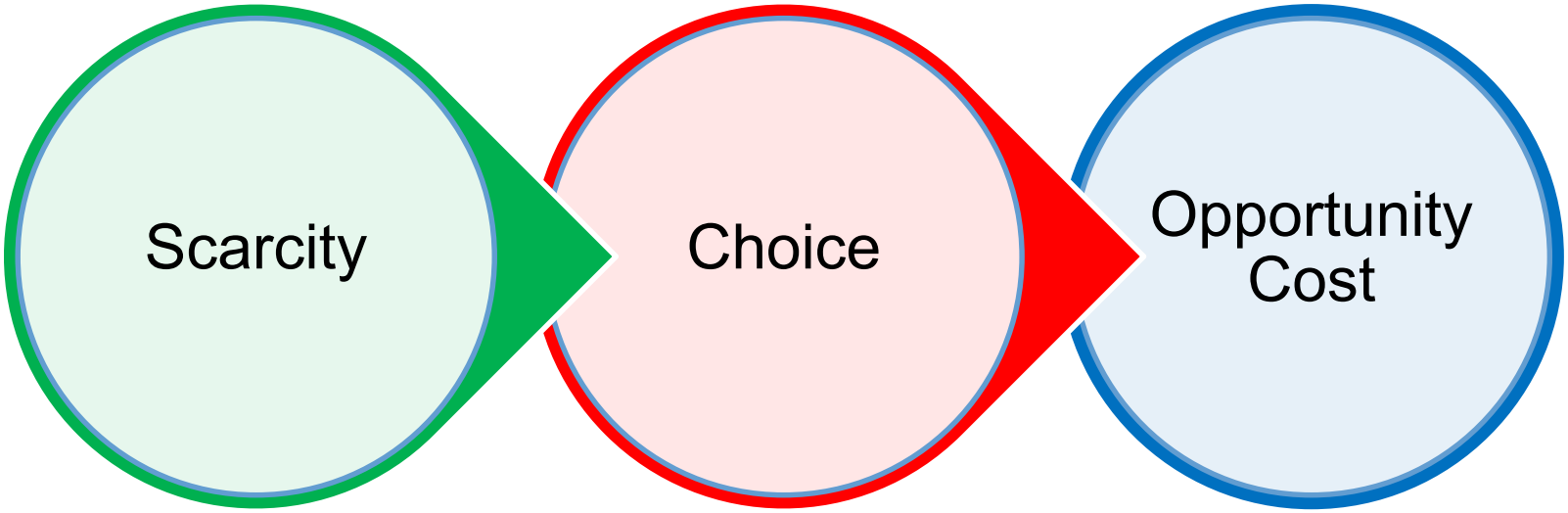
- **Microeconomics** Branch of economics that deals with the behavior of individual economic units—consumers, firms, workers, and investors—as well as the markets that these units comprise.

- **Macroeconomics** Branch of economics that deals with aggregate economic variables, such as the level and growth rate of national output, interest rates, unemployment, and inflation.

Theme in Microeconomics: Price and Market

- Microeconomics describes how prices are determined.
- In a market economy, prices are determined by the interactions of consumers, workers, and firms. These interactions occur in markets—collections of buyers and sellers that together determine the price of a good.
- In a centrally planned economy, prices are set by the government.
- In most cases, countries have mixed economy.

Basic Economic Concepts



Scarcity, Choice, & Opportunity Cost

- Scarcity means that society has limited resources and therefore cannot produce all the goods and services people wish to have.

- Scarcity implies that choices must be made (i.e. people face trade-offs), and making choices implies the existence of costs.

- Opportunity cost is the cost of using resources for a certain purpose, measured by the benefits given up by not using them in the next best alternative use.

i.e., *the cost of something is what you give up to get it.*

Example of Opportunity Cost

- What is the opportunity cost of your 4-year study in the BE program?

Present value

- Total cost = 598,000 x 4 = $2.4 m

(Assume no interest rate.)

- Suppose interest rate is 5 %.

Future value → $FV_t = PV(1+r)^t$

$PV_0 = 598,000$ baht

Year 1: $FV_1 = 598,000(1+0.05)$

Year 2: $FV_2 = 598,000(1+0.05)^2$

Year 4: $FV_4 = 598,000(1+0.05)^4 =$ ____

Cost = Baht 2.4 m.

- Expected earning = 30,000 baht/mo

  $\Rightarrow$ 360,000 baht/year.

