

Public versus Private Debt*

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1. Introduction

In the last ten years, we have experienced several individually distinct "debt problems". First, we had at the beginning of the 80s, the debt crisis of the less developed countries. Then, up to the mid-80s, rising public deficits and a persistent increase in the public debt to GDP ratio were registered in many industrial countries. Finally, in more recent years, the problem has emerged of an excessive private debt, especially in those countries where the expansion of public debt had been brought under control.

It is somewhat ironic to find that the problems due to excessive public deficits are still stressed, precisely at the time when the economies of the richest countries seem depressed more by the opposite problem of an excessive private debt. Two examples of this bias can be given, one from the scientific literature and one from official documents. For the first, consider the widespread acceptance during the 80s of the "credit rationing" hypothesis¹ and of "liquidity-constrained" models,² which assume that both the personal and the corporate sector are rationed, *i.e.* denied credit by risk-averse rational financial intermediaries.³ Credit rationing became the standard interpretation precisely at the time when the problem of an excessive

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¹ See Jaffee-Stiglitz (1990).

² See Jappelli-Pagano (1989).

³ Recall that "liquidity constrained" models (the fact that some economic agents are unable to borrow against their future income) were developed to prove – contrary to Barro-Ricardo neutrality – the positive effects of public debt: government borrowing can lead to crowding-in of private investment. See Woodford (1990) and Inman (1990).

private debt was emerging. The second example is to be found in the Maastricht Treaty, which states (art. 104c) that "Member states shall avoid excessive governmental deficits", as defined in the annexed "Protocol on the excessive deficit procedure". One should note that no precise analytical definition is given for what an excessive public deficit is. No reference is made to specific problems in servicing the debt nor to any measure of a possibly negative public sector "net worth".⁴ Instead, we are told that budgetary discipline (*i.e.* the avoidance of "excessive" deficits) is given by two reference values: less than 3% for the ratio of government annual deficit to GDP; and less than 60% for the ratio of the stock of government debt to GDP. There is no specific theory behind those numbers but it is widely assumed⁵ that their relevance derives from the 60% ratio being the EC average of recent years, while the 3% ceiling is consistent with stability of that 60% debt-to-GDP ratio in the case of a steady-state 5% growth rate of nominal GDP.

From this point of view, the Maastricht Treaty enshrines the obsession with public deficits and debt that had been typical of the 80s. In fact the criteria for government debt to be considered excessive are propounded quite irrespective of the conditions of private debt, which is not even mentioned in the Treaty. This approach I intend to dispute in what follows, by arguing against the implicit Maastricht theory that only Governments can "make mistakes" and run excessive deficits, while rational private individuals will never be so wrong as to incur debt that they cannot then sustain. The latter-day conventional wisdom that only public debt matters (*i.e.* it affects private sector behaviour), and alone can be excessive (so that the private sector finds itself holding too much public debt) has no general validity. We will see that a world in which public debt matters and can be excessive is also a world in which private debt is normally relevant too; and therefore public debt cannot be deemed to be excessive without reference to the balance sheet of the private sector. In order to substantiate this point, I first consider some relevant stylised facts on public and private debt and then survey the most recent literature on this problem. I take for granted the common sense view that debt is a problem only when excessive. In fact, both

public and private debt are a positive if not strictly necessary feature of any expanding economy, and cause problems only if and when – for reasons to be explained – they become excessive.

2. Some Stylised Facts

If we consider the experience of the main industrial countries in the last twenty years we can see that:

- i)* these countries differ significantly in terms of public debt-to-GDP ratios (consider the opposite cases of G5 and Italy – Charts I and II); and
- ii)* the same is true for their private (personal plus corporate) debt to GDP ratios; but
- iii)* there is much less difference when the sum of the two (public *and* private debt) is considered (compare the more similar trends for G5 and Italy – Charts III and IV).

And what is true for differences in levels is also confirmed by differences in trends: countries tend to have either high public or private debt; and countries which in recent years have had the highest reduction in public debt have also registered the highest increase in private debt. In other words, total (public and private) debt seems to be much more stable through time and more similar across countries than each of its two components. This finding could imply that debt sustainability more appropriately refers to the total than to each kind of debt separately, given a significant degree of *ex ante* substitution between the two.

