MICHAŁ CHOJNOWSKI

Warsaw School of Economics, Poland

QUANTIFYING MARKET SENTIMENTS. EXTRACTION AND REAL-TIME OBSERVATION

Abstract:

sentiment quantification on a given market based on Bayesian SVAR model. The presented study extends the idea proposed by Blanchard et al. (see: Blanchard, L'Huillier and Lorenzoni (2013)) with an introduction of a noise in private signals caused by interpretation of publicly known shocks.

Moreover, the discussed research focused on an application of extracted sentiments in econometric modelling and forecasting. Google Trends have been chosen to represent market sentiments because of their availability (see: Choi and Varian (2012), D'Amuri and Marcucci (2012), Chen et al. (2015)). Google Trends seem to be a cheaper and more accessible source of customer preferences than survey-based indices (see: McLaren and Shanbhouge (2011)).

Google Trends are ranked using spike-and-slab regression by the significance in describing market sentiments. Cardinality of the set of most important Google Trends is bounded from above, which represents the information capacity limit of agents (see: Sims (2013)). Elements of the set changes slightly over time. Elements' reshuffle happens only if a new set is significantly better in illustrating market sentiments than the previous one. This introduces the cost of obtaining new information (see: Mankiw, Reis, Wolfers (2003)).

We have shown that market sentiments increase forecast accuracy. In the study case of Polish car industry, LSTAR model with market sentiments are a threshold variable predicts number of sold cars at least 30% more accurate than any benchmark model used in the research. If LSTAR forecasts are supported by Google Trends predictions, then the accuracy is 54% better.

Keywords:

sentiments, Google trends, ARMAX, LSTAR, ANN-ARMA, ANN-LSTAR

JEL Classification: C50, D83, C53