

What is Econometrics about?

Literally, Econometrics is about adding some ‘metrics’ into Economics. Practical Econometrics usually starts with an economic model, constructed either by observation or by other form of deduction. That model may or may not have bearing in the real world, until such time that Econometrics practice is applied. To resolve this conundrum, we need the following ingredients:

1. Data
2. Methodology
3. Economic knowledge and understanding
4. Computer software
5. No prejudice

Let us elaborate a little on the above. The only requirement from the data is that it is reliable, an ask which is often not trivial at all to satisfy (indeed, as the old proverb goes, Econometrics would have been much easier without data). As for methodology, it should be suitable for the idiosyncrasies of the data under consideration and much of economic data is not lacking in these, to say the least. Some knowledge and understanding of economic systems is required for the analysis and there are ample econometric computer softwares to choose from. Finally and perhaps most importantly, for a successful assessment of the model (defined as an assessment which gets you as close as possible to the truth, which is not necessarily what you would have hoped for), we need to apply the econometric analysis without prejudice.

Economic models can be as simple as

$$\text{consumption} = \alpha + \beta \text{income} + u$$

or as complex as the imagination may drift. These models can be parametric or non-parametric, linear or not, single- or multiple-equation, Gaussian- or otherwise. Model specification depends on the field of study involved. For instance, microeconomic data, which is primarily based on cross-sectional data, give rise to very different models from those encountered in Finance and Macroeconomics, which are dominated by time series

data. This should also address the immortal question: what is the difference between Econometrics and Statistics? The answer is, quite simply, that economic data give rise to models which are uncommon in other fields, hence require the development of statistical methodologies which are specifically geared for these peculiarities. For instance, in the analysis of financial and macroeconomic data, nonstationary Econometrics methods have developed in a way which is not paralleled in any branch of Statistics.