Incomes Policy and Tax Rates in the U.K.

by

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In the 1976 Budget statement, the government of the United Kingdom offered an unprecedented proposal to the trade union movement. In it, a large packet of cuts in direct income taxes was made conditional upon the unions agreeing to a lower rate of increase in nominal wages in the coming year than had previously been anticipated.

The strategy behind this policy, outlined by Mr. Dennis Healey, Chancellor of the Exchequer, was to substantially reduce the rate of inflation over the following year.[1] In addition, it was hoped to improve the employment situation more than would otherwise be possible. The latter effect was assumed to flow from the net expansionary impact of the total package on consumption, and also indirectly from lower inflation generating more jobs, "by improving the ability of our industry to compete, by stimulating investment and by improving confidence in Britain both at home and abroad."

While achieving both these objectives, Mr. Healey proposed to guarantee that "the working population as a whole does not suffer by accepting a lower pay limit rather than a higher one." Thus, the combination of lower taxes and lower inflation would be sufficient to insure that in real terms, "the majority would really be better off with a low pay limit rather than with a higher limit, but none of the tax reliefs."

Since the economic policy proposed has been outlined by Mr. Healey, the economic environment facing the U.K. has substantially altered. Foreign loan commitments from the IMF, contingent upon a contractionary fiscal package, have blurred the likely outcome of this new economic proposal. In addition, recent refusals by the trade unions to accept a third phase of this formal agreement may have sounded the death knell of yet another round of negotiations. Yet the feasibility of such a policy package, ceteris paribus, is of itself of substantial importance. While the unity and strength of the trade union movement in Britain makes this type of bargaining fairly unique, if successful, the policy

This paper thus sets out to analyze what the impact of such a government policy is likely to be, ceteris paribus, and under what conditions it can succeed in achieving all three objectives proposed. Attention will be focused on its likely effect this period, and its implication for sustained success. While the unity and strength of the trade union movement in Britain makes this type of bargaining fairly unique, if successful, the policy has obvious application to other economies where a mechanism exists for the centralized determination of wage levels. The analysis will proceed in three parts. First a disequilibrium neo-Keynesian model will be outlined and the short run impact of the policy package analyzed. Then, the choice-set facing the economy, after the one period policy expires will be examined in Section II. Explicit consideration of the foreign sector will be incorporated in the Section III, while a summary and observations on the long run are discussed in Section IV.

I. A Model of the Short Run Effects of the Policy Proposal

Since the analysis is concerned primarily with the behaviour of inflation and employment, only the goods and labor markets will be considered explicitly below, with the money and bond markets endogenized. The stated policy of the British Government is to maintain a "neutral" or accommodative monetary policy[2] so that the neglect of monetary effects should prove neither serious nor inconsistent with expected central bank action. In the model below, therefore, it will be assumed that real money balances are determined by central bank operations to equate supply with desired real balances at a constant real interest rate. Alternative assumptions as to the conduct of monetary policy will, of course, further complicate the analysis below.

The point of departure will be the traditional neo-classical equilibrium model with the commodity and labor markets considered explicitly.[3] Within this approach, excess demand for labor causes nominal wage adjustment, while excess demand for good results in price movement, In the neo-classical paradigm, prices and wages adjust rapidly to restore the system to equilibrium,

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This paper thus sets out to analyze what the impact of such a government policy is likely to be, ceteris paribus, and under what conditions it can succeed in achieving all three objectives proposed. Attention will be focused on its likely effect in the first period, and its implication for sustained success. The analysis will proceed in three parts. First a disequilibrium neo-Keynesian model will be outlined and the short run impact of the policy package analyzed. Then, the choice-set facing the economy, after the one period policy expires will be examined in Section II. Explicit consideration of the foreign sector will be incorporated in the Section III, while a summary and observations on the long run are discussed in Section IV.

