In the econometric literature, there is not much research on binary time series. However, in the last couple of years, some new binary time series models have been suggested where the traditional static model is extended by different kinds of dynamic structures. In the thesis, the main goal is to forecast the economic recession periods occurred in the United States and Germany. Especially, it is interesting to consider new so called autoregressive models suggested by Kauppi and Saikkonen (2007). They also proposed a new iterative framework for multiperiod forecasts. Iterated multiperiod forecasts are compared with previously used direct forecasts.

The parameter estimation of the employed dynamic models can be done by a maximum likelihood method described in the theoretical part of the thesis. Model diagnostics and forecasting procedures are as well considered. Two LM tests for the usefulness of the autoregressive part are also proposed.

It is shown that the models with autoregressive part seem to outperform the static probit models in terms of in-sample and out-of-sample predictions. The best forecasting models give the distinct recession signals of the forthcoming recession which started in 2001. In the dynamic probit model with the lagged recession indicator, the iterative forecasts seem to be superior to direct forecasts.

Several empirical studies have proposed that the yield curve, which is defined as a spread between long and short term interest rates, is an accurate explanatory variable in recession forecasting. As in previous studies, the domestic yield curve is an important predictor variable in both countries but also the foreign yield curve, stock market returns and, in the case of Germany, the interest rate differential between the United States and Germany are statistically significant predictors in the dynamic probit models.

The most important reference is the article of Kauppi and Saikkonen (2007). Chauvet and Potter (2005) have also proposed important model variants and forecasting methods for the binary time series models. Davidson and MacKinnon’s book (1993) and their article (1984) are important references for the theoretical part and especially for the proposed LM tests for the autoregressive part. The articles of Bernard and Gerlach (1998) and Estrella and Mishkin (1998) are important references for the recession forecasting. The forecasting power of the yield curves and the stock returns are also considered in numerous other articles.