

Chapter 1: Five Foundations of Economics

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What is Economics?

Economists study how decisions are made. Examples of economic decision include whether you should buy or lease a car, sublet your apartment, or buy that Gibson guitar you've been eyeing. And just as individuals must choose what to buy within their limits of their income, society as a whole must determine what to produce from its limited set of resources.

Our wants and needs are practically unlimited, but resources available to satisfy these wants and needs are always limited. The term used to describe the limited nature of society's resources is **scarcity**. **Economics** is the study of how individuals and societies allocate their limited resources to satisfy their practically unlimited wants.

Microeconomics and Macroeconomics

Microeconomics (micro) is the study of individual units that make up the economy, such as households and businesses. **Macroeconomics** (macro) is the study of the overall aspects and workings of an economy, such as inflation (an overall increase in prices), growth, employment, interest rates, and the productivity of the economy. Consider a worker who gets laid off and becomes unemployed; is this an issue that would be addressed in microeconomics or macroeconomics? The question seems to fit parts of both definitions. The worker is an individual, which is micro, but employment is one of the broad areas of concern for the economy as a whole, which is macro. However, because one worker is laid off, this is a micro issue. When many workers are laid off, the result is a higher unemployment rate across the entire economy. Then the issue is broad enough to be studied by macroeconomists. However, macroeconomics is more than just an aggregation.

Macroeconomists examine, among other things, government policies regarding the federal budget and money supply, the reasons for inflation and unemployment, economic growth, international trade, and government borrowing – topics that are too complex to be understood using only microeconomic analysis.

What are Five Foundations of Economics?

The study of economics can be complicated, but we can make it very accessible by breaking it down into a set of component parts. The 5 foundations of economics are:

- **Marginal thinking**
- **Opportunity cost**
- **Trade-offs**
- **Incentives**
- **Value created from trade**
- **Economics is everywhere**

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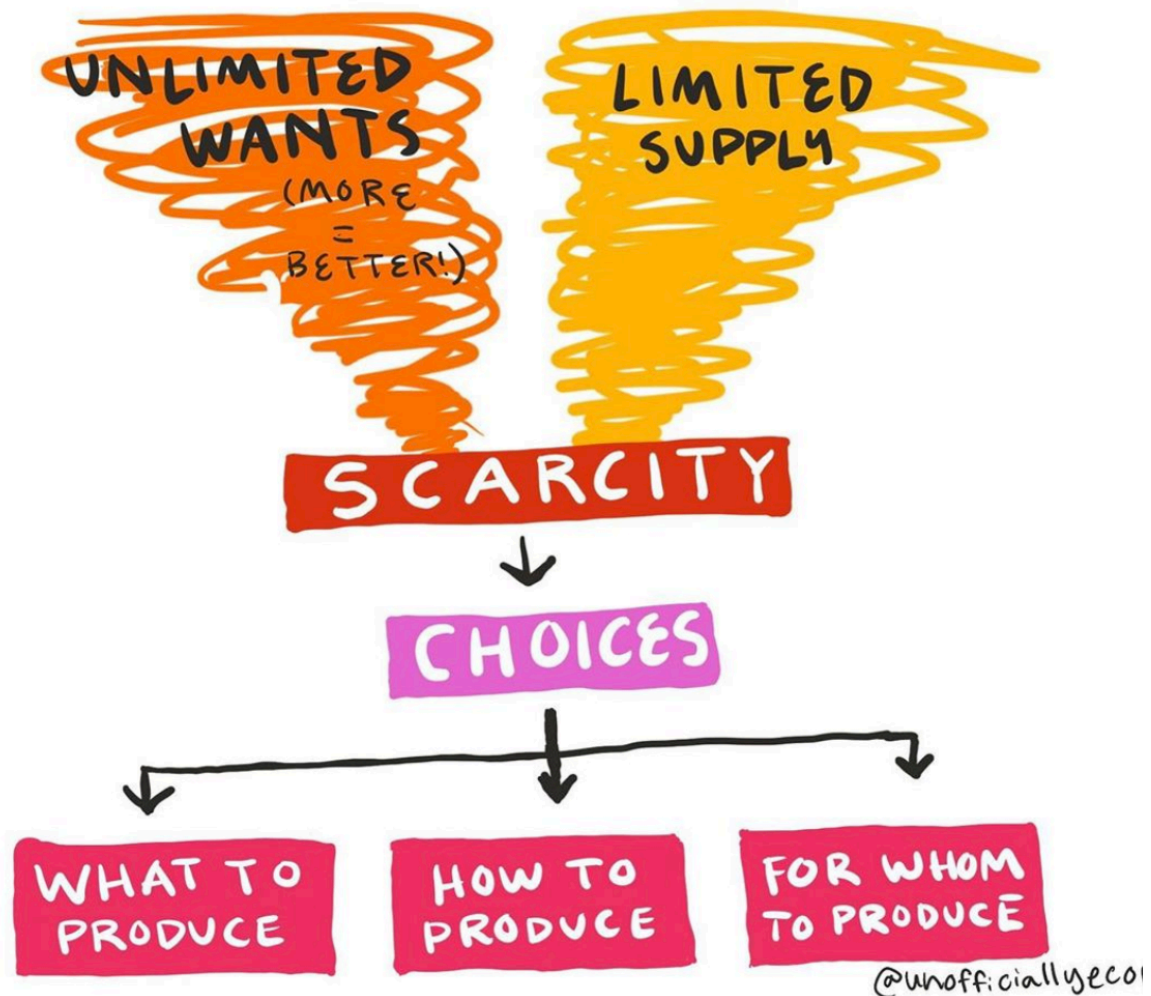
Scarcity