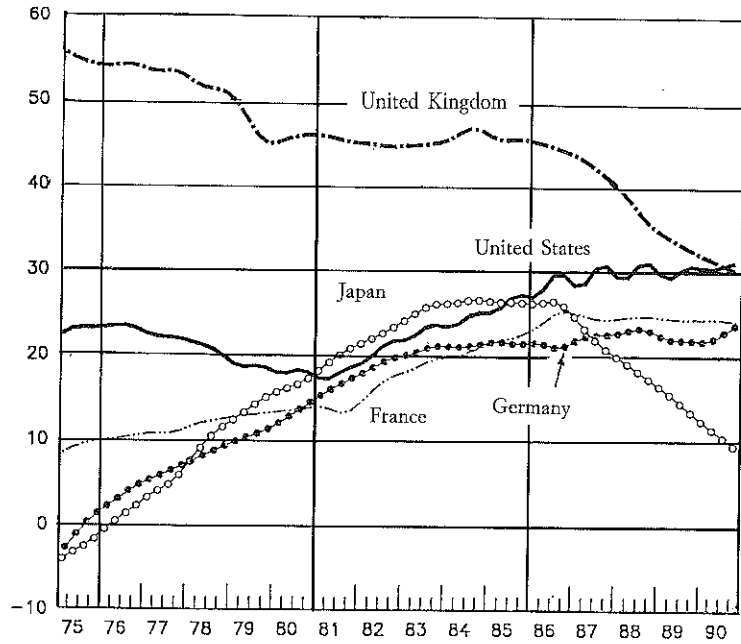
To assess the problems resulting from an excessive expansion of public or of private debt, we can examine the two extreme cases which in recent years have been represented by Italy and the United Kingdom: two countries with a very similar development for total debt and yet opposite trends for the two components. Among the group of the main industrial countries, Italy has had the highest increase in the public debt to GDP ratio with the smallest increase in private (personal and corporate) debt. The United Kingdom, by contrast, had the highest reduction in the public debt to GDP ratio with the highest increase in private (mostly personal) debt.

⁴ See Buiter (1983).

⁵ See Buiter (1992). For a broader criticism of budgetary ceilings see Bovenberg *et al.* (1991).

CHART I

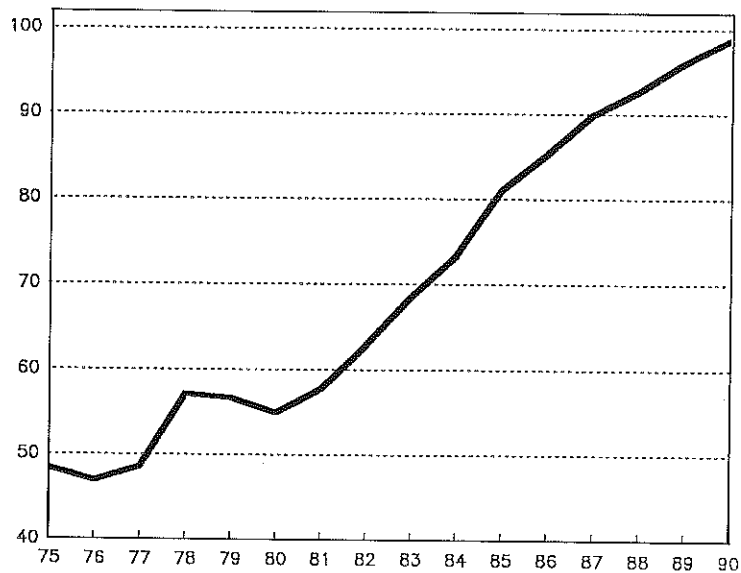
DEBT AS A SHARE OF NOMINAL GNP
NET PUBLIC DEBT



Source: Howe-Pigott (1991-92)