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perhaps through a Walrasiam auctioneer, who forbids non-equilibrium trading. In reality, however, recontracting is not feasible and market clearing is not guaranteed. In disequilibrium, the notional demands and supplies need not hold and effective market signals determine economic activity levels. The model presented by Barro and Grossman (1971) provides such a framework and will be the focal point of the present analysis. It will be assumed that the economy is functioning at under potential, or at an effective equilibrium, whereby excess labor supply exists at the current wage. Households react by reducing their consumption demands below notional levels.[5] This reinforces the reduction in labor demand by firms. Convergence occurs at a temporary disequilibrium level that is defined but at less than full employment.[6] Therefore, while the notional demand and supply of curves of Walras determine the equilibrium position of the economy, in disequilibrium firms' and households' behaviour is moved "off" the notional demand curves. The effective functional forms are given by equations (1) thru (7).

(1) $Y^D = Y^D(Y, \ , \ )$

(2) $Y^S = \bar{Y}^S$

(3) $Y = \text{Min } Y^D, Y^S$

(4) $L^D = L(Y)$

(5) $L^S = \bar{L}^S$

(6) $L = \text{Min } L^D, L^S$

(7) $\bar{Y}^S = L^{-1}(\bar{L}^S)$

where Y = output in real terms, L = employment, = tax level, and = inflation. X^D, X^S refer to supply and demand levels, derived from utility or profit maximization with their arguments discussed in detail below. Given the under-employment level of the economy, however, the demand quantities result from constrained maximization, and may therefore be defined as effective rather than notional, equations (1) and (4). As the United Kingdom

economy is in a position of underemployment and excess capacity, it is unlikely that the proposed incomes policy will shift output levels by so great an amount as to lead to a notional equilibrium in the short run. Accordingly the analysis will center upon the effect of the policy on the constrained underemployment equilibrium. The notional supply side of both the labor and output markets is taken as constant for simplicity, equal to the "full employment" level, equations (2) and (5). In each market, actual activity levels are determined by the smaller of the demand and supply. It should be noted that, except for the irrelevance of the real wage rate, given the disequilibrium quantity transactions in the labor market, the behavioral equations of the model are identical to a simple "Keynesian" system.

The dynamics of the system are given by the price and wage adjustment equations,

$$(8) \quad \pi_t = \lambda[Y_t^D - Y_t^S] + \pi_t^e [\dot{W}_t, \pi_{t-1}, \pi_{t-2}, \ldots]$$

$$(9) \quad \dot{W}_t = \dot{\overline{W}}_t$$

where, for consideration of the policy initiative, the percentage increase in nominal wages, $\dot{W}$, is an exogenous variable determined by the terms of the agreement between the labor movement and government. The inflation rate, π, follows expectations of inflation, π^e, plus an adjustment term, $\lambda[Y^D - Y^S]$ to reflect the dampening effect of excess supply upon inflationary movements, with the speed of adjustment $\lambda \geq 0$. The assumed dynamic equation on prices is consistent with the recent work on output-inflation dynamics as presented by Phelps (1967) and Grossman (1974) in that it includes both excess demand and expectations as explanatory variables. Expectations are assumed to be obtained from the past history of price movement and factor costs. In terms of the latter, the level of agreed wage settlements, net of productivity changes (assumed zero for simplicity), impacts immediately on the level of inflation through expectations. It is assumed, therefore, that individuals perceive higher commodity price movement will result from net increases in wages and incor-

porate this knowledge in their expected inflation variable. Note that a "mark up" assumption for pricing policy would lead to the same result, and could be justified in the presence of Britain's price code legislation. The form adopted in equation (8), however, allows for the more indirect effects of an income policy to be captured through the inflationary expectations term, and fits most directly into the previous literature.

To consider the short run, one period effects of the policy under consideration, the trade-off between nominal wage increases, $\dot{W}$, for the coming year and tax level, τ, must be analyzed. The combined effect of these two variables on the state of the economy is most easily treated by considering the short run loci in $\dot{W}/\tau$ space of iso-levels of inflation, unemployment, and after tax real wages.

