

ABSTRACT

Topic: Application of dynamic factor models to problems of macroeconomic indicators forecast.

Master thesis: 95 p., 8 fig., 8 tables, 3 appendix, 34 references.

The object of study: estimation of optimal number of factors and maximum lag in the dynamic factor model.

The purpose: to examine the subject of study, review methods for determining the optimal number of parameters to compare their performance on real data.

The paper describes two methods for estimating the optimal number of factors to retain in the model, and the maximum lag of this factors. The first method is based on the information contained in autocovariance matrices, and the second based on minimizing the prediction error. Both methods were applied to the real data, the deposit rates in Ukraine for the last 10 years and compared based on their performance on real data.

Advantages and disadvantages were identified in comparison with one another, and recommendations on the choice of methods depending on the data are given. In particular, the first method does not give the desired result on datasets, that are strongly correlated between different observations.

The novelty of this work is to use an alternative method, namely the method based on the information in autocovariance matrices for modelling macroeconomic data and to compare it with the standard method based on prediction error.

In further research, this method can be modified to overcome the limitation on strong correlation of data between lags.

DYNAMIC FACTOR MODEL, DEPOSIT RATES, KULLBACK-LEIBLER INFORMATION, BARTLETT TEST STATISTIC, KALMAN FILTER