

Week 14

International Trade

EDUCATION BEYOND BORDERS

- Consider your typical day:
 - You wake up to an alarm clock made in Korea.
 - You pour yourself orange juice made from Florida oranges and coffee from beans grown in Brazil.
 - You put on some clothes made of cotton grown in Georgia and sewn in factories in Thailand.
 - You watch the morning news broadcast from New York on your TV made in Japan.
 - You drive to class in a car made of parts manufactured in a half-dozen different countries.

- . . . and you haven't been up for more than two hours yet!



Interdependence and the Gains from Trade

- Remember, economics is the study of how societies produce and distribute goods in an attempt to satisfy the wants and needs of its members.



Interdependence and the Gains from Trade

- How do we satisfy our wants and needs in a global economy?
 - We can be economically self-sufficient.
 - We can specialize and trade with others, leading to economic interdependence.

Interdependence and the Gains from Trade

- Individuals and nations rely on specialized production and exchange as a way to address problems caused by scarcity.
- But this gives rise to two questions:
 - Why is interdependence the norm?
 - What determines production and trade?

Interdependence and the Gains from Trade

- Why is interdependence the norm?
 - Interdependence occurs because people are better off when they specialize and trade with others.
- What determines the pattern of production and trade?
 - Patterns of production and trade are based upon differences in opportunity costs.



A Parable for the Modern Economy

- Imagine . . .
 - only two goods: potatoes and meat
 - only two people: a potato farmer and a cattle rancher
- What should each produce?
- Why should they trade?



Table 1 The Production Opportunities of the Farmer and Rancher

	Minutes Needed to Make 1 Ounce of:		Amount of Meat or Potatoes Produced in 8 Hours	
	Meat	Potatoes	Meat	Potatoes
Farmer	60 min/oz	15 min/oz	8 oz	32 oz
Rancher	20 min/oz	10 min/oz	24 oz	48 oz

Production Possibilities

- Self-Sufficiency
- By ignoring each other:
 - Each consumes what they each produce.
 - The production possibilities frontier is also the consumption possibilities frontier.
 - Without trade, economic gains are diminished.

