

WILLEM H.  
BUTTER

*Principles  
of Budgetary  
and  
Financial  
Policy*

# PRINCIPLES OF BUDGETARY AND FINANCIAL POLICY

Willem H. Buiter

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# 1 · INTRODUCTION

Fiscal policy is once again at the center of the economic policy debate all over the world. Professional economists and economic policy-makers try to make sense of a bewildering variety of data generated by often badly managed national, regional and global economic laboratories.

Among the open issues that (should) trouble the sleep of those responsible for the design of monetary, fiscal and financial policy are the following:

How can we reconcile the 'twin deficits' of the United States, i.e. the more or less simultaneous emergence of deficits in the current account of the balance of payments and in the Federal budget, with the recent development in Britain of a large current account deficit in the balance of payments at the same time as the public sector budget was moving into surplus?

Are public sector budget deficits monetized sooner or later, i.e. do they eventually spell inflation? Is a correction of the fiscal deficit a necessary condition for a sustained reduction in the rate of inflation?

Is it true, as argued by (among others) Milton Friedman and Robert Barro, that (to a first approximation) the only relevant aspects of the budget are the volume and composition of public spending on real goods and services and that the choice of financing method (taxation, domestic credit expansion or borrowing) is irrelevant? Does financial crowding-out of private saving, capital formation and/or the current account surplus by public sector debt remain a concern?

What remains of the Keynesian arguments for countercyclical budget deficits? Going beyond the above-mentioned first approximation, is the neo-classical tax-smoothing argument (that, since non-distortionary taxes do not exist, planned or expected distortionary tax rates should be smoothed to minimize the efficiency losses inevitably involved in financing the government's spending program) the only remaining rationale for countercyclical budget deficits?

## 2 *Introduction*

How do we assess the solvency of a government? How do we evaluate the consistency of the government's spending and revenue-raising plans with its outstanding debt obligations and its inflation objectives?

How does the pursuit of internal or external stabilization objectives through fiscal means affect the government's structural (or allocative) and distributional objectives?

These and similar issues have been a central concern in my research since I was a graduate student at Yale in the early 1970s. A representative sample of my work on fiscal and financial policy is brought together in this volume. The 13 essays that follow this Introduction develop four major themes and are organized into five parts.

The first theme, which pervades the essays in each of the five parts, is that the stabilization role of fiscal policy cannot be analyzed separately from its allocative and distributional roles. Variations in any given fiscal instrument (public spending category, tax rate, etc.) will affect the balance between aggregate output and absorption or demand, will alter the key relative prices (static and intertemporal) and rationing constraints faced by private agents, and will alter the distribution of resources.

The second theme, which is the central topic of Part II ('Issues of Measurement') and crops up repeatedly in each of the other parts, focuses on the measurement of public sector activity over time. Giving priority to issues of measurement and accountancy does not merely reflect the fact that, fundamentally, economists are bookkeepers with ambitions (or pretensions). Without measurement there can be no science. Also, the way we measure things, organize data and try to map them into their theoretical counterparts will color our understanding of the processes we are monitoring.

The snapshot, single-period view of the government's corner of the flow-of-funds accounts known as the public sector deficit is now generally recognized to possess very little informational content about anything of interest to an economist, such as impact of fiscal policy on demand, crowding-out pressure, etc. Part II considers how (and to what extent) a longer-run perspective on the government's finances can be summarized in a single comprehensive government balance sheet or its flow counterpart, something which, by abuse of language, we might call a 'permanent deficit'.

The third theme concerns 'crowding out', the displacement of private economic activity by public economic activity. When we investigate this multi-dimensional concept, it soon becomes apparent that both the direct and the indirect or general equilibrium effects of public sector actions on private economic behavior can be reinforcing or complementary ('crowding in') rather than offsetting or substituting ('crowding out'). Part III ('Crowding Out') contains a wide-ranging theoretical analysis of this issue and



presents some tentative empirical evidence on the importance of financial crowding out.

Financial crowding out concerns the consequences of financing public sector deficits by borrowing. The fourth theme, emphasized in Part IV, but also present in Parts I, II and V, deals with the implications of choosing the alternative financing mode, domestic credit expansion or, in closed economic systems, monetary financing.

