

Lecture Outline

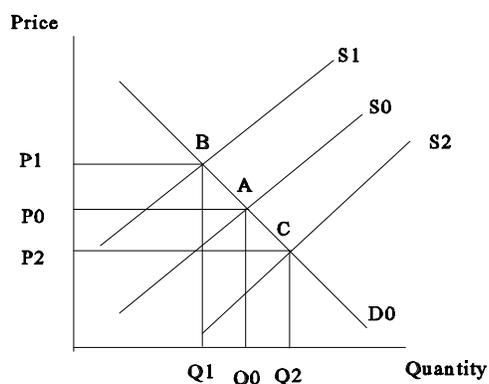
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1. Market Equilibrium

In Chapter 3, we explored the relationship between price and quantity demanded and quantity supplied; determine what were the determinants of demand and supply and how these determinants influenced demand and supply; and developed the concept of market equilibrium. In this chapter, we will examine changes in demand and supply; how transactions costs affect markets; intermediaries and arbitrage; and the role of government in the market economy.

1.1 Changes in Supply



As we discussed previously in Chapter 3, changes in supply can result from a variety of factors to include:

- a. Production Technology
- b. Resource Costs
- c. Prices of Related Producing Goods
- d. Producers' Expectations
- e. Number of Sellers
- f. Taxes, Subsidies, and Regulations

Let us assume from example, that the initial supply curve was  $S_0$  and the initial demand curve was  $D_0$  with equilibrium price and quantity  $P_0$  and  $Q_0$ .

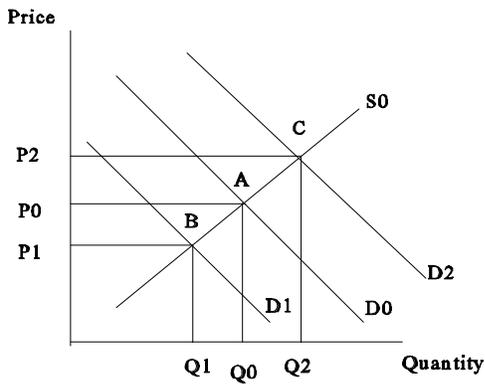
Now, let us assume that resource costs increase, leading to a decrease in supply from  $S_0$  to  $S_1$ . As illustrated above, the result of a decrease in supply is a higher equilibrium price ( $P_1$ ) and a lower equilibrium quantity ( $Q_1$ ). Conversely, if resource costs had decreased, then supply would shift outward from  $S_0$  to  $S_2$  and equilibrium price would decrease to  $P_2$  and equilibrium quantity would increase to  $Q_2$ .

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	Impact on Equilibrium Price	Impact on Equilibrium Quantity
Supply Decrease, Demand Constant	Increase	Decrease
Supply Increase, Demand Constant	Decrease	Increase

As illustrated above, there is a positive relationship between the shift of the supply curve and equilibrium quantity and a negative relationship between equilibrium price and the shift of the supply curve.

1.2 Changes in Demand



As previously discussed in Chapter 3, there are a variety of factors that influence demand, to include:

- a. Tastes and Preferences
- b. Income and Income Distribution
- c. Prices of Related Goods
- d. Numbers and Distribution of Population
- e. Expectations on Prices, Incomes, and Good Availability
- f. Taxes, Subsidies, and Regulations

Let us assume that initial price and quantity are again  $P_0$ ,  $Q_0$  and that the initial demand and supply curves are  $S_0$  and  $D_0$ .

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Now, let us assume that due to a famine that the population declines by 10%. All else remaining equal, demand shifts from  $D_0$  to  $D_1$  and equilibrium price and quantity shift to  $P_1$  and  $Q_1$ . As a result, equilibrium price and quantity decline. Conversely, if the population increases by 10%, then demand increases to  $D_2$  and equilibrium price and quantity shift to  $P_2$  and  $Q_2$ . As a result of the increase in demand, equilibrium price and quantity increase.

Thus, note that equilibrium price and quantity are positively related to shifts in demand.

	Impact on Equilibrium Price	Impact on Equilibrium Quantity
Supply Constant, Demand Decrease	Decrease	Decrease
Supply Constant, Demand Increase	Increase	Increase

### 1.3 Shifts in Supply and Demand

Note in the preceding cases, we examine the impact of a shift in one side of the market while holding the other side of the market constant. However, in reality, it is unlikely that the only one side of the market will be affected by a shift in one of its determinants while the other side of the market remains unaffected.