Figure 1 The Production Possibilities Curve

(a) The Farmer's Production Possibilities Frontier

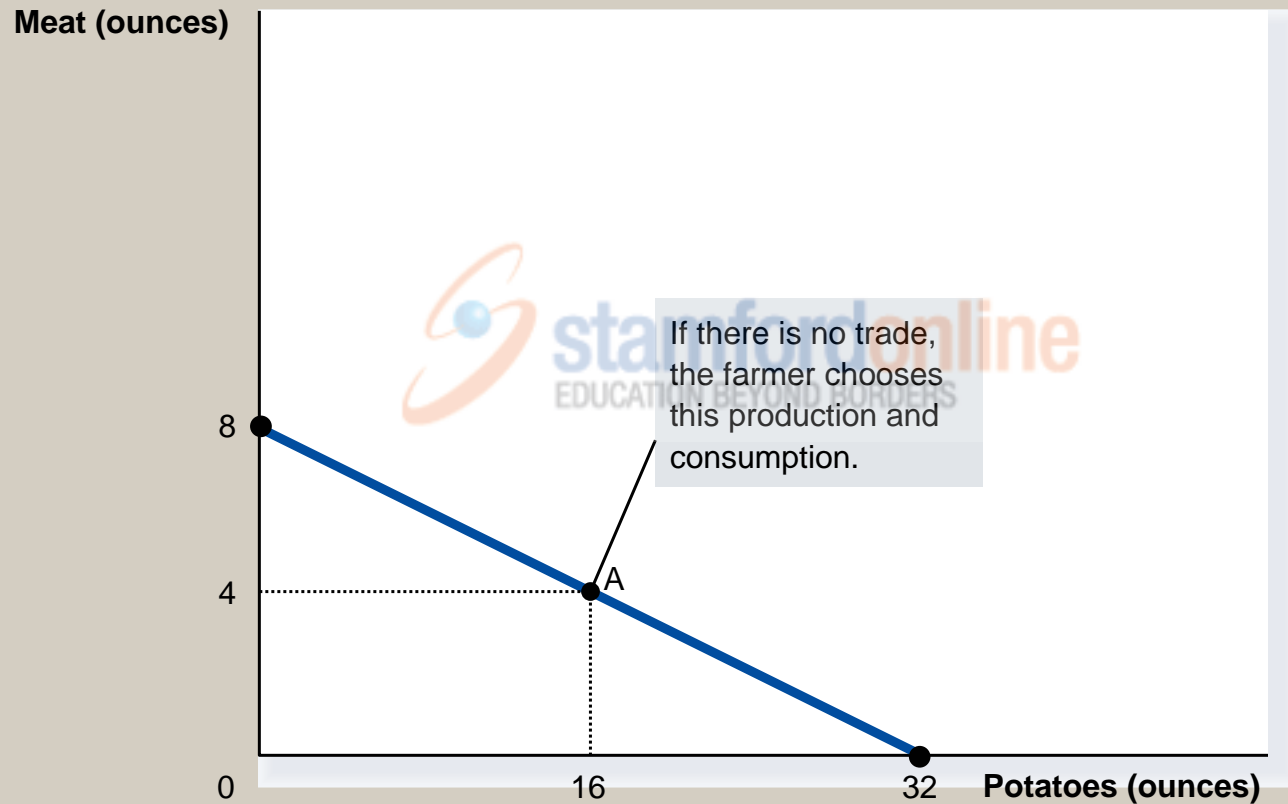
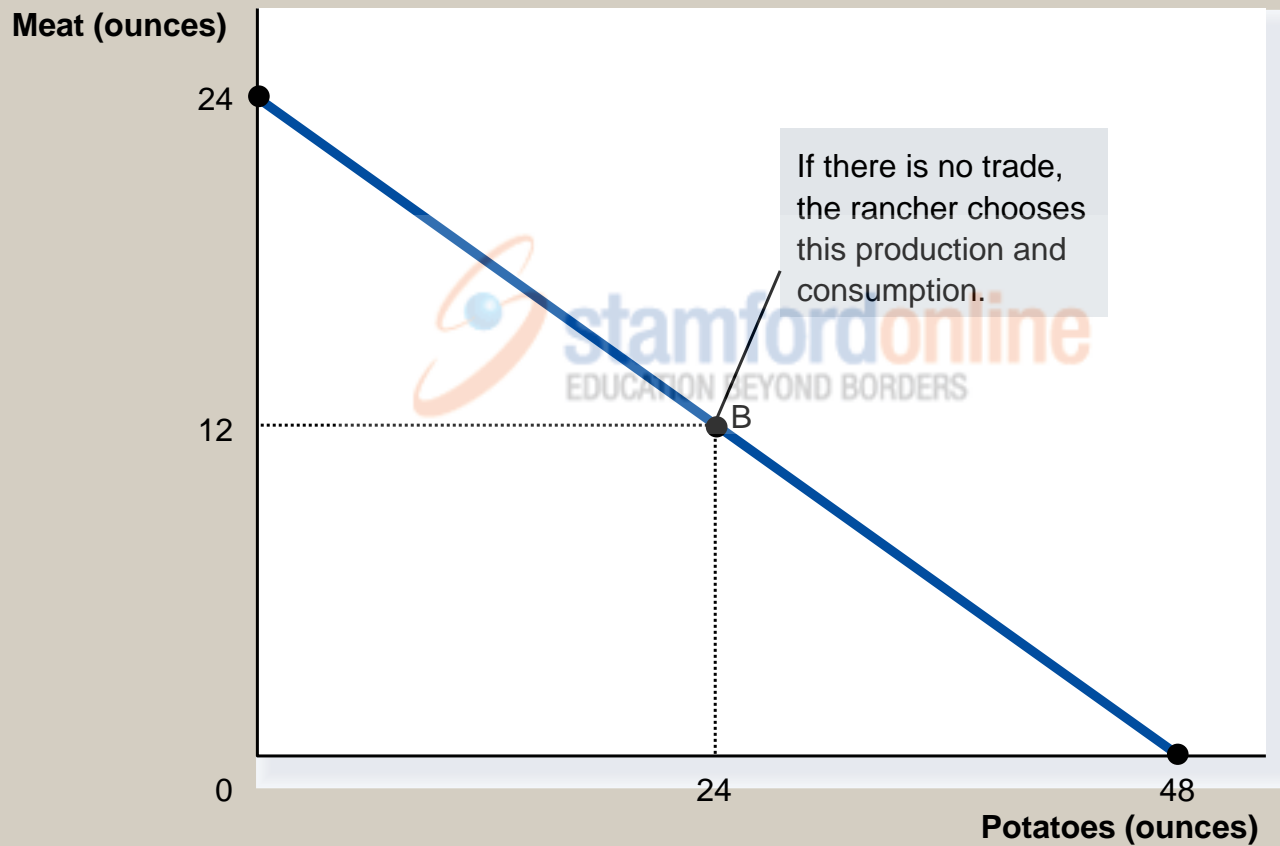


Figure 1 The Production Possibilities Curve

(b) The Rancher's Production Possibilities Frontier



Specialization and Trade

- The Farmer and the Rancher Specialize and Trade
 - Each would be better off if they specialized in producing the product they are more suited to produce, and then trade with each other.

The farmer should produce potatoes.

The rancher should produce meat.

