

AAE101: Intro to Ag. & Applied Econ.

Discussion Section 3

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Today's goal

- Understand the effects of government-imposed price controls by analyzing real-world examples of price floors and ceilings.
- Apply economic reasoning to evaluate market efficiency, shortages, surpluses, and policy trade-offs through problem-solving and team-based simulations.

Practice Questions

1. **Supply and Demand with a Tax:** Consider the following market for a good:

- Demand: $Q_d = 100 - 2P$
- Supply: $Q_s = 4P - 20$

- (a) Find the equilibrium price and quantity without a tax.
- (b) Suppose the government imposes a per-unit tax of \$12. Find the new equilibrium price and quantity.
- (c) Calculate the tax revenue.

*This handout is based on the corresponding handouts from previous years by Felipe Parra Escobar, Matt McKetty & Talita Silva. Modifications and additions in this version by Erick.

- (d) Compute the Deadweight Loss (DWL) due to the tax.
2. **Price Floor and Price Ceiling:** Using the original setup of question 1.
- (a) Suppose the government imposes a price ceiling at \$15. Determine the quantity supplied and quantity demanded. Is there a shortage or surplus? If so, how much?
 - (b) Suppose instead that the government imposes a price floor at \$30. Determine the quantity supplied and quantity demanded. Is there a shortage or surplus? If so, how much?
 - (c) Discuss welfare implications. Who benefits and who loses?
 - (d) Suppose with a price floor, consumers must wait in line for the good. How does this affect welfare? How does it compare to a tax in terms of inefficiency?
3. You will analyze and predict the effects of government-imposed price controls by working through real-world scenarios. Each team will act as analysts assessing the impact of price floors or ceilings using data and logical reasoning. Each team will receive two scenarios and must predict the market impact based on provided data.
- **Team 1 Economists:** Analyze market efficiency)
 - **Team 2 Consumers:** (Evaluate benefits and drawbacks for buyers)
 - **Team 3 Producers:** (Assess how suppliers are affected)
 - **Team 4 Government:** (Justify and defend the policy)

Scenario 1 - Gasoline Prices in Crisis: The government sets a maximum price for gasoline at \$2.50 per gallon due to an energy crisis.

- **Market Data Before Regulation:** The equilibrium price is \$4.00 per gallon and the equilibrium quantity is 1,000,000 gallons per day.
- **After Regulation:** Maximum price allowed is \$2.50 per gallon. Gasoline demand increases to 1,300,000 gallons per day, but the supply drops to 800,000 gallons per day

Team Tasks:

- Economists: Calculate the shortage and explain how it affects market efficiency.
- Consumers: Discuss how the policy helps some consumers but harms others.
- Producers: Explain how the policy affects their business and production decisions.
- Government: Justify why the regulation was introduced and discuss alternative solutions.

Scenario 2 - Agricultural Minimum Prices: The government guarantees a minimum price of \$1.50 per pound of wheat to support farmers.

- Market Data Before Regulation: The Equilibrium price is \$1.00 per pound and the equilibrium quantity is 500,000 tons per year.
- After Regulation the minimum price set at \$1.50 per pound. Wheat supply increases to 600,000 tons per year and the demand drops to 400,000 tons per year. The government buys the excess supply.

Team Tasks:

- Economists: Calculate the surplus and discuss efficiency loss.
- Consumers: Discuss how the policy affects food prices and affordability.
- Producers: Explain how farmers benefit and potential long-term effects.
- Government: Justify why the policy was implemented and suggest alternatives.

Debrief

- (a) Who benefits and who loses in each scenario?
- (b) What are the unintended consequences of these policies?
- (c) How does government intervention affect market efficiency?
- (d) Are there better ways to achieve the policy goals without creating distortions?