- Years to break-even

$$= \frac{2,400,000}{360,000} = 8 \text{ years}.$$

Production Possibilities Curve (PPC)

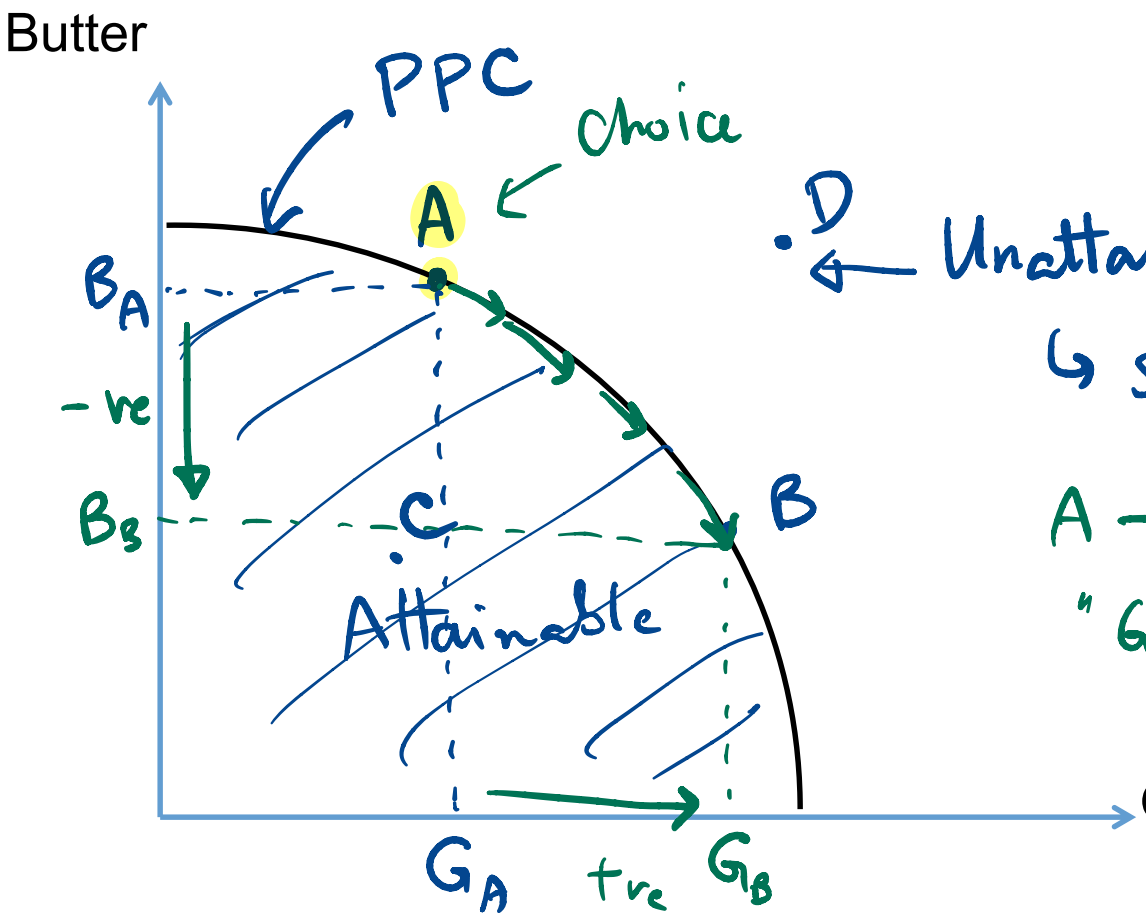
Frontier (PPF)

- Production possibilities curve – a curve that shows which alternative combinations of commodities that can be attained if all available resources are used efficiently.

- Assumptions:
  - All resources are fully employed.
  - There are 2 outputs.
  - There are limited resources. → scarcity
  - Full *efficiency*
  - Fixed technology

Scarcity, Choice, Opp. cost

Illustration: PPC



• D ← Unattainable / infeasible

↳ Scarcity

A → B

"Give-up" butter in exchange for gun.

→ opportunity cost

How does a PPC illustrate scarcity, choice, and opportunity cost?

- Scarcity
  - The unattainable combinations outside the curve
- Choice
  - The need to choose among the alternative attainable points along the curve
- Opportunity cost
  - The negative slope of the curve

