1. Introduction

A long-standing problem in both economic theory and economic policy is whether, and if so to what extent, an increase in government expenditure can expand total expenditure or effective demand, and with it total employment, if the money supply is held constant and the additional expenditure is financed by capital market borrowings. The view that it cannot be trusted to do so was firmly held by the British Treasury in the 1920s and came to be known as 'the Treasury View' (cf Hancock 1970 p. 110). The theoretical underpinnings of this view were provided by R.G. Hawtrey, who argued that if the government borrows money to finance public works, that will in most cases be at the expense of private expenditure (Hawtrey 1925). Only if the velocity of circulation of money would go up, could effective demand for labour increase. This is of course unexceptionable, it simply follows from the equation of exchange, \( MV = PT \). Where opinions differ is on the question whether the velocity of circulation can increase or not. In Hawtrey's view, it cannot, barring exceptional circumstances, etc., when the outlook for industry is extremely unfavourable: "The idle balances are not in general accumulated for want of attractive enough permanent investments; they are rather composed of unemployed circulating capital, often that of manufacturers who prefer not to be dependent on their bankers" (Hawtrey 1925 p. 43). Apparently, to Hawtrey's mind the demand for money is interest-inelastic. Only with abnormally poor profit expectations would there be any idle balances in the Keynesian sense (Hawtrey's 'idle balances' seem to be held from what Keynes called the precautionary motive). All this translates, given the money supply, into an LM-curve with a vertical section and a horizontal section, the latter hardly ever relevant.

The Treasury View implies that increased government expenditure fully crowds out private expenditure. In Keynesian analysis, complete crowding out is the exception rather than the rule. The Monetarists returned to the Treasury View. In fact, they had little choice but to do so if they wished to uphold their view that the price level is roughly proportional to the money supply. They rejected 'fine tuning', i.e., discretionary or activist macro-economic policies designed to stabilise the economy. This leaves little room for activist fiscal policies. They marshalled empirical evidence to support their view that national income, in particular private consumption, is highly correlated with the money supply (which means a stable income velocity of money) but not with autonomous spending, including the government budget deficit. Friedman and Meiselman (1963) found that the income velocity of money was more stable than the Keynesian autonomous expenditure multiplier or the investment multiplier. Andersen and Jordan (1968) regressed changes in GNP on changes in monetary and fiscal variables (the celebrated St. Louis-equation). These studies started an avalanche of empirical work. The results of the reduced-equation estimates of the Monetarists were inconclusive; they proved sensitive for the choice of independent variables, whilst doubts were expressed as to the exogeneity of these variables: results are biased if the policy variables (in this case changes in the money supply and the full-employment budget surplus) were actively used for stabilisation purposes (cf Kösters 1973, Monissen 1973, Arestis 1985 p. 177). Also, Friedman and Meiselman's finding that in the years of the Great Depression the investment multiplier was more stable than income velocity, could hardly be seen as damaging for
Grading out: national income traced through. There was some nominal
increase in the above case when real costs move, but no real
increase. In the above case, the increase in money prices of
investment goods, labor, and materials, which is not reflected
as a real increase, is the only factor contributing to the increase
in real costs. Therefore, the increase in real costs is zero, and
there is no increase in real income. In the above case, the
increase in nominal income is zero, but real income is also zero.

In the above case, therefore, the money system is not
automatically adapted to the real system, and the real system
is not automatically adapted to the money system. The
problem of the coordination of the two systems is important.

2.1 Real vs. nominal Grading out

In an economic system, the nominal values of goods and
services are expressed in terms of money. The nominal values
are the values at which the goods and services are traded in
the market. The nominal values are not adjusted for inflation,
and they do not reflect the real value of the goods and services.

Nominal values can be misleading, especially when comparing
goods and services across different periods of time. For
example, the nominal values of a house and a car are
comparable in the short run, but they are not comparable in
the long run. The prices of a house and a car are affected by
different factors, such as location and quality. Therefore,
nominal values are not a good measure of the real value of
the goods and services.

Real values, on the other hand, adjust for inflation and
reflect the real value of the goods and services. Real values
are expressed in terms of constant dollars, which means that
the nominal values are adjusted for inflation. Real values
are a better measure of the real value of the goods and
services, and they provide a more accurate picture of the
economic situation.