For example, if consumer tastes and preferences for a particular product change, it is likely that suppliers will notice the change in tastes and preferences and their expectations about the future demand for the good will also change.

This being said, there are 9 possible cases as illustrated in the following table.

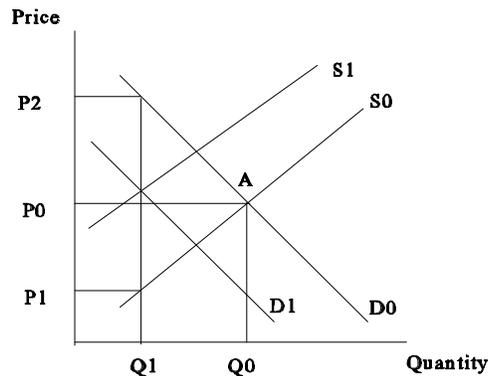
	Supply constant	Supply Decreases	Supply Increase
Demand Constant	Price constant Quantity constant	Price increases Quantity decreases	Price decreases Quantity increases
Demand Decreases	Price decreases Quantity decrease	Price variable Quantity decreases	Price decreases Quantity variable

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Demand Increase	Price increase Quantity increase	Price increases Quantity variable	Price variable Quantity increases
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We have already illustrated six of the nine cases where one side of the market (if not both) is held constant. We now examine the remaining four cases.

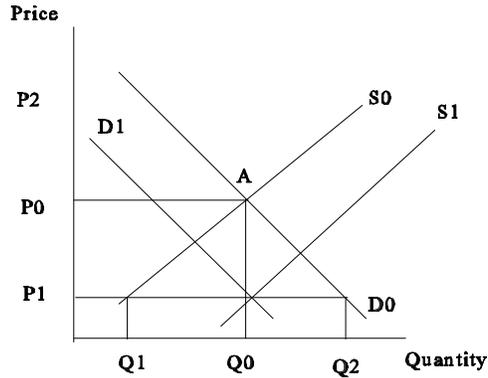
Case 1: Supply Decreases, Demand Decreases



In this case, we observe that equilibrium quantity will decrease but that equilibrium price is indeterminate and may vary between  $P_1$  and  $P_2$  depending on the magnitude of decline in supply and demand.

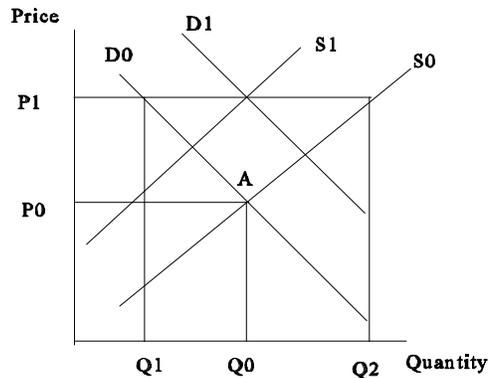
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Case 2: Supply Increases, Demand Decreases



As illustrated in Case 2, when Supply increases and Demand decreases, we are able to state that equilibrium price will decline but that equilibrium quantity is indeterminate. Equilibrium quantity will depend on the magnitude of the shifts in Supply and Demand.

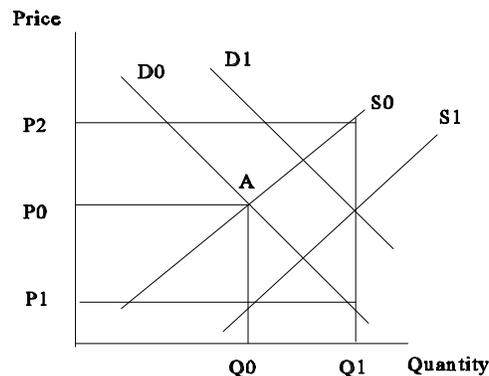
Case 3: Supply Decreases, Demand Increases



As illustrated in Case 3, when Supply decreases and Demand increases, we are able to state that equilibrium price will increase but equilibrium quantity is indeterminate.

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Case 4: Supply Increase, Demand Increase



In Case 4, we are able to state that equilibrium quantity will increase but that equilibrium price is indeterminate and depends on the magnitude of the shifts in Supply and Demand. If, for example, the shift in Supply is greater in magnitude than the shift in Demand, then we will be able to state that price and quantity increase.

2. Transaction Costs

We often notice that as we examine goods that we wish to purchase in different locations that there are often variations in price. At times, these variations in price can be significant, leading to the question, what is occurring that prices are not the same in all geographical locations.

This occurs because the provision of goods is not an instantaneous process. There are costs involved in the production and consumption of goods, costs that play a significant role in the market economy.