The government budget constraint (or budget identity) shows that any excess of expenditure over current revenues has to be met by asset sales, borrowing or domestic credit expansion. In conjunction with the government's (intertemporal) solvency constraint limiting the extent to which additional net debt can be incurred, this means that domestic credit expansion is endogenously or residually determined once the government fixes its expenditure and taxation plans, and assuming it will not default on its debt. What does this fiscal view of the ultimate determinants of monetary growth and thus of the rate of inflation tell us about policies to achieve a lasting reduction in the rate of inflation?

All four themes (the need to consider jointly the stabilization, allocative and distributional consequences of fiscal and financial policy; measurement issues; crowding out; and the fiscal origins of inflation) are introduced in a non-technical manner in Part I ('Setting the Scene'). In the final Part V ('Fiscal and Financial Policy in Developing Countries') we see how the tools and concepts developed under these four theme headings can be applied under the extreme conditions generated in the laboratory of developing countries facing severe internal and external disequilibrium.

We now turn to a more detailed review of the essays included in this volume.

## 1.1 SETTING THE SCENE

The two papers of Part I (Buiter, 1984b; 1985) are broad-ranging, non-technical papers aimed at a wider public. The first of these (Chapter 2) was my inaugural lecture at the London School of Economics (LSE) in 1983 (minus a section on public sector solvency and the consistency of fiscal, financial and monetary plans, dealt with at length in Chapters 3 and 4 in this volume). As I never got around to preparing the inaugural lecture for publication in *Economica* (the normal practice at the LSE), I am pleased to have this opportunity to reissue this rather uninhibited paper here.

The paper deplores the still prevalent split between approaches stressing the stabilization role of fiscal and financial policy and approaches stressing its allocative and distributional aspects.

The incentive- and distributional effects of non-lump-sum taxes, transfers

## 4 Introduction

and subsidies and the incentive- and distributional effects of exhaustive public spending (complementarity or substitutability between public and private consumption and investment, conventional public goods issues, etc.) tend to be studied in universes where stabilization issues are ruled out a priori. (Stabilization here refers to policies designed to affect — and, one hopes, to minimize — gaps between actual levels of output and employment and their socially efficient levels, and to policies aimed at influencing the rate of inflation.) Competitive Walrasian economies, especially when endowed with complete contingent markets, do not permit consideration of the kinds of market failure that generate a potential use for stabilization policy. For example, except for policies aimed at influencing misperceptions-induced departures from the full information equilibrium, there can be no stabilization policy in New Classical models. In such economies, the consideration of financing problems, i.e. the issues involved in choosing the mix over time of various kinds of taxation, borrowing and monetary financing, for a given program of public spending on goods and services, reduces to a standard neoclassical exercise in optimal taxation. With the usual convexity assumptions, the general neoclassical policy prescription ('When in doubt, smooth it out') emerges predictably for conventional distortionary tax rates, especially when objective functionals are time-additive, when there is ample contemporaneous separability and when certainty equivalence rules (see, for example, Barro, 1979; and Kydland and Prescott, 1980). Similar results obtain for the inflation tax rate (see, for example, Phelps, 1973; Mankiw, 1987; and Barro, 1987).

The key Keynesian insight that market economies can get stuck in persistent non-Walrasian equilibria characterized by widespread underutilization and waste of human and non-human resources has not yet made its mark on those studies in public finance that look seriously at the structure of taxes, duties, tariffs, transfer payments, benefits, subsidies and public sector charges or at the composition and nature of exhaustive public spending programs.

Approaches that take seriously the possibility of significant and persistent failures of the invisible hand and emphasize the influence of fiscal, financial and monetary policy on aggregate demand (and through that on the levels of output and employment) have suffered from two weaknesses. The first is the rather coarse characterization of the spending and tax instruments and of the way in which they affect private sector behavior. Even in a demand-constrained equilibrium, it is likely to make a difference whether a given reduction in current tax revenues is achieved through a cut in personal income tax rates, corporate profit tax rates, capital gains tax rates, tariffs, etc. By the same token, the composition of an increase in public spending may be as important as its magnitude for the determination of its short-run and long-run effects.

