

Lecture 1 – Scarcity

Opportunity Cost

General Idea You may have heard, “There is not such thing as a free lunch.” Economists are very fond of this phrase. What do you think it means?

Every choice you make has a next best choice you could have made. Economists call this **opportunity cost**.

Let’s say I gave you \$20. How would you spend it? If I said you had to choose your next best choice what would it be?

Explicit vs. Implicit Costs

Opportunity cost isn’t only about money changing hands – it’s about everything you give up, including things you already own.

- **Explicit costs:** out-of-pocket costs – money you actually pay (tuition, fees, supplies).
- **Implicit costs:** the value of what you give up without paying anyone – most commonly your time (the wages you could have earned instead, the sleep you didn’t get).

Total opportunity cost = explicit costs + implicit costs.

Education

What is the opportunity cost of attending this class? What is the opportunity cost of you being in this degree program? What is the explicit cost here? What is the implicit cost?

This is implicitly about the scarcity of your time.

K12

Now, imagine you’re teaching a class to 5th graders. You want to do an activity where students create some art. What is the opportunity cost of this choice?

Instead, imagine you’re a superintendent deciding where to spend your budget. How does opportunity cost apply here?

Higher Ed

How about you’re in university administration and you decide to build a new building?

How should opportunity cost affect decision making?

It changes the question from “is this a good thing?” to “is this best thing I can choose?”

Budget Constraints

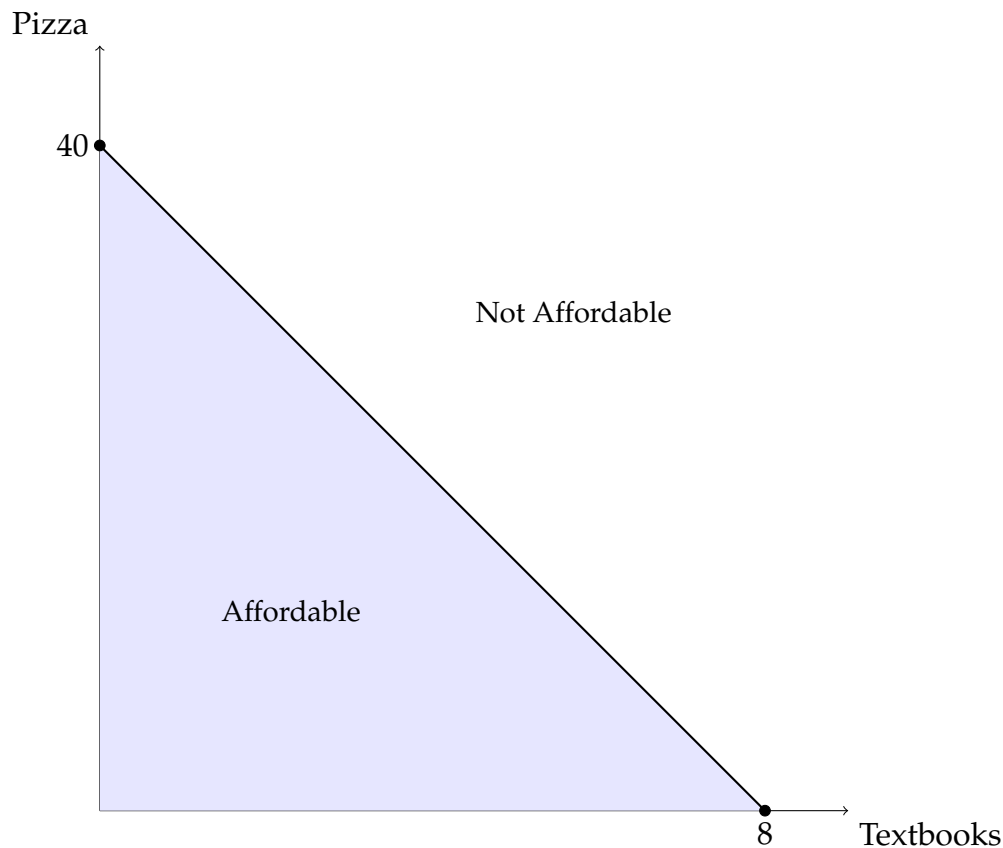
This idea is often illustrated through budget constraints. We typically have 2 goods in our problems (why? – *so we can draw it in two dimensions; one good on each axis. The same logic holds with more goods, we just can't picture it as easily.*)