Table 2 The Gains from Trade: A Summary

	Farmer		Rancher	
	Meat	Potatoes	Meat	Potatoes
Without Trade:				
Production and Consumption	4 oz	16 oz	12 oz	24 oz



Figure 2 How Trade Expands the Set of Consumption Opportunities

(a) The Farmer's Production and Consumption

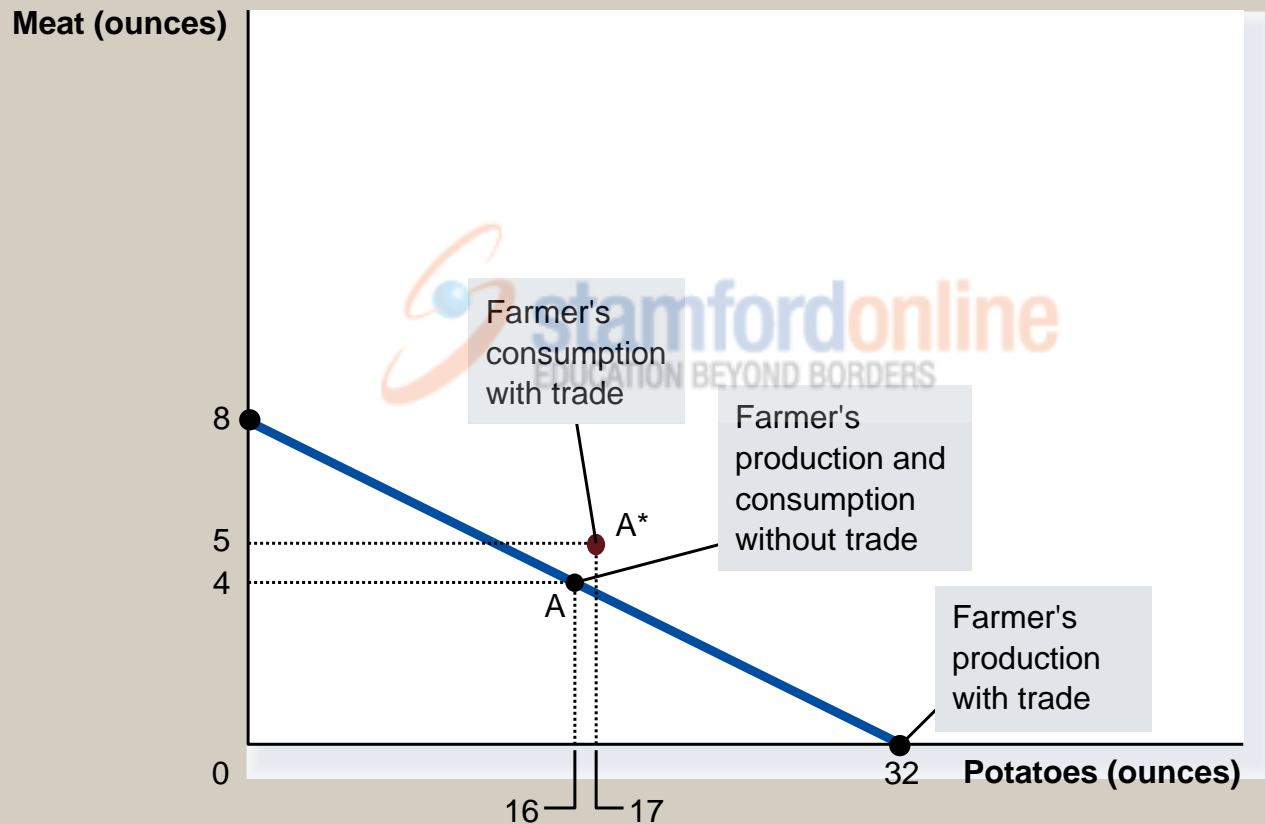


Figure 2 How Trade Expands the Set of Consumption Opportunities

(b) The Rancher's Production and Consumption

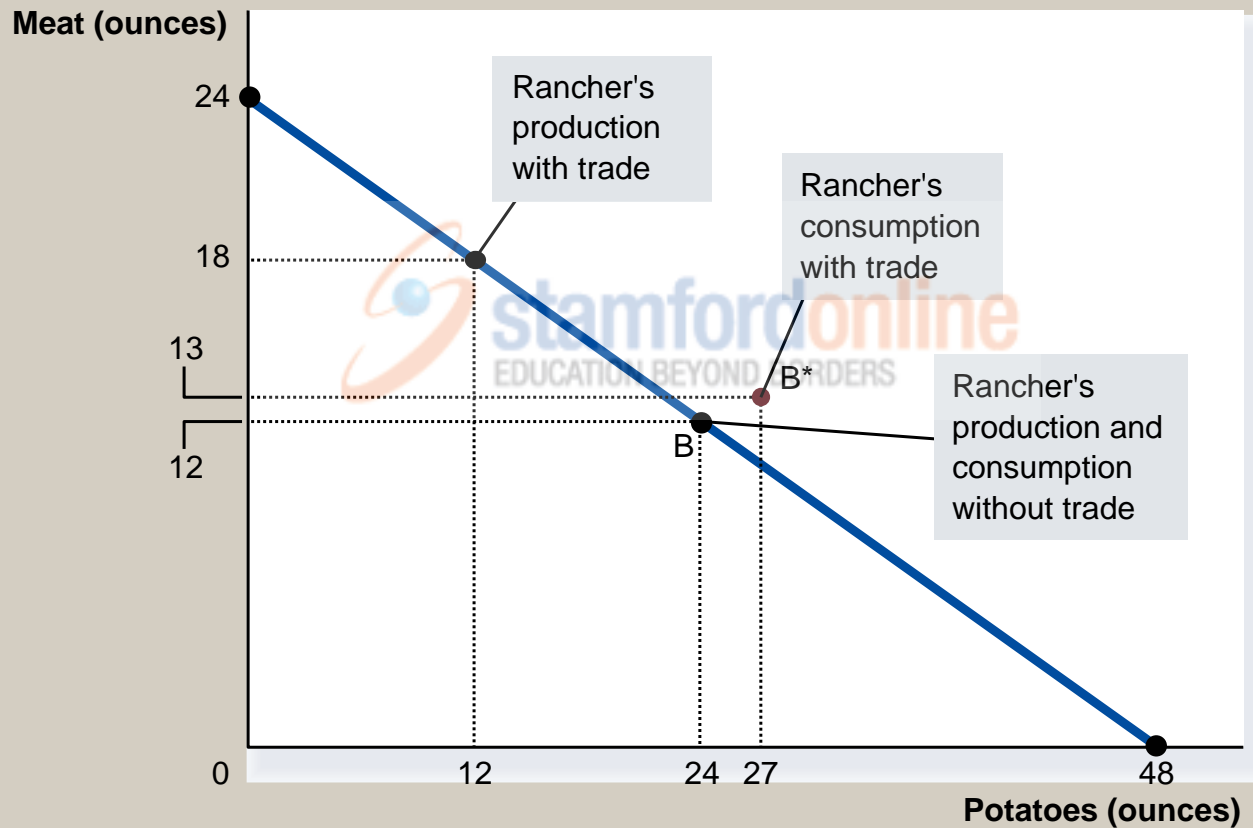


Table 2 The Gains from Trade: A Summary

	Farmer		Rancher	
	Meat	Potatoes	Meat	Potatoes
Without Trade:				
Production and Consumption	4 oz	16 oz	12 oz	24 oz
With Trade:				
Production	0 oz	32 oz	18 oz	12 oz
Trade	Gets 5 oz	Gives 15 oz	Gives 5 oz	Gets 15 oz
Consumption	5 oz	17 oz	13 oz	27 oz
Gains from Trade:				
Increase in Consumption	+1 oz	+1 oz	+1 oz	+3 oz



The Principle of Comparative Advantage

- Differences in the costs of production determine the following:

- Who should produce what?
- How much should be traded for each product?

Who can produce potatoes at a lower cost--the farmer or the rancher?

The Principle of Comparative Advantage

- Differences in Costs of Production
- Two ways to measure differences in costs of production:
 - The number of hours required to produce a unit of output (for example, one pound of potatoes).
 - The opportunity cost of sacrificing one good for another.

Absolute Advantage

- The comparison among producers of a good according to their productivity—*absolute advantage*
 - Describes the productivity of one person, firm, or nation compared to that of another.
 - The producer that requires a smaller quantity of inputs to produce a good is said to have an absolute advantage in producing that good.

Absolute Advantage