CHART II

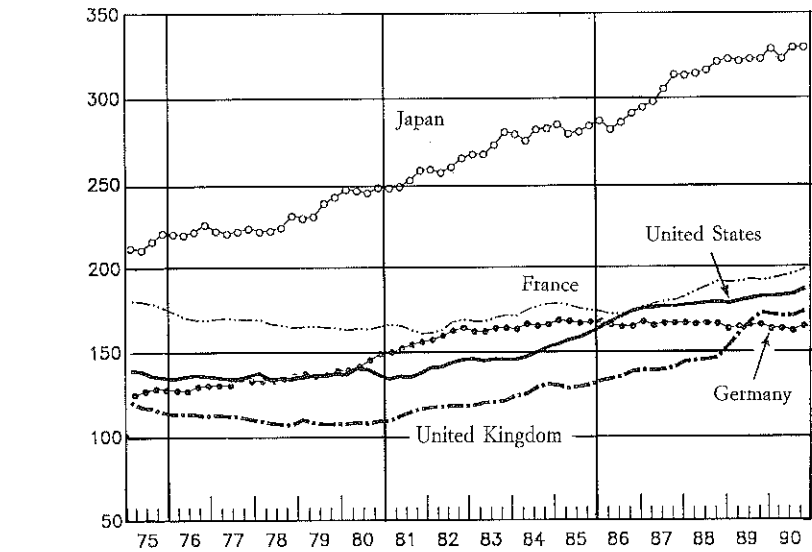
DEBT AS A SHARE OF NOMINAL GNP
NET PUBLIC DEBT - ITALY



Source: Bank of Italy, Annual Report, various years.

CHART III

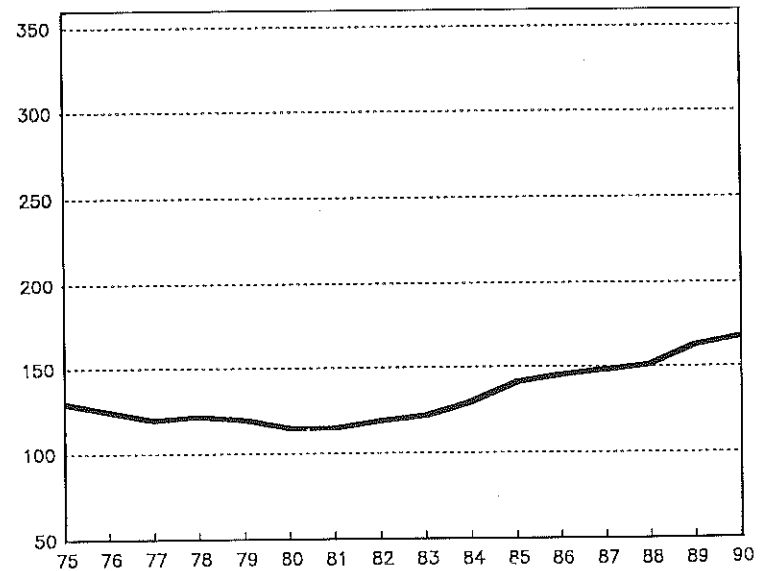
DEBT AS A SHARE OF NOMINAL GNP
TOTAL DEBT



Source: Howe-Pigott (1991-92)

CHART IV

DEBT AS A SHARE OF NOMINAL GNP
TOTAL DEBT - ITALY



Source: Bank of Italy, Annual Report, various years.

3. Italy and the United Kingdom Compared

Let us therefore briefly summarize what the main features of the two countries have been which can be linked to their debt situation.

In the case of Italy, we have registered a continued increase of public debt, rising faster than GDP, therefore with a rising debt-to-GDP ratio (from 50% to over 100% in about ten years). The private sector has maintained a high saving ratio enabling it to fund domestically most of the Government deficit. Thus most of the public debt is owned by the private sector. The household sector appetite for Government bills and bonds is sustained by their attractive yields, which have been positive in real terms in the last ten years, and by the favourable fiscal treatment applied to them. The interest paid on the public debt accrues to the private sector, increasing its disposable income. Private consumption can therefore be higher than otherwise. But while the household sector enjoys the benefits of higher incomes, as it is receiving more interest than it is paying out, the corporate sector is adversely affected by the high interest it is paying (and possibly by the overvalued currency that high interest rates bring about). We can therefore see how a rising public debt has been associated in recent years with higher consumption and lower investment, and more generally with a squeeze on domestic supply while domestic demand was sustained. The difference is made good by rising net imports and through them some of the debt spills over to foreign investors. In sum, rising public debt tends to be associated with supply side constraints, and economic growth is eventually hampered.

