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Abstract

The effects of budget deficits financed by taxing corporate and personal incomes are compared and contrasted. Households are finitely lived, as in Blanchard (1985), so that transfers and taxes on personal incomes are discounted at a higher rate than the interest on government debt. However, as corporations are infinitely lived, taxes on corporations are discounted at the same rate as the interest on government debt. Thus, unanticipated deficits financed by taxing corporate incomes are neutral. In a small open economy, anticipated deficits financed by taxing corporations lead to a current account surplus, as transfers are then discounted at a higher rate than the taxes. Tax reforms involving shifting taxes from personal incomes to corporate incomes lead to a current account surplus.

1 I would like to thank Neil Bruce, Douglas Purvis, and especially Michael Devereux for very helpful comments, and the Social Sciences and Humanities Research Council of Canada for financial support. All errors are mine alone.

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Introduction

The tax reforms in the United States in 1986, when there was a large shift in taxes from personal incomes to corporate incomes, was a reminder that a sizeable proportion of government revenues is raised by taxing the ownership of capital. Although in the Finance literature a great deal of attention has been given to the effects of taxes on corporations on asset prices, in the literature on the effects of budget deficits not enough attention has been given to the effects of deficits financed by taxing corporate incomes. However, as pointed out by Mundell (1960), budget deficits financed by taxing corporate incomes could have very different effects from deficits financed by taxing personal incomes. In this paper we compare and contrast deficits financed by taxing corporate incomes with deficits financed by taxing personal incomes in a small open economy. The effects of tax reforms involving shifts in taxes from personal incomes to corporate incomes are also studied.

Mundell argued that, as corporations have access to perfect capital markets, taxes on corporate incomes will be discounted at the same rate as the interest on government debt. Thus, budget deficits financed by taxing corporations will have no effect on wealth. Mundell also argued that households have access to imperfect capital markets. Thus, taxes on personal incomes will be discounted at a higher rate than the interest on government debt. Thus, deficits financed by taxing personal incomes should increase wealth.

In this paper we use an explicit optimising framework to contrast the effects of budget deficits financed by taxing corporate and personal incomes. In this framework we establish the truth of some of Mundell's conjectures. In our model households have finite planning horizons, as in Blanchard (1985), while firms are infinitely lived. The fact that firms are infinitely lived implies that taxes on corporate incomes are discounted at the same rate as the interest on government debt. Therefore, unanticipated deficits financed by taxing corporate incomes are neutral. However, as in Blanchard, households face a constant probability of death throughout their lives, which means that taxes on personal incomes are discounted at a higher rate than the interest on government debt. Thus, unanticipated deficits financed by taxing personal incomes increase wealth and aggregate expenditure, causing a current account deficit.

In this setting the way in which the government decides to finance an anticipated deficit is especially important because the effect of an anticipated deficit on aggregate wealth will be positive or negative depending on how it is financed. If the anticipated deficit is financed by taxing personal incomes, then when the policy is announced there will be an increase in wealth and expenditure, causing a current account deficit, as future taxes are discounted at a higher rate than the interest on government debt. However, if the anticipated deficit is financed by taxing corporate incomes, then at the time the policy is announced aggregate wealth and expenditure will *fall*, for the following reason. As taxes on corporations are discounted at the same rate as the interest on government debt, the present value of the taxes is equal to the value of the transfers as of the time that the policy is carried out. However, when the policy is announced households are not sure that they will survive to collect the transfers. Thus, they discount the transfers at a higher rate than the market rate of interest. In contrast, taxes will be discounted at the market rate of interest. This then means that at the time the policy is announced aggregate wealth and expenditure will fall, causing a current account surplus. This result, that an anticipated deficit could cause a fall in wealth, is in sharp contrast to the conventional views about anticipated deficits in finite horizon models, as emphasized by various authors, including Feldstein (1983,1986).

The fact that taxes on corporations are discounted at a lower rate than taxes on personal incomes means that a tax reform involving a shift in taxes from personal incomes to corporate incomes will result in a fall in wealth and aggregate expenditure, causing a current account surplus. This kind of tax reform is of special interest because of the reforms in the U.S. in 1986, and the current speculation that Canadians may follow suit.

The model is presented in Section II. The effects of deficits and tax reforms are studied in Section III. Some concluding remarks are made in Section IV.