- The Rancher needs only 10 minutes to produce an ounce of potatoes, whereas the Farmer needs 15 minutes.
- The Rancher needs only 20 minutes to produce an ounce of meat, whereas the Farmer needs 60 minutes.

The Rancher has an absolute advantage in the production of both meat and potatoes.

Opportunity Cost and Comparative Advantage

- Compares producers of a good according to their *opportunity cost*.
 - Whatever must be given up to obtain some item
- The producer who has the smaller opportunity cost of producing a good is said to have a *comparative advantage* in producing that good.

Comparative Advantage and Trade

- Who has the absolute advantage?
- The farmer or the rancher?
- Who has the comparative advantage?
- The farmer or the rancher?



Table 3 The Opportunity Cost of Meat and Potatoes

Opportunity Cost of:

	1 oz of Meat	1 oz of Potatoes
Farmer	4 oz potatoes	1/4 oz meat
Rancher	2 oz potatoes	1/2 oz meat

Comparative Advantage and Trade

- The Rancher's opportunity cost of an ounce of potatoes is $\frac{1}{4}$ an ounce of meat, whereas the Farmer's opportunity cost of an ounce of potatoes is $\frac{1}{2}$ an ounce of meat.
- The Rancher's opportunity cost of a pound of meat is only 4 ounces of potatoes, while the Farmer's opportunity cost of an ounce of meat is only 2 ounces of potatoes...



Comparative Advantage and Trade

...so, the Rancher has a comparative advantage in the production of meat but the Farmer has a comparative advantage in the production of potatoes.

Comparative Advantage and Trade

- Comparative advantage and differences in opportunity costs are the basis for specialized production and trade.
- Whenever potential trading parties have differences in opportunity costs, they can each benefit from trade.

