

The Transmission Channels of Public Debt on r-star

chatGPT explores how Public Debt could affect r-star

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Introduction

This document discusses how public debt dynamics influence r-star, the natural rate of interest. We explore the key transmission channels through which public debt affects r-star and highlight the critical role of the sustainability condition in stabilizing r-star and long-term interest rates.

1. Debt Sustainability and Interest Rates

The idea behind debt sustainability is to ensure that a government's debt does not grow faster than its ability to pay it back, which is essentially its economic output (GDP). If debt grows too fast relative to GDP, it could become unsustainable, leading to difficulties in servicing the debt, potentially causing higher interest rates or even default.

1.1 Key Terms

- **Debt-to-Output Ratio:** The ratio of the government's debt to the country's GDP, often denoted as:

$$d_t = \frac{D_t}{Y_t}$$

where:

- d_t = debt-to-output ratio at time t ,
- D_t = nominal debt at time t ,
- Y_t = nominal GDP at time t .