



## Revenue, Profits, and Price: Crash Course Economics #24

Crash Course: Economics

<https://youtube.com/watch?v=UWlmfFax8EW>

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Adriene: Welcome to Crash Course Economics, I'm Adriene Hill Jacob: and I'm Jacob Clifford, and I have a confession. Economists' perfect little models don't exactly reflect real life. Which is disappointing. Adriene: Don't worry. You're not wasting your time. Microeconomics explains ideas and concepts in pretty broad terms, and leaves the business specifics to other courses like accounting, management, and marketing. Understanding economics can help entrepreneurs become better decision makers. Think of it like a liberal arts education â€” it's not where you go to learn any specific job â€” but it can help you see the big picture. [Theme Music] Jacob: Let's say a lawyer stops practicing law and decides to open up a pizza parlor. Let's say his total revenue from selling pizza is \$50,000 and he has to pay \$20,000 to cover stuff like the ingredients, the oven, rent, and wages. Now, an accountant would calculate his profit, the revenue minus the costs, as \$30,000. Not bad. But an economist recognizes that there's a cost missing: the opportunity cost. Our pizza entrepreneur loses the income he would have earned by being a lawyer, let's say \$100,000. If you factor that in, he is actually losing \$70,000. But he's his own boss. He might be happier running a pizza shop even though he is making less money. Well, maybe, but the point is, you have to factor in these implicit benefits and costs when you make decisions. So there's actually two types of profit. Accounting profit, which is revenue minus just explicit costs, those traditional out-of-pocket costs you think of when you run a business. And there's Economic profit which is revenue minus explicit and implicit costs â€” which is those indirect opportunity costs. Adriene: In this example, putting a dollar price on opportunity cost is pretty easy. It's just the income he's not earning as a lawyer. Maybe the idea of putting a price on intangible implicit things seems a little strange, but you do it all the time. When you're deciding whether or not to get a job you calculate the explicit costs â€” like how much it costs to get to work every day, but also the implicit costs â€” the value of the things you have to give up. Maybe you're giving up the money you could earn doing some other job, time with family and friends, or the opportunity to binge watch Gilmore Girls. How much that actually costs depends on the individual, but if the wage offered is greater than the cost of all those things, you take the job. Businesses use this same logic. They calculate their potential revenue and their costs of production, including implicit costs, to make informed decisions. This means that companies in competitive markets don't make very much profit. In fact, economists argue that they make no economic profit. To be clear, companies need to make accounting profit to stay in business, so they do make a profit, just not above and beyond their opportunity costs. Here's why: If you're the first one to start selling glow sticks at a rave, you might make some economic profit. You would cover the cost of glow sticks and possibly all of your opportunity costs, the money you could be earning doing something else. But if you're making a ton of extra money on top of that, it's likely that glow stick competitors will jump in the market. Competition will lower the price and reduce your sales. New vendors will continue to enter until all that extra profit disappears, just like the beautiful light of a glow stick fading away on Sunday morning. Businesses that stay in the market make just as much as they would doing something else. In other words, they have zero economic profit â€” that's what economists call normal profit. And it's the minimum level of economic profit a company needs to stay in business. But remember, this is only in very competitive markets that have low barriers for entry. If it's hard for other companies to enter a market than a business can earn economic profit. Jacob: So now, let's look at the cost of production. The actual cost of producing things. Economists point out that there's two types of costs: there's variable costs and fixed costs. Variable costs change with the amount produced. So, a variable cost for a pizza restaurant is the costs of ingredients, like wheat and cheese, and the wages paid to workers. The more pizza you make, the more of those resources you need, and the higher those costs. But, fixed costs, as you might imagine are fixed. The cost of an oven or