II. The Model

In this section we describe a small open economy that takes the world rate of interest, r^*, as given. For such a small open economy we can take the capital stock as fixed for the following reason. We assume that there are competitive firms that have planning horizons which are infinite. Then, with the interest rate fixed, the optimal steady state stock of capital of these firms will be fixed. As the policy experiments that we carry out involve only lump sum taxes on corporations, these policies will not affect the stock of capital in the economy.[2]

The household side of the model is similar to Blanchard's (1985). Time is continuous, and at any instant a large cohort, whose size is normalised to π, is born. π is the constant probability of death that agents face throughout their lives. As π is constant, the expected remaining life of an agent of any age is given by $\int_0^\infty te^{-\pi t}\,dt = \pi^{-1}$, and a cohort born at time zero has a size, as of time t, of $\pi e^{-\pi t}$. Thus, the size of the population at any time t is $\int_{-\infty}^{t} \pi e^{-\pi(t-s)}\,ds = 1$. There is no bequest motive and that negative bequests are prohibited. As large numbers of agents are born at any instant, we follow Blanchard and assume that there will be life insurance companies which will contract to take over agents' wealth (positive or negative) upon their death in return for a fee. Perfect competition and free entry will ensure that the life insurance contracts that are offered are fair. As agents leave no human wealth on their death, this means that agents with non-human wealth a(t) at time t will contract to recieve $\pi a(t)$ if they do not die, and to leave a(t) if they die.

We assume that agents are endowed with L units of labour, which they supply throughout their lives. As we have normalised the size of the population to unity, the supply of labour in the economy at any moment in time is L. We assume that the total amount of capital in the economy is K.

There is one perishable good in the model, produced using labour and capital according to a linear homogeneous production function:

$$y = F(L,K),$$

[2] In an interesting paper, Matsuyama (1987) also assumes that firms in the economy have planning horizons that are infinite, while households have planning horizons that are finite. Matsuyama is, however, not concerned with the effects of budget deficits or tax reforms, but with the effects of an increase in the price of an imported intermediate input on the current account.

where y is output produced.[3] If w is the wage rate and r_K the return to capital, then with perfect competition we will have $w = F_L(L,K)$, and $r_K = F_K(L,K)$.

There are two kinds of assets in the economy. There are internationally traded bonds, whose price is fixed at unity, and which have a fixed rate of return of r^*. There are also titles to capital. We assume that the titles to capital are not internationally traded, but that agents can issue bonds and sell them abroad if they wish.

Let q(t) be the price of a title to a unit of capital at time t, $r_K(t)$ the return to capital at time t, and $\tau_K(t)$ the tax that the holder of a title to a unit of capital has to pay at time t. Then, the arbitrage condition

$$\dot{q}(t) = r^* q(t) - r_K(t) + \tau_K(t) \tag{1}$$

ensures that agents cannot make profits or losses by selling their titles to capital, investing the proceeds in bonds, and using the returns on the bonds to rebuy the titles an instant later. Note that, as τ_K is a tax on the ownership, not usage, of capital, it does not cause any production distortion. Also note that we would get the same result if we instead imposed a lump sum tax on the infinitely lived corporations. In that case the amount of capital in the economy would not change, but the dividend payments would fall.

(1) then implies that $\int_t^\infty \dot{q}(v)\, e^{-\int_t^v r^* d\mu} dv = \int_t^\infty [r^* q(v) - r_K(v) + \tau_K(v)]\, e^{-\int_t^v r^* d\mu} dv$, which gives

$$q(t) = \int_t^\infty [r_K(v) - \tau_K(v)]\, e^{-\int_t^v r^* d\mu}\, dv. \tag{2}$$

Thus, wealth held in the form of titles to capital is equal to the stream of future net incomes from capital discounted at the market rate of interest. Note that this result will emerge only if we assume that firms are infinitely lived. If firms in the economy are only finitely lived then the value of their equities will be the discounted value of the net returns to capital, where the discount rate will be higher than r^*. Or, alternatively, with finitely lived firms the integral in (2) will not go until infinity.

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[3] For simplicity here we assume that capital does not depreciate. If it depreciated at the rate of δ, say, then we could replace F(L,K) by $F(L,K) - \delta K$.

From (2) we can see that the market's valuation of the titles to the country's capital stock is such that future taxes on capital are discounted at the rate of interest on government debt. This means that if unanticipated deficits are financed by taxing corporate incomes then Ricardian equivalence will hold even though households have finite planning horizons.

Let c(s,v) denote the consumption level of an agent born at time s, as of time v. Then, if we assume that the instantaneous utility function is logarithmic, the agent's objective function at time t will be

$$E_t\left[\int_t^{\infty} [\log\ c(s,v)] e^{\theta(t-v)}\, dv\right], \quad \theta \geq 0.$$

