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NEWSLETTER

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The Rising Cost of College: Tuition, Financial Aid, and Price Discrimination

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"The fact is, college has never been more necessary, but it's also never been more expensive."
—President Barack Obama, August 22, 2013[1]

The cost of college tuition has been in the headlines frequently in recent years. Conventional wisdom says the cost of a college education is rising—but is it really? The "sticker price" for a college education has risen three times faster than the inflation rate since 1978. However, when we adjust for inflation, expressing the cost in terms of constant dollars, and account for financial aid (which reduces the overall cost), average tuition and fees have remained effectively unchanged. For example, the College Board reports that average tuition and fees increased from $24,070 for the 2003-04 school year to $30,090 in 2013-14, but the average net tuition and fees (after financial aid) actually decreased from $13,600 per year to an estimated $12,460—a reduction of $1,140 over 10 years (in 2013 dollars).[2] Why the difference? The textbook explanation falls under the heading "price discrimination."

What Is Price Discrimination?

Price discrimination is the practice of selling the same good or service at different prices to different customers. It occurs in imperfectly competitive markets[3] when producers sell their product to buyers at a price that reflects their **willingness to pay**. For example, if you owned a business, you would likely prefer to sell your goods to each individual buyer for the highest price each buyer would be willing to pay. Unfortunately, this would require you to read consumers' minds and see inside their wallets. In the case of price discrimination, sellers infer consumers' willingness to pay a certain price by other means.

A simple example of price discrimination is the price of seeing a movie. At the theater ticket counter, you might notice that different groups of people (seniors and students) pay different prices. Why? Theaters realize that seniors and students (on average) have less disposable income and are likely to be very price conscious. As a result, they may choose not to see a movie at the full price. Offering a lower price to these groups gives theater owners the benefit of charging some moviegoers the higher (sticker) price without excluding less-affluent consumers, thereby filling theater seats that might otherwise be left empty. Of course, seniors and students benefit by seeing a movie they might not otherwise see.

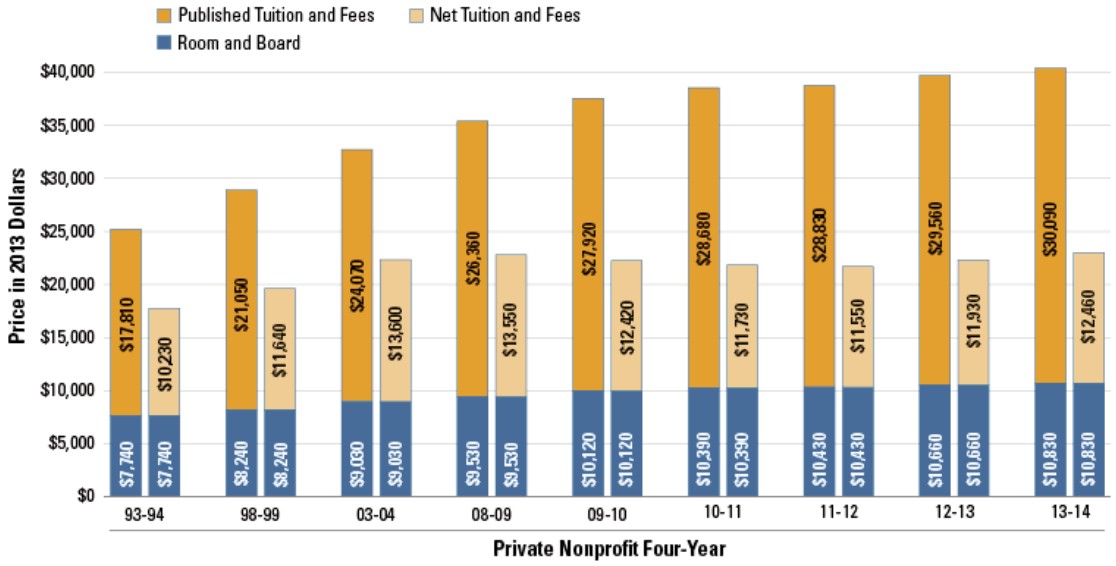
Sellers who price discriminate must overcome a few obstacles. First, sellers do not know how much each buyer is willing to pay, so they must find a way to infer this information. For our movie example, sellers (the theater owners) infer willingness to pay through age demographics and student status. Second, sellers need to establish a method that prevents all con-

sumers from paying the lower price. Movie theater owners might ask seniors and students to present identification to verify their age or student status. Finally, sellers must be able to prevent **arbitrage**, which means they must prevent consumers who buy an item at a lower price from reselling it at a higher price. Because moviegoers pay the ticket price as they enter the theater, movie tickets cannot be easily resold to other moviegoers.