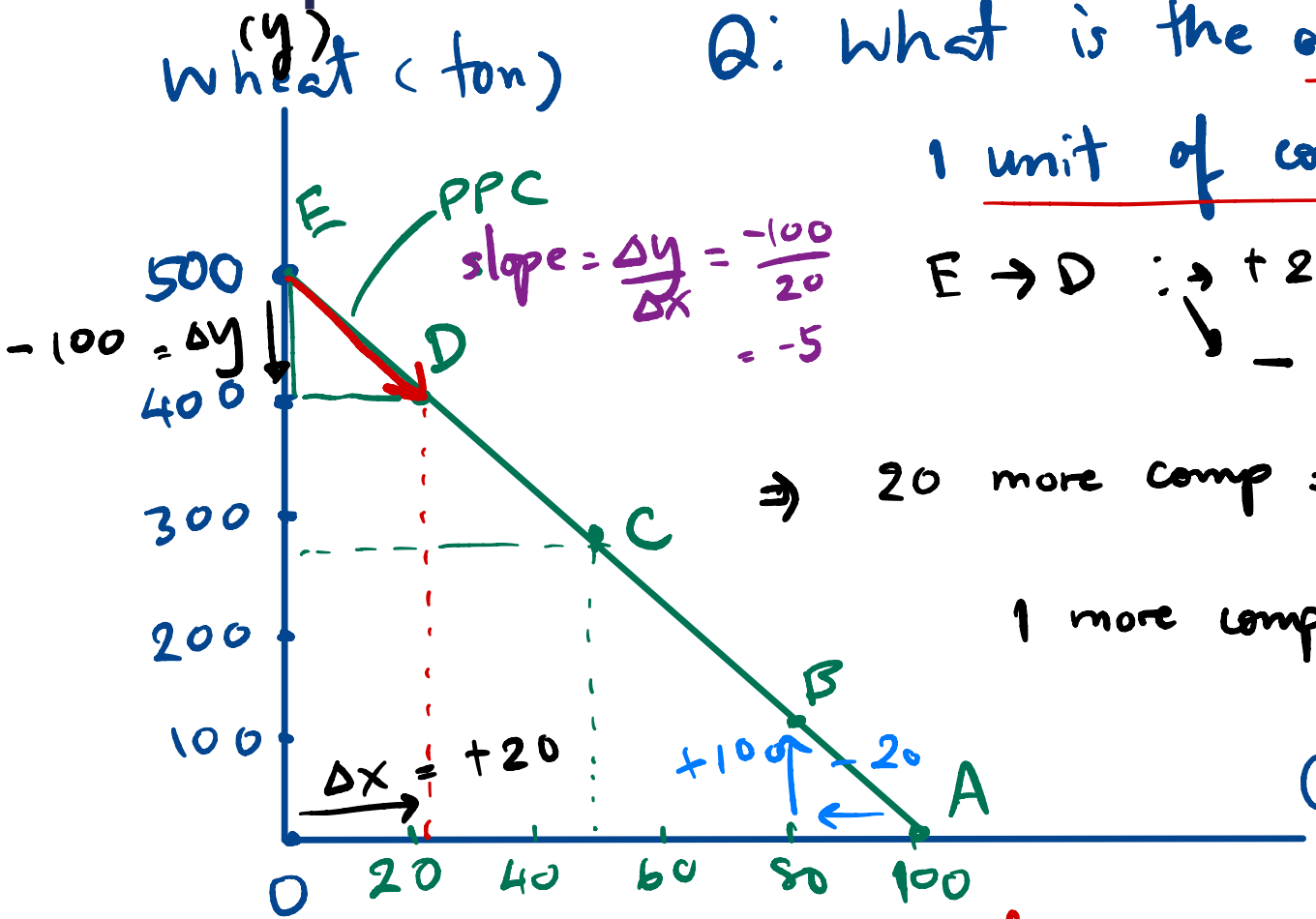
Example: PPC

- Producing one computer requires 50 hours labor.
- Producing one ton of wheat requires 10 hours labor.

	Employment of labor hours (hours)		Production	
	Computers	Wheat	# of Computers	Tons of Wheat
A	5,000	0	$100 = \frac{5000}{50}$	0
B	4,000	1,000	80	$100 = \frac{1000}{10}$
C	2,500	2,500	50	250
D	1,000	4,000	20	400
E	0	5,000	0	500

resource = 5000 labor hours

Example: PPC



slope $= \frac{\Delta y}{\Delta x} = \frac{-100}{20} = -5$

Q: What is the opp. cost of 1 unit of computer?

E → D : + 20 computers.
↓
− 100 tons of wheat

⇒ 20 more comp = 100 less of wheat

1 more comp = $\frac{100}{20} = 5$ less of wheat

∴ Opp cost of 1 comp = 5 tons of wheat

What is the opp. cost of 1 ton of wheat?

Opportunity cost of 1 ton wheat:

$A \rightarrow B$:

