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Offer a New Historical Compromise?**

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# EQUALITY AND ENTERPRISE: CAN FUNCTIONAL FINANCE OFFER A NEW HISTORICAL COMPROMISE?

By Per Gunnar Berglund<sup>1,2</sup>

‘Look after Employment, and the Budget will look after itself.’

– John Maynard Keynes

## INTRODUCTION

The first draft of this essay, which I presented at the New School conference on Functional Finance in April 1998, was cast as a tribute to William Vickrey, who died in 1996, right after he had been awarded the Nobel Prize in economics. Sad to say, in the past two years another two eminent Functional Financiers have passed away: Robert Eisner and Lynn Turgeon, both of whom appeared at the New School conference and died shortly thereafter. I am deeply indebted, intellectually as well as personally, to these great and amiable men. The following pages should be viewed as my humble tribute to this distinguished trio, which represents the very finest of American economics.

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## FUNCTIONAL FINANCE AND THE ROLE OF TAXATION

This essay addresses a fundamental question in the theory of Functional Finance, which question was put succinctly by Lynn Turgeon at said conference: ‘Why should we tax people when there is Functional Finance?’ The core message of the doctrine of Functional Finance is that the government budget should be regarded a *means* to attain real-economy goals like maximum output and employment. The size of the budget deficit and government debt does not matter *per se*; the budget should be assessed only in the light of its impact on the real economy. (Lerner 1943, p. 39)

Government expenditures, both the *spending* that furnishes public services and the *transfers* that redistribute income, form an indispensable part of any modern democratic welfare state. But they come at a cost, and the name of that cost is *taxation*. Taxes can be levied in innumerable ways, some of which might give rise to big problems, while others may be rather less disruptive. There are many more or less elaborate theories of optimal taxation, most of which attempt to minimise the negative consequences of levying taxes at a certain level, namely that level which is sufficient to ‘fully finance’ all government expenditures – to balance the budget that is.

Functional Finance does not deny the importance of allocating expenditures to the greatest benefit to society, and to design taxes such as to minimise their negative impact. What the doctrine of Functional Finance *does* deny, however, is the need for a balanced budget. Why, then, does Functional Finance reject the idea of budget balancing? Three interrelated lines of argumentation can be identified:

Firstly, there is the question of the time perspective of budget balancing. In Abba Lerner’s words, ‘Functional Finance rejects completely the traditional doctrines of “sound finance” and the principle of trying to balance the budget over a solar year or any other arbitrary period’. (Lerner 1943, p. 41) This critique applies equally to the widespread idea that the budget must be balanced ‘over a full business cycle’, which

notion introduces still more arbitrariness since it is by no means clear how the concept of a business cycle should be defined.

Secondly, there is William Vickrey's (1986a, 1992) question of the meaningfulness of the ordinary concepts of the budget deficit. What precisely is it that we are supposed to balance? As shown by Robert Eisner's extensive research into the intricacies of accounting conventions and their economic impact,<sup>3</sup> the customary conceptions of budget deficits are so riddled with problems that it is doubtful whether they are useful for any purpose whatever. Should capital expenditures be excluded from the deficit? If so, which expenditures are to be considered as such? Should interest costs on the public debt be reckoned net of inflation? There is also the 'very pertinent question of what constitutes "balance" in a moving economy.' (Eisner 1997, p. 9) If everything else grows, why shouldn't the government debt be allowed to grow as well?

The third and perhaps most fundamental objection to the idea of budget balancing is the Chartalist view on the nature of money, that 'money is a creature of the state'. (Knapp 1924, chapters 1 and 2; Lerner 1947; Wray 1998, chapter 2) The chief defining criterion for 'money' is its supreme liquidity or general acceptability, which is established 'if the state is willing to accept the proposed money in payment of taxes and other obligations to itself'. (Lerner 1947, p. 313) The money need not be *issued* by the state itself; it is the state *acceptation* that secures full liquidity. Such acceptance involves an *accreditation* of the issuer, which lays bare the Chartalist logic that money comes into existence by means of state credit.

Since the state defines what 'money' is, and thus in a sense 'lends' it into existence by means of said accreditation, it can never run out of it. In other words, the state can never default on its debts (when denominated in the home currency) unless it chooses to do so

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<sup>3</sup> (Eisner 1984, 1986a, 1986b, 1986c, 1986d, 1986e, 1988, 1989a, 1989b, 1989c, 1991a, 1991b, 1991c, 1992a, 1992b, 1993a, 1993b, 1993c, 1994a, chapter 5, 1994b, 1994c, 1994d, 1994e, 1994f, 1994g, 1997, chapter 2; Eisner and Hwang 1993; Eisner and Pieper 1986, 1987, 1988a, 1988b, 1989, 1992).

by refusing to pay. The state, therefore, operates under quite different financial conditions than do private agents. While private agents are financially constrained by their ability to raise cash by sales of commodities or by borrowing, the state does not face any such constraints.

There is in principle no limit to the amount of cash that the state can raise for the purpose of its own expenditures. While it is true that the state must raise the funds required for its expenditures by means of taxation or borrowing, it is equally true that those funds emanate from the state itself. Creditworthiness, or the ability to honour financial obligations, is a concept that pertains to debtors, not to creditors. It is meaningless to speak of the creditworthiness of the state, for the state is the ultimate creditor in respect to its own currency.

