Study Notes

Chapter One

-**Economics** is the studies that choices of individuals, businesses, governments, and entire societies make as they cope with scarcity and the incentives that influence and resolve those choices. It is broken down into microeconomics and macroeconomics

-**Microeconomics** is the study of choices that individuals and businesses make, the way these choices interact in markets, and the influence of government.

Ex. How would a tax on e-commerce affect eBay?

-**Macroeconomics** is the study of the performance of the national and global economy.

Ex. Why did Inflation in Canada start to increase in 2008?

-The scope of economics looks at the following two questions:

- How do choices end up determining *what, how* and *for whom* good and services are produced?
  - **What?**
    - What we produce changes over time. A perfect example is farming, 65 years ago 20% of people were farmers, now it is less than 3%.
  - **How?**
    - How we produce goods are determined by **factors of production**(*Land, Labour, Capital, Entrepreneurship)*
      - Land
        - This is our natural resources, such as: minerals, oil, gas, water
      - Labour
        - The quality of labour is often dependant on human capital, which is the knowledge and skill that people obtain from education, on-the-job training, and work experience.
      - Capital
        - The tools, instruments, machines, buildings, and other constructions that businesses use to produce goods and services.
      - Entrepreneurship
        - The human resource that organizes labour, land, and capital

- **Whom?**
    - Who consumes the goods and services that are produced on the incomes that people earn. A large income enables a person to buy large quantities of goods and services. People earn their incomes by selling the services of the factors of production they own.
        - *Land earns* **rent**
        - *Labour earns* **wages**
        - *Capital earns* **interest**
        - *Entrepreneurship earns* **profit**
    - The most significant factor of production, as mentioned above, is labour. Wages and fringe benefits are around 70% of total income.

- How can choices made in the pursuit of *self-interest* and also promote the *social interest*?
    - **Self-interest**
        - A choice is in your self-interest if you think the choice is the best available for you. For example, you order a home delivery pizza because you're hungry and want to eat. You don't order it because you know that delivering pizza is somebodies income.
    - **Social Interest**
        - Choices that lead to an income that is best for society as a whole- an outcome that uses resources efficiently and distributes goods and services fairly among individuals.
        - Resources are used efficiently when good and services are:
            - Produced and the lowest possible cost
            - In the quantities that give us the greatest benefit

- As a result of facing scarcity, we must make choices. The easiest way to do this is to treat your choice as a **tradeoff.** A *tradeoff* is an exchange-giving up one thing to get something else.
- Tradeoffs are divided into three categories
    - What?
        - What goods and services are produced depends on choices made by each one of us, by gov't, and by the businesses that produce the things we buy
            - Ex. Nike Hire tiger woods and allocates resources to designing and marketing a new ball and as a result cuts back on its development for new running shoes.
    - How?
        - How businesses produce goods and services we buy depends on their choices.
            - Ex. Tim Hortons opens a new store with an automated production line and closes one with trad. Kitchen, it trades off labour for capital.

- For Whom?
  - For whom goods and services depends on the distribution of buying power. Buying power can be redistributed, in one of three ways:
    - Voluntary payment
    - Theft
    - Taxes and benefits organized by the gov't
  - These redistribution programs confront society with the **big tradeoff-** the tradeoff between equality and efficiency.

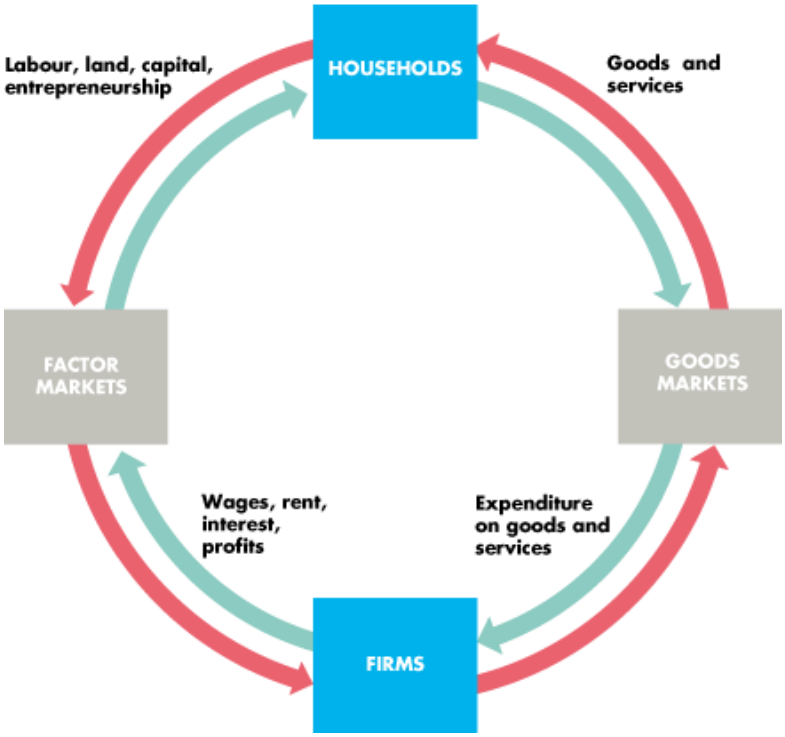
- Every choice has a cost. The **opportunity cost** of something is the highest valued alternative that we must give up to get it. It is the highest value alternative forgone.
- **Margin** is when a choice is changed by a small amount or by a little at a time, the choice is made the margin
- The benefit that arises from an increase in an activity is called **marginal benefit**
- The cost of an increase in an activity is called **marginal cost**
- Economists seek to discover how the economic world works. IN pursuit of this goal, they distinguish between two types of statements:
  - **Positive Statements**
    - Statements are about what is. They assay what is currently believed about the way the world operates. It may be right or wrong, but we can test a positive statement.
      - Ex. Our planet is warming because of coal that we're burning
  - **Normative Statements**
    - Statements are about what ought to be. These statements depend on values and cannot be tested
      - Ex. We ought to cut back on our use of coal
- To answer questions, economists create and test **economic models**. An economic model is a description of some aspect of the economic world that includes only those features that are needed for the purpose on hand. It is very simple.
  - For example, an economic model of a cell phone network might include features such as the price of calls, the number of users, and the volume of calls and it would disregard details such as cell phone colour and ringtones.

Chapter 2

- **The production possibilities frontier** is the boundary between those combinations of goods and services that can be produced and those that cannot
- The PPF illustrates scarcity because we cannot attain the points outside the frontier(for a graphic representation go to page 32)
- **Production Efficiency** is the production of goods and services at the lowest possible cost
- Production is inefficient inside the PPF because resources are either *unused* or *misallocated*(or both)
- Resources are *unused* when they are idle but could be working

- Resources are *misallocated* when they are assigned to tasks for which they are not the best match
- Every choice along the PPF involves a tradeoff
- The **Opportunity Cost** of an action is the highest valued alternative forgone. Opportunity cost is a ratio. It is the decrease in quantity produced of one good divided by the increase in the quantity produced of another good as we move along the production possibilities frontier.
    - As a result of it being a ratio, an additional product/services is equal to the inverse of the opportunity cost of production
- Increasing Opportunity cost is demonstrated on the outward-bound shape of the PPF
- **Allocative efficiency** is when the goods and services are produced at the lowest possible cost and in the quantities that provide the greatest possible benefit(Marginal Cost = Marginal Benefit)
- The **marginal cost** of a good is the opportunity cost of producing one more unit of it
    - Marginal cost = slope of PPF
        - Ex. As the quantity of pizzas produced increases, the PPF gets steeper and the marginal cost of a pizza increases.
- **Preferences** are a description of a person's likes and dislikes
- The **marginal benefit** from a good or service is the benefit received from consuming one additional unit of it
- Economists illustrate preferences using the **marginal benefit curve**, which is a curve that shows relationship between the marginal benefit from a good and he quantity consumed of that good.
- It is a general principle that the more we have of any good or service, the smaller is its marginal benefit and less we are willing to pay for an additional unit of it. This is referred to as the *principle of decreasing marginal benefit.*
- At the best point on the PPF, we cannot produce more of one good without giving up some other good that provides greater benefit.
- A significant expansion of production is called **economic growth**. This increases our standard of living but it doesn't overcome scarcity and avoid opportunity cost.
- Economic growth comes from technological change and capital accumulation. **Technological change** is the development of new goods and of better ways of producing goods and services. **Capital accumulation** is the growth of capital resources, including human capital.
- A increase in capital(short-term) will increase production(long term)
- A person has a **Comparative Advantage** in an activity if that person can perform the activity at a lower opportunity cost than anyone else
- **Absolute Advantage** is when a person is more productive than others and therefore will not trade.
- The repetition of a particular task(for example, producing a good or service) and becoming more productive is a phenomenon called **learning-by-doing.**
- Learning-by-doing is the basis of dynamic comparative advantage. **Dynamic comparative advantage** is a comparative advantage that a person(or country) has acquired by specializing in an activity and becoming the lowest-cost produced as a result of learning-by-doing.
- To make decentralized coordination work, for social institutions are needed:

