

Tradeoffs, Comparative Advantage, & the Market System

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With the financial support of
Compagnia di San Paolo



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Decisions of managers reflect key fact of economic life:
SCARCITY.

Scarcity exists because we have unlimited wants and limited resources to satisfy those wants.

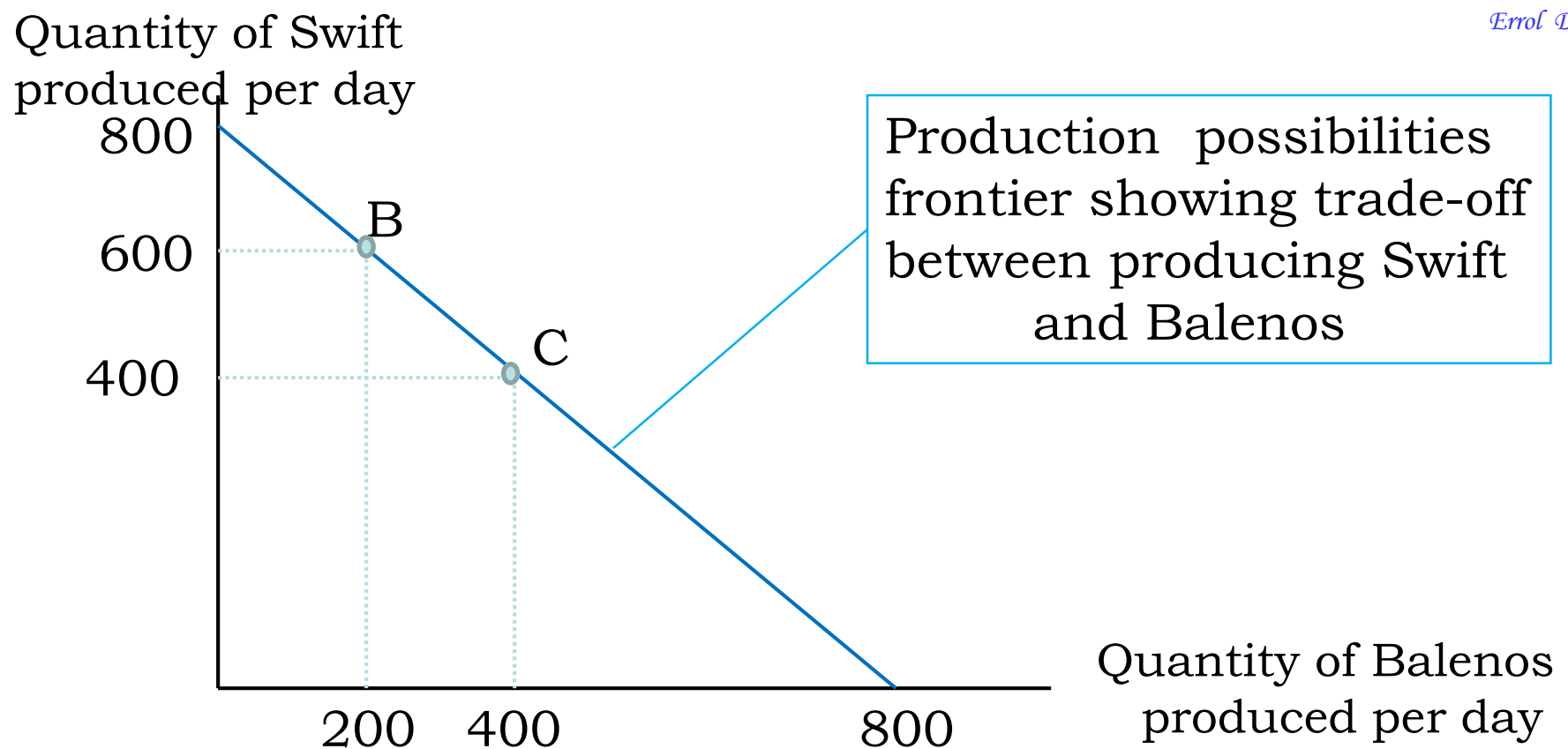
Goods and services are scarce as are economic resources or factors of production – workers, capital, natural resources, entrepreneurial ability – used to make them.

Scarcity requires trade-offs. Time for instance is scarce. If you spend an hour studying you have one hour less to go to the movies. – If Maruti Suzuki decides to devote some of its scarce workers and machinery to producing more Swift cars those resources will not be available to produce more Baleno cars.

Maruti-Suzuki's Production Choices		
Choice	Quantity of Swift cars produced	Quantity of Baleno cars produced
A	800	0
B	600	200
C	400	400
D	200	600
E	0	800

The **production possibility frontier** is used to analyze trade-offs that Maruti-Suzuki faces in its production plant.

A production possibility frontier is a curve showing the maximum attainable combinations of 2 products that may be produced with available resources.



Using all resources the company can produce 800 Swift per day or 800 Balenos per day.

If it produces both vehicles, it can produce at B where 400 Swift are produced and 200 Balenos.

If the company is producing efficiently and is on the production possibility frontier the only way to produce one more of one vehicle is to produce less of the other vehicle. – The opportunity cost of producing one more Swift is the number of Balenos the company will not be able to produce as it has already devoted those resources to producing Swift cars.

For example, in moving from point B to C, the opportunity cost of producing 200 more Balenos is the 200 fewer Swifts that can be produced.

The **opportunity cost** of any activity is the highest valued alternative that must be given up to engage in that activity.

What point on the production possibilities frontier is best?

