

# Perverse Fiscal Consolidation

D.Mario Nuti

Between 2011-2013 IMF documents and research papers have revised upwards earlier estimates of fiscal multipliers, which throughout 1970-2009 were assumed by the IMF and other international organisations to be on average about 0.5 for advanced countries (Blanchard and Leigh 2012, 2013, Batini et al. 2012, Cottarelli and Jaramillo 2012 and other researchers associated with the IMF).

The upward revision applies from 2010 and was justified by: the ineffectiveness of countervailing monetary expansion close to the zero floor of the interest rate, lack of opportunities for exchange rate devaluation especially in the Euroarea, by a large gap between potential and actual income (for fiscal multipliers are higher in a downturn than in a boom); and by simultaneous recent consolidation across countries. Moreover, the fiscal multiplier for expenditure cuts – contrary to earlier claims - turns out to be much (up to ten times) higher than for tax rises.

This means that fiscal consolidation is more expensive in terms of output loss than previously believed. But there is worse: the higher are fiscal multipliers, the higher is the probability that fiscal consolidation will have the *perverse* effect of actually *raising* the Public Debt/GDP ratio.

Namely: a fiscal consolidation (tax increases plus government expenditure cuts) will always necessarily result in an increase instead of a decrease of the Public Debt/GDP ratio, with respect to what that ratio would have been in the absence of fiscal consolidation, as long as the fiscal multiplier – or more precisely the weighted average of fiscal multipliers applicable to the composition of the fiscal package – is greater than the inverse of the country's Public Debt/GDP ratio. Thus in such circumstances fiscal consolidation, contrary to received wisdom, will make Public Debt more rather than less costly to re-finance, and therefore less instead of more sustainable. In plain words, fiscal consolidation works only in those countries that, having a sufficiently low Public Debt/ratio, do not actually need a consolidation.

Here is the proof. Given  $D$ =Public Debt,  $Y$ =GDP,  $d=D/Y$ ,  $x$ =the size of fiscal consolidation (tax rises plus expenditure cuts of given composition) expressed as a share of GDP,

$$\Delta D = -xY$$

$$\Delta Y = -m x Y$$

where  $m$  is the appropriate fiscal multiplier,

$$\Delta(D/Y) = [(\Delta D)Y - (\Delta Y)D]/Y^2 =$$

$$= [(-xY)Y - (-m x Y)D]/Y^2$$

$$= -x Y^2/Y^2 + m x Y D/Y^2 =$$

$$= -x + m x D/Y = m x d - x \text{ and therefore}$$

$$\Delta(D/Y) = x(md - 1) = x d(m - 1/d)$$

from which we can see that *the ratio D/Y must increase,*

*i.e.  $\Delta(D/Y) > 0$ , if and only if  $m > 1/d$ . Q.E.D.*

The interest of this proposition is in the fact that the inverse of the  $D/Y$  ratio is naturally all the smaller the more heavily indebted a country is, and particularly small with respect to the kind of fiscal multipliers estimates that have been produced in recent literature (such as Blanchard and Leigh 2012, 2013, Batini et al. 2012, Cottarelli and Jaramillo 2012 and other researchers associated with the IMF). Thus the counterproductive nature of fiscal consolidation in advanced economies, especially in highly indebted countries with high fiscal multipliers, is an absolute certainty.

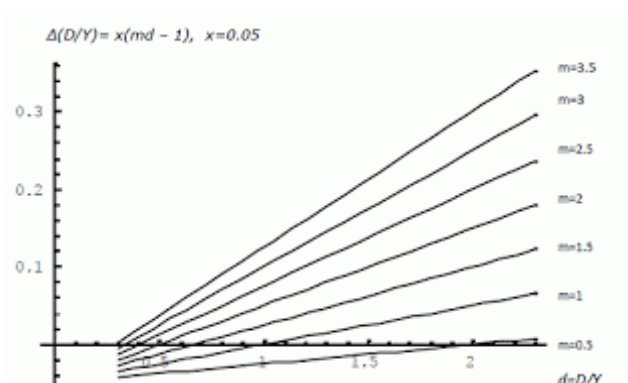


Figure 1. Illustration of perverse fiscal consolidation raising the Public Debt/GDP ratio (CLICK TO ENLARGE):  $\Delta(D/Y) > 0$  for plausible values of  $m$  and as an increasing function of  $D/Y$ .

The figure above (for which I am indebted to my colleague Marilena Giannetti) illustrates the impact of a fiscal stabilisation package of 5% of GDP, relatively modest by the standards of the current crisis, on the Public Debt/GDP ratio,  $\Delta(D/Y) = x(md - 1)$ , as a function of the current  $d=D/Y$  ranging from 50% to over 200% of GDP and for alternative values of fiscal multipliers ranging from 0.5 to 3.5. At high D/Y ratios and relatively high multipliers still within the range estimated by recent IMF sources, the rise in D/Y can be devastating.

