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Tax and Inflation

Any amount of taxation results in a higher general price level than would be the case without that amount of tax. Any cut in the amount of existing taxation results eventually in a lower general price level than would be the case had the tax not been cut. This tax effect on the general price level is brought about through the mechanism of the tax shifting process. The shifting process not only diffuses the effects of a tax throughout the economy and shifts the tax to its effective incidence, but it is also the mechanism by which any change in the amount of tax is absorbed by an economy through a movement from one general price level to another.

To investigate the tax shifting process and its effect on prices, the following simplifying assumptions are made: a marginally balanced budget; a neutral monetary policy (in the sense of the supply of money being equal to and determined by the demand for money); the non-government sector's propensity to spend out of disposable income is equal to unity, that is, the non-government sector's propensity to save is equal always to its propensity to invest.

Let it be supposed that government increase the amount of income-effect taxation by the imposition of a withholding tax assessed on the gross pay of employees. The formal incidence of the additional amount of income-effect tax will not cause any change in the aggregate supply function. On the demand side the simplifying assumptions ensure also no change in the aggregate demand function. Increased government spending out of the additional tax revenue will be expected fully to offset the reduced spending out of a smaller take-home pay. In a period short enough to exclude the possibility of retaliation by employees all that is likely to happen is some temporary disequilibrium while the economy adjusts to an increase in government spending relative to non-government spending.

Retaliation by Taxpayers

It is likely that an opportunity will arise, sooner or later, for employees to retaliate against the tax-imposed cut in their take-home pay by demanding from their employers an increase in gross pay. The evidence indicates that this opportunity will be taken by employees and that eventually employers will accede to these demands. Adam Smith concluded that all taxes imposed upon the gross pay of employees are shifted by employees onto their immediate employers.[1] He implied net of tax wage bargaining to be the general rule by arguing that a 20 per cent tax assessed on the pay of employees would result in a 25 per cent rise in their gross pay. Two hundred years later his view is supported by the results of statistical investigations using the extensive and detailed contemporary data now readily available.[2] The OECD reported in *Public Expenditure Trends* 1978 that 'labour unions do attempt to shift income tax increases forward onto higher money wages, and net of tax wage bargaining seems to be a rather common phenomenon in all OECD countries.' In the case of a withholding tax on gross pay the process of tax shifting begins with those pay increases that follow directly from employee retaliation against the tax increase. As employees recover from their employers the amount of take-home pay lost already to the withholding tax, the aggregate supply price rises by the full amount of the tax recovered. Moreover, with a progressive tax system higher gross pay is likely to lead to an additional tax liability as a result of some employees moving into a higher tax bracket, and this too will be taken into account in the pay negotiations. Thus an additional amount of income-effect taxation in the form of a withholding tax will cause,by its formal incidence, the retaliation which sets in motion a shifting of tax from employee to employer. This shifting process causes the value of Z to increase for all values of N by something probably in excess of the original amount of the additional tax. By assumption, the aggregate demand price is increasing simultaneously and equally with the aggregate supply price. The point of intersection is, therefore, rising vertically as illustrated earlier in Figure 5. Given the assumed conditions set out above (p.51), the process of shifting the additional income-effect tax causes a rising general price level to be associated with an unchanged volume of output and employment. Although from a different cause, this situation is in appearance what Maynard Keynes called 'a state of true inflation'.[3] It is a state of 'inflation' also in the sense in which that term is used by Milton Friedman and others, as the money supply is increasing at a faster rate than the growth of real output.

As the general price level rises the purchasing power of all money incomes falls and it is in this way that the tax shifting process works to effect a diffusion of tax incidence throughout the economy. In the absence of complete money illusion, the erosion of real take-home pay by rising prices will be the cause of further pay demands by employees.[4] This is the phenomenon called 'the wage/price spiral', a label which tends to obscure the retaliation taking place on a much wider front. The pay of employees is not a special case, as the fall in the purchasing power of money affects everyone in receipt of a money income. Inevitably, for the same reason as employees, the receivers of money incomes other than take-home pay will be motivated, as soon as the opportunity arises for them, to retaliate against rising prices by seeking higher money incomes. With the advent of this second stage retaliation, an extensive self-generating element is injected into the process of tax shifting. As money incomes in general rise in an attempt to regain lost purchasing power, then further price rises follow and in turn are the cause of further retaliation by the receivers of money incomes and so on and so on. Progressive taxation adds to these inflationary pressures. Even assuming no increase in tax rates, there will arise automatically additional tax liability as a result of bracket creep. However, although the diffusion of tax incidence by rising prices injects an element of self-generation into the process of tax shifting, it does, at the same time, tend to bring about a running down of the process. As noted already, most economic theorists from Adam Smith to the present day conclude that those in receipt of certain classes of money incomes cannot retaliate against the incidence of any tax that happens to fall upon that income. As the tax incidence becomes more and more diffused throughout the economy, an increasing amount of tax will fall upon those who cannot retaliate by further shifting. Meanwhile the residual balance of the tax becomes so thinly spread that it is less and less likely to motivate those who are able to retaliate. The tax shifting process ceases when the formal incidence of the tax which caused the initial retaliation is diffused by the process of shifting into an effective incidence which cannot, or does not, motivate further shifting.

