Reinventing Fiscal Policy

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Abstract

Recent developments in macroeconomic policy, in terms of both theory and practice, have elevated monetary policy while downgrading fiscal policy. Monetary policy has focused on the setting of interest rates as the key policy instrument, along with the adoption of inflation targets and the use of monetary policy to target inflation. Elsewhere, we have critically examined the significance of this shift, which led us to question the effectiveness of monetary policy. We have also explored the role of fiscal policy and argued that it should be reinstated. This contribution aims to consider further that conclusion. We consider at length fiscal policy within the current "new consensus" theoretical framework. We find the proposition of this thinking, that fiscal policy provides at best a limited role, unconvincing. We examine the possibility of crowding out and the Ricardian Equivalence Theorem. A short review of quantitative estimates of fiscal policy multipliers gives credence to our theoretical conclusions. Our overall conclusion is that, under specified conditions, fiscal policy is a powerful tool for macroeconomic policy.

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1. INTRODUCTION[1]

There has been a major shift within macroeconomic policy over the past two decades or so in terms of the relative importance given to monetary policy and to fiscal policy, with the former gaining considerably in importance, and the latter being so much downgraded that it is rarely mentioned. Monetary policy has focused on the setting of interest rates as the key policy instrument, along with the adoption of inflation targets and the use of monetary policy to target inflation. The Central Bank sets its discount rate[2] with a view to achieving the set inflation target, but the discount rate can be considered as set relative to an "equilibrium rate" so that the problem of aggregate demand deficiency appears to be effectively dispensed with.[3] This can be seen in the operation of Taylor's rule for the setting of the discount rate (Taylor 1993). In Arestis and Sawyer (2003a), we critically examine the significance of this shift in terms of monetary policy, which led us to question the effectiveness of monetary policy. In the same paper we also explore the role of fiscal policy, and argue that within the "new consensus" there is barely mention of fiscal policy.[4] We strongly suggest there that fiscal policy should be reinstated, and conclude that "fiscal policy remains a potent tool for offsetting major changes in the level of aggregate demand" (p. 19). This paper aims to consider further that particular conclusion (see also Arestis and Sawyer 1998).

We begin by considering this "new consensus" and the limited nature of its analysis. We then consider fiscal policy at length within this theoretical framework. We find the proposition of this thinking, that fiscal policy provides at best a limited role, unconvincing. The two sections that follow examine the possibility of crowding out and the Ricardian Equivalence Theorem (RET). We argue that, under specified conditions, fiscal policy is a powerful tool for macroeconomic policy. A short review of quantitative estimates of fiscal policy multipliers is provided in the section that follows, before the final section that summarizes the argument and concludes.

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[1] Work on the importance of fiscal policy has been undertaken in the past here at the The Levy Economics Institute. Of particular importance are the papers by Godley and McCarthy (1997) and Godley (1999, 2001). The role of fiscal policy has been studied in this work within a consistent stock/flow model, where it is very effective in terms of enabling imbalances in the private sector's balance sheets to be corrected (see also Minsky 1982, 1991).

[2] The generic term Central Bank discount rate is used to denote the rate of interest at which the Central Bank is willing to supply funds. It covers rates such as the "repo" rate (European Central Bank), the Federal Funds rate (U.S., Federal Reserve System), the discount rate (UK, Bank of England), etc.

[3] The "equilibrium rate" is where savings and investment are brought into equality at full employment or some other supply-side equilibrium level of employment or output.

[4] With the implication, presumably, that fiscal policy does not matter, whereas the focus is on monetary policy and the use of interest rate policy to target inflation.

2. THE "NEW CONSENSUS" IN MACROECONOMICS

The "new consensus" in macroeconomics has been summarized in terms of a simple model with the following three equations (adapted from Meyer 2001; but see also McCallum 2001, and Clarida, Galí, and Gertler 1999; it is also discussed in Arestis and Sawyer 2002b and 2002c):

$$(1) \qquad Y^g_t = a_0 + a_1 Y^g_{t-1} + a_2 E_t (Y^g_{t+1}) - a_3 [R_t - E_t (p_{t+1})] + s_1$$

$$(2) \qquad p_t = b_1 Y^g_t + b_2 p_{t-1} + b_3 E_t (p_{t+1}) + s_2 \text{ , (with } b_2 + b_3 = 1)$$

$$(3) \qquad R_t = (1 - c_3)[RR^* + E_t (p_{t+1}) + c_1 Y^g_{t-1} + c_2 (p_{t-1} - p^T)] + c_3 R_{t-1}$$

where Y^g is the output gap, R is nominal rate of interest, p is rate of inflation, p^T is inflation rate target, RR* is the "equilibrium" real rate of interest, that is the rate of interest consistent with zero output gap which implies from equation (2), a constant rate of inflation, s_i (with i = 1, 2) represents stochastic shocks, and E_t refers to expectations held at time t. Equation (1) is the aggregate demand equation with the current output gap determined by past and expected future output gap and the real rate of interest. Equation (2) is a Phillips curve with inflation based on current output gap and past and future inflation. Equation (3) is a monetary policy-operating rule with the nominal interest rate based on expected inflation, output gap, deviation of inflation from target and the "equilibrium" real rate of interest. The lagged interest rate represents interest rate "smoothing" undertaken by the monetary authorities (see, for example, McCallum 2001).[5]

From the perspective of this paper, equation (1) is of particular significance. There is no explicit mention of fiscal policy, though changes in the fiscal stance could be seen as reflected in a change in a_0. But proponents of this model have produced a number of arguments that suggest that the use of discretionary fiscal policy should be seen as the exception rather than the rule. The norm for fiscal policy should be to let automatic stabilizers operate in an environment of budgets balanced over the business cycle, and the operation of those stabilizers may be reflected in the coefficients a_1 and a_2. A number of arguments have been put forward to make the case against the use of discretionary fiscal

[5] Variations on this theme could be used; for example, interest rate "smoothing" in equation (3) is often ignored, as is the lagged output gap variable in equation (1) so that the focus is on the influence of expected future output gap in this equation. It is also possible to add a fourth equation to (1) – (3) reported in the text. This would relate the stock of money to "demand for money variables" such as income, prices and the rate of interest, which would reinforce the endogenous money nature of this approach with the stock of money being demand determined. Clearly, though, such an equation would be superfluous in that the stock of money thereby determined is akin to a residual and does not feed back to affect other variables in the model. We have explored this issue and others related to whether the stock of money retains any causal significance at some length in Arestis and Sawyer (2002c).

policy and of long-term budget deficits. The most important, and rather more widely accepted by the proponents of the case, are those of crowding out and of the RET, and given their significance we return to both below. Further arguments against discretionary fiscal policy relate to what has been labelled as "institutional aspects of fiscal policy" (Hemming, Kell, and Mahfouz 2002): model uncertainty, in that longer and more uncertain lags prevail than it was thought previously; there is the risk of pro-cyclical behavior in view of cumbersome parliamentary approval and implementation; increasing taxes or decreasing government expenditure during upswings may be politically unrealistic, and this may very well generate a deficit bias; spending decisions may be subjected to irreversibility, which can lead to a public expenditure ratcheting effect; and there may be supply-side inefficiencies associated with tax-rate volatility. We also devote a section to these "institutional aspects of fiscal policy" below.

