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Chapter 2: The Structure and History of Education Markets in the United States

Problems

1. What do economists mean by education markets, and how they differ from the market for a more traditional commodity such as cars or books?

    Economists refer to the interaction between consumers and producers of education as the education market, where students and their families are consumers, and schools or colleges are producers. Unlike other economic markets, the market for education often is not perfectly competitive because of barriers to entry, and there may be externalities if the benefits of education are not strictly private. Education is highly differentiated; education services take many different forms. The education market also is largely local, as traditionally students need to be close to the supplier to use the education services. In addition, there is often asymmetric information, since quality can be difficult to measure. Unlike typical commodities, there can be peer effects in production: the quality of education one receives can be affected by the characteristics of other consumers. Finally, education is a customer input technology, as the effort students exert affects the amount they learn.

2. Briefly discuss how education markets today differ from those in Benjamin Franklin's time.

    Compared with Franklin’s time when educational options were very limited, there are multiple options and choices at every educational level, from primary up through graduate school. Today, students in all states have access to publicly provided

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education through high school. Primary and secondary schools today also focus on a broad set of skills, rather than rote memorization, classical languages, and religion. In addition, there is a vast network of colleges and universities that includes many local community colleges, as well as many large public and private universities.

3. What is the difference between publicly provided education and publicly supported education? Can privately provided education be publicly funded?

The government's role in education defines the difference between publicly provided and publicly supported education. In publicly provided education, the government is in charge of the decisions of the school, such as resource allocation and management. In publicly supported education, the government provides funding for students (for example, via financial aid) or institutions (via grants), but is not necessarily involved in the daily decisions of providing educational services. Privately provided education can be publicly funded. An example of privately provided, publicly funded education is charter schools. Publicly provided education implies that the management of the education system is nongovernmental, but it does not reflect how it is funded.

4. Who are the different providers of education in the market? Give an example of each one.

There are three main providers of education: public education providers, not-for-profit private providers, and for-profit private providers. State and local governments are often the public providers of education; an example of public education is the University of Florida. Nonprofit private education providers are privately governed institutions that do not have shareholders; as a result, any profit that is made is reinvested in the institution. Common examples of private education can be non-sectarian, such as Harvard University, Stanford University, or Vanderbilt University,

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or religiously affiliated, such as Notre Dame University, Baylor University, or Brigham Young University. For-profit private institutions are privately governed institutions that operate as profit-maximizing firms and thus distribute profits to owners or shareholders. An example of this type of provider is the University of Phoenix.

5. What are the roles of government in the market for education?

The government has three main roles in the market for education. First, in many cases, the government is a producer of education through public institutions. Second, the government is a regulatory body that determines and enforces educational regulations. Third, the government plays a major role in education funding.

6. Briefly describe the four periods of the history of education in the United States.

The first period of the history of education in the United States was the Common School Movement in the mid-nineteenth century. This movement of educational reforms started making elementary school free and compulsory. The second movement, the High School Movement, saw marked increases in the number of students completing secondary education. This rise in high school students was largely due to the increasing returns of a high school diploma. The Expansion at the Postsecondary Level, the third period, was characterized by a large increase in the attendance and completion of postsecondary education. The rise in college attainment can be attributed largely to the World War II GI Bill and the Truman Commission Report. The fourth period of the history of education is the period we are currently in. This period has been characterized by stagnation in college enrollment but an increase in demand for skilled labor. It also has seen a shift to market-based schooling policies, such as school choice and school accountability.

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7. What evidence would support the contention that the supply of college-educated workers is inefficient?

Increases in the college wage premium over time (the wages of college graduates relative to high school graduates) indicate that changes in demand exceed changes in supply. After World War II, manufacturing jobs that did not require much formal education were common. Because of this, high-paying jobs for workers without college degrees were prevalent. As manufacturing declined, high-skilled service jobs that require a college education became more common. The countrywide shift in demand led to the wage premium we see today, but there has been only a sluggish increase in college graduates in response to the college wage premium. These trends suggest the United States is producing too few college-educated workers.