Comparative Advantage and Trade

- Benefits of Trade

- Trade can benefit everyone in a society because it allows people to specialize in activities in which they have a comparative advantage.

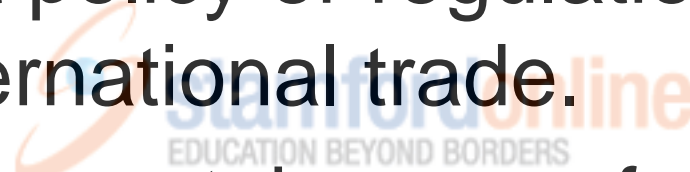


Applications of Comparative Advantage

- Should the United States Trade with Other Countries?
- Each country has many citizens with different interests. International trade can make some individuals worse off, even as it makes the country as a whole better off.
 - *Imports*—goods produced abroad and sold domestically
 - *Exports*—goods produced domestically and sold abroad

Protectionism

- A **trade barrier/ protectionism** is a general term that describes any government policy or regulation that restricts international trade.
- The barriers can take many forms, including:



1. Tariff

- Is a tax on foreign goods upon importation. When a ship arrives in port a customs officer inspects the contents and charges a tax according to the tariff formula. Since the goods cannot be landed until the tax is paid, it is the easiest tax to collect, and the cost of collection is small.
- Traders seeking to evade tariffs are known as smugglers.
- Tariffs may be of various kinds:
 - An "*ad valorem* tariff" is a percentage of the value of the item, say 10 cents on the dollar
 - A "*specific* tariff" does not relate to the value of the imported goods but to its weight, volume, surface, etc. The specific duty stipulates how many units of currency are to be levied per unit of quantity (e.g. US\$2 per kg).

2. Tariff

There are two main ways of implementing a tariff:

- An *ad valorem* tariff
 - is a fixed percentage of the value of the good that is being imported. Sometimes these are problematic as when the international price of a good falls, so does the tariff, and domestic industries become more vulnerable to competition.
 - Conversely when the price of a good rises on the international market so does the tariff, but a country is often less interested in protection when the price is higher. They also face the problem of transfer pricing where a company declares a value for goods being traded which differs from the market price, aimed at reducing overall taxes due.
- A *specific* tariff is a tariff of a specific amount of money that does not vary with the price of the good. These tariffs may be harder to decide the amount at which to set them, and they may need to be updated due to changes in the market or inflation.

2. Subsidies

- In economics, a subsidy is a type of financial government assistance, such as a grant, tax break, or trade barrier, in order to encourage the production or purchase of a good.
- The term subsidy may also refer to assistance granted by others, such as individuals or non-government institutions, although this is more commonly described as charity.



3. Voluntary Export Restraint (VER)

- Is a restriction set by a government on the quantity of goods that can be exported out of a country during a specified period of time. Often the word voluntary is placed in quotes because these restraints are typically implemented upon the insistence of the imported nations.
- Typically VERs arise when the import-competing industries seek protection from a surge of imports from particular exporting countries.
- VERs are then offered by the exporter to appease the importing country and to avoid the effects of possible trade restraints on the part of the importer. Thus VERs are rarely completely voluntary.



3. Voluntary Export Restraint (VER)

- Also, VERs are typically implemented on a bilateral basis, that is, on exports from one exporter to one importing country. VERs have been used since the 1930s at least, and have been applied to products ranging from textiles and footwear to steel, machine tools and automobiles.
- They became a popular form of protection during the 1980s, perhaps in part because they did not violate countries' agreements under the GATT. As a result of the Uruguay round of the GATT, completed in 1994, WTO members agreed not to implement any new VERs and to phase out any existing VERs over a four year period. Exceptions can be granted for one sector in each importing country.
- Some interesting examples of VERs occurred with auto exports from Japan in the early 1980s and with textile exports in the 1950s and 60s.

4. Import Quota

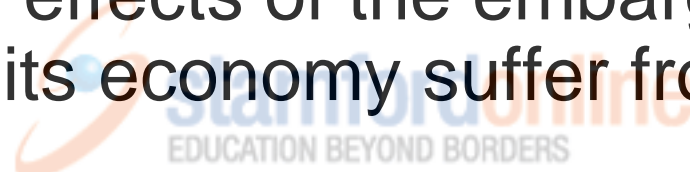
- An import quota is a type of protectionist trade restriction that sets a physical limit on the quantity of a good that can be imported into a country in a given period of time.
- For example, a country might limit sugar imports to 50 tons per year. Quotas, like other trade restrictions, are used to benefit the producers of a good in a domestic economy at the expense of all consumers of the good in that economy.
- Critics say quotas often lead to corruption (bribes to get a quota allocation), smuggling (circumventing a quota), and higher prices for consumers.
- From an economics perspective, quotas are thought to be less economically efficient than tariffs which in turn are less economically efficient than free trade.