3. FISCAL POLICY IN THE "NEW CONSENSUS"

We introduce fiscal policy explicitly into the discussion through the expansion of the equations of the model outlined in the previous section. The government sector is explicitly included though, for simplicity reasons, retaining the closed economy nature of the model, and the capacity level of output, which is labelled Y*. With a simple consumption function of the form:

(4) $C_t = d_1 + d_2(1 - t)Y_{t-1} - \alpha[R_t - E_t\,(p_{t+1})]$

where the symbols are as above, with the addition of C, consumer demand, and t, the income tax rate. The investment function is of the form:

(5) $I_t = d_3 + d_4E_t(Y_{t+1}) - \beta[R_t - E_t(p_{t+1})]$

where I is investment demand and government expenditure is labelled G. This leads to:

(6) $Y_t = (d_1 + d_3) + G + d_2(1 - t)Y_{t-1} - \alpha[R_t - E_t(p_{t+1})] + d_4\,E_t(Y_{t+1}) - \beta[R_t - E_t(p_{t+1})]$

With the output gap incorporated, this can be written as:

(7) $(Y_t - Y^*) = (d_1 + d_3) + G + [d_2(1 - t) + (d_4 - 1)]Y^* + [d_2(1 - t)](Y_{t-1} - Y^*)$
$+ d_4E_t(Y_{t+1}) - Y^*) - (\alpha + \beta)[R_t - E_t(p_{t+1})]$

It is now evident that the "equilibrium" rate of interest (for a zero output gap) is given by:

(8) $[R_t - E_t(p_{t+1})] = (d_1 + d_3)/(\alpha + \beta) + G/(\alpha + \beta) + [d_2\,(1 - t) + (d_4 - 1)]/[(\alpha + \beta)]Y^*$

It is then clear that the "equilibrium" rate of interest depends on government expenditure, and that there is not a unique "natural rate" of interest.[6] It is, of course, possible to take the balanced budget case, and then the "equilibrium rate" of interest would be given by:

(9) $[R_t - E_t(p_{t+1})] = (d_1 + d_3)/(\alpha + \beta) + [(d_2 + d_4 - 1)/(\alpha + \beta)]Y^*$

It is also evident that the "equilibrium rate" of interest depends on the parameters of the consumption and investment functions. The evidence from the U.S. and the UK (for example) during the 1990s suggests that those parameters can undergo substantial changes in the form of rises in the propensity to consume (driving the household savings rate close to or below zero) and in the propensity to invest.

The empirical investigation of the effectiveness of fiscal policy is generally undertaken in the context of econometric models that could be viewed as elaborations of the "new consensus" model. The resulting econometric model is much larger and involves many leads and lags which do not appear in the "new consensus" model, as presented above, but the econometric models generally impose the existence of a supply-side equilibrium (say the NAIRU) which is equivalent to the zero output gap for which inflation is constant.[7] With a policy regime that pushes the economy towards the supply-side equilibrium (reflected in equation 3 above for the determination of the rate of interest) there is little room for output to substantially diverge from the supply-side equilibrium. Hence, any fiscal stimulus is soon dissipated in the context of the model, leading to the empirical conclusion that fiscal policy is ineffective. In view of the constraints imposed by the nature of macroeconometric models (e.g. the existence of a supply-side determined equilibrium in the form of the NAIRU), it may be surprising that any positive effects of fiscal policy are observed. The effects generally found for fiscal policy may be explicable in terms of the starting point for the simulations (say in terms of unemployment) relative to the supply-side equilibrium. Clearly if unemployment is initially higher than the NAIRU, there is scope for a fiscal stimulus, which would (in the context of the model) push unemployment down towards the NAIRU. But it could be expected that any conclusions drawn on the effects of fiscal policy would be sensitive to the starting point used.

The "new consensus" model (or equivalent) provides little role for fiscal policy. It is assumed that there is a feasible "equilibrium rate" of interest which will secure a level of aggregate demand equal to the capacity level of output (which itself is compatible with

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[6] The "natural rate" of interest could be said to be unique if there was no effect of government expenditure on demand, which would be the equivalent of invoking RET, and this is further discussed below.

[7] See Arestis and Sawyer (2002a) for our summary of the Bank of England model and its similarities with the "new" consensus model.

constant inflation).[8] It is, however, pertinent to think about the effectiveness of fiscal policy in the context of a major shift in the coefficients of equations (4) and (5). Suppose, for example, there is a change in "animal spirits" or technological opportunities for investment, which leads to a reduction in d_3 of Δd. For fiscal policy alone to offset the reduction would require a change in government expenditure of Δd. It should be noted that here there would be no "crowding out" due to a change in the rate of interest, which is under the control of the Central Bank, nor due to output being constrained to be at the capacity level. This leads us to the question of the possibility of crowding out and the effectiveness of fiscal policy.

4. CROWDING OUT IS NOT INEVITABLE

There have been four distinct sets of arguments to the effect that fiscal policy will be ineffective, under the general heading of "crowding out."[9] The first, in the context of the IS–LM analysis, was a "crowding out" due to a rise in interest rates following a fiscal expansion. This was based on an exogenous money supply and the interest rate equating the demand for and supply of money. In that context, though, it was recognized that a sufficient increase in the supply of money alongside an increase in government expenditure could prevent the rise in the interest rate. In the context of endogenous money with the interest rate set by the Central Bank, this form of "crowding out" would arise from the deliberate action of the Central Bank. That is to say, if the Central Bank, operating on an "independent" basis, responds to a fiscal expansion by raising interest rates, then there would be some form of crowding out. Its extent would depend on the size of the interest rate rise, its feed through to other interest rates, the interest rate responsiveness of expenditure, and the phase of the business cycle. But the key point here is that any "crowding out" depends on the response of the monetary authority: it does not occur through the response of the markets. Even if the rate of interest were allowed to increase, there is still the question of the investment elasticity with respect to the rate of interest. Chirinko (1993) and Fazzari (1993, 1994–95), for example, argue very strongly that the impact of the rate of interest on investment is modest at most. Sales growth (the accelerator effect) and cash flow effects, are the dominant variables in the determination of investment. It is, in fact, generally recognized that activity variables, especially output, have "a more substantial impact on investment" (Chirinko,

[8] The word "feasible" is used in the sense of involving a positive nominal rate of interest and compatible with exchange rate targets.
[9] These arguments are examined in much more detail in Arestis and Sawyer (2003a).