8. Draw a supply and demand curve for education services.

a. What is on each axis?

In typical supply and demand graphs, the quantity of a good is on the *x*-axis. In the market for education, the *x*-axis shows the quantity of education, which may be the number of students receiving a type or level of education. The *y*-axis should be a measure of the price of education, which is sometimes referred to as tuition.

b. What does the intersection of the supply and demand curve represent?

The intersection of the supply and demand graph represents the price in equilibrium for a given combination of educational quality and quantity. In equilibrium, the number of students demanding a type or level of education is equal to the number of spots supplied by institutions. Through the price of tuition, the quantity of education demanded equals the quantity of education supplied.

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c. Show what will happen to the supply and demand curves if more schools are built.

If more schools are built, the supply of education should increase without affecting demand. This is represented by an outward shift of the supply curve and no shift in the demand curve. Market forces will cause movement along the demand curve until a new equilibrium is reached that is characterized by more education and lower prices.

d. Show what will happen to the supply and demand curves if the wage returns to schooling increase.

If the wage returns to schooling increases, the demand for education should increase without affecting supply in the short run. This change would cause an outward shift of the demand curve and a movement along the supply curve until a new equilibrium is reached in which there is a higher quantity of education and a higher tuition level.

9. What is meant by an economy of scale in the production of education? When would a local school have a natural monopoly in education production?

Since building and closing schools is expensive, the average costs of operating a school decreases as more students enroll in the school. This decrease implies that it is cheaper to have a few large schools than many small schools, since the fixed costs of building the schools are distributed among more students. In this sense, there likely are economies of scale in the production of education. A natural monopoly occurs when economies of scale are sufficiently large that one provider is the most efficient way to serve the entire market demand. It is plausible to think of a local monopoly in a small rural community where it would not make sense to build more than one school. In large urban areas and their suburbs, the much larger size of education markets allows for many schools (and school districts), which erode the extent to which there is a

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"natural monopoly" in education production.

10. Assume that education leads to more civic participation and lower crime. Do these positive externalities of education mean that people will tend to get too little, just the right amount, or too much education without government intervention in these markets?

