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The main topic of this PhD thesis is an analysis of the technical efficiency, and its determinants, of commercial banks from seven Central and Eastern European countries (Czechia, Estonia, Hungary, Latvia, Lithuania. Poland and Slovakia) during a ten-year period from 2011 to 2020. In addition, the author analysed bank's production process through the production functions elasticity in reference to all inputs. The analysis has been conducted using stochastic frontier models where parameters were estimated using maximum likelihood estimator. In addition to the main objectives defined above, the author considered two additional goals - the analysis regarding how the alternative definition of labour (defined as the bank's total assets) influences the model estimates; and how the loans quality affects bank's technical efficiency.

There are five separate thematic chapters in the thesis. First chapter presents general information about the banks' role in the market economy and its purpose as the financial intermediary. Second chapter focuses on the microeconomic fundamentals for the efficiency analysis; third chapter discusses in details the data used for the econometric modelling. Fourth chapter presents the basic methods of the stochastic production frontier estimation. The last, fifth, chapter presents the empirical results.

The key findings from the author's research are the following:

- There are significant differences in terms of the average technical efficiency between banks in each country. The most efficient banks operate in Poland and Slovakia (efficiency of 94% and 87%, respectively), less efficient banks are from Czechia (75%), Lithuania (72%), Hungary (69%) and Estonia (63%). The least efficient banks are from Latvia (43%).
- The most important input in the process of the bank's production is the financial input, for which, the elasticity of the production function is equal to c.a. 0.84. The elasticity for the remaining two inputs (fixed and labour inputs) is significantly lower: 0,04 and 0,03, respectively. It leads to the average value of the return-to-scale (RTS) factor of 0.91 what indicates decreasing RTS. These results are consistent across all analysed countries.
- Banks' technical efficiency is mainly driven by the bank-specific variables (e.g., return on asset indicator), while the macroeconomic and market environment variables are not significant.
- Using total assets as a proxy for the labour has a significant impact on the estimated parameters and level of efficiency - it is higher comparing to the results obtained using 'classic' approach.
- The quality of the bank's loan portfolio does not impact its technical efficiency.

The author plans further research to encompass an analysis of the banks' efficiency in the period of COVID-19 pandemic and during the inflation pressure i.e., in period 2020-2023, and to assess the bank's cost efficiency. The latter, in conjunction with the analysis of the technical efficiency, allow to assess the bank's profit efficiency.