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Transatlantic austerity 2010-...

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Abstract

'Austerity' was the 2010 word of the year according to the *Merriam-Webster Dictionary*, with more than 250,000 clicks on the online edition. This paper examines fiscal austerity in the specific context of the 12 early members of the European Economic and Monetary Union and, for comparative purposes, the United Kingdom and the United States, in the aftermath of the Great Recession of 2008-09. This empirical analysis of austerity policies is organized in three parts. First, an index of austerity is proposed based on the contraction of the public sector's net contribution to the economy. Then, there follows an assessment of austerity under the two dimensions of the improvement of public finances and interest rates, and of the collateral effects on output and employment. The main conclusion is that, especially for Euro-countries, austerity has so far missed its promised goals except restriction of budget deficits. Finally, three research lines are discussed that may explain why austerity may not (did not) work.

"Nobody in Europe sees a contradiction
between austerity and growth -
We have a growth-friendly process of consolidation"
W. Schauble, Minister of Finance of the
Federal Republic of Germany,
The Wall Street Journal, April 11, 2013

"For Europe, recovery is within sight"
J. M. Barroso, President of the European Commission,
State of the Union Address 2013, September 11, 2013

1. Introduction

'Austerity' was the 2010 word of the year according to the *Merriam-Webster Dictionary*, with more than 250,000 clicks on the online edition. The ordinary meaning of the word is "sternness or severity of manner or attitude", but the 250,000 readers of the entry were probably interested in its economic usage, which has rapidly spread in the Western world since the Great Recession of 2008-09 to denote "a situation in which there is not much money and it is spent only on things that are necessary". According to the *Oxford Dictionary*, an established usage of the word is more specifically related to "difficult economic conditions *created by government measures to reduce public expenditure*" (italics added).

In the fiscal sphere of life, austerity is a word with a long history which may be traced back at least to the years of the Great Depression and the "Treasury View".¹ Since then, austerity has been used to denote fiscal policies variably intended to keep the public budget in balance, or abstain from excess expenditure, or actively pursue budget restrictions, even though the economy may be suffering from low production and high unemployment. In this sense, austerity stands in opposition to the so-called "Keynesian fiscal policies" which recommend deficit spending as a means to overcome economic depressions. "The boom, not the slump, is the right time for

¹ The conventional birthdate of the Treasury View is 1929 in a speech delivered to the House of Commons by Winston Churchill, then Chancellor of the Exchequer in the Conservative government. Opposing the programmes of public works to create new employment put forward by the Liberals and supported by Keynes, Churchill invoked the "orthodox Treasury View" arguing that increasing public expenditure would simply displace an equal amount of private expenditure with no net effect on economic activity. It seems that Churchill's inspiration had been an article published by Hawtrey in 1925, "Public Expenditure and the Demand for Labour", though it is unclear how this article came to be endorsed by the Treasury as its own view (see <http://uneasymoney.com/2013/04/10/hawtrey-and-the-treasury-view/>)

austerity at the Treasury" Keynes said in 1937 in one of his famous radio broadcasts.

The motivations put forward for austerity vary according to the circumstances. For a country on the brink of a debt crisis, austerity may appear to be an obvious necessity. Yet the range of motivations is wider, and it revolves around the time-honoured issue of "crowding out" and "crowding in": that is, the relationship between changes in fiscal variables and in private expenditures. The counterparty, at the aggregate level, is the never settled issue of the extent of "fiscal multipliers", that is, the relationship between a unit change in a fiscal variable and the change in GDP. Austerity supporters rely in one way or another on theoretical underpinnings which range from the earlier neoclassical "loanable funds" model of the capital market (e.g. Bernheim, 1989) to modern general equilibrium models based on intertemporal optimisation such as those of the Barro-Ricardo type (Barro, 1974, 1989) or the recent New Keynesian ones (e.g. Woodford, 2011; Corsetti et al., 2010, 2012; Roger and in't Veld, 2013; and Buti and Pensch, 2012, for an assessment). Net of differences in the specific treatments, the essential pro-austerity argument remains that, if not immediately, in the medium term the "crowding out" effect of fiscal expansions and the "crowding in" effect of fiscal restrictions are both large and symmetric (or fiscal multipliers are small). Which means that fiscal expansions, if not useless, should be short-lived because they are tendentially harmful for economic activity as debt piles up, while "fiscal consolidation" (i.e. fiscal restrictions to stabilize and prospectively reduce public debt to a sustainable level) may be neutral (as in the Barro-Ricardo framework), negative in the short run but positive in the long run (which is more typical of New Keynesian models), or altogether positive according to the so-called "non-Keynesian effects of fiscal policy" or "expansionary fiscal restrictions" (popularized by Giavazzi and Pagano, 1996; Alesina and Perotti, 1997; Alesina and Ardagna, 2010).²

² In the course of the crisis, a marked shift of consensus has occurred from small, non-Keynesian, back to large, Keynesian, fiscal multipliers. These now seem prevalent, though their magnitude varies considerably. As an example, an extensive and systematic study across different countries, structural models, fiscal shocks and estimation techniques conducted at the IMF has reached the conclusion that "the size of many multipliers is large, particularly for spending and targeted transfers" (Coenen et al., 2010). Particularly remarkable has been regarded the *mea culpa* of IMF chief economists Blanchard and Leigh (2013) for underestimation of the recessionary effects of austerity. An important result of the studies prompted by the crisis is the discovery that there is no such a thing as "the" fiscal multiplier, whose eventual magnitude depends on a number of contingent and concomitant factors. More on this point in 4.2 and 4.3.

As a matter of fact, today's austerity has been increasingly criticized even outside the circles of "critical" or "radical" economists.³ Here I examine austerity in the specific context of the 12 early members of the European Economic and Monetary Union (EMU12)⁴, and, for comparative purposes, the United Kingdom and the United States, in the aftermath of the Great Recession of 2008-09.⁵ This allows for a specific characterisation of the subject.

In the first place, all countries activated fiscal stimuli in 2008-09 leading to substantial budget deficits; hence I identify austerity with *government actions aimed to reduce their budget deficits*; an index is proposed in section 2. In the circumstances considered here, *the overarching motivation for austerity has been fiscal consolidation*, with variable force and urgency from country to country, while also presenting fiscal consolidation not only as an immediate necessity (for some countries) but also as a requisite for reinstating sound growth conditions (for all countries) before prolonged fiscal stimuli to the economy become self-defeating as public debt grows too high.

There should be little question that European economies share the need to reduce public deficits and debts from levels that, as confirmed by a growing strand of empirical literature [...] are likely to be harmful for growth in the medium term [...] (Buti and Pench, 2012, p.1)

Austerity may be pursued in different phases of the business cycle. Considering that if automatic stabilizers are in place upward phases tend to improve the budget, while downward phases tend to deteriorate it, the more critical, and challenging, aspect of austerity is when *it is inflicted on the economy during a downward cycle, thus taking a procyclical fiscal stance*, as in the period of time considered here. Hence, the true issue at stake is whether *austerity is s a means to achieve fiscal consolidation with little or no output and employment losses, or as a means to restore growth, in the course of a recession*.

Some argue that budget consolidation and fostering growth appear contradictory to one another [...] As consolidated public finances enhance the trust of financial markets in each respective country, budget discipline is a key prerequisite for economic success and should not be perceived as a hurdle to growth (OECD, 2012, p.5)

³ As an example in the flood of materials available, especially via internet, see the interventions collected by Corsetti (2012).

⁴ Austria, Belgium, Finland, France, Germany, Greece, Ireland. Italy, Luxembourg, Netherlands, Portugal, Spain.

⁵ In order to grant uniformity, all the data, unless otherwise stated, come from the Eurostat macroeconomic database AMECO.

In the face of the Euro-crisis persistence, the policy issue has been rephrased as a matter of trading off austerity with some economic losses immediately with possibly more austerity and economic losses in the future, while austerity assessment has progressively been shifted from short to longer time horizons, albeit undetermined.

It is undeniable that the front-loaded fiscal consolidation had a negative impact on Eurozone growth, and the factors that have aggravated the impact of consolidation on growth are well known [...] The jury is still out on the relative merits of a more front loaded consolidation, allowing a smaller adjustment later on, and a delayed consolidation (US), requiring a more drastic effort when the recovery is still fragile (Buti and Padoan, 2013, p. 1)

While the details may differ, the above-mentioned theoretical underpinnings share some common features that clarify the conditions underlying successful austerity, also known as "intelligent" or "smart" austerity (e.g. OECD, 2012; Buti and Padoan, 2012; Buti and Pench, 2012; EC, 2013). There are essentially two key factors. First, "credible" fiscal consolidation is necessary to regain access to the debt market and obtain a rapid fall of interest rates. Second, the large "crowding in" of private expenditure, domestic and/or foreign, is necessary in order to minimize the contraction of economic activity and shift the economy to a sustained growth path. Then some side-conditions can also be found, such as the timing and intensity of consolidation ("front-loaded"/large vs. "back-loaded"/progressive), the composition of fiscal consolidation (cutting expenditure vs. raising taxes), and "structural reforms" intended to enhance flexibility and competitiveness in labour and goods markets. In what follows, these elements will provide guidance in the organisation of the empirical analysis of austerity policies (section 2), in the assessment of their results (section 3), and in the search for explanations of the results (section 4). Conclusions will follow in 5.

2. Gauging austerity

A basic problem in the empirical analysis of austerity is its correct and appropriate measurement. Indeed, a number of different measures are possible and available in the literature depending on the purpose of the analysis. To begin with, four different actors are involved with different viewpoints and stakes: the government, the recipients of fiscal decisions, the investors in public debt, and external agencies. Each actor may assess, or perceive, whether or not fiscal policy is austere in different ways, and it is not difficult to imagine situations in which assessments are even of different

sign. A simple example may clarify the issues involved and the rationale of the austerity indicator proposed here.

Suppose that the economy is in a downturn and the government cuts some current expenditure. This is intended to be an austerity policy "ex ante". But how this ex-ante austerity policy affects the economy depends on how the recipients of current expenditure are actually affected. Suppose that some automatic stabilizers are in place such that other components of current expenditure increase: overall, total expenditure indicates little or no change and, consequently, "ex-post" austerity results smaller than it is ex ante, probably with a negligible effect on the economy. At the same time, investors in public debt, possibly in line with external agencies like rating agencies, the International Monetary Fund (IMF), or the European Commission (EC), are concerned with financial stability and focus on the evolution of indicators like the deficit/GDP ratio or the debt/GDP ratio. Since the economy is in a downturn, and the ex-ante austerity policy is ex-post-neutral on current public expenditure, the business cycle will probably follow its own course so that current GDP will be lower than the previous year, thus pulling tax revenues down: overall, the deficit/GDP ratio, and hence the debt/GDP ratio, will be worse than in the previous year, turning the ex-ante austere government into an ex-post profligate one. Who is right, and what should the external observer look at?

The ideal indicator should be simple and transparent, and seek to comply with two criteria, at least for the purposes of the present study. 1) *Governments are responsible for what they can control directly*; hence the indicator should be "ex ante" as much as possible. 2) *The assessment of fiscal policy should necessarily go through its effects on the economy*, which largely depend on the actual evolution of relevant fiscal variables.

These two criteria are ill-served by the EC official indicator for the Excessive Deficit Procedure: the total budget/GDP ratio. The well-known reasons can be understood from the previous example. First, the total budget includes items that are not under direct government control, at least in the short run: namely, interest payments on debt and automatic stabilizers. Second, as will also be seen later, GDP ratios in general worsen this indicator in downturns and improve it in upturns with respect to the ex-ante fiscal policy.

The flaws of the total budget/GDP ratio are usually corrected by taking the primary budget net of interest and with "cyclical adjustment" (CA) techniques (for a recent assessment of this issue see EC, 2013). Hence the CA primary budget can be regarded as a good approximation of the "true" ex-ante policy stance of the government. Yet, apart from various and unresolved technical problems, the CA primary budget may fail to meet the

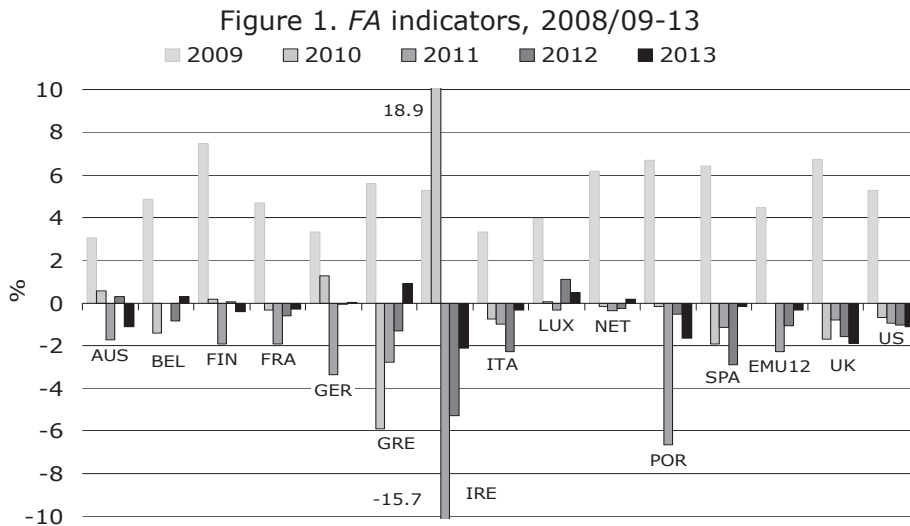
second criterion. Consider again the previous example. With a correct CA technique an observer might identify the ex-ante austerity policy of the government, but this fact is not particularly relevant to the economic impact of fiscal policy. What is relevant in this perspective is the actual evolution of fiscal balances for their terminals in the economy, which include the working of automatic stabilizers.

My proposed fiscal austerity indicator is the following. Let F_t be the public sector's net contribution to the economy in year t , given by total expenditure on goods, services and transfers, net of interest payments and total fiscal revenue (i.e. the reverse of the primary budget), and let Y_t denote the nominal GDP. Then the change in the public sector's net contribution in year t is measured by $F_t - F_{t-1}$, and its impact on the economy by

$$(1) \quad FA_t \equiv (F_t - F_{t-1})/Y_t$$

where $FA_t < 0$ indicates austerity.