In conclusion, real values are a better measure of the
economic situation than nominal values. Nominal values
are not adjusted for inflation, and they do not reflect the
real value of the goods and services. Real values adjust for
inflation and reflect the real value of the goods and services.
Real values are a better measure of the economic situation,
and they provide a more accurate picture of the economic
situation.
Given their wealth and the volume of their assets, the reason our economy is in such a state is that the government has increased its borrowing and spending, which in turn has increased the supply of government bonds, leading to an increase in the interest rate. This, in turn, has led to a decrease in the demand for money, resulting in a decrease in the rate of interest.

In the short run, a fractional reserve system is represented by a rise in the rate of interest.

2. Crowding out through the rate of interest.

Real crowding out without full nominal crowding out.

J. E. Full-employment income.

Explanation of symbols: I = rate of interest, Y = real national income.

\[ y = f(I) \]

For partial equilibrium, mechanisms that do not act via the rate of interest, the latter (\[ I \]) be decreased (\[ J \]), mechanisms that act via the rate of interest and (\[ J \]) the expansion may go on, but the increase in the supply of money will lead to a decrease in the rate of interest. A fractional reserve system can be thought of as a cause of crowding out, because of the rise in the rate of interest.
The results of more recent estimates using the models of the current account, foreign-exchange balances, and foreign direct investment are consistent with the experience of other countries. In recent years, the current account deficit has narrowed, and the foreign-exchange balances have improved. The economy has also benefited from the appreciation of the currency, which has made imports cheaper and exports more competitive. The government has been able to maintain a stable exchange rate, which supports economic growth.

In an open economy, additional mechanisms are at work. In a fixed-rate exchange rate, government intervention can help stabilize the economy. The central bank can intervene to prevent the currency from appreciating too much or depreciating too much. This can be done by buying or selling foreign exchange, which affects the supply of foreign exchange in the market. The central bank can also use monetary policy to influence interest rates and the overall level of economic activity. By adjusting the interest rate, the central bank can affect the demand for money, which in turn affects the exchange rate. This helps to stabilize the economy and maintain a stable exchange rate.
2.3.1 Under-Representation

Time on these subjects.

Quite often, issues that are of great interest are not discussed in any detail, even though they may be crucial to understanding the determinants of economic policy. One reason for this is that discussions of economic policy often focus on aggregate data for large groups of people, rather than on the experiences of individuals. This can lead to overlooking important details that are relevant for understanding how people make decisions.

The data used to support economic policy decisions often come from large-scale surveys, such as household surveys. These surveys are designed to provide a representative sample of the population, but they may not capture the full range of experiences that individuals have. For example, surveys may not capture the impact of economic policy on individuals who are not part of the labor force, or who have different economic circumstances.

In order to improve under-representation, it is important to collect more detailed data on individuals. This could include information on income, employment status, and other factors that are relevant to understanding economic policy decisions. By collecting more detailed data, policymakers can better understand the impact of economic policy on different groups of people, and make more informed decisions.

In summary, it is important to consider the under-representation of individuals in discussions of economic policy. This can be addressed by collecting more detailed data on individuals, and by ensuring that economic policy decisions are based on a full understanding of the experiences of all individuals.
The advent of public-private partnerships (PPPs) is a response to the need for efficient and effective delivery of public services, especially in sectors such as transport, water, and energy. PPPs allow governments to leverage private sector expertise and capital to enhance public service delivery.

The success of PPPs depends on several key factors, including the alignment of public and private interests, the development of appropriate legal and regulatory frameworks, and the commitment of all stakeholders to the project's goals. PPPs can be a valuable tool for governments looking to improve the delivery of public services, but they also come with risks and challenges that need to be managed carefully.

In the case of the United Kingdom, PPPs have been implemented in a variety of sectors, including transport and energy. However, some projects have faced challenges, including delays and cost overruns, which have raised questions about the effectiveness of PPPs in this context.