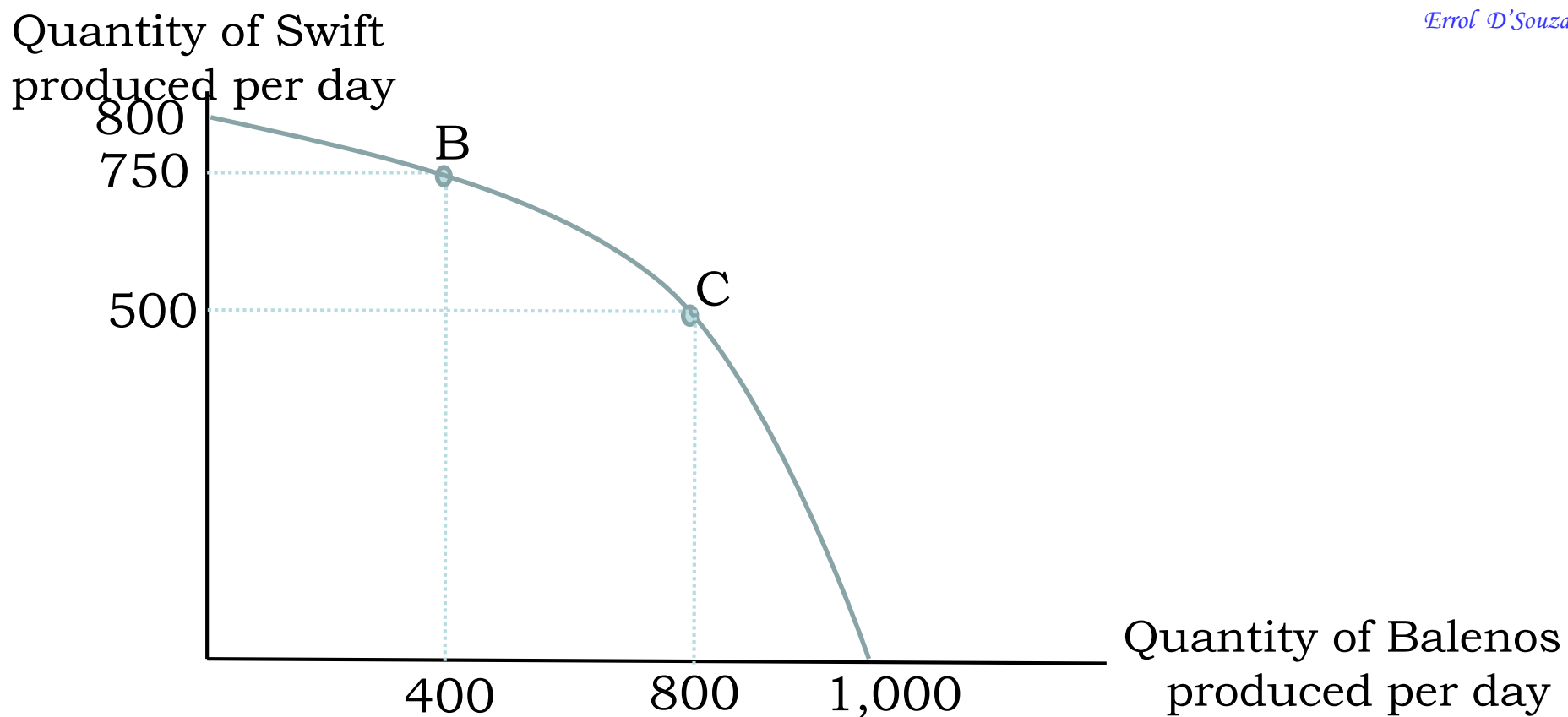
We cannot tell without further information. If consumer demand for Swifts is greater than demand for Balenos the company is likely to choose a point closer to the horizontal axis.

Zero sum charity?

Tsunami Relief and trade-offs

In Dec 2004 a tsunami flooded coastal areas of Indonesia, Thailand, Sri Lanka, and other countries bordering the Indian Ocean. Over 280,000 people died and trillions of rupees of property were destroyed.

Both governments and individuals face limited budgets and though there was an increase in total charitable giving, much of the funds spent on tsunami relief were diverted from other uses. Giving funds to victims of the tsunami meant fewer funds were available to aid other good causes such as health or education.



This production possibility frontier is bowed outward. Increasing Baleno production requires larger and larger decreases in Swift production. The company experiences **increasing marginal opportunity cost**.

This occurs because some workers, machines, and other resources are better suited to one use than to another.

To increase Baleno production from 0 to 400 the company has to give up producing 50 Swift cars.

But to increase production by another 200 vehicles of Baleno it has to give up producing 250 Swift vehicles.

Since increasing production of Baleno requires larger and larger decreases in the production of the Swift the company experiences increasing marginal opportunity costs.

Increasing marginal opportunity costs implies that the more resources already devoted to any activity, the smaller the payoff to devoting additional resources to that activity.

The more hours you have already spent studying, the smaller the increase in your test grade from each additional hour to spend, and the greater the opportunity cost of using the hour in that way.

The more funds the government spends cleaning the environment, the smaller the reduction in pollution from each additional rupee – and the greater the opportunity cost of spending the funds in that way.

Quantity of Swift
produced per day

800

600

B
A

800 1,000

Quantity of Balenos
produced per day

Because resources are scarce producing more Balenos means producing less Swift cars.

Any increase in available resources – available labour force or capital stock shifts the production possibilities frontier outward and makes possible increased production of both Balenos and Swift cars. – This is a move from point A to point B.

Technological advance makes it possible to produce more goods with the same amount of workers and machinery, which also shifts outward the production possibilities frontier.

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The ideas of production possibilities frontier and opportunity costs are useful to understand the basic economic activity of trade. – Markets are about trading or the activity of buying and selling.

Trading makes it possible for people to become better off by increasing both their production and consumption.

Specialization and the Gains from Trade

Suppose you and your neighbor both have fruit trees on your property. – mango and guava trees.

Your neighbor is good at picking mangoes and you are good at picking guavas. Then it makes sense if your neighbor concentrates at picking mangoes and you concentrate on picking guavas and you can trade some of your guavas for some of your neighbor's mangoes.

But what if your neighbour is better at picking both mangoes and guavas? Even then there is an advantage to be gained by trading with you.

	You		Your Neighbour	
	Mangoes	Guavas	Mangoes	Guavas
All time devoted to picking mangoes	20 kgs.	0 kgs.	30 kgs.	0 kgs.
All time devoted to picking guavas	0 kgs.	20 kgs.	0 kgs.	60 kgs.

