

AUSTERITY VERSUS DEVELOPMENT

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Summary. *Between 2011-2013 IMF researchers 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. The 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 fiscal multipliers being higher in a downturn than in a boom; and by simultaneous recent consolidation across countries. Moreover, fiscal multipliers for expenditure cuts – contrary to earlier findings – turn out to be up to ten times higher than for tax rises.*

This paper shows that, if the fiscal multiplier is greater than the inverse of the Public Debt/GDP ratio, fiscal consolidation necessarily raises instead of lowering the Public Debt/GDP ratio with respect to what it would have been without consolidation. This appears to be the case for all or nearly all of advanced countries, assuming national multipliers equal to the newly revised average. Fiscal consolidation reduces the Public Debt/GDP ratio only in the least indebted countries that do not need such a reduction. Consolidation makes debt less rather than more sustainable, consequently making necessary further fiscal consolidation, activating a vicious circle. Finally, the maintenance and growth of a gap between potential and effective income discourages investment and slows down both potential and actual growth.

Thus austerity and economic growth (and development) can be and mostly are alternative, conflicting objectives.

1. Introduction

In an ideal world, often commonly and unduly considered a “normal” world, there would be no conflict between austerity and economic growth and development. By austerity we mean the pursuit of fiscal policies aimed at roughly balancing the government budget over the cycle. A country would experience modest and relatively short-lived economic fluctuations, mitigated by automatic (or built-in) stabilizers, or rather by automatic “dampeners” for these can never actually stabilize the level of economic activity. If the country has the necessary fiscal space i.e. it is not already burdened by high debt costly to service, it could run an average fiscal budget close to equilibrium over the cycle, using a fine tuning approach, i.e. a discretionary or active fiscal

policy imparting a fiscal stimulus in the short term during a recession and funding it out of surpluses during the boom.

If fiscal multipliers are sufficiently low, say of the order of magnitude of about 0.5, as estimated by the IMF for advanced economies for the forty years before the last crisis (during 1970–2009, see section 6 below), even in the presence of high Public Debt nearing two years of GDP (a threshold discussed below in section 8), fiscal consolidation would reduce not only the absolute level of Public Debt but also its ratio over GDP. This in turn would reduce the cost of servicing Public Debt and make it all the more sustainable, generating over time the fiscal space necessary to run a counter-cyclical policy with a fiscal budget balanced on average.

In such ideal conditions, attempting to promote long term growth and development with persistent fiscal expansion may be inadvisable. There is bound to be *policy asymmetry*: “Policymakers who make the decisions are often more favorably disposed to pursue expansionary fiscal policies” than restrictive policies (Tanzi 2012).

There may be also *bureaucratic asymmetry*, due to officials’ incentive to expand their power and salaries through the growth of their budgets, and *citizens’ or voters’ asymmetry* i.e. the resistance of population sub-groups to selective cuts more likely to fall on particular categories (these are presumably some of the reasons for Adolf Wagner’s “Law of Increasing State Activity” and the similar Peacock-Wiseman hypothesis). “Most government programmes, especially those without clear sunset provisions, tend to grow and become more expensive over the years. In general, the longer the programmes remain in existence, the more expensive they become. They may start slim but tend to accumulate fat” (Tanzi 2012 and 2011, pp. 7-8, 121-22).

High transfer payments breed dependence and moral hazard among the beneficiaries, whether households or enterprises, and tend to grow excessively over time due to the growth of both the number of beneficiaries and that of the employees administering the benefits. Public investment may be mis-directed and breed corruption (suffice the memory of central planning collapse in 1990-91 in Central-Eastern Europe). “When the recessions are due to the bursting of non-sustainable bubbles stimulus packages will be less successful in reducing unemployment in the short and medium term than in traditional recessions” because higher employment requires the re-deployment of labour to skills, sectors and locations different from their previous ones (Tanzi 2013, p. 10).