Second, the economic mechanisms generating and supporting the non-

Walrasian equilibria are often spelled out poorly or not at all. Note, however, that the failure to generate the equilibrium as the outcome of a dynamic process unfolding in real time (and not in auctioneer's time) is shared by the Walrasian competitive equilibrium; no amount of repetition of the phrase 'all trades perceived to be mutually advantageous are exhausted' can substitute for an explicit analysis of how we get there from here.

Progress has been made, however, on the 'microfoundations' of Keynesian macroeconomics. It is well-known that efficiency-wage phenomena in the labor market (see, for example, Akerlof and Yellen, 1986) can generate persistent equilibria with socially inefficient unemployment of labor. When combined with imperfect competition in product markets (see, for example, Akerlof and Yellen, 1985a; 1985b; 1988; Buiter, 1988b) and with any plausible mechanism for generating *nominal* price or wage stickiness (e.g. menu costs or other real costs of nominal price adjustments, as surveyed in Rotemberg, 1987) such models provide, in principle, the microfoundations of demand management and of stabilization policy. Another promising approach to the microfoundations of Keynesian economics and to stabilization policy is through explicitly game-theoretic models (such as Cooper and John, 1988; or Shleifer and Vishny, 1988) stressing strategic complementarity, spillovers and externalities as the mechanism for generating Keynesian demand externalities or through the related models of search with externalities explored by Diamond (1982; 1988). Blanchard and Kiyotaki (1987) also belongs to this family. None of these new approaches to non-Walrasian economics has as yet come close enough to the institutional reality of modern market economies to permit a recognizable positive or normative analysis of public spending, taxation, borrowing and monetary financing. The very limited intertemporal structure of the current crop of new-Keynesian models is a further obstacle to a serious analysis of budgetary issues, many of which are inherently intertemporal. This will no doubt change in the future as this promising branch of enquiry develops further, but as of now we are stuck between the Scylla of the study of relevant spending and tax structures in uninteresting models and the Charybdis of the study of rudimentary tax and public expenditure options in more interesting models.

Virtually every change in exhaustive public spending programs, tax structures, benefit coverage, entitlement and enforcement will redistribute resources between (groups of) individuals, households, regions, social classes, etc. The often highly aggregative models of modern public finance may miss much that is important to human welfare.

The simple sequential general equilibrium models, such as the neo-classical growth models with an overlapping generations (OLG) structure on the household side, that are now often used for policy-oriented analyses of public finance issues, can lull the profession into a comfortable neglect of

important distributional issues. The most extreme example of this approach, the so-called representative agent models popularized especially by Lucas (see, for example, Lucas, 1978; Lucas and Stokey, 1983; 1987), lose even the very limited ability of simple OLG models to address intergenerational redistribution and focus on pre-Friday Robinson Crusoe economies in which distributional issues cannot arise.

While in this relative neglect of distributional issues the fashionable wing of the economics profession reflects, as ever, the spirit of the times, it is both short-sighted and unnecessary. The computational capacity to analyze dynamic models with non-trivial heterogeneity among households, workers, etc., does exist (see, for example, Auerbach and Kotlikoff, 1987). While many of the applied computational general equilibrium models remain awkwardly static (even when they purport to analyze intertemporal issues involving public sector deficits, external borrowing and domestic capital formation), there are now a number of examples (such as Feltenstein, 1986) showing that this, too, may be a potentially fruitful approach to the analysis of public finance issues with non-trivial distributional aspects.

Chapter 3 considers the three main worries associated with public sector debt and deficits. These are the link between public sector debt, deficits and inflation; the issue of public debt, deficits and solvency; and public debt, deficits and financial 'crowding out'.