The Chartalist contention, thus, is that the state can borrow as much as it wants in its own currency. So why indeed should it tax people? According to Lerner's 'first law of Functional Finance' (1943, p. 40), taxes should only be raised in order to prevent excessive inflation. The mechanism he had in mind is straightforward: increased taxes will reduce disposable incomes, which reduction will tend to curtail private spending. Lower spending involves generally slacker markets and perhaps more unemployment, and this will alleviate the inflationary pressures.<sup>4</sup>

However, this familiar mechanism of inflation reduction is by no means as uncomplicated as it might seem at first blush. For tax hikes can easily produce *higher* inflation. For instance, increases in sales taxes are overwhelmingly likely to induce higher prices, and – at any rate when the economy operates at (or near) full employment, such price rises are likely to be followed by compensatory wage increases. Lynn Turgeon

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<sup>4</sup> Lerner was concerned that the increased powers of organised labour might cause money wages to accelerate well before full employment was reached, and sought other solutions than slack markets and unemployment to the problem of inflation. Various proposals in this vein have been put forward by Lerner, Colander and Vickrey – e.g. Colander's 'tax-based income policy', Lerner's 'market anti-inflation plan', and Vickrey's 'marketable markup warrants' scheme. (Colander 1986, 1992; Lerner 1978, 1980a, 1980b; Lerner and Colander 1982, Vickrey 1986b, 1986c, 1992b)

(1996, p. 25, 28, 32, 58) called this phenomenon ‘supply-side inflation’, and argued that at any rate since the mid-sixties this type of inflation has been predominant. The very medicine prescribed against inflation may not only worsen the disease itself but also bring about the highly undesirable by-product of unemployment.

Thus we must add to the list of unpleasant consequences of taxation the risk for stagflation.<sup>5</sup> The conclusion that follows from this general picture is that taxes should be kept as stable as possible and as low as possible. Aggregate demand reductions in order to curb inflation ought rather to be brought about by means of cutbacks in government expenditures. In general, taxation should take a back seat position in the policy game of ‘tuning’ aggregate demand – whether the tuning is ‘fine’ or not. This rule may be viewed as a first amendment to Lerner’s laws of Functional Finance.

The second amendment concerns the general level of taxation. The Turgeon question of why there should be any taxation at all is merely a logical *reductio ad absurdum* of the general principle that taxes should be reduced as far as possible *in relation to a given size of government spending*. It is quite conceivable that bigger government might call for higher taxes. But Functional Finance does not recognise any direct and simple relationship between the two. In order to assess the appropriate level of taxation, the impact on the economy must first be assessed.

The conventional wisdom of the balanced budget involves a dilemma: the boons of high government expenditures must be weighed against the evils of high taxation. Countries with extensive welfare state arrangements and therefore a big government sector are also societies of relatively limited economic disparities. Big government is a means to bring about greater equality. On the other hand, countries with a small government sector and greater disparities are often viewed as more dynamic and entrepreneurial. Equality comes and a cost in terms of reduced enterprise. Cradle-to-grave insured, comfortable life of

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<sup>5</sup> Another problem with taxes as a tool for aggregate demand management is that temporary changes in the level of taxation may prove relatively ineffective with respect to aggregate demand due to ‘inter-temporal substitution’ effects.

Euro-sclerosis stands against the stressful but affluent life in the dynamic and successful American job machine.

The conventional wisdom holds that there is an inescapable and immutable iron-law type trade-off between Equality and Enterprise: We cannot have more of the one without sacrificing some of the other.<sup>6</sup> The science of the balanced budget is indeed dismal; its basic message is neatly captured by Keynes's ironic aphorism: 'the more the fewer, and the higher the less'. (Keynes 1929, p. 91)

The big promise of Functional Finance is to do better than the conventional wisdom. While Functional Finance may not be able to dispel the trade-off altogether, it should be able to *improve* on it. In other words, with Functional Finance we can break the fetters of the iron law and obtain more Equality at any given level of Enterprise, or more Enterprise at any degree of Equality, than what the conventional doctrine of the balanced budget can offer. This free lunch is made feasible by employing the magic wand of maximum deficit financing.

Functional Finance holds that the level and quality of government services, and the level of social security benefits has got nothing to do with taxation. For all these items appear on the *debit* side of government budgets. Tax revenues appear on the *credit* side. It is the tacit presumption of a balanced budget that underlies the perpetuation of the pernicious myth, that when the government spends, it hands out 'taxpayer's money'. As soon as we transcend the illusory constraint of the balanced budget, the notion of 'taxpayer's money' dissipates. Credit and debit become independent entities.

The independence of debit and credit should however not be taken to imply that the government can spend any amounts without worrying about the consequences. But it should be emphasised that it is the *consequences* in terms of the impact on the real economy that counts – not the financial deficit as such. Functional Finance should put stress on the fact that government spending and taxation have different effects on

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<sup>6</sup> Given that the allocation of resources is optimised subject to the overall tax/expenditure level.

aggregate demand. An increase in government spending involves a direct addition to aggregate demand, but also an indirect effect, partly through increased private-sector income and wealth, partly through higher investment induced by higher capacity utilisation. Lowered taxes, on the other hand, will only work indirectly, via the private sector wealth position and income flow.

The debit and credit sides of the budget are functionally asymmetrical. Expansionary policy measures operating on the debit side (increased government spending) are far more powerful than credit-side interventions like lowered taxes. Thus the government deficit – the difference between spending and taxes – does not work symmetrically. The size of the deficit therefore says very little about the likely impact on output and employment.

Acknowledging this asymmetry, one must wonder why tax cuts are ever suggested as a means to stimulate economic activity. There seems to be no sense in using such a sub-optimal tool, when increased spending would do the job both quicker and better. The motives for lowering taxes must be sought elsewhere. There may of course be good political reasons for lowering taxes. People generally don't like paying taxes, which sentiment may make tax cuts an easier way to go from the political and legislative point of view. But that is no *economic* argument. From the economic point of view, the fact remains that taxes are less efficient than public spending with respect to the goal of stimulating aggregate demand.

