

Forecasting of inflation rates has become crucial for both policy makers and private agents who try to understand and react to Central Bank decisions since many Central Banks implemented inflation targeting rules instead of control of monetary aggregates. Inflation forecasting is considered to be very complicated issue because univariate regression models and structural macroeconomic models are usually outperformed by naive random walk model. This work is intended for forecasting inflation in the Czech Republic by employing Bayesian econometric method (namely Bayesian Vector autoregression - BVAR). Bayesian methods proved to be useful in inflation forecasting in developed countries (Fabio Canova: G-7 Inflation Forecasts: Random Walk, Phillips Curve or What Else?, 2007).

Bayesian econometrics is one of the most developing fields of econometrics for past two decades. In the centre of the approach is Bayesian probabilistic theory based on conditional probabilities. This probabilistic approach is, however, computationally demanding. Fast computer evolution enables wide applications of Bayesian models. Model estimations are based on combining information from some prior beliefs and from the data. Many different sorts of models have their Bayesian variants (e.g. OLS) but the emphasis in this work is on Bayesian Vector autoregression (BVAR). One of the aims of the thesis is to become familiar with principles of Bayesian econometric and be able to use Bayesian approach in various models.

In this thesis, I compared the forecasting performance of various models by applying the Theil U-statistics. Since VAR models were able to outperform Random Walk in pseudo out-of-sample forecasts, I undertook an experiment with the aim to identify the best inflation predictors, that should be included within the VAR model. For this purpose I employed a set of almost 80 time series covering various economic indicators including forward looking variables extracted from surveys.

I have found that unemployment is never in the set of best predictors (rejection of Phillips curve as useful relationship), GDP measure appears only in the long term forecast, whereas forward looking indicators are important for shorter forecast horizons. Employing of BVAR models instead of VAR have brought mixed results.