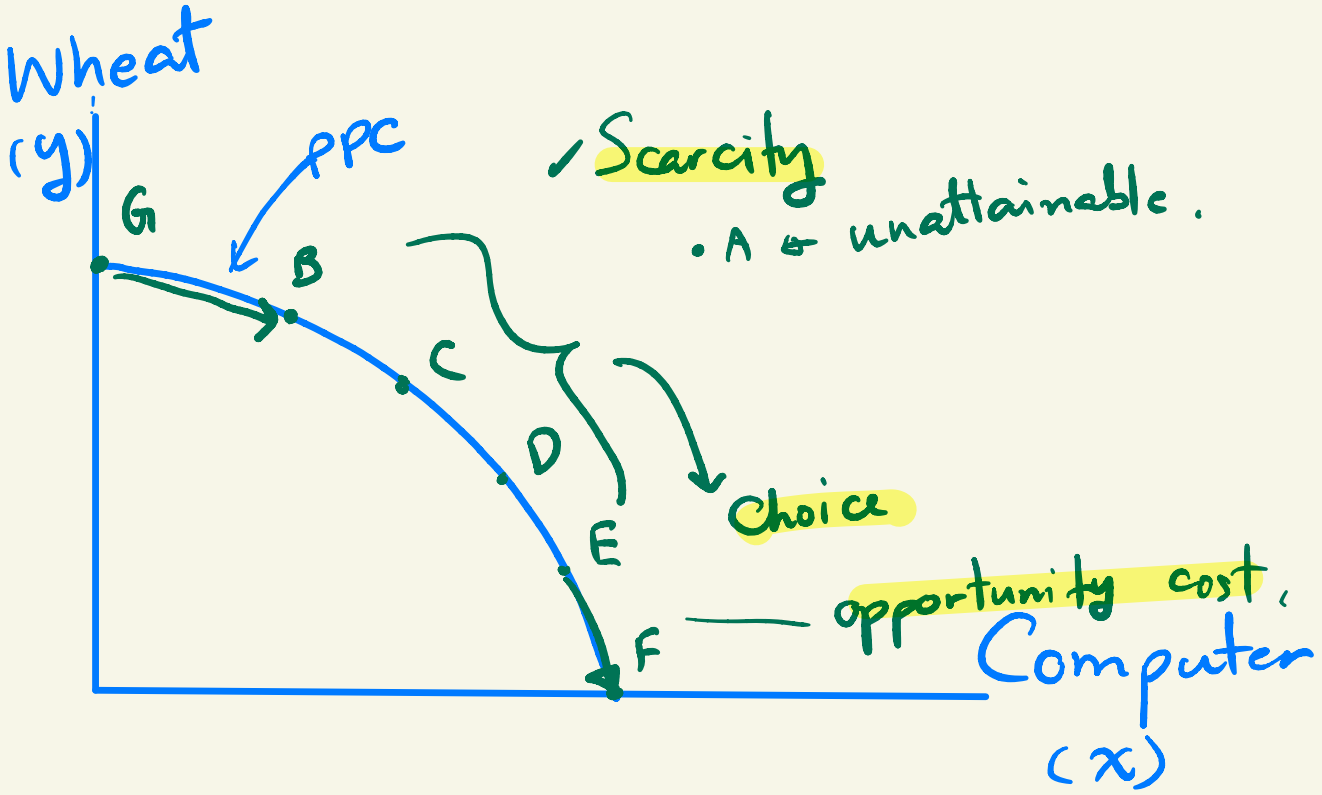
100 more tons of wheat = 20 less computer

1 more ton of wheat = $\frac{20}{100} = 0.2$ less computer.

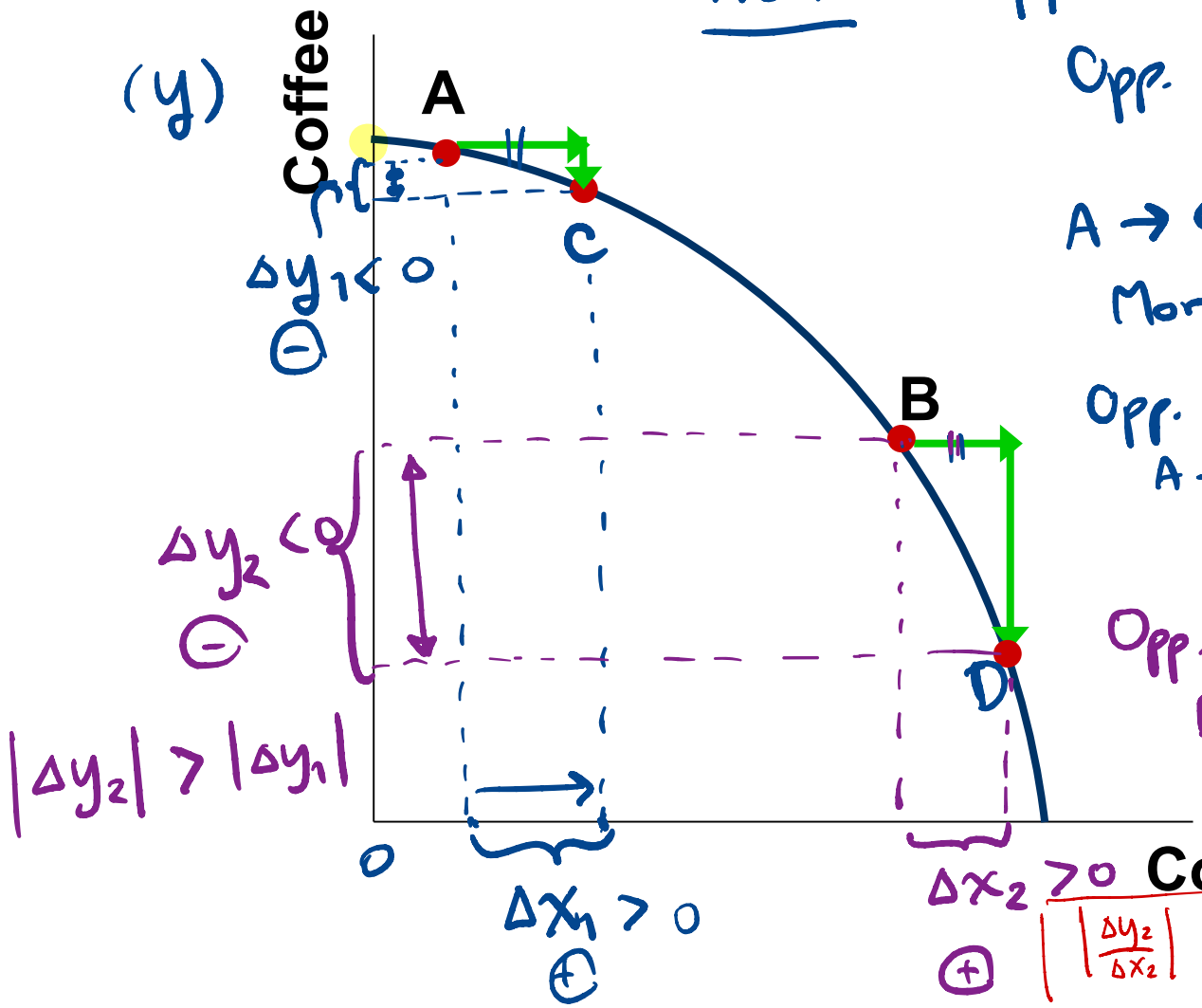
∴ The opp. cost of wheat = 0.2 comp.