Overall, this austerity indicator seems to strike a reasonable balance between the two criteria mentioned above, and to provide a comparable measure of the impact of actual changes in the public sector's net contribution to the economy while avoiding the bias inherent in taking GDP ratios as primitives.⁶ Table 1 in Appendix provides the summary statistics of FA indicators cross-country and over-time. The time series for each country begins with the first year of recession, which is 2008 for France, Greece, Ireland, Italy, UK and US, 2009 for the others. Figure 1 provides a snapshot of the FA s since 2009



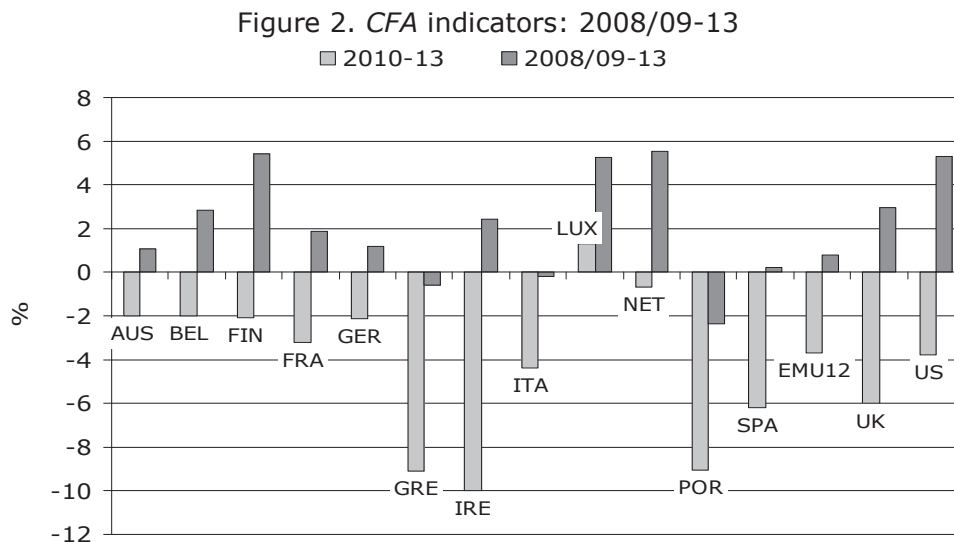
Following the literature on austerity, three dimensions stand out as critical: timing, intensity and composition.

⁶ Note that, generally, $(F_t - F_{t-1})/Y_t \neq F_t/Y_t - F_{t-1}/Y_{t-1}$ unless GDP is constant.

2.1. Timing and intensity

As can be seen, after generalized fiscal stimuli in 2009 (with EMU12 on average less stimulative than UK and US), in 2010 almost all countries (except Austria, Finland, Germany and Ireland) entered a substantial austerity regime. As of 2011, all countries were under austerity. However, an interesting difference emerges between EMU12 *vis-à-vis* UK and US: the former on average have followed the so-called "front-loaded" strategy (austerity peaked in 2011 and then declined) whereas the latter (and Italy) have adopted the "back-loaded" strategy with austerity increasing progressively over time.⁷

From this initial overview, austerity appears as a medium-term policy. Hence, whether it was front- or back-loaded, it is informative to compare the overall intensity of austerity across countries by taking the cumulated value of the *FA* indicator ($CFA = \sum_t FA_t$). This can be seen in Figure 2.



Since the first year of generalized austerity (2010) all countries, except Luxembourg and the Netherlands, have had a sizeable restrictive *CFA*. It should be noted that EMU12 and US have reached almost the same -3.7% . Evidently, while the timing of austerity doses has been different across the Atlantic, with possibly different effects, the overall intensity of the therapy has not. The other "back-loading" country, the UK, has cumulated a remarkable -6% . However, notable differences are apparent among the EMU countries. The five most financially distressed countries – Greece, Ireland, Italy, Portugal and Spain (EMU5) – stand out as those with the

⁷ According to the evidence analysed by Buti and Pench (2012), gradual consolidations seem more likely to be successful, but gradualism may be harmful for countries starting with high debt levels and major financial distress.

largest *CFA*. The strongest dosage of austerity has been inflicted on Greece, Ireland and Portugal – i.e. the three countries under "Troika" treatment for access to rescue packages; interestingly, they have been subject to almost the same *CFA* between 9% and 10%. The remaining countries range from 2% to 3%.

Figure 2 also displays the *CFAs* from 2008/09 to 2013. This adds a further bit of information on the overall fiscal adjustment: whether austerity has eventually more (negative histogram) or less (positive histogram) than reversed the initial fiscal stimulus. Other differences emerge. In the majority of countries, cumulated austerity has fallen short of the initial stimulus, leaving a post-crisis net fiscal expansion. This is barely the case of EMU12, with a meagre 0.8% *vis-à-vis* 3% of UK and 5.3% of US. By contrast, three of the EMU5 (Greece, Italy, Portugal) have cumulated a net fiscal restriction, with Spain breaking even.

In light of this first overview of the data, we may draw two conclusions. First, austerity has not been an exclusive policy imposed by the EMU upon member countries; rather, it has been "freely" pursued across the whole Transatlantic area. Second, austerity has however been implemented in different ways as to its timing and overall intensity. This holds true even among EMU countries, despite their being subject to the same rules and to common surveillance institutions. As argued by EC officials, diversification and flexibility have in fact been actively pursued in application of the more recent modifications of the relevant fiscal rules (Buti and Carnot ,2013, p.3).

2.2. Composition

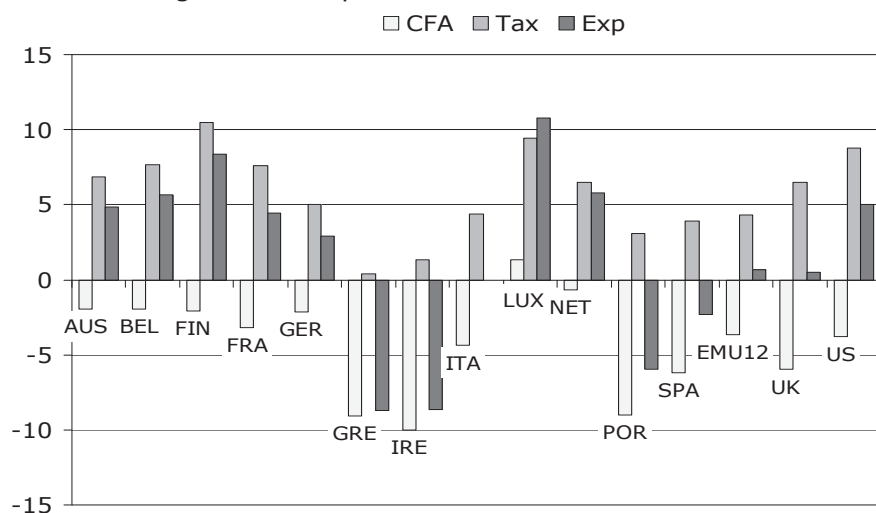
One of the strands of literature underpinning austerity, the so-called "non-Keynesian effects of fiscal policy", assigns a crucial role to the composition of budget reductions (see Carnot, 2013, for an overview). The most common finding or prescription is that expenditure cuts have a less negative impact (or even a positive one) on the economy and a more lasting effect on public finances.⁸ In this perspective, Figure 3 shows, from Table 1, the composition of the *CFA* of all countries, that is,

$$(2) \quad FA_t = (G_t - G_{t-1})/Y_t - (T_t - T_{t-1})/Y_t$$

$$(3) \quad CFA_t = \Sigma_t \Delta G_t / Y_t - \Sigma_t \Delta T_t / Y_t$$

Positive histograms indicate increases.

⁸ It is sometimes added that the expenditure to be cut is the "unproductive" one. Yet this is a category difficult to identify, hence, in practice, expenditure at large is considered.

Figure 3. Composition of *CFA* indicators 2010-13

We can see that the majority of countries, within and outside the EMU, have implemented their restrictive *CFA* by *increasing tax pressure more than expenditure*. Some countries traditionally regarded as fiscally virtuous have let expenditure grow to a remarkable extent over the austerity period (Austria, Finland, Germany, Luxembourg, US). The UK has contained expenditure but has realized its cumulated restriction almost entirely on the taxation side. It may come as a surprise that the most aggressive cumulated restrictions on the expenditure side have been accomplished within the EMU5 group: in the case of Greece, Portugal and Ireland this may be the result of specific Troika interventions; yet Spain has managed a net cut by itself and Italy has kept cumulated expenditure changes at around zero.

2.3. Differences in austerity

From a historical perspective, the figures presented above depict a unique sequence of large, simultaneous fiscal restrictions across the whole Western world. However, significant differences also emerge, and it is therefore important to try to characterize them. Let us focus on the EMU12 group, since, as noted above, differences therein are more challenging given the common institutional setup and the tight cross-country interrelations.

According to Table 1 yearly standard deviations of *FAs* indicate that cross-country heterogeneity has declined over time; yet the bulk of the high heterogeneity in 2010 and 2011 was due to extra-large adjustments in Greece, Ireland and Portugal. Volatility of *FAs* per country over time has also been sizeable, in the order of magnitude of the average or more, and again with those three countries standing out for very high volatility.

In search of possible explanatory variables of these differences, I now consider four main drivers of austerity that can be found, whether positively or normatively, in the literature. Two respond to "financial stability": correction of previous deficits and debt stocks. One arises from "market discipline": the sovereign risk premium. One, which may counteract the others, relates to "macroeconomic stabilization": the cyclical position of the economy. There are plenty of theoretical and empirical "fiscal reaction functions" that relate some fiscal policy instrument to one or more of these hypothetical determinants. I do not engage in this kind of exercise here. Rather, I let the data speak for themselves and only plot the *FA* data set *vis-à-vis* proxies for the above-mentioned drivers of austerity. The EMU institutional setup provides natural benchmarks for proxying the variables of interest. The data set excludes Greece, Ireland and Portugal because, as already pointed out, their fiscal policies have been tightly determined by conditionality of rescue packages, and the data of these countries represent large outliers that may impair the significance of statistical analysis. Hence, for each EMU9 country, I denote with

- $EDEF_{t-1}$: the excess of the total deficit/GDP ratio of the previous year from the 3% benchmark⁹
- $EDEB_{t-1}$: the excess of the gross debt/GDP ratio of the previous year from the 60% benchmark¹⁰
- S_t : the current year average of monthly spreads of long-term government bonds relative to German bonds¹¹
- OG_t : the current output gap as officially measured by Eurostat¹²

The four panels of Figure 4 display the correlation graphs between the *FAs* of the EMU9 countries and each of the above-defined drivers, together with the best-fit (higher R^2) interpolation function. In the first place, all R^2 are relatively small (less than 50%) indicating that none of the supposed drivers is by itself a good candidate for explaining the differences in austerity.¹³

⁹ The various reforms of the Stability and Growth Pact have introduced new conditions that may smooth the correction of the deficit towards the 3% ceiling, so that each country may be subject to specific adjustment plans and *interim* targets. However, in the medium-term horizon adopted here, the 3% benchmark remains binding, and the distance from it is a good proxy at least for the pressure for fiscal adjustment.

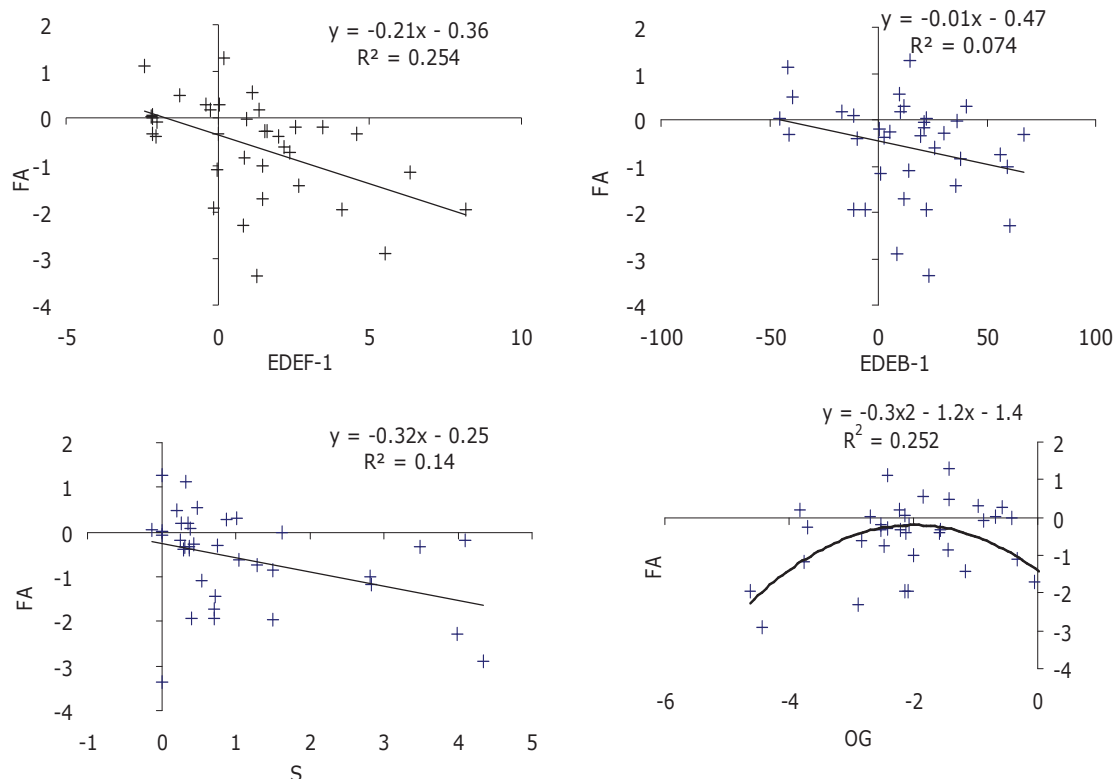
¹⁰ The same caveats as for the deficit apply here (see fn. 9).

¹¹ Data source: ECB, Online statistical database, Interest rate statistics.

¹² This statistic is also used by the EC to construct the official series of CA budgets for the Excessive Deficit Procedure.