The strong arguments for lower taxes lie on the supply side. Whereas increased public spending works almost exclusively on the demand side, tax cuts operate on *both* the demand and the supply side. The demand effect of a tax cut would be relatively weak compared to an increase in government spending, but it would have the advantage of stimulating aggregate supply along with demand. Insofar as the supply-side elasticity with respect to taxation is substantial, lower taxes might prove a powerful tool by which to expand the output potential and steeping the growth path compatible with any given rate of inflation.

So long as there is *some* supply-side elasticity, there is at any rate a preliminary economic case for lowering taxes. But lowering taxes while keeping spending unchanged will widen the deficit, and a bigger deficit will likely stimulate aggregate demand. Tax cuts therefore provide a parallel and simultaneous stimulus of both the demand and the supply side.

The important issue for Ministers of Finance to consider, is which of the two effects is the greater. So long as the supply-side effects outweigh the demand-side effect, there is scope for more public spending to counteract deflationary tendencies. But if the demand-side stimulus should be greater than the supply-side impact, then it might prove necessary to cut back on spending programmes in order to maintain a reasonable degree of price stability. Conversely, if public spending is maintained at a certain level or proportion of the domestic product, then taxation must be calibrated such as to avoid inflationary or deflationary imbalances. A Minister of Functional Finance in the limbo of this tax minimisation problem should indeed ask himself how low he can go before inflation rears its ugly head.

When this line of reasoning is taken to its logical extreme, the credit side of the budget might be completely cleared, and tax revenues (net of subsidies) kept at the zero level.<sup>7</sup> The very notion of a 'tax-free' economy may seem unrealistic, particularly from a political point of view,<sup>8</sup> but that should not deter us from investigating the logic of this *reductio ad absurdum*. For by looking into the extreme, we may learn more about the commonplace.

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<sup>7</sup> It should be noted that this does not necessarily involve the abolishment of taxation. Taxes may still be retained, but counterbalanced by 'negative taxes' or subsidies of the same size. It is the aggregate outcome that matters for our purposes.

<sup>8</sup> There may also be economic arguments against the zero-tax economy. A particularly interesting argument has been put forward by Wray (1998), who asserts that taxes secure the value of the currency. Wray also acknowledges, however, that taxation is a sufficient, but not a necessary, condition for the maintenance of the value of the currency (*ibid.* p. 4n).

By divorcing the credit side from the debit side, Functional Finance opens up a Pandora's Box. Taxes can no longer be viewed as necessary in order to 'finance' public spending, for the state can always find the cash it needs. The role of taxes, as well as public expenditures, must therefore be viewed solely in the light of their real-economy impact, and public spending is no doubt the most effective means to control aggregate demand. Lowered taxes might stimulate aggregate supply and this effect is their prime economic rationale.

While Functional Finance holds that the budget is subject to no financial constraints, it acknowledges that the calibration of spending and taxes is subject to certain macroeconomic balance constraints, namely the prevention of unsound inflation and deflation. The following sections are an attempt at defining and analysing those constraints in terms of a simple macroeconomic model. The aim of the model is to investigate the possibility, as raised by Lynn Turgeon, of an entirely 'tax-free' economy where all public expenditures are financed by means of borrowing.

#### A SIMPLE MACROECONOMIC MODEL FOR THE CLOSED ECONOMY

Let us start our inquiry into the principles of a 'tax-free' economy by setting up a simple model for the demand side of the economy. For simplicity and convenience, we shall restrict our exposition to the closed-economy case. Foreign trade, cross-border income flows and portfolio transactions will be disregarded.

The first step is to express the private-sector demand  $D_P$  as the mathematical product of the private net wealth position  $V_P$  and the wealth-to-spending turnover rate  $u$ .

$$(1) \quad D_P = u \cdot V_P.$$

Our second step is to insert this relation into the definitional relation that the domestic product  $Y$  is the sum of private demand  $D_P$  and government demand  $D_G$ . We obtain

$$(2) \quad Y = D_p + D_G = u \cdot V_p + D_G.$$

Next, we note that the national wealth  $V$  is made up of private wealth  $V_p$  and government net wealth  $V_G$ .

$$(3) \quad V = V_p + V_G.$$

Solving (3) for  $V_p$  and substituting into (2) yields

$$(4) \quad Y = u \cdot V_p + D_G = u \cdot V - u \cdot V_G + D_G.$$

The national wealth in a closed economy is by definition equal to the value of the national capital stock  $K$ , making the two substitutable for one another. By invoking a capital–output relation  $v$ , linking the value of the capital stock (national wealth) to the domestic product, we complete our model.

$$(5) \quad K = V = v \cdot Y.$$

We proceed to substitute  $v \cdot Y$  for  $V$  in (4) to obtain

$$(6) \quad Y = u \cdot V_p + D_G = u \cdot v \cdot Y - u \cdot V_G + D_G.$$

Subtracting  $u \cdot v \cdot Y$  and factoring out  $Y$  gives

$$(7) \quad (1 - u \cdot v) \cdot Y = D_G - u \cdot V_G.$$

Finally, we divide by  $(1 - u \cdot v)$  and obtain

$$(8) \quad Y = \frac{D_G - u \cdot V_G}{1 - u \cdot v}.$$

Equation (8) is a convenient shorthand expression of the ‘multiplier’ kind. Note that only two parameters have been used:  $u$  and  $v$ . Insofar as these parameters remain fairly stable over time, equation (8) will provide a useful tool for the Functional Finance analysis. Experience suggests that  $v$  may be supposed to be long-term stable at a value somewhere around 4 in most industrialised economies. The value of  $u$ , on the contrary, seems to be subject to a gradual, long-term decline, a fact repeatedly pointed out by Vickrey (e.g. 1994a, 1997). Indeed the long-term decline of  $u$  in conjunction with the long-term constancy of  $v$  makes up the main ingredients of ‘stagnationist Keynesianism’.