Once the increasing cost of funding government debt (defined as the non-monetary general government net debt augmented by the Central Bank) rises

over the country's growth rate, sooner or later – at an uncertain date in the long run but with inexorable certainty – debt becomes unsustainable.

Given the interest rate effectively paid on Public Debt and its maturity structure, and therefore the average rate r paid on that debt, the variation Δd of the ratio d between Public Debt and GDP is given by the standard debt dynamics equation:

$$\Delta d = -s + d.(r-g)/(1+g),$$

where s is the primary surplus (i.e. before interest payments, in proportion to GDP, again referring to the general government budget augmented by the Central Bank), while g is the nominal growth rate of GDP of the country in question. For $r > g$ debt will increase to the ultimate point of default - unless the difference between the two rates is persistently offset by a primary surplus sufficiently high to stop the ratio d from rising; the condition for stabilizing the share of Public Debt in GDP ($\Delta d=0$) being the country's ability to obtain a primary surplus s^* such that

$$s^* = d.(r-g)/(1+g).$$

If the maximum primary surplus that a country can achieve falls short of s^* the probability of default rises with the size of such a gap. When default takes place, it can be expensive in terms of the access to international financial markets and its cost.

2. The world in which we live today

We must acknowledge that the world in which we live today is very remote from this ideal. Many countries are already highly indebted, at levels unprecedented since World War II, with Public Debt/GDP ratios in 2013, for instance, of 92% on average in the EU, 100% in the US and 230% in Japan. Recessions can be large scale, simultaneous in most of the world, and prolonged turning into depressions, like the current global depression that began in 2007 and is not over yet, the most serious ever in modern capitalism. In such a crisis budget deficits may be uncontrollable because of the unforeseen and unforeseeable sudden public cost of rescuing banks and other financial institutions in order to avoid a financial melt-down.

Fiscal stabilizers/dampeners have been reduced as a result of expenditure cuts, especially for welfare. Calls for strict, abrupt, frontloaded and internationally coordinated fiscal consolidations become more frequent and binding. However recent research by the IMF Fiscal Affairs Department and other IMF officials confirms that the size of fiscal multipliers has been severely

under-estimated by the OECD, the European Commission and the IMF itself, thus severely under-estimating the cost of fiscal consolidation in terms of output and employment. As we shall see below (section 7), such an upwards revision can imply adverse effects of fiscal consolidation on the Public Debt/GDP ratio.

In this paper I will argue that *in such conditions as are prevailing today a policy of austerity, such as we would and should follow in an ideal world, can and does conflict starkly with economic growth and development.*

3. *The myth of expansionary fiscal consolidation*

In the 1990s and 2000s a series of empirical studies propounded the idea of an "expansionary fiscal consolidation, or contraction", indeed of "expansionary extreme fiscal consolidation".

They argued that closing the budget deficit via higher taxes and/or lower expenditure can be and by and large is expansionary, especially if fiscal tightening is focused more on spending cuts rather than tax increases. Giavazzi and Pagano (1990, 1996) on the basis of case studies and regressions of private consumption on cyclically-adjusted government revenue and spending show that for a panel of OECD economies private consumption usually responds to fiscal consolidation within one year.

Blanchard (1990, then a Professor at MIT, before joining the IMF as Chief Economist in 2008) explained how this was due to the promotion of private sector-led growth for a number of well established reasons. Government expenditure cuts would stop the "crowding out" of private investment (see Blanchard 2008). Ricardian equivalence between funding government expenditure by borrowing and by taxation was invoked: when government expenditure is raised, funded by borrowing, economic agents discount the future payments of higher taxes that they anticipate having to pay to service the higher debt (Ricardo 1820, who first suggested it though subject to "fiscal illusion"; Antonio De Viti De Marco developed this idea in the 1890s; the proposition was independently re-discovered by Barro 1974).