How Do Colleges Practice Price Discrimination?

The price of tuition is clearly published on the website of nearly every college, but individual students often pay very different prices at the same institution. Colleges price discriminate by means of financial aid, which allows the college to subsidize the cost of college, essentially offering a discounted price to students who are less able or unable to pay full tuition. Colleges can infer willingness to pay from the detailed financial aid documents filed by families in the college application process. And because each financial aid package is individualized, the college can ensure that all students do not pay the lower price. Further, because students cannot resell their college education, there is no risk of arbitrage. In fact, for many students, earning a degree from one of the world's finest universities might be less costly than a degree from their local state college. In 2012, financial aid recipients at Harvard University paid an average of $12,000 toward tuition, room, board, and fees—receiving $41,000 in grants—and families earning less than $65,000 per year paid zero.[4] Of course, gaining admission to Harvard is very difficult; only 6 percent of applicants were accepted in 2012.

Average Net Price for Full-Time Students at Private Institutions Over Time



NOTE: The published average price for tuition and fees has increased 69 percent since the 1993-94 school year, while the average net price for tuition and fees has risen only 22 percent (adjusted for inflation).

SOURCE: Baum, Sandy and Ma, Jennifer. *Trends in College Pricing 2013*. New York: The College Board, p. 21. ©2013 The College Board; http://www.collegeboard.org.

What's the Bottom Line?

Price discrimination allows colleges to charge high tuition prices to those willing and able to pay without excluding less-wealthy students from the higher education market. Are there any downsides to this approach? Of course, the higher tuition prices paid by middle- and upper-income families subsidize the lower tuition prices paid by low-income families. As the gap between the sticker price and the discounted price paid by low-income students grows, the burden is increasingly shifted to wealthier families. If this trend were taken to its end, only the very rich would pay the full price; other families would be offered the financial aid "discount." But as economist Herbert Stein once said, "If something cannot go on forever, it will stop."[5] Following Stein's reasoning, some small private colleges are realizing the downside of their higher stated tuition prices as students experience sticker shock and look elsewhere. As a result, more than a half dozen private colleges recently reduced their sticker prices and also the amount of financial aid to students, hoping that the lower price will make their colleges more attractive to prospective students.[6]

Conclusion

Price discrimination allows colleges to charge many different prices for essentially the same service. This practice benefits students from low-income families. But, there is no free lunch: The cost burden has become increasingly progressive as wealthier families are paying more for education and subsidizing needier students. What's the lesson for prospective students? Select the school of your choice and apply for financial aid; your net price might be lower than you expected. ■

NOTES

[1] Flatley, Daniel. "President Obama Introduces Proposal to Make Higher Education More Affordable at Syracuse High School." *Watertown Daily Times* (NY), August 23, 2013; http://www.watertowndailytimes.com/article/20130823/OGD/708239805.

[2] In this calculation, inflation is measured by the consumer price index and tuition figures are the published prices of private institutions. See Baum, Sandy and Ma, Jennifer. *Trends in College Pricing 2013*. New York: The College Board, 2013; http://trends.collegeboard.org/college-pricing/figures-tables/published-tuition-and-fees-net-tuition-and-fees-and-room-and-board-2012-dollars-full-time. Financial aid data for 2013-14 are not yet available, so we use preliminary estimates here.

[3] Price discrimination is possible only in imperfectly competitive markets, which are markets where sellers have some control over the market price of the product. This is not possible in perfectly competitive markets where there are many buyers and sellers and no individual seller is large enough to influence the market price; these firms sell their products at the price determined in the broader market.

[4] "Record for Financial Aid." *Harvard Gazette*, March 26, 2012; http://news.harvard.edu/gazette/story/2012/03/record-for-financial-aid/.