Use the data in the table to construct production possibilities frontiers for you and your neighbor.

Mangoes
(kgs.)

20

20

Guavas
(kgs.)

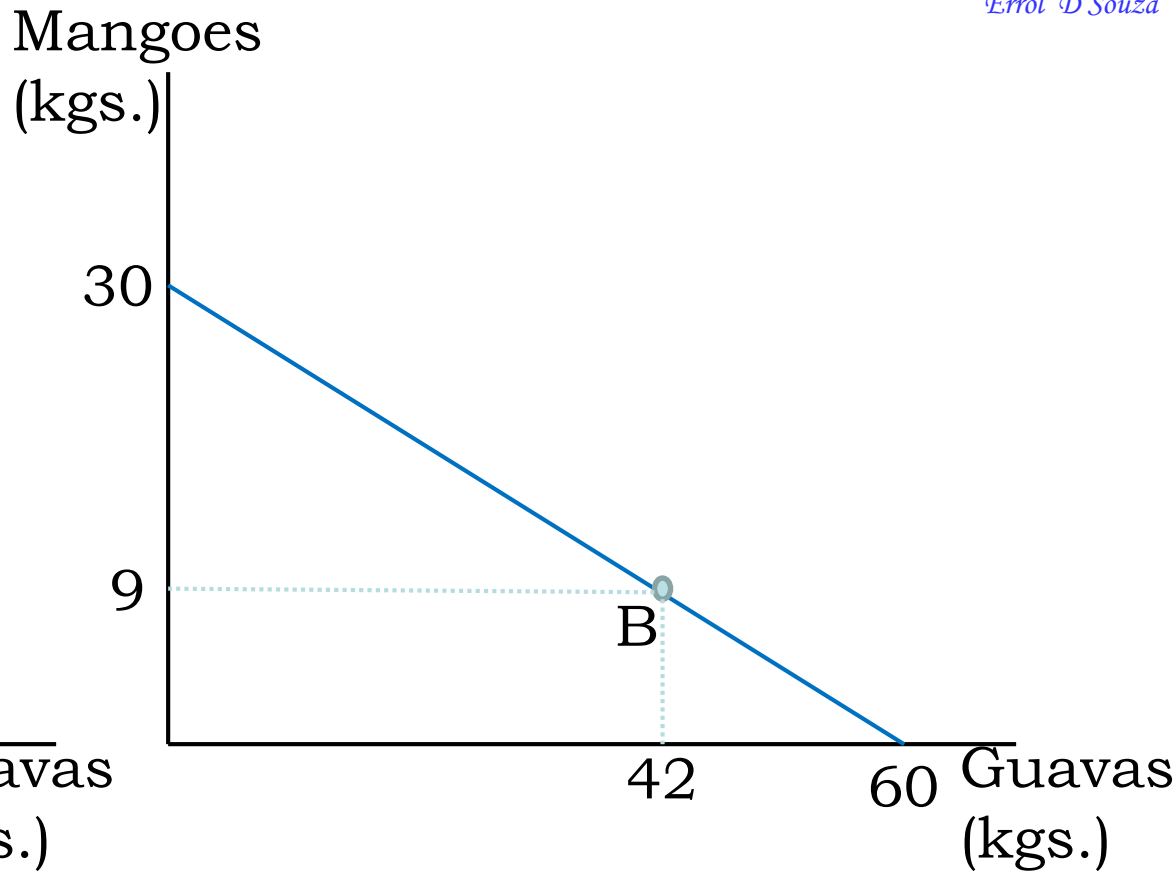
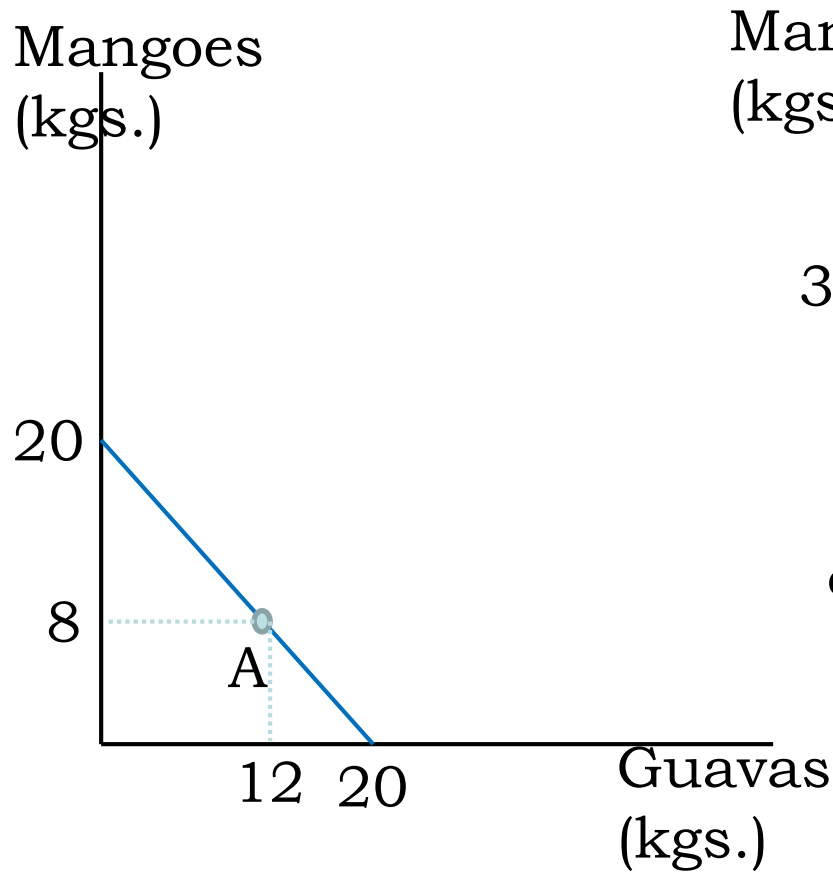
Your production possibility
frontier

Mangoes
(kgs.)

