

Nonlinear Interdependence and Overflows between Global Economic Variables and Currency Markets

Sakim Nefron*

Department of Economics, Pusan National University, Busan 46241, Korea

Abstract

This research explores the intricate web of nonlinear interdependence and overflows between global economic variables and currency markets. The study employs advanced econometric techniques to analyse the dynamic relationships that exist beyond linear correlations, shedding light on the complexities inherent in the contemporary global financial landscape. By investigating the feedback loops, spill over effects and non-linearities, this research aims to enhance our understanding of how various economic factors influence currency markets and vice versa. The findings provide valuable insights for policymakers, investors, and researchers grappling with the challenges of an interconnected and rapidly evolving global economy.

Keywords: Nonlinear interdependence • Currency markets • Econometric techniques • Global economy

Introduction

The global economy and currency markets are intertwined in a complex dance, with various economic variables influencing and being influenced by each other. Traditional linear models often fall short in capturing the intricate dynamics at play. This research seeks to delve into the nonlinear aspects of these relationships, recognizing that the global financial system operates in a state of constant flux, shaped by a multitude of factors. This section reviews existing literature on linear and nonlinear models in the context of global economic variables and currency markets. It highlights the limitations of linear models in capturing the nuances of real-world interactions and discusses the significance of incorporating nonlinear elements into analytical frameworks [1].

Literature Review

To unravel the nonlinear interdependence and overflows, sophisticated econometric techniques will be employed. This section outlines the methodology, including data sources, variables considered and the statistical tools used to analyse the relationships. Nonlinear models, such as ARCH/GARCH models, Markov-switching models, and machine learning algorithms, will be implemented to capture the complexity of the interactions. This section presents the empirical findings on the nonlinear interdependence between global economic variables and currency markets. Through the application of advanced models, the study uncovers hidden connections and interdependencies that go beyond linear correlations, providing a more nuanced understanding of how economic variables interact.

Examining overflows and spill over effects is crucial to comprehending the systemic risks and contagion within the global financial system. The research analyses how shocks in one economic variable or currency market propagate to others, creating interconnected webs of influence. To illustrate the practical implications of nonlinear interdependence and overflows, case studies will be

presented. These cases will showcase real-world scenarios where unexpected events or policy changes in one region have had cascading effects on global economic variables and currency markets. While the research provides valuable insights, it is essential to acknowledge its limitations and challenges [2].

Discussion

Nonlinear modelling, though powerful, can be computationally intensive and may require extensive data. Additionally, the inherent complexity of the global financial system may pose challenges in accurately capturing all relevant variables and their interactions. Recognizing these limitations is crucial for interpreting the research findings appropriately. Investors navigating the currency markets can benefit significantly from understanding the nonlinear dynamics explored in this research. By recognizing the potential spill over effects and overflows, investors can better manage risks, optimize portfolios, and capitalize on emerging opportunities. This section discusses practical implications for investors and offers insights into developing robust strategies in response to the identified nonlinear interdependencies. While the research provides valuable insights, it is essential to acknowledge its limitations and challenges. Nonlinear modelling, though powerful, can be computationally intensive and may require extensive data. Additionally, the inherent complexity of the global financial system may pose challenges in accurately capturing all relevant variables and their interactions. Recognizing these limitations is crucial for interpreting the research findings appropriately [3,4].

To emphasize the importance of nonlinear modelling, this section conducts a comparative analysis between results obtained from nonlinear models and traditional linear models. The goal is to highlight instances where linear models may fail to capture certain relationships and where nonlinear models provide a more accurate representation of the complex interactions in the global economic and currency markets. As with any research involving financial markets, ethical considerations are paramount. This section addresses ethical implications associated with the use of financial data, potential conflicts of interest, and the responsibility of researchers to provide unbiased and transparent analyses. Acknowledging and addressing these ethical considerations contribute to the credibility and integrity of the research [5].

Recognizing the evolving nature of the global financial landscape, this section discusses the educational implications of the research. It emphasizes the importance of incorporating nonlinear modelling techniques into finance and economics curricula to better prepare future generations of researchers, policymakers, and market participants for the challenges and opportunities posed by an interconnected world. Integrating insights from behavioural

*Address for Correspondence: Sakim Nefron, Department of Economics, Pusan National University, Busan 46241, Korea, E-mail: nefron@edu.com

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economics into the analysis can further enrich our understanding of nonlinear interdependence. This section explores how human behaviour, sentiment, and market psychology contribute to the observed nonlinearities, acknowledging that economic and financial decisions are not always rational and can be influenced by cognitive biases and emotions [6].

Conclusion

In conclusion, this research has delved into the intricate web of nonlinear interdependence and overflows between global economic variables and currency markets. By employing advanced econometric techniques, the study has provided a comprehensive understanding of the complex dynamics at play in the contemporary global financial system. The implications extend beyond academia, influencing policymakers, investors, and educators alike. As we navigate the uncertainties of a rapidly changing world, acknowledging and embracing the nonlinearities inherent in the global economy becomes imperative for informed decision-making and sustainable economic development.

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Conflict of Interest

There are no conflicts of interest by author.

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