The UK economy has been experiencing completely opposite developments. The Government budget in the mid-80s was brought under control and for some years ran a surplus. This was followed, however, and in part accompanied by an explosion of private indebtedness both for consumption and to acquire real assets (mostly houses). The build-up of private debt led to rising capital – and income – gearing and the burden of servicing debt had an impact on “primary” (net of interest) disposable income causing a decline in domestic demand which was further depressed by the private sector’s subsequent attempts to reduce its debt burden. The consequence therefore is a demand side recession, as both the personal and the corporate sector reduce their spending in an effort to restructure their balance sheets.

The implications of high, and possibly excessive, public or private debt are similar in some respects and different in others. Important differences apply in relation to financial intermediation and monetary policy. As regards the structure of financial intermediation, the main point is that household debt is higher in countries offering household easy access to credit. Public debt is higher in countries where liquidity constraints are tighter and households are credit-rationed. And the same can be said for changes in recent years: Italy’s large public debt is partly responsible for very high intermediation costs (difference between loan rates and deposit rates), while in the UK, lower intermediation costs to the private sector, *i.e.* more competitive banking services, followed the reduction in public debt. As for monetary policy, its effectiveness in controlling domestic demand is reduced in the face of high public debt: an increase in interest rates originated by a tighter monetary policy has income as well as substitution effects and therefore the degree of restriction effectively achieved is weakened. The opposite is true in the case of high private debt.

But there are also important similarities. Not only in terms of end-results (in both cases growth is hampered by excessive debts), but also in terms of constraints on the use of other policy instruments. In fact a striking similarity has recently emerged in terms of what can be done to defend the exchange rate. In the last months of 1992 we have seen that any increase in interest rates which might be required to defend an exchange rate parity may not be credible if the markets know, and they obviously do know as well as the Government itself ought to know, that higher interest rates will precisely aggravate the very problems which undermine the commitment to a fixed exchange rate. Higher interest rates which will make worse the burden of an already excessive public or private debt⁶ cannot credibly defend what is already considered an overvalued currency.

⁶ The only escape route would be a very high increase in very short-term interest rates which do not add to the burden of public or private debt. This assumes that speculative pressures are just short-lived.

4. Alternative Views on Debt

Italy and the UK seem to face different problems stemming from very different and in fact diametrically opposite debt situations. Are those differences really important and permanent? We can rephrase that question into the following main points: is debt relevant, and more precisely how can it be "excessive"? is this due to government mistakes, or to irrational individuals, or to faulty financial institutions? is the distinction between public and private debt relevant? These questions are not only of academic interest, given that the assessment of present economic conditions and in fact many proposals for policy intervention depend precisely on reliable answers to those questions.

From the professional literature we have a choice between many alternative views on debt. An orthodox view is that only public debt matters and it can become excessive through some fault of the Government. According to this conventional wisdom, an excessive public debt can cause at least one of the following problems:

- i)* it may become monetized and therefore cause inflation;
- ii)* alternatively, it may lead to higher real interest rates and thus crowd-out productive investments;
- iii)* and/or it may absorb resources from abroad, as reflected in a balance-of-payments current account deficit;
- iv)* eventually, if the debt remains excessive and not-sustainable, the end result will be a default.

This is precisely the theory implicitly incorporated in the Maastricht Treaty. To avoid monetization of public debt, Maastricht provides for a completely independent central bank (art. 107), which cannot extend any credit to the public sector (art. 104). Intervention in the nature of a bail-out in case of default risks is prohibited (art. 104b) as is privileged access to financial institutions (art. 104a). Given all these provisions, the rules on budget discipline (to prevent excessive public deficits) must logically be meant to forestall the absorption of resources from other countries (or regions) which could derive from fiscal imbalances. The implicit general rationale must be that the private sector is more stable than the government sector and that only the private sector is directly constrained by efficient

financial markets and prudent risk-averse rational creditors: it will never incur (be granted) excessive debt (credit).

But how is the orthodox view reconciled with the degree of substitution that we observe between public and private debt? This could be done in a macroeconomic context by examining the interaction of fiscal and monetary policies. As is confirmed by much evidence on policy reaction functions for many countries, the ultimate constraint on macroeconomic – monetary and fiscal – policy is the current account of the balance of payments. For a given degree of competitiveness, the consequences of expansionary policies will be reflected in a widening current deficit thus increasing foreign indebtedness. Given a limit to this, the prevailing economic policy will tend to alternate between two different "policy mixes": either "tight budget and easy money", *i.e.* an expansionary monetary policy together with a restrictive fiscal stance; or *vice versa* "easy budget and tight money", *i.e.* an expansionary fiscal policy with a restrictive monetary stance. In the first case, monetary expansion leads to growing private debt, while in the second case it is public debt which rises more. It is in the end because of this constraint⁷ that an expansionary fiscal policy, met by a restrictive monetary policy, will lead to the so called crowding-out of private by public debt.