1993, p. 1881). So that even if expansionary fiscal policy raised interest rates, crowding out would not materialize.

The second line of argument relates to the role of savings in fiscal policy.[10] Consider the following identity in terms of outcomes:

(10) DS = PI + GD + CA

where DS is domestic savings, PI is private investment, GD is government deficit and CA is current account surplus (or minus current account deficit). It is then argued that crowding out occurs because higher aggregate demand due to an increase in deficit "absorbs" savings, which reduce investment (see, for example, Cunningham and Vilasuso 1994–95). The possibility of "international crowding out" is also raised. This may come through the exchange rate: it is postulated that higher interest rates associated with the fiscal expansion, cause capital inflows which appreciate the exchange rate, deteriorate the CA (smaller surplus or higher deficit), thereby offsetting the increase in aggregate demand that emanates from fiscal expansion (see Hemming, Kell, and Mahfouz 2002, for more details on international crowding out).

A related argument has been proposed. Re-write (10) to read as:

(11) DS + FS = PI + GD

where the symbols are as above, with the exception of FS which stands for foreign saving (equivalent to deficit in CA). An increase in government deficit (GD), then, "signals a decline in government saving. As a result, either investment falls, foreign savings rise, or some combination of these occurs. Put differently, either crowding out occurs, international crowding out occurs or both" (Cunningham and Vilasuso 1994–95, p. 194).[11] Clearly, both arguments relating to (10) and (11) are flawed. Consider the argument related to (11) first. This formulation of the crowding out argument treats DS as exogenously given. However, DS should be treated as endogenous in that its size responds to changes in, inter alia, government expenditure. Then an increase in GD could be expected to lead to an increase in DS. This could also happen when we come to the argument of (10). For in both cases, it is possible that with a higher government deficit, increases in income and investment occur, as well as the economy's saving, rather than reduced investment. Consequently, expansionary

[10] Our second line of argument on the crowding out issue, draws mainly on Cunningham and Vilasuso (1994–95) and Fazzari (1994–95).

[11] In fact Cunningham and Vilasuso (1994–95) argue strongly that "demand management policies may be largely ineffective, and in some cases, contribute more to the problems than to the solutions" (p. 187). The main reason given is the "structural, institutional, and regulatory changes" since the 1970s, which "have altered the rules of the *game*, with the result that aggregate policy measures have failed to stimulate total spending" (p. 188). Fazzari (1994–95) rebuffs this proposition on both theoretical and empirical grounds.

fiscal policy will boost savings since it raises income and investment, rather than reduce savings (see also Gordon 1994). In the context of where interest rates are set by the Central Bank, the effect of budget deficit on interest rates depends on the reactions of the Central Bank.

International crowding out is unlikely to materialize under the circumstances explored here. Fiscal policy influences the level of economic activity, some of which spills over into imports. The exchange rate may be affected by the change in the level of economic activity; but the precise effect is not clear. A rise in imports could be expected to depress the exchange rate, but the rise in economic activity may generate optimism about the state of the economy thereby tending to raise the exchange rate. There may be a direct effect of fiscal policy on the exchange rate insofar as the exchange market operators react against expansionary fiscal policy and sell the currency. However, fiscal policy may very well result in increasing imports, opening up a trade deficit and thereby producing international crowding out. To the extent, however, that the rest of the world increases its appetite for the country's exports, no international crowding out need occur (see Fazzari 1993, for more details).

The counter-argument is that all this may be true in the short run, and only under conditions of excess capacity. But it is the short-run in which we live (and "in the long-run we are all dead!") and conditions of excess capacity are a general (though not universal) feature of the market economy.[12] In the long run, it is argued that the dynamics of wages and prices ensure that fiscal policy crowds out private investment or increases foreign indebtedness (via its impact on CA in equation 10). This mechanism is due to the downward-sloping aggregate demand schedule (falling prices, given the money stock, raises real balance thereby increasing aggregate demand).[13] A fiscal expansion leading to higher levels of economic activity is postulated to lead to rising prices and wages, thereby reducing private demand. A number of arguments, however, can be advanced to suggest that falling prices can go hand in hand with falling aggregate demand. Redistribution of income and wealth from debtors to creditors follows in the context of unanticipated price falls. On the assumption that debtors have a higher propensity to spend than creditors, the redistribution

[12] If full employment (or some other desired level of economic activity) can be reached and sustained by private aggregate demand, there would be few who would advocate stimulating fiscal policy. But the advocates of fiscal policy take the view that full employment is a rare occurrence and that private aggregate demand is often insufficient to sustain full employment (Say's Law does not operate).

[13] It should be noted that the extent of crowding out is, of course, affected by price flexibility. In general terms, it can be argued that "Price flexibility, even if it is limited in the short run, will tend to narrow the range of

of real wealth caused by deflation lowers aggregate demand (see, for example, Tobin, 1993). Lower income reduces cash flows relative to debt service commitments, thereby increasing the probability of insolvency (Fisher 1933, and Minsky 1975, are good examples). In addition, there are the anticipated deflation effects, which may raise expected real interest rates, which dampen expenditure and prevent the occurrence of the aggregate demand effects discussed above (DeLong and Summers 1986). More significantly, the downward-sloping aggregate demand schedule depends on the existence of "outside money" and credit money (the dominant form in an industrialized society) is largely "inside money."[14] The inevitable conclusion is that it is by no means clear that the effectiveness of fiscal policy is short lived and damaging in the long run.

The third form of "crowding out" arose from a combination of the notion of a supply-side equilibrium (such as the "natural rate of unemployment" or the non-accelerating inflation rate of unemployment, the NAIRU), and that the level of aggregate demand would adjust to be consistent with that supply-side equilibrium. In the context of an exogenous money supply, this came through the assertion of a "real balance" effect, with changes in the price level generating changes in the real value of the stock of money, thereby generating changes in the level of aggregate demand.[15] In the context of endogenous money, it would come through the adjustment of interest rate by the Central Bank. This would occur, as indicated above, if the Central Bank adopts some form of "Taylor's rule" (provided, of course, that interest rates are effective in that regard). As has been argued above, fiscal policy has an effect on the level of aggregate demand, and "crowding out" only occurs if it is assumed that the supply-side equilibrium must be attained (in order to ensure a constant rate of inflation) *and* that the level of aggregate demand would anyway be equivalent to the supply-side equilibrium. In the absence of some powerful automatic market forces or a potent monetary policy, which can ensure that the level of aggregate demand moves quickly to be consistent with the supply-side equilibrium, then fiscal policy has a clear role to play.