The slope of the inflation locus can be obtained by totally differentiating equation (8) and solving for $d\pi = 0$. This results in

$$(10) \qquad \left.\frac{\partial \dot{W}}{\partial \tau}\right|_{\pi} = \frac{\alpha\lambda \dfrac{\partial Y^D}{\partial \tau}}{\dfrac{\partial \pi^e}{\partial \dot{W}}} \; ; \quad \alpha = \frac{1}{1 - \dfrac{\partial Y^D}{\partial Y}} \quad .$$

Assuming the normal signs and magnitudes of the partial derivative[7], i.e.,

$$\frac{\partial Y^D}{\partial \tau} < 0, \; 1 > \frac{\partial Y^D}{\partial Y} > 0, \; \frac{\partial \pi^e}{\partial \dot{W}} > 0,$$

then the π locus is positively sloped in $\dot{W}/\tau$ space. Thus, a lower rate of taxation will increase demand for goods and reduce the deflationary pressure in the economy. To maintain the same inflation rate, it is then necessary to move to a lower rate of nominal wage increase.

In a similar fashion, one may derive the iso-employment line. As noted above for the disequilibrium situation modeled, labor demand is solely a function of minimum of output demand or potential supply. With demand

quantities the short side of the market, maintaining the same employment level is thus equivalent to maintaining the same level of aggregate demand, defined in functional form as equation (1). The slope of the iso-employment, or equivalently the iso-income, locus is, therefore, given by,

$$\left.\frac{\partial \dot{W}}{\partial \tau}\right|_{Y} = \frac{-\dfrac{\partial Y^D}{\partial \tau}}{\dfrac{\partial Y^D}{\partial \pi}\;\dfrac{\partial \pi^e}{\partial \dot{W}}} \tag{11}$$

The sign of equation (11) follows the sign of $\frac{\partial Y^D}{\partial \pi}$.

The general neo-classical model would assume that consumers desire to contract real money balances as inflationary expectations increase. Thus if the rate of change of nominal balances were exogenous, and the desired decrease in real belances were larger than that caused by inflation itself, the net short run effect of higher inflation would be to increase the demand for commodities so that $\frac{\partial Y^D}{\partial \pi^e} > 0$. However, if the government policy is aimed at altering the nominal money stock to the desired level, the central bank would immediately accommodate the desired contraction in real money balances. This will be accomplished by expanding the nominal supply at a rate less than the rate of inflation, or by an open market contraction of the money supply if necessary, so that the situation of excess money supply does not occur. Consequently, $\frac{\partial Y^D}{\partial \pi^e} = 0$, and π^e is not considered explicitly as an argument in aggregate demand.[8] However, observed inflation does enter the analysis. The latter causes a reduction in the value of the outstanding stock of public sector liabilities, comprised of outstanding stock of public sector liabilities, comprised of outstanding bonds and money balances, causing the net wealth of the private sector to decline. This wealth effect will contract aggregate demand, i.e., $\frac{\partial Y^D}{\partial \pi} < 0$. On the corporate side, taxation of inventory profits will lead to increased demand for external finance and decreased investment, as Lintner (1975) observes.

Additionally, if the variance of inflation is positively correlated with the mean value, as Jaffee and Kleeman (1975) have reported, higher inflation may compound the uncertainly of long term investment and reduce this quantity as well. Finally, a further reduction in aggregate demand may result from a drop in exports in the presence of uncertain inflation, due to the marketing disadvantages of such uncertainty in bidding for future contracts or purchasing forward commitments.

Therefore, there are a number of theoretical justifications for suggesting that inflation dampens aggregate demand. Further, some recent empirical evidence by Townsend (1976), for the U.K., supports the negative impact of inflation on demand. For these reasons the analysis will assume that the effect is in fact negative while noting the implications of the alternative assumption.

For $\frac{\partial Y^D}{\partial \pi} < 0$, the slope of equation (11) is negative, and reduction in taxes, which increases demand, must be offset by a higher rate of wage inflation in order to maintain the same level of output and employment.