Sargent and Wallace (1981) is the starting point of the analysis of the monetary implications of public sector debt and deficits. In a closed economy with an exogenously given primary (non-interest) government deficit, there is assumed to be an upper bound on the public debt–GDP ratio. When this ceiling is reached, further borrowing by the government is constrained to be no more than the product of this debt–GDP ceiling and the growth rate of nominal GDP (in the case of nominally denominated public debt) or the product of the debt–GDP ceiling and the growth rate of real GDP (in the case of index-linked public debt). For simplicity, consider the case where the real interest rate and the growth rate of real GDP are exogenous. Money financing (i.e. the increase in the stock of non-interest-bearing high-powered money or base money) is endogenously or residually determined by the path of the primary deficit, the debt–GDP ceiling, the real interest rate and the growth rate of real GDP. Even if inflation is proximately a strictly monetary phenomenon (most dramatically in the case where the base money–GDP velocity of circulation is constant and real GDP is exogenous), monetary growth is a fiscal phenomenon. If the interest rate exceeds the growth rate of GDP, current reductions in money growth which are not the reflection of reductions in the primary deficit imply increased borrowing and an increase in the debt–GDP ratio. Any given debt–GDP ceiling will be reached earlier (or, in the case analyzed by Sargent and Wallace, the debt–GDP ratio at any given future date,  $T$  say, will be higher) than it would have been without the current reduction in

monetary financing. If the debt–GDP ratio at  $T$  is maintained forever after, then higher monetary growth after  $T$  is the consequence of lower monetary growth before  $T$ , in the absence of any fundamental fiscal correction (i.e. absent any reduction in the primary deficit).

In a comment on Sargent and Wallace's paper (Buiter, 1984a) I pointed out that the correct deficit for measuring the 'eventual monetization' implied by the fiscal stance could differ quite dramatically from the conventionally measured Public Sector Financial Deficit (PSFD) and a fortiori from such mysterious and mystifying measures of public sector financial transactions as the Public Sector Borrowing Requirement (PSBR) in the United Kingdom. Consider, for example, the case where the current debt–GDP ratio is to be stabilized. Rather than recording current interest payments, the deficit measure relevant for eventual monetization would take the market value (measured or imputed) of all public sector non-monetary liabilities (net of non-monetary assets) and multiply them by the (long) real interest rate net of the growth rate of real GDP. Only the consumption component of exhaustive public spending should be recorded, but a correction should be made for any shortfall of the government's cash rate of return on its capital assets relative to the government's opportunity cost of borrowing. If the current value of the (consumption) primary deficit is a poor indicator of its future value, a 'permanent' (consumption) primary deficit measure should be constructed. If the act of stabilizing the debt–GDP ratio were to change future expected inflation rates, the market value of outstanding stocks of long-dated nominal debt can, of course, change dramatically (as emphasized by Minford, 1985). Similar valuation changes can occur if expected future real rates are affected. These issues were addressed also in Buiter (1982) and in Buiter (1983), the latter included in this volume as Chapter 4.

Sargent and Wallace also pointed out that many familiar money demand functions (including the linear and the log-linear ones) imply the existence of a long-run 'seigniorage Laffer curve'. The same steady-state amount of real revenue can be appropriated by printing money either with a low or with a high proportional growth rate of the nominal money stock (and therefore ultimately with either a low or a high rate of inflation). Restricting ourselves to 'unimodal' long-run seigniorage Laffer curves with a unique seigniorage revenue maximizing rate of inflation, Sargent and Wallace's conclusion that a reduction in monetary growth now implies a higher rate of monetary growth in the future need not hold on the 'slippery slope' of the Laffer curve, when inflation is above the revenue-maximizing level. These issues are considered further in Buiter (1987a; 1988d; 1988e), included in this volume as Chapters 12–14.

It is important to note that the seigniorage or inflation tax revenue of the Sargent–Wallace model is the *anticipated* inflation tax revenue only. Governments capable of surprising holders of long-dated nominal debt

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with a burst of unanticipated inflation, or a *fortiori* with a price-level jump (say through a devaluation or, in a New Classical Wonderland where goods prices behave like forward-looking financial asset prices, through a competitive market-clearing general price-level jump) can impose an (unanticipated) inflation levy. Finally, both anticipated and unanticipated inflation are likely to affect the primary deficit; the Tanzi (1978) effect of (hyper)inflation on public sector outlays and revenues may, in countries with very high inflation, outweigh the familiar effect of 'bracket creep' on progressive income tax revenues when the general price level rises.