How practically all Americans would like to be everything from “safe” to “romantically fulfilled”, the video segues to interviews with individuals whose “all I want” lists range from endearing (a big, happy dog) to the quirky (a new Wes Anderson movie), the unrealistic (quick and easy weight loss), and the impossible (“I don’t want to die”). We live in a world of scarcity; but that alone doesn’t explain why we’re unable to meet everyone’s wants. Couldn’t we just redistribute goods and services more evenly, to satisfy everyone? No chance, because our wants exceed our needs, and when all our wants are met, we come up with new ones. Many people spend their lives trying to “keep up with the Joneses”. This isn’t all bad, because competitive drive causes people to work longer and harder, which makes the economy more productive. At the same time, when we purchase one good, we have less to spend on other goods we also desire, and therefore we face trade-offs and opportunity costs.

Scarcity exists when the marginal cost of obtaining something is greater than zero. Air and gravity are the only things or items that aren’t scarce. How do people allocate their limited resources to satisfy their unlimited wants? Economics can help us overcome scarcity.

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Incentives

Incentives – factors that motivate you to act or exert effort. For example, your choice to study for an exam you have tomorrow, instead of spending the evening with your friends, is based on your belief that doing well on the exam will provide a greater benefit. You have an incentive to study because you know that an A in the course will raise your grade-point average and make you a more attractive candidate on the job market when you are finished with school. We can further divide incentives into two paired categories: positive and negative, and direct and indirect.

Incentives (both positive and negative) influence our actions in predictable ways. Incentives influence our actions in predictable ways, but also lead to unintended consequences; should you trust your real estate agent to get you the best deal? Let's do the math

Positive and Negative Incentives

Positive Incentives encourage action by offering rewards or payments. For example, end-of-year bonuses motivate employees to work hard throughout the year, higher oil prices cause suppliers to

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extract more oil, and tax rebates encourage citizens to spend more money. **Negative incentives** discourage action by providing undesirable consequences or punishments. For instance, the fear of receiving a speeding ticket keeps motorists from driving too fast, higher oil prices might spur some consumers to use less oil, and the dread of a trip to the dentist motivates people to brush their teeth regularly. In each case, we see that incentives spur individuals to action.

Direct and Indirect Incentives

Incentives can also be direct or indirect. For instance, if one gas station lowers its prices, it most likely will get business from customers who would not usually stop there. This is a **direct incentive**. Lower gasoline prices also work as an **indirect incentive**, because lower prices might encourage consumers to use more gas.

Direct incentives are easy to recognize. “Cut my grass and I’ll pay you \$30” is an example of a direct incentive. Indirect incentives are more difficult to recognize. But learning to recognize them is one of the keys to mastering economics. For instance, consider the indirect incentives at work in some government assistance programs. In other words, a society that has a direct incentive to alleviate suffering caused by poverty. But how does a society provide this safety net without taking away the incentive to work? If the amount a person receives is higher than the amount that person can hope to make from a job, there is far less incentive to go back to work. In fact, there’s an incentive not to. This situation creates an **unintended consequences**, where assistance originally meant as a safety net could start to be seen as a permanent source of income.

Auto insurance scams

Policymakers have the tough task of deciding how to balance such conflicting incentives. For this reason, many government programs specify limits on the amount of time people can receive benefits. Ideally, this limit allows the welfare programs to continue meeting people’s basic needs while creating incentives that encourage recipients to search for a job and acquire skills that will help them get a job.

Incentives and Innovation

Incentives also play a vital role in innovation, the engine of economic growth. An excellent example is Steve Jobs; he and the company he founded, Apple, held over 300 patents at the time of his death in 2011.