30

60 Guavas
(kgs.)

Your Neighbour's production
possibility frontier

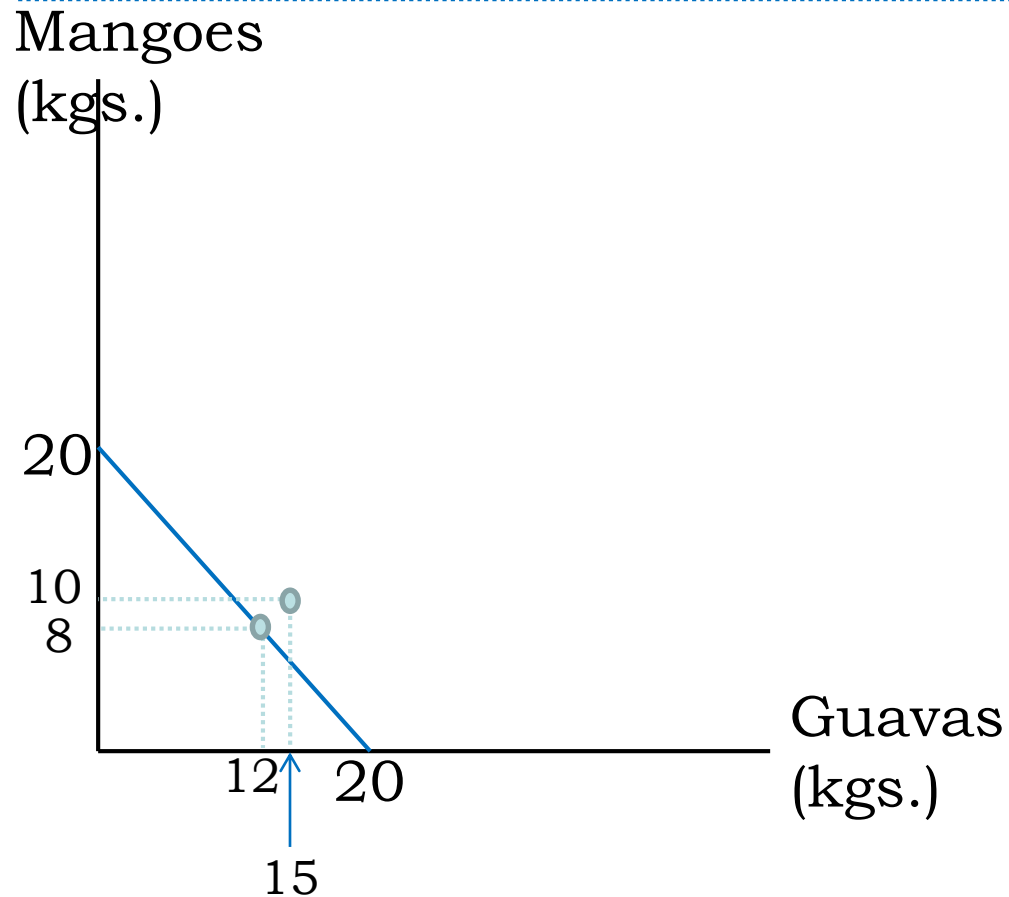


Suppose you don't trade. You pick and consume 8 kgs of mangoes and 12 kgs. of guavas per month – point A.

Your neighbor picks and consumes 9 kgs of mangoes and 42 kgs of guavas per month – point B.

Your neighbor now offers you the following: She will trade you 15 kgs. of her guavas for 10 kgs. of your mangoes.

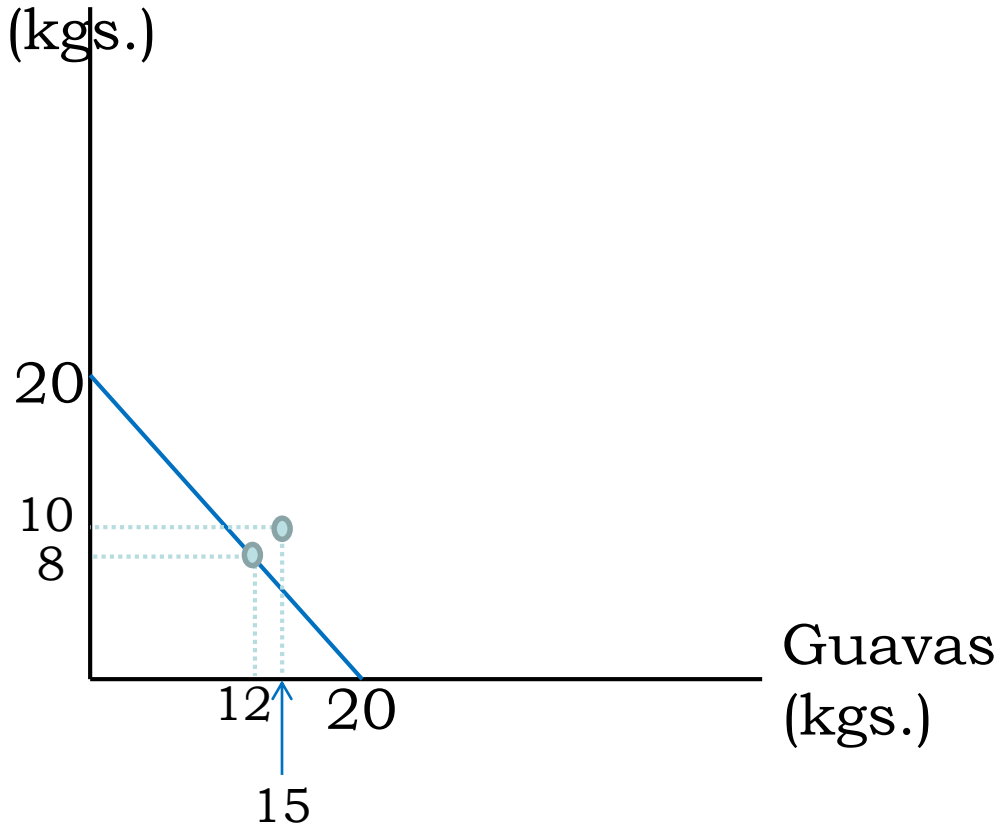
Should you accept this offer?