#### A NOTE ON GOVERNMENT DEFICIT AND DEBT

Government enters into the model through two variables: government spending  $D_G$  and government net wealth  $V_G$ . Note that the category of government spending excludes transfer payments. Only purchases of goods and services are included. Government net wealth refers to the sum of government-owned real capital assets  $K_G$  and government net financial assets  $NFA_G$ .

$$(9) \quad V_G = K_G + NFA_G.$$

The term *government debt* should be taken to refer to the government’s net financial assets with a negative sign,  $-NFA_G$ . A proper set of government accounts, including capital accounts for the recording of capital formation and revaluation items for holding gains and losses, defines the government *budget surplus*  $B$  as the per-period *change* in government net wealth  $\Delta V_G$ . The budget deficit is of course of the same absolute value, but with a negative sign.<sup>9</sup> We will distinguish between the total budget surplus  $B$ , thus

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<sup>9</sup> In practice, however, governments do not tend to make use of this comprehensive definition of the budget surplus in their actual accounting. Most governments break out the financial-assets part and

defined, and the *financial* budget surplus  $FB$  (and the corresponding deficit  $-FB$ ), defined in terms of the per-period change of the government's net financial assets, as  $\Delta NFA_G$  and  $-\Delta NFA_G$ , respectively.

The definition of government net wealth in equation (9) is applicable also to the private sector. The private sector net wealth  $V_p$  is defined as the sum of privately owned real capital assets  $K_p$  and the private net financial asset position  $NFA_p$ .

$$(11) \quad V_p = K_p + NFA_p.$$

Again note that the national wealth is the sum of private and government net wealth (equation 3), that the national capital stock is sum of the private and government capital stocks,

$$(12) \quad K = K_p + K_G,$$

and that the national wealth and capital stock are equal in value (equation 5). By combining these propositions, we obtain

$$(13) \quad NFA_p = -NFA_G.$$

That is to say: the private sector net financial asset position is equal to the government debt. Government and private-sector net financial asset positions are simply the mirror images of one another: the net debt of the one is the net assets of the other.

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limit the government deficit to the per-period change in government debt. Governments also generally exclude the holding gains on financial assets, thus limiting the deficit to the transaction changes in government debt. There is also a tendency to mix up the central government debt and deficit with the debt and deficit of government as a whole. Our concepts refer to the consolidated public sector, including central and local government as well as social security trust funds.

## SETTING THE SIZE OF THE PUBLIC SECTOR

Let us now assume that economic policy is aimed at keeping the size of the public sector at a particular proportion of the domestic product. The ‘size of the public sector’ is however a two-dimensional phenomenon: it concerns the size of government *production* as well as of government *spending*. There is no necessary relation between the two, although most governments have found it convenient to self-produce a substantial proportion of their absorption (spending). In most modern economies, government absorbs some 20–30 percent of the domestic product, whereas government production usually furnishes only some 10–20 percent.

Government production, like all other production, requires real capital. Let us denote the government-owned proportion of the national capital stock with  $a$ , so that

$$(14) \quad K_G = a \cdot K = a \cdot v \cdot Y.$$

Using equation (9) and substituting into (7) yields

$$(15) \quad (1 - u \cdot v) \cdot Y = D_G - a \cdot u \cdot v \cdot Y - u \cdot NFA_G.$$

We now proceed by adding  $a \cdot u \cdot v \cdot Y$ , and by factoring out  $(1 - a)$ :

$$(16) \quad [1 - (1 - a) \cdot u \cdot v] \cdot Y = D_G - u \cdot NFA_G.$$

Finally, we divide by  $[1 - (1 - a) \cdot u \cdot v]$ :

$$(17) \quad Y = \frac{D_G - u \cdot NFA_G}{1 - (1 - a) \cdot u \cdot v}.$$

This result may be compared to equation (8). The difference is that equation (17) expresses the domestic product in terms of government debt  $-NFA_G$  instead of

government demand and government net wealth  $V_G$  as in equation (8). This rewriting required an extra parameter  $a$ , which set the relation between  $NFA_G$  and  $V_G$ . The rest remained the same: government demand  $D_G$  as well as the parameters  $u$  and  $v$  are common for both models.

Now let us turn to setting the proportion of government spending in the domestic product. Suppose this proportion is  $b$ , so that

$$(18) \quad D_G = b \cdot Y.$$

Substitution of this equation into (16) yields

$$(19) \quad [1 - (1 - a) \cdot u \cdot v] \cdot Y = b \cdot Y - u \cdot NFA_G.$$

By subtraction of  $b \cdot Y$ , factoring, and division by  $[1 - (1 - a) \cdot u \cdot v - b]$ , we obtain

$$(20) \quad Y = \frac{-u \cdot NFA_G}{1 - (1 - a) \cdot u \cdot v - b}.$$

Comparing this equation with (17), we find that by introducing the parameter  $b$ , we effectively ‘traded’ the government demand variable for an extra parameter. Equation (18) expresses the domestic product  $Y$  solely in terms of the government debt  $-NFA_G$  and a set of four parameters:  $a$ ,  $b$ ,  $u$  and  $v$ .