- Firms
    - An economic unit that hires factors of production and organizes those factors to produce and sell goods and services
    - Firms coordinate a large amount of economic activity, but there is a limit to the efficient size of a firm
    - Local Canadian tire, roots,etc.
- Markets
    - Any arrangement that enables buyers and sellers to get info and to do business with each other
    - Markets coordinate the economic choices of people and firms
    - Oil market
- Property Rights
    - Social arrangements that govern the ownership, use, and disposal of anything that people
    - *Real* property includes land and buildings
    - *Financial* Property includes stocks and bonds and money in the bank
    - *Intellectual* property is the intangible productive of creative effort.
    - Markets can work efficiently only when property rights exists
- Money
    - Any commodity or taken that is generable as a means of payment
    - Money makes trading in markets more efficient



Chapter 3

- A **Competeive market** is a market that has many buyers and sellers, so that no single buyer or seller can influence the price
- The ratio of one price to another is called a **relative price**, and a relative price is an opportunity cost
- The **quantity demanded** is the amount if a good or service that consumers plant ot buy in a given time period at a particular price.
- The **law of demand** states, *Other things remaining the same the higher the price of the good, the lower is the quantity demanded; and the lower the price of a good , the greater is the quantity demanded*
- **Demand** refer to the entire relationship between the price and quantity demanded of the good
    - Illustrated by :
        - Demand Schedule
        - Demand Curve
            - Shows the relationship between the quantity demanded of a good and its price when all other influence on consumers' planned purchases remain the same
- When any factor that influences buying plans, other than price, changes there is a change in demand
- There are six key factors that change demand
    - Prices of Related Goods
        - **Substitute** is a good that can be used in place of another (Coke vs Pepsi)
            - If the price of a substitute rises, people buy less of the substitute and more of the other good
            - Ex. The price of Coke rises, therefore quanity demanded of coke decreases(along the curve) and the demand of Pepsi increases
        - **Complement** is a good that is used in conjunction with another good (Coffee and donuts)
            - If the price of one of the goods rises, there is a decrease in the purchase of the compliment
            - Ex. If the price of coffee increases, quanity demanded of coffee decreases, and as a result people buy less donuts
    - Expected Future Prices
        - If the expected future price is anticipated to increase/decrease, the demand adjusts accordingly.
        - Ex. If the expected price of XBOX is going to double by Christmas, then the demand increases right away.
    - Income
        - A **normal** good is one for which demand increases as income increases
        - A **inferior GOOD IS ONE FOR WHICH DEMAND DECREASES AS INCOME INCREASES**

    - Expected Future Income and Credit
        - If your expected future income increases/decreases, your demand adjusts accordingly
        - Ex. If your income increases you will have more demand for hair cuts
    - Population
        - The larger the population, the larger the demand
        - Ex. Canada vs USA
    - Preferences
        - Demand depends of preferences
- The **Quantity supplied** of a good or service is the amount that producers plant to sell during a given time period at a particular price.
- The **Law of Supply** states, *Other things remaining the same, the higher the price of a good, the greater is the quantity supplied; and the lower the price of a good, the smaller is the quantity supplied.*
- **Supply** refers to the entire relationship between the quantity supplied and the price of a good
- Supply is illustrated by:
    - Supply schedule
    - Supply Curve
        - Shows the relationship between the quantity supplied of a good and its price when all other influences on producers` planned sales remain the same
- When any factor that influences selling plans, other than price of good, there is a change in supply
- The six key factors that change supply
    - Factors of Productions
        - If a factor of production(land, labour, capital, and entrepreneurship) increase or decrease, the supply adjusts accordingly
        - Ex. If the Labour Increases, the supply decreases
    - Prices of related goods
        - **Substitutes in production** are goods that can be produced by using the same resources
            - Ex. If the price of Blue Jeans increases, the quantity supplied of Blue Jeans decreases and the supply of jean jackets also decreases.
        - **Compliments in production** are goods that must be produced together
            - Ex. If the price of a 2x4 increases, the quantity supplied increases, and the supply for sawdust increases
    - Expected Future Prices
        - If expected future prices increase or decrease, the supply adjusts accordingly
        - Ex. If the Expected Future price increases, the supply decreases
    - Number of Suppliers
        - The larger the number of firms that produce a good, the greater is the supply of the good
    - Technology

        - A technological advancement increases the supply
    - State of Nature
        - Includes all the natural forces that influence production
        - Ex. Good weather can increases the supply of products(agricultural, while bad weather would decrease the supply.
- At **Market** Equilibrium, the **equilibrium price**, quantity demanded equals quantity supplied. The **equilibrium quantity** is the quantity bought and sold at the EQ price.
- Above the equilibrium price, there is a surplus- the quantity supplied exceeds the quantity demanded.
- Below the EQ price, there is a shortage- the quantity demanded exceeds the quantity supplied

Predicting Changes in Price and Quantity

Change	Conditions	Price	Result
Increase in Demand	-At Original Price, there is a shortage -At the original Quantity, buyers are willing to pay more than current price	Price Rises	-Quantity supplied increases -Shortage is eventually eliminated
Decrease in Demand	-At the original price, there is a surplus -At the original quantity, buyers are willing to pay less	Price Falls	-Quantity supplied decreases - Surplus is eliminated
Increase in Supply	-At orig. price, there is a surplus -At new quantity supplied, buyers are willing to pay less	Price Falls	-Quantity demanded increases - Surplus is eliminated
Decrease in Supply	-At orig. price, there is a shortage -At new quantity supplied, buyers are willing to pay more	Price Rises	-Quantity demanded decreases - Shortage is eliminated
Demand and Supply Increase	-E.Quantity increase -Whether there is a shortage or a surplus at the orig. price depends on whether demand or supply has increased most -When demand and supply increase by the same, neither shortage or surplus	-Price may either rise or fall -Price remains constant	-Shortage or Surplus are eliminated

	-Demand increases more than supply, there is a shortage -Supply increases more than demand, there is a surplus	-Price Rises -Price Falls	
Demand and Supply Decrease	-EQ decreases	Price may fall or rise (ref. above for reasons)	
Demand Decreases and Supply Increases	-EQ quantity might decrease of increase -Increase in supply and decrease in demand create a **surplus**. At new price, buyers are not willing to pay current price -If the increase equals decrease in demand, the **EQ does not change** -Increase in supply exceeds the decrease in demand, the **EQ**	Price Falls	-Surplus eliminated
Demand Increases and Supply Decreases	-EQ quanity might rise, decrease, or remain the same	Price Rises	

Chapter 4

- When supply increases, the equilibrium price falls and the equilibrium quantity increases
- Sometimes the price change is large and the quantity change is small or sometimes the price change is small and quantity change is large
- The size of the change in equilibrium quantity and equilibrium price when supply changes depends on the responsiveness of the quantity demanded to a change in price.
- The **price elasticity of demand** is a units-free measure of the responsiveness of the quantity demanded of a good to a change in its price when all other influences on buyers plan remain the same.
- Price elasticity of demand =Percentage Change in Quantity Demanded

Percentage Change in Price

$$=\left|\frac{\Delta Q/Q_{ave}}{\Delta P/P_{ave}}\right|$$

- When the price of a good rises, the quanittiy demanded decrease along the demand curve
- The price elasticity of demand is a negative, however we look at the magnitude of the price elasticity of demand and ignore the minus sign.

	Price Elasticity	Name	Demand Curve
Quantity demanded remains constant when the price change	0	Perfectly inelastic demand	Vertical
Percentage change in the quantity demanded is equal to the percentage change in price	1	Unit Elastic	
Percentage change in QD is less than the percentage change in price	0-1	Inelastic	
If the QD changes by an infinetly large percentage in response to a tiny price change	∞	Perfectly Elastic Demand	Horizontal
Percentage change in the QD exceeds the percentage change in price	<1	Elastic	

- The **Total Revenue** from the sale of a good = Price X Quantity Sold

Demand	Effect	Explanation
Unit Elastic	Total Revenue does not change	Increase in price results in an equal percentage decrease in the quantity demanded
Elastic	Total Rev. Decrease	An increase I n price results in a larger percentage decrease in the quantity demanded
Inelastic	Total Rev. Increases	Increase in price results in a smaller percentage decrease in the quantity demanded

- The **total revenue test** is a method of estimating the price elasticity of demand by observing the change in toal rev. that results from a change in price
    - If a price cut increases total rev, demand is **elastic**
    - If a price cut decreases total rev, demand is **inelastic**
    - If a price cut has not no effect on total rev, demand is **unit elastic**
- Elasticity depends on three factors:
    - Closeness of substitutes
        - The closer the subsititues for a good or service, the more elastic is the demand. *Necessities* generally have an inelastic demand, where *luxuries* generally have an elastic demand
    - The proportion of income spent on the good

        - Other things remaining the same, the greater the proportion of the income spent on a good, the more elastic is the demand for it. For example, if the price of gum doubles, you consume almost as much as before, demand for chewing gum is inelastic. But if your rent doubles, you look for people to share your rent.
    - Time elapsed since the price change
        - The longer the time that has elapsed since a price change, the more elastic is demand

- The **Cross elasticity of demand** is a measure of the responsiveness for a good to a change in the price of a substitute or complement, other things remaining the same.