¹³ The simultaneous regression of all *FA* observations on all observations of the four explanatory variables would be poorly significant owing to the small total

Figure 4. Correlations between *FA* indicators and the hypothetical drivers of austerity: EMU9 countries, 2010-13



That said, *EDEF* stands out as the best-fitting variable. According to the interpolation line, all countries have shared a common austerity stance of 0.36% per year; then each 1% of *EDEF* has generated an additional 0.21% of austerity. This factor explains 25% of the variance of *FAs* in the data set. Indeed, the plot reveals the presence of large deviations below the interpolation line: that is, overreactions to *EDEF* (such as BEL11, 12, ITA11, 12, AUS11, FRA11, SPA12).¹⁴ The second candidate in the EMU rules for financial stability is *EDEB*, which however performs rather poorly. In spite of the progressively greater stress of EMU rules on debt reduction, excluding the countries under official conditionality, the austerity policies in the others do not seem particularly conditioned by *EDEB*.

number of observations. However, a first trial with OLS estimators has delivered a larger explained variability than each single variable, though still below 50%.

¹⁴ Interestingly, the two largest outliers are due to Germany, the least rule-constrained country in the group. The first is GER10 \equiv (0.21, -1.29), when the government engineered a fiscal expansion despite starting from slightly above the 3% deficit/GDP limit. The second is GER11 \equiv (1.28, 3.36), when it overreacted to the excess deficit of the previous year.

Since 2010 "market discipline", exerted by means of widening sovereign risk premia, has been a predominant concern for most governments. It is therefore reasonable to consider the evolution of spreads S as a major driver of austerity policies. This is confirmed by the relevant panel in Figure 4, although the explained variability is no larger than with $EDEF$. Along the interpolation line, one additional percentage point of spread is associated with 0.34% additional austerity. Interestingly, a group of observations (corresponding to AUS11, 13, BEL10, FRA11, FIN11 and SPA10, 12) lies well below the interpolation line, denoting relatively large austerity with respect to spreads.

To complete our analysis, let us now turn to the factor that may countervail the other pressures towards austerity, namely the cyclical position of the economy as measured by the official output gaps OG .¹⁵ In the first place, all observations lie in the negative domain of OG , which means that all countries have recorded negative output gaps all the time. The latter do not necessarily indicate a recession, but they are nonetheless official indicators of cyclical downturn. Furthermore, 70% of negative FAs have occurred with negative OGs . Hence, though correlation is not causation, we can say that austerity has been procyclical in 70% of cases, in the sense that it occurred in negative cyclical conditions. It is worth noting that the interpolation function of FAs with OGs is the only one whose best fit is nonlinear, namely quadratic and concave. This piece of information suggests that the procyclical austerity cases have not been totally unrelated to the cyclical state of the economy. The increasing part of the interpolation curve indicates *cyclical sensitivity*: that is, *worse* OGs are associated with *less severe* austerity.¹⁶ There is, however, a decreasing part of the curve indicating *cyclical insensitivity*, with *largest* OGs associated with *most severe* austerity. The countries entrapped in the south-west region below the curve are France, Italy and Spain in various years.

¹⁵ Since this is another area of disagreement produced by confusion, it is worth spending a few words on clarification. Though controversial as to their measurement, official output gaps, inherited from the theoretical framework of New Keynesian Macroeconomics, are meant to capture the deviations of GDP from its potential level. In that framework, potential output is dictated by structural supply-side factors (such as factor endowments, technology, tastes and relative prices), whereas output gaps are mostly driven by aggregate demand factors. It is important to recall this basic notion because a widespread narrative on austerity blurs the distinction and tends to convey the idea, inherited from the neoclassical Real Business Cycle theory, that low or falling GDP is always and exclusively a supply-side structural problem about which little can be done from the demand side.

¹⁶ This result is line with the so-called "fiscal fatigue" view introduced by Bohn (1995) and others (e.g. Ghosh et al., 2013).

In conclusion, the available data deliver a fuzzy picture. Some evidence can be found that austerity has to some extent been driven by compliance with EMU rules (in particular the deficit rule) as well as by market discipline. In the majority of cases, austerity policies have been procyclical; some countries have afforded some cyclical sensitivity of austerity, others have not. Yet no systematic patterns emerge. For instance, not all countries overreacting to excess deficits, or being cycle insensitive, are also high debt countries or high spread countries, as one might expect. Overall, differences in austerity seem rather erratic, or perhaps determined by specific local factors not considered here, possibly introduced into the bilateral negotiations of governments with the EC. I would call the EMU experience one of "uncoordinated austerity". Tailoring fiscal policy to local conditions may be sensible, but what is the rationale for advertising strict, non discretionary, common rules in the EMU? If it is to provide a yardstick for coordination and equity, the result seems rather poor.

3. Assessing austerity

Assessing austerity is not an easy task. For two main reasons. The first is that austerity is a complex policy recipe with multidimensional implications; it may well happen that some results are negative while others are positive. The second reason relates more to the rhetoric of the economic discourse: pro-austerity arguments, even at the official levels, are remarkably devoid of any clear quantification of the expected results, including their time horizon, against which actual results can be assessed. Hence, we lack a clear and well identified framework for assessment in the first place.

A minimal one could be the following. Strictly speaking, the purpose of austerity has been to regain control over, and the sustainability of, public debt. As a matter of fact, however, implementation of orthodox sustainability analysis, based on fiscal fundamentals and the intertemporal budget constraint, encounters a number of non-trivial difficulties (e.g. the choice of the appropriate discount rate, time horizon, and budget items) paving the way to controversial if not inconclusive judgements (e.g. Bohn, 1995; Kanda, 2011; IMF, 2012). To circumvent these difficulties, less demanding, empirically based criteria have been put forward, particularly by Bohn. The Bohn criterion is based on the fiscal reaction function that relates the primary balance, as the control variable, to outstanding debt in such a way that the latter is kept on a path converging to some finite level. In fact, a typical Fiscal-Compact-style plan can be viewed as a normative version of this principle which requires each government to plan its primary balance so as to achieve a debt target such that the excess of the debt/GDP

ratio above 60% is reduced by 1/20th per year. However, sustainability assessments in this vein are no less fraught with difficult technical choices that may lead to controversial results (see e.g. Greiner et al., 2007, and Ghosh et al., 2013, for applications to EMU countries).

Bearing this premise in mind, public finance assessment in the EMU rule framework is mostly driven by two simple indicators: the total deficit/GDP ratio and the gross debt/GDP ratio. Note that, as a consequence, these indicators are also used by investors as conventional shortcuts in their own assessments, though they may bear a tenuous connection with fundamental sustainability analysis.¹⁷ Therefore, let us think of austerity in the classical policy framework of *instruments*, *intermediate targets*, and *final targets*. Let the debt/GDP ratio be the final target, whose quantification may vary from, say, stabilization to the reduction plans prescribed by the Fiscal Compact. Given this final target, the government has to choose an instrument. We have already examined this issue, opting for the *FA* indicator (of course, others may well be chosen). This instrument (and in general the instruments fully controllable by the government) have an indirect relationship with the final target. In this regard, we can rewrite the standard dynamic equation of public debt in terms of our *FA* indicator (see expression (1)), that is:

$$(4) \quad D_t = D_{t-1} + I_t + F_{t-1} + FA_t Y_t + X_t$$

where D is the nominal value of debt, I is interest payments, F is the primary deficit and X is other extraordinary operations and adjustments. Let $I_t = i_t D_{t-1}$, where i_t denotes the nominal interest rate on outstanding debt. Taking ratios to current GDP Y_t , and denoting them with small-case letters we obtain

$$(5) \quad \Delta d_t \equiv d_t - d_{t-1} \approx (i_t - n_t) d_{t-1} + f_{t-1} + FA_t + x_t$$

where n_t is the nominal growth rate of GDP, and the usual approximation $(1 + n_t) \approx 1$ is used.

This relationship provides a first benchmark for the *effectiveness* of austerity. If a government follows a consistent path of fiscal restrictions $FA_t < 0$, it may expect d to remain on a non-increasing path $\Delta d_t \leq 0$. If this does not happen, the causes may be: 1) austerity is *insufficient*, given initial conditions and the paths of i and n , 2) adverse evolutions of i and n .

The most critical issue in austerity assessment, being a source of confusion and disagreement, is that the two sets of causes are in fact

¹⁷ This interference between the simple short-term EMU indicators and fundamental analysis that ought to drive investors' decisions paves the way to the issue of efficiency of financial markets that will be addressed subsequently. Indeed, the role of conventions as substitutes for fundamental analysis is a well known issue in behavioural finance dating back to Keynes (1936, ch. 9; 1937).

interconnected and cannot be easily disentangled. To put it in analytical terms, i and n are, in part at least, endogenous to FA . Moreover, these collateral effects of austerity are another area of large disagreement. In the pro-austerity view, its effectiveness hinges on driving i down and being neutral or positive on n . The typical anti-austerity argument is that it can easily be *excessive*, driving n downwards and i upwards (e.g. De Grauwe and Ji, 2013a). If this happens, the pro-austerity counterargument is that the problem is not austerity in itself, but that it has probably been implemented in the wrong way (see above 2.1, 2.2). Also, there has been a recent reformulation of austerity assessment according to which possible economic losses of immediate austerity should be assessed against possibly larger losses due to delayed austerity when recovery comes (e.g. Buti and Padoan, 2013). On the other hand, this style of reasoning leaves the time dimension of assessment undetermined, and it seems to presume that there is no connection between the present course of policy and how much time the recovery takes to come.

Given the objective intricacy of arguments and phenomena, it seems hard to provide a definite assessment of austerity in one single, integrated, all-encompassing empirical model. Rather, in the following sections, I will offer the reader a detailed analysis of country data and responses for each major issue of the multifaceted austerity experience of the last four years.

3.1. Public finances and interest rates

The first key ingredient in the recipe for successful austerity is an "ambitious", front-loaded restoration of sustainable public finances that stops speculative attacks, regenerates investors' confidence, and regains access to the debt market at lower interest rates. All this also eases fiscal consolidation in a virtuous circle (see equation (5)). This mechanism hinges on the hypothesis of efficient financial markets, with interest rates solely driven by "fiscal fundamentals" and rational expectations. In section 2 we saw that between 2010 and 2013 the EMU countries, and especially those in financial distress, by and large followed orthodox austerity. Did it deliver the promised results in terms of financial consolidation and interest rates?

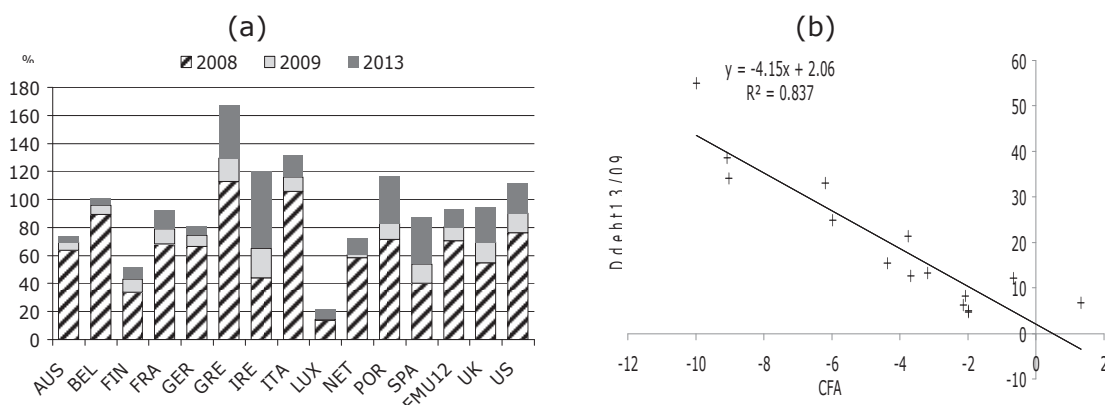
Public finances

Let us first examine whether austerity has been effective on the basic indicators of "sound" public finances. Table 2 in Appendix provides the relevant data. As can be seen, EMU12 deficits have been progressively brought under control since 2011. The aggregate deficit/GDP ratio has fallen from 6.4% in 2009 to 2.9% in 2013. In 2009 all countries were above the 3% ceiling, in 2013 only four (France, Greece, Ireland, Spain) by virtue of

special arrangements with the EC and other official agencies.¹⁸ Since our *FA* indicator measures the impact of the year *change* in the government primary budget, an appropriate assessment of effectiveness is with the year change in the total deficit/GDP ratio, expecting that in a year of austerity the ratio is cut by roughly the same amount. At first sight, this has indeed been the case. However, a more detailed analysis at country level reveals non trivial differences, particularly with more financially distressed countries being less able to control their deficit/GDP ratios (typically DEF_t improves less than *FA* or even worsens).

As regards the debt/GDP ratios, the outcome of austerity has been much poorer. Figure 5 (a) highlights the level of debt/GDP ratios in 2013 and their increment over the pre-crisis level of 2008. The first spike occurred in 2009, as a result of the post-shock fiscal stimulus. But since then debts/GDP ratios have been constantly rising in all countries despite austerity policies. As of 2013 the top debtors reside in the EMU (this was also the case before the crisis), but apart from Ireland and Greece, the top debt accumulators reside outside the EMU.

Figure 5. Debt/GDP ratios in 2008 and 2013 (a), and correlation between increase in debt/GDP ratios 2013-09 and *CFA* indicators (b)

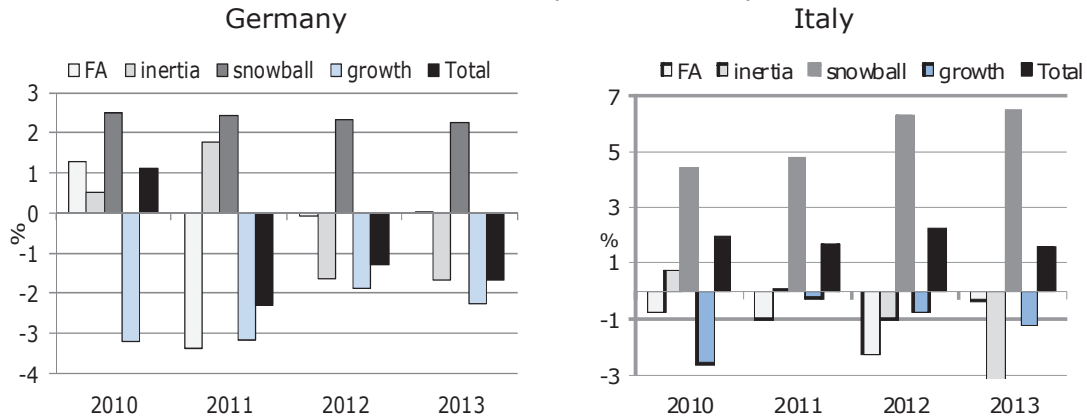


Apparently, these policies have failed to curb debt growth relative to GDP. Austerity defenders may argue that this is evidence that austerity has been *insufficient*, and that without austerity debt growth would have been much worse. Yet this argument is not so obvious as it appears. As is well known, the debt to GDP dynamics depends not only on the control of the primary budget but also on the gap between the interest rate paid on debt and on the growth rate of GDP. Equation (5) provides guidance in decomposing the drivers of the debt/GDP ratio. Apart from extraordinary

¹⁸ As of mid-2013, the Netherlands is expected to exceed the 3% ceiling and is under threat of Excessive Deficit Procedure.

operations and adjustments x_t , and given the government's fiscal impulse FA_t , three other factors can be identified: "fiscal inertia", given by the previous year's primary deficit/GDP ratio f_{t-1} , "growth effect" $-n_t d_{t-1}$, and "snowball effect" given by the evolution of interest payments $i_t d_{t-1}$.¹⁹ Table 3 presents these calculations for all countries in the austerity period.