The Shape of the PPC

- The PPC could be a straight line, or bow-shaped
- Depends on what happens to opportunity cost as economy shifts resources from one industry to the other.
  - If opportunity cost remains constant, PPC is a straight line.
  - If opportunity cost of a good rises as the economy produces more of the good, PPC is bow-shaped.
    - Why?


Wheat
(y)
PPC
Scarcity
• A & unattainable.
G
B
C
D
E
F
Choice
opportunity cost.
Computer
(x)

Example: Bow-Shaped PPC



Proof: Opp. cost A → C < Opp. cost B → D

$\Delta y_1 < 0$ (−)

$\Delta x_1 > 0$ (+)

$\Delta y_2 < 0$ (−)

$\Delta x_2 > 0$ (+)

$|\Delta y_2| > |\Delta y_1|$

A → C

More Δx_1 = Less Δy_1

Opp. cost of 1 computer

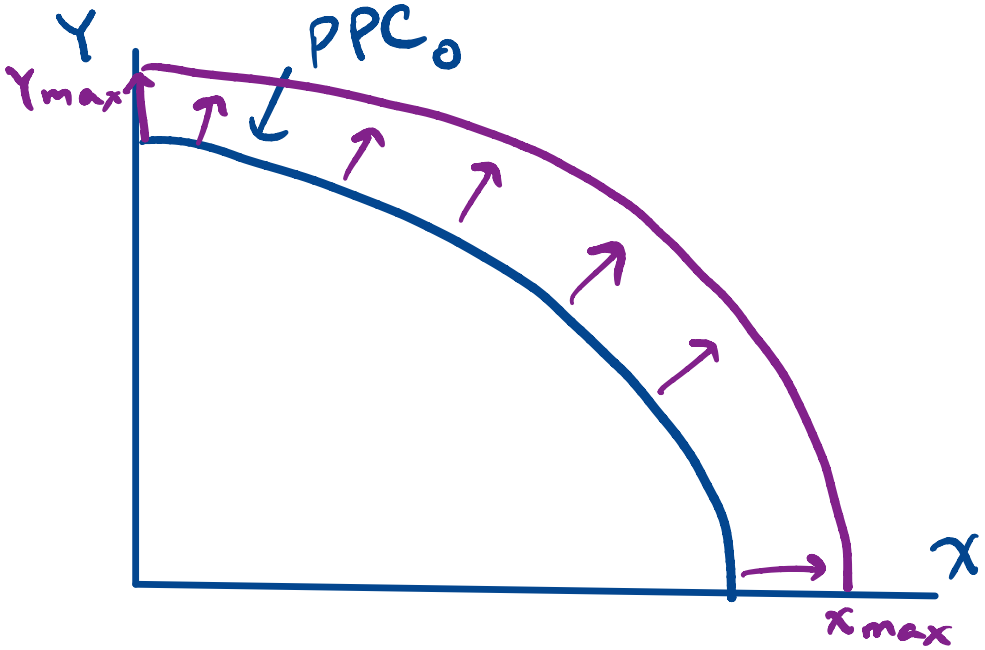
A → C = $\frac{\Delta y_1}{\Delta x_1} < 0$