  Cross Elasticity of Demand = % Change in QD / % Change in price of compliment or sub

$$\frac{\Delta Q/Q_{ave}}{\Delta P/P_{ave}}$$

- If the CEOD is positive, it is a **substitute**
- If the CEOD is negative, it is a **complement**
- The **Income elasticity of demand** is a measure of the responsiveness of the demand for a good or service to a change in income other things remaining the same.

$$\frac{\Delta Q/Q_{ave}}{\Delta I/I_{ave}}$$

Value	Type of Good	Demand
Greater than 1	Normal	Income elastic
0-1	Normal	Income inelastic
Negative	Inferior	

- The **Elasticity of supply** measures the responsiveness of the quantity supplied to a change in the price of a good when all other influences on selling plans remain the same.

$$\frac{\Delta QS/QS_{ave}}{\Delta P/P_{ave}}$$

	Value	Elasticity of Supply	Supply Curve
Quantity supplied is fixed regardless of the price	0	Perfectly Inelastic	Vertical
Percentage increase in QS is less than the increase in price	0-1	Inelastic	
% Change equals the percentage change in supply	1	Unit Elastic	Linear, passes through origin
Percentage increase in the QS exceeds the	1+	Elastic	

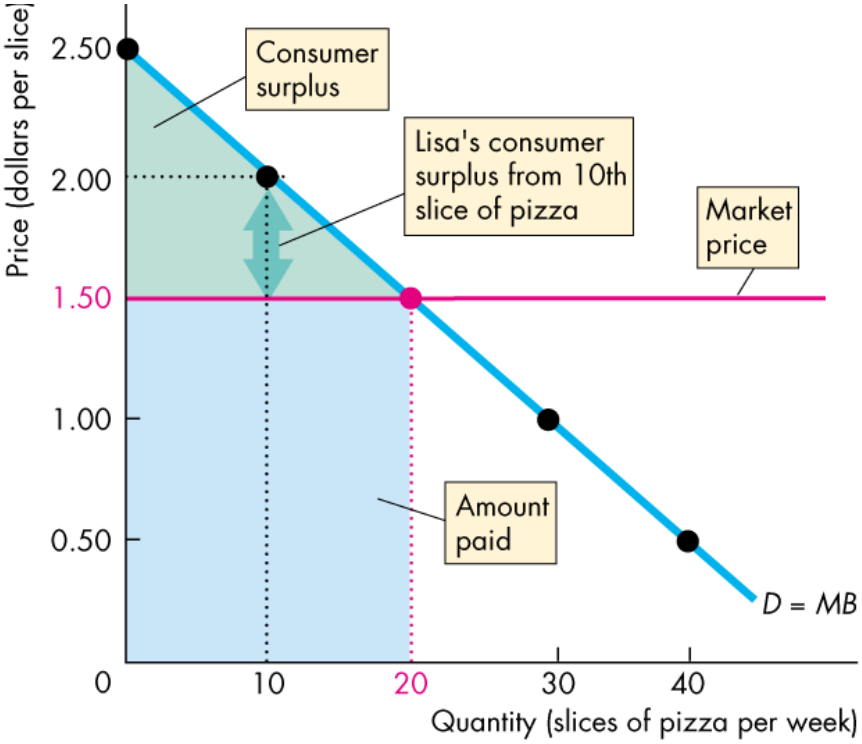
percentage increase in the price			
If there is a price at which sellers are willing to offer an quantity for sale	Infinite	Perfectly elastic	Horizontal

- The factors that influence the elasticity of supply are:
    - Resource substitution
        - Some goods and services can be produced only by using unique or rare productive resources. These items have low, perhaps even a zero, elasticity of supply. Goods that are commonly used have a high elasticity of supply
    - Time frame for the supply decision
        - Momentary Supply Curve
            - Shows responsiveness of the quantity supplied immediately following the price changes
            - Depends on elasticity of item
                - Fruit are perfectly inelastic momentary supply
                - Long distance phone calls
        - Long-run supply
            - Shows response of the QS to a price change after all the technologically possible ways of adjusting supply have been exploited
        - Short-run supply curve
            - Shows the quantity supplied responds to a price change when only some of the technologically possible adjustments to production have been made

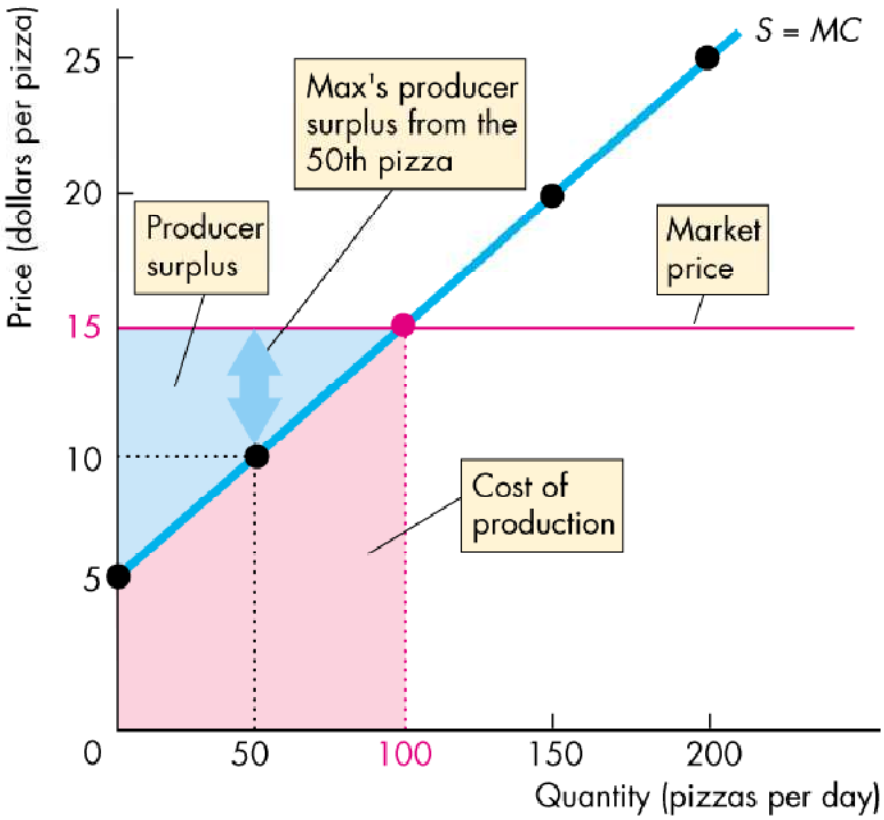
<u>Chapter 5</u>

- Resources must be allocated by some method. Resources can be allocated by:
    - Market
    - Command
    - Majority Rule
    - Contest
    - First-come, first-served
    - Lottery
    - Personal Characteristics
    - Force
- The value of one more unity of a good or service is its marginal benefit
- Marginal benefit can be expressed as the max price that people are willing to pay for another unit of the good or service
- A demand curve is a marginal benefit curve
- A demand curve below shows the quantity demanded at each price