The path of aggregate demand can itself influence the supply-side equilibrium. The size and distribution of the capital stock is a determinant of the productive capacity of the economy, and a larger capital stock would be associated with the supply-side equilibrium

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values taken by fiscal multipliers, and in particular to limit the influence of the exchange rate regime" (Hemming, Kell, and Mahfouz 2002, p. 5).

[14] Even when there is "outside money" (high powered money) and the relevant measure of the money stock is a multiple of high powered money (determined by the size of the credit multiplier), the amount of money in existence depends on people's willingness to hold that money. The stock of money is demand determined. If prices fall, then the demand for money falls, and the stock of money falls, and there is no real balance effect.

[15] This could be a long adjustment process, but it is the "automatic" one invoked in the context of the NAIRU.

involving a higher level of output and employment. The level of aggregate demand (including the change in economic activity and profitability) has an impact on investment expenditure, and thereby on the size of the capital stock (Arestis and Biefang-Frisancho Mariscal 2000). The supply-side equilibrium may form an inflation barrier at any point in time, but it is not to be seen as something immutable and unaffected by the level of aggregate demand.

The fourth route of "crowding out" comes from the Ricardian Equivalence Theorem. We may clarify RET in a bond-financed increase in household taxes, holding government expenditure constant. RET makes the assumption of equivalence between debt and taxes, and that consumers are forward looking. Consumers are also assumed to be fully aware of the government's intertemporal budget constraint, and recognize that a tax increase today, will be followed by lower taxes in the future imposed on their infinitely lived families. Consumers decrease their savings, in the knowledge that they will not have to pay more in the future (the debt will be less). The increase in taxes is associated with a decrease in savings. Permanent income, therefore, does not change as a result of the tax increase. In the absence of liquidity constraints and with perfect capital markets, consumption does not change (Barro 1974). There is, thus, equivalence between taxes and debt. This implies that an increase in government saving resulting from a tax increase, is fully offset by lower private saving, so that aggregate demand is not affected. Raising taxes will have no effect; the policy is totally frustrated and the fiscal multiplier is zero. Similarly, a reduction in taxation in the present is viewed as the prospect of future taxation (which is equivalent in present value terms) leaving the public no better off in wealth terms. The reduction in present taxation may stimulate consumer expenditure but the prospect of future taxation reduces consumer expenditure by an equivalent amount.[16]

A range of objections have been raised against the RET. The major proponent of the RET, Barro (1989), lists five "major theoretical objections that have been raised against the Ricardian conclusions. The first is that people do not live forever, and hence do not care about taxes that are levied after their death. The second is that private capital markets are "imperfect" with the typical person's real discount rate exceeding that of the government. The third is that future taxes and incomes are uncertain. The fourth is that taxes are not lump

[16] An important assumption of the process discussed in the text is that Ricardian behavior implies *full* consumption smoothing to offset intergenerational redistribution imposed by government debt policy. Tax burden is redistributed among generations with families reversing the effect of this redistribution through bequests. However, the more realistic case of *partial* consumption smoothing invalidates Ricardian behavior (Mankiw 2002).

sum, since they depend typically on income, spending, wealth and so on. The fifth is that the Ricardian result hinges on full employment" (p. 40).[17] While the first four listed are, in our view, significant and valid objections to RET, it is the fifth, which is particularly relevant here. Given the importance of the RET we discuss it at length in the next section. We concentrate, though, on the fifth theoretical objection to which we have just referred.[18]

5. THE "RICARDIAN EQUIVALENCE THEOREM"

Barro's (1989) discussion of the fifth objection is rather brief (two paragraphs). He states that "in standard Keynesian analysis … if everyone thinks that a budget deficit makes them wealthier, the resulting expansion of aggregate demand raises output and employment, and thereby actually makes people wealthier. … This result does not mean that budget deficits increase aggregate demand and wealth in Keynesian models. If we had conjectured that budget deficits make people feel poorer, the resulting contractions would have made them poorer. Similarly, if we had started with the RET notion that budget deficits did not affect wealth, the Keynesian results would have verified that conjecture. The odd feature of the standard Keynesian model is that *anything* that makes people feel wealthier actually makes them wealthier (although the perception and actuality need not correspond quantitatively). This observation raises doubts about the formulation of Keynesian models, but says little about the effect of budget deficits. Moreover, in equilibrium models that include unemployment (such as models with incomplete information and search), there is no clear interplay between the presence of unemployment and the validity of the Ricardian approach" (pp. 47–48).

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[17] We might add further objections to the list. Less than perfect foresight; partial liquidity constraints; a nonaltruistic desire to pass some of the current fiscal burden to future generations (Mankiw and Summers 1984, Blanchard 1985), are a few of them. There may also be significant distributional effects, assumed to be negligible by the RET proponents (see below in the text for relevant arguments). Furthermore, empirical work on the RET produces evidence that is mixed at best (Cunningham and Vilasuso 1994–95). A more recent study reaches to even more negative conclusions for the RET; clearly, "There is little evidence of direct crowding out or crowding out through interest rates and the exchange rate. Nor does full Ricardian equivalence or a significanct partial Ricardian offset get much support from the evidence" (Hemming, Kell, and Mahfouz 2002, p. 36).

[18] There are interest rate premia and credibility effects as well as uncertainty considerations, which can affect the size of the fiscal multipliers. With fiscal expansions and debt accumulation, risk premia that reflect the risk of default or increasing inflation risk reinforce crowding-out effects through interest rates (Miller et al 1990). They may also raise fears of future balance-of-payments problems, and thereby lead to foreign investment reduction and capital outflows. Similarly, to the extent a fiscal expansion is associated with increased uncertainty (in that future deficits have a negative effect on confidence), households may accumulate precautionary savings and firms may delay irreversible investment (Caballero and Pyndick 1996).

In the simplest Keynesian model :

$Y = C + I = a + cY + I$

or,

$Y = (a + I)/(1 - c)$

If "feeling wealthier" means that a or c rise, then income (Y) rises, and people are indeed "wealthier." Clearly if an action by government (increasing expenditure, lowering taxes) generates adverse expectational responses (e.g. leading to falls in consumer expenditure or in investment) then the government action has less effect, and the overall impact may be zero or negative. When taxation is reduced, people do have more money to spend, and so it is not unreasonable to believe that they will feel wealthier, will spend more and income will rise. Thus, it can be postulated that lower taxation will (in general) make people feel wealthier and spending will rise.