The final locus to be considered is the set of bargaining points obtainable under the government's policy, showing the change in taxes necessary to compensate for a lower nominal wage increase in order to maintain indifference on the part of wage earners. In the absence of any agreement, the change in the real wages over the finite first period would be

$$(12) \quad \Delta \frac{W}{P} = \left(\frac{W}{P}\right)_0 (\dot{W} - \pi).$$

The alternative option is a lower real wage increase, resulting from a lower nominal wage settlement, offset by a lump-sum change in taxes. Measuring both tax payments and wage levels over the bargaining period of one year for British workers, the wage earner's indifference loci would require

$$(13) \quad d\,\Delta \frac{W}{P} - d\tau = 0$$

to obtain the same change in real disposable wages,[9] ω. Substituting equation (12) into (13) and evaluating the locus of indifference on the part of the wage earner results in

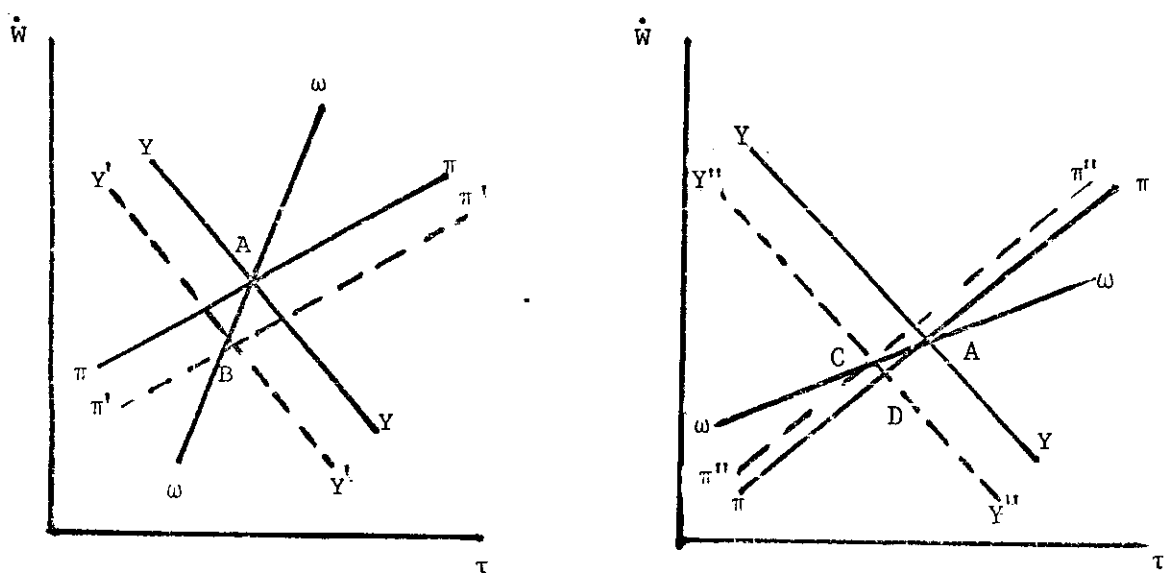
$$(14) \qquad \left.\frac{\partial \dot{W}}{\partial \tau}\right|_{\omega} = \frac{\left\{1 - \alpha \lambda \left[\frac{\partial Y^D}{\partial \pi} - \left(\frac{W}{P}\right)_0 \frac{\partial Y^D}{\partial \tau}\right]\right\}}{\left(\frac{W}{P}\right)\left[1 - \alpha \lambda \frac{\partial Y^D}{\partial \pi} - \frac{\partial \pi^e}{\partial \dot{W}}\right]} ,$$

which is positive under the condition[10] that

$$1 - \alpha \lambda \frac{\partial Y^D}{\partial \pi} > \alpha \lambda \left(\frac{W}{P}\right)_0 \left| \frac{\partial Y^D}{\partial \tau} \right|$$

and negative otherwise. A negative slope would imply that a reduction in taxation would produce such a large stimulus to inflation as to actually reduce the after tax real wage, requiring a larger nominal wage increase to offset it. This would seem unlikely under a situation of less than full employment, so that a positive slope is considered.