A slight rearrangement (cross-multiplication and changing signs on the right-hand side) of equation (20) yields an expression for the ratio between government debt and the domestic product, the *debt-to-GDP ratio*  $\theta$ .<sup>10</sup>

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<sup>10</sup> We will use the standard expression ‘debt-to-GDP ratio’ despite the fact that the domestic product is best measured as the *net* domestic product, i.e. after deduction for capital consumption. Readers may bear this slight violation of terminological stringency in mind.

$$(21) \quad \theta = \frac{-NFA_G}{Y} = \frac{1 - (1 - a) \cdot u \cdot v - b}{u}.$$

This equation is a convenient tool with which to assess the determinants of the debt-to-GDP ratio. On the right-hand side, we have the four parameters ( $a$ ,  $b$ ,  $u$  and  $v$ ), which jointly determine  $\theta$ . The share of government production, as well as absorption, in the domestic product appears to lie within the control of the economic policy-makers. The overall capital–output ratio  $v$ , however, seems to be very much of a ‘technical’ parameter, the value of which is determined quite independently of economic policy making. The crucial factor, therefore, must be the private-sector wealth-to-spending turnover rate  $u$ .

#### THE DEBT-TO-GDP RATIO AND THE PRIVATE-SECTOR WEALTH-TO-SPENDING TURNOVER RATE

Let us examine how the debt-to-GDP ratio  $\theta$  depends on the value of the private-sector wealth-to-spending turnover rate  $u$ . The partial function  $\theta(u, \bullet)$  clearly depends on the setting of the other three parameters ( $a$ ,  $b$  and  $v$ ). In order to illustrate the relation we will give two reasonable numerical examples, depicting ‘big government’ and ‘small government’, respectively.

Both examples have in common the assumption of  $v = 4.00$ , which is to say that the capital–output ratio is 400 percent. Experience tells us that the overall capital–output ratios of modern economies usually vary but slightly around this level. It may be added that the results are fairly robust. Minor changes in  $v$  will have no major impact on  $\theta$ .

The examples differ with respect to the values of the parameters  $a$  and  $b$ . Both have in common, however, that  $a$  is two-thirds of  $b$ , which means that the government sector production covers two-thirds of its absorption. This ratio may also be regarded as a stylised fact for most modern economies.

The 'big government' example is based on the assumption that  $a = 0.20$  and  $b = 0.30$ . The public sector produces 20 percent and absorbs 30 percent of the domestic product. These percentages depict roughly the situation in the industrialised countries with the largest public sector shares, e.g. the Scandinavian welfare states Denmark, Norway and Sweden.

In the 'small government' example, we assume that  $a = 0.10$  and  $b = 0.15$ , i.e. that the government sector furnishes 10 percent and absorbs 15 percent of the domestic product. This corresponds, roughly, to the industrialised countries with the smallest government sector shares, e.g. Japan and the United States.

The reason why we have chosen these two extremes in setting our parameters is that any reasonable public–private mix should lie somewhere in between these values. We should expect, therefore, that the debt-to-GDP ratio be situated somewhere in the 'corridor' shaped by these limiting assumptions (see figure 1).

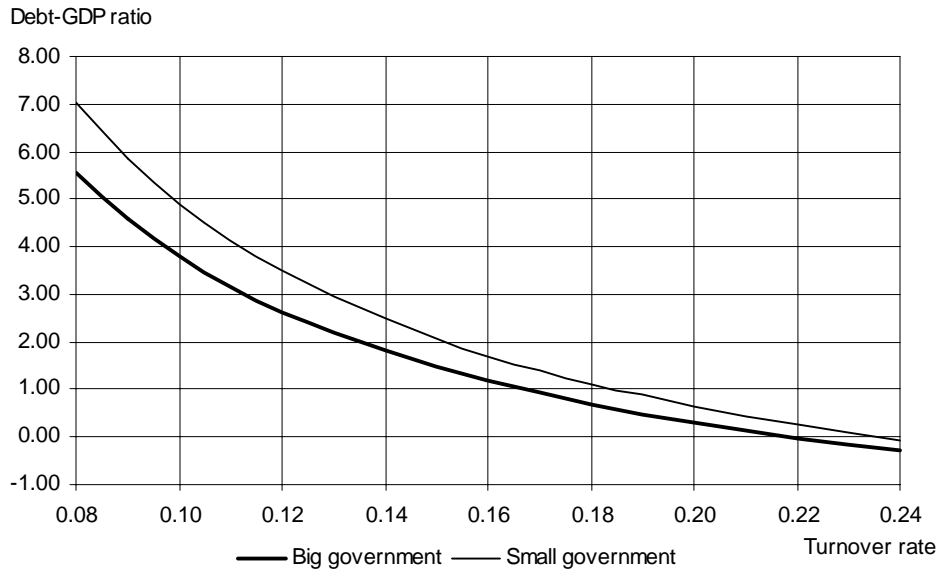


Figure 1: Two arithmetical examples of the relation between the debt-to-GDP ratio and the private wealth-to-spending turnover rate.<sup>11</sup>

As shown in figure 1, the debt-to-GDP ratio  $\theta$  is an asymptotically declining function of the private wealth-to-spending turnover rate  $u$ . This means that the more prone the private sector is to spend – to turn over its net wealth into effective demand – the less need there is for the accumulation of government debt. Those who regard public debt as a problem should therefore seek remedies in augmenting the turnover rate  $u$ , i.e. to encourage the households and firms to ‘let the good times roll’ and become more spendthrift. But if government debt is viewed as a blessing rather than a curse, the opposite conclusion follows. The more parsimonious the private sector is (the lower the turnover rate  $u$  that is), the bigger the scope, not to say the need, for government debt accumulation.