Opp. cost of 1 computer

B → D = $\frac{\Delta y_2}{\Delta x_2}$

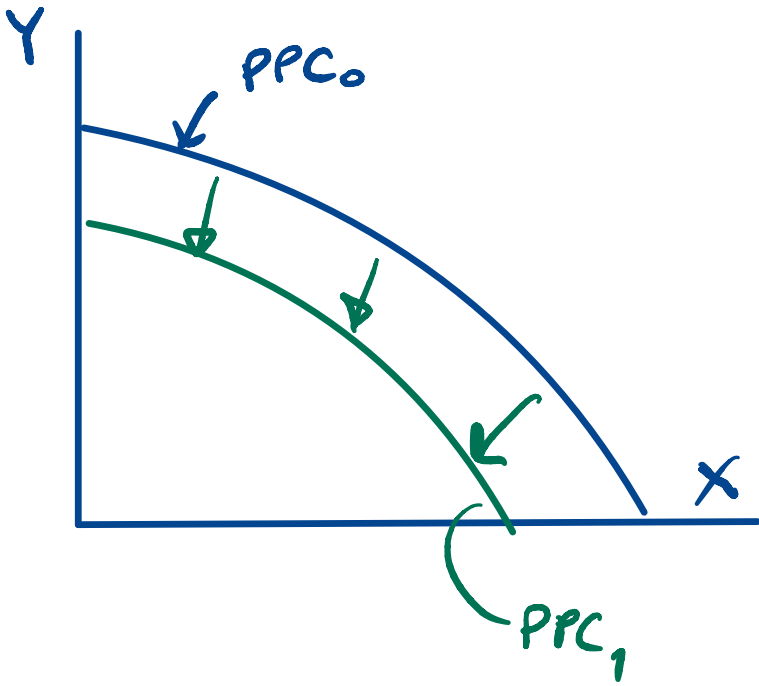
$\left|\frac{\Delta y_2}{\Delta x_2}\right| > \left|\frac{\Delta y_1}{\Delta x_1}\right|$ b/c $\Delta x_1 = \Delta x_2$ & $|\Delta y_1| < |\Delta y_2|$

Economic Growth and Changes in the PPC

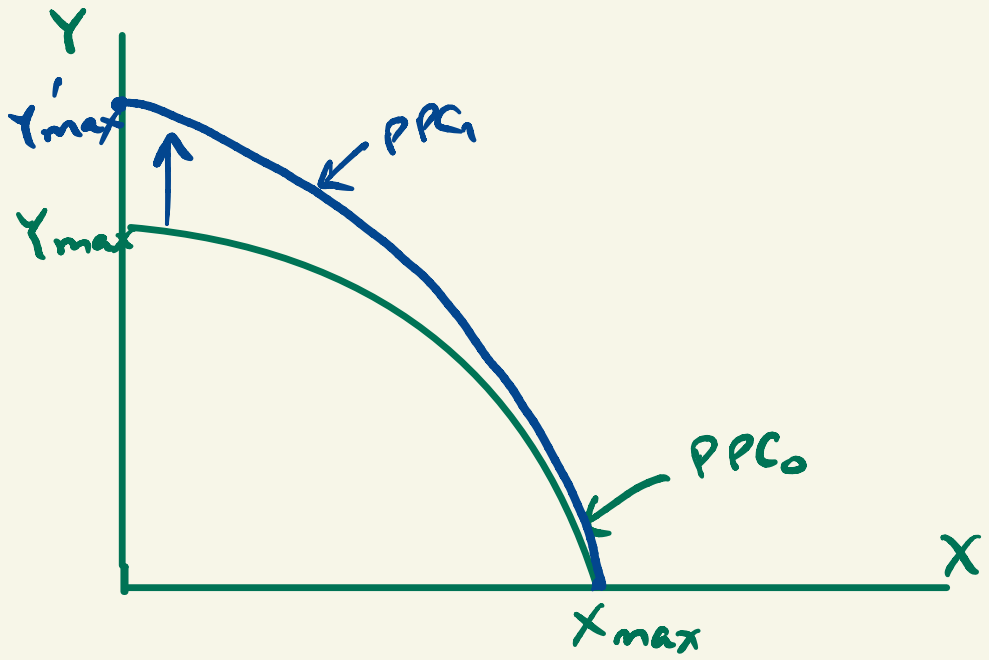


Suppose GDP growth 2.5 %. in 2022.