With constant π, this reduces to

$$\int_t^{\infty} [\log\ c(s,v)]\, e^{(\pi+\theta)(t-v)}\, dv. \tag{3}$$

Now let a(s,t) be the total financial wealth of the same individual at time t, b(s,t) his net bond holdings, and k(s,t) the number of his titles to capital. Also, let $\tau_L(t)$ be the tax on labour. Then we will have a(s,t) = b(s,t) + q(t) k(s,t) and the dynamic budget constraint of the agent will be

$$\begin{aligned} \dot{a}(s,t) = \pi[b(s,t) + q(t)\, k(s,t)] + \dot{q}(t)\, k(s,t) + r^{*}\, b(s,t) + r_K(t)\, k(s,t) + w(t)\, L \\ - \tau_K(t)\, k(s,t) - \tau_L(t)\, L - c(s,t), \end{aligned} \tag{4}$$

which is obtained as follows. If the agent has b(s,t) number of bonds and titles to k(s,t) units of capital then he will recieve π[b(s,t) + q(t) k(s,t)] from the insurance company, an interest of r^{*} b(s,t) on his bonds, and $r_K(t)$ k(s,t) on his capital. He will also have a labour income of w(t)L, and capital gains of $\dot{q}(t)k(s,t)$. He will also have to pay a tax of $\tau_L(t)$ L on his labour earnings, and $\tau_K(t)$ k(s,t) on his capital. The change in his wealth at time t will then be this net income less his expenditure at time t (c(s,t)), which is given by the right hand side of (4).

In addition to (4), the agent has to satisfy the transversality condition

$$\lim_{v\to\infty} e^{-\int_t^{v}(r^{*}+\pi)d\mu} a(s,v) = 0, \tag{5}$$

which ensures that he does not go on borrowing without bound.

If we use (1) and the fact that $a(s,t) = b(s,t) + q(t)\,k(s,t)$, then we can write (4) as

$$\dot{a}(s,t) = (r^* + \pi)\,a(s,t) + w(t)\,L - \tau_L(t)\,L - c(s,t). \tag{6}$$

(5) and (6) then imply that we can write the agent's budget constraint as

$$\int_t^{\infty} c(s,v)\, e^{-\int_t^{\infty}(r^* + \pi)d\mu} dv = h(s,t) + a(s,t), \tag{7}$$

where $h(s,t)$ is the agent's human wealth at time t and is given by

$$h(s,t) = \int_t^{\infty} [w(v) - \tau_L(v)]\, L\, e^{-\int_t^{v}(r^* + \pi)d\mu} dv. \tag{8}$$

Thus, human wealth is the present value of future labour incomes, discounted at the rate of interest plus the probability of death. This mean that, as agents have finite planning horizons, taxes imposed on labour are discounted at a higher rate than the rate of interest on government debt. Thus, budget deficits financed by taxing labour will be expansionary, which is the usual Ricardian non-equivalence result.

The agent's problem then is to maximise (3) subject to (7) by choosing an optimal sequence of consumption levels. It is easy to show that this programme gives

$$c(s,t) = (\pi + \theta)[a(s,t) + h(s,t)]. \tag{9}$$

In order to get the aggregate expenditure in the economy, $C(t)$, multiply (9) by the size of the cohort born at time s (that is, by $\pi e^{\pi(t-s)}$), and integrate over s to get

$$C(t) = (\pi + \theta)[A(t) + H(t)], \tag{10}$$

where $A(t)\left(= \int_{-\infty}^{t} a(s,t)\,\pi\, e^{\pi(t-s)} ds\right)$ and $H(t)\left(= \int_{-\infty}^{t} h(s,t)\,\pi\, e^{\pi(t-s)} ds\right)$ represent aggregate financial and human wealth at time t, respectively. Note that $A(t) = B(t) + q(t)\,K$, where $B(t)$ is the net foreign asset position of the economy. Moreover,

$$\dot{A}(t) = \pi\, a(t,t) - \pi\, A(t) + \int_{-\infty}^{t} \dot{a}(s,t)\, \pi\, e^{\pi(t-s)} ds, \tag{11}$$

where $\pi a(t,t)$ is the financial wealth of the newly born, which is equal to zero, $\pi A(t)$ is the wealth of those who die, and $\int_{-\infty}^{t} \dot{a}(s,t)\, \pi\, e^{\pi(t-s)} ds$ is the change in the financial wealth of those who stay alive.

Using (4) in (11), we get

$$\dot{A}(t) = r^{*} B(t) + r_K(t)\, K + w(t)\, L + \dot{q}(t)\, K - \tau_K(t)\, K - \tau_L(t)\, L - C(t). \tag{12}$$

Now note that $\dot{A}(t) = \dot{B}(t) + \dot{q}(t)\, K$, which means that (12) can be written as

$$\dot{B}(t) = r^{*} B(t) + r_K'(t)\, K + w(t)\, L - \tau_L(t)\, L - \tau_K(t)\, K - C(t). \tag{13}$$

Thus, the private sector accumulates bonds if its net income is greater than its aggregate expenditure.

