

PURPOSE

In this chapter we consider the unique problems of American agriculture and an overview of U.S. agricultural policy. The chapter presents the opportunity to revisit the topic of inelastic demand and to consider the topic of a price floor. It addresses the issues pertaining to the livelihoods of farmers, global agriculture more widely, and the problem of U.S. and world hunger.

For those who feel that a more detailed discussion of elasticity will help your students to understand some of the farm issues, there is an appendix to this chapter that discusses elasticity in some detail. Its coverage is a matter of the instructor's choice. A second appendix addresses target prices and deficiency payments.

LEARNING OBJECTIVES

The learning objectives in this chapter are:

1. to show the student the characteristics of American agriculture that lead to the “farm problem.”
 2. to acquaint the student with the history of U.S. agricultural policy.
 3. to demonstrate the effects of price supports and other policy choices on production and other variables.
 4. to revisit the concept of inelastic demand.
 5. to give the student practice in using supply and demand to analyze the farm problem and farm policy, and to consider the issues of concentration, environmental problems, diversity issues in agriculture, and biotechnology.
 6. to demonstrate to the student that government policy has both winners and losers and that the benefits of our farm programs accrue primarily to large producers of agricultural products.
 7. to discuss the role of U.S. farm subsidies, food aid, and genetically modified organisms on other countries in the world and to communicate the complexity of world hunger.
 8. to illustrate the economic conservative and liberal viewpoints about farm policy.
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LECTURE SUGGESTIONS

- Students tend to believe that huge crops are an unmitigated blessing for society. The idea that increases in supply can actually create problems for the sector is difficult for them. Use both graphs and numerical examples to show that supply increases cause decreases in both price and income when demand is inelastic. The numerical examples are much easier for most students to grasp than the graphs alone. You may wish to use Appendix 11-1.
- In the same way, students believe that huge crops are a benefit in terms of reducing world hunger. They do not understand that hunger is a consequence of poverty and not a lack of world food availability. High world agricultural production reduces food prices, which creates rural poverty among developing country farmers.

- Discuss the long-run decline of agriculture and the historical development of U.S. agricultural policy. This allows you to organize the rather confusing array of programs. It also makes the material more meaningful for many students whose families may have farmed generations ago.
- Look at the problem of surpluses created by price supports and show how this led to the use of supply restriction and target pricing programs.
- Carefully compare the various farm programs and emphasize that the groups that gain and lose from each are different. I have found that this helps students to understand and organize this material.
- Because I still have many students who come from small or medium-sized dairy farms, I am careful to emphasize the different policy effects on large and small farmers. These students tend to tune me out if I make sweeping generalizations about the economic inefficiency of farm programs. It is also important that students understand that large and corporate “farmers” are the primary beneficiaries of our agricultural programs.
- I try to avoid always referring to the farmer as “he.” As our students tell us, many women are farmers in their own right, and many others are full partners in running the family farm.
- You can add to the issue of diversity by discussing the role of Native Americans and migrant farmworkers in relation to farming and “the land.”
- A major issue in the country and world today is Donald Trump’s trade restrictions, which certainly have been harming U.S. farmers. Students will better understand the problems with this strategy in Chapter 12, but for now they should be alerted that this is not smart policy, in agriculture or in other sectors.
- Congress and the president continue to debate farm policies. Efforts to develop a new farm bill in 2018 failed. Ask students to research the latest issues, including expectations for a new farm bill.

ADDITIONAL DISCUSSION AND ACTION QUESTIONS

Some of the following additional discussion questions may be helpful in preparing lectures.

1. Graph the supply and demand data for sugar beets below. Then show what happens to price, quantity, and producers’ incomes if technological change shifts the supply schedule to the right by 3,000 units. Then discuss the inelasticity of demand.