5. Local Content Requirements

- Government-imposed conditions on inward direct investments, requiring that a minimum proportion of value-added of the resulting output be derived from host-country goods or services

6. Embargo

- Is the prohibition of commerce and trade with a certain country, in order to isolate it and to put its government into a difficult internal situation, given that the effects of the embargo are often able to make its economy suffer from the initiative.
- The embargo is usually used as a political punishment for some previous disagreed policies or acts, but its economic nature frequently raises doubts about the real interests that the prohibition serves.



Reasons for Protectionism

1. New industries
2. Restraining monopoly
3. Jobs
4. High wages
5. Lax environmental standards
6. Exploitation



Summary

- Each person consumes goods and services produced by many other people both in our country and around the world.
- Interdependence and trade are desirable because they allow everyone to enjoy a greater quantity and variety of goods and services.

Summary

- There are two ways to compare the ability of two people producing a good.
 - The person who can produce a good with a smaller quantity of inputs has an absolute advantage.
 - The person with a smaller opportunity cost has a comparative advantage.

Summary

- The gains from trade are based on comparative advantage, not absolute advantage.
- Trade makes everyone better off because it allows people to specialize in those activities in which they have a comparative advantage.
- The principle of comparative advantage applies to countries as well as people.

Terms of Trade

- In international economics and international trade, terms of trade or TOT are the ratio of the price of an export commodity/-ies to the price of an import commodity/-ies.
- "Terms of trade" are sometimes used as a proxy for the relative social welfare of a country, but this heuristic is technically questionable and should be used with extreme caution.
- An improvement in a nation's terms of trade is good for that country in the sense that it has to pay less for the products it imports, that is, it has to give up fewer exports for the imports it receives.

Terms of Trade

- The terms of trade measures the rate of exchange of one good or service for another when two countries trade with each other.
- For international trade to be mutually beneficial for each country, the terms of trade must lie within the opportunity cost ratios for both country.
- We calculate the terms of trade as an index number using the following formula:

$$\text{ToT} = 100 \times \frac{\text{Average export price index}}{\text{Average import price index}}$$

Terms of Trade

- If export prices are rising faster than import prices, the terms of trade index will rise. This means that fewer exports have to be given up in exchange for a given volume of imports.
- If import prices rise faster than export prices, the terms of trade have deteriorated. A greater volume of exports has to be sold to finance a given amount of imported goods and services.
- The terms of trade fluctuate in line with changes in export and import prices. Clearly the exchange rate and the rate of inflation can both influence the direction of any change in the terms of trade.

Balance of Trade

- The balance of trade (or net exports, sometimes symbolized as NX) is the difference between the monetary value of exports and imports in an economy over a certain period of time.
- A positive balance of trade is known as a trade surplus and consists of exporting more than is imported.
- A negative balance of trade is known as a trade deficit or, informally, a trade gap.

Definition

- The difference between the value of goods and services exported out of a country and the value of goods and services imported into the country.
- The balance of trade is the official term for net exports that makes up the balance of payments.
- The balance of trade can be a "favourable" surplus (exports exceed imports) or an "unfavourable" deficit (imports exceed exports).
- The official balance of trade is separated into the balance of merchandise trade for tangible goods and the balance of services.

Net Exports

- The balance of trade is essentially another term for net exports. Net exports are the difference between exports to the foreign sector and imports from the foreign sector.
- Exports are goods and services produced by the foreign sector and purchased by members of the domestic economy. Imports are goods and services produced by the domestic economy and purchased by the foreign sector.
- Whereas the net exports phrase surfaces in most theoretical analyses of the macro economy, the balance of trade term tends to be more common in the official measurement of foreign trade.

Goods and Services

- The official balance of trade is actually divided between tangible goods and intangible services.
- Official foreign trade trackers track both the foreign trade of goods and the foreign trade of services.
- The result is a balance of trade for goods, officially termed the balance on merchandise trade, and the balance of trade for services, officially termed the balance on services.



Goods and Services

- Although most people likely think of the exporting and importing of tangible, physical goods when thoughts turn to foreign trade, the exchange of services is also extremely important.
- Most certainly the exporting and importing of such tangible goods as cars, oil, computers, bananas, and underwear is central to the balance of trade. But so too is the importing and exporting of intangible services, such as education, entertainment, and health care.

Goods and Services

- For example, a foreign student who enters the domestic economy in pursuit of an education, paying tuition in the process, is exporting services to the foreign sector.
- Alternatively, a domestic citizen who visits a foreign land to soak up a bit of vacation sunshine, paying for local hotel accommodations in the process, is importing services from the foreign sector.

Surplus and Deficit

- In the same way that net exports can be either positive or negative, meaning exports exceed imports or imports exceed exports, the balance of trade can have either a surplus or deficit.

Balance of Trade Surplus

- A surplus in the balance of trade arises if the value of exports exceeds the value of imports. In terms of "payments," this indicates that the domestic economy is receiving a net inflow of payments from the foreign sector.
- More payments coming in than going out means the domestic economy has more income and enhanced living standards. For this reason, a balance of trade surplus is also commonly termed a "favourable" balance of trade.

