1 Introduction

- Economics is a broad-ranging discipline, both in scope and in the methods been used.
- What is Economics?
  - Functional Definition: the study of a specific set of phenomena we call ‘economic;’ demand and supply of commodities, market equilibrium and prices, [......]
  - Methodological Definition: the study of aggregate phenomena as outcomes of individual choices.

The functional definition is very narrow: Economists actively study phenomena which are traditionally attributed to sociology, anthropology, political science, law, and even biology. Examples include: crime, family, fertility, primitive societies (like hunter-gatherers), voting, comparative analysis of political and legal institutions, genetic evolution of preferences.

The methodological definition is more appropriate. Individual choice is at the core of any economic analysis of whatever issue. Economists will not accept group behavior as an explanation of an aggregate phenomenon; they will not stop at ‘piercing is part of ‘youth culture,’ ‘altruistic behavior is a socially accepted norm of behavior,’ but will rather try to identify what drives individuals to act in accordance to a specific culture or to abide to a specific norm.

1.1 The Economic Method

[...] the difference between economics and sociology is very simple. Economics is all about people make choices. Sociology is all about why they do not have any choices to make. (James S. Duesenberry).

- Most (but not all) economists will accept the following as fundamental characters of the economic method:
Individual choices are rational. Individual agents respond optimally to changes in costs and benefits: they will choose the best bundle of goods for their money; they will sell assets they know are over-valued and will buy assets they know are over-valued; they will engage less in criminal activities if the probability of detection is higher, if punishment is more severe, if more alternatives to crime are offered ex-ante.

Aggregate phenomena result from equilibria. Agents in an economy or society interact through markets and through different institutions (families, firms, schools, peers). Choices of different agents are connected in the economy, and an economic analysis of a specific phenomenon considers all the relevant connections, the direct and indirect effects of a change in the determinants of such phenomenon, for example. This is what economists call equilibrium. For instance, a preference shift of young people in favor of beef over chicken will have an effect in their demand, which will in turn have an effect on the relative price of beef and chicken, which will have an effect on the demand of all people, and of the producers of beef and chicken. An equilibrium is the level of demand of young and old people, the price, the supply of beef and chicken after all these effects have been taken into account. Another example of equilibrium analysis: a technological change which changes the demand for skilled workers will have an effect on their wage, and on the wage of un-skilled workers too; in turn this will have an effect on their supply (e.g., because more people will acquire the demanded skills following an increase in the wage rate for skilled workers). Equilibrium analysis is not only appropriate for economic questions: many of the early forecasts of the effect of Aids mistakenly did not consider the effects of the advent of the disease on sexual practices and norms (‘safe sex’).

1.2 Theory and Models

An economist is the only professional who sees something working in practice and then seriously wonders if it works in theory (Ronald Reagan).

- Models are theoretical exercises of abstraction.
Abstraction - ignoring many details in order to focus on the most important elements of the problem.

There is no such thing as the right degree of abstraction for all analytic purposes. The proper degree of abstraction depends on the objective of the analysis. A model that is a gross oversimplification for one purpose may be needlessly complicated for another.

- Models are not necessarily mathematical models. The following example (taken from Krugman, 1995) illustrates this point: Dave Fultz at the Univ. of Chicago in the late 40’s showed that a dishpan filled with water, on a slowly rotating turntable, with an electric heating device bent around the outside of the pan is a good representation of the basic pattern of weather. The dishpan was build to model the temperature differential between the poles and the equator and the force generated by the earth’s spin (abstracting from most of the intricacies and complexities of the earth geography) and was successfully shown to exhibit phenomena which could be interpreted as tropical trade winds, cyclonic storms of the temperate regions, and the jet stream.

- Most economic models are in fact mathematical models. This is in part due to the fact that math is a very efficient language for abstract arguments (especially, it facilitates the manipulation of complex logical arguments and the identification of logical and conceptual mistakes in abstract arguments). But also, mathematics, especially when coupled with fast computers, allows the constructions of models as laboratories, that is, mechanical imitation, economies that generate simulated data which can be compared with actual data from real economic systems (Lucas, 1980 develops on this point).

1.3 Economic Debates

Why does public discussion of economic policy so often show abysmal ignorance of the participants? Why do I so often want to cry at what public figures, the press, and television commentators say about economic affairs (Robert M. Solow).

- Politicians and reporters are fond of pointing out that economists can be found on both sides of many issues of public policy. If economics is
a science, why do economists quarrel so much? After all, physicists do not debate whether the earth revolves around the sun or vice versa. The question reflects a misunderstanding of the nature of science! Disputes are normal at the frontier of any science. Clearly, nowadays physicists do not argue whether the earth revolves around the sun but they did (quite vociferously), and they do argue about the causes (and even the existence) of global warming. However the disagreements between hard scientists go mostly unnoticed to the public because only few of us understand what they are talking about. On the other hand, the economists’ disputes are aired to the public and thus all sorts of people are eager to join the economic debates.

- Unfortunately, common sense is not always a reliable guide in economics since many economic relationships are counterintuitive. Hopefully, by the end of our course we will have a better sense of when common sense works and when it fails.

1.4 References