Blanchard (1990) also mentioned increasing confidence, a favourable impact on expectations, declining borrowing costs, a weaker currency. For example, a modest tax increase may avoid a much larger tax increase later, or lead to the expectation of future substantial tax cuts; fiscal consolidation may be associated with higher disposable income expected by consumers and rising confidence of investors leading to higher consumption and investment. These arguments would hold also for "extreme" fiscal contraction or consolidation.

Alesina and Perotti (1995) found on the basis of case studies that fiscal consolidations are sometimes correlated with rapid output growth, especially if obtained by government spending cuts rather than tax increases. Subsequent research based on larger samples of countries and years, including Alesina, Ardagna and Trebbi (2006), confirmed these results.

Further support for the so-called "austerians" - "advocates of fiscal austerity, of immediate sharp cuts in government spending" (a label introduced by Krugman 2013) - was provided by Reinhart and Rogoff (2010). On the basis of a new dataset of 44 countries spanning about two hundred years, incorporating "over 3,700 annual observations covering a wide range of political systems, institutions, exchange rate arrangements, and historic circumstances", Reinhart and Rogoff found that "the relationship between government debt and real GDP growth is weak for debt/GDP ratios below a threshold of 90 percent of GDP. Above 90 percent, median growth rates fall by one percent, and average growth falls considerably more."

The notion that government debt exceeding 90 percent of GDP has a significant negative effect on economic growth, which was put forward also by Kumar and Woo (2011) and Baum, Checherita and Rother (2012), became a decisive supportive argument for austerity by national and international leaders, from ex-vice-presidential candidate Paul Ryan, chairman of the USA Congress budget committee, to EC Commissioner Olli Rehn, and authoritative experts such as Vito Tanzi. Thus Keynes's proposition that "the boom, not the slump, is the right time for austerity" was falsified, austerity becoming a good policy for all seasons especially in highly indebted countries.

4. A reconsideration of expansionary fiscal consolidation

The proposition of "Expansionary Fiscal Consolidation" was immediately subjected to many criticisms and was gradually discredited both on theoretical and on empirical grounds.

As early as November 2008 the IMF Managing Director Dominique Strauss-Kahn took the initiative for a sizeable global fiscal stimulus of the order of 2% of Global GDP. In an interview with IMF Survey Online on 29 December 2008 Olivier Blanchard, by then IMF Chief Economist, and Carlo Cottarelli, Chief of the IMF Fiscal Affairs Department, called for bank recapitalization and monetary expansion, but in view of the time consuming nature of the first and the ineffectiveness of the second at low interest rates they really made the case for fiscal stimulus.

"In normal times – they wrote – the Fund would indeed be recommending to many countries that they reduce their budget deficit and their Public Debt. But these are not normal times, and the balance of risks today is very different. ... If no fiscal stimulus is implemented, then demand may continue to fall. And with it, we may see some of the vicious cycles we have seen in the past: deflation and liquidity traps, expectations becoming more and more pessimistic and, as a result, a deeper and deeper recession. If, instead, a fiscal stimulus is implemented but proves unnecessary, the risk is that the economy recovers too fast. Surely, this risk is easier to control than the risk of an ever deepening recession." The IMF raised its lending, increased its own resources and relaxed somewhat its conditionality, but its commitment was intermittent and short-lived. The ECB, under the leadership of Jean-Claude Trichet, was soon advocating an early exit strategy from both monetary expansion and fiscal stimulus.

In October 2010, Chapter 3 of the IMF *World Economic Outlook* examined "the effects of fiscal consolidation – tax hikes and government spending cuts—on economic activity." It found that fiscal consolidation typically reduces output and raises unemployment in the short term, especially if it occurs simultaneously across many countries, and if monetary policy is not in a position to offset them. Only in the longer term can interest rate cuts, a fall in the value of the currency, and a rise in net exports usually "soften" the contractionary impact but do not offset it.

Baker (2010) criticises Alesina and others (1995, 2006) for their use of cyclically adjusted deficits, while policy driven deficit adjustments behave in a keynesian fashion. Broadbent and Daly (2009) had supported the expansionary consolidation approach, but Baker pointed out that known cases of expansionary consolidation had occurred for very narrow output gaps relatively to the large ones that occurred in the current crisis.