If the RET proposition held, then the size of the budget deficit is irrelevant for the level of aggregate demand. In particular, a balanced budget would be compatible with full employment (or more generally with the supply-side determined equilibrium), and hence (for a closed economy) savings and investment would be equal at full employment. In those circumstances, there would be no reason for fiscal policy: the problem of any deficient aggregate demand would have been solved. But it could also be noted that if there is a discrepancy between intended savings and investment, then that discrepancy can never by overcome through the use of fiscal policy. If, for example, savings would exceed investment at a level of income corresponding to the supply-side equilibrium, that difference could never be dealt with if the RET hypothesis held.

However, when fiscal policy is approached in "functional finance" terms, that is a budget deficit is run by the government because there is a difference between savings and investment at the desired income level, then the RET approach is scarcely relevant. In the absence of a budget deficit, the excess of savings over investment cannot occur (and the discrepancy is dealt with through a fall in income reducing savings until brought into line with income). In this regard it can also be noted that much of the variation in the budget position of government occurs as a result of fluctuations in private demand, with the operation of the "automatic stabilizers" of fiscal policy. Barro (1989) also argues that "abstracting from chain-letter cases where the public debt can grow forever at the rate of interest or higher, the present value of taxes (and other revenues) cannot change unless the government changes the present value of its expenditures. This point amounts to economists' standard notion of the absence of a free lunch—government spending must be paid for now

or later, with the total present value of receipts fixed by the total present value of spending. Hence, holding fixed the path of government expenditure and non-tax revenues, a cut in today's taxes must be matched by a corresponding increase in the present value of future taxes" (pp. 38–9).

The "chain-letter case" can be viewed in the following way. Take a budget deficit (primary, that is excluding interest payments on debt) to GDP ratio of d, then it can be readily shown that the government debt to GDP ratio would converge on $b = d/(g - r)$ where g is the rate of growth of GDP and r is the (post-tax) real rate of interest on government debt. If $g > r$, then the debt to GDP ratio will stabilize though the amount of outstanding debt will continue to rise (in line with GDP). But, if $g < r$, then the debt to GDP ratio would not stabilize and attempts to run a continuous budget deficit would lead to escalating government debt. It should, though, be noted that if $g < r$, then any size of deficit will lead to escalating debt to GDP ratio, though obviously the build-up will be slower the smaller is the budget deficit. On the other hand, if $g > r$, then any size of budget deficit can be sustained. The limits on the budget deficit could then arise if the rate of interest on government borrowing rose with the size of the budget deficit. The impact of a budget deficit on the rate of interest may well depend on the purpose of the budget deficit. When the budget deficit is viewed in terms of "functional finance," that is the deficit is run for the purpose of securing a high level of economic activity and does so by absorbing the excess of private savings over investment, then the budget deficit need not put upward pressure on the rate of interest.

It can be agreed that the response to an increase in government expenditure (not matched by a change in taxation) would include a commensurate increase in savings. However, that increase in savings can come from a change in the level of income (the Keynesian view) or a change in savings behavior (the RET view). For a closed economy, $G - T = S - I$, and hence $S = G - T + I$. For simplicity assume that T and I are constant, then $s\Delta Y + \Delta sY = \Delta G$. The Keynesian emphasis is on ΔY, whereas the RET is on Δs (savings propensity rises as consumption propensity falls in the face of government expenditure and the prospect of future interest payments and taxation).

6. INSTITUTIONAL ASPECTS OF FISCAL POLICY

We have argued that fiscal policy appropriately applied does not lead to crowding out, and in that sense fiscal policy will be effective.[19] But there may be other causes that can produce ineffectiveness in fiscal policy. These other causes have been summarized above (see section 2) under the general title of "institutional aspects of fiscal policy." This section explores some of the issues which arise.

The first issue concerns what may be termed "model uncertainty": the operation of fiscal policy requires forecasts of the future course of the economy, and uncertainty over forecasts increases the difficulties of making decisions over fiscal policy. It increases the likelihood that fiscal policy would turn out to be inappropriate. Some have argued that in terms of model uncertainty, there is evidence that longer and more uncertain lags have prevailed recently than it was thought the case previously (Hemming, Kell, and Mahfouz 2002, p. 8). Model uncertainty is, of course, not new in economics and economic policy in particular. Friedman's (1959) notion of long and variable lags in monetary policy is perhaps the most well known. This clearly shows that long and variable lags are not a reflection of fiscal policy alone. Indeed many of the issues raised here would also apply to monetary policy: there may be model uncertainty, long and variables lags between policy announcement and effect there also. Indeed, monetary policy and fiscal policy both draw on the forecasts of macroeconometric models, and uncertainty over the models would apply with equal force to monetary policy as to fiscal policy. Further, monetary policy (in the form of interest rate decisions) involves frequent decision making (e.g. monthly for the Bank of England, every six weeks for the Federal Reserve) and attempts fine tuning. Fiscal policy, in contrast, typically involves infrequent decisions (often annual), and could be described as more like "coarse tuning."[20] It could be argued that the "fine tuning" nature of monetary policy means that it suffers more from problems of model uncertainty than does fiscal policy.

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[19] This is to recognize that an attempted fiscal expansion in the context of a fully employed economy would involve "crowding out" to some degree. The extent of the "crowding out" would depend on how far supply can respond to increase in demand, and even at what is regarded as full employment there can be some elasticity of supply (firms hold some excess capacity, there are "encouraged" worker effects etc.).

[20] This refers to discretionary fiscal policy: it could be said that the automatic stabilizers are operating all the time.

The second issue relates to the argument that fiscal policy is in practice pro-cyclical rather than counter-cyclical.[21] In particular, it has long been argued that the various lags of decision making, implementation and impact may mean that fiscal policy which is intended to stimulate the economy during a downturn may come into effect when the economy has already recovered (and similarly for fiscal policy designed for a boom period coming into effect when the economy has turned down). The strength of this argument depends on the relationship between the length of the business cycle and the lags of fiscal policy. For example, a four-year business cycle and a two-year fiscal policy lag would indeed lead fiscal policy being pro-cyclical.

