**Analyzing the Snowball Effect on Public Debt Dynamics and Its Determinants - the case of North Macedonia**

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**Abstract**

Maintaining healthy public finances is crucial for ensuring financial stability and fostering economic growth. Recent economic research has increasingly focused on debt sustainability, particularly in the aftermath of the global financial crisis of 2008, the COVID-19 pandemic, and the war in Ukraine.

This study investigates the dynamics of public debt in North Macedonia over the past two decades and the underlying factors influencing the significant shifts in debt dynamics. In 2008, Macedonia's public debt reached a historical low of 23% of GDP. However, over the next eight years, the debt doubled, reaching 46% of GDP by 2016. The COVID-19 pandemic further exacerbated the situation and combined with the energy crisis intensified by the war in Ukraine, Macedonia's public debt soared to a historical high of 62.1% of GDP in 2023. In particular, the study aims to identify and analyze the primary drivers of Macedonian public debt dynamics from 2002 to 2023 with main focus on three key factors: the primary budget balance, the interest-growth differential, and stock-flow adjustments. Special attention is given to the interest-growth differential, commonly known as the snowball effect, which plays a critical role in public debt sustainability. The snowball effect suggests that a debt ratio tends to decline (or rise) when the GDP growth rate is higher (or lower) than the interest rate on government debt, even with a zero primary budget balance. In the recent period, sluggish economic growth, due to declining external demand and rising food and energy prices, coupled with rising interest rates, triggered a detrimental snowball effect that posed significant challenges for public debt sustainability. Therefore, in addition to better understand the snowball effect, the Ordinary Least Squares (OLS) method is utilized. This analysis examines how different macroeconomic variables (as foreign direct investment, trade openness, unemployment, etc.,) and institutional factors (government effectiveness and corruption) influence debt dynamic.

The findings point out the critical role of the interest-growth differential in public debt sustainability over the analyzed period. Given the current economic conditions characterized by low GDP growth and high-interest rates, North Macedonia faces significant challenges in managing its public debt. The study also provides policy recommendations to enhance fiscal discipline, stimulate economic growth, and improve institutional frameworks to mitigate the adverse effects of the snowball effect on public debt.

**Keywords:** Public Debt, Snowball effect, Primary balance, Macroeconomic factors, Institutional factors