A second conclusion to be drawn from figure 1 is that ‘big government’ will diminish the need for government debt accumulation. This is just another manifestation of the notorious paradox of thrift, and all the more ironic since those who call for reduction of

<sup>11</sup> See Appendix for assumptions and data tables.

the public sector often do so with express reference to the need for reducing the public debt! In the name of economic logic, those who worry about the size of the public debt should advocate *bigger* government, not smaller. On the other hand, the view that the public debt is beneficial does not square with the advocacy of bigger government. Debt-lovers should rather call for smaller government.

## STEADY STATE OF THE DEBT-TO-GDP RATIO

By differentiating the definition of the debt-to-GDP ratio (see equation 21), remembering that  $FB = \Delta NFA_G$ , defining the *deficit-to-GDP ratio*  $\beta = -FB/Y$  and the *GDP growth rate*  $\psi = \Delta Y/Y$ , we obtain<sup>12</sup>

$$(22) \quad \Delta \theta = \frac{Y \cdot \Delta(-NFA_G) \cdot \Delta Y}{Y^2} = \beta - \theta \cdot \psi .$$

We examine the steady-state conditions by setting  $\Delta \theta = 0$ :

$$(23) \quad \Delta \theta = \beta - \theta \cdot \psi = 0 \Rightarrow \beta = \theta \cdot \psi .$$

In order to maintain a stable debt-to-GDP ratio, the deficit-to-GDP ratio  $\beta$  must equal the mathematical product of the debt-to-GDP ratio  $\theta$  and the GDP growth rate  $\psi$ . It should be stressed that the feasible size of the steady-state deficit-to-GDP ratio is proportional to the size of the debt-to-GDP ratio. The larger the debt, the higher the feasible deficit.

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<sup>12</sup> Again GDP is used as convenient shorthand for the domestic product, whether it is measured in ‘gross’ terms or not.

## THE PRIMARY DEFICIT

Part of the government's financial surplus consists of net interest receipts (which item is usually negative). We shall denote this *interest net* by  $R$ . The remainder of the financial surplus is called the *primary surplus*,  $PFB$ . Thus the interest net and the primary surplus add up to the financial surplus, so that

$$(24) \quad R + PFB = FB.$$

The size of the interest net depends on two factors: the size of the government's net financial asset position  $NFA_G$ , and the average interest rate on government net financial assets  $r$ .

$$(25) \quad R = NFA_G \cdot r.$$

Let us now define the (net deficit) *interest-to-GDP ratio*  $\rho = -R/Y$ . By using the definition of  $\theta$  we obtain

$$(26) \quad \rho = \theta \cdot r.$$

In analogy with the definition of the deficit-to-GDP ratio  $\beta$ , we shall also define a corresponding *primary deficit-to-GDP ratio*  $\beta' = -PFB/Y$ . Thus it holds true that

$$(27) \quad \beta = \beta' + \rho.$$

Now invoke the steady-state condition for  $\theta$  (equation 23), as well as equation (26), and substitute both of them into (27). After solving for  $\beta'$ , the equation reads

$$(28) \quad \beta' = \theta \cdot (\psi - r).$$

The steady-state size of the primary deficit-to-GDP ratio is determined by the debt-to-GDP ratio  $\theta$  and the *difference* between the GDP growth rate  $\psi$  and the interest rate  $r$ . This is an important relation. What it says is that in order for the deficit to contribute to the financing of government spending on real goods and services (not merely to the transfer of wealth to creditors!), we must see to it that the GDP growth rate exceeds the rate of interest. The larger the gap between the GDP growth rate and the interest rate, the more powerful the ‘leverage’ of government debt and primary deficits.

### SUBSTITUTING DEBT GROWTH FOR TAXATION

Suppose, for example, that the GDP growth rate exceeds the interest rate by 5 percentage points. Then the steady-state deficit-to-GDP ratio will be 5 percent of the debt-to-GDP ratio. If the debt-to-GDP ratio is at (say) 60 percent, then the primary deficit-to-GDP ratio can be permanently maintained at 3 percent. These figures are incidentally the same as those stipulated in the Maastricht Treaty of the European Union as ‘convergence criteria’ for the debt and deficit. Note that if the GDP growth rate exceeds the interest rate by 5 percentage points, then no less than one-fifth of the public sector in our ‘small government’ example, and one-tenth of the ‘big government’, can be *permanently* financed by allowing the government debt to grow continuously. Taxpayers would be relieved to the corresponding extent.

Once we acknowledge the feasibility of substituting a permanently growing public debt for taxation, we have opened up a Pandora’s box. Whereas the figures in the above example indicate a substantial albeit limited contribution to the financing of public spending, other figures will give other results. In principle, there is nothing that prevents us from imagining the full financing of *all* government spending by simply allowing the public debt to grow and thus levying no taxes. We have reached the nexus of Functional Finance, where debt dynamics and Chartalism meet in answering Lynn Turgeon’s pertinent question why people should be taxed at all.

Let us retain the assumption of a five percentage-point excess of the GDP growth rate over the interest rate. Suppose, now, that the debt-to-GDP ratio could be raised to 300 percent. The arithmetic then yields a primary deficit-to-GDP ratio of 15 percent, which is sufficient to finance the whole of the ‘small government’, and half of the ‘big government’. In order to deficit finance the entire ‘big government’, the debt-to-GDP ratio must be boosted to an astronomic level of 600 percent.

The key to accomplish the substitution of debt growth for tax finance lies in keeping interest rates below the GDP growth rate. So long as the interest rates exceed the GDP growth rate, the government debt will work the other way round, as a drag on the private sector and the taxpayers. The required low-interest policy may not be an easy thing to bring about, and even more difficult to sustain, particularly in today’s institutional setting with internationally open financial markets. At the very least, a unilateral move towards lower interest rates presupposes the maintenance of a flexible exchange rate regime.

