Cambridge Journal of Economics 1998, 22, 103–116

COMMENTARIES

This section is designed for the discussion and debate of current economic problems. Contributions which raise new issues or comment on issues already raised are welcome.

The myth (or folly) of the 3% deficit/GDP Maastricht 'parameter'

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A relation is presented defining the boundary, algebraically and geometrically, to the sustainability area of public finance. The relation (and area) involve three magnitudes: deficit/GDP, debt/GDP and rate of growth. It is shown that the parameters stated in the famous Annex to the Maastricht Treaty (60% for the debt/GDP ratio and 3% for the deficit/GDP ratio) represent only one particular point on the above mentioned boundary relation to the sustainability area. There exists an infinite number of other points sharing the same characteristics. On the basis of the OECD data referring to the end of 1996, it is shown that all major European countries find themselves outside the sustainability area, except Belgium and Italy, i.e., exactly the opposite of what is widely believed to be the case in current discussions.

1. Introduction

The Treaty of Maastricht (1992) is more than 200 pages long, as originally published (1992), and deals with many subjects, including a supposed 'co-ordination' of macroeconomic policies (art. 103). But of all the subjects it deals with, one has come to overshadow all the others: the creation of a single European Monetary Unit—an event with which Maastricht has by now become associated. In order to qualify for participation, each country is supposed to fulfil four conditions (or criteria, as they are called in art. 109j of the Treaty), namely: (*i*) a degree of price stability close to that achieved by the three best performing European countries; (*ii*) 'sustainability' of its public finance position; (*iii*) observance, for the two years prior to the event, of the normal fluctuation margins provided for by the exchange-rate mechanism of the European Monetary System; and (*iv*) durability of convergence of long-term interest rates.

When the Treaty was signed, few really expected that more than a handful of countries would be able to satisfy such criteria. In practice, things have developed differently. By an

Manuscript received 15 September 1997; final version received 7 October 1997.

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extraordinary combination of events (or by a stroke of luck), three of the four criteria have surprisingly been met—and very quickly too, though at the cost of high taxation and extensive unemployment—by all countries in the European Union (with the one exception of Greece). The criterion that still remains a thorn in the European flank is that of 'sustainability', concerning public finance positions.

Curiously enough, however, on this point the Treaty does not give, or even mention, any accepted notion of public finance 'sustainability'. It does mention two crucial 'reference values' that have to be considered—the public deficit/GDP ratio and the public debt/GDP ratio. But no explicit relation is mentioned between the two. The Treaty simply refers to an annexed 'Protocol', where two very specific figures are stated: 3% for the public deficit/GDP ratio and 60% for the public debt/GDP ratio.

Nobody has ever been able to give any plausible explanation of *why* these two figures were chosen. As far as the 60% ratio is concerned, the most likely inference is that it amounted to roughly the average observed in Europe at the time of the drawing up of the Treaty, with both Germany and France being near it. But other countries (notably Belgium and Italy) were far from it; and since it would have been unreasonable (in fact impossible) to require immediate adjustment, a proviso was added (art. 104c) stating that a higher debt/GDP ratio than the 'reference' one would be acceptable if 'the ratio is sufficiently diminishing and approaching the reference value at a satisfactory pace'.

More difficult to explain is the choice of the 3% public deficit/GDP 'reference value', especially if one considers that, on this point, the Treaty is now being interpreted very strictly, allowing for absolutely no deviation (not even by any small fraction of a percentage point) from the 3% figure. Such a rigid stance is so extraordinary as to lead one to think that any justification can only be found in the realm of symbolism. The whole of the Maastricht Treaty seems to have been reduced to the fulfilment of this symbolic figure of a 3% public deficit/GDP ratio stated in one of its Annexes. But even symbols cannot escape the reality of their implications. If a 3% public deficit/GDP ratio is to be rigidly adhered to and regarded as a symbol of European fiscal and financial stability (even at the cost of heavy sacrifice), it surely should be an absolutely necessary condition for fiscal and financial stability.

Nobody has ever proved this. In fact it cannot be proved, as will be shown in the following pages.

2. Public debt sustainability

We may begin by asking what the Treaty is trying to avoid; namely: when is it that a public deficit becomes excessive? To give an answer one obviously cannot quote any arbitrarily chosen figure; one must examine the consequences of the deficit on public finances, usually synthesised by the effects on the ratio of the public debt to the gross domestic product (GDP). Another—alternative—way of putting the same question is therefore to ask: When is it that the time path of the public debt becomes unsustainable?