The September 2011 IMF *Fiscal Monitor* warned that "too rapid consolidation during 2012 could exacerbate downside risks": "Further tightening during a downturn could exacerbate rather than alleviate market tensions through its negative impact on growth".

Guajardo, Leigh and Pescatori (2011) investigated the short-term effects of fiscal consolidation on economic activity in OECD economies. They examine the historical record, "including Budget Speeches and IMF documents, to identify changes in fiscal policy motivated by a desire to reduce the budget deficit and not by responding to prospective economic conditions." Using this new dataset, they find that fiscal consolidation has contractionary effects on private domestic demand and GDP. "By contrast, estimates based on conventional measures of the fiscal policy stance used in the literature [based on a

statistical concept such as the change in the cyclically-adjusted primary balance (CAPB)] support the expansionary fiscal contractions hypothesis but appear to be biased toward overstating expansionary effects.”

Blanchard (2011) stressed the “schizophrenic” attitude of investors with regard to fiscal consolidation manoeuvres: their initial enthusiasm is followed by the fear of consequent recession: we could say that governments are “damned if they do, damned if they don’t”.

In May 2013 Jeffrey Frankel criticized Alesina and Giavazzi, Alesina and Ardagna and a further 2012 paper by Alesina with Favero and Giavazzi, all claiming that fiscal consolidation is not contractionary in a recession. Frankel reports on a recent paper by Alesina's original coauthor, Perotti (2012), criticizing the dating methodology used, and pointing out that some of the fiscal consolidations used by Alesina were announced by governments but never implemented. Thus Frankel concludes that Alesina “has not been receiving his fair share of abuse” (“[Frankel heaps "fair" abuse on Alesina](#)”, Eurointelligence.com 22/5/2013, unsigned).

In the end, Alesina and Giavazzi softened very considerably their original position. In May 2013 they actually recommended the Italian government to overstep the 3% deficit threshold for two years – for “that three per cent should not be a taboo” – offering the EC in exchange immediate tax reductions on labour incomes and planned gradual and permanent expenditure cuts in the following three years. The European Commission would not close the excess deficit procedure for Italy at end-May – as it actually did – but should be willing to approve such a plan and verify its implementation. At the same time, credit to households and enterprises should resume through bank re-capitalisation conditionally funded by the EMS.

5. The non-existing 90% threshold for the Public Debt/GDP ratio

The Reinhert-Rogoff notion of a critical 90% threshold of the debt/GDP ratio was immediately criticized by Irons and Bivens (2010) who argued that causation run backwards, in that slower growth leads to higher debt-to-GDP ratios rather than the other way round. Moreover “there is no compelling reason to believe ... that gross debt of about 90% will necessarily lead to slower economic growth... In fact, the greatest threat to economic growth is policy inaction fueled by deficit fears.”

The final blow to the Reinhart-Rogoff 90% debt/GDP dogma came from Herndon, Ash and Pollin (2013), who replicated the analysis by Reinhart and Rogoff 2010 using the original data. Apart from a coding error, which however

made only a small contribution to their conclusions, available data for several Allied nations—Canada, New Zealand, and Australia—that emerged from World War II with high debt but nonetheless exhibited solid growth were selectively excluded. And summary statistics were all weighted equally regardless of the duration of high debt and growth performance. "... when properly calculated, the average real GDP growth rate for countries carrying a public-debt-to-GDP ratio of over 90 percent is actually 2.2 percent, not 0.1 percent as published in Reinhart and Rogoff". It turns out that "average GDP growth at Public Debt/GDP ratios over 90 percent is not dramatically different than when debt/GDP ratios are lower."

Reinhart and Rogoff (2013) admitted some of their errors and omissions but argued that these do not alter their ultimate austerity-justifying conclusion: excessive debt depresses growth. But two subsequent studies have claimed that, on the contrary, slow growth appears to cause higher debt (as Irons and Bivens 2010 had already argued). Dube (2013) finds that growth tends to be slower in the five years before countries have high debt levels.

