

What is the value of the fiscal multipliers today?

By [Xavier Timbeau](#)

We inherited higher public deficits and greatly increased public debts from the crisis (Table 1). Reducing these will require a major fiscal effort. But a programme that is too brutal and too fast will depress activity and prolong the crisis, not only compromising the fiscal consolidation effort but also locking the economies into a recessionary spiral. The value of the fiscal multiplier (the link between fiscal policy and economic activity) both in the short term and in the long term is thus a critical parameter for stabilizing the public finances and returning to full employment.

Public deficit and public debt 2007-2012

<i>In GDP points</i>	Public deficit		Net public debt minus financial assets	
	2012	Change 2012-2007	2012	Change 2012-2007
DEU	-0.9	-1.1	52	9
FRA	-4.5	-1.7	66	31
ITA	-1.7	-0.1	96	9
ESP	-5.4	-7.3	54	37
NLD	-4.3	-4.4	43	15
BEL	-2.8	-2.7	82	9
PRT	-4.6	-1.4	81	32
IRL	-8.4	-8.5	82	82
GRC	-7.4	-0.6	134	52
AUT	-2.9	-1.9	48	17
Euro area (EA11)	-3.0	-2.3	63	20
GBR	-7.7	-4.9	74	46
USA	-8.3	-5.3	85	37
JPN	-9.9	-7.8	134	54

Source : OECD, Economic outlook 91.

When the multiplier (in the short term) is greater than approximately 2 (actually $1/a$, a being the sensitivity of the public deficit to the economic cycle and valued at about 0.5 in the developed countries), then fiscal cutbacks produce such a decrease in activity that the short-term deficit increases with the cuts. When the multiplier is greater than approximately 0.7 (in fact, $1/(a+d)$, d being the ratio of debt to GDP), then fiscal restraint increases ratio of debt to GDP in the short term. In the longer term, things get complicated, and only a detailed modelling can help to understand in what circumstances today fiscal restraint would lead to a sustained reduction in the debt-to-GDP ratio. The value of the multiplier in the medium term is of course crucial (it is usually assumed to be null, or zero, but in the case of cost-effective public investment, this assumption does not hold), but hysteresis effects as well as changes in expectations about inflation or about sovereign interest rates (and therefore the critical gap, i.e. the gap between 10-year sovereign bond rates and the economy's nominal potential growth rate) interact with changes in the debt and in GDP.

Until recently, most economists believed that the value of the multiplier depends on the composition of the fiscal stimulus (taxes, expenditure and the nature of taxes and expenditure), the size of the economy and its openness (the more open the economy, the lower its multiplier) and the existence of anticipations of a fiscal shock (an anticipated shock would have little effect, in the long term, it would have none, with only an unexpected shock having a temporary effect)[\[1\]](#). [Recent literature \(since 2009\) has taken an interest](#) in the value of the fiscal multiplier in the short term in times of crisis . Two main conclusions emerge:

1. The multiplier is higher in "times of crisis" (in the short term or as long as the crisis lasts). In "times of crisis" means high unemployment or a very wide output gap. Another symptom may be a situation where safe long-

