

BOX 3.2 What Affects the Size of Fiscal Multipliers?¹

The size of fiscal multipliers depends on macroeconomic conditions and country-specific features. While the chapter examines how fiscal multipliers depend on fiscal space, especially in the context of developing economies, this box reviews additional aspects that have been important in explaining the size of multipliers.

Conditions affecting multipliers

Fiscal multipliers depend on the phase of the business cycle: they tend to be larger during recessions than during expansions (Auerbach and Gorodnichenko, 2012a, 2012b). In theory, this is attributed to a higher level of economic slack (Rendahl, 2012) and a greater share of liquidity-constrained households (Canzoneri et al., 2012) during economic downturns. The effectiveness of fiscal policy also depends on monetary policy. Monetary contraction, in response to expansionary fiscal policy that increases inflation and output, blunts the effects of the fiscal policy on output. Similarly, the effects of fiscal policy on output are more pronounced when monetary policy is more accommodative, especially when interest rates are at the zero lower bound (Christiano, Eichenbaum, and Rebelo, 2011).

The effectiveness of fiscal policy also depends on country-specific features. Fiscal multipliers tend to be larger in economies with fixed exchange rates than in economies with flexible exchange rates (Ilzetzki, Mendoza, and Vegh, 2013) because, in fixed regimes, expansionary fiscal policy tends to trigger some monetary accommodation. Fiscal multipliers are also larger in less open economies because of lower leakages into import demand.

Finally, the choice of the fiscal instrument matters. Revenue-based fiscal multipliers tend to be lower (especially in the short term) than expenditure-based multipliers. Expenditures tend to affect aggregate demand directly, whereas changes in revenues operate only indirectly and are subject to leakage. For example, households may save a portion of tax cuts intended to stimulate aggregate demand. Some caution is warranted here as recent work has shown that cyclically adjusted tax revenues are not a good proxy for tax policy. Riera-Crichton, Vegh and Vuletin (2012) argue that using tax rates instead of tax revenues yields considerably higher tax multipliers.

Empirical estimates

Empirical estimation of fiscal multipliers requires a strategy to identify exogenous fiscal shocks. The one deployed in the chapter relies on a timing assumption that discretionary fiscal policy takes at least a quarter to respond to macroeconomic conditions (Blanchard and Perotti, 2002). There are alternative identification strategies deployed in the literature: the narrative approach as in Ramey and Shapiro (1998) or Guajardo, Leigh, and Pescatori (2014); forecast errors as in Blanchard and Leigh (2013); or fluctuations in aid-related financing approval used as instruments in Kraay (2012, 2014). Fiscal multipliers can also be obtained from estimated dynamic stochastic general equilibrium (DSGE) models (Coenen et al., 2012). While empirical approaches yield reduced-form estimates of fiscal multipliers, DSGE-based estimates can capture deep structural features of the economy, in particular the interactions between private-sector behavior and policy parameters.

The vast majority of the estimates fall between zero and unity. Multipliers, on average, tend to be somewhat larger in advanced economies relative to developing ones. Recent work, although mostly in the context of advanced economies, has shown that multipliers depend on macroeconomic conditions consistent with the theoretical predictions above. For instance, the size of multipliers tends to be significantly larger during recessions. Estimates place the long-term fiscal multiplier during recessions between 0.6 and 2.7, which is generally several times larger than multipliers during more tranquil economic conditions. These effects are even larger when interest rates are at the zero lower bound. In addition to the phase of the business cycle, evidence for advanced economies suggests that fiscal multipliers are smaller in the presence of narrow fiscal space, and can even turn negative (Table B3.2.1).

¹The main author of this box is Jamus J. Lim.

²Using tax revenues as the fiscal instrument first involves adjusting for the cyclical or the automatic stabilizer component via elasticity estimates. One reason the chapter does not discuss revenue-based multipliers is that elasticity estimates tend to be unreliable for EMEs and FMEs.

BOX 3.2 (continued)

TABLE B3.2.1 Fiscal multipliers: A review of studies

Groups/Features	Short-term multiplier	Long-term multiplier
Income group		
Advanced economies	-0.1–1.2	-1.1–1.8
Developing economies	-0.4–0.6	-0.4–0.9
Upper-middle income ¹	0.0–0.6	-0.3–0.9
Lower-middle income	-0.4–0.4	-0.4–0.0
Low income	0.2–0.5	-0.3–0.8
Business cycle		
Expansion	-0.9–1.4	-0.5–1.1
Recession	0.3–2.5	0.6–2.7
Zero lower bound ²	2.3–3.7	1.0–4.0
Fiscal space		
Wide space ³	0.0–1.1	-0.4–1.8
Narrow space	-0.2–0.9	-3.0–1.3

Sources: World Bank compilation; Batini et al., (2014); Ilzetzki, Mendoza, and Vegh (2013); Mineshima, Poplawski-Ribeiro, and Weber (2014); and Ramey (2011).