Your neighbor now offers you the following: She will trade you 15 kgs. of her guavas for 10 kgs. of your mangoes.

Should you accept this offer?

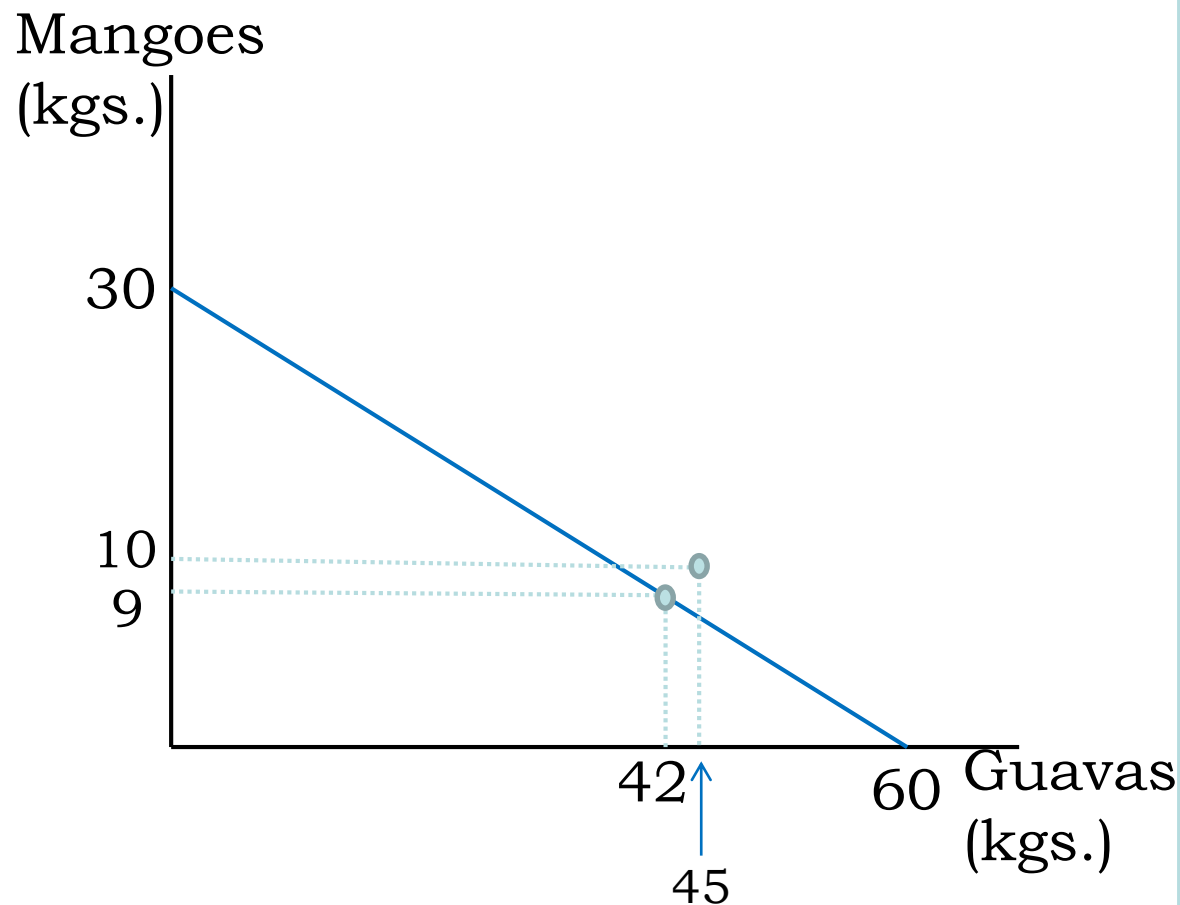
Mangoes
(kgs.)



You should specialize in picking only mangoes. This means you pick 20 kgs. of mangoes. – You trade 10 kg. of these for 15 kgs. Of guava from your neighbor.

You can now consume 10 kg. of mangoes and 15 kgs. of guava.

You are now better off.



Your neighbor is also better off. By specializing in picking guavas she can pick 60 kgs. She trades 15 kg. of these to you for 10 kg. of mangoes.

Absolute advantage is the ability to produce more of a good or service than competitors using the same amount of resources.

Your neighbor has an absolute advantage over you in producing both mangoes and guavas because she can pick more of each fruit than you can in the same amount of time.

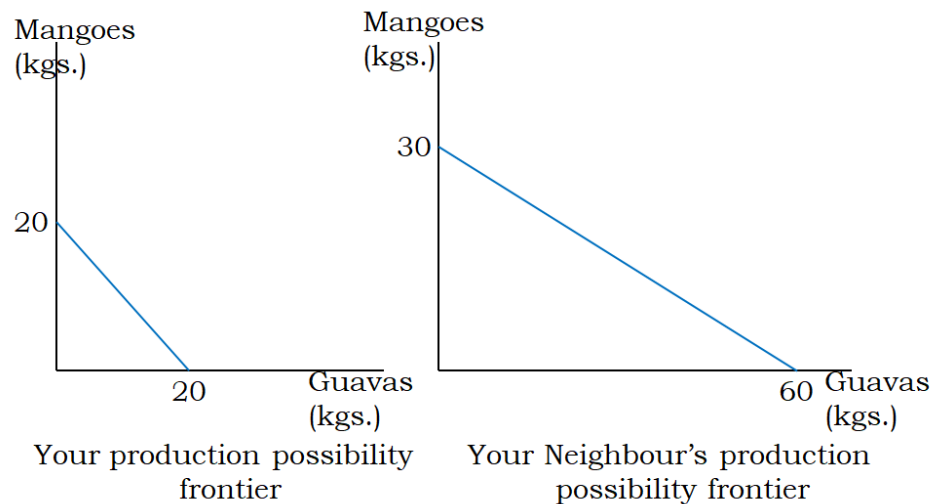
This seems to suggest that your neighbor should pick her own mangoes and her own guavas.

Yet we have just seen that she is better off if she specializes in guava picking and leaves the mango picking to you. – Why?