On this point there is a vast literature. One of the standard references is a paper prepared for the OECD by Olivier Blanchard and other economists (1990), referring precisely to 'The Sustainability of Fiscal Policy'. Blanchard starts from a certain public debt/GDP ratio which is considered to be acceptable or satisfactory and which is taken as an external datum. (It must be said, by the way, that there is no economic theory that can establish *what* such a ratio should be.) Blanchard then examines the path that the budget public deficit ought to follow in order to lead the stock of the existing debt towards that

pre-established public debt/GDP ratio, within a pre-stated period of time. He considers three time horizons: 1 year, 5 years, and 40 years. The drawback of Blanchard's analysis is that it is analytically rather complicated and therefore difficult to use in discussions which are not strictly academic.

It is possible, however, to use an analytical formalisation which is much simpler (and which I have used already on other occasions—Pasinetti, 1989, 1997), the results of which do in the end come to coincide with those of Blanchard *et al.*, if we begin by considering the shortest time horizon, that is 1 year, and if we assume (since in any case the pre-established public debt/GDP ratio is to be assumed as externally given) that the country considered has already arrived at a level of public debt/GDP ratio that is considered as acceptable. (I shall come back to the reasons that may justify such supposition.)

When the problem is put in these terms, it becomes evident that the crucial point is not the level already reached by the debt/GDP ratio (which is taken as given), but its subsequent time path. We may therefore start from the following *definition of sustainability of the public debt*: a public debt is sustainable when it satisfies the following condition:

$$\left(\frac{D}{Y}\right)_{(t)} \leqslant \left(\frac{D}{Y}\right)_{(0)},$$

where:

$D>0$: public debt at the end of the year
Y : annual Gross Domestic Product (GDP), in nominal terms
t : time.

This means that the public debt is defined as *sustainable* when the ratio D/Y decreases or, at least, remains constant. (Conversely, it is defined as unsustainable when the ratio D/Y is increasing.) It must therefore be:

$$\frac{\theta}{g}\,\frac{D}{Y} \leqslant \frac{D}{Y}, \qquad \text{i.e.: } \theta \leqslant g;$$

where

$\theta = \dfrac{\Delta D}{D}$: (annual) rate of growth of public debt

g = (annual) nominal rate of growth of GDP.

Adding now the following definitions (all variables being in nominal terms):

$R>0$: total annual public revenue
$G>0$: public annual expenditure net of interests
$S^{(p)}$: $R - G$: (annual) primary public surplus
S : $-\Delta D$: annual total public unbalance (surplus or deficit)
i : (annual) nominal rate of interest

we may proceed to the formulation of the following standard identities of national fiscal accountancy. They define two different, and alternative, notions of public deficit: the *total* and the *primary* public deficit (or surplus), (S) and ($S^{(p)}$) respectively; each of the two being in turn expressed both in absolute nominal terms and relatively to GDP:

$$S = -\Delta D = R - G - iD,$$

$$S^{(p)} = R - G = S + iD = -\Delta D + iD,$$

$$\frac{S}{Y} = -\frac{(\Delta D)}{D}\frac{D}{Y} = -\theta\frac{D}{Y} = \frac{S^{(p)}}{Y} - i\frac{D}{Y},$$

$$\frac{S^{(p)}}{Y} = \frac{S}{Y} + i\frac{D}{Y} = -\theta\frac{D}{Y} + i\frac{D}{Y}.$$

In the two cases, the following two identity/relations between each of the two versions of the deficit/GDP ratio and the public debt/GDP ratio immediately follow:

$$\frac{S}{Y} = -\theta\frac{D}{Y}, \tag{1}$$

$$\frac{S^{(p)}}{Y} = (i-\theta)\frac{D}{Y}, \tag{2}$$

Accordingly, the sustainability area of public debt may be defined in two alternative ways: (*a*) with reference to the total deficit, or (*b*) with reference to the primary deficit.

In the first case, the boundary relation is:

$$\frac{S}{Y} = -g\frac{D}{Y}, \tag{1*}$$

while the sustainability area for the debt (and the total deficit) is defined by:

$$\frac{S}{Y} \geqslant -g\frac{D}{Y},$$

and, graphically, by Figure 1.

