

## Introduction to “Debt-Dependent Effects of Fiscal Expansions”

### 1. What is the question (of the paper)?

The main question of the paper: can government debt accumulation affect fiscal policy effects? This is because a high-debt environment might undermine fiscal policy as an effective tool to fight recession. The paper explores whether debt-dependent government spending effects are theoretically robust. The paper analyzes the effects of a government spending shock at various debt levels. The paper also studies state-dependent fiscal policy effects and how the capital state can affect debt-dependent government spending effects. The paper is also related to how future fiscal adjustments can affect current fiscal policy effects through the inter-temporal balancing of the government budget constraint, but with a focus on debt levels.

### 2. Why should we care about it?

Since the global financial crisis, many developed nations entered a period of high government debt and sluggish economic growth. Lackluster economic performance usually calls for expansionary fiscal policy. The conventional wisdom is that a fiscal expansion is less effective when debt is high than when it is low, and the reasoning is that a high-debt level induces expectations of high future taxes, discouraging current consumption, investment, and output. But so far, the empirical evidence is inconclusive. This calls for further theoretical and empirical investigation because this is an important issue for policymakers around the world.

### 3. What is your (or the author’s) answer?

The paper supports the conventional view that government’s fiscal policy is less effective when it is highly indebted, when assuming GHH preference and income tax adjustments. However, these results are not robust to alternative specifications. The paper shows that when the wealth effect on labor supply is sufficiently strong, or when fiscal adjustments involve government spending reversals, the short-run difference in debt-dependent government spending effects can be quite small. It is even possible that as the share of fiscal adjustments via government spending cuts gets large, government spending becomes more expansionary in a high-debt state than in a low-debt state in the short run. Expecting government spending reversals produces a positive wealth effect, which can dominate the negative wealth effect from expecting higher future taxes and thus reverse the original negative consumption response in a high-debt state. Also, when accounting for the endogenous relationships between debt and capital, the paper finds that the initial capital level at the time of a government spending shock plays an important role in government spending effects.

#### **4. How did you (or the author) get there?**

- (a) The authors adopt a neoclassical growth model, where government spending enters household utility as a complement to private consumption. This captures the short-run expansionary effects of government spending on consumption and output.
- (b) Normally, fiscal multipliers are often computed by solving a linearized equilibrium system and, therefore, do not depend on debt levels. Instead, they obtain a fully non-linear solution under rational expectation to explore government spending effects at different debt levels.
- (c) The utility function in the neoclassical growth mode allows for variation in the wealth effect on labor supply, and therefore can accommodate both the GHH and KPR preferences. This enables the author to use GHH preference as a baseline specification to allow the income tax rate to stabilize debt, and then explore the KPR preference, government spending reversals as an adjustment instrument, and uncertain fiscal adjustments.
- (d) The authors perform structural VAR estimations on simulated data, following the standard structural VAR methodology in estimating fiscal policy effects.
- (e) The authors introduce an exogenous distribution of debt thresholds and model adjustment magnitudes to debt as a regime-switching process.

## Examples

The Russian economy is now in a deep recession due to falling oil prices and sanctions. Economic stimulus packages such as expansionary monetary and fiscal policy might be attractive options for the policy makers in Moscow. The findings of this paper might be a valuable reference because if the Russian government is highly indebted, then the effects of expansionary fiscal policy might not be as stimulative as expected.



## Notations

effective consumption ( $\tilde{c}_t$ )

leisure ( $1 - l_t$ ).

private consumption ( $c_t$ )

government spending ( $g_t$ )

labor ( $l_t$ )

investment ( $i_t$ )

capital ( $k_t$ )

$b_t$  is one-period government bond that sells at a price  $q_t$  at  $t$

$\tau_t$  is the general income tax rate

$w_t$  is the real wage rate

$r_t^k$ : the capital rental rate at time  $t$

$z_t$  is transfers from the government

$X_t$ : an index variable, with which  $X_t = \tilde{c}_t^\psi X_{t-1}^{1-\psi}$

$a_t$ : total factor productivity (TFP), which follows an AR(1) process:  $a_t = (1 - \rho_a)a + \rho_a a_{t-1} + \varepsilon_t^a$ , where  $\varepsilon_t^a \sim N(0, \sigma_a^2)$

$\phi$ : the share of adjustments by spending cuts

$s_t^{b*}$ : the stochastic debt threshold value that the government would undertake fiscal consolidations if the debt level exceeds it

$\gamma_\tau$ : the parameter for income tax adjustment rules in level deviations of debt

$rs_t^z$ : the regime index, which evolves according to the transition matrix

$$\begin{pmatrix} p_1^z & 1 - p_1^z \\ 1 - p_2^z & p_2^z \end{pmatrix}$$

$\alpha$ : the capital income share