One important aspect of the fiscal-monetary nexus which the essays in this volume do not consider is the strategic or game-theoretic interaction between the fiscal and the monetary authority. The Sargent-Wallace scenario, after the debt-GDP ceiling has been reached, can be thought of as representing the situation of a dominant fiscal authority forcing an accommodating monetary authority to monetize whatever residual financing requirements it has. This may represent institutional reality in France and, perhaps to a slightly lesser extent, in the United Kingdom where the monetary authorities are *de jure* and/or *de facto* subordinate to the Treasury. The central banks in many developing or semi-industrial countries also tend to be agencies for the fiscal authorities without independent authority.

The scope for independent action of the Federal Reserve Board of the United States is somewhat greater than that of the Bank of England, and the former's influence and indeed leadership in fiscal and financial matters in general are also no doubt enhanced by the fact that budgetary authority in the United States is fragmented between the executive and legislative branches of government. The contrast in this regard with the United Kingdom's unitary state and the absence of any effective separation of powers is striking indeed.

At the extreme end of the spectrum of monetary independence in the industrial world is the West German Bundesbank. A reversal of the Sargent-Wallace ideal-type, with the central bank in a leadership role, setting the amount of seigniorage it is willing to extract and leaving the fiscal authority with the passive role of adjusting its primary deficit to the central bank's monetary target may well be appropriate for a positive analysis of this case.

When the government cannot run Ponzi games, i.e. cannot forever finance the entire interest bill on its outstanding debt simply by borrowing more, we can derive in straightforward fashion the public sector solvency constraint or present value budget constraint. This says simply that the present discounted value of future primary surpluses plus the present discounted value of future new issues of high-powered money should be (at least) as large as the value of the outstanding public debt. The 'no Ponzi game' restriction seems reasonable when (on average) the interest rate is expected to exceed the growth rate in the future.

The government's solvency constraint can be used as a systematic, forward-looking accounting device for evaluating the consistency of the authorities' fiscal, financial and monetary plans. When a discrepancy is shown to exist, various 'permanent deficit' measures can be constructed to indicate the magnitude of the long-run adjustments that will have to be made to spending plans, revenue projections or future planned recourse to seigniorage, in order to achieve feasible plans.

If neither spending, nor revenue, nor monetizations plans can be revised to fill the hole in the government's solvency constraint, a partial or complete default on the government's outstanding debt is indicated.

The brief review of financial crowding out in Chapter 3 anticipates later work (Buiter, 1977; 1988c; 1989; Buiter and Tobin, 1979; Tobin and Buiter, 1976; 1980), which together constitutes Part III of this volume.

It is well known that in otherwise conventional Keynesian models with demand-determined output and sluggish price adjustment, forward-looking financial markets can help create conditions under which the unanticipated announcement of a *future* fiscal expansion causes a recession between the announcement date and the implementation date: the anticipation of higher future short interest rates raises the current long rate of interest, causes the exchange rate to appreciate and may also depress Tobin's  $q$ . (see, for example, Blanchard, 1981). The only minor innovation as regards financial crowding-out in the paper is in Appendix 3B which analyzes a simple aggregate demand–aggregate supply model with an augmented Phillips curve and a government budget identity. Even the unexpected announcement of an immediately implemented increase in exhaustive public spending can be contractionary in this model if the government's financing rule is sufficiently biased towards debt.

Finally, the paper repeats the well-known but nevertheless systematically ignored warning of Blinder and Solow (1974) that there are no 'model-free' measures of fiscal stance. Neither the government deficit, not its change, nor the inflation-, growth-, investment- and cyclically-corrected, demand-weighted deficit is a measure of the expansionary thrust (short-, medium- or long-run) of fiscal policy in any model of the economy that I am aware of. Similarly, none of the (doctored or undoctored) deficit measures are reliable indicators of the magnitude or even the sign of the effects of fiscal policy on interest rates, capital formation or the current account of the balance of payments (see also Kotlikoff, 1988).

## 1.2 ISSUES OF MEASUREMENT

Part II consists of two papers, the first of which (Chapter 4) was written while I was a visiting scholar with the Fiscal Affairs Department of the International Monetary Fund during the summer of 1982. I have always been struck by the willingness of this institution (and its big sister across

the street) to encourage and support heterodox research by consultants and advisers, even when the policy implications of this work did not appear to fit in comfortably with current operational practice and/or institutional conventional wisdom.