One has to assume that this is also the logic behind Maastricht's insistence on limits to public sector deficits to be added to the clauses which prevent monetization and bail-outs: once in an economic union, each country's "foreign constraint" is loosened (and in fact not even recorded any more, given that the statistics for "internal" balances of payments disappear). Thus the rules against excessive public deficits are meant to substitute for the discipline so far inflicted by the balance of payments. On the other hand, if we accept the principle that the effective macroeconomic limit is set by the foreign constraint – you can have as much debt as foreign creditors allow you – we then have to accept the further consequence that it is total and not just public debt which is constrained. If only foreign debt matters, then the distinction between public and private debt loses its importance and we could simply consider the national balance sheet which derives from consolidating Government and private accounts.⁸ But

⁷ To be interpreted as a policy constraint and not simply as an accounting identity. See Chrystal (1992).

⁸ See Buiter (1983).

this also implies that any public debt expansion may or may not be "excessive" depending on the simultaneous development of private debt. One has therefore to admit that the ratios specified in the Maastricht Treaty, the 3% of GDP for the budget deficit and the 60% for debt, can have very different meanings in countries like Italy or the United Kingdom, which are so different in terms of private (personal and corporate) debt.

Excessive public debts need to be avoided, in Maastricht language, but they have first to be defined and it does not seem possible to do so without reference to the entire balance sheet of each country.

We have seen that a macroeconomic explanation, basically related to the "policy mix" and to the consequent crowding-out of private by public debt, is capable of reproducing the stylised facts that were listed earlier. On this evidence alone, one would conclude that Italy has just had on average "easier budgets and tighter money" than the United Kingdom. But we have to recall that macroevidence is relevant mainly in the short-run and the factors stressed could be just temporary: the policy mix affects the cycle rather than the underlying trends.

Any unexpected change in public debt, like any unexpected monetary expansion, will affect short-run private sector behaviour. But to appreciate its long-run equilibrium, we need to consider in more detail the micro-foundations of debt. To these we now turn, focussing in particular on the outcome of the long debate on the so called "Ricardian-equivalence hypothesis". This has been a somewhat heated controversy, but has been useful in clarifying what are the relevant issues.

Stripped to its bones, the debate started by Barro's (1974) seminal paper has led to two opposite microeconomic views on the importance of debt. They can be summarized in the following two models.

4.1 *Debt Neutrality*

Let us assume a world composed of n essentially similar rational individuals which share the same utility function, marginal propensity to consume, access to credit, and the like. Through their Government, or any other similar collective organization, they can obtain

their preferred mix of public and private goods. And through credit, dissaving, and saving, they can anticipate or postpone consumption. In a world of essentially similar individuals, we can assimilate each individual (the "representative agent") to the entire economy and show how debt (both public and private) can be incurred to finance present consumption out of future consumption. Any increase in public debt will have to be serviced by future taxes, whose present value is just equal to the debt itself, exactly as any increase in private debt will have to be serviced by future consumption foregone.⁹ In this world, the Government is no different from any other individual: its utility function does not differ from that of the "representative agent", nor can its budget policies modify the real equilibrium of the economy.¹⁰ In a society in which "all men are equal" (or at least very similar), and the Government borrows at the same interest rate as all individuals, debt neutrality obtains (in fact this is normally a world in which "excessive" debt should not exist) and it refers to public and private debt alike,¹¹ as the very distinction between a public and a private sector simply loses all financial significance.

4.2 *Debt Matters*

In the highly simplified society just sketched an "excessive" debt can occur only by mistake. It is possible that individuals base their anticipation of future disposable incomes on optimistic assumptions and expect an increase in income, relative to borrowing costs, which does not materialize. Or a speculative bubble can develop: individuals buy properties and other assets in view of expected capital gains which then do not occur. In all these cases, the burden of the debt turns out to be greater than originally expected and thus the subsequent cut in consumption has to be bigger. The point can be further developed along the lines of the Phelps-Lucas parable of micro-macro

⁹ Unless of course by anticipating future consumption it were possible to increase expected permanent income and thus sustain the debt incurred.