In the five years after they have high debt levels, there is no noticeable difference in growth at all, certainly not at the 90 percent debt-to-GDP level regarded by Reinhart and Rogoff as the threshold of non-sustainability. Kimball and Wang (2013) present similar findings. This point is accepted by Reinhart-Rogoff (2013): "The frontier question for research is the issue of causality."

The same issue of causality was raised by Panizza and Presbitero (2012), also with respect to Kumar and Woo (2011), adding that "a fully solvent government with a high level of debt may decide to put in place restrictive fiscal policies to reduce the probability that a sudden change in investors' sentiments would push the country towards a bad equilibrium.

These policies, in turn, may reduce growth... especially if implemented during a recession. In this case, it would be true that debt reduces growth, but only because high levels of debt lead to contractionary policies." The same argument applies to Baum, Checherita and Rother (2012). IMF (2012, p.9) states conclusively that "*There is no simple relationship between debt and growth ... There are many factors that matter for a country's growth and debt performance. Moreover, there is no single threshold for debt ratios that can delineate the 'bad' from the 'good'*" (Italics added).

Such a cumulative and final discrediting of the alleged expansionary (severe at that) fiscal contraction approach, and of the associated 90% threshold to debt sustainability, does not appear to have had much impact on actual policies, especially on German-led European policies, with EU and especially EMU

countries tied to the "suicide pact" (Joseph Stiglitz) of so-called Growth and Stability.

The latest EU Fiscal Compact or TSCG – Treaty on Stability, Coordination and Governance – coming into force in 2015, demands a balanced budget provision to be inserted in member states' national constitutions, subject to a maximum structural deficit of 0.5% of GDP. There are penalties and automatic adjustments in case of inobservance, subject to the verification and rulings of the European Court of Justice. Financial assistance programmes under the ESM – the European Stability Mechanism that came into operation in March 2012 – from March 2013 are conditional on prior TSGC ratification.

From 2015 countries exceeding the statutory debt/GDP ceiling of 60%, required by both the Maastricht Treaty and the Stability and Growth Pact, are expected to reduce the excess debt by 1/20 of the current gap every year until the ceiling is reached – which for a country like Italy at over 130% involves a budgetary surplus of over 3.5% a year for 20 years.

Recently the IMF (2013) criticized the Troika's [EC, ECB, IMF] handling of the Greek crisis over the last four years, listing "notable failures": "Market confidence was not restored, the banking system lost 30 percent of its deposits, and the economy encountered a much deeper-than-expected recession with exceptionally high unemployment. Public debt remained too high and eventually had to be restructured, with collateral damage for bank balance sheets that were also weakened by the recession. Competitiveness improved somewhat on the back of falling wages, but structural reforms stalled and productivity gains proved elusive." Nevertheless "The report considers the broad thrust of policies under the program to have been appropriate."

6. The upward revision of fiscal multipliers (2012-13)

The value of fiscal multipliers generally assumed by the IMF for 1970-2007 for 26 advanced economies averaged 0.5 within three years (IMF, 2008, p. 177). Similarly, IMF (2010, chapter 3) presents multiplier estimates for 15 advanced economies during 1979–2009 also averaging 0.5 percent within two years. The IMF staff note prepared for the G-20 Ministerial Meeting (IMF, 2009, p. 32) reports their assumptions about fiscal multipliers, based on various studies, estimated at 0.3–0.5 for tax revenue and 0.3–1.8 for government spending. "This evidence, and our finding of no gap, on average, between assumed and actual fiscal multipliers before the crisis, would imply that multipliers assumed prior to the crisis were around 0.5" (Blanchard and Leigh, 2013).