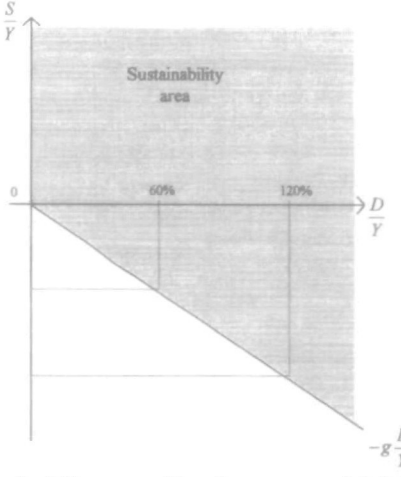


Figure 1 *Sustainability area with reference to total deficit/GDP ratio*

In the second case the boundary relation is:

$$\frac{S^{(p)}}{Y} = (i-g)\frac{D}{Y}, \tag{2*}$$

while the sustainability area for the debt (and the primary deficit, or surplus) is defined by:

$$\frac{S^{(p)}}{Y} \geq (i-g)\frac{D}{Y}, \qquad (2^*)$$

and, graphically, by Figure 2.

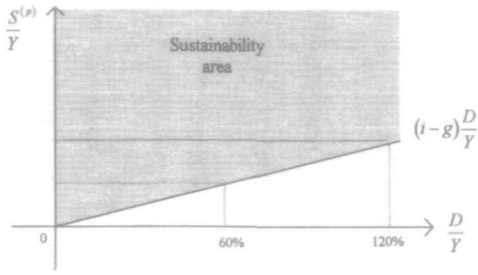


Figure 2 *Sustainability area with reference to primary deficit (or surplus)/GDP ratio*

Case (*b*), which refers to the primary surplus (or deficit), contains more information. The stability primary surplus (or deficit) depends on 3 external magnitudes: the public debt/GDP ratio (which is on the abscissae), the rate of interest and the growth rate of GDP (the difference between the two being represented by the slope of the boundary line). Note, to give an example, that if the difference between the nominal rate of interest and the nominal rate of growth were of two percentage points, i.e. $(i-g) = 2\%$, the stability primary surplus would be $(S^{(p)}/Y) = 1{\cdot}2\%$; and the sustainability area for it would be:

$$\frac{S^{(p)}}{Y} \geq 1{\cdot}2\%,$$

with reference to a ratio $(D/Y) = 60\%$. Similarly, the stability primary surplus would be $(S^{(p)}/Y) = 2{\cdot}4\%$, and the sustainability area for it would be:

$$\frac{S^{(p)}}{Y} \geq 2{\cdot}4\%,$$

with reference to a ratio $(D/Y) = 120\%$.

Case (*a*), which refers to the total deficit, is of more immediate relevance to current discussions, as it is the one considered by the Maastricht Treaty. The total stability deficit emerges here as a consequence of 2 external magnitudes: the public debt/GDP ratio (represented on the abscissae) and the growth rate of GDP, represented by the (negative) slope of the boundary line. To go back to the two previous numerical examples, we may verify that, with a nominal growth rate of GDP of 5%, and a ratio $(D/Y) = 60\%$, the stability total deficit is $(S/Y) = -3\%$, and the sustainability area for it is:

$$\left(\frac{S}{Y}\right) \geq -3\%.$$

This seems to be precisely the 'reference value' which is stated explicitly in the Annex Protocol to the Maastricht Treaty. But this value is only one single point on the entire boundary line. In the case of a $(D/Y) = 120\%$, with the same nominal GDP growth rate

of 5%, the stability deficit would be $(S/Y) = -6\%$ and the sustainability area would be:

$$\left(\frac{S}{Y}\right) \geqslant -6\%,$$

i.e., double that of the previous case. Thus $(D/Y) = 120\%$ and $(S/Y) = -6\%$ are two other reference values, alternative to those appearing in the Protocol annexed to the Maastricht Treaty, and yet sharing the same characteristics, as they belong to the same boundary relation that defines the sustainability area.

All intermediate cases, or all previous and succeeding cases, may easily be calculated, with a nominal GDP rate of growth of 5%—as implicitly presupposed in the Maastricht Treaty, and as taken in our two numerical examples—or with any other rate of growth.

The important aspect to underline is that—in a stability context—public debt/GDP and total deficit/GDP ratios (and similarly public debt/GDP and primary surplus/GDP ratios) are related to each other by a well-defined relation. It is this *relation* between the two magnitudes, and not any couple of points arbitrarily chosen on the relation itself (and the fact that the chosen couple of 'reference values' represent an average of observed data does not diminish their arbitrariness), that defines the boundary to the *deficit sustainability area*, and *ipso facto* to the *debt sustainability area*.

