BUCHAREST UNIVERSITY OF ECONOMIC STUDIES

The council for Doctoral Science -
Cybernetics and Economic Statistics

QUANTITATIVE TECHNIQUES FOR RAPID ESTIMATES OF MACROECONOMIC INDICATORS

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In the present era characterized by the demand for instant access to information, the concept of flash estimates has gained considerable attention, particularly in recent years. One of the most critical macroeconomic indicators, Gross Domestic Product (GDP), is typically released on a quarterly basis with significant delays.

However, in a world where policy decisions often need to be made in real-time with incomplete economic data, necessity for more timely information has become increasingly pronounced. Aligning the release time of GDP data with global standards, such as those observed in the United States, where GDP data is released at intervals of 30-60-90 days, is imperative. Several European countries, including Belgium, Lithuania, and Spain, have explored ways to reduce the time lag in publishing GDP flash estimates, aiming to enhance the efficiency of early warning systems, particularly underscored by the lessons learned from the last recession.

Against this background, nowcasting has become a valuable tool for forecasting present or near-future values of macroeconomic indicators using the available data. Taken into consideration the above-mentioned context, the present PhD thesis aims to explore several advanced econometric techniques and to develop a nowcasting model for Romania.

The research objectives can be summarized as following:

- Assessment of the existing state of art nowcasting techniques for rapid estimates of macroeconomic indicators.
- Comparison and evaluation of trustworthiness of various nowcasting models in real-time economic analysis.
- Classification of challenges and limitations related to nowcasting techniques and proposal of possible resolutions or developments.

The thesis is structured as following:

- **General introduction** sets the stage for the thesis, providing an overview of the research problem, the significance of the paper and its objectives. It introduces the concept of rapid estimates of macroeconomic indicators, explain its importance in economic analysis, and outline the structure of the thesis.

- **Chapter 1: state of art and literature review** delves into the existing literature related to macroeconomic indicators, their estimation methods, and the challenges associated. Various models and techniques employed in nowcasting and estimation, highlighting their strengths and weaknesses. This chapter also identifies the current gaps in literature that our study aims to address.
- **Chapter 2: bibliometrics analysis** focuses on the analysis of literature itself. We perform a comprehensive bibliometric analysis aimed to identify research trends in the rapid estimates' domain. This analysis includes key research topics, the evolution of research focus over time, most influential journals, and most productive countries.
- **Chapter 3: application** represents the core of the thesis, where we present the theoretical foundation for our model, the data sources and methodologies employed, and the empirical results. The practical utility, accuracy and reliability of the model is also addressed within the chapter.
- **General conclusions** synthetize the findings from our thesis and provides a comprehensive conclusion. We revisit the research objectives, summarize the key results, and discuss their implications for the academic environment. This chapter also addresses the limitations and suggests possible directions for future research.