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1

Introduction

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What is econometrics?

The study of econometrics has become an essential part of every undergraduate course in Economics and it is not an exaggeration to say that it is also a very essential part of every economist's training. This is because the importance of applied economics is constantly increasing while the quantification and evaluation of economic theories and hypotheses constitutes now, more than ever, a bare necessity. Theoretical economics may suggest that there is a relationship among two, or more, variables but applied economics demands both evidence that this relationship is a real one, observed in everyday life, and quantification of the relationship between the two variables as well. The study of the methods that enable us to quantify economic relationships using actual data is known as econometrics.

Literally, econometrics means 'measurement (which is the meaning of the Greek word metrics) in economics'. However, in essence, econometrics include all those statistical and mathematical techniques that are utilized in the analysis of economic data. The main target of using these statistical and mathematical tools in economic data is to attempt to prove or disprove certain economic propositions and models.

The stages of applied econometric work

Applied econometric work in practice always has (or should at least, have) as a starting point a model or an economic theory. From this theory, the first task of the applied econometrician is to formulate an econometric model that can be used in an empirically testable form. Then, the next task is to collect data that can be used to perform the test, and after that to proceed with the estimation of the model.

After the estimation of the model is done, the applied econometrician has to perform specification tests to make sure that the model she/he used was the appropriate one, as well as some diagnostic checking in order to check the performance and the accuracy of the estimation procedure. If those tests suggest that the model is adequate, then the next test is to apply hypothesis testing in order to test the validity of the theoretical predictions, and then she/he will be able to use the model for making predictions and policy recommendations. If it is found that the specification tests and the diagnostics suggest that the model used was not an appropriate one, then the econometrician will have to go back to the econometric model formulation stage and revise the model, repeating the whole procedure from the beginning (for a graphical depiction of these stages see Figure 1.1). The aim of this book is to deal with these issues and provide readers with all the basic mathematical and analytical tools that will enable them to carry out applied econometric work of this kind.

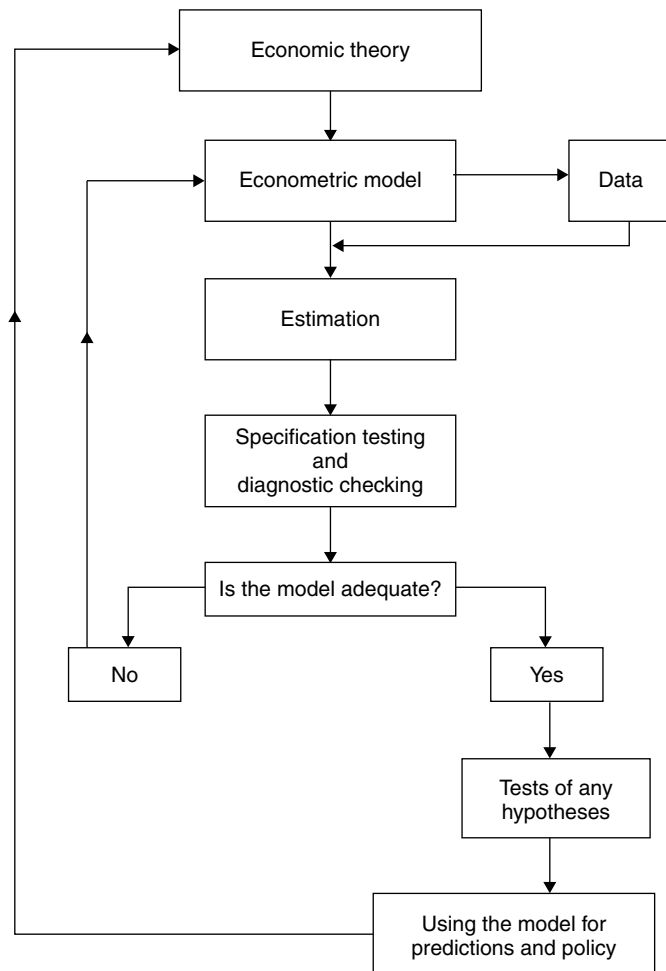


Figure 1.1 The stages of applied econometric analysis

Source: Based on Maddala (2001).

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