The analysis of the practical difficulties of these policies and the possible need for institutional reform must however fall outside the scope of this essay. Our purpose here is merely to bring to the reader’s attention the core principle of substituting debt growth for taxation, which should be a hobbyhorse of Functional Finance. The larger the excess of GDP growth over the interest rate, the greater the ‘leverage’ of government debt increases into primary deficits, and the more taxation can be replaced with deficits and debt growth.

The five percentage-points difference chosen in our examples were not picked out of a hat. Modern economies seem to be able to grow, in real terms, by at least 3–4 percent per annum, and it does not seem unreasonable to assume that real interest rates can be brought down, by appropriate monetary policies, to some 1–2 percent below zero. The difference implied lies in the region of 4–6 percentage points. Thus the 5 percent ‘lever’ suggested in our examples does seem to lie within reach for practical policy.

## THE WEALTH-TO-SPENDING TURNOVER RATE REVISITED

This *reductio ad absurdum* brings us right back to the relations depicted in figure 1, the graphs of which show the consistency requirements in terms of the private wealth-to-spending turnover rate in order to finance all government expenditure by debt growth instead of taxation.

Full deficit financing of ‘big government’ does not seem practicable. The graph doesn’t even cover the point of intersection between the ‘big government’ curve and the required debt-to-GDP ratio of 6.00. In order to accomplish such a gigantic debt-to-GDP ratio, the private wealth-to-spending turnover rate would have to be lowered to less than 0.08, meaning that the private sector would turn over their wealth into effective demand once every twelfth year on average.

However, the idea of deficit financing the ‘small government’ does appear somewhat less far-fetched. The ‘small government’ curve crosses the required 3.00 debt-to-GDP ratio at a private wealth-to-spending turnover rate of about 0.13, corresponding to the private sector revolving their wealth at an average pace of once every eighth year.

These different wealth-to-spending turnover rates may say very little until we get some idea about the actual wealth-to-spending turnover rates in the real economies of today. Like in the case of the capital–output ratio, there is some variation, but there nevertheless appears to be a tendency for this rate to hover around the 0.20 level. Which puts in perspective the needed lowering to less than 0.08 in the ‘big government’ case. It just does not seem realistic to bring down the turnover rate by nearly two-thirds. The turnover rate reduction required in the ‘small government’ case (by one-third, from roughly 0.20 to 0.13) is also quite large, but much smaller and more manageable than the ‘big government’ case.

Thus the whole matter of permanent deficit financing of government spending revolves around one particular parameter: the private-sector wealth-to-spending turnover rate  $u$ .<sup>13</sup> Unless  $u$  can be brought down to a sufficiently low level, there will be no room for the public debt needed to yield the required deficits. This suggests that the future efforts of Functional Financiers might best be directed to the question of how this turnover rate can be affected and regulated by means of policy measures.

#### TAX REFORM IN ORDER TO LOWER THE TURNOVER RATE

We have already written off the possibility of fully deficit financing the ‘big government’. A practically necessary condition is that the government share of the GDP is limited, meaning cut back in the case of European welfare states. This need not involve any reductions of the volume and quality of services provided by the government sector. For if aggregate supply is relatively elastic with respect to the level of taxation, then tax cuts may provide for a great expansion of the private sector. A vigorously growing private sector will tend to reduce the *share* of the public sector in the economy, which reduction might render unnecessary any actual cutbacks of the real size of government.

Provided that government demand is kept within the ‘small government’ percentage limit, the stability of the system depends crucially on the ability to bring down the private-sector wealth-to-spending turnover rate  $u$  to the required level of roughly 0.13. Since the present-day turnover rate is in the neighbourhood of 0.20, spending habits will need some restriction in order for the 0.13 level to obtain. How, then can we conceive a means with which to accomplish this?

The answer, we believe, lies in tax reform. We must invent a system of taxation that *discourages* the private sector from spending to the necessary extent. The natural solution to this problem, it seems to me, is to invoke a system of *progressive spending taxation*,

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<sup>13</sup> Provided, of course, that the gap between GDP growth and the interest rate can be upheld with appropriate monetary measures.

meaning that private-sector spending, at least on consumption, should be progressively taxed.<sup>14</sup> Such a tax may be established within the framework of the ordinary income tax. All that is needed is to allow deductions for saving. The progressiveness of the income tax itself will then provide disincentives to spending.

If allowances were made for saving, then the level of income taxation would be subject, to some extent, to individual discretion. Frugality and tax-avoidance would go hand in hand, while the spendthrift would suffer from high taxation. The personal rate of income taxation would depend on the level of personal consumption spending as well as the size of personal income. From the point of view of egalitarian ethics, such a taxation system may seem quite unfair. For high-income earners usually spend a much smaller proportion of their income on personal consumption, and may therefore avoid a great deal of taxation. Invoking fairly sharply progressive tax rates may however mitigate this injustice.

It is however questionable whether taxation of income really is an expression of equity. The mere earning of income does not involve any claim on the nation's real production resources. Personal saving means an excess of that person's contribution to the nation's output over her absorption of currently produced goods and services. That excess will enable other people to incur a corresponding deficit, i.e. to absorb more than they productively contribute. The very point of the tax reform here suggested is to make the whole of the private sector such a net contributor, or net saver, in order to make room for the public sector's deficits.

Any taxation of the contributions – of factor incomes that is – is likely to reduce the willingness to contribute. This is just another way of expressing the elasticity of supply. One may question what society gains by preventing people from working as much and as

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<sup>14</sup> An important contribution along these lines is Lawrence Seidman's volume *The USA Tax: A Progressive Consumption Tax* (1997a; for a brief presentation see Seidman 1997b). While Seidman's proposal is well considered and detailed, it is unfortunately void of the insights of Functional Finance.

well as they desire? Indeed, preventing people from contributing and doing their best may well involve a measure of paternalism and injustice in itself.