Figure 6. Decomposition of the growth of debt/GDP ratios in the austerity period 2010-13: Italy and Germany



As representative examples, Figure 6 compares the evolution of the various factors for one of the EMU5 countries, Italy, with large initial debt and its rapid increase, and the country at the opposite extreme, Germany (the "total" histogram, if positive, measures the impulse to debt/GDP growth net of x_t). Differences, and hints about whence the ineffectiveness of austerity derives, appear quite clearly. Both countries recorded the strongest impulse to debt/GDP growth in 2010, in the aftermath of the fiscal stimulus of 2009. The crucial difference unfolds subsequently: Why has Italy's larger and sustained sequence of fiscal restrictions been unable to stop debt/GDP growth? Two main reasons can be seen: a much stronger "snowball effect" and a much weaker "growth effect". The former has in its turn been driven by the sharp rise of the i_t variable, that is, interest payments per unit of debt (see fn. 19), which has been rising from 3.9% in 2010 to 5.3% in 2013.

As said, the critics of austerity point out that it may in itself be partly responsible for worsening debt/GDP ratios by depressing growth, and possibly increasing risk premia. Panel (b) of Figure 5 shows that higher growth of debt/GDP ratios in the austerity period is indeed correlated with higher CFA indicators. But of course, it should be proved that austerity is

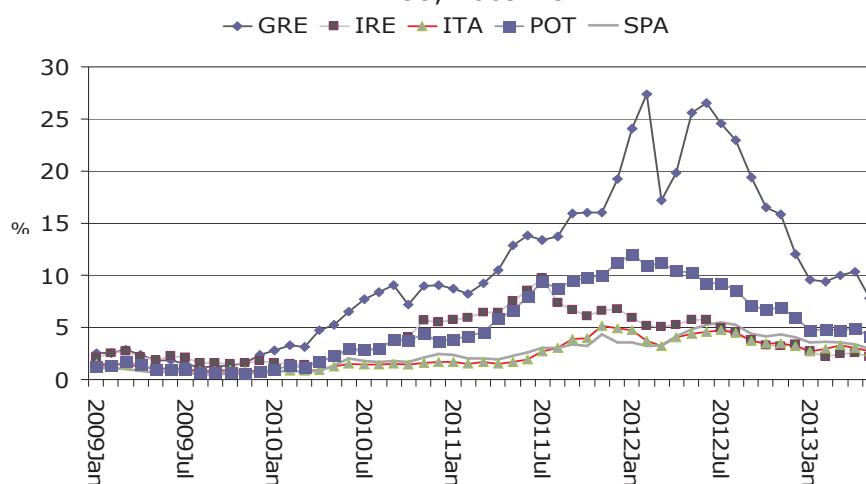
¹⁹ Since "the" interest rate actually paid on the outstanding debt is in fact a complex composition of different rates and maturities, for these empirical calculations i_t is better obtained as the ratio of actual interest payments on debt, I_t/D_{t-1} .

responsible for low growth. Before proceeding on this ground (see below 3.2 and 4.2), the evolution of interest rates deserves further attention.

Interest rates

We have already seen the presence of a tendential negative correlation between the evolution of spreads and FAs across countries and over time, which means that *more* austerity has been concomitant with *larger* spreads. This tendency is even more evident in the EMU5 group of countries under sovereign debt attack. It is worth tracking the experience of the EMU5 countries in some detail.

Figure 7. Average monthly spreads of long-term interest rates over German bonds: EMU5, 2009-13

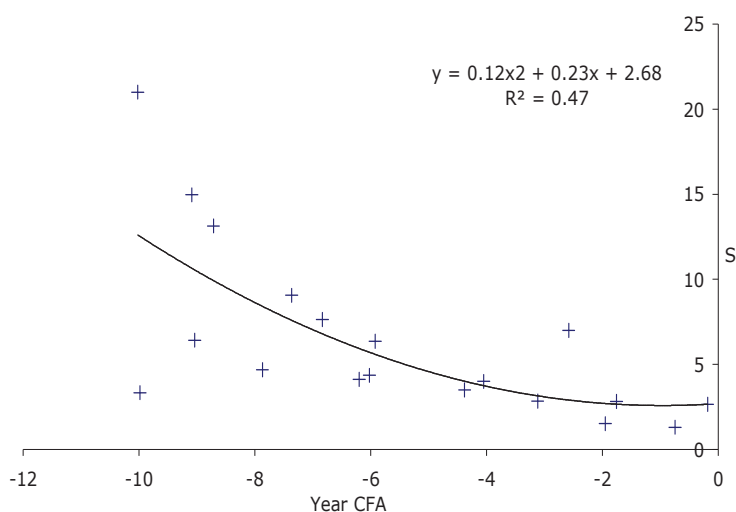


Source: ECB, Statistical Warehouse, Interest rates statistics.

The comovement of the spreads in Figure 7 is quite clear. They began to soar for all countries in early 2010 with the outbreak of the Greek crisis. They all peaked towards the end of 2011. In the same period all countries activated substantial austerity programmes (see Figure 1 and Figure 2). They have differed in timing and intensity, but overall from 2010 to 2013 the EMU5 countries have accomplished large $CFAs$, whether imposed by external agencies or domestic governments. The relationship between this sustained fiscal effort over time and the evolution of spreads is thus best captured by plotting the latter *vis-à-vis* the year $CFAs$ (Figure 8).²⁰ Excluding the outlier of the Irish extra-large fiscal bailout of 2010, the plot in Figure 8 highlights a strong *positive* (convex (!)) correlation between the data.

²⁰ The year CFA_t is the sum of previous FAs up to t .

Figure 8. Year average of monthly spreads of long-term interest rates over German bonds *vis-à-vis* year CFA indicators: EMU5, 2010-13 (excluded IRE10)



This can be interpreted as evidence that, in financially distressed countries, spreads have been strong drivers of austerity, as they should be, to the point that governments have been chasing their spreads with repeated doses of austerity. However, reverse causality is also possible. Reverse causality, or the "positive feedback" mechanism going from austerity to higher spreads to more austerity and so on, is embedded in the growing literature on "self-fulfilling expectations" of sovereign-debt crises, which challenges both the efficient market hypothesis and the austerity doctrine, and to which we shall return later (see below 4.1).

Causality is an issue that can hardly be settled once and for all by pure statistics, especially in a context of limited availability of data and in times of exceptional events (see however De Grauwe and Ji, 2013b). At any rate, what seems indisputable in the data is that, over time, austerity has failed to deliver lower spreads. At the beginning of 2012 the spreads of all EMU5 countries were still high or rising. The true turning point occurred in the second half of 2012, and to many observers it was only due to the credible launch of the ECB's Outright Monetary Transactions programme (the safety net for sovereign debt prices and spreads) and to President Draghi's celebrated commitment that "the ECB will do whatever it takes" (for pleas to adopt this new approach, and predictions of its outcome, see e.g. De Grauwe, 2010; Wyplosz, 2011). It may be argued that austerity paved the way, both financially and politically, to the ECB's intervention (Buti and Carnot, 2013). However, the ECB intervention mechanism is heterodox, not complementary, with respect to the austerity doctrine, and it was in fact fiercely opposed by integral supporters of the doctrine. So in the end the question remains: Why was austerity by itself ineffective on spreads?

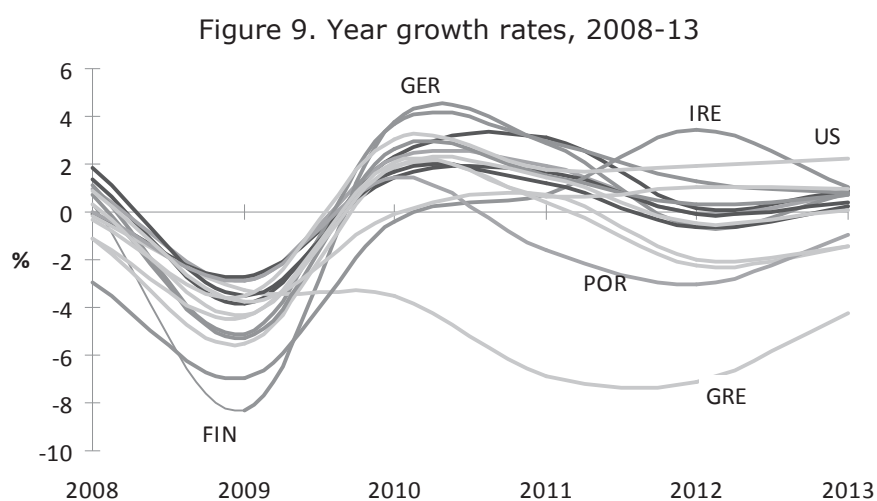
Empirical research on risk premia in the Euro-sovereign crisis is burgeoning²¹. Challenging technical problems aside, some convergence can be detected. Overall, the Euro-sovereign turmoil has shaken the reliance on financial market efficiency as providing the right stick and carrot mix that should drive fiscal consolidation. However, the same studies widely agree that, among the fundamentals, the evolution of debt/GDP ratios indeed has a significant influence on spreads. Hence, having seen that austerity has had scant success in harnessing debt/GDP growth, it is not so surprising that spreads have failed to fall as well. Was austerity too little, or too much? We shall return to this issue later (see below section 4).

3.2. Output and unemployment

Along the road to successful austerity, fiscal consolidation and lower interest rates prepare the ground for "crowding in" and sustained recovery. In light of the previous data about fiscal consolidation, let us now examine the evolution of economic activity and unemployment in the four years of austerity.

Output and growth: Were do we stand?

To begin with output and growth, Table 4 in Appendix displays the relevant data for all countries starting from 2008. Looking at GDP growth rates (see also Figure 9), the first patent fact – which is however well-known to business cycle scholars – is their high correlation (only Ireland after 2010 seems on a track of its own).



²¹ To mention only a few recent comprehensive contributions: Attinasi et al. (2009), Caceres et al. (2010), Favero and Missale (2011), De Grauwe and Ji (2012b)

This fact suggests that intra-EMU and even Transatlantic common factors have been predominant over domestic factors and policies. The Great Recession began in the last quarter of 2008 and spread everywhere in 2009. The first rebound occurred in 2010, though to different extents across countries. Fears of double-dip recessions materialized: the 2010 recovery was short-lived and followed by another slump. The data indicate that after the second dip, growth rates are improving. Is this the true start of catching up with the pre-crisis ordinary state of affairs?

In 2013 four of the EMU5 countries are still bound to recession or almost zero growth (Greece, Italy, Portugal, Spain). The others are on the track of very weak growth, except perhaps the US. Further forecasts are still hazy, both because they are highly uncertain and because the consensus is that EMU countries will muddle through slow recovery. In the last four years, the countless announcements by official agencies of an imminent upswing of economic activity, soon revised downwards, have been embarrassing (Blanchard and Leigh, 2013). All in all, there is not much ground either for optimism or for declaring the end of the Recession war in Europe.

In a medium-term retrospective of austerity policies, it is also important to assess the state of macroeconomic indicators with respect to their *pre-crisis* values.²² A first indicator in Table 4 shows that as of 2013 *no country*, among those in positive territory, has yet caught up with the pre-crisis growth trend. Only US and Germany are almost there (however, it should be borne in mind that the latter's pre-crisis performance was rather poor). For all other countries with positive growth in 2013, the growth gap still looms large, ranging from the -1.1% of Belgium to the -3.4% of Luxembourg.

Regaining the pre-crisis growth rate would be important, but the *level* of GDP is equally so. Hence a better gauge of the overall post-crisis performance in Table 4 is the compound growth rate (CGR) from the first year of recession (2008 or 2009) to 2013: if negative, it indicates a net output loss, if positive a net output gain.²³ The largest subset of countries, all in the EMU, is still suffering a net output loss (the EMU5 group in particular); two are around zero (France and Luxembourg); and only four have gained a net output growth (Austria, Belgium, Germany, US). These figures vividly depict the unprecedented width and depth of the crisis, as well as the slow and scant recovery of most countries. How are fiscal policies, and their differences, related to these facts?

²² The last year of positive growth before 2009.

²³ A more severe, and perhaps correct, measure of output loss would take into account that, in the absence of the crisis, GDP would have probably grown. Here the problem is the choice of the trend growth rate, which is obviously arbitrary.

Figure 10. *CFA* indicators and compound growth rates 2008/09-13
 (a) 2008/09-13 (b) 2010-13

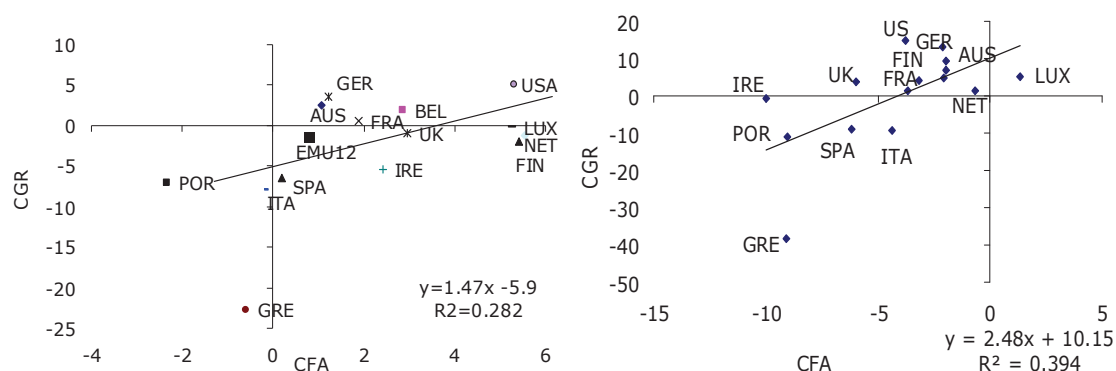


Figure 10 provides the correlation graph of the *CFAs* with *CGRs*. The two variables are consistent with the post-crisis medium-term horizon and smooth out short-run "noise". There are a few interesting facts to consider.