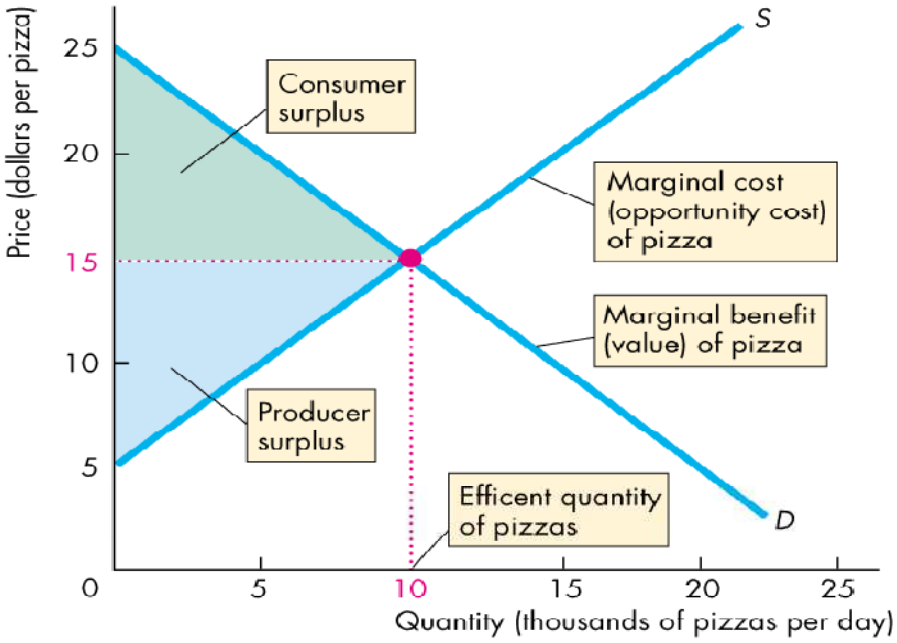
- And a demand curve below also shows the max price consumers are willing to pay for one more unit of the good or service
- The market demand curve is the horizontal sum of the individual curves
- We find the points on the market demand curve by adding the quantities demanded by all the individuals at each price
- **Consumer Surplus** is the value of a good minus the price for it, summed over quantity bought.
    - It is the same formula as area of triangle (A= ½bh)
    - Below the area is (20 x $1)/2



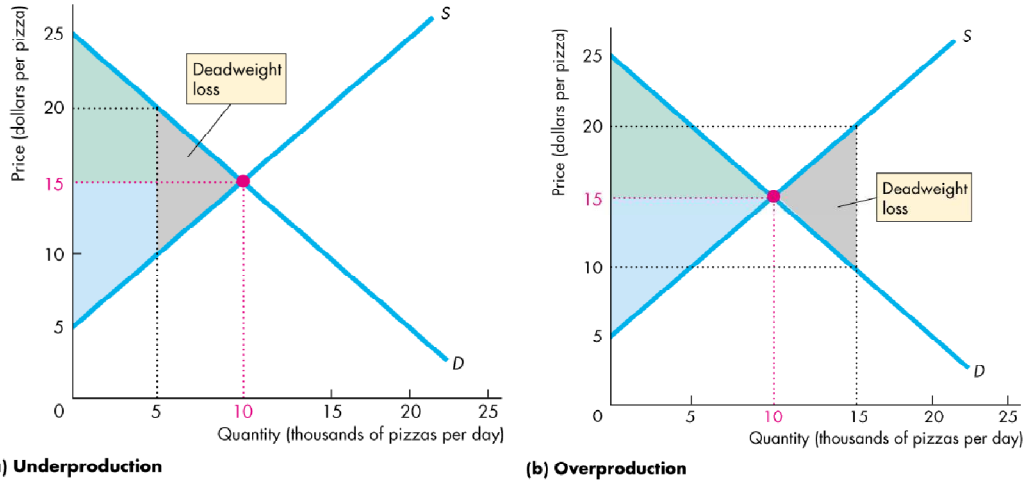
- When people buy something for less than it is worth to them, they receive a consumer surplus
- Cost is what a producer gives up, and price is what a producer receives
- Marginal cost is the minimum price that producers must receive to induce them to produce another unit of the good or service
- The supply curve is a marginal cost curve
- The supply curve shows the quantity supplied at a given price
- The supple curve also shows the min price that producers must receive to induce them to produce another unit of a good or service
- The market supply curve is the horizontal sum of the individual supply curves
- We find the points on the market supply curve by adding together the quantities supplied by all producers.
- **Producer surplus** is the price of a good minus the opportunity cost of producing it, summed over quantity sold



- Producer surplus = ½ bh
    - (100*$10)/2
- Where the demand curve and supply curve intersect, MB=MC. At this point, there is an efficient use of resources
- A competitive market puts resources to work in the activities that create the greatest possible value, thus the competitive equilibrium is efficient



- In the figure, resources are used efficiently when
    - the sum of consumer surplus and producer surplus is maximized
    - Sum of producer surplus is maximized when 10,000 pizzas/day are produced
        - If production is less than 10,000 pizzas/day, the marginal pizza is value more highly then its OC
        - If production exceeds 10,000 pizzas/day, the marginal pizza costs more to produce than the value consumers place on it
- The most significant obstacles to efficiency are:
    - Prices and quantity regulations
    - Taxes and subsidies
    - Externalities
    - Public goods and common resources
    - Monopoly
    - High Transaction costs
- These obstacles to efficiency result in tow possible outcomes
    - Underproduction
    - Overproduction
- When less than the efficient level of output is produced in part A of the figure, there is a gap between what consumers are willing to pay and what producers must be offered. This is called a **deadweight loss**. The same thing happens when more than efficient level of output is produced (Part B) as there is a gap between the opportunity cost of the last unit of output and what consumers are willing to pay for it.

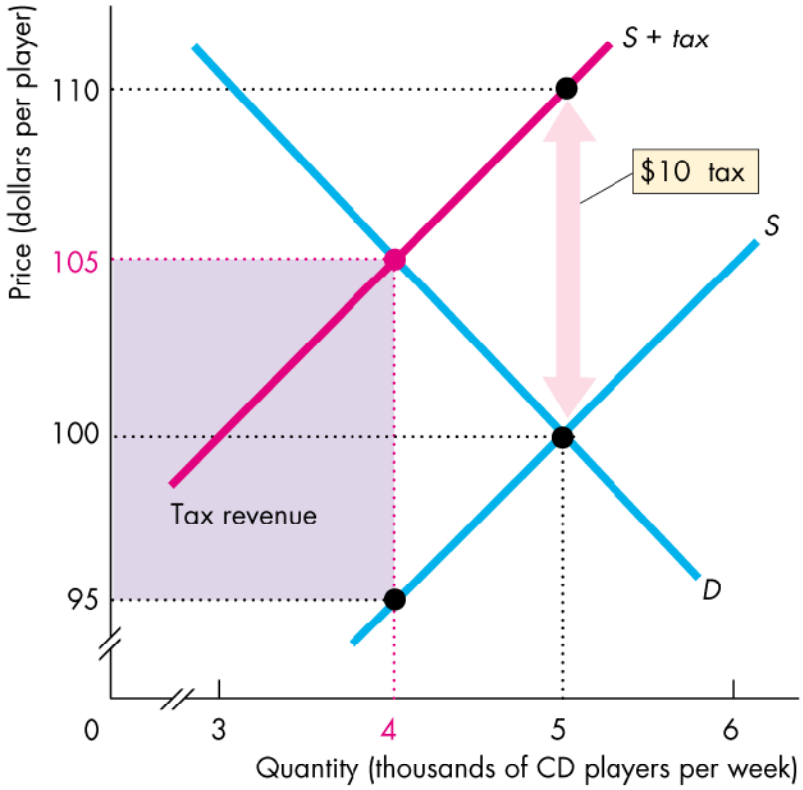


- Ideas about fairness can be divided into two groups
    - It's not fair if the *result* isn't fair
    - It's not fair if the *rules* aren't fair
- Utilitarianism is the principle that states what we should strive to achieve "the greatest happiness for the greatest number"
    - Big problem with the ideal of complete equality is it ignores the costs of making income transfers
- Recognizing the cost of making income transfers leads to what is called the **big trade-off**, which is a trade-off between efficiency and equality
- The Symmetry principle is the requirement that people in similar situations can be treated similarly. In economic life, this principle translates into *equality of opportunity*.
- Robert Nozick, late Harvard Philosopher argues that the idea of fairness as an outcome or result cannot work and that fairness must be based on the fairness of the rules
    - Suggests:
        - The state must enforce laws that establish and protect private property
        - Private property may be transferred from one person to another only by voluntary exchange

Chapter 6

- A **price ceiling** is a regulation that makes it illegal to charge a price higher than a specified level
- When a price ceiling it applied to housing markets, it is called a **rent ceiling**
    - For a rent ceiling to be effective, it must be set below the equilibrium price
    - A rent ceiling creates a shortage, search activity and black markets occur
        - The time spent looking for someone with whom to do business is called **search activity**
        - A **black market** is an illegal market in which price exceeds the legally imposed price ceiling
    - Rent Ceilings are inefficient

- A **price floor** is a regulation that makes it illegal to trade at a price lower than a specified level
- When a price floor is applied to labour markets, it is called **minimum wage**
    - For a price floor to be effective, it must be set above the equilibrium price
    - This creates unemployment
- Tax on buyers has the same effects as an equivalent tax on sellers