We refer to these costs as transactions costs, where transaction costs are costs associated with:

- a. gathering information about prices and availability; and
- b. mobility, or transporting goods, resources, or potential buyers between markets.

As we have previously discussed, there are opportunity costs involved in all economic decisions, and the buying and selling of goods is no different. There are often significant opportunity costs involved, and these costs result in differentials in market prices between geographical locations.

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How quickly a market moves towards equilibrium is dependent upon the transaction costs involved in the movement towards equilibrium, that is:

- a. How quickly and efficiently information flows between buyers and sellers;
- b. How efficiently goods and resources are transported within and across markets.

Let us take for example the recent development of auctions on the Internet. We can take any auction and observe how buyers respond to information on prices, quality, and actions of other buyers. Now imagine that this had to occur by a more primitive means of communication, for example, carrier pigeon. Obviously, the costs involved in buying and selling goods would dramatically increase if we had to rely on more inefficient means of communication.

We can extend this example to transportation. Merely consider the transportation costs involved in the shipment of goods via truck and horse.

## 2.1 Intermediaries

Between the producer and the consumer there are sometimes individuals who act as middlemen, stewarding the goods to market.

Intermediaries specialize in reducing uncertainty and transaction costs. Their role is to reduce the costs involved in conveying goods from the original producers to the final consumers, often adding value to the good during the process to make it more compatible with the final consumers' demands.

For example, consider the chain of intermediaries between the farmer and the final consumer of milk. The farmer may sell his milk to a milk buyer who in turn processes the milk into separate products (milk, cream, etc) and sells each of these products to a grocery chain who in turn brings these products to the local grocery store for you to purchase and consumer. This whole chain of events is much more efficient than you buying a cow and milking it to produce your own milk.

Now, why do intermediaries exist? Simple: PROFIT.

If an intermediary makes the correct decisions, then they will buy the goods from the producer and ship the goods to the consumer and make a profit by selling the good at a higher price than what they purchased it from the producer.

### 2.1.1 Arbitrage

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Arbitrage is the process of buying at a lower price in one market and selling at a higher price in another market, where the arbitrager knows prices in both markets and the price differential between the markets exceeds the transaction costs in shipping the good from one market to another market.

Let us examine this process more closely:

Georgia

1lb of Peaches = \$1.25

Information Cost = \$.05 per lb  
Transportation Cost = \$.15 per lb

Texas

1lb of Peaches = \$2.00

In this example, there is room for arbitrage. One could buy a pound of peaches and transport them to Texas for a total cost of \$1.45 per lb. This would result in a profit of \$0.55 per lb.

### 2.2.2 Speculators

A speculator is merely an individual who buys a good at one period in time with the objective of selling the same good at a later period in time for a higher price.

The stock market is a classic example of speculation at work. Investors buy stocks with the hope they will increase in price over time, so they may sell them at a profit (short-selling is merely a more complicated form of speculation).

## 3. Markets and Public Policy

To this point, we have only examined how taxes and subsidies drive a wedge between producer and consumer prices. We now turn to an examination of another government policy and its impact on the market.

To place this section into context, we merely have to look at rent control in New York (price ceiling) and farm price controls in the United States and the European Union (price floors). The monetary cost of these policies is easily in the billions of dollars a year, not to mention the inefficiencies these policies produce in terms of the allocation of resources.

### 3.1 Price Controls

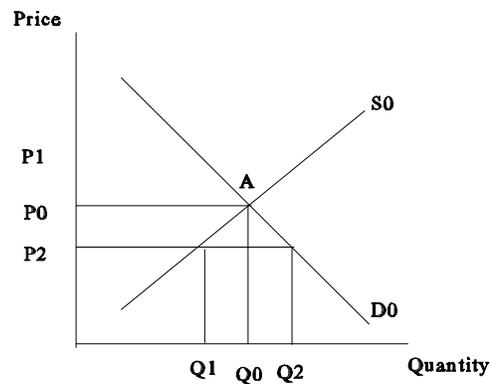
One laudable objective of public policy is the attempt to provide some measure of equality

through control of market prices. However, these policies come at a cost.

### 3.1.1 Price Ceilings

Price ceilings are when a maximum legal price is imposed on the market. The classic example of price ceilings is the policy of rent control in major metropolitan areas.

The normative argument for rent controls is that there is not sufficient low-income housing in the urban core (Manhattan for example). By imposing a maximum legal price, lower-income individuals will be able to consume housing in the urban core that would otherwise be unattainable.



