A Note on the Evaluation of Public Deficits: Net or Gross of Interest?*

1. Foreword

In the abundant literature on the national debt, references occur frequently to government budget deficit *excluding* interest payments.

In the present note, I want to argue that reference to a budget deficit that excludes interest payments, while justified in certain contexts, is not justified in others. Indeed, it may induce incorrect or distorting conclusions when used to discuss the objectives of economic policy, and in particular the aim of stabilizing the size of the national debt.

The note concludes by proposing a very simple rule for the calculation of the maximum budget deficit compatible with a stable national debt.

2. Appropriate contexts for excluding interest from the evaluation of public budget deficits

It is no doubt possible to single out contexts in which references to the budget deficit, net of interest, is justified. For example:
— such a procedure may be justified when it is useful to make a

distinction between decisions concerning the current management of the budget and the mechanisms concerning the servicing of previously contracted debts;

— such a procedure may also have a justification in mathematical exercises designed to explore the various conditions which asymptotically lead to the stabilization of certain magnitudes regarded as important (for example, the ratio of national debt to GDP, *i.e.* Gross Domestic Product), on the hypothesis that other magnitudes remain constant.

And so on.

3. Contexts inappropriate to the exclusion of interest

The budget deficit, excluding interest, does not, on the contrary, appear as an appropriate term of reference, when elaborations are carried out regarding the objectives of economic policy, and in particular when considering the aim of slowing down the growth of the national debt.

For, when the national debt is increasing, it would make no sense to regard as part of the deficit an increase due, for example, to payments of salaries to personnel, and, at the same time, not to treat as part of the deficit an increase due to interest payments. If both cause the debt to increase both should be within the scope of a policy designed to bring the deficit under control.

Of course (and *this is the crucial distinction*), one must distinguish that part of interest which is *real* from that part which merely is a compensation for inflation.

After the events of the seventies, every perceptive household has realized that any interest received is made up of two components: one that is real, and one that represents a compensation for the fall in the real value of the credit (due to inflation).

Once this distinction is made, it becomes clear that the component of interest which is a compensation for inflation does not contribute to swell the public-sector deficit in real terms. Yet the other component of interest — the real component — is indeed an integral part of the burdens on the public budget. And when it is

financed on a deficit basis, it contributes, just like any other expenditure, to increasing the real amount of the national debt.

Therefore, if the aim of economic policy is to bring to an end the increase of the national debt, then the elimination of the deficit with the exclusion of interest will not lead to the attainment of such an aim at all: the national debt in real (as well as in nominal) terms will go on increasing.

Thus any elaboration in terms of a budget deficit net of interest leads to distortions, the size of which it is not even possible to assess in general. For, the size in absolute (and real) terms of the distortion is all the greater, the higher the stock of the national debt. When the national debt is insignificant, it makes little difference to calculate the deficit with or without interest. But, when the stock of the national debt (as it is in Italy at present) is of the order of a million billion lire, a real rate of interest of three percentage points (which, in present international circumstances, is by no means exceptional) means an additional budget burden in *real* terms of the order of 30,000 billion lire a year (more than 3% of GDP!).

4. Other adverse arguments to the criterion of excluding interest

Other counter-arguments to the procedure of excluding interest from the evaluation of public deficits may be listed.

i) From an expository point of view, the criterion of getting rid of the public-sector deficit with the exception of interest, when adopted for the exploration of dynamic paths, is rather cumbersome and hard to explain. All the mathematical elaborations carried out with this criterion are hard to synthesize in a few simple proposition of immediate comprehension. In most cases, these propositions are expressed in the following way: "it can be shown... that, if the real rate of interest is lower than the real rate of growth of GDP, and if the ratio of the public-sector deficit to GDP remains constant, in the end (that is asymptotically, without it being possible to specify when), the ratio of the national debt to GDP will tend towards a constant level, which is determined by a certain formula...". (And here a formula is given containing magnitudes which are assumed to be constant, although they are not.) Those who are unfamiliar with

mathematical (not to say with economic) elaborations, are simply invited to engage in acts of faith, giving up any attempt to understand the implications.

ii) From the point of view of adherence to reality, all these mathematical elaborations are carried on at an abstract level, quite remote from any politically relevant discussion. The magnitudes which are assumed to be constant (the real rate of interest, the real rate of growth, the ratio of deficit to GDP), far from remaining constant (as would be called for by the mathematical formula) vary from one year to the other and are even subject to changes as a result of government decisions on economic and monetary policy and of acts of Parliament.

