

Demand and Supply of Natural Resources

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Topics

- ▶ 1. Supply and Demand of Natural Resources.
- ▶ 2. The Market Mechanism.
- ▶ 3. Changes in Market Equilibrium.
- ▶ 4. Elasticities of Supply and Demand.
- ▶ 5. Effects of Government Intervention - Price Controls.
- ▶ 6. Consumer and Producer Surplus.

Supply-demand analysis: why do we need it?

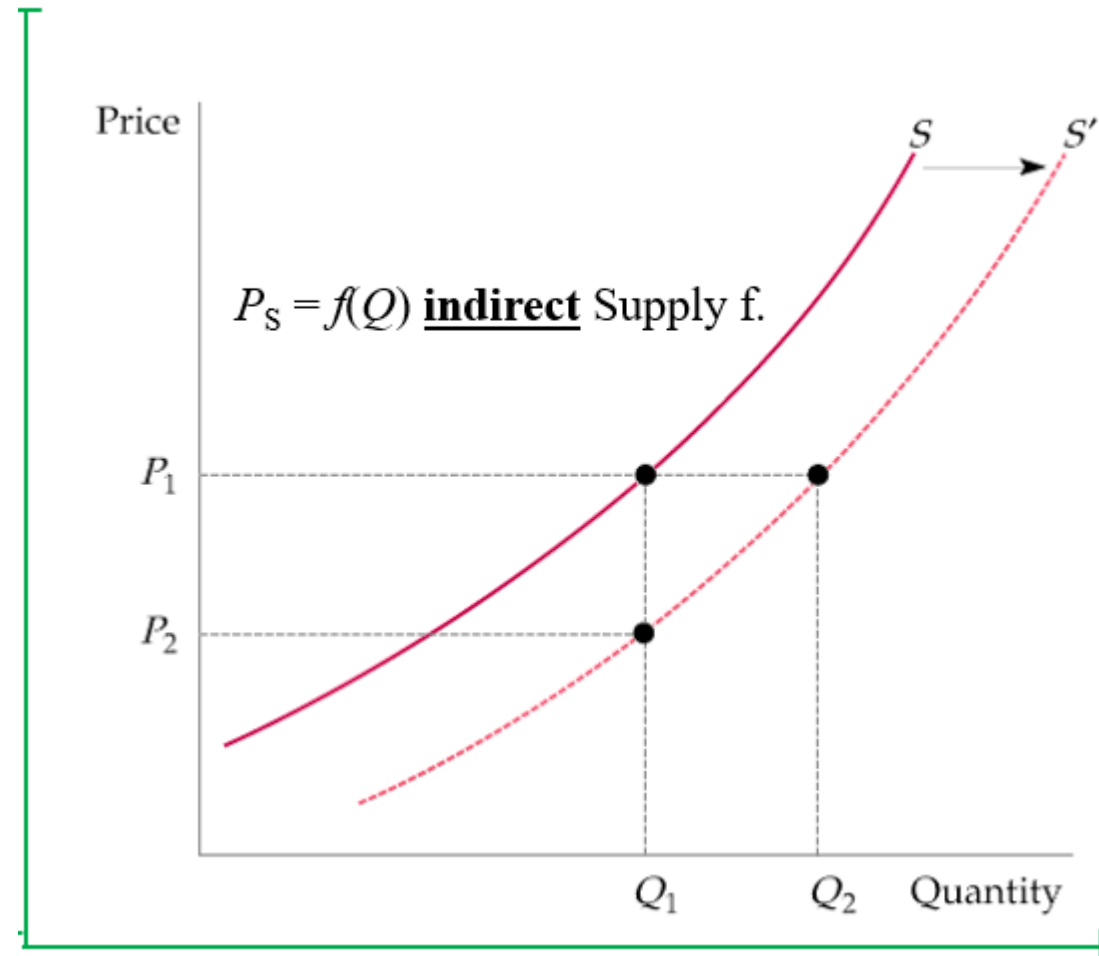
- ▶ Understanding and predicting how changing world economic conditions affect market price and production
- ▶ Evaluating the impact of government price controls, minimum wages, price supports, and production incentives:
 - ▶ Determining how taxes, subsidies, tariffs, and import quotas affect consumers and producers

The Wood Supply Curve

- Relationship between the price of the wood and the quantity of wood that the producers are willing to sell.

$$Q_s = f(P) \text{ direct Supply f.}$$

- The direct supply curve shows how the quantity of a good (wood) offered for sale changes as the price of the good changes.
- The supply curve is upward sloping: the higher the price of wood, the more firms are able and willing to produce and sell wood.
- If production costs fall, firms can produce the same quantity of wood at a lower price or a larger quantity of wood at the same price. The supply curve then shifts to the right (from S to S').



Other variables that affect the supply of wood. Shifting the supply curve.