Note that, within a sustainability context, for any given nominal GDP rate of growth, the higher the public debt/GDP ratio, the higher also is the sustainability total deficit/GDP ratio corresponding to it. At the same time, as the other relation shows, when the difference between nominal rate of interest and nominal rate of growth is positive, the higher the public debt/GDP ratio the higher also is the primary surplus which must be achieved in order to remain in the sustainability area.

It is important to note that it is possible to remain in the sustainability area, i.e. in an area where the public debt/GDP ratio is either constant or decreasing, even with a *permanent* public deficit, provided that the GDP rate of growth is positive (the increase in the GDP coming constantly to compensate, or more than compensate, for the increase in the public debt.)[1]

It may also be interesting to note how crucial for public finances is the difference between the rate of interest and the rate of growth (both expressed in nominal terms). By considering a limiting case, if such a difference were to be narrowed down to zero, i.e. in the case $i = g$, the sustainability area concerning the primary deficit, in Figure 2, would come to coincide with the positive quadrant. It would be possible to sustain permanently, that is to say to maintain constant over time, a public debt/GDP ratio of *whatever* initial amount, merely by observing the constraint of balancing the primary government budget. Interest would indeed be paid with further debt, but the extra debt would be compensated for exactly by the growth of GDP. Interest payments would not in the least affect ordinary primary expenditure, and thus it would not affect the level of fiscal pressure!

[1] As may have become evident, the definition of sustainability used here is—from a strictly analytical point of view—so much simpler than those currently used, e.g. by Blanchard *et al.* (1990), because of at least three properties. First, by using the shortest time horizon (1 year) and by starting from a level of the D/Y ratio which is already at the 'acceptable' level, no computation of discounted future deviations is required. What is required is simply that, year after year, the total deficit remain inside the (sustainability) area, where the public debt is decreasing (or is at most constant). Second, a (sustainable) primary surplus emerges as a necessary feature of an economy with a public debt, as long as the rate of interest exceeds the rate of growth (it would disappear if $i \leqslant g$, as illustrated in the text.) Third, all concepts that are needed are in *nominal* terms, which makes it unnecessary even to compute any real magnitude.

In practice, this limiting case is unlikely to materialise. In current financial market conditions, the interest rate is likely to remain higher than the growth rate, so that the relation that marks the boundary of the sustainability area is usually high up in the positive quadrant, as represented in Figure 2. There is more to it than that. It may well happen that the financial markets interpret a high *(D/Y)* ratio as a risk factor and impose an even higher $(i - g)$ differential, so that in Figure 2 the linear relation defining the boundary might at a certain point no longer be a straight line, but bend up, as the *(D/Y)* ratio is increasing. It is by this route that a high *(D/Y)* ratio may generate (even without objective reasons) fragility in the public financial sector.

3. The question of total indebtedness

The elaborations presented in the previous section would appear entirely unexceptionable, if it were not for that supposition made at the beginning, on the basis of which the actually existing public debt/GDP ratio has been accepted as given. (Our definition of sustainability refers to the time movement of the public debt/GDP ratio, independently of its initial level.)

But let us look at the actual situation. The public debt/GDP ratios in the principal European countries are given in Tables 1 and 2. We can immediately see that they differ considerably: they range from 55·1% in France and 61·3% in Germany to 124·4% in Italy and 129·9% in Belgium. The 'reference value' mentioned in the Annex Protocol to the Maastricht Treaty—it will be remembered—is 60%, i.e. near the public debt/GDP level of France and Germany. In current discussions it is taken for granted that the latter level (60%) is, *for all*, more 'satisfactory' than higher ones. At first sight, especially if one considers the vicissitudes that, in some countries, have given rise to the present high level of public debts, this conviction might appear well founded.