Panel (a) 2008/09-13 starts from the first year of recession. Once again, there is no claim of causality, but a quantitative rendition of "shock absorption": that is, how the overall fiscal adjustment of each country is associated with its overall post-shock growth performance. There exists a significant *positive* relationship between the two variables. Hence the countries with larger net output loss, or least shock absorption, are also those with more cumulated austerity: this is the case of the EMU5 countries, though Ireland has instead maintained a net fiscal stimulus. The other countries with positive or around zero net growth²⁴ have engineered a net fiscal stimulus. These differences in fiscal policies account for about 28% of the variance in growth performances. In the EMU12 as a whole, austerity has almost offset the initial stimuli, leaving a net output loss. One may view this as a result of the "uncoordinated austerity" outlined in 2.3, with the EMU5 countries' losses being unbalanced by the gains of the others. Outside the EMU, the UK has followed the Continental austerity stance and has performed worse than not only the US but also some EMU countries.

Panel (b) 2010-13 focuses on the compound growth performance over the austerity period. The previous considerations apply even more neatly, with the interpolation line implying that the critical dosage of *CFA* that has triggered net output losses has been 4%, with 1% of additional *CFA* associated with 2.5% net output loss. This figure may provide a first order of

²⁴ These are Finland, Luxembourg and Netherlands, which, curiously, have injected the largest net fiscal stimuli barely breaking even on growth. Evidently they have not been up to their fame of fiscally virtuous and efficient members of the EMU.

magnitude for the notion of *excess* austerity (within the data sample under consideration) (see also below 4.2). This factor explains 40% of differences in growth performance.

As said in 2.2, in the pro-austerity literature "composition matters". Accordingly, the recessionary effects of austerity are attributed to a composition unbalanced towards higher taxation instead of lower expenditure. However, our preliminary inspection of the data on the composition of *CFAs* (see Figure 3) does not lend support to this view. As already stressed, it is the EMU5 group that has imposed the most aggressive austerity on the expenditure side, but it has also suffered the largest output losses.

The fact that the most financially distressed countries display the worst output losses is in line with recent research on the abnormal effects of "financial cycles" with respect to more "usual" business cycles (Borio, 2012; Hall, 2010; see also 4.2 below). These analyses focus on the peculiar role of the financial sector in modern economies. But how governments react to financial distress, especially their own, is obviously part of the picture. In the specific case, given an exogenous monetary policy stance, EMU5 governments have adopted, or have been forced to adopt, austerity policies – indeed the most severe policies of all, and also the most orthodox in terms of timing and composition. On the one hand, these policies, and the pains they bring, may appear unavoidable if the government is to regain creditworthiness in the debt market. On the other hand, severe, front-loaded and expenditure-based austerity has also been advocated as the safe way to minimize the pains of public finance consolidation. Are the results for the EMU5 the expected ones?

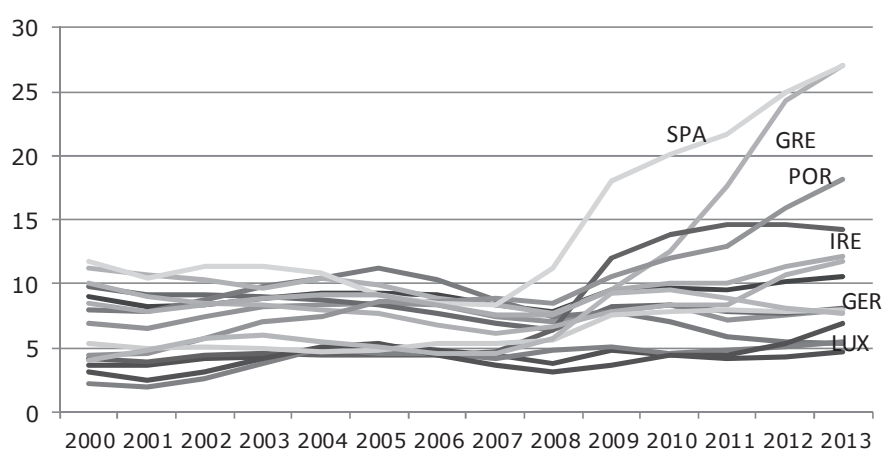
Unemployment

Since 2008 unemployment has soared significantly in all countries apart from Germany and few others, with the most dramatic peaks in the EMU5 group. In 2013, EMU12 unemployment is 4.6 point higher than in 2007, +2.7 in UK and +3.1 in US. Figure 11 highlights that the crisis has created a clear break in the previous trends, which were either stable at relatively low levels or gradually decreasing. Unemployment has closely followed the path of GDP. As of 2013, 1% of compound output loss on average accounts for almost 0.8% of increase in unemployment and for 70% of differences across countries.

The effects of austerity on the labour market are a contentious and intricate issue that cannot be fully developed here. It may be recalled that one standard ingredient in order to have growth-friendly austerity is that there should be concomitant "structural" – i.e. labour market – reforms

injecting more flexibility into wage changes as well as job relocations. This conveys the idea that austerity may have undesirable effects on unemployment owing to labour market rigidity, and also the idea that if large losses of employment are observed, these are more the result of rigidities than of austerity *per se*. These propositions, which are very popular in the pro-austerity narratives, are hard to test because they usually come with no indication about what the ideal response of unemployment should be for the given rate of austerity (perhaps zero, or less than zero?).

Figure 11. Unemployment rate, 2000-13



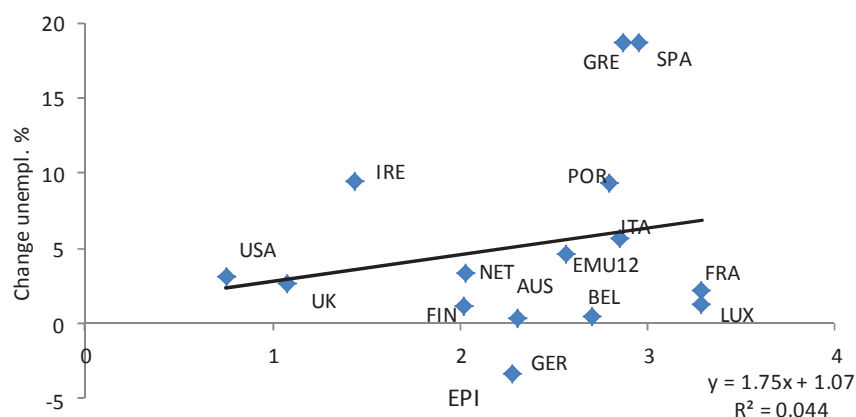
Cursory inspection of standard labour market statistics does not lend much support to these narratives in two respects. The first is that there is not much evidence that labour markets have remained rigid in the face of falling output and rising unemployment. The second is that differences in rigidity across countries amount to a thin explanation of differences in unemployment performances.

Rigidity is a difficult concept to render operational. It combines institutional factors with other factors that condition the functioning of the labour market in specific economic circumstances. From the former point of view, the OECD offers a well-known set of indicators, the Employment Protection Indicators (EPI)²⁵, which are widely used by labour researchers for comparative analyses. A high value of the indicator provides a measure of rigidity in terms of legislations and regulations that may hamper wage changes and/or workers mobility across jobs and sectors.

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<http://www.oecd.org/employment/emp/oecdindicatorsofemploymentprotection.htm>

Figure 12. Labour market rigidity index and change of unemployment 2007-13



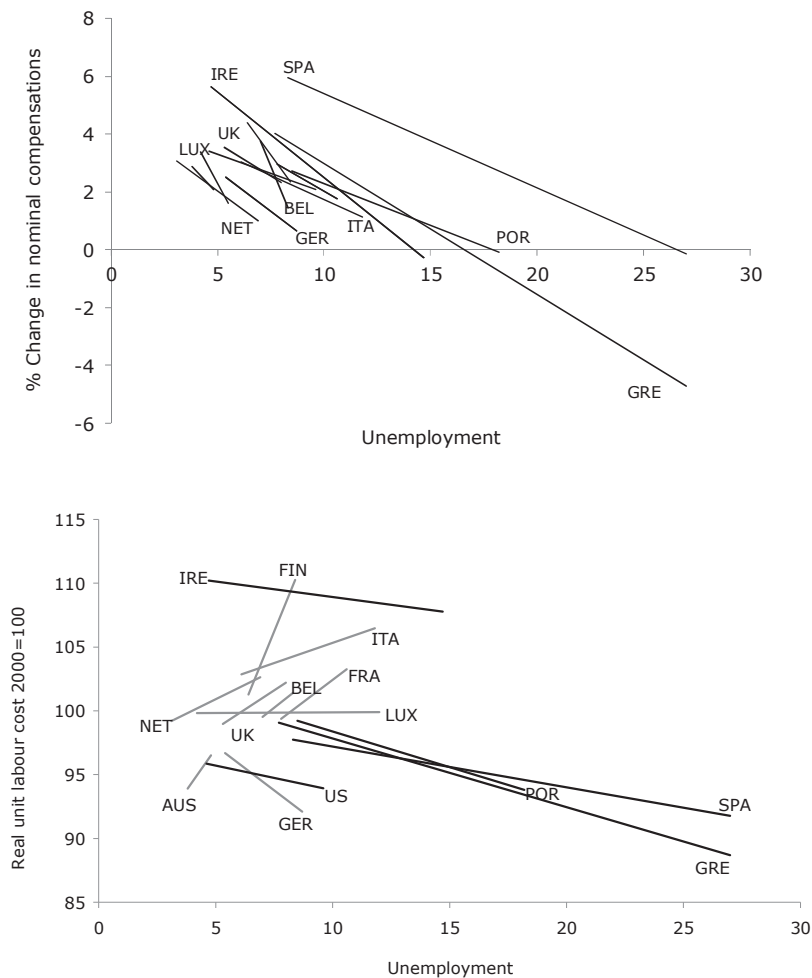
Source: elaborations on OECD Employment Protection Indicators

To gauge how this dimension of labour market rigidity may relate to differences in unemployment performance across countries during the crisis, I have elaborated a synthetic index for each country based on two EPI: "Strictness of employment protection; Individual and collective dismissal (regular contracts)" (version 3), and "Temporary employment" (version 3).²⁶ My index is the average of the average value of the two EPI from 2008 to 2013 (actually, EPI have remained constant or have changed very little in this period of time). The relationship between this rigidity index and the change of unemployment is shown in Figure 12.

If *some* countries with higher index display a greater increase in unemployment than do *some* countries with lower index, this pattern is far from providing an exhaustive explanation of the differences in unemployment performance. True, the more flexible economies of US and UK have obtained relatively small increases in unemployment, but the majority of the EMU economies, with much higher indices, have done no worse, or even better. The much worse unemployment performance of the EMU5 countries seems unrelated to significant differences in rigidity with respect to the other EMU partners. EPI provide a "static snapshot" of the institutional arrangements governing labour relations. However, the actual response of labour markets to economy-wide shocks may be more or less rigid also depending on specific circumstances that cannot be accounted for *ex ante*. It is therefore useful to extend our analysis to some economic indicators.

²⁶ Considering both segments of the labour market is important since temporary jobs are becoming increasingly common and typically less regulated than open-ended contracts. Both versions 3 encompass a larger number of indicators, and are available from 2008 to 2013.

Figure 13. The Phillips Curve, nominal and real, 2007-13

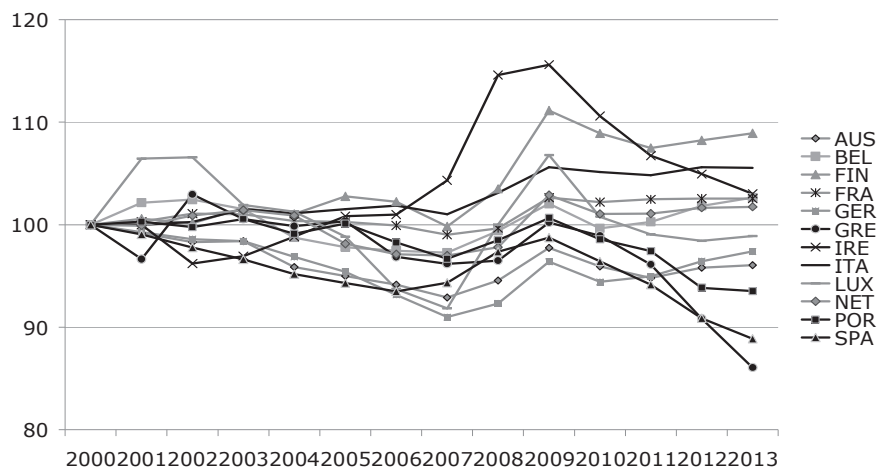


To begin with the most classic labour market indicator, the Phillips Curve, the top panel of Figure 13 shows the linear interpolations of unemployment with rates of change in nominal compensations per employee from 2007 to 2013. As can be seen, all countries display a negative relationship with roughly the same slope, showing that increasing unemployment has been associated with falling nominal wages. Overall, a picture of *nominal wage deflation* appears. As is well known, the point is whether wage deflation is sufficient to preserve employment, and this is captured by the steepness of the Phillips Curve. The majority of slope coefficients range between 0.2 and 0.4. Notable exceptions are some EMU countries (like Austria, Belgium, Luxembourg, Finland) with coefficients larger than 1. Indeed, these countries show relatively better unemployment performances, though other good performers, like Germany, UK, US (supposed to have more flexible markets), display flatter Phillips Curves similar to those of worse performers. It may be debated at length whether

these figures denote enough flexibility, but at any rate it seems hard to detect high nominal wage rigidity. The extreme case of Greece is instructive, since its worst jump in unemployment has been associated with *negative* rates of change in nominal wages, something reminiscent of the years of the Great Depression in US and UK.

