



## Economic Review

# Machine Learning Approaches to Macroeconomic Forecasting

by: Aaron Smalter Hall

November 12, 2018

A machine learning model can incorporate large amounts of data to forecast the unemployment rate.

---

Forecasting macroeconomic conditions can be challenging, requiring forecasters to make many discretionary choices about the data and methods they use. Although forecasters underpin the choices they make about models and complexity with economic intuition and judgement, these assumptions can be flawed. Machine learning approaches, on the other hand, automate as many of those choices as possible in a manner that is not subject to the discretion of the forecaster.

Aaron Smalter Hall applies machine learning techniques to find an optimal forecasting model for the unemployment rate. His results suggest that when supplied with diverse and complex data, a machine learning model can outperform simpler time-series models as well as a consensus of professional forecasters, with better performance at shorter horizons. In particular, his results show that a machine learning model can identify turning points in the unemployment rate earlier than competing methods.

Publication information: 4th Quarter 2018

DOI: 10.18651/ER/4q18SmalterHall

---