Let's think about the grad student problem. You need to buy textbooks and pizza

Let's say your budget is \$400 and textbooks cost \$50 and pizza costs \$10. What can you tell me about how people could spend their money?

What if they spent it all on food? All on textbooks? Could they make other choices?

What does this look like as a picture? Where in the picture is affordable? Where is not affordable?



Budget constraint: $\text{Income} = \$400$, $P_{\text{textbooks}} = \$50$, $P_{\text{pizza}} = \$10$

What does this look like as an equation?

$$400 = 50 * \text{textbooks} + 10 * \text{pizza}$$

What about a more general formulation?

$$Income = P_x * X + P_y * Y$$

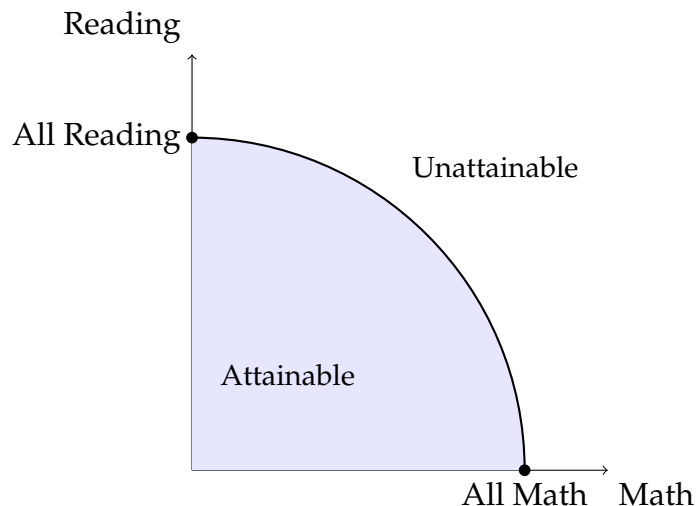
What is the slope of the line? (Figure this out visually and with algebra)

Production Possibilities Frontier

One way to think about opportunity cost is to think about the production side of things.

How much can I produce? What are my choices?

If school spent all their time teaching math how much could they produce? All their time teaching reading? Picture?



Production Possibilities Frontier: Math vs. Reading instruction

What is the slope?

Bowed-Out vs. Straight-Line PPF

Notice the curve is bowed outward (concave to the origin) rather than a straight line. Does the slope stay constant as you move along the curve, or does it change?

If every resource (every teacher, every hour of class time) were equally good at teaching math and reading, the PPF would be a straight line – the opportunity cost of trading one for the other would be the same no matter where you started.

Because most resources are better suited to one subject than the other, the PPF bows outward: as a school shifts more and more time toward one subject, it has to pull in

resources that are less and less suited to it, so the opportunity cost of each additional unit keeps rising.

What would make a school's PPF closer to a straight line? What would make it bow out even more?

What are other examples from education?

What would be an example I think about? (Teaching and research)

What would shift this out? (More teachers, more instructional time, better technology, teacher training)

What would shift this in? (Budget cuts, teacher shortages, an unfunded mandate that eats into instructional time)

Wrapping Up

Opportunity cost, budget constraints, and the PPF are three ways of looking at the same idea: scarcity affects choice.

Opportunity cost says every choice has a next-best alternative you give up.

Budget constraints show the choices a consumer can afford, given limited income and prices.

The PPF shows the choices a producer – a school, a district – can afford, given limited resources.

In every case, the question isn't "is this choice good?" – it's "is this the best choice I could make?"

How does this apply to today's readings about school finance?