<u>Price</u>	<u>Quantity Supplied</u>	<u>Quantity Demanded</u>
\$15	12,000	6,000
12	10,000	7,000
9	8,000	8,000
6	6,000	9,000
3	4,000	10,000

2. If the demand for grain sorghum is inelastic and supply increases due to a bumper crop, what will happen to equilibrium price, quantity, and the income of producers of grain sorghum? Show graphically and explain. (It is not necessary to use numerical values in this question, but be sure to draw a steep demand curve so you can represent to the students how a relatively small change in quantity is associated with a relatively large change in price.)
3. Draw the shift of supply that has occurred in the market for milk *over time* as technological advance has made it cheaper and easier to produce a hundredweight of milk. What has been the effect on real milk prices over time? What has been the effect on the equilibrium quantity of milk bought and sold? Would you expect this to encourage many farmers to leave the dairy industry? Why has the exodus of dairy farmers been slower than you would expect?

4. Draw supply and demand curves for oats. Label an effective price floor in the market. Remind students what it means to be “effective.” Label the quantity demanded (Q^D) and the quantity supplied (Q^S) of oats along the quantity axis. What is the problem that results? What must the government do to maintain the artificially high price of oats? Is this efficient? Is this “fair” to the consumer? taxpayer? large farmer? small farmer? other small business people? Remind students that contrary to what they would like to see, price floors are “high” and price ceilings are “low” in the graphs.

SOME ANSWERS AND COMMENTS ON THE TEXT DISCUSSION AND ACTION QUESTIONS

1. The inelasticity of the demand for farm products, along with the fluctuating supply, causes prices to be unstable. An increase in supply caused by a bumper crop will cause a large decrease in price and also a decrease in farm incomes. The idea of an increase in production and a decrease in income is new to many young students. The opposite is also the case. Students are usually surprised to learn that in a year of bad weather, overall farm income increases. Developing countries’ reliance on their own primary commodity production entails problems of price instability, declining terms of trade, and resulting financial problems.
2. Increase; yes.
3. The minimum price (or the support price) below which market price cannot go keeps the price from falling to the equilibrium level and rationing away the surplus. Another example of a price floor is the minimum wage.
4. Farmers put their least productive land into the supply restriction program and then farm their remaining acreage more intensively.
5. Student answers will vary, but should demonstrate the application of economic analysis and vocabulary.
6. Student activity.
7. Student activity.
8. Student activity.
9. Student activity.
10. Student activity.
11. Student activity.
12. Inelastic: medications, cigarettes, gasoline, alcohol; Elastic: candy bar brands, ice cream cones, bread.

(Appendix 11-2)

1. Price supports and target prices both can increase the income of farmers. But since price supports are minimum prices, below which price cannot fall, they create persistent surpluses. Target prices, on the other hand, do not create surpluses. Price is allowed to fall to the level that clears the market, and a subsidy in the amount of the difference between the target price and the actual price is paid on each unit the farmer sells. Both programs benefit farmers and cost taxpayers. The price support increases the price of food and thus hurts consumers, and the high price can also hurt our international competitiveness. The low price under a target pricing program actually acts as an indirect subsidy to consumers and encourages consumption. It is also an indirect subsidy to our farm exports, because it lowers the price of agricultural commodities. Both programs provide larger benefits to larger farms, because payments are based on the quantity of production.

SUGGESTED TEST QUESTIONS

Multiple-Choice Questions

- A bumper crop will _____ supply and _____ the price of a farm product.
 - decrease, decrease
 - decrease, increase
 - increase, decrease**
 - increase, increase
- The demand for most farm commodities is:
 - growing more rapidly than supply.
 - inelastic.**
 - decreasing over time.
 - a relatively flat downward sloping line.
- If demand is inelastic and the price of the product decreases, producers' incomes will:
 - not change.
 - increase.
 - decrease.**
 - Cannot say from given information.

Answer the next two questions on the basis of the following demand and supply schedules for wheat.