By way of example, a country with  $d=1.20$ ,  $m=3$ , undertaking a stabilisation of  $x=5\%$ , would raise its  $d$  by  $0.05*(1.20*3-1)=13\%$  of GDP, from 1.20 to 1.33. In a country like Japan, for a Public Debt at over 200% of GDP, a fiscal consolidation package of 5% would lead to an increase of the Public Debt/GDP ratio of the order of 30% of GDP. For a perverse effect of fiscal consolidation on such a massive scale the claim that “The short-term effects of fiscal policy on economic activity are only one of the many factors that need to be considered in determining the appropriate pace of fiscal consolidation for any single economy” (Blanchard and Leigh, 2013, p.6) is facile and disingenuous. Such a regime switch cannot be ignored.

We have seen above that before the crisis the value of fiscal multipliers generally assumed by the IMF for advanced economies for forty years (1970-2009) was on average 0.5. This leads to the presumption that – if national fiscal multipliers were all identical to the group average of 0.5 – only in Japan (with a GDP/Public Debt ratio as low as 0.47 in 2012 and 0.43 in 2013) would fiscal consolidation have raised the Public Debt/GDP ratio, and only very marginally at that. In all other countries fiscal consolidation would have worked, lowering both D and the D/Y ratio.

The lower bound of the fiscal multipliers revised by Blanchard and Leigh (2012 and 2013), at 0.9, would imply a perverse consolidation pattern in 2012 not only in Japan but also in Greece, Ireland and Italy; while the upper bound of 1.7 would add to the list of perverse consolidation also France, the UK, Spain, Germany, Hungary, Austria, the US, the Netherlands and Albania.

Table 1. Threshold of the fiscal multiplier over which fiscal consolidation necessarily leads to higher Public Debt/GDP ratio for selected countries (calculated as the GDP/Public Debt ratio, from the data estimated by US-CIA, *The World Factbook*, 2013, for 2012), ranked by increasing value of the multiplier threshold.

Country	Public Debt/GDP	GDP/Public Debt
Japan	214.3	0.47
Greece	161.3	0.62
Ireland	118.0	0.84
Italy	126.1	0.79
France	89.9	1.11
UK	88.7	1.13
Spain	85.3	1.17
Germany	81.7	1.22
Hungary	78.6	1.27
Austria	74.6	1.34
US	73.6	1.36
Netherland	68.7	1.45
World average	64.0	1.56
Albania	60.6	1.65
Poland	53.8	1.85
Finland	53.5	1.87
Slovakia	48.	2.06
Czechoslovakia	43.9	2.21
Denmark	45.3	2.21
Sweden	38.6	2.56
Romania	37.2	2.69

The lower bound of the expenditure multipliers estimated by Batini et al. (2012), 1.6, would remove only Albania from the list of perverse fiscal consolidation, but its higher bound 2.6 would include – in addition to the previous list, also Poland, Finland, Slovakia, the Czech Republic, Denmark and Sweden, leaving out Romania as the only country in table 1 in which consolidation would not raise the Public Debt/GDP ratio and reduce GDP growth. Using the range of estimated multipliers for tax rises, 0.16-0.35, on the contrary, that kind of fiscal consolidation would always work, i.e. would reduce both the absolute level of Public Debt *and* its ratio to GDP.

For the multiplier estimated by Auerbach-Gorodnichenko (2012b), near zero in normal times to about 2.5 during recessions, fiscal consolidation would work always in a boom, and never in a recession except in Sweden and Romania. Finally, for Christiano et al. (2011), with the multiplier at 3.2 once the interest rate approaches the zero interest lower bound, all the countries in Table 1 would experience perverse fiscal consolidation.

It is reasonable to presume that all the IMF researchers involved in this kind of work must have been aware of such devastating implications of the upward revision of fiscal multipliers. My colleague and good friend Giancarlo Gandolfo helped me to work out the proof of the proposition above linking the multiplier to the inverse of the Public Debt/GDP ratio, for which I am most grateful, but in all honesty he would be the first to point out that the proof does not involve the use of rocket science. Cottarelli and Jaramillo (2012) who discuss the feedback loops between fiscal policy and growth, get remarkably close to that proposition, but use an obscure turn of phrase, and stop short of stating it in so many words, or mathematically:

“a deceleration of growth prompted by a fiscal consolidation could result in a rise in the government debt-to-GDP ratio. This is found to be the case if the initial stock of debt is large and the fiscal multiplier is high. The effect of fiscal tightening on debt (the numerator of the ratio) in percentage terms is smaller the higher the initial stock of debt to GDP. Meanwhile, the negative effect of fiscal tightening on GDP (the denominator of the ratio) is larger the higher the fiscal multiplier.”