Combining the three loci to determine whether the government's economic proposal is feasible, two possibilities may be distinguished. In panel A,



A. Feasible Results from Incomes POlicy B. Infeasible Results from Incomes Policy

Figure 1: Potential Results of Policy

the slope of the ω locus is greater than the π locus, and the movement from A to B, while maintaing the same disposable wage as before the policy initiative, will move the economy to a short run position of lower inflation ($\pi' < \pi$) and higher output and employment levels ($Y' > Y$). However, in panel B a movement from A to C will increase inflation ($\pi'' > \pi$) while increasing employment ($Y'' > Y$). A combination of lower taxes and lower nominal wage increases could move the economy to a lower inflation rate with a higher output, as in point D, but this movement would require the unions to accept a reduction in real disposable wages relative to the no-policy position at point A.

The key to the economic feasibility of the governments' programs then, is the relative slopes of the ω and π loci. Examining the two slopes in question, it can be shown that the π locus varies in slope from 0 to ∞ with the magnitude of the speed of adjustment, λ, in equation (8). The condition under which the government's proposed policy is economically feasible thus may be expressed as a condition on λ. A movement to a situation of both lower inflation and higher output, while maintaining the same real disposable wage position of labor, is possible if and only if

$$(15) \qquad \lambda < \frac{\frac{\partial \pi^e}{\partial W}}{-\alpha \left(\frac{W}{P}\right)_0 \frac{\partial Y^D}{\partial \tau}} .$$

Essentially, the inflationary impact of the tax reduction must not so increase price movements as to outweigh the deflationary impact of the lower wage settlement. Given the increase in aggregate demand associated with the tax package, the greater is the adjustment coefficient, the more likely it is that the inflationary impact of the tax cut overwhelms the deflationary impact of lower wage settlements.[11]

We conclude, therefore, that the more imperfect the aggregate commodity market is, i.e., the smaller the reaction of price to excess supply, the more likely will the policy succeed. It is interesting to note that this result

wage increase is not complemented by a further tax cut. Real disposable wages will, therefore, be smaller unless compensated by a significant second period drop in the inflation rate.

In period two the real disposable wage locus, assuming the same nominal wage change is granted workers, may be written explicitly as

$$(18) \quad \omega_2 = [\dot{W}_1 - \pi_2] \left(\frac{W}{P}\right)_1$$

Under the assumption that the real wage follows the pattern suggested by the Chancellor, it must at least remain constant during the income policy program. Yet, the real disposable wage in period two will be less than that in period one unless

$$(19) \quad \pi_1 - \pi_2 > \frac{-d\tau_1}{\left(\frac{W}{P}\right)} \quad .$$

This will only be the case if the economy is relatively sensitive to the policy package along the ω trade-off locus, and expectations react relatively quickly to recently observed inflation rates. The movement of inflation during the program period may be seen by referring to the impact of a marginal tax change on inflation along the ω line,

$$(20) \quad d\pi_1 = \left[\frac{\alpha\lambda \frac{\partial Y^D}{\partial \tau} + \frac{\partial \pi^e}{\partial \dot{W}} \left(\frac{W}{P}\right)_0^{-1}}{1 - \alpha\lambda \frac{\partial Y^D}{\partial \pi} - \frac{\partial \pi^e}{\partial \dot{W}}} \right] d\tau_1 \quad ;$$

This will have impact upon inflation in period two according to the differential of equation (16) above,

$$(21) \quad d\pi_2 = \frac{\frac{\partial \pi_2^e}{\partial \pi_1}}{1 - \lambda\alpha \frac{\partial Y^D}{\partial \pi_2}} \, d\pi_1$$

For a discrete change in taxation, then, the left hand side of equation (19) may be written as

$$(22) \quad \pi_1 - \pi_2 = \int_{\tau_0}^{\tau_1} \left(\frac{\partial \pi_2}{\partial \pi_1}\right) \left(\frac{\partial \pi_1}{\partial \tau_1}\right) d\tau_1$$

where the valuesof the partials follow equations (20) and (21).

Equation (22) indicates that a reduction in the real disposable wage in period two is only avoidable if $\frac{\partial \pi_2}{\partial \pi_1}$ and $\frac{\partial \pi_1}{\partial \tau_1}$ are large. From the equations defining these variables, this requires values for both $\frac{\partial \pi^e}{\partial \dot{W}}$ and $\frac{\partial \pi^e}{\partial \pi_{t-1}}$ be large. It is, therefore, possible that the maintenance of a lower inflation rate and higher employment can be sustained without a shift in the distribution of income against the wage earner.