A better measure of whether or not nominal wage deflation is sufficient is given by the related change in *real* wages. One traditional explanation of cyclical unemployment is that nominal wage deflation is insufficient relative to prices, so that real wages actually rise, triggering layoffs. Hence the bottom panel of Figure 13 displays the "real" Phillips Curve, where unemployment is plotted against the index of real unit labour costs (RULC). This index warrants preliminary treatment since it plays a key role in the narratives on the deep roots and consequences of the crisis in the EMU. One of the narratives is "real", and it reads the sovereign debt crisis as a foreign debt crisis triggered by the growing current account imbalances of the group of countries that have been losing competitiveness since the inception of the euro (e.g. Gros, 2011).²⁷ A typical measure of competitiveness used in these analyses is the RULC, and Figure 14 shows its index for the EMU12 countries up to 2013. The EMU5 group is highlighted in black.

Figure 14. Real unit labour costs (2000 = 100): EMU12 countries, 2000-13



As a matter of fact, the evolution of the RULC is somewhat consistent with the above view, but to a limited extent. In 2007 only two of the EMU5 countries recorded RULC higher than in 2000, and slightly so (Ireland and

²⁷ A widespread line of thought sees these real divergences, and the ensuing "macroimbalances", as a (or "the") deep fragility of the EMU (see e.g. the EC reports reviewed by Kuenzel and Ruscher, 2013). Monitoring of macroimbalances has now been introduced into the new coordination tasks established by the "Six Pack" reform.

Italy). Actually, these were the sole two countries with higher RULC, which suggests that the pre-crisis period was one of general gains in competitiveness in the EMU. Moreover, if one looks at the ladder (from highest, Ireland, to lowest, Germany) of the RULC in 2007, one finds the other three EMU5 countries at around the middle, preceded by stronger economies like Finland, Netherlands, France.

What is more interesting and relevant to our purposes here is the post-crisis evolution of the RULC. From 2007 to 2009 they *increased* everywhere. From 2010 onwards we can clearly see two distinct groups: in the EMU5, RULC have been falling, with the exception of Italy, while in the other countries they have been rising. As of 2013, the RULC ladder has been reshuffled, with Greece, Spain and Portugal figuring at the bottom, and less distressed countries like Belgium, Finland, France and Netherlands having their RULC higher than in 2000. This switch in the RULC ladder suggests that the allegation of a "beggar-thy-neighbour" policy against the weak economies is not well grounded in the data. However, whilst the data may suggest that nominal deflation was insufficient, or that there was some *real wage rigidity* in the majority of countries, this conclusion does not hold for the countries subject to the most severe austerity treatments, which have accomplished competitiveness gains by way of *real wage depreciation*. Such countries are also commonly presented as requiring more radical structural reforms, and it may be that the pressures of the crisis, and of the international agencies have pushed them in that direction. With what result?

We can now return to the bottom panel of Figure 13. The five countries with falling RULC from 2007 to 2013 (Greece, Ireland, Portugal, Spain, US) are highlighted in black. The remarkable fact is that these countries have also seen their *unemployment rise* as much as, or even more than, the others (incidentally, this is an experience common to the US, the flexible economy *par excellence*).²⁸

In conclusion, nominal and real labour market flexibility may be a precondition for achieving "smart" or "intelligent" austerity, but there is little evidence that the "nasty" austerity now being experienced in Europe can be entirely traced back to labour markets.

²⁸ Among the countries with rising RULC, the only one with falling unemployment has been Germany. Indeed, if there is "something special" with Germany, this cannot be just labour competitiveness.

4. Why austerity may not (did not) work

In section 2 we have already discussed and dispelled the more frequent defensive explanations of unexpected and undesirable effects of austerity. These effects are largely attributed to side-conditions such as composition or timing. The causes of austerity failures, in the EMU experience at least, should be deeper-lying than side-conditions. In this section I explore three possible research paths in the literature that depart from the *foundations* of austerity. The first addresses the mis-response of interest rates. The second focuses on the missing link of "crowding in". The third, which is consequential, explores endogeneity and interdependence issues: that is, the implications of procyclicality of austerity when it is enforced in an area of integrated economies.

4.1. Sustainability vs. credibility

The immediate expected effect of austerity, both in logical and real time, should be a rapid contraction of the sovereign risk premium and the fall of the whole set of interest rates, especially on the long maturity side. This outcome hinges on the "credibility view", according to which governments are urged to announce *and implement* large, possibly complete, front-loaded, fiscal consolidation. This strategy makes consolidation credible in the sense that financial investors believe that there will be no debt repudiation in the future, and real investors believe that there will be no further fiscal restrictions. Of course, the essential step is the financial one.

The punishment, or lack of reward, in terms of spreads of hard austerity plans *implemented* by countries in the EMU5 group, or the self-defeating effect of conditionality plans in Greece and Portugal (and partly in Ireland), raise the thorny issue of whether such plans were *too small* (non credible) or *too large* (non sustainable). *Sustainability* is indeed another approach which is partly analogous to, but partly different from, the celebrated one of credibility. It comes from choice-theoretic models as well as from empirical research on sovereign solvency or default.

Put simply, sustainability is the chance that at any point in time the government is willing or able to sustain the level of fiscal effort required by the solvency condition of its outstanding debt. Hence sustainability, as much as credibility, is a key variable in the investors' assessment of default risk, and in the determination of sovereign risk premia. A related critical problem is that assessing a sovereign's ability to stay solvent is not an easy task for reasons that extend beyond the technicalities of complex financial entities. The first point, an oft-forgotten one, is that a sovereign, unlike any other ordinary debtor, has the power to manipulate its balance sheet by means of

taxation and monetization so that it is virtually ever-solvent. In practice, a sovereign may be, or assessed to be, insolvent only because some constraints are imposed, or self-imposed, on its powers. However, by their very nature, such constraints can be tightened or relaxed as a result of institutional circumstances and, eventually, political decisions. In many cases, default has been a decision unrelated to "technical" inability to pay (e.g. Buiters and Rahbari, 2013; Tomz and Wright, 2013). Following the early contributions by Eaton and Gersowitz (1981) and Calvo (1988), the current generation of sovereign debt models is in fact concerned with institutional setups where the government's ability to tax or monetize is constrained (for instance, Euro-governments have no access to monetization) and therefore *the government can opt for default as a result of a cost-benefit analysis* (e.g. Corsetti and Dedola, 2011; De Grauwe, 2011; Gros, 2012; Cooper, 2012; Tamborini, 2012; Ghosh et al., 2013). Typically, the marginal cost of solvency increases with fiscal effort relative to the benefit of default, and there exists a critical level of fiscal effort at which the government *chooses* to default. Therefore, the dimension and timing of consolidation plans is a double-edged blade: if small and progressive, the plan may strain credibility, if large and immediate it may be judged unsustainable. As stressed in particular by Gros (2012) and Tamborini (2012), an essential factor from the investors' viewpoint is the difficulty of assessing unsustainability due to the large and blurred set of factors, many of which extra-economic, that may impinge on the government's decision. This adds a source of peculiar uncertainty not amenable to "objective" analysis of the so-called "fundamentals". Unsustainability of consolidation plans is thus embodied in sovereign risk premia.

Contrary to the credibility approach, sustainability indeed predicts that governments engaged in larger and larger fiscal adjustments will pay a *higher* interest rate. This happens because, as the fiscal adjustment increases, the probability attributed to the government's option for default increases, and so does the risk premium. As a consequence, multiple equilibria of the bond market arise. One possible equilibrium is a "self-fulfilling default prophecy" due to the positive feedback mechanism among market beliefs of default, higher spread, larger fiscal adjustment, reinforcement of market beliefs. For instance, the models proposed by Ghosh et al. (2013) and Tamborini (2012) generate the "acceleration" (i.e. convex) relationship between larger fiscal adjustment and risk premium that is observable in the data (see Figure 4). Therefore, a government may be driven to default even though it is solvent in initial conditions.²⁹

²⁹ This approach to the Euro-sovereign crisis has also obtained official endorsement from the President of the ECB: "(...) we are in a situation now where

Self-fulfilling expectations and the unsustainability hypothesis are quite hard to test owing to the presence of critical unobservable variables. De Grauwe and Ji (2013b) provide an econometric test supporting this view. The data in section 2 also present some indirect evidence by way of the interplay among three phenomena: countries under strong market pressure have activated large fiscal adjustments; they have suffered major growth losses inducing higher unsustainability-risk premia; the inability of increasing fiscal adjustments to conquer debt growth has been mainly due to the "snowball" effect of interest payments in a vicious circle.

The shift from a credibility to a sustainability paradigm by investors is probably playing a role in making the Euro-sovereign debt crisis so difficult to manage. This shift of paradigm may have caught policy-makers brought up in the credibility doctrine by surprise. The latter, in the different market context focused on sustainability, may in fact provide misleading policy prescriptions. The point of the sustainability approach is that when a government is caught in the self-fulfilling expectations trap, announcing *and implementing* harder fiscal plans is not the right move because, as explained above, it will boost the risk premium even though the plans are initially sustainable. As recalled above, the real stop to booming risk premia has come from the ECB (credible promise of) intervention on the debt market.

4.2. Types of crises

The second pillar of the austerity policies is "crowding in", that is, the substitution of more private expenditure (especially durable and capital goods) for less public expenditure. Of course, the first pillar, the rapid fall of risk premia, is indispensable. Since we have seen that austerity has been rather disappointing for most critical countries on this front, the promise of "gains without pains" (Perotti, 2011) may appear problematic.

A simple and direct test, though seldom pursued, is provided by data on the GDP components. Following the same medium-term approach as in section 2, Table 5 shows the compound growth rates of GDP components over the austerity period 2010-13. It can be seen that

- in all countries with positive growth, private consumption has provided the smallest contribution; the largest domestic contribution has come from fixed-capital investments only in Austria, Germany, UK and US; in

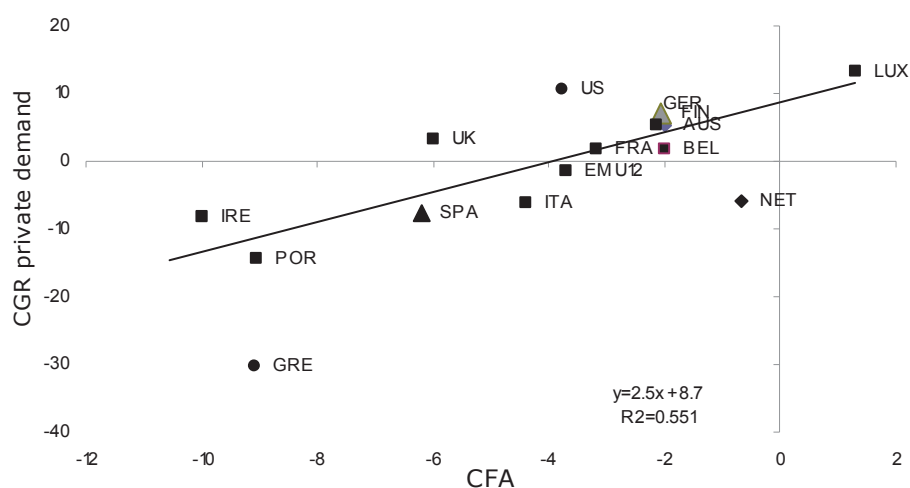
you have large parts of the euro area in what we call a "bad equilibrium", namely an equilibrium in which you may have self-fulfilling expectations that feed upon themselves and generate very adverse scenarios. So, there is a case for intervening, in a sense, to "break" these expectations (...) (Draghi, 2012, p. 4).

Belgium, Finland, France, Luxembourg, Netherlands, the largest domestic contribution has come from public expenditure

- in all countries with negative growth (the EMU5 group), this has been driven by all the domestic components, with the private ones being a multiple of the public ones
- all countries have recorded a very large positive contribution from exports

Traces of "crowding in", albeit in the presence of a substantial contraction of the public sector, are difficult to ascertain in these data. Rather, the EMU5 countries show clear signs of "general crowding out", that is, a Keynesian regime of large co-variations between private and public expenditures. The sole support to GDP growth has come from exports. Yet this, rather than being evidence of "crowding in", indicates a typical Alexander's "absorption" mechanism whereby the enlargement of the export component is obtained by way of compression of the domestic components (see also 3.2 above with regard to domestic nominal and real deflation). Since our *FA* is a measure of the change of the public sector's net contribution to the economy, Figure 15 shows the compound growth rate of total private domestic expenditure *vis-à-vis* *CFAs*.

Figure 15. Correlation between *CFA* indicators and the compound growth rates of private expenditure, 2010-13



The "crowding in" area (the north-west quadrant) contains 7 of the 15 cases, 4 of which display a "crowding in" effect (the ratio with *CFA*) smaller than 1. These are also countries with relatively low net fiscal restrictions (except perhaps for UK). The other 8 cases fall in the Keynesian area (south-west, and north-east quadrants). Overall, a *positive* correlation of 0.75 prevails across all countries. Along the interpolation line, the net fiscal restriction beyond which "crowding in" has vanished is about 4%. Notably,

this is the same value that in Figure 10, panel (b), marks the point where *CFAs* have triggered net output losses. Then, on average, 1% of additional public sector's restriction has been associated with 2.5% of net loss of private expenditure. Differences in *CFAs* account for 55% of the observed differences in the compound growth of private expenditure.

The missing "crowding in" leads us back to the core of the Keynesian vs. neoclassical macroeconomics divide which originated in the years of the Great Depression. Debates on this revival have proliferated (see Leijonhufvud, 2008; Krugman, 2011; Cochrane, 2009, to mention only a few). As is well known, the key point is that Neoclassicists of all vintages conceive GDP, and its fluctuations, as being determined by supply-side structural factors. *Given* the amount of resources that the economy is able to supply (potential GDP), if one of its outlets has to be expanded, others should be contracted.³⁰ That the economy can be stuck in a position where excess saving is not channelled into new investment, the real interest rate fails to fix the problem, and supply is constrained by aggregate demand, remains not conceivable.³¹

A consistently neoclassical view of austerity should first show that the Transatlantic Great Recession has been due to a large, concomitant, breakdown of the economies' potential capacity, that actual GDP has closely followed available estimates of potential GDP, and then that the contraction of the public sector's uses of GDP is a means to restore potential capacity. The crisis has indeed prompted a new wave of "structural" studies, both theoretical and empirical, revolving around the "macroeconomics and finance" nexus. The point is that none of these studies follows a pure neoclassical approach or supports any simple "crowding in" recipe. One important thread running through this buoyant literature is that there are different types of crises, and that the crises which originate in the (private) financial sector have special, thorny, characteristics that we still fail to understand fully.