[5] Stein, Herbert. *What I Think: Essays on Economics, Politics, & Life*. Washington, DC: AEI Press, 1998, p. 32.

[6] Korn, Melissa. "Colleges Try Cutting Tuition—and Aid Packages: Administrators Believe Lower Sticker Prices Will Attract More Students." *Wall Street Journal*, October 11, 2013; http://online.wsj.com/news/articles/SB10001424052702303643304579107683540651404.

Name_____ Period_____

Federal Reserve Bank of St. Louis *Page One Economics Newsletter*:
"The Rising Cost of College: Tuition, Financial Aid, and Price Discrimination"

After reading the article, answer the following questions.

1. What two factors must be accounted for to accurately compare true college costs over time?

2. Describe how colleges overcome the three obstacles necessary to price discriminate.

Three obstacles	How do colleges overcome the obstacles?
Sellers must infer a buyer's willingness and ability to pay.	
Sellers need to establish a method that prevents all consumers from paying the lower price.	
Sellers must prevent arbitrage (consumers buying an item at a lower price and then reselling it at a higher price).	

3. Why do colleges price discriminate rather than charge a single price that everyone must pay?

4. How and why have some colleges changed their pricing strategy recently?

5. Who benefits from the practice of price discrimination with regard to college costs?

6. Who bears the burden of the practice of price discrimination with regard to college costs?

Handout

Name_____ **Period**_____

Negative connotations are likely when you combine "discrimination" with most words (e.g., "racial discrimination"). But, is *price discrimination* bad?

The *hurdle method of price discrimination* is one method price-discriminating firms use to separate those who are willing to pay a high price from those who are more price conscious. The hurdle method is the practice by which a seller offers a discount to all buyers who overcome some obstacle. Consider a rebate offer as a hurdle. For example, imagine a good with a price of $100, but if consumers mail the completed rebate form, a portion of the packaging, and the sales receipt, the seller will refund $20. In essence, buyers who use the rebate pay a lower price if they are willing to "jump the hurdle" that the rebate provides. The rebate allows the seller to offer a discounted price ($80) to buyers who are not willing to buy a product at the higher price. In doing this, sellers attempt to divide buyers by their *reservation price*, which is the highest price a particular buyer is willing to pay for a good. Buyers with higher reservation prices (those willing to pay a higher price) are less likely to jump the hurdle, so they pay the higher price ($100). In our example, the seller is dividing consumers into two segments: (i) those whose reservation price is above $100 (who will pay the full price) and (ii) those whose reservation price is between $80 and $99 (who will pay the lower price of $80). Other types of hurdles might require buyers to wait for a longer time period or accept the same good but of a different quality to buy at the lower price.

Of course, this is not a perfect hurdle—it doesn't perfectly separate consumers by reservation price. There are some consumers with higher reservation prices who might jump the hurdle and fill out and mail the rebate form and other required materials. And some buyers with lower reservation prices might not be willing to jump the hurdle and do not buy the good.

So, Is Price Discrimination a Bad Thing?

Believe it or not, price discrimination does have benefits. In the end, sellers can sell more goods by using price discrimination than if they sell only at one price. The extra units sold create additional profits for the firm (assuming the goods are sold above the cost of production). In short, sellers can expand the market for their product by offering it at different prices to different consumers.

Buyers also benefit from price discrimination. Those with lower reservation prices would be excluded from buying the good if the rebate were not offered. In this case, some buyers whose reservation price is at least as high as the discounted price—and are willing to jump the hurdle—benefit from price discrimination. Of course, some buyers with high reservation prices might pay more than if the firm had not chosen to price discriminate. If the seller were to pick one price rather than two, the single price would probably be lower than the highest price under price discrimination. In our scenario, instead of price points at $100 and $80, perhaps the single price would have been $95.

How can the following tactics be used as hurdles?

1. Coupons

2. Special sales offering discounted prices from 4 a.m. to 6 a.m.

3. Books released as hardcover copies for $40 when first published and then as paperbacks for $8 one year later

4. Movie openings in premium theaters, then discounted theaters, then DVD release

5. Commercial airlines with restricted supersaver airfares