In the United States, the patent system and copyright laws guarantee inventors a specific period of time in which they have the exclusive right to sell their work. This system encourages innovation by creating a powerful financial reward for creativity. Without patents and copyright laws, inventors would bear all the costs, and almost none of the rewards, for their efforts. Why would firms invest in research and development or artists create new music if other could immediately copy and sell their work? To reward the perspiration and inspiration required for innovation, society allows patents and copyrights to create the right incentives for economic growth. In recent years, new forms of technology have made the illegal sharing of copyrighted material quite easy. As a result, illegal downloads of books, music, and movies are widespread. When writers, musicians, actors, and studios cannot effectively protect what they have created, they earn less; so illegal downloads reduce the incentive to produce new content.

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Maintaining the right rewards, or incentives, for hard work and innovation is essential for making sure that inventors and other creative people are compensated for their creativity and vision. Some see services like Spotify, Apple Music, and SoundCloud as the answer. While streaming services are now very successful, the amount of artists receive is still far lower than it used to be.

Incentives are everywhere

One very powerful incentive is saving time. You can test out your time-savings skills when you walk across campus to a class. An app will give you a detailed route and an estimated time of arrival, but your app won't know the local shortcuts. Sometimes the shortcuts everyone takes are through buildings or along paths...the paths worn into green by students' feet will show you how to get across campus as quickly as possible.

Understanding incentives, from positive to negative and direct to indirect, is the key to understanding economics. If you remember only one concept from this course, it should be that incentives matter.

Trade-offs

In a world of scarcity, each and every decision incurs a cost. Even time is a scarce resource; after all, there are only 24 hours in a day. So deciding to play *Animal Crossing* now means you won't be able to read one of the Harry Potter books until later. More generally, doing one thing often means you will not have the time, resources, or energy to do something else. Similarly, paying for a college education can require spending tens of thousands of dollars that might be used elsewhere instead.

People who don't understand economics sometimes ignore the trade-offs that are natural in a world of scarcity. They unconsciously assume that we can (as individuals or a group) have more of everything we want. But in fact, decision-making generally involves trade-offs. For a recent example, take the Coronavirus Aid, Relief, and Economic Security (CARES) Act, which was passed by Congress with overwhelming bipartisan support and signed on March 27, 2020. This \$2.2 trillion relief package provided financial assistance for American workers, families, small businesses, and preserved jobs in American industries. But what could all that money have bought instead, if we'd spent it differently? Well, we could have created 1.5 million state-of-the-art hospital beds, or we could have built 440 brand-new NFL stadiums, or given every citizen a check for \$6,728 or created 550,000 one-megawatt solar farms, or hired 700,000 K-12 teachers for 50 years each.

Ultimately, thinking about trade-offs means that we will make more informed decisions about how to use our scarce resources.

Trade-offs consist of the entire set of things we might have done; trade-offs are part of life.

Opportunity Cost

The existence of trade-offs require making hard decisions. Trade-offs are about having something up, while opportunity cost quantifies "what" or "how much" is being given up. Choosing one thing means giving up something. No matter what choice you make, there's an opportunity cost, or next-best alternative, that must be sacrificed; **opportunity cost** is the highest-valued alternative that must be sacrificed to get something else.

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Every time we make a choice, we experience an opportunity cost. The key to making the best possible decision is to minimize your opportunity cost by selecting the option that gives you the largest benefit. It takes deliberate effort to see the world through the opportunity cost prism, but it's a worthwhile practice because it will help you make better decisions. For example, imagine you are a small business owner. Your financial officer informs you that you have had a successful year and made a sizeable profit; so everything is good, right? Not so fast, an economist will tell you to ask yourself, "Could you have made **more** profit doing something else?" Good economic thinkers ask this question all the time. "Could I be using my time, talents, or energy on another activity that would be even more profitable for me?"

Profits on an official income statement are only part of the story, because they only measure how well a business does relative to the bottom line. Accountants cannot measure what might have been better, so when economists talk about opportunity cost, they are assessing whether the alternatives are better than what you are currently doing, which considers a larger set of possible outcomes. For example, in the chapter opener, we mused about having a money tree. It turns out that money trees do really exist – in the virtual world. In *Animal Crossing*, Nintendo's breakout title of the 2020 pandemic, the player must bury a bag of Bells (the game's currency) using a golden shovel. After the tree has fully grown, it will bloom with three bags of Bells at amounts dependent on how much was initially buried. In this simple example, there is still an opportunity cost – what might have been done with the bag of Bells instead of growing a Bell tree! Planting a Bell tree today increases your future income, but you forgo the opportunity to spend Bells now.

Opportunity cost is the highest-valued alternative that must given up to engage in an activity.