It must however be pointed out that—quite apart from the fact, already mentioned, that it is not possible on theoretical grounds to say *which* level of public debt/GDP ratio is actually a satisfactory or 'acceptable' level—the judgement on the past process of public debt accumulation, which may well have taken place without adequate justifications, is one thing, the function that the public debt may fulfil once it has built up, particularly

Table 1 *Situation of the principal countries in the European Union with reference to the relation between total deficit and public debt (as % of GDP) at end 1996*

	$\frac{D}{Y}$	g	$\frac{S}{Y}$ (actual deficit)	$g\frac{D}{Y}$ (maximum stability deficit)	Difference (3) – (4)
	(1)	(2)	(3)	(4)	(5)
Italy	124·4	5·8(*)	−6·7	−7·21	+0·51
Germany	61·3	2·5	−4·1	−1·53	−2·57
France	55·1	3·0	−4·1	−1·65	−2·45
United Kingdom	56·1	4·8	−4·8	−2·69	−2·11
Spain	68·0	6·1	−4·8	−4·15	−0·65
Belgium	129·9	3·0	−3·2	−3·9	+0·7

Source: Our elaborations on OECD data (estimates), *Economic Outlook*, n. 60, 1996, with up-dating, for (*), from *Relazione Generale sulla Situazione Economica del Paese, 1996*, Treasury Ministry, Rome, April 1997.

Table 2 *Situation of the principal countries in the European Union with reference to the relation between primary deficit (or surplus) and public debt (as % of GDP) at end 1996*

	$\frac{D}{Y}$	i	g	$(i-g)$	$\frac{S^{(p)}}{Y}$	$(i-g)\frac{D}{Y}$	Difference (5) – (6)
		(rates of interest)	(rates of growth)		(primary surplus or deficit)	(stability primary surplus)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Italy	124·4	9·0	5·8(*)	3·2	+3·9(*)	3·98	−0·08
Germany	61·3	6·3	2·5	3·8	−0·9	2·33	−2·42
France	55·1	6·6	3·0	3·6	−0·8	2·02	−2·82
United Kingdom	56·1	7·8	4·8	3·0	−1·8	1·68	−3·48
Spain	68·0	8·9	6·1	2·8	+0·3	1·90	−1·60
Belgium	129·9	6·4	3·0	3·4	+5·1	4·42	+0·78

Source: Our elaborations on OECD data (estimates), *Economic Outlook*, No. 60 1996, with up-dating, for (*), from *Relazione Generale sulla Situazione Economica del Paese, 1996*, Treasury Ministry, Rome, April 1997.

Table 3 *Gross financial liabilities as % of GDP (internal non-finance sector), 1994*

	Public administration*	Private sector**	Totals
Italy	135	133	268
France	57	321	378
Germany	52	155	207
United Kingdom	59	269	328
Belgium	138	158	296
United States	69	199	268
Japan	88	295	383

Notes: *General government gross financial liabilities, including central and local government, governmental agencies and social security sector.
**Gross financial liabilities of households, corporate and unincorporated business enterprises, including shares.
Source: Elaborations on OECD data, *Financial Accounts*, kindly provided by the 'Servizio Studi' of the Bank of Italy.

once it has been stabilised so that its growth has been halted, is another, quite different thing.

The stock of public debt in existence—especially for that part of it which is held by resident citizens—fulfils also the function of providing financial assets to the holders of debt certificates. In a certain sense, these are two sides of the same coin. The public debt is a liability for the State (and of course, through the State, for the whole community), but at the same time it also represents a set of financial assets for the single individuals or institutions (private and public) that are holding them, a way for them to transfer expenditure through time. There is no doubt that this function is very important. In the case of Italy, for example, the public debt is for its greatest part (between 80% and 90%) held by residents. In itself this should lead one to infer—given the only recently introduced capital market liberalisation—that gross *private* indebtedness should be lower than in other countries. In fact, Table 3 confirms this inference. Among the principal countries of the European Union (and also with respect to Japan and the United States), Italy is the country where the ratio of gross *private* debt to GDP is lowest (133%, as against 321% in France, 269% in the United Kingdom). Table 3 also shows another extremely interesting fact. If one considers *total* indebtedness in the various countries (relative to GDP), the differences between the various countries narrow down considerably. Those countries that have a high public debt (e.g. Italy and Belgium) show correspondingly low *private* indebtedness. In other words, the total debt position in the various countries (and, as a consequence, the overall country-risk) appears by far less divergent when one considers total indebtedness, than when one is concentrating attention exclusively on public indebtedness.[1]

This leads one to think of another aspect. The exceptional (and in so many aspects damaging) expansion of public debt that has taken place in the past decade in some countries—Italy is a case in point—may not imply, as is usually said, that undue