A turning point in the discussion of fiscal consolidation came with the recent IMF upward revision of the magnitude of fiscal multipliers. The IMF *World Economic Outlook* (October 2012) contains a Box 1.1, untypically signed by its chief economist Olivier J. Blanchard and by another IMF economist, Daniel Leigh, on “Are We Underestimating Short-Term Fiscal Multipliers?”. In January 2013 Blanchard and Leigh presented a fuller paper expanding their argument at the American Economic Association Annual Conference in San Diego. It caused a sensation: Bloomberg reported the event under the title “*IMF Officials: We Were Wrong About Austerity*” (4 January 2013).

Blanchard and Leigh (2012 and 2013) investigate the relation between growth forecast errors and planned fiscal consolidation during the crisis. They took a basic sample of 28 economies, the major advanced economies included in the G20 and the member countries of the EU for which forecasts were available.¹ They focused on forecasts made for these European economies in early 2010, when a number of large multiyear fiscal consolidation plans were announced, and “conditions for larger than-normal multipliers were ripe”.

Multipliers were expected to be higher than previously assumed for at least four reasons. First, because of nominal interest rates being close to the zero lower bound, thus preventing monetary policy from offsetting with interest rate cuts the negative impact of fiscal consolidation: Christiano, Eichenbaum and Rebelo (2011) had shown that, under such conditions, fiscal multipliers can exceed 3.2.

Second, because of the lack of opportunities for exchange rate devaluation especially in the Euroarea. Third, because multipliers are known to be higher in a recession than in a boom, and by 2010 there was a great deal of slack in the economy.; Auerbach and Gorodnichenko (2012b) have found that in the US fiscal multipliers associated with government spending can fluctuate from being near zero in normal times to about 2.5 during recessions; while “...when the output gap is closed or positive, a fiscal expansion will result in more inflation or external deficits, not more output” (Cottarelli and Jaramillo, 2012). Fourth, because the impact of fiscal adjustment is multiplied by synchronized consolidation occurring across numerous economies.

Blanchard and Leigh (2012 and 2013) regressed the forecast error for real GDP growth during 2010–11 on forecasts of fiscal consolidation for 2010–11 that were made in early 2010. “Under rational expectations, and assuming that the correct forecast model has been used, the coefficient on planned fiscal consolidation should be zero. The equation estimated [1.1.1] is

¹ The data and estimation codes for the analysis can be found at <http://www.imf.org/external/pubs/ft/wp/2013/Data/wp1301.zip>.

forecast error of growth = α + β forecast of fiscal consolidation + ϵ .

The forecast error of growth is equal to actual cumulative real GDP growth during 2010–11 minus the forecast of growth in the April 2010 *World Economic Outlook*. The forecast of fiscal consolidation is the forecast of the change in the structural fiscal balance as a percentage of potential GDP during 2010–11 as of the April 2010 *World Economic Outlook*... If the fiscal multipliers used for forecasting are accurate, the slope coefficient, β , should be zero."

Blanchard and Leigh found that, in advanced economies, stronger planned fiscal consolidation has been associated with lower growth than expected; the coefficient on planned fiscal consolidation was large, negative, and significant. "A natural interpretation is that fiscal multipliers were substantially higher than implicitly assumed by forecasters."

"The main finding, based on data for 28 economies, is that the multipliers used in generating growth forecasts have been systematically too low since the start of the Great Recession, by 0.4 to 1.2, depending on the forecast source and the specifics of the estimation approach. Informal evidence suggests that the multipliers implicitly used to generate these forecasts are about 0.5. So actual multipliers may be higher, in the range of 0.9 to 1.7." In other words, the cost of fiscal consolidation had been grossly under-estimated. "We find no evidence of multipliers being over- or under-estimated for emerging market economies during that period" (Blanchard and Leigh, 2013).