The notion of the pro-cyclical nature of fiscal policy is justified by resort to arguments relating to the cumbersome parliamentary design, approval and implementation. We may actually distinguish between inside and outside lags in this context. Inside lags refer to the time it takes policy makers to appreciate that fiscal policy action is necessary and to make the required decisions. Clearly, inside lags depend on the political process and the effectiveness of fiscal management. Outside lags refer to the time that it takes for fiscal measures to affect aggregate demand (Blinder and Solow 1974). Discretionary policy measures, particularly when they involve policy departures, new forms of taxation and expenditure initiatives, are likely to be subject to long inside lags. Variations in tax rates and in social security benefits can potentially be made with relatively short inside lags.[22] But automatic stabilizers, by their nature, involve little by way of inside lags.

Outside lags are expected to be more variable than inside lags and would vary, depending on the fiscal measure utilized, on the institutional set-up of the economy in question and the period under investigation.

One difference between monetary policy and fiscal policy arises from the former being much less subject to democratic decision-making than the latter. Changes in tax rates require Parliamentary or Congressional approval; changes in interest rates do not. But long and variable outside lags may be a feature of monetary policy as much as (or more than) fiscal policy. The inside lags of fiscal policy could be substantially reduced by the adoption of a "fiscal policy rule" (Taylor 2000) analogous to a "monetary policy rule" (Taylor 1993). To the extent that this is the right rule (i.e. places much emphasis on full employment), there

[21] The operation of the "automatic stabilizers" provide a counter-cyclical component of fiscal policy. The pro-cyclical argument applies particularly to the discretionary changes in fiscal policy.

[22] This is not entirely true in that it may not be the case in all Parliamentary systems. In the UK for example, the fiscal measure of a change in the duty on alcohol, tobacco, petrol, etc. is made quickly and implemented within hours (often 6 p.m. on budget day). It is subject to retrospective approval by Parliament.

could be a role for such a rule; especially so if the rule relates to the fiscal stance, leaving the issue of composition of taxation and of public expenditure to be determined through the democratic process.

The third issue is the idea that fiscal policy may entail a "deficit bias." This may be due to a number of factors. Increasing taxes/decreasing government expenditure during upswings may be politically unrealistic. Alesina and Perotti (1995) refer to a number of institutional factors to explain the possibility of a deficit bias. Voters and policymakers may be unaware of the government's intertemporal budget constraint,[23] and as a result favor budget deficits; they may wish to shift the fiscal burden to future generations; policymakers may wish to limit the room of manoeuvre of future governments strategically in terms of fiscal policy; political conflicts may delay fiscal consolidation in terms of sharing the burden of adjustment among various social groups, thereby producing a deficit bias; spending decisions may be subjected to irreversibility, which can lead to a public expenditure ratcheting effect.

The presence of a deficit bias does not necessarily make fiscal policy any less effective, though it may constrain governments to engage in further deficit spending in the face of a recession.

It has been argued that large and persistent deficits may be a reflection of this deficit bias. But those deficits have to be measured against what is required. The persistence of unemployment in market economies suggests a general lack of aggregate demand, and hence a requirement for fiscal stimulus. Any tendency for savings to outrun investment also requires a budget deficit to mop up the excess net private savings. We can then distinguish those budget deficits which are required to sustain demand and to mop up excess savings to ensure desirable levels of economic activity, which we will call necessary deficits. In contrast, unnecessary budget deficits are that part of deficits which take economic activity too high (on some criteria such as beyond full employment). This distinction clearly implies that a bias in favor of necessary deficits is consistent with the argument advanced in this paper, whereas any bias towards unnecessary deficits are not.

The fourth issue arises from the notion that supply-side inefficiencies associated with tax-rate volatility are possible. This issue is strongly related to the way in which changes in taxes affect the supply of labor, and also changes in capital taxes affect saving and investment. These considerations are expected to have a significant impact to internationally

mobile labor and capital. However, ultimately these considerations depend heavily on the empirical evidence adduced on the impact of tax changes on the supply of labor and capital, and thereby on growth. This empirical issue, however, has yet to be validated. Such limited evidence that exists, has not yet provided clear-cut conclusions (see, for example, Blundell and MaCurdy 1999; Hemming, Kell, and Mahfouz 2002). A further comment worth making is this. Active monetary policy involves interest rate volatility (as compared with a passive monetary policy which changed interest rates infrequently, which would have supply-side inefficiencies. If fiscal policy is successful, then demand volatility is reduced, and demand volatility would generate supply-side inefficiencies in that the level of supply would be continually changing not to mention the inefficiency of excess capacity.

A final issue that belongs to the "institutional aspects" is the level and degree of economic development. It is the case that most of the literature on the effectiveness of fiscal policy has focused on developed countries. Agénor et al (1999) argue that because the developing world is more likely to be influenced by supply shocks, fiscal policy as a tool of demand management is most likely to be used far less frequently in developing than in developed countries. A supply shock, however, is often taken to mean a cost change (e.g. oil price), but that has a demand dimension to it (in case of oil imports change etc.). Clearly, a supply shock change cannot affect the level of economic activity unless it causes demand to change as well. Within the AS–AD model, an adverse shift in the AS curve can be offset in terms of economic activity by a shift in the AD—albeit at the expense of a higher price level (and leaving aside the question of how the supply side would be identified). In the case of developing countries, it may be that collection of taxation is more difficult etc., but it would also seem that there may be less call for fiscal deficits: if developing countries are characterized by low savings and high demand for investment, then S – I would be negative, and hence G – T would also be negative. This is the classic argument that governments in developing countries run surpluses in order to generate savings, which the private sector is unwilling or unable to undertake.

Even so, it is suggested that the availability and cost of domestic and external finance is a major constraint on fiscal policy. It follows that access to financing should determine to a large extent the size of the fiscal deficit. An increase in the fiscal deficit beyond a level that can only be financed on unacceptable terms may be associated with severe crowding out

[23] This appears to accept the intertemporal budget constraint as a reality, which may not be the case. In another paper (Arestis and Sawyer 2003b), we argue that that depends on whether the rate of interest is higher or lower than the rate of growth.

effects. Relaxing these constraints, therefore, enables fiscal policy to have significant stimulative effects (Lane et al 1999). An additional factor that enhances the effectiveness of fiscal policy in these countries is the relatively high marginal propensity to consume, which can increase the size of the impact of fiscal policy significantly. This analysis suggests that the deficit bias discussed above may be relatively higher in developing countries. In fact, Hemming, Kell, and Mahfouz (2002, p. 12) provide a list of the causes of the relatively high deficit bias in developing countries. Governance, as it relates to poor tax administration and expenditure management, is probably the most important and significant item on the list. In terms of the distinction drawn above, this would be "unnecessary" deficit bias.