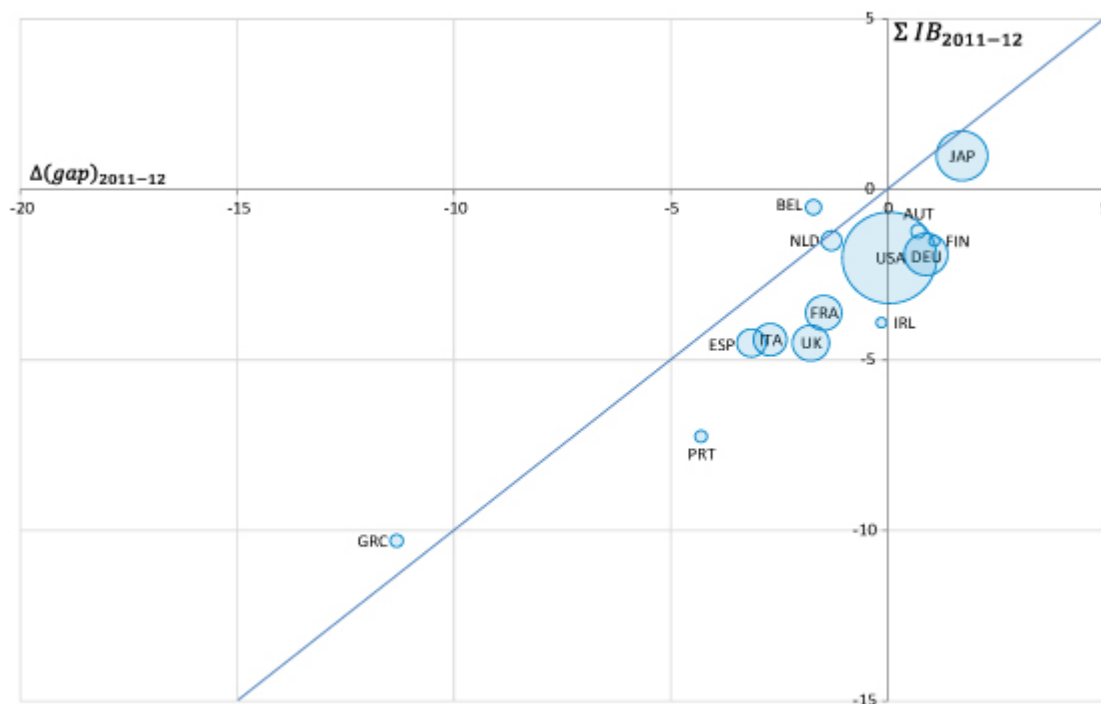
term interest rates are very low (*i.e.* negative in real terms), suggesting a flight to safety (radical uncertainty) or a liquidity trap (expectations of deflation). Two theoretical interpretations are consistent with these manifestations of the crisis. One, price expectations are moving toward deflation, or radical uncertainty makes it impossible to form an expectation, which is consistent with very low safe interest rates and leads to the paralysis of monetary policy. Or second, more economic agents (households, firms) are subject to short-term liquidity constraints, perpetuating the recessionary spiral and preventing monetary policy from functioning. In one case as in the other, the fiscal multipliers are higher than in normal times because the expansionary fiscal policy (resp. restrictive) forces the economic agents to take on debt (resp. shed debt) collectively instead of individually. In “times of crisis” the multiplier is in play including when it is anticipated and its effect persists until a return to full employment.

2. The multiplier is higher for expenditures than it is for compulsory levies. The argument in normal times is that higher compulsory levies acts as a disincentive and spending cuts as an incentive on the supply of labour. In a small open economy, when monetary policy also induces a real depreciation of the currency, fiscal restraint can increase activity, a result that has long allowed supporters of fiscal discipline to promise all kinds of wonders. But in times of crisis, in addition to the fact that the multipliers are higher, the logic applicable in normal circumstances is reversed. The use of taxes as disincentives for the labour supply or spending cuts as incentives does not work in an economy dominated by involuntary unemployment or overcapacity. It is in fact the expectations of a recession or of deflation that act as disincentives, which is another factor indicating high multipliers.

Econometric estimates (based on past experience of “times of crisis”) lead to retaining a fiscal multiplier of around 1.5 (for an average mix of spending and compulsory levies).

Taking together 2011 and 2012, years in which a very strong fiscal impulse was carried out, confirms this econometric evaluation. By comparing on the one hand changes in the output gap from end 2010 to 2012 (on the abscissa) and on the other hand the cumulative fiscal impulse for 2011 and 2012, we obtain the short-term impact of the fiscal consolidation. Figure 1 depicts this relationship, showing a close link between fiscal restraint and economic slowdown.

Graphe 1 : Change in the output gap and the impulse 2011-2012



Source: OECD, *Economic Outlook 91*, June 2012. The year 2012 is a projection (OFCE forecast October 2012).
The area of the bubbles is proportional to real GDP in 2011 (\$ PPP).

For most countries, the “apparent” multiplier is less than 1 (the lines connecting each of the bubbles are below the bisector, the “apparent” multiplier is the inverse of the slope of these lines). Figure 2 refines the evaluation. The changes in the output gap are in effect corrected for the “autonomous” dynamic of the closing of the output gap (if there had been no impulse, there would have been a closing of the output gap, which is estimated as taking place at the same

rate as in the past) and for the impact of each country's budget cutbacks on the others through the channel of foreign trade. The bubbles in orange therefore replace the blue bubbles, integrating these two opposing effects, which are evaluated here while seeking to minimize the value of the multipliers. In particular, because the output gaps have never been so extensive, it is possible that the gaps are closing faster than what has been observed in the last 30 or 40 years, which would justify a more dynamic counterfactual and therefore higher fiscal multipliers.

Austria and Germany are exceptions. As these two countries enjoy a more favourable economic situation (lower unemployment, better business conditions), it is not surprising that the multiplier is lower there. Despite this, the "corrected apparent" multiplier is negative. This follows either from the paradoxical effects of the incentives, or more likely from the fact that monetary policy is more effective and that these two countries have escaped the liquidity trap. But the correction provided here does not take into account any stimulus from monetary policy.