[1] This characteristic is not of course a novelty. At the 'Servizio Studi' of the Bank of Italy—from where I obtained the elaborations of OECD data presented in Table 3—they are well aware of it. A few years ago, Professor Giacomo Vaciago (1993) made this characteristic the subject of his Fowler Hamilton Lecture, at Christ Church, Oxford. Curiously enough, in current discussions, all this seems to be ignored or to have been forgotten.

expansion of current expenditure has taken place with respect to the possibilities of future expenditure (at the expense of future generations), but may simply reveal a crowding out of private *versus* public financial assets. If this is true, one may expect that the decrease of the public debt/GDP ratio which is now taking place (and the process of public enterprise privatisation surely leads in this direction) will cause an increase of the private debt/GDP ratio without substantially affecting the ratio of *total* debt to GDP. Thus, if a high public debt to GDP ratio simply reveals an imbalance between public and private indebtedness, when one looks at it within a framework of convergence among the various European countries, this imbalance may well need correcting. But it seems unreasonable that such correction should be carried out by imposing rigid (and unjustified) constraints on the decrease of the level of public indebtedness, when these constraints are unnecessary for stability purposes. It would seem more reasonable to help the country concerned develop appropriate conditions for a parallel widening of the private financial sector. Clearly, a too rapid decrease of public indebtedness—and thus of the availability of public financial assets—without a parallel expansion of private indebtedness, i.e. of the availability of private financial assets, might well generate a variety of other imbalances (e.g., between internal and external indebtedness). This simply underlines the importance of the theoretical scheme proposed in the previous section. No doubt it is essential for fiscal sustainability to bring to a halt the expansion of public indebtedness. But at the same time it makes no sense to impose on the process of redistribution from public to private indebtedness any arbitrarily determined speed, as for example that which is implied by a ratio of total deficit to GDP given by a rigid figure of 3%. In those cases where such a figure is not necessary for the purpose of keeping the country concerned within the sustainability area, simply no rational justification can be adduced.

These assertions are even more cogent in the face of the 'stability pact', recently underwritten and confirmed during the meetings of the Heads of Government of the European Union. When the 3% public deficit/GDP ratio is not necessary for the purpose of remaining within the sustainability area, such a pact means precisely the unreasonable constraint illustrated above. For the country concerned, the 'pact' may entail severe costs on two counts: because it prevents expansionary policies in periods of recession and mass unemployment (as is the case at present, with unemployment in the double digit percentage range and no government worrying seriously about it, while at the same time worrying about tiny fractions of a one percentage point on the public deficit/GDP ratio!); and because, on the top of that, it also imposes heavy fines. I cannot see how all this could be a symbol for anything. It simply sounds foolish.

4. The situation of the principal countries in the European Union at the end of 1996

If we accept at this point the reference framework presented in section 2 above, we may quickly look at the situation in which the principal countries in the European Union found themselves at the end of 1996, with reference to the two boundary relations presented above. The relevant data are shown in Tables 1 and 2. The source of the data is the OECD, with an updating—as far as Italian primary deficit and growth rate are concerned—coming from the latest *Relazione Generale sulla Situazione Economica del Paese*. For all countries the reference date is end 1996.

As is well known, the decisions on participation to the European Monetary Unit will be

taken on the basis of the data at the end of 1997. The present exercise is to examine how the various countries stand one year before that date.

On the basis of the data in Tables 1 and 2, it is possible to construct, for each country, the two boundary relations (1*) and (2*), and thus define the sustainability area in its two versions, i.e. with reference to the total deficit (or surplus) and with reference to the primary deficit (or surplus), respectively. The boundary relations (straight lines), the sustainability areas (shaded areas) and the points indicating the situations of each country (denoted by a star) are represented in Figure 3.

The data of Tables 1 and 2 and the relations represented in Figure 3 may appear surprising, if one considers the current discussions and the reports we have from the press on the meetings of the various Heads of Government, Treasury Ministers and Central Bank Governors.

The only two European countries which, at the end of 1996, turn out to be within the sustainability area, as defined in version (1*), are Belgium and Italy. All others countries are out; and to a rather considerable degree (by magnitudes of the order of 2·5 percentage points, except for Spain, which is out by less than 1 percentage point.) In version (2*), the situation appears only very slightly different. The only difference is that Italy appears just out (0·08 of a percentage point) of the sustainability area; in practice, it is on the boundary line. All other countries considered in Table 2 are out of the sustainability area.[1] Paradoxically, and contrary to prevalent convictions—most of all, contrary to the conviction generated by insistence on the 3% deficit/GDP Maastricht mythical 'parameter'—it is for these countries, rather than for Belgium and Italy, that the data at the end of 1996 reveal serious deviations from the area of sustainability of public finance.