Let us assume that P0, Q0 is the equilibrium price and quantity. Now,

the government imposes a maximum price of P2. What is the result?

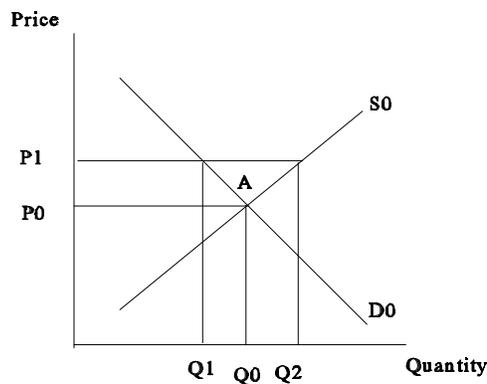
In the market, the price ceiling creates a shortage, that is, Q1 housing is supplied while Q2 housing is demanded. What will happen? Individuals will circumvent the price ceiling by offering bribes to landlords that will, in effect, raise the price of the housing to the market price.

However, there is a significant cost involved in the imposition of a price ceiling. First, individuals will incur a time-cost since not enough housing is available at the price ceiling. Second, as has occurred in New York, the price ceiling may not be sufficient enough for housing owners to recoup their costs, and thus building maintenance declines. Third, there is no financial incentive for builders to enter the market, thus over time, the shortage is exacerbated as housing is taken off the market and converted to other uses. There are many other costs involved. However, if society determines it is important enough to provide the opportunity for lower-income individuals to consume

this higher-priced housing, then one can only observe at state the cost of the policy.

### 3.1.2 Price Floors

A price floor merely imposes a minimum legal price in the market.



As illustrated above, the price floor results in a surplus in the market as suppliers provide  $Q_2$  and consumers only wish to consume  $Q_1$ .

In reality, the agricultural price support program is a good example of the price floor policy. The government, with the objective of providing support to farmers, sets the price for various products at a certain price. If the market exceeds the price, then there is no cost to the government. However, if the market does not meet the price, then the government buys the products at the support price. The government then stockpiles these goods for sale/use at a later date.

## 4. Government and the Market Economy

What government is supposed to do is a matter of great debate, not only among economists, but among philosophers, politicians, theologians, and anyone else with a opinion. In this section, we examine some of the argues for government intervention in the market economy.

### 4.1 Rationale for Government

#### 4.1.1 Legal Environment

One rationale that is widely agreed upon is the need for a legal environment within which the market can operate. Contracts must be enforceable, private property respected, money must be standardized and acceptable as legal tender, and so forth.

The scope of government is a question of political debate. Should the government try enforce any notions of equality (racial, religious, sexual, etc)? Should the government attempt to dictate within what limits you may use your private property?

#### 4.1.2 Enforcing Competition

Another rationale that is agreed upon but not as much as a stable legal environment is the need for the government to enforce competition. Should governments attempt to restrict the operations of monopolies (Microsoft, AT&T)?

### 4.2 Providing for Public Wants

Governments do have a role when the market fails. For example, if a firm emits pollution in its production process that goes downstream, then the firm does not view the pollution as an economic bad, but those individuals downstream view the pollution as an economic bad. In this case, the economic activity spills over to parties not directly involved in the economic activity.

#### 4.2.1 Externalities

Externalities can be both positive and negative. Pollution is a negative externality but education produces positive externalities (increasing human capital, lowering crime).

In the event of an externality, the market fails to capture the cost (benefit) of the externality. Thus, government can intervene to ensure that the polluter incorporates the social cost of pollution in their cost behavior.

#### 4.2.2 Public Goods

Public goods are those goods which are both nonrival and nonexclusive.

A nonrival good is a good in which one individual's consumption does not detract from any other individual's consumption (radio, tv). A nonexclusive good is a good in which access cannot be denied.

Because public goods are nonrival and nonexclusive, there is no financial incentive for the

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market to produce them. How many people would send \$30 to the Pentagon for national defense?

Thus, the government does have a role to provide those necessary public goods. The debate occurs in what is necessary and what is excessive.

#### 4.3 Income Redistribution

This role of government is entirely subjective. Should the government be involved in taking resources from one group of individuals and giving those resources to another group of individuals?

#### 4.4 Stabilizing Income, Prices, and Employment

Discuss

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An economist returns to visit his old school. He's interested in the current exam questions and asks his old professor to show some. To his surprise they are exactly the same ones to which he had answered 10 years ago! When he asks about this the professor answers: "the questions are always the same - only the answers change!"