# The fiscal stimulus of 2009-10: Trade openness, fiscal space, and exchange-rate adjustment

|  |  |
| --- | --- |
| [Joshua Aizenman](http://www.voxeu.org/index.php?q=node/1097) [Yothin Jinjarak](http://www.voxeu.org/index.php?q=node/4830)30 September 2011, VOX.EU | [**Print**](http://www.voxeu.org/index.php?q=node/7045) [**Email**](http://www.voxeu.org/index.php?q=forward&path=node/7045)[**Comment**](http://www.voxeu.org/index.php?q=node/7045#comments) [**Republish**](http://www.voxeu.org/index.php?q=node/87) |

|  |
| --- |
| *In the immediate fallout from the global crisis, governments around the world responded by spending big. Yet despite the talk of international coordination, this wasn’t the case in all countries. This column explores why. It finds that trade openness, fiscal space, and exchange-rate policy played a pivotal role.*In the first phase of the 2008-09 global crisis, Keynes’ concerns expressed in *The World’s Economic Outlook* (1932) were taken seriously:*Competitive wage reductions, competitive tariffs, competitive liquidation of foreign assets, competitive currency deflations, competitive economy campaigns -- all are of this beggar-my-neighbour description. For one man's expenditure is another man's income. Thus, while we undoubtedly increase our own margin, we diminish that of someone else; and if the practice is universally followed everyone will be worse off.*Reading these words in the months after Lehman Brothers collapsed, countries adopted sizable fiscal stimuli, augmented by unprecedented monetary expansions supported by elastic swap lines between the Federal Reserve and the European Central Bank, and between the Fed and four emerging markets. The flight to quality and the shortage of dollar liquidity posed a special challenge for emerging markets, causing them to supplement these policies with both large sales of foreign currencies at the height of the crisis and with sizeable depreciations.Yet, there has been a remarkable heterogeneity in the magnitudes of the fiscal stimuli and of the exchange-rate depreciation. In [Aizenman and Jinjarak](http://www.nber.org/chapters/c12498.pdf) (2011), we study the response heterogeneity of countries during the crisis, identifying the associations of economic structure (trade openness, fiscal capacity, etc), the size of fiscal stimuli, and the exchange-rate depreciations during the crisis. The crisis led to a significant fiscal stimulus in the US, Japan, and Germany, the magnitude of which increased from 2009 to 2010, reflecting various lags associated with fiscal policy. China, South Korea, and Russia provided front-loaded fiscal stimulus at rates that were well above that observed in most OECD countries. Notable is the greater agility of the emerging markets’ response relative to that of the OECD countries, reflecting possibly faster policy-response capacity of several emerging markets, and possibly the deeper safety net of the OECD, where unemployment insurance, food stamps, social security, socialised medical care, etc. provides automatic stabilisers that work to cushion the economy in addition to the crisis-related stimulus (see Dolls *et al* 2010). In contrast, emerging markets with a more limited safety net but with larger fiscal space tend to benefit by a more aggressive crisis-related fiscal stimulus, compensating partially for the absence of deeper social insurance.A useful theoretical anchor predicting such heterogeneity is the neo-Keynesian open-economy, as provided by the Meade’s (1951) framework. The textbook Meade model implies that at times of collapsing aggregate demand, economies that are more closed (or less open) should opt for a larger fiscal stimulus, and should rely less on exchange-rate depreciation. Trade openness implies lower fiscal multipliers, as a share of the stimuli would ‘leak.’ Trade openness may also increase the potency of exchange-rate depreciation relative to the fiscal stimulus in mitigating the drop in demand for exportable goods, acting as a demand-switching policy, whereby the improved competitiveness of a country increases the demand for net exports.Fiscal policy is predicated on fiscal space and fiscal capacities. While the notion of fiscal space is fuzzy, it deals with the degree to which a country has the ability to fund a fiscal stimulus without a sizable increase in the real interest rate. The presumption is that public debt overhang (like higher public debt/GDP) reduces the ability to fund fiscal stimuli. Indeed, public debt/GDP has been frequently used by the literature and by policymakers as an important indicator for the soundness of policies, and as a measure of exposure to confidence crises. The Maastricht criteria imposed thresholds of public debt/GDP below 60%, and fiscal deficit/GDP below 3% as criteria for joining the euro. Yet, a given ratio of the public debt/GDP, say 60%, is consistent with ample fiscal space in countries where the average tax collection is about or above 50% of the GDP, as is the case in France, Germany, and in most northern European countries. The same public debt ratio is associated with a limited fiscal space in countries where the average tax collection is about or below 25%, as has been the case in developing countries, emerging markets, and the Eurozone peripheral countries (Greece, Ireland, Italy, Portugal, and Spain).Instead of a normalisation of public debt and fiscal deficit by the GDP, we argue that the tax revenue as a share of the GDP, averaged across the business cycle, provides a more efficient way of normalising macro public finance data. We define this ratio as the (*de facto*) tax base: short of a drastic change in tax rates and tax enforcement, the tax base provides a concise summary of the tax capability. The (*de facto*) tax base reflects both the ability and the willingness of a country to fund fiscal expenditure and transfers. Across countries, we find that the *de facto* tax base is more stable than public debt/GDP, and public debt/GDP normalised by the *de facto* tax base is more volatile than public debt/GDP. The public debt/GDP normalised by the *de facto* tax base is subject to greater cross-country variation, and provides a more robust explanation for the scale of fiscal stimuli. Essentially, the public debt/GDP normalised by the *de facto* tax base measures the average tax-years that it would take to ‘buy’ the outstanding public debt, and provides a stock measure of public debt overhang. We view this measure as a more fundamental metric for fiscal space, as it links the public debt to the resources the public sector can mobilise without drastic change of the social contract. Consequently, we define the *de facto* fiscal space by the inverse of the average tax-years it would take to repay the public debt.