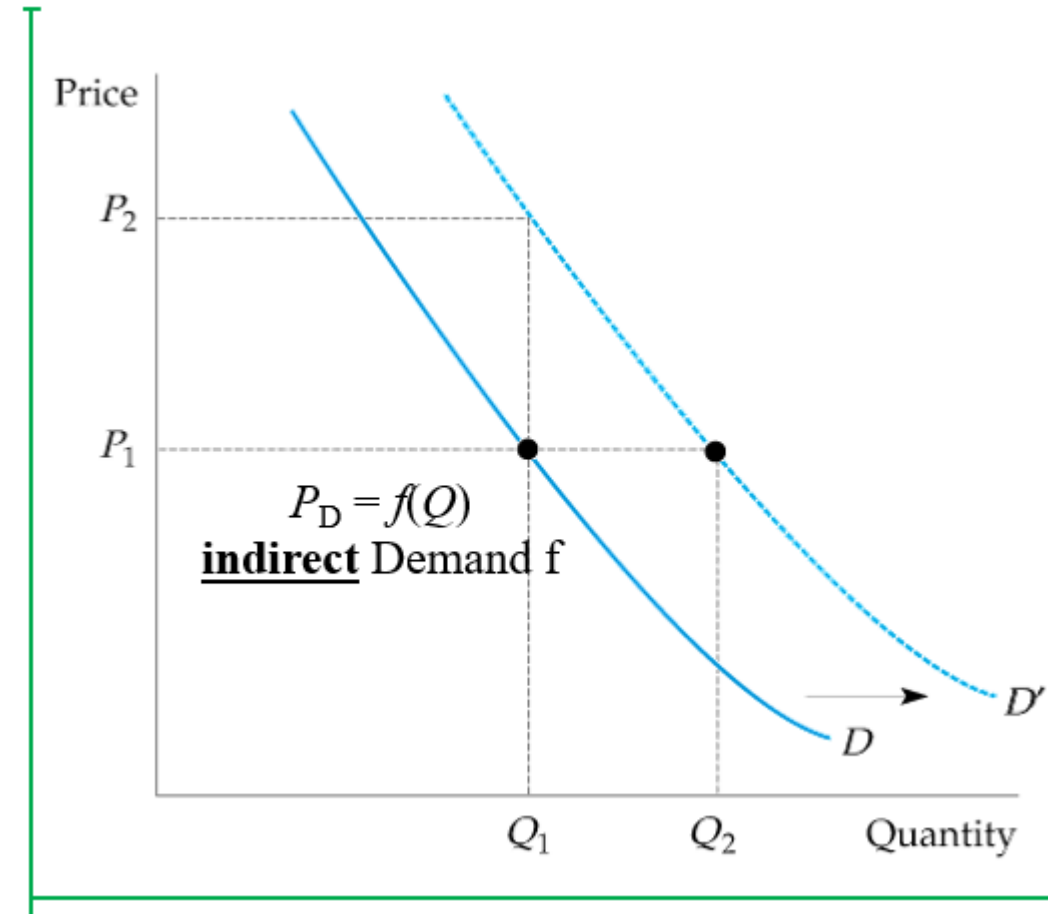
- ▶ The quantity that producers are willing to sell depends not only on the price they receive but also on their production costs, including:
 - ▶ Wages rates (labour force),
 - ▶ interest rates (cost of capital to be invested in the production activity), and
 - ▶ the costs of raw materials (to cut trees I need chainsaws that run on a combination of gasoline and oil).
- ▶ When production costs decrease, output increases regardless of the market price. The entire supply curve therefore shifts to the left.

The Wood Demand Curve

- ▶ Relationship between the price of the wood and the quantity of wood that consumers (firms producing furniture or people using wood for the stove or fireplace) are willing to buy.

$$Q_D = f(P) \text{ direct Demand f}$$

- ▶ The direct demand curve shows how the quantity of a good (wood) demanded by consumers changes as the price of the good changes.
- ▶ The demand curve is downward sloping: the higher the price of wood, the less wood consumers are willing to buy it.
- ▶ The quantity demanded may also depend on other variables, such as income and the prices of other goods. For most products, the quantity demanded increases when income rises. The demand curve then shifts to the right (from D to D').

