

TRANSCRIPT

I'm so glad to see you here for Week 3, especially when the weather is so nice outside. In today's lecture, we will touch on the topic of economic models, which is the main content of Chapter 2. Revisiting the economic principles from the last lecture will illustrate how economic models can help us understand how the economy works. Unfortunately, we will not be going into details about how to build an economic model, because it's beyond the scope of this introductory course.

So. What is a model? In pop culture, when the word "model" is mentioned, people envision a popular fashion model. Sorry, those aren't economic models! Both may look fancy and stylish, but for economic models, the concepts or principles they represent may not work well in real life. We will start with an introduction to the different types of models and their real-life uses. As always, I will wrap up today's lecture by going over some of the limitations and uncertainties on today's topic.

An economic model is a simplified representation or description of a real-world economy. They are created to better understand economic behaviours and to make forecasts of what might happen. Technically, economic models are the building blocks of the field as they theoretically represent how an economy works. Economists might even claim that economic modeling is the heart of economics. You may have heard of some well-known models before, for example, the Cobb-Douglas model of production and the Heckscher-Ohlin model of international trade. As you might expect, many economic models have earned their inventors both fame and money for their contributions to the field.

Let's take a look at a simple model that is related to the principle of scarce resources. The principle states that production is always constrained by the availability and quantity of resources. Imagine a scenario where an economy uses its limited resources, such as coal and labour, to produce two goods, like soap and aspirin. Consequently, there is a tension between the production of soap and the production of aspirin. An increase in the production of soap leads to a decrease in the production of aspirin. The relationship between soap and aspirin is depicted by the graph known as the Production Possibility Curve. The PPC is an economic model that illustrates different combinations of the production of soap and aspirin goods.

A more complex model could predict the impact of a new federal policy that supports first-time home buyers. The model could also analyze the effects that the policy has on the national housing market and the economy in the near future. This model would include many more variables and incorporate much more complex relationships among these variables.

Depending on the perspective you take, economic models can be grouped in various ways. For instance, just from the way that the models are presented, we can distinguish between visual models and mathematical models. Mathematical models include optimization problems where consumers try to maximize utility subject to their budget constraints. Visual models, such as the graph we just saw, present things graphically, using flow charts and diagrams. Another distinguishing feature that differentiates models is what kind of data they analyze. For example, some models use previously observed data to simulate economic phenomena and to answer “what-if” questions by manipulating certain variables. Other models are anchored on assumptions and observations for forecasting and predicting the future relationship of the variables.

Economic modeling has both quantitative and qualitative approaches. Sophisticated modeling requires good training in mathematics and statistics. I know some of you may become very excited about numbers, and others may frown. Don’t worry, we have advanced courses designed for economic modeling in your senior year and at the graduate level.

To reiterate, an economic model attempts to present real-world economic phenomena in a simplified manner. Models can only incorporate a limited number of variables or factors. Many factors, some of them critical, will unfortunately be omitted. For example, in the analysis of consumer behavior, cultural impact and spending habits may be omitted.

One limitation of economic models is that their generalizability tends to be constrained by real-life variables or factors. This is referred to as the one-size-fits-all issue, where economic models fail to apply to certain settings and situations. In addition, one major assumption in economical modeling is that all other variables remain unchanged when attempting to establish causal relationships. Economic experiments are often critiqued due to concerns of their internal and external validity; particularly, they may not be applicable to true economic behaviour. This “all-other-things-unchanged” assumption, or *ceteris paribus* if we use a fancy Latin phrase here, does not hold true at all in real life. So it’s not surprising that Dani Rodrik, a Harvard professor of economics, said that “models are never true; but there is truth in models” as they reflect a simplified view of the world.