[1](http://www.voxeu.org/index.php?q=node/7045#fn1)Figure 1 shows the debt/GDP normalised by the average tax revenue/GDP, by country groups. The Figure shows that fiscal space was weakest (highest levels of public debt/average tax base) in the low and middle-income countries. Although fiscal space measures are stronger in the Eurozone peripheral countries than in low- and middle-income countries, its debt/GDP ratio is higher. Generally, the Eurozone peripheral countries had more limited fiscal space during the tranquil period than other OECD countries – higher average public debt relative to the tax base, and a higher level of public debt to GDP. Figure 1 is consistent with the notion that, even without increasing the tax base, a fair share of countries had significant fiscal space in 2006. The presumption is that a *lower* pre-crisis public debt/GDP relative to the pre-crisis tax base (*ie*, higher *de facto* fiscal space) implies *greater* willingness to fund fiscal stimuli using the existing tax capacity. We apply these concepts in order to explain the cross-country variation in the fiscal stimulus during the aftermath of the global crisis.**Figure 1.** Average 2000-06 fiscal space by regionhttp://www.voxeu.org/sites/default/files/image/FromAug2011/AizenmanFig1(1).gif*Notes: The fiscal space is calculated from public debt as of 2006 and 2000-05 average tax/GDP. The South-Western euro Area Peripheral (SWEAP) includes Greece, Ireland, Italy, Portugal, and Spain.*We use the pre-crisis *de facto* fiscal space and structural controls to account for the patterns of fiscal stimuli and exchange-rate adjustments during the crisis, applying OLS, SUR and TOBIT regression analysis for more than 100 countries, validating the predictions of Meade’s approach. We find that higher public debt/average tax base is associated with lower fiscal stimulus, and greater trade openness is robustly associated with a lower fiscal stimulus and a higher depreciation rate during the crisis. A one standard-deviation increase of the public debt/average tax base lowers the size of the fiscal stimulus by about 2% of the GDP. A one standard-deviation increase of trade openness increases the nominal depreciation during 2009-10 by about seven percentage points. Concluding remarksWe show the importance of pre-crisis fiscal space in accounting for the fiscal stimulus during 2009-10. We also find that higher trade openness had been associated with a smaller fiscal stimulus, and with greater exchange-rate depreciation. Economically, these effects are large. A possible interpretation is that a higher public debt/average tax base reduces the supply elasticity of funds facing the treasury, thereby reducing the viability of a countercyclical fiscal policy.[2](http://www.voxeu.org/index.php?q=node/7045#fn1) As fiscal multipliers tend to be lower in more open countries, these countries opted for a smaller fiscal stimulus, putting greater weight on adjustment via exchange-rate depreciation (‘exporting their way to prosperity’). Overall, these results are consistent with the neo-Keynesian open economy framework, and with the importance of fiscal space in measuring the viability of countercyclical policies.ReferencesAizenman, J and Y Jinjarak (2011), “[The Fiscal Stimulus of 2009-10: Trade Openness, Fiscal Space and Exchange Rate Adjustment](http://www.nber.org/chapters/c12498.pdf)”, NBER Working Paper No. 17427, forthcoming, *NBER International Seminar on Macroeconomics* 2011.Aizenman, J, MJ Hutchison, and Y Jinjarak (2011), “[What is the Risk of European Sovereign Debt Defaults? Fiscal Space, CDS Spreads and Market Pricing of Risk](http://www.nber.org/papers/w17407)”, NBER Working Paper No. 17407.Alm, J and B Torgler (2006), “Culture differences and tax morale in the US and in Europe”, *Journal of Economic Psychology*, 27:224-246.Dolls, M, C Fuest, and A Peichl (2010), “Automatic Stabilizers and Economic Crisis: US vs. Europe”, NBER Working Paper No. 16275.Frey SB and B Torgler (2007), “Tax morale and conditional cooperation”, *Journal of Comparative Economics*, 35:136-159.[Keynes, JM (1932), *The World’s Economic Outlook*, Atlantic Monthly, May.](http://www.theatlantic.com/past/docs/unbound/flashbks/budget/keynesf.htm)Meade, JE (1951), *The Balance of Payments: The Theory of International Economic Policy*, Vol. 1, Oxford University Press.1 Our presumption is that the tax base depends on structural factors that are harder to modify in the short run than adjusting government expenditure. This view is consistent with recent empirical literature finding that tax compliance. Individual’s willingness to pay taxes is affected by perceptions about the fairness of the tax structure, by his perception of the behaviour of other taxpayers, and the degree to which his preferences are adequately represented (see Alm and Torgler 2006 and Frey and Torgler 2007).2 In a companion paper, we also study the usefulness of the de facto fiscal space by showing that they account better for sovereign spreads of countries than the more conventional public debt/GDP (Aizenman et al. 2011). |