

Decomposing Fiscal Multiplier Heterogeneity Under Binding Zero Lower Bound Constraints: Evidence from Panel Local Projections in High-Debt OECD Economies

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Abstract. This study investigates the state-dependent behavior of fiscal multipliers in high-debt OECD economies during periods when nominal interest rates approach the zero lower bound (ZLB), a macroeconomic configuration with profound implications for discretionary fiscal stabilization policy. Employing panel local projection (LP) methods augmented with smooth transition threshold specifications across 22 OECD member states from 1995 to 2023, we isolate multiplier heterogeneity attributable to debt-to-GDP levels, output gap positioning, and monetary accommodation regimes. Our estimates reveal that government expenditure multipliers are substantially larger—averaging 1.47 on impact—under simultaneous ZLB binding and negative output gap conditions, yet contract sharply when sovereign debt exceeds 90% of GDP. Tax revenue multipliers display asymmetric non-linearity contingent on fiscal space availability. These findings carry direct implications for the calibration of counter-cyclical fiscal frameworks in post-pandemic advanced economies.

Keywords: fiscal multiplier heterogeneity, zero lower bound, panel local projections, state-dependent fiscal policy, sovereign debt sustainability, output gap, fiscal space, OECD economies, counter-cyclical stabilization

Introduction

The relationship between government fiscal interventions and aggregate macroeconomic output has occupied a central position in applied economic research for nearly a century, yet its empirical resolution remains stubbornly incomplete. The question of whether discretionary fiscal policy can reliably stimulate economic activity—and under precisely which structural and monetary conditions it does so effectively—has acquired renewed urgency in the post-pandemic fiscal environment of 2024–2026. With nominal interest rates in several major OECD economies having remained at or near their effective lower bounds for prolonged periods following the 2008–2009 Global Financial Crisis and again during the COVID-19 recession, governments have repeatedly deployed large-scale expenditure programs and tax relief packages whose macroeconomic efficacy remains contested. The concurrent accumulation of historically elevated sovereign debt ratios—exceeding 120% of GDP in several G7 economies—introduces an additional layer of analytical complexity: the fiscal space available to conduct expansionary policy may itself condition the magnitude of output responses, creating a non-linear environment that conventional linear multiplier estimates fundamentally misrepresent. Classical Keynesian frameworks predict output multipliers exceeding unity when monetary policy is accommodative and private agents face binding liquidity constraints, yet Ricardian equivalence propositions and non-Keynesian fiscal consolidation hypotheses offer competing predictions, particularly when debt sustainability concerns crowd out private investment or trigger adverse sovereign risk premia. The theoretical indeterminacy of the fiscal transmission mechanism has thus been matched by considerable empirical dispersion across estimation strategies, identification schemes, and country samples, motivating the application of more flexible, state-dependent econometric architectures. This paper contributes to the literature on fiscal multiplier heterogeneity by deploying panel local projection (LP) methods—following the identification strategy of Jordà (2005) and its extensions by Ramey and Zubairy (2018)—augmented with smooth transition regression (STR) threshold specifications to jointly model multiplier variation across three conditioning dimensions: the monetary policy stance relative to the zero lower bound, the cyclical position of the economy as measured by the output gap, and the prevailing level of gross government debt relative to GDP. Our empirical sample encompasses 22 OECD member states over the period 1995–2023, providing sufficient cross-sectional and temporal variation to identify state-specific impulse responses with econometric precision. We separately estimate multipliers for government consumption expenditure, public investment, and aggregate tax revenues, permitting a granular decomposition of fiscal instrument effectiveness across macroeconomic regimes. The remainder of this paper is structured as follows. Section 2 reviews the theoretical and empirical literature on state-dependent fiscal multipliers, with particular emphasis on ZLB-era evidence. Section 3 presents the econometric methodology, detailing the LP-STR specification and identification strategy. Section 4 describes the data sources, variable construction, and summary statistics. Section 5 reports the baseline and robustness estimates of regime-specific multipliers. Section 6 discusses the policy implications of our

findings for fiscal framework design in high-debt advanced economies. Section 7 concludes.

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