

Fiscal multipliers

@econcortex

2026-09-23

Abstract

What one unit of government spending does to output in the textbook, in New Keynesian models at the lower bound, and in the data from wars, forecast errors and US states.

The multiplier is the answer to the question a finance minister asks first: if we spend one more franc, by how much does GDP change? The theoretical range runs from below zero to above two, and the empirical literature has narrowed it considerably, though only after learning which experiment it was measuring.

Definition 1 (Spending multiplier). The change in output per unit change in government purchases, $\Delta Y/\Delta G$, over a stated horizon. The cumulative multiplier divides the integral of the output response by the integral of the spending response, which is the version to compare across studies.

What theory says

In the neoclassical benchmark, government spending crowds out private consumption through a negative wealth effect on households and raises labour supply, so output rises by less than spending and the multiplier lies between zero and one. In a New Keynesian model with sticky prices and a central bank that follows a Taylor rule, the multiplier is close to one: demand rises, but the central bank leans against it. Woodford's exposition shows how the answer hinges on the monetary response (Woodford, 2011).

The response is what changes at the effective lower bound. If the central bank cannot raise rates, higher spending raises expected inflation, lowers the real rate, and stimulates private demand on top of the direct effect. Christiano, Eichenbaum and Rebelo showed that multipliers above two arise in a standard model when the lower bound binds and the spending is expected to last as long as the bound does (Christiano et al., 2011). The same mechanism cuts the other way: consolidation at the lower bound is unusually costly.

Three ways to measure it

Military spending. Wars change government purchases for reasons unrelated to the business cycle. Ramey and Zubairy built a quarterly US series back to 1889 and estimated state-dependent multipliers with local projections; they found multipliers between 0.6 and 1 in most states of the economy and no strong evidence of larger multipliers in slumps, though somewhat larger ones when the lower bound binds (Ramey & Zubairy, 2018). Auerbach and Gorodnichenko, using a regime-switching VAR on post-war data, had found much larger multipliers in recessions, around 1.5 to 2, than in expansions (Auerbach & Gorodnichenko, 2012); the two papers differ in identification and in how the regime is defined, and the disagreement is instructive rather than resolved.

Forecast errors. Blanchard and Leigh noticed that in 2010 to 2011 the countries that consolidated most had the largest negative growth surprises relative to IMF forecasts. Since the forecasts already embodied a multiplier of about 0.5, the systematic errors implied that actual multipliers at the time were above one (Blanchard & Leigh, 2013).

Cross-sectional evidence. Nakamura and Steinsson exploited the fact that US military build-ups hit states differently. A state that receives one dollar more of spending than the average sees output rise by about 1.5 dollars. This is an **open-economy relative multiplier**: it nets out the national monetary and

tax response, and in a model it maps into an aggregate multiplier well above one when monetary policy does not react (Nakamura & Steinsson, 2014).

Reading the evidence

Ramey's survey of the decade after the financial crisis draws the lines: aggregate spending multipliers are most plausibly between 0.6 and 1 in normal times, larger at the lower bound or when policy is accommodative; tax multipliers, identified with narrative records of legislated changes, are often larger than spending multipliers; and the transfer multiplier depends on who receives the money (Ramey, 2019). The cross-sectional and the aggregate numbers are answers to different questions and should not be averaged.

Multipliers and debt

The multiplier feeds straight back into The government budget constraint and debt dynamics. With a multiplier m and a tax share τ , one unit of spending raises revenue by τm ; the deficit rises by $1 - \tau m$. With $m = 1.5$ and $\tau = 0.4$ the deficit rises by 0.4, and if the spending also prevents a persistent loss of output, the debt *ratio* can fall. That is the arithmetic behind the claim that consolidation at the wrong moment can raise the debt ratio it was meant to reduce, and behind the case for Fiscal rules and the Swiss debt brake that let the automatic stabilisers work.

- Auerbach, A. J., & Gorodnichenko, Y. (2012). Measuring the output responses to fiscal policy. *American Economic Journal: Economic Policy*, 4(2), 1–27. <https://doi.org/10.1257/pol.4.2.1>
- Blanchard, O. J., & Leigh, D. (2013). Growth forecast errors and fiscal multipliers. *American Economic Review: Papers and Proceedings*, 103(3), 117–120. <https://doi.org/10.1257/aer.103.3.117>
- Christiano, L., Eichenbaum, M., & Rebelo, S. (2011). When is the government spending multiplier large? *Journal of Political Economy*, 119(1), 78–121. <https://doi.org/10.1086/659312>
- Nakamura, E., & Steinsson, J. (2014). Fiscal stimulus in a monetary union: Evidence from US regions. *American Economic Review*, 104(3), 753–792. <https://doi.org/10.1257/aer.104.3.753>
- Ramey, V. A. (2019). Ten years after the financial crisis: What have we learned from the renaissance in fiscal research? *Journal of Economic Perspectives*, 33(2), 89–114. <https://doi.org/10.1257/jep.33.2.89>
- Ramey, V. A., & Zubairy, S. (2018). Government spending multipliers in good times and in bad: Evidence from US historical data. *Journal of Political Economy*, 126(2), 850–901. <https://doi.org/10.1086/696277>
- Woodford, M. (2011). Simple analytics of the government expenditure multiplier. *American Economic Journal: Macroeconomics*, 3(1), 1–35. <https://doi.org/10.1257/mac.3.1.1>