The paper considers in considerable detail the construction and interpretation of the comprehensive wealth accounts or solvency constraints of the public, private and external sectors. Focusing on these accounts, rather than on the current flow of funds, compels the policy-maker to take the long view. An important part of stabilization policy consists in the restructuring by the government of its comprehensive balance sheet, consisting of its tangible and intangible assets and liabilities, in such a way that private agents (who might otherwise be constrained in their spending behavior by cash flow constraints, liquidity constraints, lack of collateral or other capital market imperfections) can also take the long view and are enabled to act as if they, too, are constrained only by their permanent income.

Basic differences in the 'opportunity sets' of the private and public sectors mean that the government is the natural borrower or borrower of first resort when the economy is hit by shocks that drive current income below permanent income. Such shocks often increase the incidence and severity of liquidity constraints in the private sector and worsen the quality of the private balance sheets, thus reducing their collateral value. Because of its monopoly of the power to tax, to regulate and to declare some of its liabilities legal tender, governments have access to the capital markets on terms that are superior to those available to most private agents. By borrowing (a device for singling out non-liquidity-constrained private agents) or by printing money during periods when liquidity constraints bite more widely and more deeply than usual and by retiring this debt or the additional money through higher taxes during times when liquidity constraints are less prevalent, the government can improve the intertemporal allocative efficiency of the economy as a whole. This argument for fiscal stabilization would hold even if reductions in demand did not have Keynesian consequences in the form of wasted idle capacity and underutilization of labor. They are, of course, reinforced by Keynesian failures of goods and labor markets. The political economy issues associated with temporary borrowing or monetization (the time-consistency of such fiscal-financial strategies) is an issue that is not addressed in my work. The design of political institutions that will support wise stabilization policy (especially 'reversible-in-present-value-terms' deficit financing) is an important issue, but there is no need to wait for its resolution before we can begin to think systematically about the nature of optimal stabilization policy. The analysis of optimal policy under the assumption of full credibility (or ability to pre-commit) also makes us more aware of the costs of the inability to pre-commit and may act as a spur to institutional reform.

The construction of the solvency constraints is, of course, no substitute



for the modeling of economic behavior. The paper emphasizes this repeatedly. It comes up, for example, when it is pointed out that the 'human capital' relevant to the behavior of the private sector is the human capital of those currently alive, while the present discounted value of future taxes on labor income in the public sector's solvency constraint includes the labor income taxes paid by future generations. Only when those currently alive are linked to these future generations through a chain of operative inter-generational gifts or bequests will the future tax streams constraining private and public behavior be the same.

The short Chapter 5 is an excerpt from a much longer paper (Buiter, 1987b), written as a background paper for the preparation of the 1988 *World Development Report* of the World Bank. It is included here to demonstrate the practical uses that can be made of the government's solvency constraint, even with very limited data and unlimited reluctance to make projections about the likely future behavior of public spending, conventional tax revenues and inflation tax revenues. It contains calculations for the main industrial countries of the constant or permanent primary surpluses (as a percentage of GDP) required to stabilize the public debt burden. It also shows that in recent years seigniorage (measured as the ratio of the change in the base money stock to GDP) has been a negligible source of government revenue in all the major industrial countries with the notable exception of Italy.

### 1.3 CROWDING OUT

Part III, 'Crowding Out', is the longest in the volume. It contains the most careful statements about why and how public debt and deficits matter and emphasizes the distinction between 'financing issues', i.e. the choice between tax financing, money financing and bond financing of a given 'exhaustive' public spending program, and 'public expenditure issues', the analysis of the consequences of variations in the size and composition of the exhaustive public spending program for a *given* financing mode. Didactically, it is probably best to analyze the consequences of variations in public spending in a balanced budget setting, with lump-sum taxes (if they are available) or broadly based distortionary taxes (if lump-sum taxes are not available) varying endogenously to maintain budget balance. A bond-financed increase in public consumption spending would then be viewed as the sum of two distinct kinds of fiscal policy actions: a balanced budget increase in public consumption expenditure and a tax cut financed by borrowing.

After developing a taxonomy of 'crowding out' in Chapter 6 (Buiter, 1977), the 'microfoundations' of debt neutrality and its absence are developed in Chapters 7 and 8 (Buiter, 1988c; 1989). Chapter 7 is the only