A cut in the amount of income-effect taxation will motivate a tax shifting process in the reverse direction to that which follows upon an increase. During the time this takes to work through the economic system the process will lead, given the assumptions set out above, to a fall in prices with little or no change in the volume of output and employment. For example, a reduction in the amount of withholding tax assessed on the gross pay of employees will result, through its formal incidence, in an increase in take-home pay by an amount equal to the tax cut. At the next round of pay negotiations net of tax wage bargaining is likely to lead to a lower settlement than would otherwise have been the case in the absence of a tax cut. Adam Smith's argument and contemporary evidence suggests net of tax wage bargaining works both ways. Thus some part, or even the whole, of the benefit from the reduction in tax is shifted from the employees to the employer in the form of lower labour costs than otherwise would have been the case had there been no tax cut. The working of market forces in a trading economy will ensure that eventually firms reflect their lower labour costs in the selling prices of their output. As this latter stage becomes general the benefit of the tax cut is spread throughout the economy.

The formal incidence of an increase in the amount of supply-effect taxation, by definition, will cause an increase in the value of Z for all values of N equal to the amount of the additional tax. Simultaneously, given the assumptions specified (p.51), the value of D will increase for all values of N by that same amount. Thus in this case the tax shifting process may be considered as being activated automatically, as firms have no option if they are to remain in business but to adjust to the tax-imposed increase in their supply price. The formal incidence of an increase in supply-effect taxation is, therefore, with the minimum of time lag, a direct cause of rising prices and an erosion of real incomes. As the opportunity arises it is to be expected that all income receivers will retaliate against the erosion of their real income. In so doing they motivate the second stage of the tax shifting process which is indistinguishable from that following upon an increase in the amount of income-effect taxation. Again, once this second stage is set in motion it too will continue until the formal incidence of the additional tax is diffused throughout the economy into an effective incidence which cannot, or does not, motivate further retaliation. That a change in the amount of supply-effect tax tends automatically by its formal incidence to affect prices almost immediately is the reason why demand management techniques rely on taxes of this class as so-called 'regulators'. Nonetheless, the demand management argument, that a change in the amount of supply-effect tax will cause only a once and for all change in prices, is valid only on the assumption of persistent and complete money illusion or in cases where the change in the amount of tax is so small that the resultant change in prices is too little to activate retaliation.

Tax Inflation

As has been argued, the tax shifting process is essentially a mechanism by which an economy adjusts to a change in the total amount of taxation through a movement from one relatively stable general price level to another relatively stable general price level. For this adjustment to be completed, with the minimum of interference to the volume of output and employment, a neutral monetary policy is necessary. For this reason periods during which tax shifting is proceeding may be appropriately described, depending on direction, as *tax inflation* or *tax deflation*. During a period of tax inflation a neutral monetary policy requires the monetary authorities to allow the rate of increase in the money supply to be in excess of the rate of growth of real output. This is because, at any given volume of output and employment, rising prices will lead to an increase in the demand for money. If during such a period the rate of increase in the money supply is restricted to the rate of growth of real output then inevitably output and employment also will be restricted. In a period of tax deflation the converse holds; in this case a neutral monetary policy implies a rate of increase in the money supply less than the rate of growth of real output.