<u>Price</u>	<u>Quantity Supplied</u>	<u>Quantity Demanded</u>
\$6	100,000	50,000
5	80,000	55,000
4	60,000	60,000
3	40,000	65,000
2	20,000	70,000

- Equilibrium price and quantity will be:
 - \$4; 60,000.**
 - \$5; 60,000.
 - \$3; 40,000.
 - \$3; 65,000.
- If the government supports the price of wheat at \$5, there will be a:
 - shortage of wheat.
 - surplus of 20,000 units of wheat.
 - surplus of 25,000 units of wheat.**
 - shortage of 20,000 units of wheat.
- A reason the government might establish price supports for wheat could be to:
 - get rid of a surplus of wheat.
 - increase the ability of poor families to afford bread.
 - increase U.S. farmers' ability to compete in international wheat markets by lowering the export price of wheat.
 - increase the incomes of wheat farmers.**
- The largest share of government payments to farmers have gone to:
 - family farms.
 - growers of fresh fruit and vegetables.
 - large farms and agribusiness.**
 - small farms.

8. The goal of government supply restriction programs has been to:
 - a. increase the amount of farm products exported by the United States.
 - b. decrease food prices for consumers.
 - c. increase the price of farm products.**
 - d. increase U.S. demand for farm products.

9. Characteristics of agriculture include:
 - a. immobile resources.
 - b. extensive technological change.
 - c. inelastic demand.
 - d. All of the above**

10. When we say that price supports interfere with the rationing function of price, we mean that:
 - a. price supports cause too few resources to be allocated to farming.
 - b. price supports cause persistent shortages.
 - c. price supports cause persistent surpluses.**
 - d. price supports cause the market to reach equilibrium too rapidly.

11. Which of the following is *not* used to increase the demand curve for U.S. farm products?
 - a. supply restriction programs**
 - b. food stamps (SNAP).
 - c. the supplementary food program for women, infants, and children (WIC)
 - d. U.S. food aid to other countries.

12. When bad weather causes crop failures for corn farmers so that the market supply of U.S. corn decreases substantially:
 - a. the overall income of U.S. corn farmers will decrease.
 - b. the overall income of U.S. corn farmers will increase.**
 - c. almost all corn farmers go broke because of the crop failure.
 - d. the price of corn will fall to below the farmers' cost to produce it.

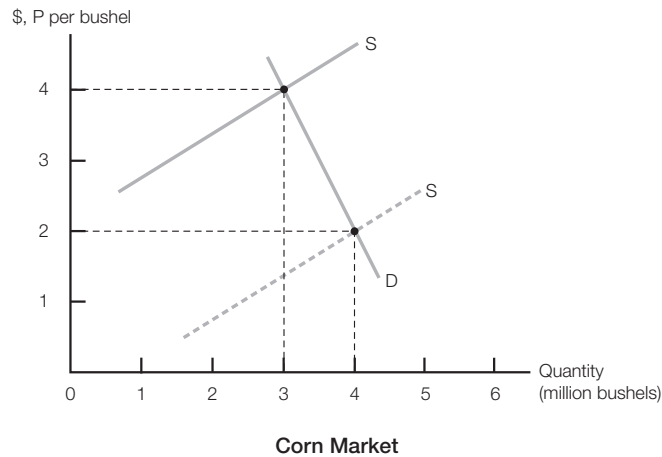
13. Because there has been extensive technological change in agriculture:
 - a. over time, supply has not been able to keep up with demand.
 - b. over time, supply has increased more than demand.**
 - c. the prices farmers receive for their products have increased in comparison to the prices of other products.
 - d. None of the above

14. When we say that price supports interfere with the rationing function of price, we mean that:
 - a. price supports create shortages.
 - b. price supports do not allow the price to fall to the equilibrium level, thereby eliminating the shortage.
 - c. price supports do not allow the price to fall to the equilibrium level, thereby eliminating the surplus.**
 - d. price supports shift the demand for agricultural commodities backwards.

