Forecasting with Economic News

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Abstract

In the last 20 years the increase in accuracy of macroeconomic forecasts has relied mostly on sophisticating econometric models that used data provided by statistical agencies. However, the recent availability of alternative datasets offers the opportunity to consider new information sources that can contribute to improve our forecasts of macroeconomic variables. In this paper we consider news as an alternative dataset. News articles have three appealing characteristics: 1) they are available at high frequency, 2) they aggregate a disperse set of information and opinions, and 3) are available for a long period of time suitable for macroeconomic applications. We consider news articles published by the 6 largest US newspapers for the period 1984-2018 for a total of over 6.6 million articles. We apply natural language processing techniques to transform text into numbers. In particular, we perform a fine-grained aspect-based sentiment analysis that consists of identifying terms of interests and assigning a sentiment/tonality score based on the lexical relations in the text. This approach is likely to provide a more accurate representation of the sentiment in the text relative to naive approaches of scoring the whole article. We construct five economic sentiment indicators that we use to nowcast/forecast several quarterly and monthly variables. The results show that some of these indicators have significant (out-of-sample) predictive power, in particular at longer horizons. We also consider the usefulness of these indicators in a quantile setting and find that they contribute to more accurate forecasts at low quantiles. Overall, the analysis indicates that economic sentiment extracted from news can significantly improve the accuracy of point and density forecasts.