Overall, PPPs can be a useful tool for delivering public services, but they require careful planning, implementation, and monitoring to ensure their success.
The theory of rational choice suggests that people make decisions based on maximizing utility or satisfaction. However, practice often deviates from this theory due to factors such as bounded rationality, emotional biases, and social norms. This can lead to suboptimal decisions that are not always in the best interest of the individual or society.

In the context of government expenditure, the government's spending decisions are influenced by a variety of factors. These include economic conditions, political pressures, and public opinion. The government may engage in deficit spending to stimulate the economy during recessions, or it may cut spending to reduce the budget deficit and national debt.

The trade-off between the interests of different groups is a significant aspect of government policy-making. The government must balance the needs of various stakeholders, including businesses, consumers, and social groups. This can lead to conflicts of interest and policy compromises.

In summary, while the theory of rational choice provides a useful framework for understanding decision-making, the complexities of real-world situations often result in policies that deviate from optimal choices.
expenditure by government expenditure. Not only is there debt-neutrality or no effect of changes in government debt on spending, but also fiscal impotence: fiscal policy is without any effect on consumer expenditures and the IS-curve in general. Taxes reduce private wealth and private consumption is reduced in step. So is consumption when bonds finance an increase in government expenditures: the government siphons off part of the public's income stream by selling bonds that are not net wealth. Keynesian deficit spending is both futile and innocuous in that case, as Tobin (1980 p. 52) notes. Private consumption is affected by government spending, but not the rate of interest nor, presumably, private investment.

Ricardo himself would not subscribe to the theorem that has been named after him. He argues, in Ch. 17 of the Principles, that if the government needs £ 2000 for some purpose, it should be a matter of indifference whether that amount of money be raised by taxes or by borrowings. The money is taken away from other allocations and, to paraphrase Ricardo, its opportunity cost is what really counts. Agents who are, in our parlance, 'rational', would be indifferent between paying £ 100 at once and paying £ 5 per year in taxes (as they would be doing if the government issued consols at 5 per cent). But Ricardo does not believe that agents are rational and therefore is no adherent of the equivalence theorem: an agent who would have to pay £ 100 at once would "save speedily the £ 100 from his income. By the system of loans, he is called upon to pay only the interest of this £ 100, or £ 5 per annum, and considers that he does enough by saving this £ 5 from his expenditure, and then deludes himself with the belief that he is as rich as before" (Ricardo 1965 p. 163).

2.3.3 Empirical tests of ex-ante crowding out

The Monetarist views on crowding out did not necessarily imply ex-ante crowding out, nor did the empirical evidence at the time point in that direction. In fact, empirical tests are not very encouraging for the idea of ex-ante crowding out (Feldstein 1982), though there is a certain plausibility to the notion that tax-financed education or medical care reduce private expenditure on these items by more or less the same amount. As an indirect test, it has been argued that the equivalence theorem would seem to imply that the public's consumption and savings behaviour is indifferent as to fully funded and unfunded pensions systems (Buchanan 1976 p. 341). In particular, a shift from a funded system to a pay-as-you-go system would not increase private spending, because the public would take account of future contributions. This corollary does not seem to be corroborated in actual practice either, though Barro (1976 p. 348) finds the empirical evidence against the view that future taxes or social security contributions are capitalised not convincing.

Direct tests of ex-ante crowding out focus on the consumption function, presumably because ex-ante crowding out leaves the rate of interest and therefore private investment unaffected. This may be correct for the case of full tax discounting, but not necessarily for the case of ultrarationality. Tests of ex-ante crowding out therefore are mostly tests of Ricardian equivalence. We give a quick roundup of some of the empirical research, in order to show the gist of the literature, without any pretense of comprehensiveness (see for a survey of 23 studies De Haan and Zelhorst 1988).

Of course the real market value of government debt does not affect expenditure on consumption if the public does not view government debt
where government expenditure measures, if they are not, the revenue
different ways of spending, a budget deficit, income gains, and
would have been a remarkable phenomenon with such a change. They wrote
through 1988. ABD, budget deficits, and economic policy, 2 part of 2.
are broken down and analyzed on page 154. To put the facts in
2. government revenue and the budget question the spending analysis, as a specification.
the same table, the fiscal stance, the government's ability to influence spending, as a and
and expenditure degrades the government's revenue to national income
1961-1965 period, but the data for budget and trade, presented in
12. (D) J. W. Jones, The generation of government revenue, in
thecase of government, the different measures of government revenue and

12. Jones, Waltzen, and the generation of national income

The difference is the only other variable that remains at the same level.