Also note that the evolution of aggregate human wealth is given by

$$\begin{aligned} \dot{H}(t) &= \frac{d}{dt}\left[\int_{-\infty}^{t}\left[\int_{t}^{\infty} [w(v) - \tau_L]\, L\, e^{-\int_t^v (r^{*}+\pi)d\mu} dv\right] \pi e^{\pi(s-t)} ds\right] \\ &= -\,[w(t) - \tau_L(t)]\, L + (r^{*} + \pi) H(t). \end{aligned} \tag{14}$$

Now, from (10) we have

$$\dot{C}(t) = (\pi + \theta)\big[\dot{A}(t) + \dot{H}(t)\big]. \tag{15}$$

Thus, substituting for $\dot{A}(t)$ and $\dot{H}(t)$ from (12) and (14) into (15) and using (1), we can show that

$$\dot{C}(t) = (r^{*} - \theta) C(t) - \pi(\pi + \theta)[B(t) + q(t)K]. \tag{16}$$

Now consider the government side of the model. The government needs an amount G(t) for its consumption at time t. Let D(t) be the amount of government debt outstanding. Then the government's dynamic budget constraint will be

$$\dot{D}(t) = r^{*} D(t) + G(t) - \tau_L(t) L - \tau_K(t) K. \tag{17}$$

The government also has to satisfy the transversality condition

$$\lim_{v \to \infty} e^{-\int_t^v r^{*} d\mu} D(v) = 0. \tag{18}$$

(17) and (18) then imply that

$$D(t) = \int_t^{\infty} G(v) e^{-\int_t^v r^{*} d\mu} dv - \int_t^{\infty} (\tau_K(v) K + \tau_L(v) L) e^{-\int_t^v r^{*} d\mu} dv.$$

That is, the government's debt should be equal to the present value of its expenditures less the present value of its taxes.

To make the analysis as simple as possible we assume that the government chooses $\tau_L(t)$ and $\tau_K(t)$ so as to keep its debt at a constant level. Also, we assume that initially government debt is zero, and that G(t) is fixed at a constant level G. With these assumptions the evolution of the system will be given by equations (1), (13), and (16). Note that if in addition we assume that the tax rates are expected to stay constant at the levels τ_L and τ_K, then $\dot{q}(t)$ will be zero for all t, and we will have $q(t) = \frac{(r_K - \tau_K)}{r^{*}}$ for all t. In that case the evolution of the system will be described completely by equations (13) and (16) only. Figure (1) shows the equilibrium of the economy in this case for the case when $\theta > r^{*}$. The $\dot{B} = 0$ and $\dot{C} = 0$ are given by

$$\begin{aligned} (\dot{B} =)\ \ 0 &= r^{*} B(t) + r_K K + w L - \tau_L(t) L - \tau_K(t) K - C(t), \text{ and} \\ (\dot{C} =)\ \ 0 &= (r^{*} - \theta) C(t) - \pi(\pi + \theta)[B(t) + q(t) K], \end{aligned} \tag{19}$$

respectively. In the case where $\theta < r^{*}$ the $\dot{C} = 0$ locus will be upward sloping, but it will be steeper than the $\dot{B} = 0$ locus for stability.

III. The Effects of Budget Deficits and Tax Reforms

In this section we consider the effects of budget deficits and tax reforms. As we saw in the previous section, taxes on corporations are discounted at the same rate as the interest on government debt, while taxes on labour income are discounted at a higher rate. As taxes on corporations and on labour are discounted differently, the way in which the government chooses to finance is deficit becomes important. In this framework we get results that are similar to Mundell's.

First consider the effect of an unananticipated deficit financed by taxing capital. For convenience, suppose we choose units so that $L = K = 1$. Then we can think of the government issuing D number of bonds and increasing τ_K by r^*D. From (19), we can see that this policy will not shift the $\dot{C} = 0$ or the $\dot{B} = 0$ loci, as $dB = D$ and $d\tau_K = r^*D$. Thus, the equilibrium of the economy will be unaffected by the policy. The reason for this is that, as the rate of discount for discounting future taxes on capital is equal to the rate of interest on government bonds, with this policy the value of the assets in the economy falls by exacly the same amount as the government debt issue. Thus, aggregate wealth is unaffected by deficits financed by taxing capital ownership. This was also emphasized by Mundell. In Mundell's case, taxes on corporations were being discounted at the same rate as the interest on government debt because corporations had access to perfect capital markets. In the present framework, on the other hand, the result comes about because corporations are infinitely lived.

Now consider an unanticipated deficit financed by taxing labour. As $dB = D$ and $d\tau_L = r^*D$, the $\dot{B} = 0$ will not shift, but the $\dot{C} = 0$ locus will shift horizontally by -D. Then, as shown in Figure (2), the short run equilibrium will shift from E_0 to E_1, and then the economy will move along the new saddle path towards the long run equilibrium at E_2. As taxes on labour are discounted at a higher rate than the interest on government debt, deficits financed by taxing labour income increase net wealth and aggregate expenditure in the short run. The country will run a current account deficit, which will reduce the steady state level of expenditure. Again, it is instructive to compare this result with Mundell's. In Mundell's model deficits financed by taxing personal income were expansionary because households had access to imperfect capital markets. In our model, however, it is because agents have finite planning horizons, and they do not expect to pay all the taxes that are going to be levied on labour in the future.