After a battery of tests, Blanchard and Leigh (2013) found that their results were robust with respect to a variety of control variables ranging from country selection to initial fiscal and current account balances, from Public Debt/GDP ratio, and CDS spreads, to initial bank credit risk and household debt levels, and unexpected consolidation (ex post structural fiscal balance minus the forecast). They also found "that there was no systematic tendency for economies with larger initial fiscal consolidation plans to implement larger additional consolidation". "Forecasters significantly underestimated the increase in unemployment and the decline in private consumption and investment associated with fiscal consolidation." Blanchard and Leigh repeated the exercise for forecasts of the European Commission, OECD and the Economist Intelligence Unit, and they found that the results held and were significant for all the forecasters considered. Of course their results only give average multipliers for groups of countries, while individual countries may have multipliers larger or smaller than the average. Blanchard and Leigh (2012) conclude that "More work on how fiscal multipliers depend on time and economic conditions is warranted." But more research was already available to the IMF.

7. Additional evidence: *Batini et al. (2012)*.

Batini-Callegari-Melina (2012) using regime-switching vector autoregressions (VARs) estimated the impact of fiscal adjustment on the United States, Europe and Japan allowing for fiscal multipliers to vary across recessions and booms. They also estimated ex ante probabilities of recessions associated with different sizes and types of consolidation shocks (expenditure cuts versus tax rises). The main finding is that "smooth and gradual consolidations are to be preferred to frontloaded or aggressive consolidations, especially for economies in recession facing high risk premia on Public Debt, because sheltering growth is key to the success of fiscal consolidation in these cases". "If consolidations are delayed there is a real risk of debt downgrades or defaults. But frontloading consolidation risks bringing recoveries to a halt, hindering the same fiscal adjustment or making it too costly in terms of jobs and output."

Among the more detailed results from their analysis Batini et al. (2012) find that:

- Fiscal expenditure multipliers are significantly larger in downturns than in upturns, in line with earlier findings by Auerbach and Gorodnichenko (2012a and b, and Baum, Poplawski-Ribeiro and Weber (2012);
- during downturns confidence effects do not seem to have ever been strong enough to make the consolidations expansionary at least in the short run;
- contrary to the literature on alleged expansionary consolidation, "Expenditure multipliers (where expenditure is defined as public consumption and investment only) are significantly larger than tax multipliers (where tax is defined as tax minus transfers) in downturns;"
- Monetary policy does not seem to have had a role offsetting the recessive implications of consolidation during downturns, possibly reflecting the fact that interest rates may not have been cut sufficiently (or sufficiently fast), and because of probable parallel anti-inflationary measures;
- The probability that a fiscal consolidation initiated in a downturn deepens or extends the downturn is almost twice as large as the probability that a consolidation started in an upturn triggers a downturn;
- "Strong" consolidations (defined as 2 standard deviation fiscal shocks) are 20 percent more likely to trigger or extend downturns than "mild" (defined as 1 standard deviation fiscal shocks) consolidations. In other words, the same fiscal adjustment is less recessionary if made via an extended adjustment as opposed to a more abrupt one;

- “The exact size of the 1-year cumulative fiscal multiplier is country-, time-, and circumstance-specific, with ranges in our sample countries (in downturns) between 1.6 and 2.6 for expenditure shocks, and 0.16 and 0.35 for tax shocks”, i.e. up to *ten* times larger for expenditure than for tax multipliers.
- The peak effect on output of fiscal consolidations is within the first year from the shock.
- Frontloaded consolidations tend to be more contractionary and, hence, delay the reduction in the debt-to-GDP ratio relative to smoother consolidations.

Batini et al. (2012) also run simulations showing that “front-loading fiscal consolidations tend to have harsher and more protracted adverse effects on output, without accelerating the drop in the debt-to-GDP ratio relative to a more evenly-distributed consolidation.” This, in periods of low confidence in the government, may be problematic because the failure to obtain immediate debt reduction – especially if a front-loaded consolidation is based primarily on expenditure cuts - may further reduce government credibility and raise risk premia, making consolidation more costly and less effective.”Frontloading consolidations during a recession seems to aggravate the costs of fiscal adjustment in terms of output loss, while it seems to greatly delay the reduction in the debt-to-GDP ratio—which, in turn, can exacerbate market sentiment in a sovereign at times of low confidence, defying fiscal austerity efforts altogether. Again this is even truer in the case of consolidations based prominently on cuts to public spending” (Batini et al. 2012).