rent don't change, even if you produce more pizza. Now, together, fixed costs and variable costs make up the total cost for a specific number of pizzas. Now, Average cost, or the cost per unit, is the total cost divided by the number of output. The average cost of producing most things initially falls as more is produced. So if the owner of the pizza shop spends \$10,000 on a brand new oven, the average cost of that very first pizza produced is gonna be about \$10,000. The average cost of producing two pizzas would be around \$5,000. And once you get to 10 pizzas, it's like \$1,000 â€” that's an expensive pizza. The more units he makes, the lower the average cost per pizza, because fixed costs can be spread over a large number of units. Now obviously the owner wouldn't have bought that oven if he expected only to make 10 pizzas. Buying expensive equipment only makes sense if you plan on making a lot. That's one reason why large companies often have a cost advantage over small companies. Adriene: So, the cost to produce only one car would be really, really high. Like, millions of dollars. But the average price of a new car in the US is over \$33,000. To keep their average cost down, car manufacturers make hundreds of cars per day in huge, expensive factories. Their total total costs are astronomical, but the average cost per car is relatively low. Unless you want an Aston Martin or something. This is called economies of scale. Companies that produce more can utilize mass production techniques and spread out their fixed costs over a lot of units. Economies of scale work so well, some companies get big enough to dominate their industry and limit competition. We'll get to that. For now let's go back to the pizza example. Economies of scale means that a larger pizza restaurant may have a slight cost advantage compared to a smaller restaurant because they can afford things like ovens with conveyor belts. To get the average cost to fall even further, a restaurant could automate the entire process and have robots produce 1000 pizzas per hour, but that doesn't make sense if no one wants to buy all those pizzas. Although it's great to keep costs down, the goal of a business is not to have the lowest average cost. The goal is to make the right number of pizzas that maximize profit. To produce the right amount, a business should follow the profit maximizing rule: continue to produce as long as the marginal revenue of the last unit produced is greater or equal to the marginal cost. This is often shortened down to â€” produce where MR equals MC. â€” Let's break it down. Marginal revenue is the additional revenue earned from selling another unit. So if a pizza company can sell every pizza for \$10 then their marginal revenue for each is \$10. Marginal cost is the additional cost of producing another unit. It is the change in total cost from producing one more pizza. So if the marginal cost of another pizza is \$5 and you can sell it for \$10 then you should definitely produce that pizza. You would make a \$5 profit off it. If the marginal cost of next pizza is \$9 then you should produce that pizza too. But, if the marginal cost of the next pizza is \$12, you shouldn't make it. The additional cost is greater than the additional revenue. Notice in this example the marginal cost is increasing. That's true for the production of almost everything. The more you make, each additional unit is eventually going to cost more. Let's learn why in the Thought Bubble Jacob: Businesses have all kinds of variable costs, but let's imagine a pizza shop where the only variable cost is labor. And while we're using the power of imagination, let's say that they're making rainbow flavored pizza. Anyway, when one worker is hired, that worker does absolutely everything himself. He pures the rainbows, assembles the pizza, puts it in the oven, and delivers it. But, when a company hires a second worker, they can start to specialize. One worker prepares the ingredients while the other makes the pizza and puts it in the oven. Now, this specialization decreases the marginal cost of each pizza. If one worker can make 5 pizzas in an hour, but two workers can produce 20 pizzas then the additional cost of each of those pizzas will be lower. But the benefits of specialization are limited. As the company continues to hire more and more workers, the total amount of pizzas they produce each hour is going to increase at a slower rate. They've run up against the law of



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diminishing marginal returns. As you add variable resources, like workers, to a set number of fixed resources, like ovens, the additional output generated from each additional worker will eventually decrease. There are just too many cooks in the kitchen. Now, eventually, they'll get to a point where hiring another worker only adds one more pizza to their hourly total. Now, the marginal cost of that last pizza is huge. And, it's likely to be higher than the additional revenue the company is gonna get from selling that pizza. So to maximize profit, a company should make sure they produce the right number of pizzas. Where the marginal cost of the last unit produced is going to be up to, but not greater than, the marginal revenue. Adriene: Thanks Thought Bubble. The Law of Diminishing Marginal Returns applies to all sorts of tasks. For farmers, there's likely to be a large additional yield from fertilizing a field for the first time, but each time they fertilize the additional gains diminish. At some point, too much fertilizer can actually cause the total yield to fall. This also applies to studying. The returns from your first hour of studying are high. Instead of failing your final exam, you may get a C. Another hour of studying may get you a B and another hour may get you up to a B+. But every hour you get lower and lower returns. And, again at some point maybe the twelfth hour of studying your grade would actually go down since you stayed up all night and fell asleep during the test. Understanding this law helps people balance costs and benefits, but there's one more cost we need to cover: sunk costs. A sunk cost is a cost that's already been paid and can't be recovered. Economists stress that sunk costs shouldn't be included when making future decisions. Assume a business spends 2 million dollars developing a new product, and then no one wants that product. They have to come up with something else. The money spent on developing the first product is a sunk cost and should be ignored moving forward. This type of rational decision making seems like common sense, but behavioral economists point out that people make irrational decisions all the time. Think about dating. Imagine you've been with someone for a couple years. If your relationship starts going sour, you might try to ignore the red flags. Who wants to give up on a relationship that you've invested so much time in? Economics tells us to think about sunk costs and focus instead on the benefits and costs in the future. Get outta there! Jacob: So there you have it. Everything you need to know to run your own business. Except, not really. Economics explains business decision making in broad terms. Adriene: If you really want to learn all the details, become an entrepreneur and start a business. And if you ever get interviewed by Fortune magazine or The Wall Street Journal, make sure to tell them that it all started here, with Crash Course Economics. Thanks for watching, we'll see you next week. Jacob: Crash Course Economics was made with the help of all these nice people. You can help with our costs by subscribing to Crash Course at Patreon, where your support will help keep Crash Course free, for everyone, forever. And you get great rewards. Thanks for watching and DFTBA! Adriene: Let's break it down. Marginal revenue is the additional revenue earned from -- [crashing noise] [laughter] Are you OK?