Notes: Estimates are for both government consumption and expenditure multipliers. Minimum and maximum estimates may refer to distinct studies and/or economies. Where available, short-term multipliers report the impact multiplier; otherwise the multiplier at the one-year horizon is used. Where available, long-term multipliers report the cumulative multiplier at the horizon of five years; otherwise the longest (generally three-year) horizon is used. The high-income and developing multipliers report linear estimates without state dependency.

¹The upper-middle income estimates are skewed by the unusually large multiplier of China (2.8). Hence, China was excluded from the computation of the upper bound.

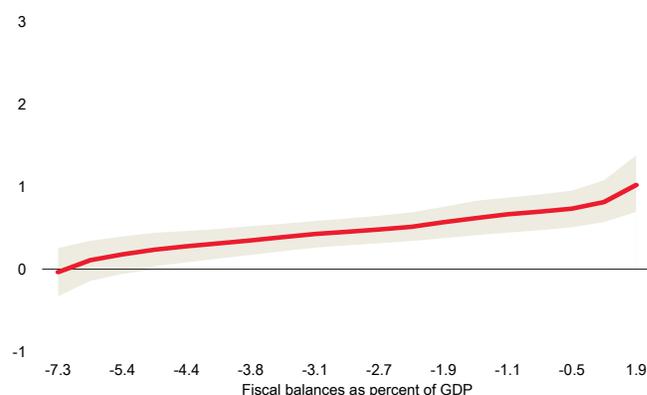
²Applies to zero lower bound for monetary policy rates. Multipliers depend heavily on the duration of the period in which the zero lower bound is binding; short-term (long-term) estimates reported here correspond to a zero lower bound of one (twelve) quarters.

³Fiscal space in these studies is usually measured in terms of the debt-to-GDP ratio: a high (low) debt-GDP ratio indicates fiscal space is narrow (wide).

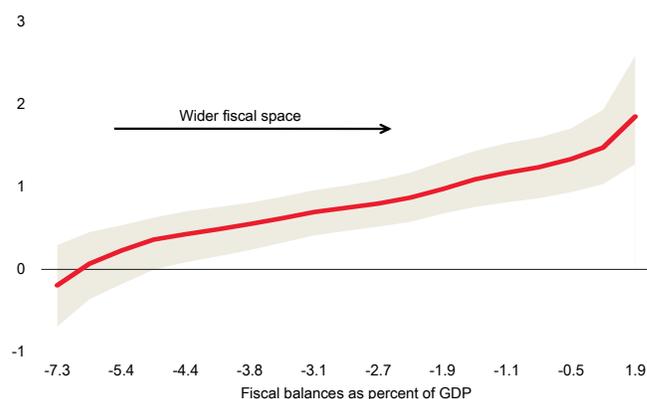
FIGURE 3.9 Fiscal multipliers by fiscal space

Fiscal policy in EMEs and FMEs tends to be more effective when fiscal space is wider.

A. 1 year



B. 2 years



Source: World Bank estimates.

Note: The graphs show fiscal multipliers for different levels of fiscal space at horizons of one and two years. These are based on the estimates from the IPVAR model using a sample of 15 EMEs and FMEs. Fiscal balance as a percentage of GDP is the measure of fiscal space and the values shown on the x-axis correspond to the percentiles from the sample. Fiscal space is narrow (wide) when fiscal balances are low (high). Solid lines represent the median, and shaded areas around the solid lines are the 16-84 percent confidence bands.

and Vuletin (2014).²³ Although the precise estimates of the multipliers differ, the results from the alternative models also suggest that fiscal policy is more effective—fiscal multipliers are higher—when pre-existing fiscal space leading up to the stimulus is wide than when it is narrow (see Annex 3A).

In sum, the empirical evidence presented here suggests that wider fiscal space is associated with more effective fiscal policy in developing economies. This result holds for different types of fiscal space measures using various empirical approaches.

²³Details of these two models are provided in Annex 3A.