- ***Value of the next best alternative***

TPS: How many hours would you wait in line on Black Friday to save \$300 on a TV

Marginal Thinking

The process of systematically evaluating a course of action is called economic thinking. **Economic thinking** involves a purposeful evaluation of the available opportunities to make the best decisions possible. In this context, economic thinkers use a process called **marginal analysis** to break down decisions into smaller parts. Often, the choice is not between doing and not doing something, but between doing more or less of something. For instance, if you take on a part-time job while in school, you probably wrestle with the question of how many hours to work. If you work a little more, you can earn additional income. If you work a little less, you have more time to study. Working more has a tangible benefit (more money) and a tangible cost (lower grades). All of this should sound familiar from our earlier discussions about trade-offs; the work-study trade-off affects how much money you have and what kind of grades you earn.

An economist would say that your decision – weighing how much money you want against the grades you want – is a decision at the *margin*. In economics, **marginal thinking** requires decision-makers

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to evaluate whether the benefit of one more unit of something is greater than its cost. Understanding how to analyze decisions at the margin is essential to thinking like a good economist.

Is the additional benefit greater than the additional cost?

What is the optimal amount of cleanliness?

Trade

Imagine trying to find food in a world without grocery stores. The task of getting what you need to eat each day would require visiting many separate locations. Many centuries ago, this need to bring buyers and sellers together was met by weekly markets, or bazaars, in central locations like town squares. **Markets** bring buyers and sellers together to exchange goods and services. As commerce spread throughout the ancient world, trade routes developed. Markets grew from infrequent gatherings, where exchange involved trading goods and services, into more sophisticated systems that use cash, credit, and other financial instruments. Today, when we think of markets, we often think of eBay or Craigslist. For instance, if you want to find a rare Hot Wheels Black Panther Movie Die-Cast Vehicle, an excellent place to look is eBay, which allows users to search for just about any product, bid on it, and then have it sent directly to their home.

Trade creates value and depends on specialization and comparative advantage.

The Circular Flow

When we consider all the trade that occurs in an economy, it is helpful to use a circular flow diagram. This shows how goods, services, and resources flow through the economy via commerce between households and firms. Households are made up of consumers, as we usually picture them. Firms are businesses. Households desire the goods and services produced by firms, but to produce those goods and services, firms require the resources owned by households. The circular flow diagram illustrates the movement of goods, services, and resources that results when firms and households do business with each other.

Consider a simple example, let's say you spend \$1,000 on a new Dell computer. You trade for your computer in a product market, and Dell gets the \$1,000: this takes place in the top half of the circular flow diagram. Then Dell uses the \$1,000 to pay its workers' wages and other suppliers for the use of resources. This happens in the bottom half of the diagram. In the end, the funds make the complete circuit back to households.

Trade creates value

Trade is the voluntary exchange of goods and services between two or more parties. Voluntary trade among rational individuals creates value for everyone involved.

For example, imagine you are on your way home from class and you want to pick up a gallon of milk. You know that milk will be more expensive at a convenience store than at the grocery store 5 miles away, but you are in a hurry to study for your economics exam and are willing to pay up to \$5 for the convenience of getting the milk quickly. At the store, you find that the price is \$4 and you happily purchase the milk. This ability to buy for less than the price you are willing to pay provides a positive incentive to make the purchase, but what about the seller? If the store owner paid \$3 to buy milk from a

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supplier, and you are willing to pay the \$4 price she has set in order to make a profit, the store owner has an incentive to sell. The simple voluntary transaction has made both of you better off.

Comparative advantage refers to the situation in which an individual, business, or country can produce at a lower opportunity cost than a competitor can. Comparative advantage harnesses the power of specialization, a topic discussed in further detail in Chapter 2. For instance, Starbucks specializes in making coffee, Honda in making automobiles. You would not want to get your morning cup of joe at Honda anymore than you would want to buy a car from Starbucks! On a broader scale, specialization and trading of services exist at the international level: some countries have highly developed workforces capable of managing and solving complex processes. Other countries have large pools of relatively unskilled labor. As a result, businesses that need skilled labor gravitate to countries where they can easily find the workers they need. Likewise, firms with production processes that rely on unskilled labor look for employees in less developed countries, where workers are paid less. By harnessing the power of increased specialization, global companies and economies create value through increased production and growth. However, globalized trade is not without controversy; when goods and jobs are free to move across borders, not everyone benefits equally, nor should we expect this outcome, but outsourcing is an important component of economic growth in the long run.

Conclusion

Economists ask and answer big questions about life. This is what makes the study of economics so fascinating. Understanding how an entire economy functions may seem like a daunting task, but it is not nearly as difficult as it sounds. Once you have learned the fundamentals of economics, you can use them to analyze almost any problem. In the next chapter, we use the ideas developed in this chapter to explore trade in greater depth.

Value of time

- The value of time determines relative prices of goods and services, investments, productivity, and economic growth, and measures of income inequality.
- Current research suggests society is