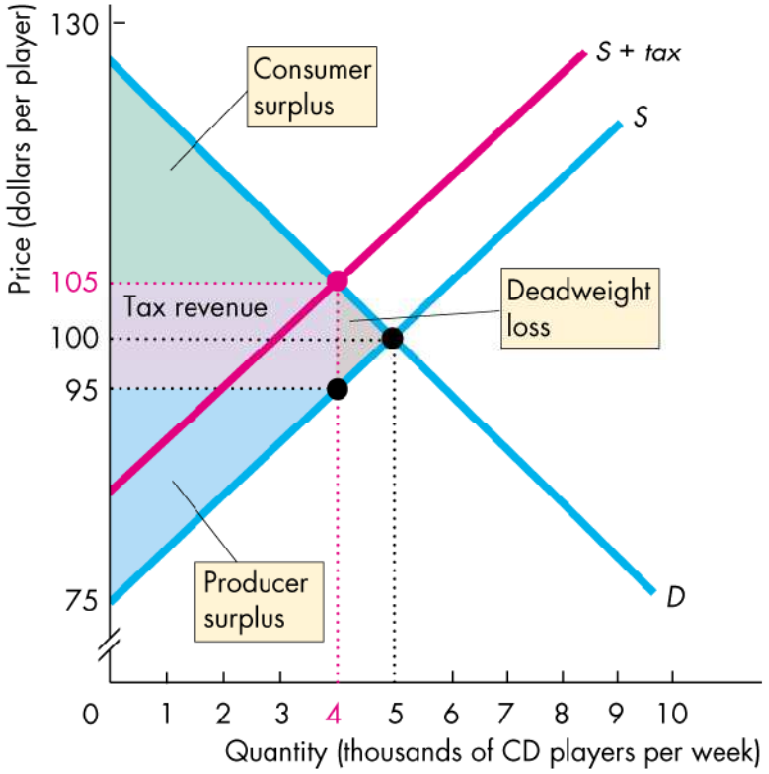


- With no sales tax, the EQ price is $100/ CD player, and EQ quantity is 5,000 CD players/week
- When a tax is imposed, there is no change in demand, but there is a change in supply. The supply curve shifts leftward. The vertical distance between the supply curve and the Supply + tax curve is the amount of the tax
- Equilibrium now occurs at a price of $105, and at a quantity sold of 4,000.
- The sales tax raises the price paid by the buyer to a $105 /player but lowers the price received by the seller to $95 a cd player
- The price paid by the buyer rises $5 and the price received b the seller falls by $5, so the buyer and the seller each pay $5 of the tax.
- The government collects revenue of $10/ CD player X 4,000 players, which is tax revenue
- The division of tax between the buyer and the seller depends of the elasticity of demand the elasticity of supply
    - Perfectly inelastic demand – buyer pays
    - Perfectly elastic demand- seller pays
    - Perfectly inelastic supply- seller pays
    - Perfectly elastic supply- buyer pays

- Ref. Figures 6.5-6.10 in textbook(P. 137-139)

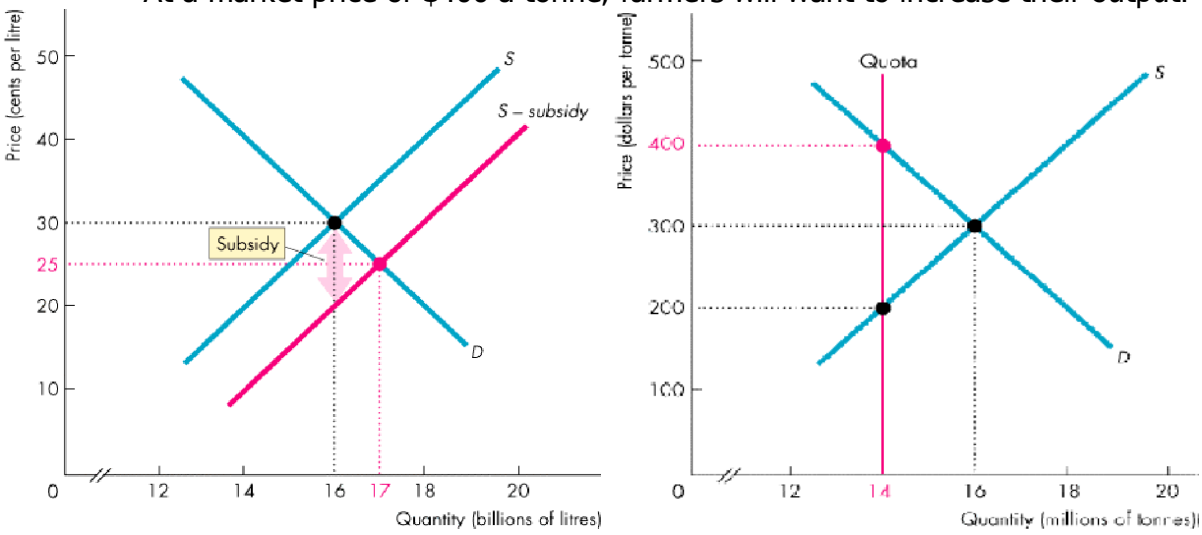
- The figure below shows that a tax places a wedge between the price paid by buyers and price received by sellers.

- The tax decreases the quantity produced and consumed and lowers both the consumer surplus and producer surplus.
- Part of the consumer surplus and producer surplus goes to the government as tax revenue.
- And part of each surplus becomes a deadweight loss.



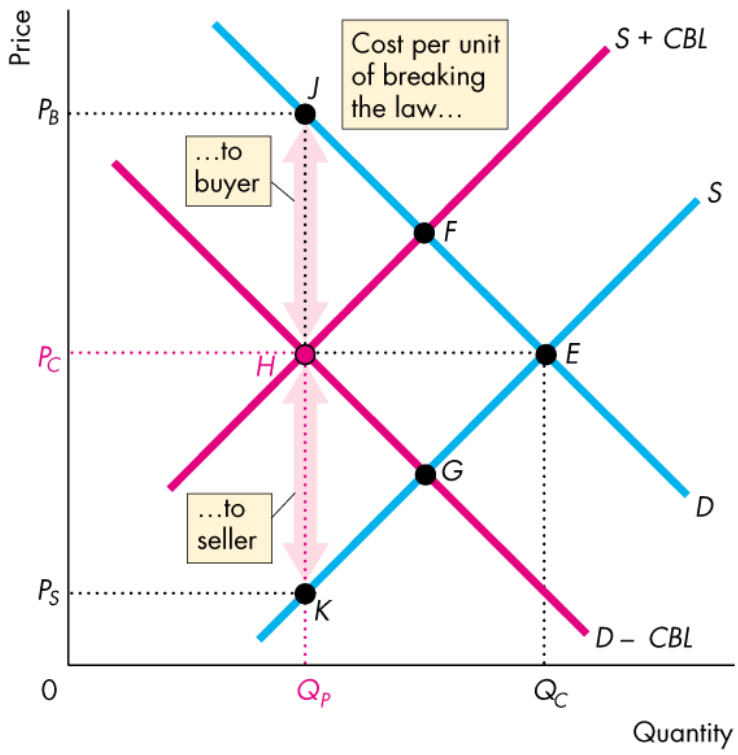
- A subsidy is a payment made to the producer.
- The figure shows a subsidy in the market for milk.
- A subsidy works like a negative tax.
- Producers are willing to supply at the original price minus the subsidy.
- So, a subsidy increases supply.
- With an increase in supply, the price falls and the quantity increases.
- A production quota is an upper limit to the quantity of a good that may be produced in a specified period.
- The figure shows how a quota works in the market for skim milk.
- With no quota, the equilibrium quantity is 16 million tonnes and the equilibrium price is $300 a tonne.
- A quota of 14 million tonnes is imposed.
- So the quantity supplied decreases to this amount.
- The price rises to $400 a tonne.

- Producers are willing to supply 14 million tonnes at a price of $200 a tonne.
- At a market price of $400 a tonne, farmers will want to increase their output.