In the United States, the "2011-2012 corrected apparent" multiplier comes to 1. This "corrected apparent" multiplier is very high in Greece (~ 2), Spain (~ 1.3) and Portugal (~ 1.2), which is consistent with the hierarchy set out in point 1. This also suggests that if the economic situation deteriorates further, the value of the multipliers may increase, exacerbating the vicious circle of austerity.

For the euro zone as a whole, the "corrected apparent" multiplier results from the aggregation of "small open economies". It is thus higher than the multiplier in each country, because it relates the impact of the fiscal policy in each country to the whole zone and no longer just to the country concerned. The aggregate multiplier for the euro zone also depends on the composition of the austerity package, but especially to the place where the measures are being

implemented. However, the biggest fiscal impulses are being executed where the multipliers are highest or in the countries in the deepest crisis. The result is that the aggregate multiplier for the euro zone is 1.3, significantly higher than that derived from the US experience.

Grappe 2 : Changes in the output gap and the impulse 2011-2012

Source: OECD, *Economic Outlook 91*, June 2012. The year 2012 is a projection (OFCE forecast October 2012). The area of the bubbles is proportional to real GDP in 2011 (\$ PPP).

by the IMF has contradicted the analyses made in the early 2000s, which concluded that anti-Keynesian effects dominate Keynesian effects. Thus, at least with regard to the short term, before the crisis and in “normal times”, the diagnosis today is that the fiscal multipliers are positive. The endogeneity of measurements of a fiscal impulse by simply varying the structural deficit interfered with the empirical analysis. The use of a narrative record of fiscal impulses addresses this issue and significantly alters estimates of the multipliers. In most macroeconomic models (including dynamic stochastic general equilibrium – DGSE – models), the fiscal multipliers are also positive in the short term (on the order of 0.5 for a pure fiscal shock “in normal times”). In the long run, the empirical analysis does not tell us much, as the noise drowns out any possibility of measurement. The long term therefore reflects mainly an *a priori* theory that remains largely dominated by the idea that fiscal policy can have no long-term effect. However, in the case of public investment or of possible hysteresis, the assumption of a non-null effect in the long run seems more realistic.

A review of the recent literature on fiscal multipliers: size matters!

By [Eric Heyer](#)

Are the short-term fiscal multipliers being underestimated? Is there any justification for the belief that fiscal restraint can be used to drastically reduce deficits without

undermining business prospects or even while improving the medium-term situation? This is the question that the IMF tries to answer in its latest [report on the world economic outlook](#). The Fund devotes a box to the underestimation of fiscal multipliers during the 2008 crisis. While until 2009 the IMF had estimated that in the developed countries they averaged about 0.5, it now calculates that they have ranged from 0.9 to 1.7 since the Great Recession.

This reassessment of the value of the multiplier, which [X. Timbeau discusses in an interesting reading](#) on the basis of a “corrected apparent” multiplier, builds on the numerous studies carried out by IMF researchers on the issue and especially that of [Batini, Callegari and Melina \(2012\)](#). In this article, the authors draw three lessons about the size of the fiscal multipliers in the euro zone, the U.S. and Japan:

1. The first is that gradual and smooth fiscal consolidation is preferable to a strategy of reducing public imbalances too rapidly and abruptly.
2. The second lesson is that the economic impact of fiscal consolidation will be more violent when the economy is in recession: depending on the countries surveyed, the difference is at least 0.5 and may be more than 2. This observation was also made in another study by the IMF ([Corsetti, Meier and Müller \(2012\)](#)) and is explained by the fact that in “times of crisis” more and more economic agents (households, firms) are subject to very short-term liquidity constraints, thus maintaining the recessionary spiral and preventing monetary policy from functioning.
3. Finally, the multipliers associated with public expenditure are much higher than those observed for taxes: in a recessionary situation, at 1 year they range from 1.6 to 2.6 in the case of a shock to public spending but between 0.2 and 0.4 in the case of a shock on taxes. For the euro zone, for example, the multiplier

at 1 year was 2.6 if government spending was used as an instrument of fiscal consolidation and 0.4 if the instrument was taxation.

As the economic crisis continues, the IMF researchers are not the only ones raising questions about the merits of the fiscal consolidation strategy. In an NBER working paper in 2012, two researchers from Berkeley, [Alan J. Auerbach and Yuriy Gorodnichenko](#), corroborate the idea that the multipliers are higher in recessions than in periods of expansion. [In a second study](#), published in the *American Economic Journal*, these same authors argue that the impact of a shock on public expenditure would be 4 times greater when implemented during an economic downturn (2.5) than in an upturn (0.6). This result has been confirmed for the US data by three researchers from the University of Washington in St. Louis ([Fazzari et al. \(2011\)](#)) and by two economists at the University of Munich ([Mittnik and Semmler \(2012\)](#)). This asymmetry was also found for the data on Germany in a study by a Cambridge University academic and a Deutsche Bundesbank researcher, [Baum and Koester \(2011\)](#).