Now consider the effects of shifting taxes from labour to capital. This is of special interest because of the tax reforms in the United States in 1986, where taxes were shifted from personal incomes to corporate incomes. There is also some speculation that Canadians may follow suit.

Note that if $d\tau_L = -d\tau_K$ then, from (19) the $\dot{B} = 0$ locus will not shift, while the $\dot{C} = 0$ locus will shift horizontally by $\frac{d\tau_K}{r^*}$, as shown in Figure (3). Thus, the short run equilibrium will shift from E_0 to E_1, and the economy will move along the new saddle path towards the long run equilibrium at E_2. As future taxes on capital are discounted at a lower rate than future taxes on labour, the tax reform has the effect of reducing wealth. Thus, aggregate expenditure falls, and the country runs a current account surplus, which raises aggregate expenditure in the long run.[4]

We now turn to the effects of anticipated deficits. The way in which the government decides to finance these deficits is especially important here because the effects of the deficit on current expenditure can be positive or negative, depending on how it is financed. Consider the effect of an anticipated deficit financed by taxing labour. As we have already seen, when the policy is actually carried out the $\dot{B} = 0$ locus remains unaffected, but the $\dot{C} = 0$ locus shifts to the left, as shown in Figure (4). At the time of the announcement of the deficit (t_0) the short run equilibrium will shift from E_0 to E_1, and the economy will move along an unstable trajectory such that at the time the deficit is incurred the economy hits the new saddle path SS. In the long run aggregate expenditure will be lower because during the adjustment period the economy will be running a current account deficit. The reason for the initial increase in aggregate expenditure is that future taxes are discounted at a higher rate than the interest on government bonds, so that anticipated deficits financed by taxing labour are expansionary. This is the conventional view about anticipated deficits that has been emphasized by variour authors, including Feldstein (1983,1986).

In striking contrast to the conventional views about anticipated deficits in finite horizon models, anticipated deficits financed by taxing corporations *reduce* wealth and current expenditure. To see this suppose the government decides to incur a debt of D at time t_1 and to finance this by imposing a tax of r^*D on capital. The present value of the taxes will then be equal to

$$\left(\int_{t_0}^{t_1} e^{-\int_{t_0}^{v} r^* d\mu} dv\right)\left(\int_{t_1}^{\infty} r^* D\, e^{-\int_{t_1}^{v} r^* d\mu} dv\right) = D\int_{t_0}^{t_1} e^{-\int_{t_0}^{v} r^* d\mu} dv,$$

---

[4] Note that this is contrary to the experience of the U.S.. which has been running a large current account deficit since 1986. One could, however. argue that the main cause of the U.S. current account deficit is the large U.S. budget deficit.

while the present value of the transfers, to be given to agents alive at time t_1, will be

$$D\int_{t_0}^{t_1} e^{-\int_{t_0}^{v}(r^* + \pi)\,d\mu}\,dv.$$

As $\int_{t_0}^{t_1} e^{-\int_{t_0}^{v} r^*\,d\mu}\,dv \;>\; \int_{t_0}^{t_1} e^{-\int_{t_0}^{v}(r^* + \pi)\,d\mu}\,dv$, the effect of the anticipated deficit is to reduce wealth and expenditure in period t_0. Note that the present value of both taxes and transfers, as of time t_1, are D. However, from time t_1 to time t_0 the taxes are being discounted at a lower rate than the transfers, because households are not sure that they will survive to collect the transfers. Thus, wealth and aggregate expenditure at time t_0 falls.

The dynamic adjustment of the economy in response to an anticipated deficit financed by taxing corporate incomes is shown in Figure (5). As we have already seen, this policy will not affect the long run equilibrium, so that in the long run the economy will be at the original equilibrium E_0. However, this policy has the effect of reducing aggregate wealth and expenditure at time t_0 . Thus the short run equilibrium shift from E_0 to E_1 . Moreover, from (2) we can see that the effect of the increase in future taxes on capital is to reduce $q(t_0)$, which means that the at time t_0 the $\dot{C} = 0$ locus will shift to the right. In Figure (5) this is shown as the shift from $\dot{C}_1 = 0$ to $\dot{C}_2 = 0$. Thus, the short run equilibrium at E_1 will lie on an unstable trajectory. Also, from (2) we can see that as we get closer to the time when taxes have to be levied, the value of titles to the country's capital stock will fall. Thus, over time, the $\dot{C} = 0$ locus will be shifting out, until time t_1, when it will shift back to $\dot{C}_1 = 0$. The economy will move along an unstable trajectory from E_1 as shown in Figure (5). When the future deficit is announced wealth falls and the country runs a current account surplus. Then, over time, as we get closer to the time when the transfers are going to be paid, wealth will be rising, because agents will be more likely to survive to collect the transfers. Thus, over time aggregate expenditure will be rising, which will tend to reduce, and then reverse, the current account surplus. The economy hits the new saddle path, SS_1, at t_1. Thus, a current account surplus will be followed by a deficit. The result that an anticipated deficit financed by taxing corporate incomes will lead to a loss of wealth and a current account surplus is in sharp contrast to the conventional view about anticipated deficits in finite horizon models emphasized by, for example, Feldstein (1983, 1986).