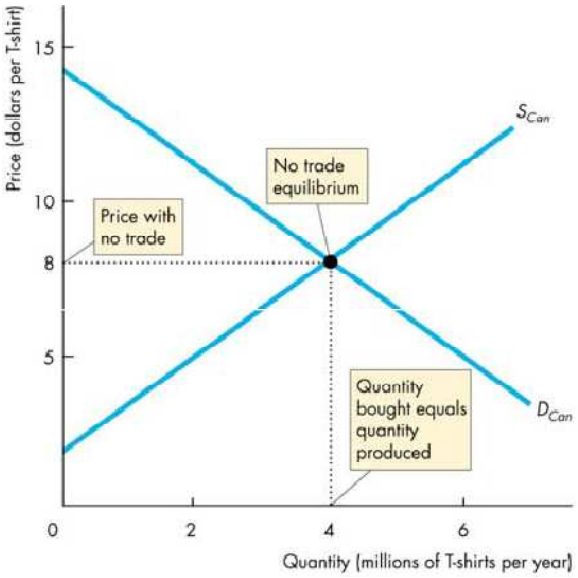
Markets of illegal goods

- The figure shows the market for drugs.
- If drugs were not illegal, the quantity bought and sold would be Q_C and the price would be P_C.
- Now suppose that there is a penalty on sellers.
- To determine the new supply curve, we add the cost of breaking the law to the minimum price that drug dealers are willing to accept.
- The market moves from point E to point F.
- Now suppose that there is a penalty on buyers (but no penalty on sellers).
- To determine the new demand curve, we subtract the cost of breaking the law from the value of the good to determine the maximum price buyers are willing to pay.
- The market moves to point G.
- If penalties are imposed on both sellers and buyers, supply and demand and the supply curve and the demand curve shift.
- The market moves to point H.
- The quantity of drugs bought could be decreased if drugs were legalized and taxed.
- A sufficiently high tax could be imposed to decrease supply, raise the price, and achieve the same decrease in the quantity bought as with a prohibition on drugs.
- Is there a case for legalizing drugs?
- The government can generate a tax revenue that is not available if drugs are illegal.
- In favour of prohibition is the fact that prohibition sends a signal that might influence preferences, decreasing demand for illegal drugs.

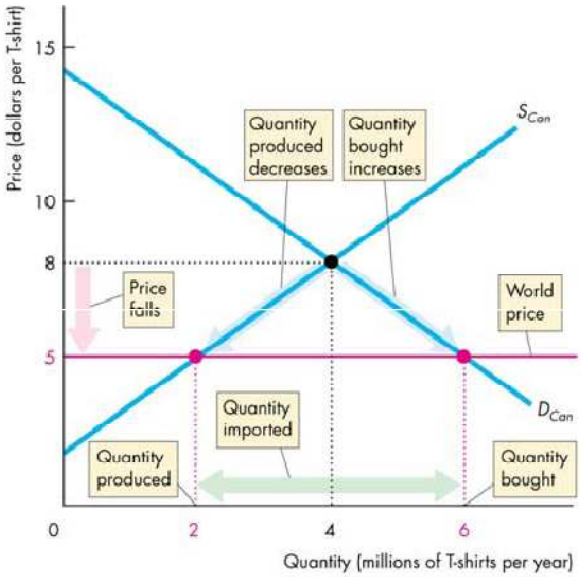


Chapter 7

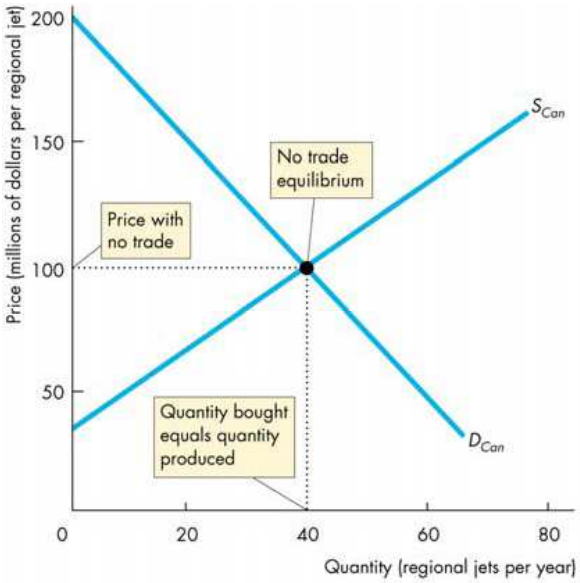
- The goods and services we buy from other countries are our imports, and the goods and services we sell to people in other countries are our exports.
- Comparative advantage is the fundamental force that drives international trade.
- Comparative advantage is a situation in which a person can perform an activity or produce a good or service at a lower opportunity cost than anyone else.
- National comparative advantage is a situation in which a nation can perform an activity or produce a good or service at a lower opportunity cost than any other nation.
- The graph shows the market for t-shirts.
- In the left graph, with no international trade, the price of a t-shirt is $8 and Canada produces and buys 4 million t-shirts a year.
- The right graph shows that the rest of the world has a comparative advantage in the production of t-shirts because the world price is less than Canada's price.
- With international trade, the price of a t-shirt in Canada falls to $5.
- Canadian producers produce 2 million t-shirts (at the intersection of the S_{CAN} curve and the world price line), and Canadian consumers purchase 6 million t-shirts (at the intersection of theD_{CAN} curve and the world price line).
- Canada imports 4 million t-shirts.



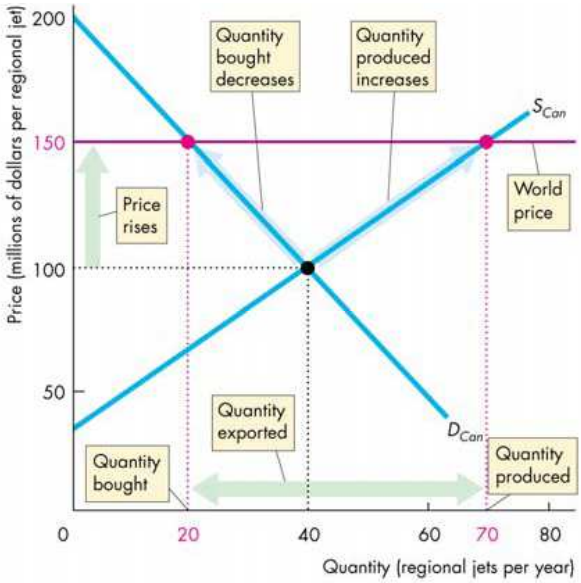
(a) Equilibrium with no international trade



(b) Equilibrium in a market with imports



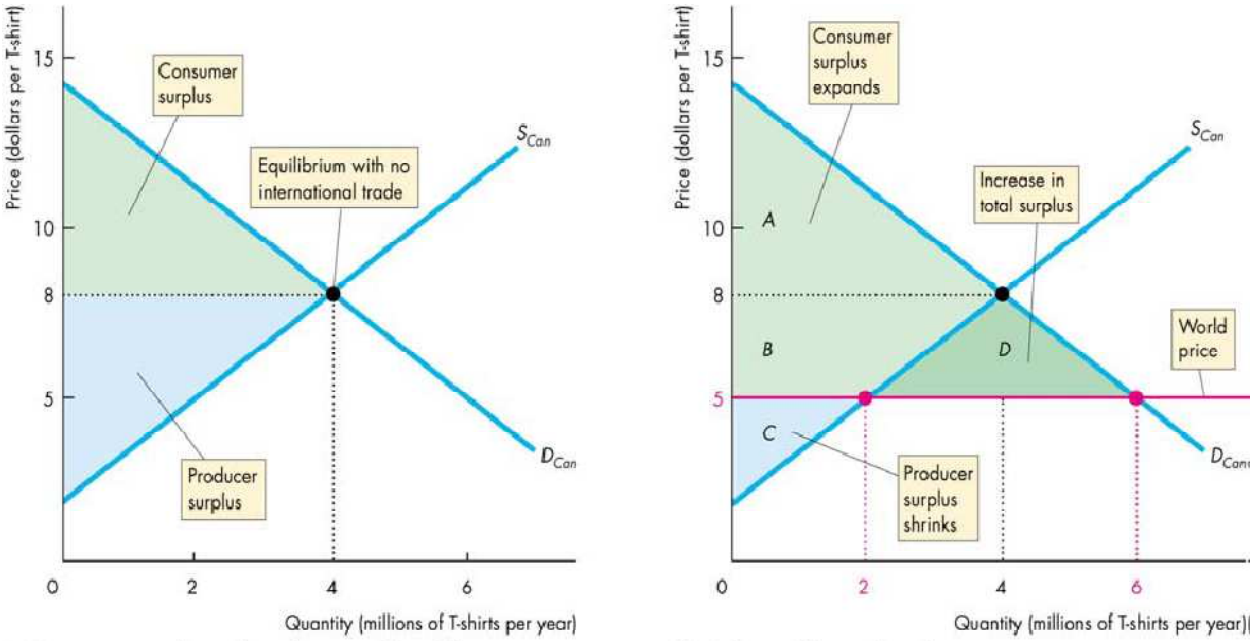
(a) Equilibrium without international trade



(b) Equilibrium in a market with exports

- In the left graph, with no international trade, the price of a regional jet is $100 million and Canada produces and buys 40 regional jets a year.
- The right graph shows that Canada has a comparative advantage in the production of regional jets because the world price is greater than Canada's price.
- With international trade, the price of a regional jet in Canada rises to $150 million.