8. Implications of higher fiscal multipliers

Higher fiscal multipliers have a devastating “perverse” effect on fiscal consolidation. 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,

$$\Delta(D/Y) = \frac{(\Delta D)Y - (\Delta Y)D}{Y^2} = \frac{(-xY)Y - (-m x Y)D}{Y^2} = \frac{-x Y^2 + m x Y D}{Y^2} =$$

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

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

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.

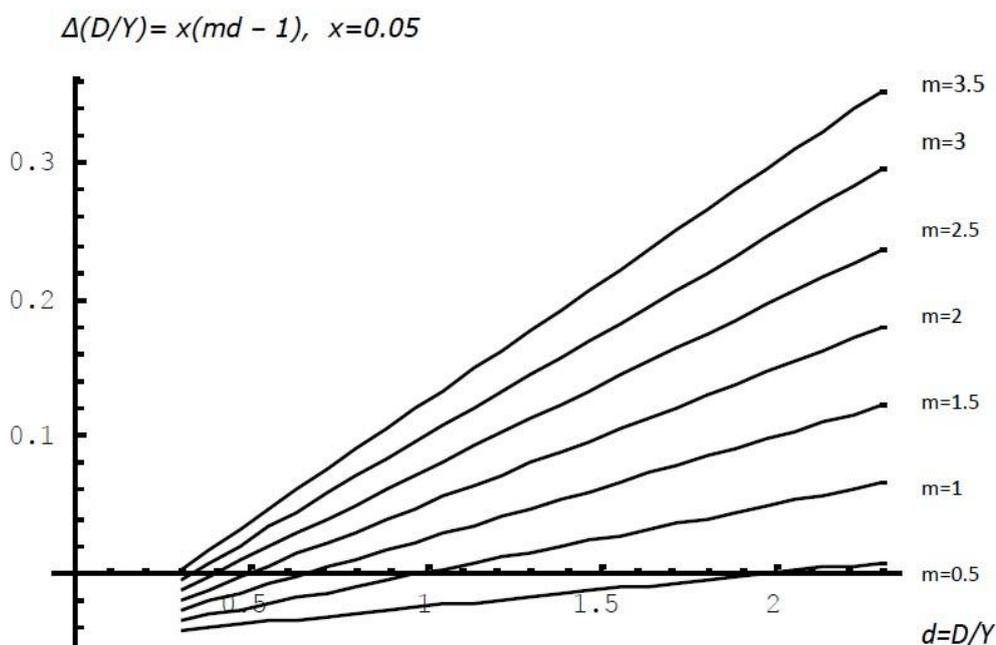


Figure 1. Illustration of perverse fiscal consolidation raising the Public Debt/GDP ratio

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%. 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.

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
Hungaria	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	48,6	2,06
Czechoslovakia	43,9	2,21
Denmark	45,3	2,21
Sweden	38,6	2,56
Romania	37,2	2,69

We have seen above (section 6) 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.

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).² "An insufficient demand protracted over time unavoidably generates a slowdown in the formation of new

²"If we draw on the same graph the time path of potential and of effective income, the first will be represented in general by a rising curve and the second by a serpentine curve winding around the first. The impression is given that potential income grows over time for its own reasons, independent of the reasons that determine the deviation of effective income from its path. It is, however, a deceptive impression."

"The curve of effective income will continue to wind itself around that of potential income, but both curves will be lower than they would have been if demand had continued to grow at the previous rate... The lower formation of productive capacity prevents the demand shortfall from appearing as a considerable and persistent underutilisation of productive capacity – and in this fashion it hides the traces of the production loss... The observer sees the two curves as they are, not as they should have been. And therefore he remains victim of the impression that potential income growth is independent from that of demand and effective income" (Vianello, 2005, our translation from Italian).

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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