12. The difference is the only other variable that remains at the same level.

The difference is the only other variable that remains at the same level.

The difference is the only other variable that remains at the same level.
A budget deficit without any crowding out of private investment or external devaluation.

In effect, we are now crowding out private investment or external devaluation. The reason is that the dollar expression of a number of other important factors, which in turn explains the increase in the dollar exchange rate, is also important.

The increase in the dollar exchange rate is a consequence of the increase in private investment and external devaluation. The increase in the dollar exchange rate may be due to the increase in the dollar interest rate.

The increase in the dollar exchange rate is due to the increase in private investment and external devaluation. The increase in the dollar exchange rate may be due to the increase in the dollar interest rate.

In this case, the effect of the exchange rate on the dollar exchange rate is not necessarily important.

The increase in the dollar exchange rate is a consequence of the increase in private investment and external devaluation. The increase in the dollar exchange rate may be due to the increase in the dollar interest rate.

The increase in the dollar exchange rate is due to the increase in private investment and external devaluation. The increase in the dollar exchange rate may be due to the increase in the dollar interest rate.

In this case, the effect of the exchange rate on the dollar exchange rate is not necessarily important.
ports. If the current account dominates the capital account of the balance of payments, this should contribute to a depreciation, even if the budget deficit pushed the rate of interest up. Moreover, Evans found that interest rates fell with a fall in taxes, keeping federal spending constant, at first sight inconsistent with ex-ante crowding out. This he ascribes to higher real after-tax returns on investments that increased savings. Fischer (1988 p. 328) sees the US fiscal experiment in the early 1980s as a clear refutation of ex-ante crowding out; real interest rates rose and private saving did not increase. Apparently there is room for disagreement, but one condition for Ricardian equivalence to hold, namely no distortions caused by taxes, is unlikely to be fulfilled. Higher government expenditure, whether financed by present taxation or future taxation, is almost certain to lead to higher marginal tax rates (unless national income growth catches up with higher taxes), with probably deleterious effects on economic activity. All in all, even if full ex-ante crowding may have been refuted, it is surely remarkable that no systematic influence of government budget deficits on the rate of interest seems to have been found (cf also Darrat 1989 on the US 1946-1986).

3. The government budget deficit

IS/LM models can be augmented with an equation for the government budget deficit. Such augmented models can be used to study the behaviour of the system when the government budget is not in equilibrium and either the money supply or the volume of government bonds is changing (cf. Blinder and Solow 1974). Wealth effects and interest rate effects move the system to a new equilibrium, if such an equilibrium exists, which may not be the case (Infante and Stein 1976, Buiter 1985). In these models (long-term) debt and capital are perfect substitutes in the public's portfolios, so that an increase in the volume of government debt raises the required rate of return on capital.

The basic model is as follows:

\[ Y = C(Y + G - T(Y + B), Ms + B/i) + I(Y, i) + G \]  \hspace{1cm} (1)

\[ Ms = Md(Y, i, Ms + B/i) \]  \hspace{1cm} (2)

\[ DB / i + DMs = G + B - T(Y + B) \]  \hspace{1cm} (3)

where \( Y \) = national income (added value) excluding interest on government debt, \( C \) = consumption, \( G \) = government expenditure excluding interest payments, \( T \) = taxes, \( B \) = number of government bonds, consols which each pay one unit of money per period on interest (\( B \) therefore equals the amount of interest payments per period), \( Ms \) = money supply, \( i \) = rate of interest, \( I \) = private investment, \( Md \) = money demand, \( D \) = the operator \( d/dt \).