- Canadian producers produce 70 regional jets (at the intersection of the S_{CAN} curve and the world price line), and Canadian consumers purchase 20 regional jets (at the intersection of theD_{CAN} curve and the world price line).
- Canada exports 50 regional jets.

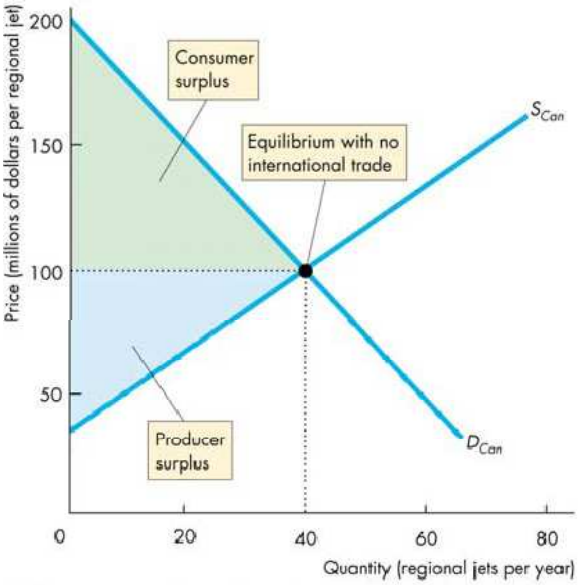


(a) Consumer surplus and producer surplus with no international trade

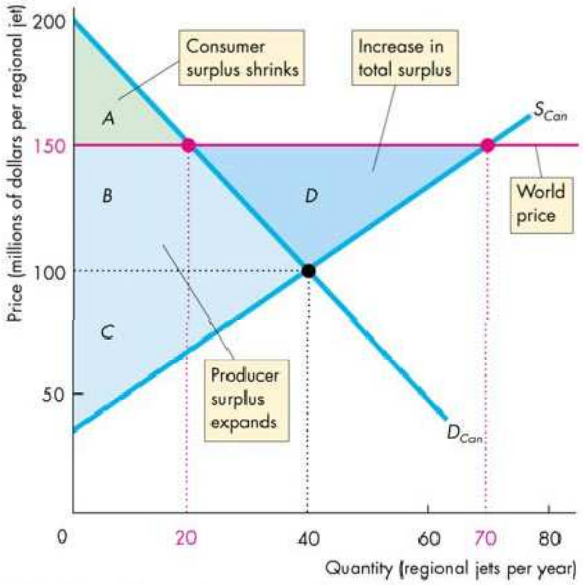
(b) Gains and losses from imports

- The graph on the left shows Canada's consumer surplus and producer surplus with no international trade in t-shirts.
- The right graph shows Canada's consumer surplus and producer surplus with international trade in t-shirts.
- Consumer surplus increases with international trade because the price of a t-shirt falls from $8 to $5 and because the quantity of t-shirts purchased in Canada increases from 4 million to 6 million. Producer surplus decreases with international trade because the price of a t-shirt falls from $8 to $5 and because the quantity of t-shirts produced in Canada decreases from 4 million to 2 million.

- Consumer surplus increases, and producer surplus decreases but the increase in consumer surplus is greater than the decrease in producer surplus. Total surplus increases by area D.



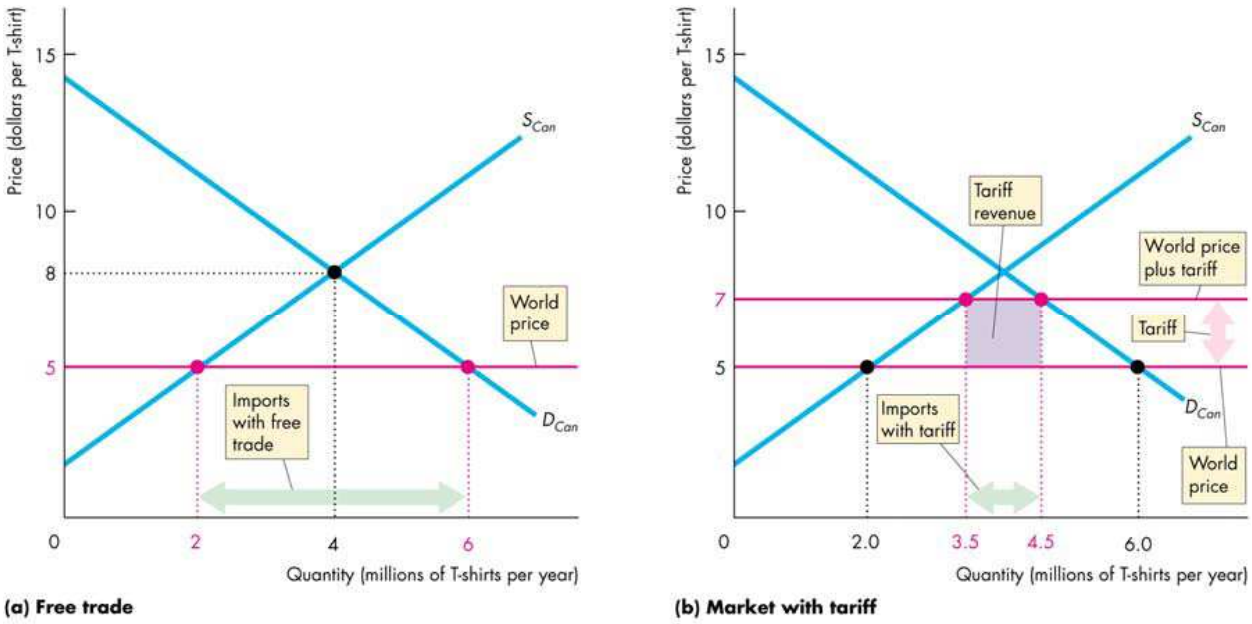
(a) Consumer surplus and producer surplus with no international trade



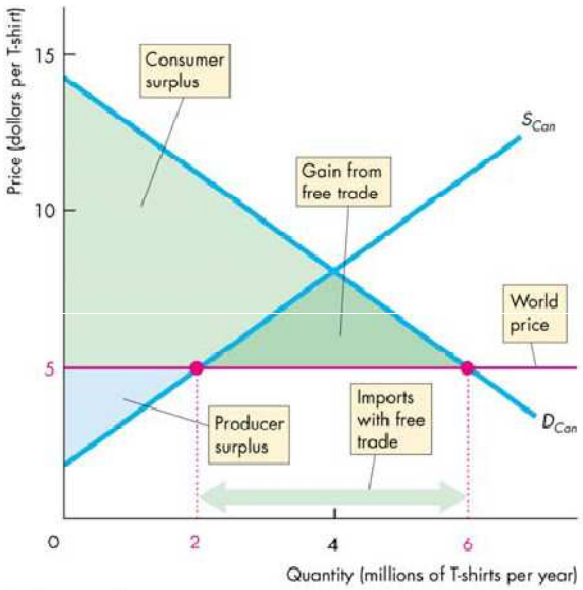
(b) Gains and losses from exports

- The graph on the left shows Canada's consumer surplus and producer surplus with no international trade in regional jets.
- The right graph shows Canada's consumer surplus and producer surplus with international trade in regional jets.
- Consumer surplus decreases with international trade because the price of a regional jet rises from $100 million to $150 million and because the quantity of regional jets purchased in Canada decreases from 40 to 20. Producer surplus increases with international trade because the price of a regional jet rises from $100 million to $150 million and because the quantity of regional jets produced in Canada increases from 40 to 70.

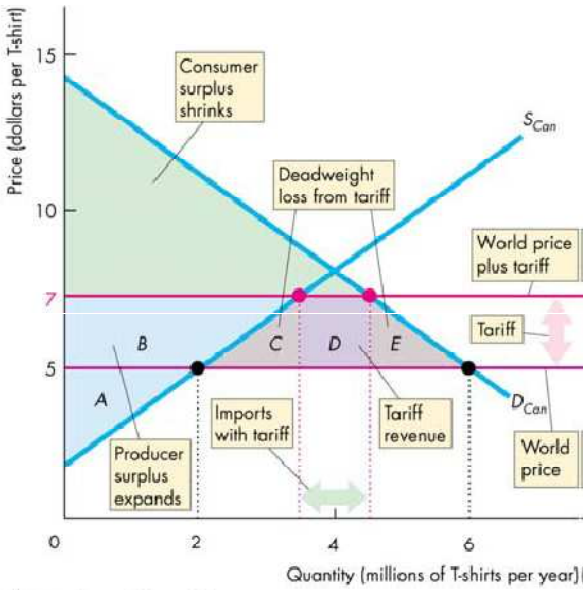
- Consumer surplus decreases, and producer surplus increases but the increase in producer surplus is greater than the decrease in consumer surplus. Total surplus increases by area D.
- The result of all of this is a tariff. A tariff is a tax on a good that is imposed by the importing country when an imported good crosses its international boundary.



