MACROECONOMIC TREND DOMINANCE: A MULTIRESOLUTION (MODWT) ANALYSIS OF THE BET INDEX

Marius Cristian Acatrinei[1*], Alexandru Petrescu[2]
[1), 2)] *Financial Supervisory Authority, Bucharest, Romania*

Abstract
This paper applies multiresolution analysis based on the Maximal Overlap Discrete Wavelet Transform (MODWT) to investigate the structural dynamics of the BET index from the perspective of systemic risk and capital market dynamics in Romania. Using a six-scale decomposition of daily prices over the period 2024–2025, total variability is separated into two fundamental components: the long-term macroeconomic trend (horizons above 64 days) and cyclical oscillations over short and medium horizons (2–64 days).
The empirical results for 2025 indicate an overwhelming dominance of macroeconomic factors, with the trend component explaining 99.15% of total variance, while cyclical oscillations contribute only 0.85%. Within the cyclical component, a clear hierarchy emerges: medium-term cycles (16–64 days) account for over 73% of cyclical variance, while short-term fluctuations (2–8 days) contribute only 12%.
A visual examination of the decomposition over the 2024–2025 period identifies July 2025 as a period with simultaneous amplification across all time scales, from daily volatility to the macroeconomic trend. This simultaneity of amplifications across different time scales represents a distinct pattern observable in the decomposition, coinciding in time with the implementation of electricity price liberalization. The study demonstrates that the variance structure observed in 2025 has implications for risk modeling, as scenarios focused on short-term volatility capture only a minimal fraction of the total observed variability.

Keywords
MODWT, multiresolution analysis, emerging markets, BET index, wavelet decomposition, variance structure.

JEL Classification
G11, C22, E44

[*] Corresponding author, **Marius Cristian Acatrinei** – marius.acatrinei@asfromania.ro.