IV. Conclusions

In this paper we have compared and contrasted budget deficits financed by taxing corporate incomes with deficits financed by taxing personal incomes. We have also studied the effects of tax reforms involving shifts in taxes from personal incomes to corporate incomes. We have shown that if corporations are infinitely lived, taxes on corporations will be discounted at the same rate of interest as the interest on government debt. Then, unanticipated deficits financed by taxing corporate incomes will be neutral, even though households have finite planning horizons. Also, in sharp contrast to the conventional views about anticipated deficits in finite horizon models, we have shown that in a small open economy anticipated deficits financed by taxing corporate incomes lead to a loss of wealth and a current account surplus. This was because taxes were then discounted at a lower rate than the transfers, the households at the time the policy is announced being uncertain whether they would survive to collect the transfers. Also, as households had finite planning horizons, taxes on personal incomes were discounted at a higher rate than taxes on corporations. This meant that a tax reform involving a shift in taxes from personal incomes to corporate incomes would result in a loss of wealth, reducing aggregate expenditure and leading to a current account surplus.

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FIGURE 1

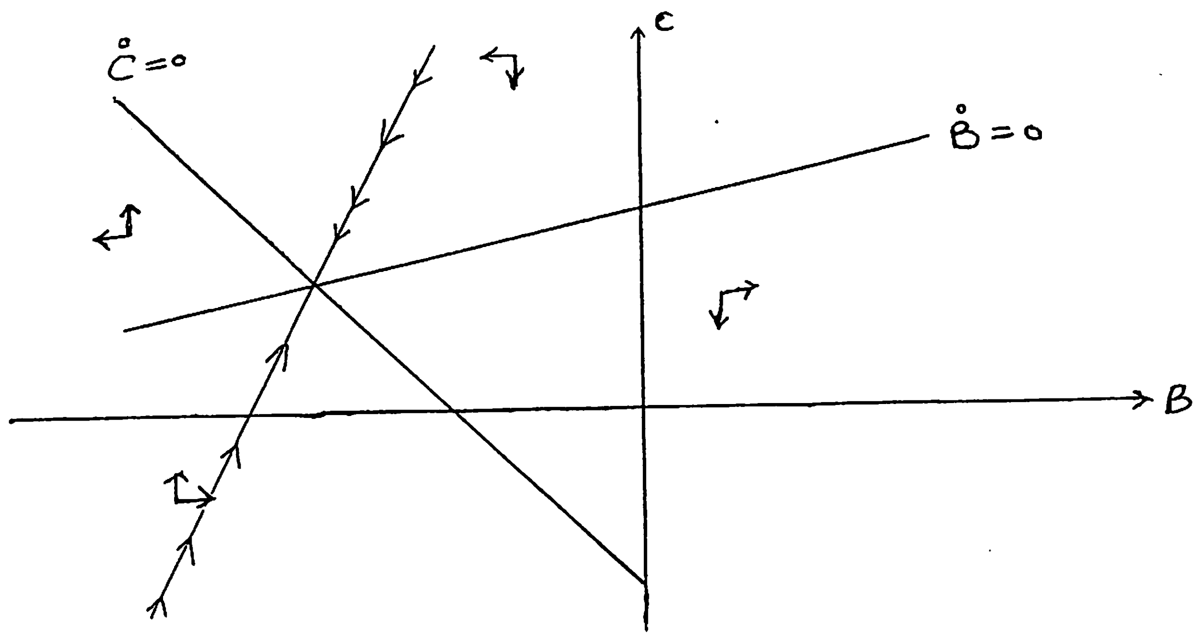

FIGURE 2

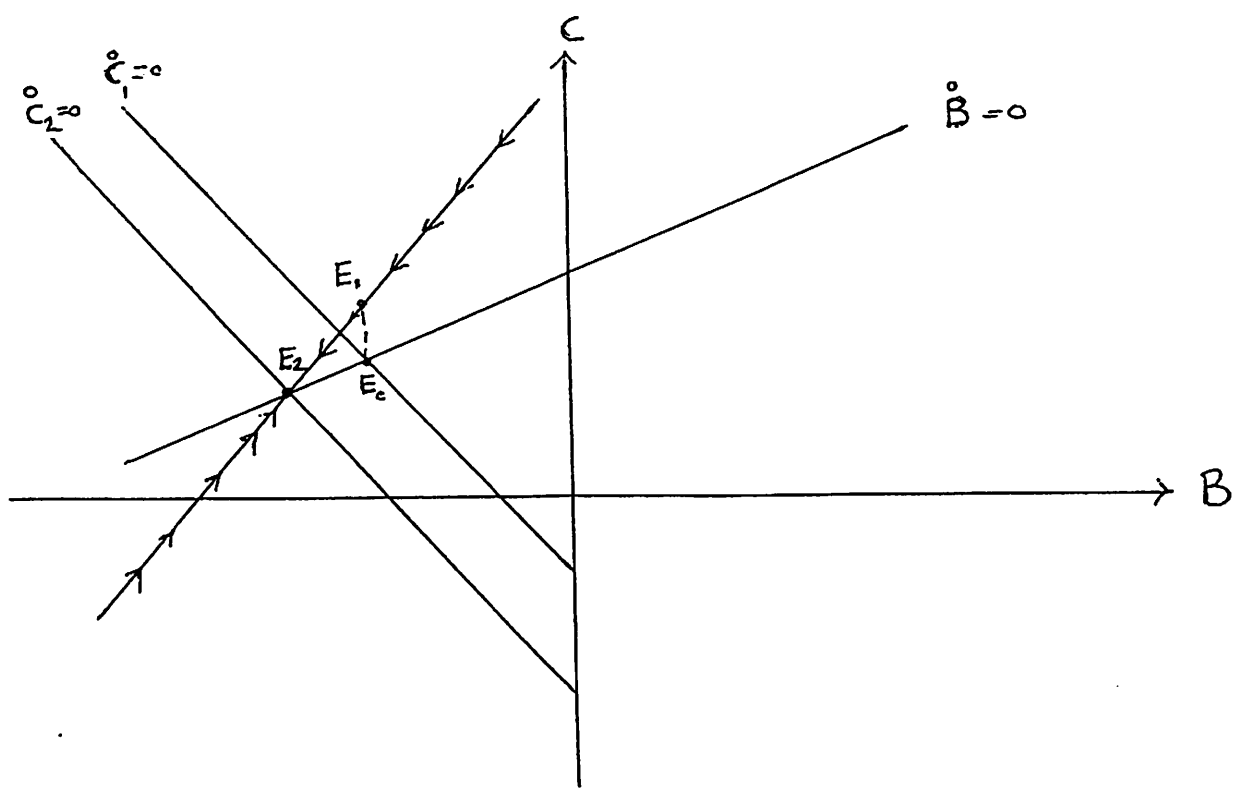

FIGURE 3

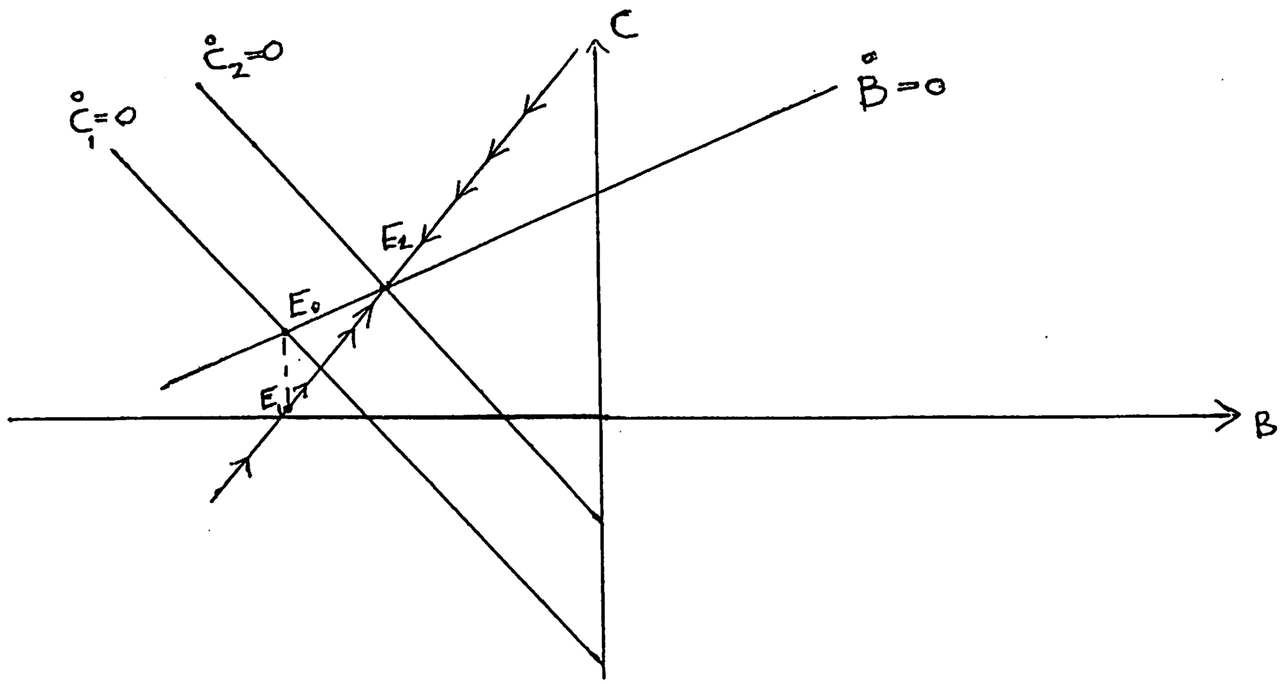

FIGURE 4

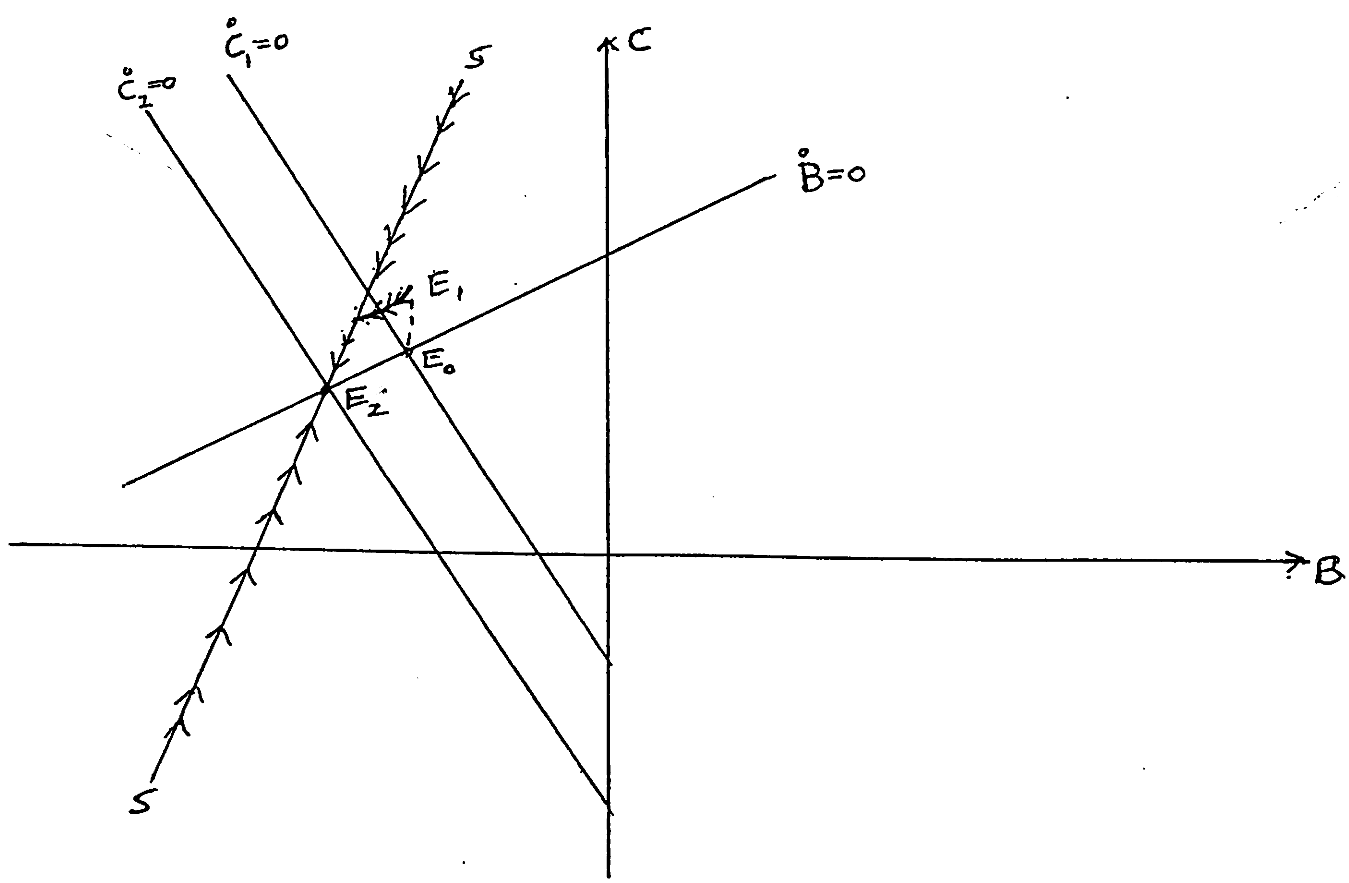

FIGURE 5