Violations of the condition captured in equation (22) does not, however, nullify the potential use of the incomes policy. If it is not satisfied, it merely indicates that a policy designed at maintaining stable real disposable wages each period is not possible. The government could, however, compensate the wage earner by larger tax reductions in period one for the present value of the wage losses in subsequent periods if the structure of the economy is sufficiently conducive to this short run policy. To do so would, unfortunately, make the condition on λ, for success in period one, much more restrictive.[13]

III. The Foreign Sector

Since the British economy is highly open, it is desirable to note the effects of including foreign sector impacts on the closed economy results derived above.

Under the present system of floating exchange rates, in the absence of intervention, the exchange rate should adjust to keep the balance of payments continuously in equilibrium. If capital flows are assumed constant in the long run,[14] balance of payments equilibrium implies a constant and offsetting balance to the foreign trade sector. Thus, a purely monetary disturbance, such as a change in the inflation rate relative to the rest of the world, will merely affect the compensating change in the exchange rate to leave relative prices, and the trade balance, unchanged.

However, any real sector results of the policy will affect the exchange

rate. Here there are two effects. First the increase in domestic income will worsen the trade balance and thus lead to an additional depreciation of the exchange rate to maintain balance. On the other hand, if the proposed policy stabilizes the U.K. trading posture, as noted in Section I, and increases foreign demands for domestic product, the balance would move in the opposite direction. If the direct effect of import demand is relatively large, the change in the trade balance is negative, indicating deterioration of the trade position. On the other hand, if the foreign demand responds strongly, an opposite result obtains. It would appear likely that the income effect would outweigh the stability effect so that the present treatment will assume a negative trade effect with passing references made to the alteration of the conclusion for a positive shift.

For a given change in the trade balance, the required percent depreciation of the exchange rate to restore balance of payments equilibrium is, in general, some function of the trade balance shift associated with the U.K. program proposal, determined by demand elasticities in the trade balance, the sensitivity of domestic output to foreign demand, and monetary conditions.[15] The result of such a devaluation is an increase in the domestic price of traded goods. This implies an overall increase in the domestic price index.[16] The effect of this additional inflation component will be to worsen the trade-off between $\dot{W}$ and τ in the short run, i.e., require a larger reduction in $\dot{W}$ for a given reduction in taxes to maintain the same inflation rate. As a consequence, the condition necessary for successful first period implementation of the income policy proposal become more stringent. Specifically the condition on λ of Section I becomes

$$(23) \qquad \lambda < \frac{\frac{\partial \pi^e}{\partial \dot{W}}}{\alpha(\frac{W}{P})\ (-\frac{\partial Y^D}{\partial \tau})} + \frac{\partial \pi}{\partial \rho}\gamma' m \ .$$

where ρ is the exchange rate, m is the marginal propensity to import and γ represents the linkage of trade demand to the exchange rate movement.[17]

Equation (23) indicates that the decreased taxation must have a correspondingly smaller inflationary impact on the domestic economy to offset the foreign trade effect, which works counter to the policy goals outlined above. Therefore, the policy becomes more difficult to employ for an open economy, and restricts the range of economic conditions that favor the proposal.

IV. Summary and Caveat

The analysis above suggest that for some reasonable range of economic conditions the U. K. incomes policy suggested by Chancellor Healey can be successful. The key determinant of this success, however, is the speed with which the British economy reacts to changes in excess demand. If the speed of adjustment is directly related to the competitive conditions in the commodity market, as is generally assumed, then the less competitive the economy the more likely the British government initiative will be successful in the short run.

The success of the policy beyond the first period will depend upon expectation adjustment speed which can only be conjectures. Nevertheless, the more rapid expectations adjust to recent observations, the more likely the policy will prove successful in subsequent periods.

In summary, then, the analysis suggests that such a policy tool may be feasible. However, it awaits empirical validation of the necessary conditions.