iii) In some (for many aspects very valuable) studies, one also notes a tendency to convey the idea that the calculation of the deficit with the exclusion of interest can serve the purpose of separating tasks: the Government could pursue the task of managing the budget, by dealing with the primary deficit; the Central Bank on its turn could be left to look after interest policy. But this again may easily cause confusion. It is no doubt true that fiscal policy is essentially a government matter, and that monetary policy is mainly the responsibility of the Central Bank. But this does not mean that the servicing of outstanding debts falls within the scope of monetary policy: it simply does not, except in an indirect way. When financial burdens originate from commitments that have been entered into, *in the past*, they will weigh fully on the budget. Monetary policy will indeed affect interest conditions, but only for the *new* debt issues.

iv) The criterion of excluding interest from the evaluation of public-sector deficits also encourages politicians (who are already instinctively inclined to favour expenditure benefiting their electors) to pay little or no attention to expenditure on interest. The conviction, which easily takes root, is that, with some inflation, interest does not really have to be paid. Following this illusory attitude there seems to be no reason to worry too much about a national debt, which appears to them not to cost anything.[1]

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[1] A propos of tackling debt servicing by fiscal measures, it may be interesting to recall Evsey Domar's well known article ("The Burden of the Debt and the National Income", *American Economic Review*, 1944), which even today is frequently cited and which gave rise to a whole stream of economic literature on the national debt.

In that article, the author sets out to prove that the accumulation of the national debt, *in certain circumstances*, is not at bottom so disastrous as some of the staunchest supporters of a balanced budget tend to assert.

5. A rule of immediate evidence

But is there any simple and generally understandable rule to which one could refer in discussions regarding the rescue of public finances from situations of continuously increasing indebtedness?

Here is one: the national debt will stop increasing, in real terms, when the government eliminates all public deficit *gross* of *real* interest (that is nominal interest less the loss in real value, due to inflation, of outstanding debt).

This rule immediately refers to an objective of economic policy: stopping the growth of the national debt. In addition, the amount of the deficit to be eliminated, according to the rule, immediately conveys an idea of the size of the measures that are needed.

Of course, this does not mean that the excess deficit, calculated according to the above rule, should be wiped out immediately. But anyone examining it, can at once assess its size and think of the number of years over which reasonably to spread the cuts that are necessary; account taken of the fact that the longer the period over which the cuts are spread, the larger will be both the size of interest and the absolute eventual size of the deficit to be cut.

The same simple rule can be reformulated from another point of view, namely from the point of view of the maximum deficit compatible with no increase in the real value of the national debt.

Let us see what this means. During the year under consideration, the stock of the national debt is subject, as a result of inflation, to a loss in real value equal to

$$(1) \qquad\qquad zD,$$

where z is the annual expected rate of inflation and D is the total stock of the national debt at the beginning of the year. But this means that zD also represents the maximum amount which the public deficit can reach without causing an increase of the national debt in real terms.

The interesting point of Domar's article is that interest payments are always explicitly related to a tax specifically designed to cover them (always real in Domar's article).

Rereading that article now, I am struck by the care taken by Domar to stick firmly, in all his elaborations, to the principle of interest being *always* covered by a specific tax. It is precisely on this principle that depend all his claims in favour of a budget policy, which permanently, but within certain limits, relies on public indebtedness.

Therefore, a total public deficit of zD at current values (including *all* expenditure — current, on capital account and on interest account) will maintain the real value of the national debt unchanged at the end of the year. It follows that a total public deficit lower than zD will cause a decrease and a total public deficit higher than zD will cause an increase in real value of the public debt.

6. The same rule applied with reference to the ratio of national debt to GDP

In international comparisons, the national debt is often regarded, not in absolute terms, but in relation to GDP. For comparisons of this kind, the rule set out in the previous section must be adapted to the more moderate objective of rescuing public finances from a situation of continuous growth of the ratio of national debt to GDP.

We can say quite simply:

The public debt/GDP ratio will cease increasing when the expenditure cuts and/or the new taxes will be such as to eliminate all deficit, gross of real interest, but adjusted for the factor of real GDP growth (more specifically: gross of the amount obtained by multiplying the end-of-the-year stock of the national debt by the excess of the real rate of interest over the real rate of growth).