You have to give up 1 kg. of mangoes for each kg. of guavas you pick as you shift time away from picking mangoes. Hence your opportunity cost of picking 1 kg. of mangoes is 1 kg. of guavas.

Your neighbor has a different tradeoff. As she shifts time from picking mangoes to guavas she has to give up $\frac{1}{2}$ kg. of mangoes for every kg. of guavas she picks.

Alternatively as she shifts time from picking guavas to picking mangoes she gives up 2 kg. of guavas for every kg. of mangoes she picks.



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	Opportunity cost of picking 1 kg. of mangoes	Opportunity cost of picking 1 kg. of guavas
You	1 kg. of guavas	1 kg. of mangoes
Your neighbour	2 kg. of guavas	$\frac{1}{2}$ kg. of mangoes

	Opportunity cost of picking 1 kg. of mangoes	Opportunity cost of picking 1 kg. of guavas
You	1 kg. of guavas	1 kg. of mangoes
Your neighbour	2 kg. of guavas	$\frac{1}{2}$ kg. of mangoes

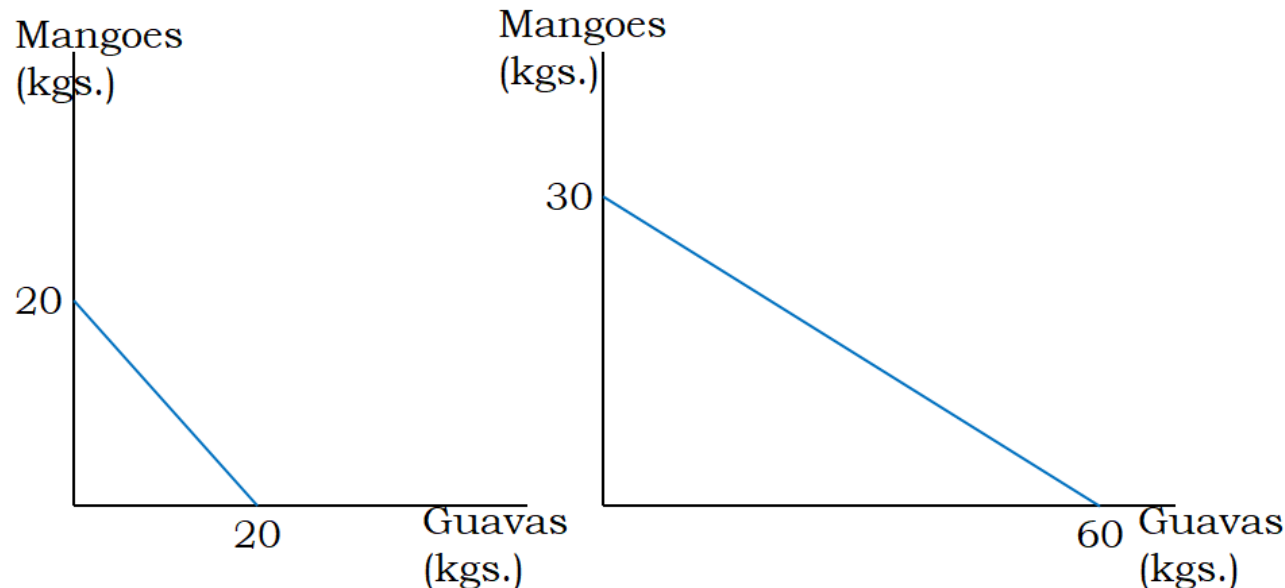
Even though your neighbor can pick more mangoes a month than you, the *opportunity cost* of picking mangoes is higher for her than for you because when she picks mangoes she gives up more guavas than you do.

So even though she has an absolute advantage over you in picking mangoes, it is more costly for her to pick mangoes than it is for you. – However, her opportunity cost of picking guavas is lower than your opportunity cost of picking guavas.

Comparative advantage is the ability of an individual, firm, or country to produce a good or service at a lower opportunity cost than other producers.

You are better off specializing in picking mangoes and your neighbor is better off specializing in picking guavas.

Even though she can pick $1\frac{1}{2}$ times as many mangoes as you can in a month she can pick 3 times as many guavas. So by specializing in picking guavas she is spending her time in activity where her absolute advantage over you is the greatest.



Absolute advantage – The ability of an individual, firm, or country to produce more of a good or service than competitors using the same amount of resources.

- In the example your neighbor has an absolute advantage over you in both picking mangoes and in picking guavas.

Comparative advantage – The ability of an individual, firm, or country to produce a good or service at a lower opportunity cost than other producers. – In the example your neighbor has a comparative advantage in picking guavas but you have a comparative advantage in picking mangoes.

This is an important economic principle: **The basis for trade is comparative advantage, not absolute advantage.**

The fastest mango pickers do not necessarily do mango picking. If the fastest mango pickers have a comparative advantage in some other activity they are better off specializing in that other activity.

Individuals, firms, and countries are better off if they specialize in producing goods or services for which they have a comparative advantage and obtain the other good or service they need by trading.