15. Which of the following is a major contributor to world hunger?
 - a. lazy farmers
 - b. greed by wealthy consumers
 - c. poverty**
 - d. insufficient world food production.

(Appendix 11-1)

Answer the next three questions on the basis of the following graph for corn.



16. Initially assuming that the supply curve is S_1 , what is the total revenue to corn growers?
- \$12
 - \$12 million**
 - \$8 million
 - Cannot say from given information.
17. Now assuming that supply changes to S_2 , what will be the total revenue to corn growers?
- \$8
 - \$8 million**
 - \$12
 - Cannot say from given information.
18. On the basis of the changes in price and total income noted in the previous two questions (as well as the slope of the demand curve), we can say that:
- the supply of corn is inelastic.
 - the supply of corn is elastic.
 - the demand for corn is inelastic.**
 - the demand for corn is elastic.

(Appendix 11-1)

19. When supply increases, price will decrease by a greater amount:
- the more elastic is demand.
 - the more inelastic is demand.**
 - the flatter is the supply curve.
 - the flatter is the demand curve.

(Appendix 11-2)

20. Target prices differ from price supports in that:
- target prices indirectly subsidize both domestic and international buyers.
 - no surplus is created.
 - it is easier to calculate the cost of the policy than with price supports.
 - All of the above**

True-and-False Questions

1. More people live in the United States rural sector than in the urban sector. (F)
2. Most government benefits to farmers go to small farmers. (F)
3. Rural incomes are higher on average than urban incomes. (F)
4. The demand for most farm products is inelastic. (T)
5. Because demand for farm products is inelastic, lower prices mean lower incomes for farmers. (T)
6. Slovenia has the highest agricultural productivity as shown in the table in the text. (T)
7. “Dumping” is exporting a product at low prices, even below its cost. (T)
8. Poor African countries can have among the lowest levels of agricultural productivity in the world. (F)
9. The government can increase the price of farm products by either increasing the supply or decreasing the demand for them. (F)
10. Virtually all farmers and farmworkers are white males. (F)
11. Economic liberals are concerned about the fact that most agricultural subsidies go to larger farmers and agribusinesses. (T)
12. The underlying farm problem is that we simply produce too much farm products. (T)
13. Controversy about funding for food stamps (SNAP) was part of the reason that a new farm bill failed to pass in 2018. (T)
14. U.S. hunger is largely due to people’s poverty. (T)
15. Resources used in agriculture are relatively immobile. (T)
16. Historically, many U.S. farm policies originated with the Agricultural Adjustment Act of 1933. (T)
17. Over time the price of farm products, compared to the price of other products, has increased. (F)
18. Hunger in the United States has largely been eliminated. (F)
19. Food aid has almost eliminated hunger in the world’s conflict zones. (F)
20. Tariffs imposed by Donald Trump have had the effect of harming U.S. farmers. (T)
21. Short-run price fluctuation in agriculture results in part from inelastic demand. (T)
22. Donald Trump’s policies have been informed by his nationalistic-populism. (T)
23. Price supports create shortages. (F)
24. According to the text, genetically modified organisms will be the solution to world hunger. (F)
25. Based on the data in the text, the United States has the highest agricultural productivity in the world. (F)
26. U.S. agricultural subsidies harm poor farmers in developing countries. (T)
27. The Supplemental Food Program for Women, Infants, and Children (WIC) is viewed by economists as a very ineffective program for keeping healthcare costs down. (F)
28. Donald Trump has called for large reductions in funding for food stamps (SNAP). (T)

(Appendix 11-1)