The point is that although the participants in the debate *“should not be reported as representing the views of the IMF”*, as stated in all IMF publications, naturally their writings are taken as a pointer to the way IMF views are evolving. Therefore they must be anxious not to suggest that their upwards revision might result in *perverse fiscal consolidations in all or near all* advanced economies, and balk at saying in so many words that fiscal consolidation backfires precisely in those highly indebted countries on which it is pressed most energetically. Thus Blanchard and Leigh (2013) are adamant:

“... our results should not be construed as arguing for any specific fiscal policy stance in any specific country. In particular, the results do not imply that fiscal consolidation is undesirable.”

And Cottarelli and Jaramillo (2012) make a case against abrupt, front-loaded and

simultaneous fiscal consolidations (like Blanchard and Cottarelli had done separately in 2011 and 2012 respectively). “It is imperative to lower Public Debt over time”, though: “However, in the short-run, front-loaded fiscal adjustment is likely to hurt growth prospects, which would delay improvements in fiscal indicators, including deficits, debt, and financing costs. A measured, although not trivial, pace of adjustment, based on a clear medium-term plan, is therefore preferable, if market conditions allow it.” Nevertheless, they claim that fiscal consolidation and economic growth go “hand in hand”.

All researchers advocate structural reforms, precisely to offset the recognition that fiscal adjustment will slow down growth. “Reforms in goods, services, and labor markets that improve economic efficiency will boost potential growth, in turn serving as important tools in the fiscal adjustment process” (Cottarelli and Jaramillo 2012). These cover a multitude of sins and virtues that have mixed and ambiguous effects, if any, and in any case only in a distant long-run. The notion of a virtuous circle in which “pro-growth fiscal adjustment measures, other structural reforms, and lower debt boost growth and the latter facilitates fiscal adjustment” (*ibidem*) is pie in the sky, and a dangerous vision if it is used to justify perverse fiscal consolidation.

The proposition that fiscal consolidation harms development *only* when it is abrupt, front-loaded and internationally coordinated is a *non-sequitur*.

At this point two further considerations are in order. First, we know – not least from Cottarelli and Jaramillo (2012, Appendix on *Short-run Determinants of CDS Spreads in Advanced Economies*) – that a country’s cost of borrowing tends to rise with the Debt/GDP ratio and with the fall in the growth rate, both phenomena being associated with “perverse” fiscal consolidation i.e. with the near totality of consolidations. For “a deceleration of growth prompted by a fiscal consolidation could trigger nervousness in financial markets” and “...markets seem to have been focusing recently on short-term growth developments.” “The possible increase in spreads when fiscal policy is tightened creates a problem for upholding a fiscal adjustment strategy, not only because higher financing costs increase the overall deficit, but also because of political economy reasons. If painful fiscal tightening is accompanied by early evidence of an improvement in credibility, the adjustment is more easily sustained, but if markets do not reward the effort, the resolve of the government to carry on the fiscal adjustment may be undermined.” Therefore fiscal consolidation can and often does generate a vicious circle that makes Public Debt more and more unsustainable.

Second, we know that in a prolonged depression productive capacity does not just stand idle but is actually *destroyed*: factories close down with no more than a fraction of their productive capital being re-deployed elsewhere, if at all, in other productive uses; human capital is also destroyed, as workers made redundant are dispersed, and their skills are lost or forgotten or made obsolete. When actual output falls below potential output, at some point gross investment stops and net investment falls below zero as unused or obsolete capital is not replaced, thus reducing not only employment but the number of those “employable”, pulling down the growth path of potential output (Vianello 2005). “An insufficient demand protracted over time unavoidably generates a slowdown in the formation of new productive capacity and therefore of potential income” (*ibidem*). Discouraged workers will stop looking for work and the rate of participation will fall. As Nicholas Kaldor (1983) had argued, “It is illegitimate to assume that there exists a long run equilibrium growth path, for a single country or even the world as a whole, determined by population growth, capital accumulation and the rate of technical progress, all taken *exogenously* [italics added].” (p. 95).

In such conditions, *in the world as we know it, fiscal consolidation definitely can harm economic growth and development, even if it is not abrupt, front-loaded and internationally coordinated*. This is not to say that there are no limits to a country’s or even a group of countries’ ability to sustain a fiscal stimulus. But fiscal consolidation has to be avoided absolutely as long as the GDP/Debt ratio is smaller than the fiscal multiplier – even if otherwise the country is growing less fast than the interest rate on its debt, for with perverse fiscal consolidation the country would continue to raise its Debt/GDP ratio even faster than with continued fiscal stimulus.

This is true even if government expenditure consists of Keynes’ proverbial policy of hiring some workers digging holes and others filling them, that Tanzi (2012) would relegate “to the museum of old and wrong ideas” (p. 11). Obviously the replacement of unproductive expenditure with productive investment has significant additional benefits over a continuation of unproductive investment such as digging and filling holes or building pyramids or cathedrals, but even the continuation of such unproductive investment is superior to fiscal consolidation.

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