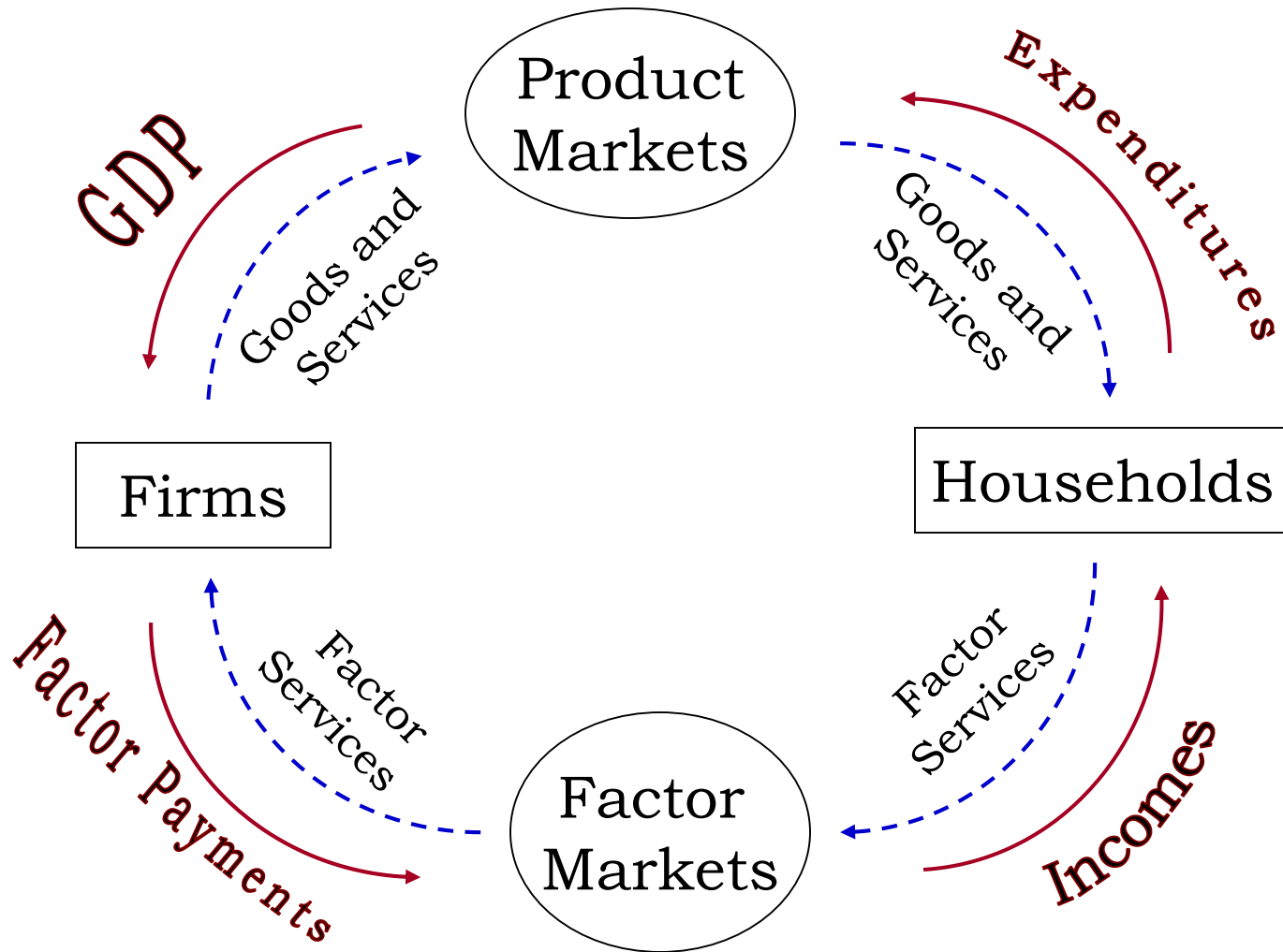
Trade allows people to specialize according to their comparative advantage. By engaging in trade people can raise their standard of living.

Trade is carried out in markets. – a group of buyers and sellers of a good or service and the institution or arrangement by which they come together to trade.

Households and firms interact in **two types of markets**: product markets and factor markets.

In product markets households are demanders and firms are suppliers

Factor markets are markets for factors of production such as labour, capital, natural resources, and entrepreneurial ability. In this market households are suppliers and firms are demanders.



The Circular Flow of Income and Product

Output = Income = Expenditure

The previous diagram is a simplified version of reality. It leaves out the role played by government in making payments such as subsidies and buying goods from firms.

It also leaves out the role played by banks, the stock markets and bond markets in the financial system in aiding the flow of funds from lenders to borrowers.

It does not show that some goods and services are produced in foreign countries and some of the output of domestic firms are sold to foreign households.

“Economics is a science which studies human behavior as a relationship between given ends and scarce means which have alternative uses”

-Lionel Robbins

An Essay on the Nature and Significance of Economic Science, 1932

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“Economics is the study of how societies use scarce resources to produce valuable commodities and distribute them among different people”

-Paul Samuelson & William Nordhaus

Economics, 18th edition

“Economics is the study of how people make choices under conditions of scarcity and of the results of those choices for society.”

Robert H. Frank and Ben S. Bernanke
Principles of Economics

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Robert H. Frank and Ben S. Bernanke
Principles of Economics

“Economics is the study of how society manages its scarce resources.... Economists therefore study how people make decisions: how much they work, what they buy, how much they save, and how they invest their savings.”

N. Gregory Mankiw
Principles of Macroeconomics

Entrepreneurs are central to the working of the market system. An entrepreneur is someone who operates a business.

Entrepreneurs decide what goods they believe consumers want, and then decide how those goods might be produced most profitably.

They bring together the factors of production – land labour, capital, and natural resources – to produce goods and services.

They put their own funds at risk when they start businesses. – It is not unusual for entrepreneurs who eventually achieve great success to fail at first. Early in his career Sakichi Toyoda whose company eventually became Toyota Motor Corp started a company that quickly failed.

The Legal Basis of a Successful Market System

The absence of government intervention is not enough for a market system to work well. – Governments have to provide **secure rights to private property** for a market system to work at all.

In addition government can aid the working of the market by enforcing contracts between private individuals through an **independent court system**.

The protection of private property and the existence of an independent court system to impartially enforce the law provide a legal environment that will allow a market system to succeed.

In many poor countries owners of businesses are not well protected from having their businesses seized by government or from having their profits taken by criminals and the mafia. – Where such problems exist opening a business can be extremely risky and this reduces the gains from trading in the market place.

Property rights refer to the rights individuals have to exclusive use of their property, including the right to buy or sell it. – **Property** can be **tangible**, physical property, such as a factory. It can also be **intangible**, such as the right to an idea.

In a modern economy *intellectual property rights* are very important – rights to books, films, software, and ideas for new products or new ways of producing products.

The **development of the internet** has led to new problems in protecting intellectual property rights. Songs, newspaper and magazine articles, and entire motion pictures can be copied and e-mailed from one computer to another.