7. QUANTITATIVE EFFECTS OF FISCAL POLICY

This section draws on published work on the empirics of fiscal policy. We do not offer our own empirical work but rely instead on already published evidence. We may distinguish between evidence adduced from developed and developing economies. This distinction is necessary partly for the reasons alluded to at the end of the last section, but also for reasons which have to do with data deficiencies in developing countries. For all these reasons there is rather less evidence on the short-run impact of fiscal policy for developing rather than for developed countries (Hemming, Kell, and Mahfouz 2002). We begin with the available evidence on developed countries.

Following Hemming, Kell, and Mahfouz (2002), we comment on three substantive components of the available evidence on developed countries. There are to begin with, estimates of dynamic multipliers that are designed to determine the possible empirical impact of fiscal policy on economic activity. These dynamic multipliers are derived from macroeconomic model simulations and small model calibrations, as well as reduced-form equations. Studies, which draw from specific episodes of fiscal contraction in an attempt to identify expansionary fiscal contractions, is the second category. The third category comprises of studies that attempt to assess the determinants of dynamic multipliers. Consequently, interest in this concentrates upon relationships between fiscal policy on the one hand, and other variables on the other, such as interest and exchange rates, investment, consumption, etc.

On the first issue, Hemming, Kell, and Mahfouz (2002) summarize the evidence adduced from these studies. It is suggested that short-term multipliers are positive, ranging from 0.1 to 3.1, with expenditure multipliers being in the range of 0.6 to 1.4, and tax

multipliers in the range of 0.3–0.8. Long-term multipliers are smaller than short-term multipliers, undoubtedly reflecting some form of crowding out. Another recent study (Hemming, Mahfouz, and Schimmelpfennig 2002) summarizes the argument along similar lines: "Estimates of fiscal multipliers are overwhelmingly positive but small. Short-term multipliers average around a half for taxes and one for spending, with only modest variation across countries and models (albeit with some outliers). There are hardly any instances of negative fiscal multipliers, the exception being that they can be generated in some macroeconomic models with strong credibility effects" (p. 4). Small model calibrations, essentially dynamic general equilibrium models that analyze steady-state long-run effects of fiscal policy, produce results that show output to respond positively to (unanticipated) increase in government expenditure (where permanent changes have larger effects than temporary changes). Reduced-form equation results are broadly similar.

On the second category of studies, Hemming, Mahfouz, and Schimmelpfennig (2002) examine fiscal policy during recessions in advanced countries to conclude that (1) fiscal policy during recessions in closed economies is effective but with a small fiscal multiplier; (2) fiscal policy is not so effective in open economies during recessions, especially when flexible exchange rates prevail; (3) fiscal expansions can be more effective when it is expenditure-based, big government, there is excess capacity, a closed economy or an open economy with a fixed exchange rate regime, and expansionary expenditure is accompanied by monetary expansion.[24] In terms of the determinants of fiscal multipliers, the third category identified above, Hemming, Kelly, and Mahfouz (2002) conclude that "There is little evidence of direct crowding out or crowding out through interest rates and and the exchange rate. Nor does full Ricardian equivalence or a significant partial Ricardian offset get much support from the evidence" (p. 36).

Finally, the evidence on developing countries is not dissimilar to that obtained for developed economies. If anything fiscal multipliers tend to be rather higher in the case of

[24] An interesting case that has been discussed in the literature (initiated by Giavazzi and Pagano 1990) is the case of Ireland and Denmark where, it is alleged, contractionary fiscal policy is associated with expansion in economic activity. We would dispute this result on the basis that it is other factors, which explained the expansion of economic activity; it is, thus, the expansion that enabled budget deficits to be smaller than otherwise. This is a classic case of "simultaneity bias" (Eichengreen 1998). Also, omitted variables may very well be responsible for the results obtained in these fiscal consolidation episodes. Exchange rate depreciations that normally accompany fiscal contractions may be more responsible for the expansion in economic activity rather than the fiscal action itself (Hemming, Kell, and Mahfouz 2002, p. 25). More specifically in the case of Ireland, Walsh (2002) argues that a number of factors contribute to the expansion, "a low exchange rate, the inflow of FDI to high productivity sectors, and wage moderation following the return to centralised wage agreements in 1987. Labor market reforms, including a tightening of the social welfare regime and a switch of spending from income support to active labor market policies, played a positive role" (p. 1).

developing rather than developed economies (see, for example, Hemming, Kelly, and Mahfouz 2002, p. 33).

The overall conclusion of this rather brief summary of the empirical evidence on the effectiveness of fiscal policy is encouraging. Fiscal multipliers and other tests tend to provide favorable evidence for fiscal policy. Especially so in view of the argument that in most, if not all, of the studies referred to in the studies that summarize the results reported in this paper, there is a long-run constraint built into the models utilized for the purposes of the empirical exercises. Such constraints, what we labeled above NAIRU constraints, by their very nature and definition contain substantially the long-run values of the fiscal multipliers.

8. SUMMARY AND CONCLUSIONS

We have argued in this paper that shifts in the level of aggregate demand can be readily offset by fiscal policy. Consequently, fiscal policy remains a powerful instrument of regulating the level of aggregate demand. Fiscal policy "can and should be called upon as a key part of the remedy" when the economy needs aggregate demand boosting, and "when the economy's resources are underutilized" (Fazzari 1994–95, p. 247). Even when the economy's resources are fully utilized, we would still argue that to the extent fiscal policy can affect the capital stock of the economy (Arestis and Biefang-Frisancho Mariscal 2000), it can also have long and lasting effects in this case.

REFERENCES

Agénor, P-R., McDermott, C. J. and Prasad, E. S. 1999. "Macroeconomic Fluctuations in Developing Countries: Some Stylized Facts." *IMF Working Paper 99/35.* Washington D.C.: International Monetary Fund.

Alesina, A. and Perotti, R. 1995. "The Political Economy of Budget Deficits." *Staff Papers* 42(2): 1–31. Washington D.C.: International Monetary Fund,

Arestis, P. and Biefang-Frisancho Mariscal, I. 2000. "Capital Stock, Unemployment and Wages in the UK and Germany." *Scottish Journal of Political Economy* 47(5): 487–503.

Arestis, P. and Sawyer, M. 1998. "Keynesian Policies for the New Millennium," *Economic Journal* 108: 181–195.

———. 2002a. "The Bank of England Macroeconomic Model: Its Nature and Implications." *Journal of Post Keynesian Economics* 24(4): 529–545.

———. 2002b. "Can Monetary Policy Affect the Real Economy?" Working Paper No. 355. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.

———. 2002c. "Does the Stock of Money Have Any Significance?" Working Paper No. 363. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.