¹⁰ An increased supply of public debt is always met by an identical increase in demand for it, as the two cannot even be distinguished.

¹¹ Just as no one can be made any richer by borrowing so no one can be made any different by Government borrowing. One has to observe that in this Barro-Ricardo world many more "neutralities" apply: the Modigliani-Miller theorem is also valid (the choice between debt and equity finance is irrelevant to the firm's equilibrium). See Webb (1982).

inconsistencies. Rational forward-looking individuals will not make systematic mistakes but their macro-estimates can be faulty. For they know their own relative income (due to their productivity, their specific labour market, etc.) better than they know economy-wide trends.

Forecasting errors – excessive optimism – can lead to excessive debts also in a world in which normally debt neutrality obtains. But there are other cases, in fact an entirely different model, in which debt matters.

Contrary to the model seen earlier, we know that public debt can be important even in the long run in the case in which economic agents are different. In a model in which different agents have different utility functions, or propensities to consume, or different access to credit, and these differences are not completely offset by direct linkages (bequests and transfers), the economy cannot simply operate as if it were just one individual (as in representative-agent models). The distribution among different individuals of some crucial variables (income, credit, ...) will have a macro-impact, irrespective of rational expectations, forward-looking behaviour, and the like. Debt neutrality is therefore dismissed: both public and private debt have distributional, and therefore macro, effects. These conclusions have recently been rediscovered,¹² but in fact they were present in the literature long before the recent “Ricardian equivalence” debate.

One should remember Keynes’s (1923) insistence on the fact that debt servicing transfers income from the taxpayer to the rentier and this depresses the economy. This effect would be lost in a world of homogeneous individuals in which all rentiers are also taxpayers, and *vice versa*, as any transfer of income between identical individuals will not have macro-effects. The same can be said for the distinction between the young and the old (or between current and future voters) of which we have learned much in the now fashionable “overlapping generations” models. In a world of non-homogeneous agents Government debt matters because the individuals benefitting from public deficits are not the same as those who will have to sustain the debt burden. And this is true also for the long run, if those individual differences persist.

¹² See Webb (1981), Blanchard (1985), Bernheim-Bagwell (1988), and Miller-Roberds (1992).

5. Conclusions

By exploring the relevant macro- and micro-economics of debt we have found the following main factors to be important:

- i)* collective preferences for public versus private goods;
- ii)* individual time preference for present against future consumption (or asset accumulation);
- iii)* estimates of macroeconomic trends and their chances of being mistaken;
- iv)* differences among individuals.

We have seen that a rising debt-to-income ratio can either reflect true intertemporal preferences of individuals or derive from their mistaken estimates of future economic developments. But in general, short-run effects (due to unexpected changes in income, in interest rates, etc.) will tend to disappear in the long run. Only for the short run could it be said that individuals adjust to what the Government is doing.

Much of the controversy between the macroeconomic explanations of the effects on the private sector of exogenously given Government debt policies, and the microeconomic explanations of Government actions being rooted in the preference patterns of rational individuals, has to do with the difference between short-run and long-run equilibrium. Only in the short run can the Government be any different from what people expect. In the long run Governments and their policies are chosen by – and not imposed on – people (at least in our democracies)!

From this point of view, we have seen that the Maastricht view that only public debt matters has no theoretically sound basis. If public debt matters (either in the short run only or in the long run) then private debt can also be relevant and has to be taken into account in deciding whether any particular volume of public debt is “excessive” or otherwise.

The comparison between recent debt experience in Italy and in the United Kingdom can benefit from those theoretical developments, and the following further points should be noted:

- i)* Italy can sustain a high public debt-to-GDP ratio which could not be sustained by a country already having a very high private

debt ratio. This conclusion depends partly on the Government's superior ability to raise additional revenues or reduce transfers to a household sector which still has a very low debt and high saving ratio.

ii) As against this, the unprecedented – at least in peace-time – build up of public debt in Italy may have increased uncertainty both about the Government's solvency and about the private sector's expected disposable income,¹³ two factors which help to explain the increasing private sector saving and therefore "debt neutrality". It is also the case that while pervasive credit rationing and liquidity constraints should make public debt different from private debt, in the Italian case these features are largely offset by extensive direct family linkages and "internal" credit markets.