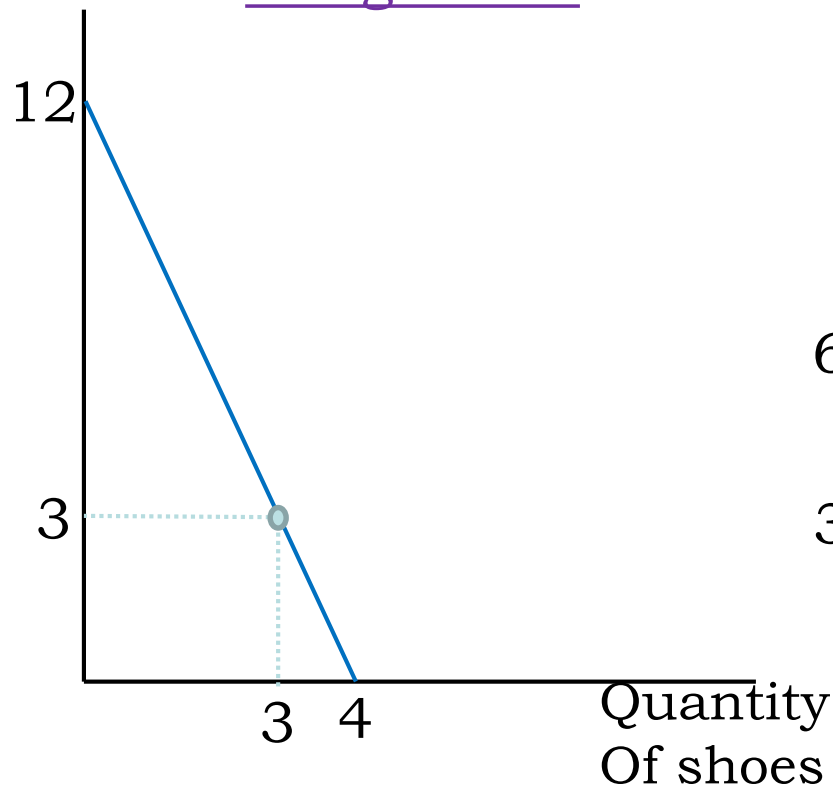
Unauthorized copying of music became particularly severe in 1999 when Napster created software that allowed people to download music from the Web without the authorization of the copyright holders. – A sharp decline in music CD sales occurred.

Record companies and some artists – heavy metal band Metallica – sued Napster for copyright infringement. A federal court in the US ordered the firm to stop its activities.

Using the same amount of resources, Bangladesh and Vietnam can both produce shirts and shoes as shown in the following production possibilities frontiers:

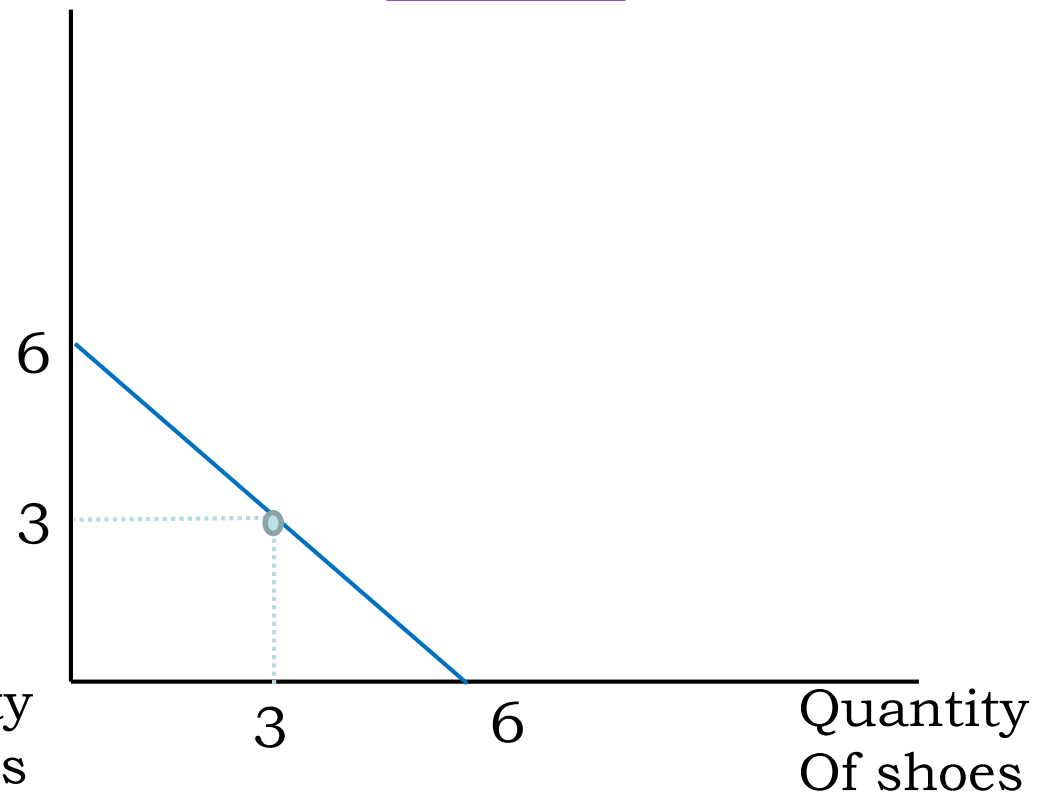
Quantity
Of shirts

Bangladesh



Quantity
Of shirts

Vietnam



- Who has a comparative advantage in producing shirts and who in producing shoes? – Explain your reasoning.
- Does either country have an absolute advantage in producing both goods?
- Suppose that both countries are currently producing 3 pairs of shoes and 3 shirts. Show that both can be better off if they specialize in producing one good and then engage in trade.

	Opportunity cost of producing a shirt	Opportunity cost of producing a pair of shoes
Bangladesh	$\frac{1}{3}$ pair of shoes	3 shirts
Vietnam	1	1

Bangladesh has a comparative advantage of producing shirts
- its opportunity cost is lower. Vietnam has a comparative advantage of producing shoes.