However, one serious caveat must be offered. The essential reason for the potential success of the policy is the ability of government to compensate the worker for lower wages by reduced taxation. With a constant level of expenditure by the government, this implies a constant increase in government bonds into the future. This, of course, implies that the budget is not in balance. The government

may wish to allow this deficit spending to continue until full capacity is reached. However, it may only do so at the expense of capital expenditure by the private sector or massive borrowing from abroad to finance this deficit.[18] For the U.K. it would appear that foreign pressure precluded such an arrangement. Yet, if the government wishes to close the budget gap it may do so only by increasing taxes which may be viewed as reneging on the negotiated settlement with labor. The economy will diverge from full employment in an analogous manner to its convergence under the policy proposal. While one may wish to neglect this stock variation, as pertinent only in the long run, present evidence for the British economy suggests that it cannot be omitted indefinitely.

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[1]"Report of the Budget Speech", Financial Times (April 7, 1976).

[2]"I aim to see that the growth of money supply is consistent with my plans for the growth of demand in current prices," Healey , op. cit.

[3]If the velocity of circulation were to remain constant, this policy would be equivalent to increasing money balances in line with nominal income. The more general assumption of satisfying money demand at a constant real interest rate, allows for changes in velocity due to changes in inflationary expectations and thus nominal interest rates.

[4]By Walras Law the money market may be suppressed. The analyzed model therefore has three markets with three unknowns.

[5]See Clower's contribution (1967) for an analysis of consumption outside of full employment.

[6]The literature of relevence here is considered in detail in Barro and Grossman (1976) and references.

[7]Since the bond market is endogenous, alterations in τ will necessitate higher bond sales to maintain the government budget constraint at the initial level of government expenditure. Its impact upon aggregate demand implies that total crowding out does not occur, nor do households alter consumption patterns to accommodate higher future tax liabilities associated with future interest payments. The former is consistent with traditional underemployment models, e.g. Tobin (1969), while the latter is discussed by Solow and Blinder (1974).

[8]There may be a second order wealth effect associated with this open market operation, as outside real money balances are exchanged for zero wealth public debt. See Barro |1974|. The text ignores this complication in the dynamics of the incomes policy proposal.

[9]It should be observed, here, that the formulation of the Chancellor's tax package in equation (13) may be unnecessarily favorable to labor. If it assumed that labor is concerned only with the total wage bill, actual wage rates could fall as a result of the proposal, if employment levels are found to rise. This is not considered explicitly here, but could be analyzed in an analogous manner to the present formulation.

[10] The text assumes that the denominator of equation (14) is unambiguously negative. This will be the case for all $\frac{\partial \pi^e}{\partial \dot{W}} \leq 1$. If expectations increase by more than nominal wages the condition reported in the text would not be sufficient to insure a positively sloped locus. However the economics of such explosive expectations is dubious. Further, wages could not long remain a policy tool as union demands would surely adjust to such extreme expectation behavior.

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[11] For $\frac{\partial Y^D}{\partial \pi} > 0$ the Y locus will be positive. Even so a simultaneous reduction in $\dot{W}$ and λ can be achieved as long as $\lambda < \frac{1}{\alpha \frac{\partial Y^D}{\partial \pi}}$. This second condition is more stringent than (15) and renders the economy inherently less stable. See Goldman (1972) for stability with $\frac{\partial Y^D}{\partial \pi} > 0$.

[12] There is a limit to the number of periods the proposed policy may be used, as the tax rate approaches zero in finite time, if successive periods use further tax reductions. Accordingly we assume a one period tax policy.

[13] The impact of the policy on periods beyond those considered in the text is exactly analogous to the period two case. Therefore these periods are omitted. Further, the analysis does not use an intertemporal approach directly because it is felt that a sequential analysis of the impact of the program is preferred for likely political impact. The long run is, however, discussed in Section IV.

[14] The behavior of short term capital flows in response to the proposal cannot be derived from the analysis used in the text. Accordingly the analysis will assume it constant.

[15] See, for example Tsiang (1961) and Alexander (1952).

[16] For a positive trade balance effect, the opposite result obtains.

[17] The assumed relationship is $d\rho = \alpha(dB)$ with $\alpha^1 > 0$.

[18] Recall the money stock variation is no longer a policy tool for budget balance.

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