One may therefore conclude that, at least in the short run, the Italian economy seems less damaged by its excessive public debt than the United Kingdom is by its excessive private debt, as it could be gauged by the fact that when the currencies of both countries recently went floating downwards outside the ERM, the British pound tended to depreciate against the Italian lira. Of course most of these differences could be relevant only in the short-run. For the long run, we have seen that the main analytical as well as ideological controversy on debt neutrality, like many other debates in economic theory, eventually centers on one simple basic question: are all men alike?

REFERENCES

- BARRO, R.J. (1974), "Are government bonds net wealth?", *Journal of Political Economy*, November-December.
- BERNHEIM, B.D. and BAGWELL, K. (1988), "Is everything neutral?", *Journal of Political Economy*, April.
- BLANCHARD, O.J. (1985), "Debt, deficits, and finite horizons", *Journal of Political Economy*, April.
- BOVENBERG, A.L. *et al.* (1991), "Economic and monetary union in Europe and constraints on national budgetary policies", *IMF Staff Papers*, June.
- BUITER, W.H. (1983), "Measurement of the public sector deficit and its implications for policy evaluation and design", *IMF Staff Papers*, June.
- BUITER, W.H. (1992), "Should we worry about the fiscal numerology of Maastricht?", *CEPR Discussion Paper*, No. 668, London, June.
- CHRYSTAL, K.A. (1992), "The fall and rise of saving", *National Westminster Bank Quarterly Review*, February.
- HOWE, H. and PIGOTT, C. (1991-92), "Determinants of long-term interest rates: an empirical study of seven industrial countries", *Federal Reserve Bank of New York Quarterly Review*, Winter.
- INMAN, R.P. (1990), "Public debts and fiscal politics: how to decide?", *American Economic Association Papers and Proceedings*, May.
- JAFFEE, D. and STIGLITZ, J. (1990), "Credit rationing", in B. Friedman and F. Hahn (eds.), *Handbook of Monetary Economics*, North-Holland, Amsterdam.
- JAPPELLI, T. and PAGANO M. (1989), "Consumption and capital markets imperfections – An international comparison", *American Economic Review*, December.
- KEYNES, J.M. (1923), *A Tract on Monetary Reform*, Macmillan, London.
- LEIDERMAN, L. and BLEJER, M.I. (1988), "Modeling and testing Ricardian equivalence", *IMF Staff Papers*, March.
- MILLER, P.J. and ROBERDS, W. (1992), "How little we know about deficit policy effects", *Federal Reserve Bank of Minneapolis Quarterly Review*, Winter.
- WEBB, D.C. (1981), "The net wealth effect of government bonds when credit markets are imperfect", *Economic Journal*, June.
- WEBB, D.C. (1982), "Default risk in a model of corporate and government finance", *Journal of Public Economics*, April.
- WOODFORD, M. (1990), "Public debt as private liquidity", *American Economic Association Papers and Proceedings*, May.

¹³ Default risks associated with an excessive public debt reduce its "comparative advantage" over private debt. Confidence is more important for public debt which is a case of one debtor confronted with many creditors, which is not true for private debt.

A rising public debt is also associated with an increasing uncertainty about future tax rates and thus expected disposable income. See Leiderman-Blejer (1988).

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ERRATA CORRIGE

In the article on "Central Bank Independence in Twelve Industrial Countries", by S. Eijffinger and E. Schaling, published in the March 1993 issue of this *Review*, on page 82 the first four lines of text ("The Reserve Bank of Australia ... of this Act") should be substitute as follows:

"The Commonwealth Bank of Australia was established in 1911, initially as a trading bank. Steps towards the acquisitions of central banking powers were taken in the 1920s, especially in 1924. Again, during the Great Depression of the 1930s, it began to acquire further central banking responsibilities (e.g. for the exchange rate) and, under emergency powers in World War II, established *inter alia* exchange control and a wide range of credit controls. These were continued under the Banking Act 1945.¹ Then in 1959, central banking functions were separated from trading bank operations and a new Reserve Bank of Australia was established. The functions of its Board are set out in Article 10 (2) of the Reserve Bank Act of 1959:".

¹ See J.S.G. Wilson, "The Commonwealth Bank of Australia", in R.S. Sayers, ed., *Banking in the British Commonwealth*, Oxford 1952, pp. 39-99.

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