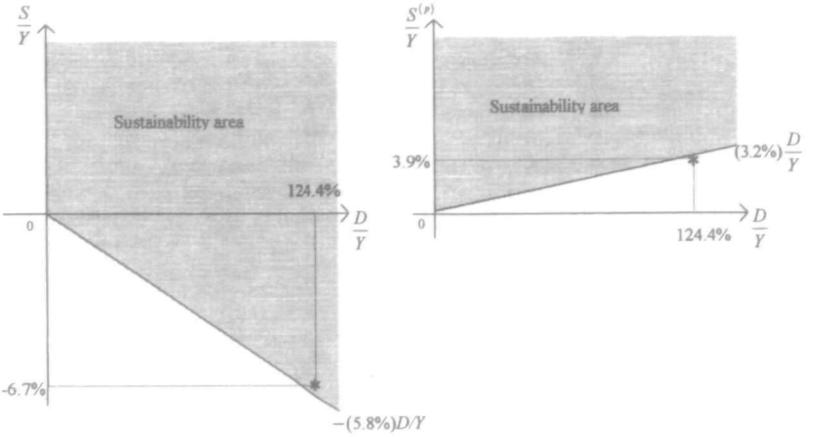
5 Conclusion

A boundary relation has been presented defining, algebraically and geometrically, the area of sustainability of government public finance, in terms of a decreasing (or at most non-increasing) ratio of public debt to GDP. The boundary relation and the sustainability area involve three magnitudes: deficit/GDP ratio, public debt/GDP ratio, and rate of growth. It is shown that the 'reference values' stated in the famous Annex to the Maastricht Treaty (60% for the public debt/GDP ratio, 3% for the deficit/GDP ratio, and—implicitly—a nominal rate of growth of 5%) represent only one particular point on the above mentioned boundary relation defining the sustainability area. There exists an infinite number of other points sharing the same characteristics. On the basis of OECD data it is shown that all major European countries find themselves outside the sustainability area, at the end of 1996, except Belgium and Italy. The same exercise is carried out in an alternative way, namely with reference to the primary deficit (or surplus)/GDP ratio—rather than with reference to the total deficit/GDP ratio, as considered in the Maastricht Treaty. The results are basically the same.

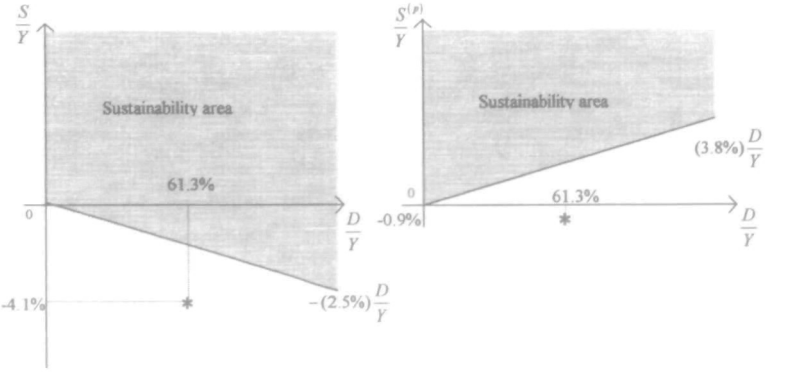
This is precisely the opposite of what is taken for granted in current discussions.

[1] On theoretical ground, the two relations between public debt/GDP and deficit (or surplus)/GDP in their two alternative versions (1*) and (2*) should lead exactly to the same conclusions. In practice, there are some incongruities due to the use of separate tables of the OECD data: this accounts for the small differences. The basic overall picture that emerges is, however, quite clear.

