

Abstract

Over the past four years, the COVID-19 pandemic has led to economic shutdowns and uncertainty, resulting in inflationary pressures in 2021 and 2022, compounded by geopolitical tensions such as Russia's invasion of Ukraine. These events collectively influenced the government bond markets. This thesis investigates, whether duration and convexity measures remain reliable for assessing interest rate risk for government bonds in the Czech Republic, Germany and the USA, using quarterly data. We applied the fixed effects and Two-Stage Least Squares methods to analyze the data across various models, categorized by country and bond type. Our findings indicate that duration measures were generally reliable, even amid fluctuating yields and rising policy interest rates, though their accuracy varied yearly. Incorporating convexity measures into the regressions improved the precision of duration metrics. Additionally, our analysis confirmed the reliability of duration metrics for short-term government bonds in the US and Germany. These findings underscore the resilience and utility of traditional duration metrics, particularly when complemented by convexity measures, in assessing interest rate risk under diverse economic conditions, suggesting avenues for future research.

Keywords

government bonds, duration, interest rate risk

Title

Government Bond Duration: Theory and Evidence