In this case, the second viewpoint mentioned above becomes even more significant. In the course of the year under consideration, the stock of public debt (D) will undergo, because of inflation, as already pointed out, a loss in real value of zD (z being the expected annual rate of inflation). But, if GDP increases in real terms, we may allow for a *further* increase in the national debt without thereby worsening the debt/GDP ratio. This further permissible increase in the debt is equal to $g'D$ where g' is the expected real rate of growth of GDP. Hence, the sum $zD + g'D$, or rather, to be rigorous (since we are considering a finite period of time: a year), the sum $zD + g'D + zg'D$, which we may write:

$$(z + g' + zg')\, D,$$

represents the maximum amount that can be reached by the public

deficit without leading to an increase in the national debt/GDP ratio. It will be noted that the sum $(z + g' + zg')$ is nothing but the breakdown of the rate of growth of GDP evaluated at current prices, that is, evaluated before any elaboration. We might well therefore simply call g the expected rate of growth of GDP at current prices and simply write (since $g = z + g' + zg'$):

$$(2) \qquad\qquad gD.$$

This is the maximum amount, at current prices, which the public deficit can reach without causing an increase of the public debt/GDP ratio. Any deficit spending, at current prices, which were to go beyond the amount gD will make the public debt/GDP ratio increase.

The interesting feature of expression (2) is precisely its simplicity and the minimum of elaboration it requires. It indicates the maximum size of the public deficit (at current prices) which is compatible with a non-worsening of the situation of indebtedness of the public sector (evaluated relatively to GDP).

7. Concluding remarks

In the two preceding sections, very simple rules have been formulated as a standard for reference in discussions on public deficit, when the objective is that of stabilizing the national debt, either in real terms or in relation to GDP. The simplest expression of such rules is given by the two formulae:

$$(1) \qquad\qquad zD,$$
$$(2) \qquad\qquad gD,$$

where D is the stock of the national debt at the beginning of the year under consideration, z the expected rate of inflation and g is the expected rate of growth of GDP, evaluated at current prices in the year under consideration.

A total deficit (including everything, at current prices; *i.e.* including current account, capital account and interest) will not lead to an increase, by the end of the year, of the real value of the national debt if it is not greater than zD, and will not lead to an increase, by

the end of the year, of the national debt/GDP ratio if it is not greater than gD.

Let me add, for the sake of completeness, that the stabilization of the absolute or of the relative size of the national debt cannot in itself be considered as a final objective of economic policy. A great deal depends on the *level* at which such stabilization takes place. The absolute size reached by the stock of the national debt and its ratio to GDP (at present, in Italy, respectively beyond the million billion lire mark, and above the ratio of unity to GDP) are magnitudes not to be passively accepted as a result of past policies, but themselves to be subjected to careful scrutiny and to conscious decisions of economic and monetary policy.

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Post Scriptum (May 1989)

A practical application to the Italian economy

Here are the required data:

i) The stock of public debt on 1st January 1989 was 1,170 thousand billion lire (of which little more than 1 million and 35 thousand billion due to public debt in the strict sense of the word, and the rest due to public debt for the monetary base, *i.e.* debt toward the Central Bank. The figures come from the latest Bullettin of the Bank of Italy);

ii) The expected yearly percentage rate of inflation for 1989 is at present estimated (in Government documents) around 5.5%;

iii) The expected yearly percentage rate of growth of GDP for 1989 is at present estimated around 9% (*i.e.* 3.5% due to *real* growth plus 5.5% due to inflation).

The formulae set out above therefore yield, for 1989:

$$zD = 64.35 \text{ thousand billion lire,}$$
$$gD = 105.30 \text{ thousand billion lire.}$$

These two figures represent, respectively, the maximum deficit compatible with the objective of stabilisation of the absolute value of the public debt, in real terms, and the maximum deficit compatible with the objective of stabilization of the ratio of public debt to GDP.

These figures are to be compared with the actual deficit of the Italian State budget, which (again from Government documents) is estimated (even after the cuts envisaged by the Government Easter 1989 measures) around 130 thousand billion lire.

The differences between this last figure and each of the two preceding figures, namely:

$$130 - 64.35 = 65.65 \text{ thousand billion lire,}$$
and
$$130 - 105.30 = 24.70 \text{ thousand billion lire,}$$

represent the distances which at present separate the Italian State budget from the two objectives specified above.

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