- The left graph shows the market for t-shirts in Canada with free trade.
- Canada imports 4 million t-shirts.
- The right graph shows the market for t-shirts in Canada when a tariff of $2 a t-shirt is imposed.
- The price of a t-shirt in Canada rises from the world price of $5 to a price of $7.
- Canadians now purchase 4.5 million t-shirts (at the intersection of the D_{CAN} curve and the world price plus tariff line).
- Canadian producers now produce 3.5 million t-shirts (at the intersection of the S_{CAN} curve and the world price plus tariff line).
- Canada imports 1 million t-shirts.
- The Canadian government collects a tariff of $2 on each t-shirt imported, so the government makes a tariff revenue of $2 million.
- The winners of tariffs:
    - Canadian Producers
    - Government

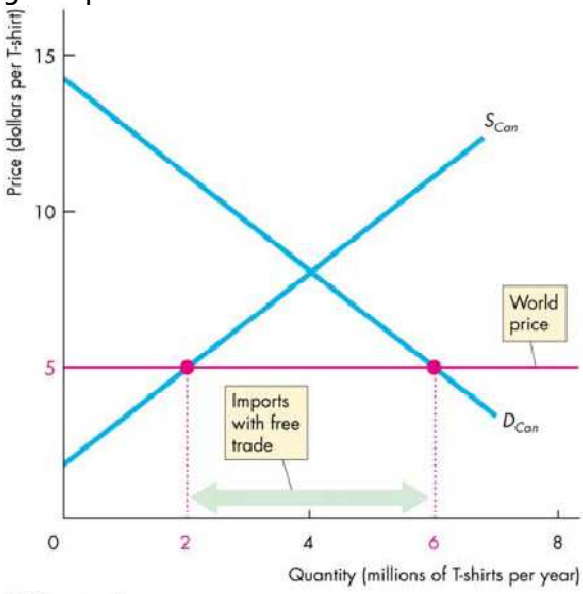


(a) Free trade

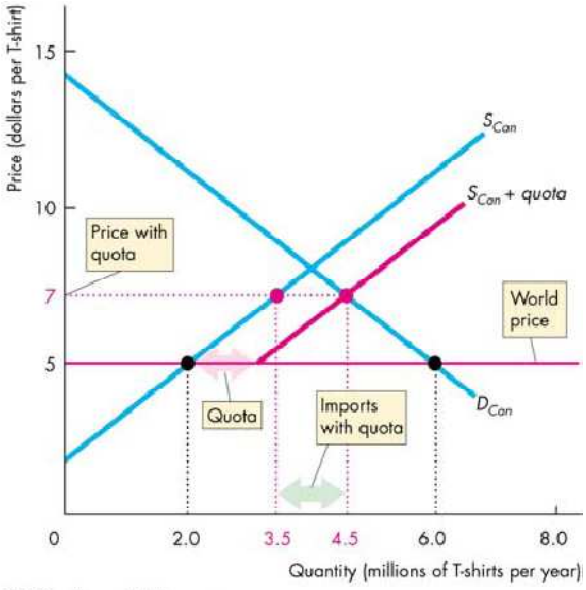


(b) Market with tariff

- Another restriction put in place is called a quota. An import quota is a restriction that limits the maximum quantity of a good that may be imported in a given period.



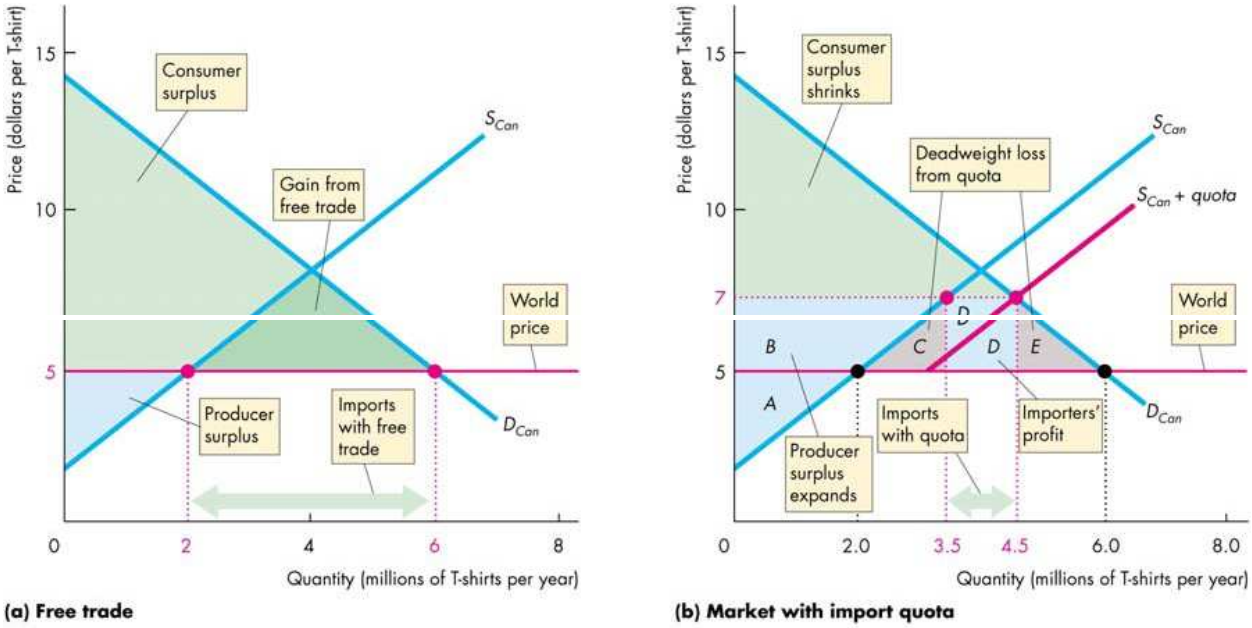
(a) Free trade



(b) Market with import quota

- The left graph shows the market for t-shirts in Canada with free trade.
- Canada imports 4 million t-shirts.
- The right graph shows the market for t-shirts in Canada with an import quota of 1 million t-shirts.
- The price of a t-shirt in Canada rises from the world price of $5 to a price of $7.

- Canadians now purchase 4.5 million t-shirts (at the intersection of the D_{CAN} curve and the S_{CAN} +quota curve).
- Canadian producers now produce 3.5 million t-shirts (the quantity supplied on the S_{CAN} curve at the price of $7 a t-shirt).
- Canada imports 1 million t-shirts.



- There are winners and losers from a quota.
- The left graph shows the market for t-shirts in Canada with free trade.
- The right graph shows the market for-t-shirts in Canada when an import quota is applied.
- Consumer surplus decreases because the price of a t-shirt rises and the quantity of t-shirts bought decreases.
- Producer surplus increases because the price of a t-shirt rises and the quantity of t-shirts produced in Canada increases.
- The importers gain an equal to area D but a deadweight loss equal to the sum of areas C and E is created.
- There are two cases for restricting trade. They are:
    - Infant-industry
        - The infant industry argument for protection is that it is necessary to protect a new industry to enable it to grow into a mature industry that can compete in world markets.
        - The argument has two fatal flaws:
            - The industry's owners profit from the industry's growth to maturity and have all the incentives needed to bring the industry to maturity.
            - Subsidy is more efficient then production

    - Dumping
        - Occurs when foreign firms sells its good internationally at a price below cost of production
        - Three fatal flaws
            - Dumping is virtually impossible to detect
            - There are no global monopolies
            - If there were, international anti-monopoly rules would be needed, not protection
- Other arguments for protection are fatally flawed. These are the claims that protection:
    - Allows us to compete with cheap foreign labour
    - Penalizes lax environment environmental standards
    - Saves jobs
    - Prevents rich countries from exploiting developing countries
- Trade is restricted because of tariff revenue and rent seeking
- In developing countries, governments have a difficult time collecting taxes from their citizens because much economic activity takes place in a n informal economy with few financial records
- The one area in which economic transactions are well recorded and audited is in international trade
- So this activity is an attractive base for tax collection in developing countries and is used much more extensively than in a developed countries
- Rent seeking is the major reason why international trade is restricted
- Rent seeking is lobbying for special treatment by the government to create economic profit or to divert consumer surplus or producer surplus away from others
- Offshore outsourcing occurs when one of the following occurs
    - Hire foreign labour and produce in other countries
    - Buy finished goods, components, or services from other firms in Canada
    - Buy finished goods, components, or services from other firms in other countries
        - Activity 2 and 3, are outsourcing
        - Activity 1 and 3, are offshoring