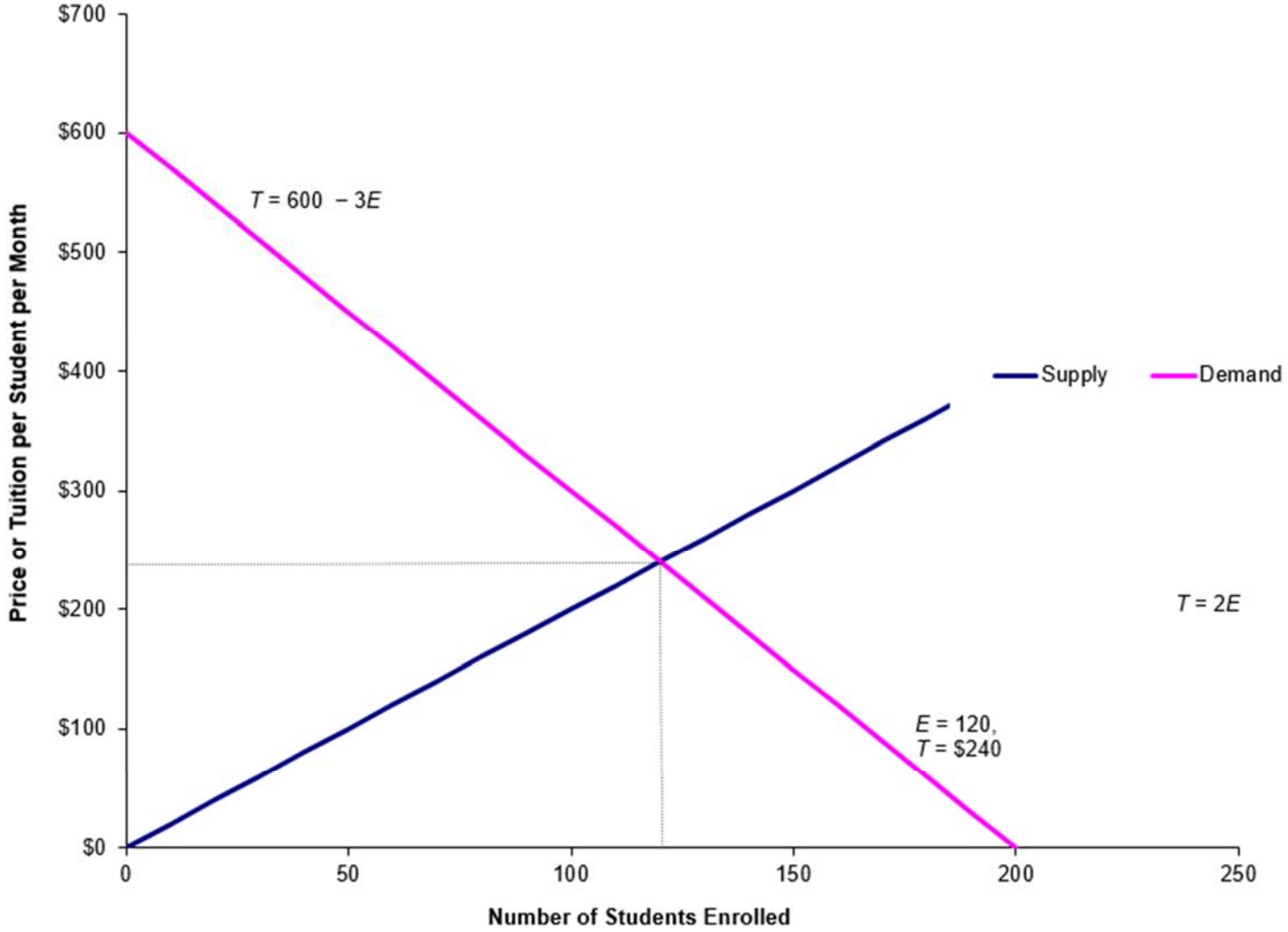
When there are positive externalities to education, individuals for whom the marginal social benefit and the marginal private benefit is less than the private cost will underinvest in the absence of government intervention. As a result, people tend to underinvest in schooling and get too little schooling in the absence of government intervention.

11. Consider the market for after-school programs, which are claimed to foster achievement and discourage undesirable activities like teen smoking. Suppose the demand for after-school programs is described by: $E_D = 200 - \frac{T}{3}$ where T is the posted tuition per month and E is enrollment. The supply of these programs is described by the function: $E_S = \frac{T}{2}$.

a. Plot the relationship between the demand for after-school programs and the tuition price. Plot the relationship between the quantity of after-school openings supplied and tuition. Label the axes and the demand and supply curves carefully. What is the equilibrium price and quantity?

In equilibrium tuition is $240 and enrollment is 120 students. $T^* = 240$, $E^* = 120$

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$700
$600
$500
$400
$300
$200
$100
$0
Price or Tuition per Student per Month
T = 600 − 3E
Supply
Demand
T = 2E
E = 120,
T = $240
0
50
100
150
200
250
Number of Students Enrolled

b. Suppose that the program prevents 1 in 10 enrollees from smoking, reducing future public health costs. How does the equilibrium enrollment level differ from an efficient outcome that incorporates the public benefit to the reduction in smoking? Comment on how this illustrates the nature of an externality.

In the equilibrium in part a students and their parents are considering only their own benefits at the margin to the after-school program. The efficient level of enrollment would occur at the level where the additional benefits to society combined with the private benefits are just equal to the price. As a result, the equilibrium enrollment in part a is less than the efficient level of enrollment. This gap illustrates an externality because future taxpayers (and others outside this direct transaction between school and student) benefit from the reduction in the costs that go with smoking. Thus, the presence of an externality motivates government intervention in this market.

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