———. 2003a. "On the Effectiveness of Monetary Policy and Fiscal Policy." Working Paper No. 369. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.

———. 2003b. "The Case for Fiscal Policy." Working Paper, Forthcoming. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.

Barro, R. J. 1974. "Are Government Bonds Net Wealth?" *Journal of Political Economy* 82: 1095–1117.

———. 1989. "The Ricardian Approach to Budget Deficits." *Journal of Economic Perspectives* 3(2): 37–54.

Blanchard, O. J. 1985. "Debt, Deficits and Finite Horizons." *Journal of Political Economy* 93: 223–247.

Blinder, A. and Solow, R. 1974. "Analytical Foundations of Fiscal Policy." In A. Blinder et al, eds. *The Economics of Public Finance: Essays.* Washington, D.C.: The Brookings Institution.

Blundell, R. and MaCurdy, T. 1999. "Labor Supply: A Review of Alternative Approaches." in O. Ashenfelter and D.Card, eds. *Handbook of Labor Economics Vol. 3A.* Amsterdam and New York: Elsevier.

Caballero, R. and Pyndick, R. S. 1996. "Uncertainty, Investment, and Industry Evolution." *International Economic Review* 37(3): 641–662.

Chirinko, R. S. 1993. "Business Fixed Investment Spending: A Critical Survey of Modeling Strategies, Empirical Results, and Policy Implications." Research Working Paper 93–01. Federal Reserve Bank of Kansas City.

Clarida, R., Gali, J. and Gertler, M. 1999. "The Science of Monetary Policy: A New Keynesian Perspective." *Journal of Economic Literature* 37(4): 1661–1707.

Cunningham, S. R. and Vilasuso, J. 1994–95. "Is Keynesian Demand Management Policy Still Viable?" *Journal of Post Keynesian Economics* 17(2): 231–248.

DeLong, J. B. and Summers, L. 1986. "Is Increased Price Flexibility Stabilizing?" *American Economic Review* 76: 1031–1044.

Eichengreen, B. 1998. "Comment on 'The Political Economy of Fiscal Adjustments'." *Brookings Papers on Economic Activity 1:* 255–262. Washington: Brookings Institution.

Fazzari, S. M. 1993. "Working Capital and Fixed Investment: New Evidence in Financing Constraints." *Rand Journal of Economics* 24(3): 328–342.

———. 1994–95. "Why Doubt the Effectiveness of Keynesian Fiscal Policy." *Journal of Post Keynesian Economics* 17(2): 231–248.

Fisher, I. 1933. "The Debt-Deflation Theory of Great Depressions." *Econometrica* 1: 337–357.

Friedman, M. 1959. *A Programme for Monetary Stability. The Milar Lectures.* New York: Fordham University Press.

Giavazzi, F. and Pagano, M. 1990. "Can Severe Fiscal Contractions be Expansionary? Tales of Two Small European Countries." In O. J. Blanchard and S. Fischer, eds. *NBER Macroeconomics Annual 1990.* Cambridge, Mass.: MIT Press.

Godley, W. 1999. "Seven Unsustainable Processes: Medium-Term Prospects and Policies for the United States and the World." *Special Report.* Annandale-on-Hudson, N.Y.: The Levy Economics Institute.

———. 2001. "Fiscal Policy to the Rescue." *Policy Note No.* 1. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.

Godley, W. and McCarthy, G. 1997. "Fiscal Policy Will Matter." Challenge 41 (1): 38–54.

Gordon, D. 1994. "Must We Save Our Way out of Stagnation? The Investment/Saving Relation Revisited." Mimeo. New York: New School for Social Research.

Hemming, R., Kell, M. and Mahfouz, S. 2002. "The Effectiveness of Fiscal Policy in Stimulating Economic Activity: A Review of the Literature." *IMF Working Paper 02/208.* Washington D.C.: International Monetary Fund.

Hemming, R., Mahfouz, S. and Schimmelpfennig, A. 2002. "Fiscal Policy and Economic Activity in Advanced Economies." *IMF Working Paper 02/87.* Washington, D.C.: International Monetary Fund.

Keynes, J. M. 1930. *Treatise on Money.* London: Macmillan (page references refer to *The Collected Writings of John Maynard Keynes* V. London: Macmillan.

———. 1936. *The General Theory of Employment, Interest and Money*, London: Macmillan.

Lane, T. D., Ghosh, A., Hamann, J., Phillips, S., Schulze-Ghattas, M. and Tsikata, T. 1999. "IMF-Supported Programs in Indonesia, Korea, and Thailand: A Preliminary Assessment." *IMF Occasional Paper No. 178.* Washington, D.C.: International Monetary Fund.

Mankiw, G. N. 2000. "The Savers-Spenders Theory of Fiscal Policy." *American Economic Review* 90(2): 120–125.

———. 2002. "U.S. Monetary Policy During the 1990s." In *American Economic Policy in the 1990s*. Boston, Mass.: MIT Press.

Mankiw, G. N. and Summers, L. H. 1984. "Do Long-Term Interest Rates Overreact to Short-Term Interest Rates?" *NBER Working Paper* No. 1345. Cambridge, Mass.: National Bureau of Economic Research.

McCallum, B. T. 2001. "Monetary Policy Analysis in Models Without Money." *Federal Reserve Bank of St. Louis Review* 83(4): 145–160.

Meyer, L. H. 2001. "Does Money Matter?" *Federal Reserve Bank of St. Louis Review* 83(5): 1–15.

Miller, M., Skidelsky, R. and Weller, P. 1990. "Fear of Deficit Financing—Is It Rational?" In R. Dornbusch and M. Draghi, eds. *Public Debt Management: Theory and History.* Cambridge and New York: Cambridge University Press. 293–310.

Minsky, H. P. 1975. *John Maynard Keynes.* New York: Columbia University Press.

———. 1982. *Can "It" Happen Again? Essays on Instability and Finance.* Armonk, N.Y.: M.E. Sharpe.

———. 1991. "Financial Crises: Systemic or Idiosyncratic?" Working Paper No.51. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.

Taylor, J. B. 1993. "Discretion Versus Policy Rules in Practice." *Carnegie-Rochester Conference Series in Public Policy* 38: 195–214.

———. 2000. "Reassessing Discretionary Fiscal Policy." *Journal of Economic Perspectives* 14(3): 21–36.

Tobin, J. 1993. "Price Flexibility and Output Stability: An Old Keynesian View." *Journal of Economic Perspectives* 7: 45–66.

Walsh, B. M. 2002. "When Unemployment Disappears: Ireland in the 1990s." *CESIFO Working Paper No. 856*, Category 4: Labor Markets (December).