Recent Big Data and Machine Learning Applications in Economics

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Abstract

Purpose of the article This work illustrates three recent important studies related to Big Data and Machine Learning methods in economics and econometrics.

Methodology/methods The papers are previous or current works of well-known scholars in their fields. I select the papers from different subjects to observe how Big Data and Machine Learning methods can be used for different purposes.

Scientific aim The growing interest for handling Big Data in different economic topics brought economists to study the advantages and limits of new techniques like Machine Learning methods and the validity of standard econometric methods in these new data-rich environments. The work aims to analyze the three papers taking into account the current debate on Machine Learning methods and Big Data among scholars in economics and econometrics.

Findings Some scholars show how standard econometrics methods are still useful even with Big Data. Others instead illustrate how possible combinations of Machine Learning methods and econometrics techniques can be helpful in a high-dimensional framework. In particular, text mining and forecasting in data-rich environments research cannot escape, at least partially, the usage of Machine Learning methodologies. However, the debate over the real capacities of these new methods to solve problems such as causal inference is still open. Recent researches related to the so-called double (or de-biased) Machine Learning are triggering further researches and applications in this field.

Conclusions The work shows the potentialities but also the current limits of the use of Machine Learning methods and Big Data and possible new research topics. Finally, the new methods are imposing new reflections also on the current teaching programs in Economics and Business all over the world.

Keywords: Machine Learning, Big Data econometrics, Forecasting, Causal Inference, Text Mining

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