Tax inflation describes the condition which prevails for as long as an economy is adjusting to an additional amount of total tax through a rising general price level and, therefore, at any given level of activity the demand for money tends to rise as prices rise. During a period of tax inflation a rate of increase in the money supply in excess of the rate of growth of real output is only the *proximate* cause of the rising prices. The *primal* cause of rising prices during the period is the additional amount of taxation. So long as the tax shifting process continues, an apparently lax monetary policy is not so much the cause of inflation as a policy necessary to minimise the effect of fiscal policy upon the level of activity. This does not deny Milton Friedman's assertion that 'inflation is always and everywhere a monetary phenomenon',[5] for undoubtably without the excess money supply the rate of inflation would be less and might even be a zero rate. Nonetheless, when applied to a period of tax inflation, Milton Friedman's assertion is likely to mislead for it refers to no more than a proximate cause of the rising prices. When an economy is going through a period of tax inflation, any attempt to 'squeeze inflation out of the system' by restricting the supply of money must also restrict output and employment, if not precipitate a slump. The concept of tax inflation is consistent also with the restated quantity theory of money, for it admits of a stable demand function for real balances, M/P. When fiscal policy generates forces tending to raise the value of P, then the value of M will need to be increased if a restrictive effect on the level of activity is to be avoided. However, the concept of tax inflation does deny Friedman's proposition that 'fiscal policy is unimportant for inflation'.[6] Fiscal policy is very important for inflation, for it is fiscal policy that is often the primal cause of rising prices, and it is the rising prices that lead to an increase in the money supply in excess of the rate of growth of real output.

The Economic Upper Limit to Taxation

The terms tax deflation and tax inflation describe conditions in an economy which can exist openly, given a neutral monetary policy, for only so long as it takes that economy to adjust to a change in the total amount of taxation through a movement from one relatively stable general price level to another relatively stable general price level. In the case of tax inflation this assumes the total amount of tax to be no larger than that which the process of tax shifting can diffuse into an effective incidence at some higher general price level. The larger the amount of taxation the longer the tax shifting process will continue and the higher will be the eventual general price level. Thus it is possible for the total amount of tax to be such as to cause the shifting process and the rise in prices to continue indefinitely. Tax inflation then becomes a persistent condition. For any economy, therefore, there must be, in given conditions, a maximum amount of total tax revenue which at some general level of prices is consistent with a zero rate of inflation without restricting the level of activity. This total amount of taxation is that amount which the shifting process can diffuse over a period of time into an effective incidence. Following the terminology of Colin Clark in his pioneering empirical studies[7], this amount of tax revenue relative to net national product (NNP) at market prices can be called the *economic upper limit to taxation*.

Provided that general government total tax revenue does not cause the economic upper limit to taxation to be exceeded, then tax inflation is a temporary condition limited to whatever period of time it takes the shifting process to diffuse the formal incidence of taxation into an effective incidence. When total general government tax revenue causes the economic upper limit to taxation to be exceeded, then there will exist a condition of persistent tax inflation. Whether persistent tax inflation is open or suppressed is determined by government policy. In fully controlled economies it is usually suppressed. In open trading economies, with relatively free markets faced with persistent tax inflation, however, it is government monetary policy that determines the trade-off between the rate of inflation and the restriction of output and employment. Demand management techniques may succeed in reducing the rate of inflation for a time, but in the longer-run can only make the situation more intractable. Increasing taxes in an attempt to dampen real demand raises prices and restricts the growth of NNP at market prices. The restriction of growth and the rising prices combine to reduce the economic upper limit to taxation and lead evenually to a state Milton Friedman describes as 'stagflation'. A tight monetary policy will suppress persistent tax inflation at the expense of a restriction on output and employment although, as in the case of the United Kingdom, this may be associated with improvements in productivity. However, irrespective of any short-run benefits, should the level of activity begin to recover then the rate of inflation will again start to accelerate. The improvement in the level of activity provides the conditions conducive for retaliation against taxation and so the process of tax shifting restarts. The only effective policy to eradicate persistent tax inflation is a policy of cutting tax revenue which is directed towards reducing firms' tax inflated costs and expanding NNP at market prices. When the economic upper limit to taxation is being exceeded, a prosperous economy and a zero rate of inflation are incompatable.

1. Adam Smith, *The Wealth of Nations*, BkV, Ch II, Part II, Art.III
2. Ronald Burgess, *Fanfare to Action*, Economic Study Association, 1973; Thomas Dernbury, *The Macroeconomic Implication of Wage Retaliation Against Higher Taxation*, International Monetary Fund Staff Papers, Nov. 1974; C.J. Bruce, 'The Wage Tax Spiral; Canada 1953-70', *Economic Journal*, 1975.
3. J.M. Keynes, *The General Theory of Employment Interest and Money*, p.303.
4. John Hicks, *Economic Perspectives – Further Essays on Money and Growth*, OUP, 1977, p.6
5. Milton Friedman, *The Counter-Revolution in Monetary Policy*, Institute of Economic Affairs, 1970.
6. Ibid., p.24.
7. Colin Clark, *Economic Journal*, 1945 & *Taxmanship*, Institute of Economic Affairs.