Balance of Trade Deficit

- A deficit in the balance of trade arises if the value of imports exceeds the value of exports. In terms of "payments," this indicates that the domestic economy has a net outflow of payments to the foreign sector.
- Fewer payments coming in than going out means the domestic economy has less income and limited living standards. For this reason, a balance of trade deficit is also commonly termed a "unfavourable" balance of trade.

Balance of Trade

- Whether the balance of trade is in surplus or deficit, and thus "favourable" or "unfavourable" comes not only from the domestic view of the overall domestic economy, but also from the perspective of domestic producers.
- A balance of trade surplus is most favourable to domestic producers responsible for the exports. However, this is also likely to be unfavourable to domestic consumers of the exports who pay higher prices.
- Alternatively, a balance of trade deficit is most unfavourable to domestic producers in competition with the imports, but it can also be favourable to domestic consumers of the exports who pay lower prices.

Balance of Trade

- Factors that can affect the balance of trade figures include:
 - Prices of goods manufactured at home (influenced by the responsiveness of supply)
 - Exchange rates
 - Trade agreements or barriers
 - Other tax, tariff and trade measures
 - Business cycle at home or abroad.
- The balance of trade is likely to differ across the business cycle. In export led growth (such as oil and early industrial goods), the balance of trade will improve during an economic expansion.
- However, with domestic demand led growth (as in the United States and Australia) the trade balance will worsen at the same stage in the business cycle.

Balance of Payment

- The balance of trade is actually one component of a more extensive set of international financial accounts termed the balance of payments.
- The balance of payments summarizes ALL payments between the domestic economy and the foreign sector.
- While payments for exports and imports constitute a major portion of these payments, they are not the only payments.

Definition

- A comprehensive set of accounts that tracks the flow of currency and other monetary assets coming into and going out of a nation.
- These payments are used for international trade, foreign investments, and other financial activities.
- The balance of payments is divided into two accounts -current account (which includes payments for imports, exports, services, and transfers) and capital account (which includes payments for physical and financial assets).
- A deficit in one account is matched by a surplus in the other account. The balance of trade is only one part of the overall balance of payments set of accounts.

Balance of Payment

- The balance of payments provides a country with a record of international payment flows. While the balance of trade is one important part of the balance of payments account it is only part.
- The balance of payments is a comprehensive set of accounts that track all sorts of payments coming in to and going out of a nation for a wide variety of reasons.
- Specifically the balance of payments is the difference between all payments coming into a nation and those going out of the nation. It is the balance of international monetary transactions for a nation.

Balance of Payment

- The balance of payments is effectively the difference between the funds received by a country and those paid by a country for all international transactions.
- These international transactions include
 - (1) the exchange of merchandise (exports and imports), which is the balance on merchandise trade,
 - (2) the exchange of services, summarized as the balance on services,
 - (3) any gifts or transfer payments that do not involve the exchange of goods and services, and the
 - (4) the purchase of physical or financial capital assets.
- The balance of payments is divided into two accounts - current account (which includes payments for imports, exports, services, and transfers) and capital account (which includes payments for physical and financial assets).

Balance of Payments

CURRENT ACCOUNT				
		<i>Merchandise Exported</i>	290.1	
		<i>Merchandise Imported</i>	-162.3	
	Balance on Merchandise Trade			127.8
		<i>Services Exported</i>	25.3	
		<i>Services Imported</i>	-82.6	
	Balance on Services			-57.3
	Balance on Goods and Services			70.5
	Unilateral Transfers			5.3
Balance on CURRENT ACCOUNT				75.8
CAPITAL ACCOUNT				
		<i>Domestic Government Investment</i>	-24.7	
		<i>Domestic Private Investment</i>	-91.3	
	Domestic Investment in Foreign Assets			-116.0
		<i>Foreign Government Investment</i>	8.1	
		<i>Foreign Private Investment</i>	33.8	
	Foreign Investment in Domestic Assets			41.9
Balance on CAPITAL ACCOUNT				-74.1
Balance on CURRENT AND CAPITAL ACCOUNT				1.7
	Statistical Discrepancy			-1.7
OVERALL BALANCE				0.0

Balance of Payments

- To illustrate the balance of payments system of accounts, consider the Republic of Northwest Queoldiola, a hypothetical country that is well suited for this task. Other real world countries, such as the United States, Brazil, or Malaysia, have similar accounts (albeit with different numbers).

- First note that the table contains two major sections, Current Account and Capital Account. Details about both are forthcoming. Near the bottom of the table is then a summary Balance of the Current and Capital Accounts, which combines the two sections.
- At the very bottom is finally the overall Balance of Payments. Why the overall balance is zero but the summary balance is not is worthy of further discussion and is also forthcoming.

Current Account

- The Northwest Queoldiola balance of payments chart at the right highlights the current account. The current account is a record of all trade between one nation and other nations. It includes payments for imports and exports of both goods and services.
- It also includes monetary gifts or transfer payments to and from other nations.
- This account is divided into three categories -- balance on merchandise trade, balance on services, and unilateral transfers.