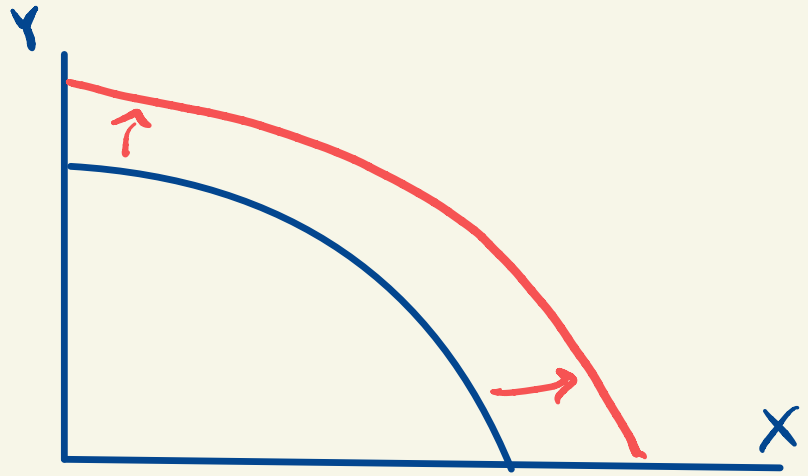
GDP growth = -12 % (economic slowdown)



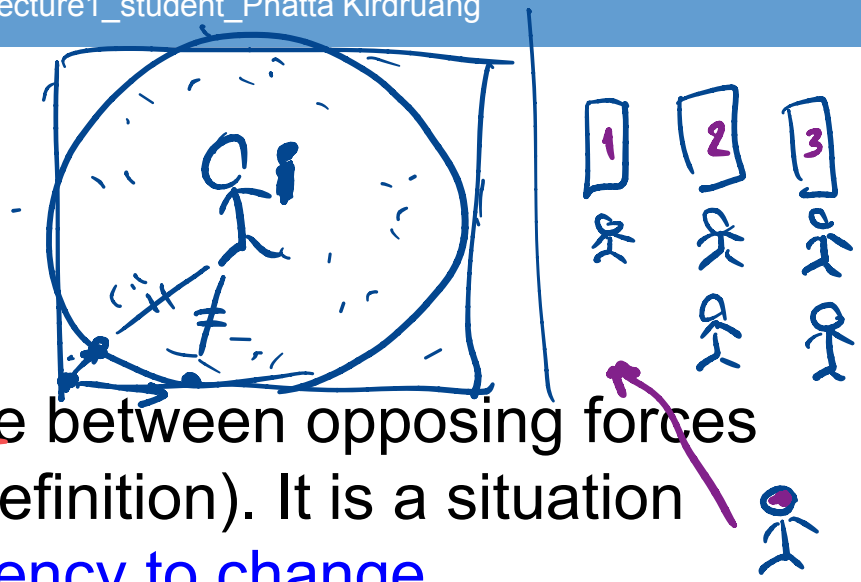
What if we have a new technology that makes the production of Y cheaper?



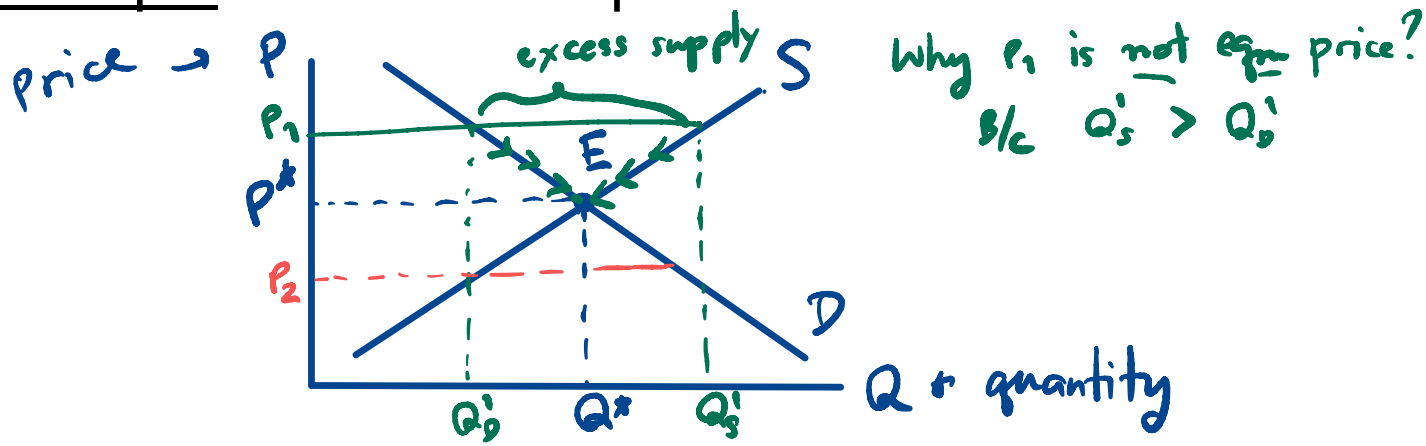
What if new technologies that makes X & Y production cheaper?