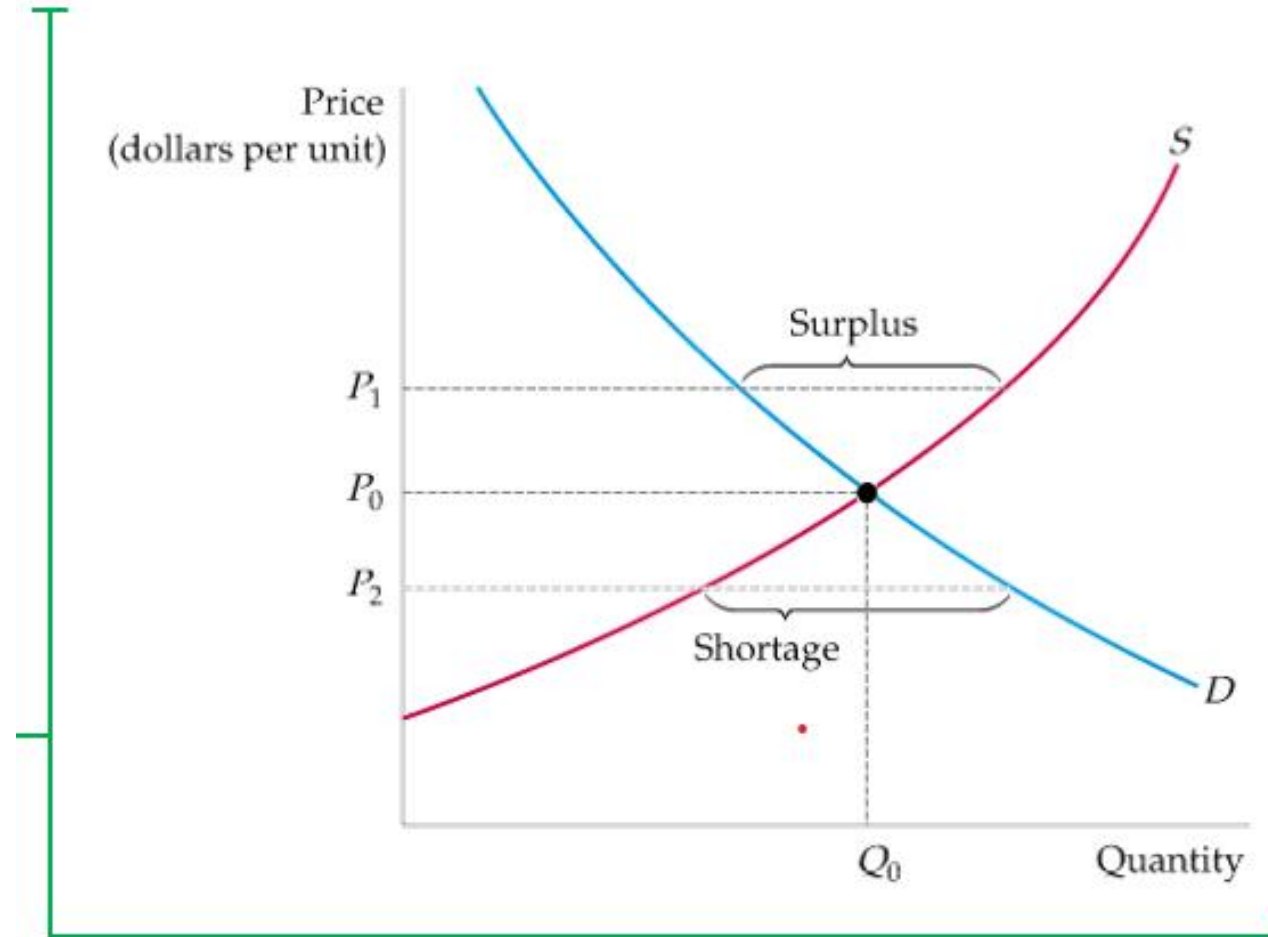


Other variables that affect the demand of wood. Shifting the demand curve.

- ▶ The quantity that consumers are willing to buy depends not only on the price they pay, but also on their income level.
 - ▶ If the price is constant, but the income level increases, the quantity of wood demanded increases. The demand curve shifts to the right.
- ▶ Effect of a price change of substitutes (plastic of furniture; gas for cooking; energy for cooking or heating):
 - ▶ If the price of plastic, gas, or energy were to decrease, some consumers (businesses and families) might switch from wood to other cheaper materials.
- ▶ Effect of a price change of complements (paint for wooden furniture; stoves):
 - ▶ If the price of paint for making wooden furniture increases, the demand for wood for making furniture decreases.
 - ▶ If the price of wood-burning stoves increases, consumer demand for wood decreases.

The market mechanism.

- ▶ The market clears at price P_0 and quantity Q_0 .
- ▶ At the higher price P_1 , a surplus develops (quantity of wood supplied by firms is larger than the quantity demanded), so price falls.
- ▶ At the lower price P_2 , there is a shortage (quantity demanded is larger than quantity supplied), so price is bid up.



Equilibrium.

- ▶ Equilibrium price or market clearing price:
 - ▶ Price of wood that which the quantity of wood supplied equates the quantity of wood demanded.
- ▶ Market mechanism:
 - ▶ Tendency in a free market for price to change until the market clears.
- ▶ This holds true if the market of wood is competitive:
 - ▶ None of the firms offering wood in the market and none of the firms or households buying wood in the market can individually affect the market price
 - ▶ Simply put, each of them is too small to influence the price through the quantity sold or purchased.