

# Chicago Price Theory

## *An Introduction*

### THE CHICAGO ECONOMICS TRADITION

A longstanding Chicago tradition treats economics as an empirical subject that measures, explains, and predicts how people behave. Price theory is the analytical toolkit that has been assembled over the years for the purpose of formulating the explanations and predictions, and guiding the measurement.

In the tradition of Chicago's "Economics 301," the purpose of this course is to help you master the tools in the kit so that you can use them to answer practical questions. Studying price theory at Chicago is "a process of immersion in those models so that they bec[o]me so intuitive to one's work that, in combination with new empirical investigation, they open the door to novel evaluations of market organization and government policy."<sup>1</sup>

Because price theory at Chicago has always been tethered to practical questions, this course and the course Jacob Viner taught at Chicago almost 90 years ago (Viner 1930/2013) share some remarkable similarities. The tradition draws heavily on Alfred Marshall (1890) in, among other things, viewing human behavior in the aggregate of an industry, region, or demographic group. Market analysis is essential to price theory because experience has shown that markets enable each person to do things far differently than if he or she lived in isolation. It is no accident that price theory is named after a fundamental market phenomenon: prices.

Price theory is not primarily concerned with individual behavior; models featuring individuals are provided when they offer insight about the

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aggregate. None of this is to say that price theory only looks at average or representative agents. Indeed, a primary reason that markets transform human activity is that they encourage the amplification of innate differences among people. Heterogeneity can be important; as we see in the example of comparative advantage below, markets can amplify heterogeneity through returns to specialization.

Price theory has not been static, though. Gary Becker, who taught Economics 301 for many years and gives a couple of the lectures in the video series that accompanies this book, developed human capital analysis and extended price theory to deal with discrimination, crime, the family, and other “noneconomic” behaviors. Becker and Murphy revisited the topic of complementary goods, using it to examine addictions, advertising, and social interactions (Becker 1957, 1968, 1993; Becker and Murphy 1988, 1993, 2003). Most important, people and businesses are in different circumstances today than in Viner’s time—as witnessed by the decline of agricultural employment, increased life expectancy, and the rise of information technology.

### PRICE THEORY DIFFERS FROM MICROECONOMICS

Although strategic behavior, such as the interactions among sellers in a market where they are few in number, has been treated with price theory (Weyl 2018), the introductory Chicago price theory course has not emphasized it. Competition, by which we mean that buyers and sellers take prices as given and the marginal entrant earns zero profit, is emphasized in large part because for most purposes, it is a reasonable description of most markets (Pashigian and Self 2007). Moreover, the competitive framework is simple enough to make room for us to master additional aspects of tastes and technology—such as product quality, habit formation, social interactions, durable production inputs, and complementarities—that are important for practical problems. Monopoly models are used on those occasions when price-setting behavior is relevant (Friedman 1966, 34–35; Stigler 1972; Demsetz 1993, 799). More generally, price theory is stingy as to the number of variables that are declared to be important in any given application.

In emphasizing markets and competition, price theory is different from microeconomics. Both typically begin with the consumer or household, but price theory stresses how consumers react to prices, many times without reference to utility or even “rationality”; whereas microeconomics

takes care to lay down an axiomatic foundation of the utility function and individual demand functions. Price theory then quickly gets to market equilibrium, treating related subjects such as compensating differences, tax incidence, and price controls.

Microeconomics makes more intensive use of game theory, which traditionally puts somewhat more emphasis on rationality and optimizing agents. Both price and game theory model behavior as an equilibrium, but the latter typically focuses on interactions among small numbers of agents and strives to make separate predictions for each one. The rest of the market is treated as a constant.

The typical auction model of price (Klemperer 2004) is an example of the game-theoretic approach. That model has a fixed number of goods for sale in the auction, with little attention to how the goods were produced or how they would be used if not sold in the auction. The model has a fixed number of buyers and predicts how each buyer separately makes bids on the items for sale. Understanding why there are, say, two buyers rather than some other number, or what determines the seller's reservation price, is considered to be an advanced topic. With its emphasis on competitive market equilibrium, basic price theory is not concerned with bid prices but rather the ultimate transaction price, aggregate quantities produced and sold, and how they are connected with costs of various kinds, as well as how the good is situated in the consumer demand system.

The market-equilibrium approach says that the most important effects of policy, technical change, and other events are not necessarily found in the immediate proximity of the event. An ethanol subsidy example, discussed below, features a subsidy that is paid only in the market for fuel, which uses just a fraction of total corn production but has more price-sensitive demand. The market for animal feed is unsubsidized, but corn farmers' opportunity cost for selling animal feed is linked to the subsidized fuel market, so much of their gain from the subsidy comes from the increase in the equilibrium price of animal feed.

Real-life situations involve an element of strategic interaction where the players in a small-scale game understand the outside options available to them in a larger market. One approach would be to simultaneously model both the strategies and market prices. Auction models could, in principle, have endogenous production, entry, and reservation values that reflect economic activity outside the auction. But the point of theory in economics or any other field is to focus on important

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