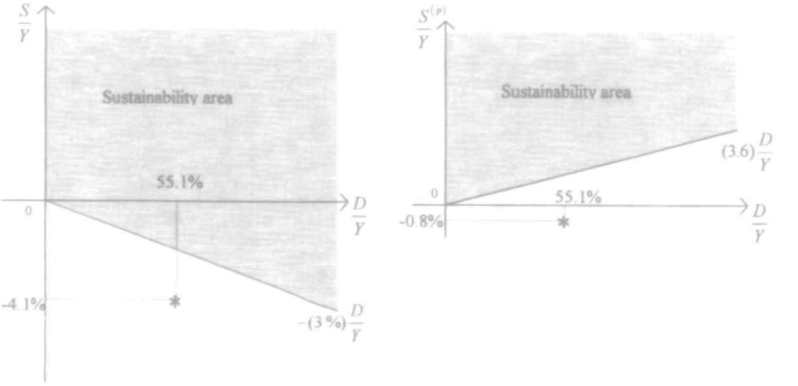
Italy



Germany



France



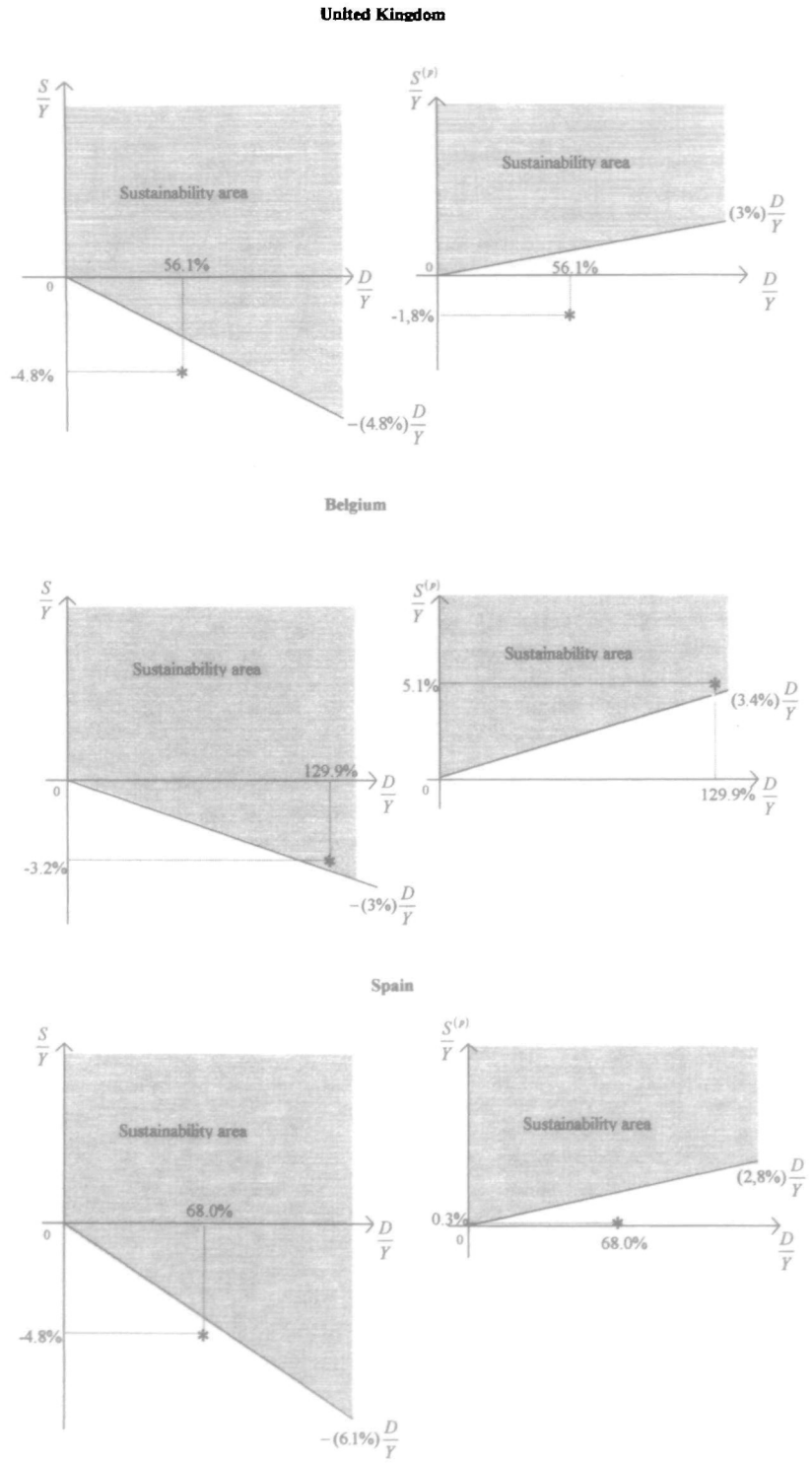


Figure 3 *Deficit (or surplus)/GDP relations in selected European Countries, 1996*

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