Eq. (1) represents the IS-curve. It is to be noted that interest payments on government bonds figure separately. There is a wealth effect in consumption, wealth consisting of the money supply \( Ms \) and the market value of bonds, \( B/i \). Eq. (2), representing the LM-curve, also contains a wealth effect. Note that government bonds are net wealth, there is no debt neutrality in this model. Eq. (3) gives the government budget constraint, showing that a budget deficit (the right-hand side of the equation) implies either debt financing or money creation or both. It is possible to include the stock of capital in both the wealth variable...
and the investment function, but that does not contribute to the transparency of the model (cf. Blinder and Solow 1973). This kind of analysis can also be extended to open or growing economies (see for an open economy Branson 1976 and for an economy that is both growing and has targets for the current account of the balance of payments Van Ewijk 1986).

This model allows for crowding out through wealth effects, shifts of the IS-curve along a sloping LM-curve and portfolio-balance effects through a rise in the rate of interest because of an increasing supply of bonds. Inclusion of the government budget constraint means that the point of intersection of the LM- and IS-curves represents only a temporary equilibrium if there is a surplus or deficit on the government budget. Changes in the money supply or the bond supply will then lead to further shifts of the IS- and LM-curves. Full equilibrium obtains when

\[ G + B = T \]  

(4)

or, after total differentiation, when

\[ dG + dB = T_Y dY + T_Y dB \]

i.e., after rearranging,

\[ dY/dG = \left[ 1 + (1 - T_Y) dB/dG \right] / T_Y \]

(5)

(we assume that tax rates on interest income are identical to tax rates on other income).

If government expenditure rises and the increase is financed by the creation of money (i.e., by selling Treasury notes to the Central Bank, so that interest payments flow back to the government), eq. (5) reduces to

\[ dY/dG = 1/T_Y \]

(6)

If \( dB/dG > 0 \), this means that the long-term multiplier of government expenditure is greater under bond financing than under money financing, provided a new equilibrium is indeed attained. This differs from the short-term effect. In the short term bond-financed expenditure will shift the LM-curve upward (given the money supply, equilibrium on the money market will at any rate of interest only obtain at a higher rate of interest if the bond supply increases; this is the portfolio balance effect). On outstanding bonds, however, interest has to be paid. The government sees itself forced to issue new bonds in order to pay interest. Total wealth therefore increases further, and against an upward shift of the LM-curve the IS-curve shifts to the right. Generally wealth effects on consumption may be assumed to be stronger than wealth effects on money demand, as economic agents will prefer to invest any increase in wealth in assets that give a higher return. It is not impossible for \( dB/dG \) to have a negative value. This may happen if the short-term effects of \( dG \) are very strong. With a high propensity to consume and strong reactions of investment to changes in national income, national income may grow fast enough for the increase in tax receipts to surpass the increase in government expenditure. For the money supply to be held constant, government debt has to be bought back rather than sold. A curious implication is that open-market operations have a contractive rather than an expansive effect in that case:
the fall in the number of bonds outstanding reduces interest payments, leads to budget surpluses which are used for further buy-backs, private wealth is reduced in the process and the resulting contraction by far outweighs the effects of the increased money supply (Mayer 1984 p. 374).

It should be realised that the outcomes of the above analysis hinge on the supposition that non-interest government expenditure is unaffected by the amount of interest payments and that tax rates are held constant. Furthermore, the results presuppose stable situations, but it is not impossible for the model to explode after a shock, i.e., debt may continue to grow. Gale (1983 p. 160) notes that a strong effect of bond-financed fiscal expansion requires an increase in the capital stock at the same time as an increase in government expenditure. This means that any crowding out of private investment through higher interest rates must be overcompensated by income-induced investments (the accelerator). Of course, it should always borne in mind that this model is a Keynesian fix-price model, which limits its applicability for long-term analysis. A diagrammatical analysis by Mayer (1984) with flexible prices threw up the same results as the fix-price algebraic model, though. Also, it is a defect that full equilibrium is not made contingent on zero net investment (Arestis 1985 p. 111; see for simulations with a model with flexible prices, equity shares, the stock of capital and explicit expectations Nguyen and Turnovsky 1983 and for a growth model, that of course admits of net investment in equilibrium, Van Ewijk 1986).

BIBLIOGRAPHY


P. Evans, Is the Dollar High Because of Large Budget Deficits?, *Journal of Monetary Economics*, vol. 18, 1986.


G. Fromm and L.R. Klein, A Comparison of Eleven Econometric Models of