In other work, a researcher at Stanford, [Hall \(2009\)](#), affirms that the size of the multiplier doubles and is around 1.7 when the real interest rate is close to zero, which is characteristic of an economy in a downturn, as is the case today in many developed countries. This view is shared by a number of other researchers, including two at Berkeley and Harvard, [DeLong and Summers \(2012\)](#), two from the Fed, [Erceg and Lindé \(2012\)](#), those of the [OECD \(2009\)](#), those of the [European Commission \(2012\)](#) and in some recent theoretical work ([Christiano, Eichenbaum and Rebelo \(2011\)](#), [Woodford \(2010\)](#)). When nominal interest rates are blocked by the zero lower bound, anticipated real interest rates rise. Monetary policy can no longer offset budgetary restrictions and can even become restrictive, especially when price expectations are anchored on deflation.

As already noted by J. Creel on this blog ([insert link to the](#)

post of 22.02.12) with respect to the instrument to be used, *i.e.* public spending or taxation, other IMF economists together with colleagues from the European Central Bank (ECB) the US Federal Reserve (FED), the Bank of Canada, the European Commission (EC) and the Organization for Economic Cooperation and Development (OECD) compared their assessments in an article published in January 2012 in the *American Economic Journal: Macroeconomics* ([Coenen G. et al. \(2012\)](#)). According to these 17 economists, on the basis of eight different macroeconometric models (mainly DSGE models) for the United States, and four models for the euro zone, the size of many multipliers is large, particularly for public expenditure and targeted transfers. The multiplier effects exceed unity if the strategy focuses on public consumption or transfers targeted to specific agents and are larger than 1.5 for public investment. For the other instruments, the effects are still positive but range from 0.2 for corporation tax to 0.7 for consumer taxes. This finding is also shared by the [European Commission \(2012\)](#), which indicates that the fiscal multiplier is larger if the fiscal consolidation is based on public expenditure, and in particular on public investment. These results confirm those published three years ago by the [OECD \(2009\)](#) as well as those of economists from the Bank of Spain for the euro zone ([Burriel et al \(2010\)](#)) and from the Deutsche Bundesbank using data for Germany ([Baum and Koester \(2011\)](#)). Without invalidating this result, a study by [Fazzari et al \(2011\)](#) nevertheless introduced a nuance: according to their work, the multiplier associated with public spending is much higher than that observed for taxes but only when the economy is at the bottom of the cycle. This result would be reversed in a more favourable situation of growth.

Furthermore, in their assessment of the US economy, researchers at the London School of Economics (LSE) and the University of Maryland, [Ilzetzki, Mendoza and Vegh \(2009\)](#), highlight a high value for the fiscal multiplier for public investment (1.7), *i.e.* higher than that found for public

consumption. This is similar to the results of other IMF researchers ([Freedman, Kumhof, Laxton and Lee \(2009\)](#)).

In the recent literature, only the work of Alesina, a Harvard economist, seems to contradict this last point: after examining 107 fiscal consolidation plans, conducted in 21 OECD countries over the period 1970-2007, Alesina and his co-authors ([Ardagna in 2009](#) and [Favero et Giavazzi in 2012](#)) conclude first that the multipliers can be negative and second that fiscal consolidations based on expenditure are associated with minor, short-lived recessions, while consolidations based on taxation are associated with deeper, more protracted recessions. In addition to the emphasis on the particular experiences of fiscal restraint (Scandinavian countries, Canada), which are not found when including all experiences with fiscal restriction (or expansion), the empirical work of Alesina *et al.* suffers from an endogeneity problem in the measurement of fiscal restraint.

The notion of a narrative record of fiscal impulse helps to avoid this endogeneity. For example, in the case of a real estate bubble (and more generally in cases of large capital gains), the additional tax revenues from the real estate transactions results in a reduction in the structural deficit, as these revenues are not cyclically based (the elasticity of revenues to GDP becomes much higher than 1). So these are associated with an expansionary phase (in conjunction with the housing bubble) and a reduction in the structural deficit, which artificially strengthens the argument that reducing the public deficit may lead to an increase in activity, whereas the causality is actually the reverse.

With the exception of the work of Alesina, a broad consensus emerges from the recent theoretical and empirical work in the existing economic literature: a policy of fiscal consolidation is preferable in periods of an upturn in activity, but is ineffective and even pernicious when the economy is at a standstill; if such a policy is to be enacted in a downturn,

then tax increases would be less harmful to the activity than cuts in public spending ... all recommendations contained in [Creel, Heyer and Plane \(2011\)](#).