This dissertation is composed of four essays that empirically investigate three topics in financial economics; financial stress and its leading indicators, the relationship between bank competition and financial stability, and the link between management board composition and bank risk.

In the first essay we examine which variables have predictive power for financial stress in 25 OECD countries, using a recently constructed financial stress index. We find that panel models can hardly explain FSI dynamics. Although better results are achieved in country models, our findings suggest that financial stress is hard to predict out-of-sample despite the reasonably good in-sample performance of the models.

The second essay develops an early warning framework for assessing systemic risks and predicting systemic events over two horizons of different length on a panel of 14 countries. We build a financial stress index to identify the starting dates of systemic financial crises and select crisis-leading indicators in a two-step approach; we find relevant prediction horizons for each indicator and employ Bayesian model averaging to identify the most useful predictors. We find superior performance of the long-horizon model for the Czech Republic.

The theoretical literature gives conflicting predictions on how bank competition should affect financial stability, and dozens of researchers have attempted to evaluate the relationship empirically. In the third essay we collect 598 estimates of the competition-stability nexus reported in 31 studies and analyze the literature using meta-analysis methods. Our findings suggest that the definition of financial stability and bank competition used by researchers influences their results in a systematic way. We find evidence for moderate publication bias. Taken together, the estimates reported in the literature suggest little interplay between competition and stability, even when corrected for publication bias and potential misspecifications.

The fourth essay investigates how composition of Czech bank management boards affects bank risk. We build a unique data set comprising selected biographical information on the management board members of Czech banks over the 2001-2012 period and combine it with individual bank financial data. Next, we apply a machine learning technique – the random forest – to identify the best predictors of bank risk and further interpret the model output. We find non-linear relationships between average directors' age, average director tenure, the proportion of directors holding an MBA and the proportion of non-national directors and the three observed bank risk proxies.