Economists' Tool Kit: Equilibrium Analysis

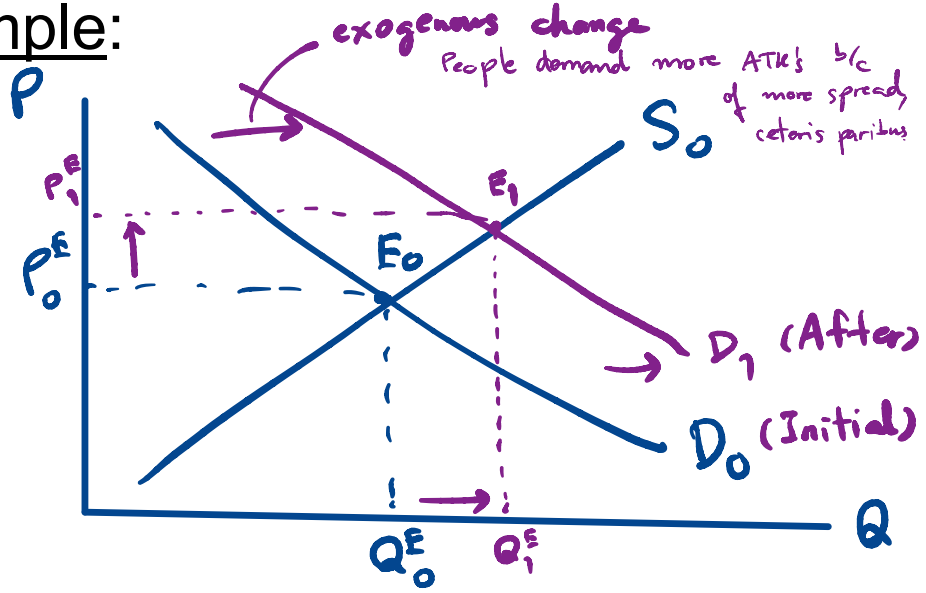


- Equilibrium is a state of balance between opposing forces or actions (Merriam-Webster Definition). It is a situation characterized by a lack of tendency to change.
- Example: Economic equilibrium



Economists' Tool Kit:
Comparative Static Analysis

- Comparative statics is the comparison of two different economic outcomes, before and after a change in some underlying "exogenous parameter." = "outside factor"
- "ceteris paribus" - a Latin phrase meaning "other things equal" or "other things held constant".
- Example:



Economists' Tool Kit: Constrained Optimization

- Producer
  - Objective: Maximize profit – under limited resources

$$\max_{Q_1, Q_2} \pi(Q_1, Q_2) \quad \text{subject to} \quad Q_1 + Q_2 = \bar{Q}$$

Profit; 2 goods: Q_1, Q_2; objective function; constraint

  - Objective: Minimize cost – under quantity requirement

$$\min_{L,K} C = wL + rK \quad \text{s.t.} \quad \bar{Q} = f(L,K)$$

w: wage, L: Labor, r: rent, K: capital

- Consumer
  - Objective: Maximize utility – under income constraint

$$\max_{x_1, x_2} u(x_1, x_2) \quad \text{s.t.} \quad p_1 x_1 + p_2 x_2 = \bar{Y}$$

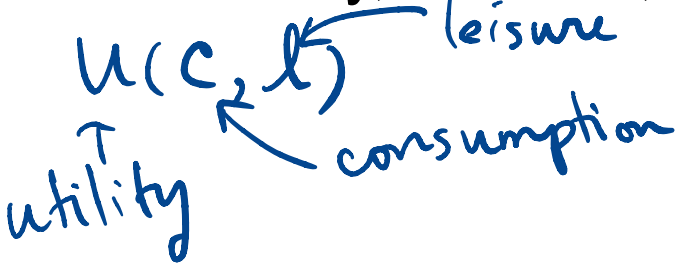
$\bar{Y}$: income; p_1, p_2: prices; x_1, x_2: amount of consumption

Methodology of Studying Economics:

Theories and Models

- In economics, explanation and prediction are based on theories. *Theories* are developed to explain observed phenomena in terms of a set of basic rules and assumptions.
  - E.g. Theory of consumer behavior

- A *model* is a mathematical representation, based on economic theory, of a firm, a market, or some other entity.



Methodology of Studying Economics:

Positive vs. Normative Statements

- Positive economics
  - Examines questions of what was, what is, what will be
  - Seeks to explore facts, how the economy works

- Normative economics
  - Examines questions of what should be, what ought to be
  - Depends on value judgements

Example: Positive Vs. Normative Statements

tax on unhealthy food

Which statement is positive, and which is normative?

1. Fat tax leads to better health of the population.
   - Positive
2. Government should impose fat tax on sweetened drinks.
   - Normative
3. The majority of the population would not want the government to impose fat tax.
   - Positive