The models least distant from the neoclassical paradigm belong to the revival of the New Keynesian Macroeconomics with "financial frictions" that went astray in the late '90s (Bernanke and Gertler, 1989; Bernanke et al. 1999). Alongside the usual "nominal rigidity" of prices, these frictions typically arise from information asymmetries that interfere with the efficient allocation of financial resources and hence with consumption,

³⁰ If this is true, however, it is difficult to understand the widespread belief, or it is poorly explained, that expanding the public sector's uses of GDP is "bad" whereas expanding the foreign sector's ones (i.e. exports) is "good".

³¹ Hence the surprise that in a recession fiscal multipliers are larger than usual: Parker (2011), DeLong and Summers (2012), Blanchard and Leigh (2013).

saving and investment decisions. The main focus of these models is on the fact that financial (as well as real) shocks are amplified and determine wide swings of GDP from its potential track (however, how these shocks may affect potential GDP permanently is less explored; see e.g. Hall, 2010). When this happens, the private sector's expenditure falls to an inefficiently low level, but not because the public sector's expenditure is too high. Moreover, "financial frictions" may amplify fiscal multipliers. Unless the government is itself responsible for the financial distress due to a high sovereign risk premium (as in Corsetti et al., 2012)³², the policy implications are quite remote from austerity, and may well point in the opposite direction. As in the New Keynesian tradition, the favourite front line intervention is by means of monetary policy (which anyway implies that a *demand gap* from potential GDP should be corrected). However, as shown by the crisis experience, monetary policy may soon encounter the "zero lower bound" of nominal interest rates at which supportive fiscal policy is needed (Krugman, 2005; DeLong and Summers, 2012; Krugman and Eggertsson, 2012). Again, this is a result not dramatically at variance with the basic IS-LM model with "liquidity trap". From this point of view, non-Keynesian success stories may have in fact been due to a number of favourable Keynesian side conditions, regarding in particular the concomitant stance of monetary and exchange-rate policies. That a fiscal contraction accompanied by expansionary monetary policy and exchange-rate depreciation may end up with a net positive effect on GDP has been well known ever since the basic Mundell-Fleming model. Hence, no firm policy prescription can be drawn that is valid for all countries and times (e.g. Favero et al., 2011)

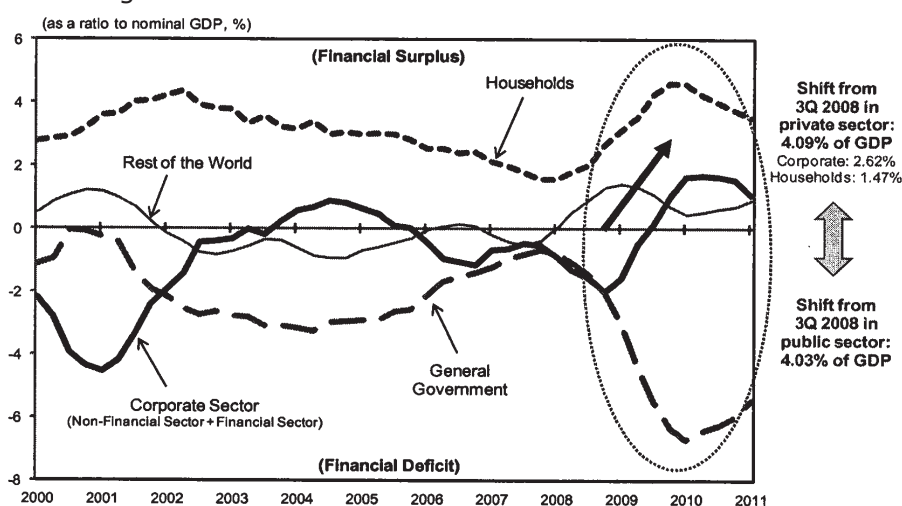
Indeed, the 'IS' (meaning "investment-saving imbalances") approach, which was central to pre-Keynesian and Keynesian business cycle theories, has also been revived, though mostly empirically (theoretical examples are Tamborini, 2010, and Mazzocchi et al., 2013). In a remarkable set of papers, chief researchers at the Bank of International Settlements (BIS) (see Borio, 2012) have drawn a rich and challenging picture of the complex financial factors that, both on the supply and demand side, may drive the economy along financial cycles from boom to bust. A key driver in the boom phase is typically excess investment over saving prompted by rapid levered credit expansion. However, this not only generates excess demand: investment

³² Yet, according to these authors, "in relatively extreme cases where fiscal strains are severe and monetary policy is constrained for an extended period, fiscal tightening may even exert an expansionary effect. That being said, fiscal retrenchment is no miracle cure. Indeed, all our simulations feature a deep recession even if tighter fiscal policy, under the aforementioned conditions, may stimulate economic activity *relative to an even bleaker baseline* (Corsetti et al., 2012, p. 41, italics added).

today is output capacity tomorrow, which raises potential output. Thus the two measures of output move together to produce a seemingly neoclassical scenario and blur analyses (and policy prescriptions) based on the distinction between the two. When "real bubbles" of unsustainable debt-backed expenditures burst, the driving force of the crisis is excess saving, or "deleveraging" in the financial dialect. This phenomenon has also been popularized by Koo (2011) with his now famous label of "balance-sheet crises".

The key difference between an ordinary recession and one that can produce a lost decade is that in the latter a large portion of the private sector is actually *minimizing debt* instead of maximizing profits following the bursting of a nationwide asset price bubble [...] In order to regain their financial wealth and credit ratings, households and businesses are forced to repair their balance sheets by increasing savings or paying down debts. This act of deleveraging reduces aggregate demand and throws the economy into a very special type of recession (p. 19).

Figure 16. Sectoral flow of funds of in the EMU 2000-11



Source: Koo (2011), p.30

Deleveraging can be detected in flow-of-funds data. Figure 16, drawn by Koo (2011), shows these data for the household, corporate, public and foreign sectors in the EMU as a whole. It can be seen clearly that, as a consequence of the sharp deterioration of their balance sheets in 2007-08, since 2008-09 the two domestic private sectors have suddenly shifted into financial surpluses. The initial fiscal stimuli increased governments' net borrowing in a compensatory way; thereafter, austerity transformed governments into deleveraging units too. As a result the EMU as a whole has become an excess saving area reflected in net lending to the rest of the world.

Therefore, contrary to the traditional neoclassical motivation for austerity, in a deleveraging process the non-financial private sector is not

constrained in its ability to borrow but it is (it wants to be) a net saver in the first place. Things are even worse when the financial sector is deleveraging as well, because the consolidation of private balance-sheets at financial intermediaries is not translated into new supply of loans either. Under these conditions, forcing the government into deleveraging to foster "crowding in" is pointless; the result is just additional excess saving. In a crisis of this type fiscal multipliers turn out to be larger (and asymmetric) with respect to those observed under ordinary fluctuations. It may be argued that the government's ability to compensate for private deleveraging with deficit spending is constrained by its own initial debt and the related risk premium demanded by lenders. This may justify the claim that countries like the EMU5 had no real alternative to austerity, but it cannot justify "uncoordinated austerity" as a Union-wide policy.

4.3. Endogeneity and interdependence

As recalled above, the final effect of a fiscal restriction on economic activity depends on a large set of concomitant factors, some of which related to the openness of the economy. These become crucial when (uncoordinated) austerity is imposed on a large system of integrated economies (with fixed exchange rates). To begin with, it is beyond dispute that economic activity is highly correlated across the EMU (e.g. see earlier studies reported in Buti and Sapir, 1998). Figure 9 is a vivid depiction of the highly correlated GDP paths of the EMU countries since the eruption of the Great Recession.

Moving to a multi-country setup, if fiscal Keynesian effects are confined to the demand side, the well-known Mundell-Fleming results apply. In a system of integrated economies with fixed exchange rates, a fiscal restriction in one country generates negative spillovers onto others via international trade. If trade multipliers do not exceed unity, the final result is a magnified fall in GDP in each country and the area as a whole (e.g. Alcidi and Gros, 2011, Annex A). This result can only be mitigated if concomitantly the interest rate falls in each and all countries. The implication is that fiscal multipliers may be quite different (quite larger) with respect to those measured in each country in isolation (Favero et al., 2011). Tamborini (2013) provides an analytical quantitative treatment of this effect.

Let $m = 1, \dots, N$, be the member countries. Denote with \underline{m} all non- m countries, and with \underline{N} their number. Suppose that all countries adopt uncoordinated fiscal restrictions $FA_m < 0$, each of which is associated with a fiscal multiplier ϕ_m . Hence, $FA_m \phi_m < 0$ is the domestic component of each country's impact on GDP. To this should be added the "mean field effect",

that is, the correlation c_m of changes of GDP in one country with the average of the changes in all the others, which amounts to

$$(6) \quad \mu_m = c_m \frac{1}{N} \sum_m FA_m \phi_m$$

The overall impact on the union's GDP will be

$$(7) \quad \frac{1}{N} \left(\sum_m (FA_m \phi_m + \mu_m) \right)$$

In order to grasp the thrust of this result, let us and assume that FA , ϕ , c are equal in all countries. Then, it is easily seen that the overall impact on GDP for each country and the union as a whole is $FA\phi(1 + c)$. With $c \approx 0.9$ (see Tamborini, 2013), the impact is almost doubled with respect to each country taken in isolation. Hence, there seems to be the possibility that an uncoordinated fiscal restriction brings about a massive continental recession worsening the debt management conditions for all countries.

Now let us again consider the equation (5) of the change in the debt/GDP ratio. Let the interest rate be on its trend value i , and, as a first approximation, let $FA_t\phi(1 + c) = \Delta n_t$ be the fiscal multiplier effect in terms of deviation of nominal growth from its trend n . This fact entails that the change in the debt/GDP ratio becomes

$$(8) \quad \begin{aligned} \Delta d_t &= (i - n - FA_t\phi(1 + c))d_{t-1} + (f_{t-1} + FA_t) \\ &= [(i - n)d_{t-1} + f_{t-1}] + (1 - \phi(1 + c)d_{t-1})FA_t \end{aligned}$$

The term in square brackets yields the debt path with unchanged fiscal stance. The fiscal restriction $FA_t < 0$ generates a negative impulse to the debt/GDP ratio only if $\phi(1 + c)d_{t-1} < 1$. Hence, given ϕ , a combination of *high outstanding debt* and *high GDP correlation* can eventually produce an *increase* in the debt ratio, the Labour of Sisyphus in which some EMU countries seem entrapped (see 3.2 above). Suppose that $\phi = 0.7$ (the average of values found by Burriel et al. (2011) in "normal times"). Hence, $\phi(1 + c) = 1.33$. As a result, fiscal restrictions in countries with $d_{t-1} > 75\%$ are bound to *increase* the debt/GDP ratio. The source of the mistake lies not so much in the estimate of ϕ , but in ignoring the *scale effect* of initial outstanding debt and the *interdependence effect* due to the uncoordinated Union-wide austerity.³³

5. Conclusions

Assessment of austerity is matter of lively and unresolved dispute. As stressed in the paper, an additional difficulty is that the advocates of

³³ "The crisis also highlighted the magnitude of the spillovers between euro area countries and the consequent need for deeper budgetary integration among them. In response, an additional reform package, known as the Two Pack, entered into force on 30 May 2103" (EC, 2013, p.3)

austerity usually fail to specify clearly the criteria against which this policy should be assessed. This enhances, rather than dispelling, the suspicion that austerity is a *must* without alternatives also for extra-economic reasons. This makes austerity a good case study on the methodology of science according to Popper's falsificationism. From this point of view, the core propositions of the austerity policy are not falsifiable simply because there is no "control protocol" with which to do so. Indeed, as highlighted by Popper's major pupils, falsificationism is not common practice in the ordinary conduct of scientists, neither in hard sciences nor, to a greater extent, in social sciences. Cognitive studies have also discovered that, indeed, we all seek confirmation of our ideas, and that we protect them from unpleasant facts by means of more or less conscious selective strategies.

In this paper I have sought to present the reader with a wide set of data, or "stylized facts", in order to gauge and characterize the last four years of austerity on both sides of the Atlantic, and in particular in the EMU. Data analysis has been organized around two assessment criteria: the primary goal of improving public finances and lowering interest rate, and the collateral effects on economic activity and unemployment. According, for instance, to Buti and Carnot (2013), austerity has been on the main target, since "on average the euro area structural balance has been cut from 4.5% to 1.25% between 2009-13 (...) There has also been visible progress in improving external and relative competitiveness positions" (p. 2). These are indeed two facts that we have found in the data. However, that strong fiscal adjustments coupled with domestic deflation can eventually produce such results is not surprising. The key test of the ex-ante austerity prescriptions and narratives is that *such results should come at low or negligible real and welfare costs followed by fast recovery*, since front-loaded fiscal consolidation produces an immediate fall in interest rates and a rise in confidence that foster long-term private expenditure. The key accusation brought against austerity is that this prediction, or promise, has not materialized, particularly in the EMU5 group countries under the most severe austerity therapy. Debts have increased further, spreads have remained high until the ECB has stepped in, recessionary effects have been much longer and deeper than expected, and the political and social costs have been impressive.

Against these "collateral damages", the usual line of defence consists of a number of side-arguments that methodologists call the "protective belt". Arguments of this sort usually exploit the fact that articulated theories, or policy prescriptions in our case, do depend on a number of side-conditions. Hence, if some facts do not fit the theory, the core is preserved, while the problem is shifted onto the side conditions. Here we have examined those

which are more frequently invoked: too little, too late, too much taxes, too much labour rigidity. Again, assessment is questionable as long as we are not given a benchmark. At any rate, the data lend little support to the argument that austerity failures are essentially due to these concomitant factors. Quite the contrary: the EMU5 countries, which have benefited the least and suffered the most from austerity, are also those where the right precepts have been followed, or imposed, more faithfully.

Elusive deadlines for policy assessment are another typical protective strategy. As the Euro-crisis progressed, delivery of promised austerity rewards has been shifted into a farther future. The 2011-12 cabinet of Mario Monti in Italy promised “rigour, growth and equity” in line with the predictions of the austerity policy outlined above. Before leaving office with negative growth and negligible equity, Monti argued that it was foolish to expect that fiscal consolidation would not bring recession in the short run, while the fruits would have come in the long run. Besides being an ex-post retreatment, this style of argumentation is purely rhetorical since there is no clear ex-ante commitment stating 1) *how much* recession is compatible with the given policy, 2) *how long* the long run is.