From a Functionalist perspective, the earnings and wealth of individuals should be a subordinate problem. What really counts is the extent to which people contribute, and how much of their contributions they use up. The ‘stagnationist’ tendencies of modern economies, as emphasised by William Vickrey, essentially means that there is a general willingness on the part of the private sector to contribute more in terms of output than it uses up in terms of spending. There is a ‘savings gap’, which calls for an ever-growing public debt in order to balance overall supply and demand.

This stagnation tendency, the growing savings gap, has often been viewed as a problem. But why should one look at it that way? Isn’t the gap really a big resource? Shouldn’t it be encouraged? For the bigger the gap, the greater the scope for deficit financing of public spending. Indeed, the graver the stagnationist tendencies of the private sector, the lower the taxes can go, and the greater the scope for public borrowing and a growing debt. Instead of encouraging private spending as a remedy for stagnation, should we not promote private saving to widen the savings gap? For by so doing, we could deficit finance all the more, and enjoy the supply-side benefits of reduced taxation.

A progressive personal consumption tax might be calibrated such as to encourage an *average* level of personal consumption that is consistent with the desired *aggregate* volume of consumption. The per-person target level could be calculated by taking an estimate of the economy’s overall capacity to supply consumption services and divide by the number of taxpayers. The sharper the progressiveness of the tax penalty for exceeding the target per-head level of spending, the stronger the individual incentives to hold consumption levels near the target.

In order to bring the overall level of taxation down to the zero level – in accordance with Turgeon’s idea of a ‘tax-free’ economy – tax revenues collected from spendthrift, over-the-target consumers could be transferred to low-consuming households. This could be

accomplished by means of an automatic transfer mechanism along the lines of a ‘negative income tax’.

This is not the place to expound a detailed tax reform proposal. Our main point is to show the main principles on which such a reform might be based. The purpose of such a tax reform would be twofold: It would discourage private spending and encourage saving in order to make room for big, permanent public deficits. It would maximise aggregate supply by bringing down the overall rate of net taxation (taxes less subsidies) to zero.

## FUNCTIONAL FINANCE AND THE NEW HISTORICAL COMPROMISE

Egalitarian ethics vs. the right to contribute – those are the elements of the perennial conflict between Equality and Enterprise. It is generally believed that there exists an inescapable trade-off between the two. The more the Equality, the fewer the pennies, and the higher the taxes, the less the Enterprise. Too much Equality will render a fair but slack society riddled with ‘Eurosclerosis’; Enterprise can only be bought at the cost of a staggeringly unequal society plagued by an alarming rate of poverty in the midst of plenty.

The political Left embraces Equality, while the political Right preaches Enterprise. The polarity of political life rests heavily on perceptions of economic necessity. The compromise that Functional Finance can offer involves a mitigation of the polarity. By substituting debt growth for taxation, and by invoking progressive personal consumption taxation, we may indeed combine the best of both worlds. We can have more Enterprise and more Equality at the same time!

True a tax reform along the suggested lines is likely to involve a considerable degree of *income* inequality. That seems to be the inevitable price for having tax-free Enterprise. In the absence of taxation there will be no economic disincentives that discourage work and productive efforts in general. Progressive taxation of *consumption* will however provide

strong incentives for the levelling out of differences in standards of living. Lifestyles, after all, are based on levels and patterns of consumption, not income. It seems, therefore, that the requirements of remunerative justice (i.e. getting paid in proportion to inputs), and of distributive justice (i.e. moderate differences in consumption levels) could both be better satisfied by such a reform than is the case today.

Since remunerative and distributive justice may be considered the bees in the ideologists' bonnets, this tax reform approach suggests also a new historical compromise to replace the social compact of the high-taxation welfare state. Functional Finance could pave the way for the peaceful cohabitation of the killer-bees of right-wing Enterprise and the bumble-bees of left-wing Equality. There would at any rate be less grumbling in the hive. It would be rash, of course, to propose anything concrete at this premature stage, but the logic of this overall vision of a virtually tax-free economy, still retaining a fair measure of public spending, should be interesting enough to warrant attention and further discussion. It may well prove to be an erroneous and impossible strategy in the end, but even if it does, there are important insights to be got from taking it to that end.

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APPENDIX: DEBT-TO-GDP RATIO BY PRIVATE WEALTH-TO-SPENDING  
 TURNOVER RATE – ASSUMPTIONS AND DATA UNDERLYING FIGURE 1.

Assumptions/Example	'Big government'	'Small government'
Share of government production in the domestic product	20% ( $a = 0.20$ )	10% ( $a = 0.10$ )
Share of government spending in the domestic product	30% ( $b = 0.30$ )	15% ( $b = 0.15$ )
Overall capital-output ratio	400% ( $v = 4.00$ )	400% ( $v = 4.00$ )

Table A1: Assumptions of the 'big government' and 'small government' examples.

$u$	'Big government'	'Small government'
0.08	5.55	7.03
0.09	4.58	5.84
0.10	3.80	4.90
0.11	3.16	4.13
0.12	2.63	3.48
0.13	2.18	2.94
0.14	1.80	2.47
0.15	1.47	2.07
0.16	1.18	1.71
0.17	0.92	1.40
0.18	0.69	1.12
0.19	0.48	0.87
0.20	0.30	0.65
0.21	0.13	0.45
0.22	-0.02	0.26
0.23	-0.16	0.10
0.24	-0.28	-0.06

Table A2: Calculations of steady-state debt-to-GDP ratios for different levels of the private wealth-to-spending turnover rate.