Current Account

1. Balance on Merchandise Trade

- Is a the first portion of the Current Account. This is the difference between the payments received for exports of goods to other nations and the payments made for the imports of goods from other nations.
- The goods included are physical or tangible goods, but not intangible services. The balance merchandise is thus appropriately divided into Merchandise Exported and Merchandise Imported.
- Note Northwest Queoldiola exports more merchandise than it imports, hence the balance is a positive number.

Current Account

2. Balance on Services

- Is the second portion of the Current Account. This is the difference between the payments received for exports of services to other nations and the payments made for the imports of services from other nations. This includes only intangible services.
- Once again a summary balance is provided for the trade in services, which for Northwest Queoldiola is negative, meaning that it exports fewer services than it imports.

3. Unilateral Transfers

- Is the last portion of the Current Account. This is the difference between gifts or transfers received from other nations and transfers sent to other nations. It includes gifts or transfers between individuals, and perhaps more important, it includes transfers between governments.
- For Northwest Queoldiola transfers are positive because it receives more gifts from other countries than it gives out.

Current Account

- Note that the sum of the balance on merchandise trade and the balance on services is technically termed the balance on goods and services, or more commonly just the balance of trade.
- This value is positive if the exports of goods and services exceeds the imports of goods and services, which is a balance of trade surplus.
- A balance of trade deficit occurs if the exports of goods and services falls short of the imports of goods and services, and the resulting value is negative.
- Including unilateral transfers with the balance on goods and services provides a summary value of the balances of the current account, the last line in this section.
- For Northwest Queoldiola, this value is positive.

Capital Account

- In the middle of the Northwest Queoldiola balance of payments chart is the capital account, as highlighted in the chart to the right.
- The capital account includes the flow of payments used to purchase financial and physical assets.
- Some folks in the foreign sector purchase assets in the domestic economy. And some in the domestic economy purchase assets in the foreign sector.
- These purchases are be made by individuals, business, and even governments.

Capital Account

1. Domestic Investment in Foreign Sector

- Is the portion of the Capital Account. This is the net flow of payments used by those in the domestic economy to purchase financial and physical assets in other nations.
- The bulk of this category is purchases of foreign assets, especially physical capital, made by private domestic businesses.
- However, it also includes purchases of foreign assets, primarily financial assets, made by the domestic government (usually the central bank and usually in the conduct of exchange rate policies).

Capital Account

2. Foreign Investment in Domestic Sector

- This is the net flow of payments used by those in the foreign sector to purchase financial and physical assets in the domestic economy.
- Once again, the majority of these payments is for the purchase of domestic physical capital by foreign sector businesses.
- However, purchases of financial capital issued by the domestic government, especially currency, is notable.

Capital Account

- Summing the outflow of payments by the domestic sector for foreign assets and the inflow of payments by the foreign sector for domestic assets generates the balance on the capital account.
- For Northwest Queoldiola, this value is negative.

Balance of Accounts

- The table of the Northwest Queoldiola balance of payments highlights the summary balance portion of the statement.
- Interestingly, the balance on the current account for Northwest Queoldiola is a positive value and the balance on capital account is (almost) and equal negative value.
- Is this mere coincidence?

Balance of Accounts

- Summing the balance on the current account and the balance on the capital should, in theory at least, equal zero. That's what the "balance" in balance of payments is all about.
- Any net flow of payments for goods and services is offset by an equal but opposite net flow of payments for capital investments.
- In the balance of payments, the current account and capital account balance out to zero (in theory).
- This arises because the payments are made with the domestic currency of the nation (in this case, queolds used by Northwest Queoldiola). This currency is typically only the legal tender for the domestic economy and is, of course, limited in supply.
- Thus, any domestic currency that flows out of the country to purchase imports or invest in foreign assets must return (eventually) to the domestic economy to purchase exports or invest in domestic assets.

Balance of Payment

- While the balance of trade can be in surplus or deficit, the balance of payments necessarily is in balance, neither surplus nor deficit.
- A balance of trade surplus, as such, means that other payments are in an equal and opposite deficit.
- If a given country has a net inflow payments on trade because exports exceed imports, then it has a corresponding net outflow of payments for unilateral transfers and investments.
- Likewise a net outflow of payments on trade because imports exceed exports corresponds with a net inflow of payments for unilateral transfers and investments.
- It all balances out.

Conclusion

- Balance of payments surpluses and deficits are short lived. They are achieved by forcing an imbalance in the flow of currency either into or out of the country.
- Eventually this currency will begin to flow in the other direction. Of course the policy efforts to maintain the imbalance can be intensified to offset the natural counter-balancing flow.
- But such efforts cannot be maintained indefinitely.
- Eventually the country will pay out all of its domestic currency to other countries (with a balance of payments deficit) or domestically control all of the currency of other countries (with a balance of payments surplus).
- Neither of these options can actually occur