In the long run we are all dead. Economists set themselves too easy, too useless a task if in a tempestuous season they can only tell us that when the storm is long past the ocean is flat again (Keynes, 1923).

Until the proponents of the austerity policy do not give us their control protocol, such a policy will in fact remain unfalsifiable, and the key question – is it working? – will remain unanswered.

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Appendix

Table 1. Summary statistics of FA indicators, 2008/09-13

	2008			2009			2010			2011		
	FA	Tax	Exp	FA	Tax	Exp	FA	Tax	Exp	FA	Tax	Exp
Austria				3.04	-1.00	2.04	0.55	1.40	1.95	-1.72	2.28	0.56
Belgium				4.84	-1.41	3.43	-1.43	2.60	1.17	-0.02	1.92	1.90
Finland				7.48	-4.39	3.09	0.19	1.73	1.92	-1.94	4.26	2.32
France	0.37	-0.1	0.27	4.70	-1.93	2.77	-0.34	1.46	1.13	-1.94	2.76	0.82
Germany				3.34	-0.91	2.43	1.29	0.55	1.84	-3.36	2.36	-1.00
Greece	2.91	-0.41	2.51	5.58	-2.03	3.56	-5.92	0.14	-5.78	-2.79	-0.39	-3.18
Ireland	7.11	-2.11	5.0	5.29	-4.94	0.36	15.70	-0.43	15.26	-18.3	0.49	-17.8
Italy	0.86	-0.2	0.66	3.32	-2.11	1.21	-0.74	1.04	0.30	-1.01	0.84	-0.17
Luxemb.				3.94	-0.16	3.78	0.04	2.30	2.34	-0.32	3.70	3.38
Netherl.				6.20	-2.62	3.58	-0.19	1.54	1.35	-0.39	0.84	0.45
Portugal				6.69	-2.43	4.27	-0.18	1.02	0.84	-6.65	0.99	-5.66
Spain				6.40	-3.01	3.40	-1.95	1.31	-0.64	-1.17	0.83	-0.34
EMU12				4.47	-1.91	2.56	0.00	1.10	1.10	-2.28	1.81	-0.47
St. dev.				1.40			4.88			4.83		
UK	2.20	-1.5	0.72	6.73	-2.51	4.22	-1.69	2.28	0.59	-0.78	1.46	0.67
US	3.81	-2.3	1.51	5.26	-2.47	2.80	-0.66	1.82	1.16	-0.96	2.39	1.43
	2012			2013			CFA08/09-12	CFA 10-13				
	FA	Tax	Exp	FA	Tax	Exp						
Austria	0.29	1.47	1.76	-1.10	1.69	0.60	1.06	-1.98				
Belgium	-0.84	0.78	-0.07	0.30	2.36	2.66	2.85	-1.99				
Finland	0.08	2.07	2.15	-0.40	2.39	1.99	5.40	-2.08				
France	-0.62	1.90	1.27	-0.29	1.48	1.19	1.88	-3.19				
Germany	-0.07	1.12	1.04	0.02	0.99	1.00	1.20	-2.13				
Greece	-1.31	-1.75	-3.06	0.93	2.40	3.33	-0.59	-9.09				
Ireland	-5.29	0.42	-4.87	-2.11	0.85	-1.26	2.42	-9.98				
Italy	-2.29	1.49	-0.80	-0.33	0.99	0.66	-0.19	-4.38				
Luxemb.	1.12	1.93	3.05	0.49	1.52	2.00	5.26	1.32				
Netherl.	-0.27	1.12	0.85	0.19	2.97	3.16	5.53	-0.66				
Portugal	-0.53	0.05	-0.48	-1.67	1.04	-0.63	-2.34	-9.04				
Spain	-2.90	-0.35	-3.25	-0.18	2.10	1.92	0.21	-6.20				
EMU12	-1.05	1.09	0.03	-0.35	0.34	-0.01	0.79	-3.68				
St. dev.	1.65			0.85			3.5	2.43				
UK	-1.59	1.63	0.03	-1.91	1.12	-0.79	2.95	-5.98				
US	-1.04	1.79	0.75	-1.10	2.76	1.66	5.31	-3.76				

Tax: Total fiscal revenue
Exp: Primary expenditure
CFA: cumulated FA

Table 2. *FA* indicators, total deficit/GDP ratios and debt/GDP ratios, 2009-13

	2009			2010			2011		
	FA	Def/ GDP	Debt/ GDP	FA	Def/ GDP	Debt/ GDP	FA	Def/ GDP	Debt/ GDP
Austria	3.04	-4.15	69.5	0.55	-4.48	71.9	-1.72	-2.66	72.2
Belgium	4.84	-5.64	95.8	-1.43	-3.92	96.0	-0.02	-3.76	98.0
Finland	7.48	-2.74	43.5	0.19	-2.86	48.4	-1.94	-0.78	48.6
France	4.70	-7.57	79.2	-0.34	-7.12	82.3	-1.94	-5.22	85.8
Germany	3.34	-3.21	74.4	1.29	-4.28	83.0	-3.36	-0.78	81.2
Greece	5.58	-15.56	129.4	-5.92	-10.50	145.0	-2.79	-8.96	165.3
Ireland	5.29	-14.02	65.1	15.70	-31.17	92.5	-18.3	-13.23	108.2
Italy	3.32	-5.34	116.0	-0.74	-4.43	119.3	-1.01	-3.81	120.8
Luxemb.	3.94	-0.81	14.8	0.04	-0.85	19.1	-0.32	-0.60	18.2
Netherl.	6.20	-5.55	60.8	-0.19	-5.00	62.9	-0.39	-4.55	65.2
Portugal	6.69	-10.23	83.1	-0.18	-9.99	93.3	-6.65	-4.64	107.8
Spain	6.40	-11.18	53.9	-1.95	-9.34	61.2	-1.17	-8.30	68.5
EMU12	4.47	-6.38	80.6	0.00	-6.23	86.2	-2.28	-4.02	88.6
UK	6.73	-11.40	69.6	-1.69	-10.24	79.6	-0.78	-9.48	85.7
US	5.26	-11.55	90.4	-0.66	-10.63	99.1	-0.96	-9.75	103.5
	2012			2013					
	FA	Def/ GDP	Debt/ GDP	FA	Def/ GDP	Debt/ GDP			
Austria	0.29	-3.11	74.2	-1.10	-2.12	74.3			
Belgium	-0.84	-3.04	100.5	0.30	-3.36	100.8			
Finland	0.08	-0.89	50.5	-0.40	-0.70	51.7			
France	-0.62	-4.72	90.5	-0.29	-4.54	92.5			
Germany	-0.07	-0.63	82.2	0.02	-0.64	80.7			
Greece	-1.31	-8.40	160.6	0.93	-9.57	168.0			
Ireland	-5.29	-8.54	116.1	-2.11	-7.86	120.2			
Italy	-2.29	-3.00	127.0	-0.33	-2.90	131.4			
Luxemb.	1.12	-1.75	20.3	0.49	-2.24	21.6			
Netherl.	-0.27	-4.28	70.1	0.19	-4.50	73.0			
Portugal	-0.53	-5.15	113.9	-1.67	-3.71	117.1			
Spain	-2.90	-5.76	80.9	-0.18	-5.55	87.0			
EMU12	-1.05	-3.13	92.4	-0.35	-3.01	93.3			
UK	-1.59	-7.80	91.2	-1.91	-5.92	94.6			
US	-1.04	-8.56	108.9	-1.10	-7.41	111.8			

Table 3. Decomposition of the growth of debt/GDP ratios in the austerity period, 2010-13

	2010					2011				
	FA	(1)	(2)	(3)	Total	FA	(1)	(2)	(3)	Total
Austria	0.5	1.3	2.6	-2.9	1.7	-1.7	1.8	2.6	-3.8	-1.0
Belgium	-1.4	2.0	3.5	-3.9	0.1	0.0	0.4	3.4	-4.0	-0.2
Finland	0.2	1.3	1.4	-1.8	1.1	-1.9	1.5	1.3	-3.2	-2.3
France	-0.3	5.1	2.4	-1.8	5.4	-1.9	4.7	2.6	-2.7	2.7
Germany	1.3	0.5	2.5	-3.2	1.1	-3.4	1.8	2.4	-3.2	-2.3
Greece	-5.9	10.4	5.8	2.4	12.7	-2.8	4.7	6.8	7.8	16.5
Ireland	15.7	12.0	3.1	1.9	32.7	-18.3	28.0	3.6	-0.3	13.0
Italy	-0.7	0.8	4.4	-2.6	1.9	-1.0	0.0	4.8	-2.1	1.7
Luxemb.	0.0	0.4	0.4	-1.1	-0.3	-0.3	0.4	0.5	-1.2	-0.6
Netherl.	-0.2	3.4	1.9	-1.8	3.3	-0.4	3.1	1.9	-1.5	3.2
Portugal	-0.2	7.3	3.0	-2.1	8.1	-6.7	7.0	4.3	0.9	5.5
Spain	-1.9	9.4	1.9	-1.4	8.0	-1.2	7.4	2.2	-1.7	6.8
EMU12	0.0	3.5	2.8	-0.3	6.0	-2.3	3.4	3.0	-1.8	2.3
UK	-1.7	9.5	2.9	-3.5	7.2	-0.8	7.4	3.1	-2.4	7.3
US	-0.7	9.0	2.6	-3.8	7.2	-1.0	8.0	3.0	-3.9	6.2
	2012					2013				
	FA	(1)	(2)	(3)	Total	FA	(1)	(2)	(3)	Total
Austria	0.3	0.0	2.8	-2.0	1.1	-1.1	0.3	2.9	-3.0	-0.9
Belgium	-0.8	0.4	3.5	-2.0	1.0	0.3	-0.4	3.5	-5.2	-1.9
Finland	0.1	-0.6	1.3	-1.7	-0.8	-0.4	-0.5	1.5	-2.0	-1.3
France	-0.6	2.6	2.8	-1.7	3.1	-0.3	1.9	3.0	-2.6	2.0
Germany	-0.1	-1.6	2.3	-1.9	-1.3	0.0	-1.7	2.3	-2.3	-1.7
Greece	-1.3	2.2	7.4	8.9	17.2	0.9	1.0	7.7	-8.6	1.1
Ireland	-5.3	9.7	4.3	-1.9	6.8	-2.1	4.2	5.9	-3.9	4.0
Italy	-2.3	-1.0	6.3	-0.8	2.2	-0.3	-3.3	6.5	-1.2	1.6
Luxemb.	1.1	0.1	0.5	-0.4	1.3	0.5	1.2	0.6	-0.5	1.7
Netherl.	-0.3	2.6	1.9	-0.4	3.9	0.2	2.3	2.1	-3.9	0.8
Portugal	-0.5	0.4	5.3	2.8	8.0	-1.7	-0.1	5.5	-4.3	-0.6
Spain	-2.9	6.1	2.5	-0.8	4.9	-0.2	3.3	2.6	-0.4	5.3
EMU12	-1.1	1.0	3.2	0.7	3.9	-0.3	0.0	3.4	-5.1	-2.1
UK	-1.6	6.4	3.2	-2.8	5.2	-1.9	4.6	3.3	-1.2	4.8
US	-1.0	6.8	3.1	-4.1	4.7	-1.1	5.5	3.2	-3.8	3.7

(1) inertia
(2) snowball
(3) growth

Table 4. Summary statistics of GDP growth data at constant 2005 prices, 2008-13

	Ave. 2000-07	2008	2009	2010	2011	2012	2013	CGR 08-13	CGR 10-13
Austria	2.1	1.4	-3.8	2.3	3.1	0.2	0.9	2.6	9.3
Belgium	1.8	1.0	-2.8	2.3	1.9	-0.1	0.7	1.9	6.9
Finland	2.9	0.3	-8.4	3.7	2.9	-0.6	0.8	-2.0	4.7
France	1.8	-0.1	-2.7	1.5	1.7	0.0	0.4	0.6	4.2
Germany	1.4	1.1	-5.1	3.7	3.0	1.3	0.8	3.5	12.9
Greece	4.1	-0.2	-3.3	-3.5	-6.9	-7.1	-4.2	-22.8	-38.3
Ireland	5.0	-3.0	-7.0	-0.4	0.7	3.5	1.1	-5.4	-0.8
Italy	1.3	-1.2	-5.5	1.8	0.4	-2.3	-1.4	-8.0	-9.4
Luxemb.	3.8	0.8	-5.3	2.7	1.6	0.4	0.7	-0.2	5.2
Nether.	2.0	1.8	-3.5	1.7	1.2	-0.7	0.3	-1.2	1.3
Portugal	1.0	0.0	-2.9	1.4	-1.6	-3.0	-1.0	-7.0	-10.9
Spain	3.1	0.9	-3.7	-0.1	0.7	-2.0	-1.4	-6.4	-9.0
EMU12	1.7	0.3	-4.3	1.9	1.5	-0.5	0.1	-1.4	1.5
UK	2.9	-1.1	-4.4	2.1	0.7	1.0	0.9	-0.9	3.8
US	2.4	-0.4	-3.5	3.0	1.7	1.9	2.3	5.0	14.7

CGR: compound growth rate

Table 5. Compound growth rates of GDP components at constant 2005 prices:
EMU12, 2010-13

	Priv. cons.	Priv. invest.	Pub. current	Pub. Invest.	Domestic	Export	GDP
Austria	3.2	11.8	7.6	-4.9	4.7	40.8	9.3
Belgium	2.4	-0.3	20.0	8.0	2.4	32.5	6.9
Finland	8.0	4.0	13.3	6.2	6.0	35.1	4.7
France	1.6	2.7	8.8	2.0	2.3	32.7	4.2
Germany	4.1	10.2	2.4	-1.0	5.1	45.6	12.9
Greece	-26.7	-46.0	-37.2	-51.8	-27.5	32.2	-38.3
Ireland	-2.9	-25.3	-17.2	-53.4	-9.8	24.2	-0.8
Italy	-4.7	-11.8	-5.4	-15.6	-6.7	38.6	-9.4
Luxemb.	6.5	27.8	16.3	17.9	19.7	10.3	5.2
Nether.	-4.4	-10.4	0.4	-5.7	-2.3	41.1	1.3
Portugal	-10.1	-30.1	-23.1	-40.3	-14.3	45.6	-10.9
Spain	-5.4	-14.5	-7.0	-68.9	-10.1	39.4	-9.0
EMU12	-1.1	-3.0	0.2	-19.0	-1.6	=	1.5

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