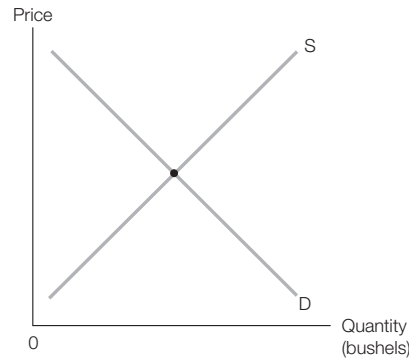
29. With inelastic demand, the percentage change in quantity demanded is greater than the percentage change in price. (F)

(Appendix 11-2)

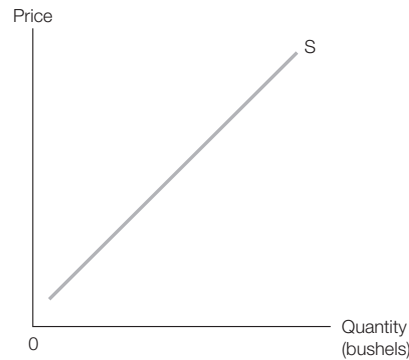
30. Deficiency payments are calculated as the difference between the target price and the actual price received by farmers, times the number of units sold by the farmers. (T)
31. Target prices result in lower agricultural prices. (T)

Short-Answer Questions

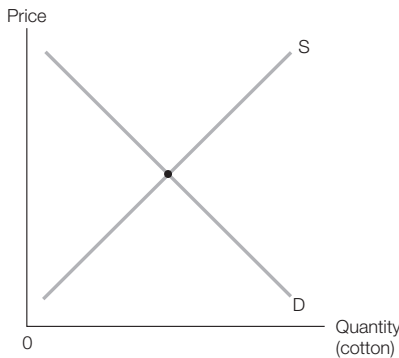
1. On the supply and demand graph for wheat shown below, show the effect of rapid technological change in wheat production. What happens to market equilibrium price (**decrease**) and the equilibrium quantity exchanged? (**increase**)



2. Draw a demand curve for millet, assuming that demand curve is relatively inelastic. Then suppose that supply fluctuates from year to year due to changing weather. What is the effect of demand inelasticity and supply fluctuations on the market price of millet? (**much fluctuation**) Show this on your graph.

**Millet Market**

3. Label an effective price floor (P_f) along the price axis in the market for cotton below. Label the resulting quantity demanded (Q^D) and the quantity supplied (Q^S) on the quantity axis. (Hint: The price floor must be above the market equilibrium price to be effective.) What is the economic problem caused by the price support? (**surplus**).



Cotton Market

4. Critics of farm policy argue that U.S. agricultural policies have contributed to increasing concentration in agriculture and to adverse environmental effects from farming. Discuss these criticisms of our farm policy.
5. Graphically and verbally discuss the following statement: Agricultural price supports interfere with the rationing function of price.
6. Use what you've learned in this chapter to discuss the problem of world hunger and the impact of U.S. food aid and agricultural subsidies on the world's poor.

Critical Thinking Question

U.S. government agricultural policy has been credited with making the transition of farmers from agriculture to other sectors more orderly, and it has been blamed for contributing to environmentally harmful agricultural practices and increasing concentration in agriculture. Are these criticisms of farm policy true? What should be the role of government in agriculture today?

INTERNET RESOURCES

<http://www.usda.gov>

(This U.S. Department of Agriculture site discusses agricultural policy from a noneconomic perspective.)

<http://www.nass.usda.gov>

(This site has the Census of Agriculture, which is conducted every five years. It is possible to obtain data for particular states.)

<http://www.census.gov>

(The Census Bureau also provides data on the agricultural sector.)

<http://www.fao.org>

(This site for the Food and Agricultural Organization of the UN provides information about U.S. agricultural subsidies and their effects on other countries.)

<http://www.ewg.org>

(This takes you to the home page of the Environmental Working Group, a not-for-profit organization that provides information on the distribution of U.S. agricultural subsidies.)

<http://www.fwjustice.org>

(This is the website of Farmworker Justice, an organization dedicated to improving conditions for migrant and seasonal farm workers.)