THE FISCAL DEFICIT, MONETARY POLICY AND INTEREST RATES

This article discusses in simple terms the relationship between fiscal deficits and interest rates. In addition to exploring the main theoretical linkages, the article briefly reviews the results of overseas studies and comments on the implications for the package of fiscal reform measures currently being introduced in New Zealand.

Introduction

The relationship between the fiscal deficit and interest rates has come under increasing attention overseas in recent years as economists have sought to explain the high real interest rates which have been experienced in many countries in the 1980s. More recently, commentators in New Zealand have also begun to focus on this relationship following the removal of interest rate controls in mid-1984 and the subsequent rise in domestic interest rates.

Changing market expectations regarding the size of the fiscal deficit and the Government's borrowing programme were clearly a major influence on short-term movements in wholesale interest rates in New Zealand over 1985/86. The Government has also indicated that it views a reduction in the relative size of the deficit as an important element in the achievement of a sustainable fall in real interest rates.

This article briefly discusses the nature of the theoretical linkages between the fiscal deficit and interest rates. It also comments on the implications of alternative forms of deficit financing although it is generally assumed that net public sector injections are 'fully-funded' through sales of medium to long-term government stock. Extensive work has been carried out overseas in an attempt to identify the linkages between deficits and interest rates based on actual data, particularly for the United States. While the results of this work are not given in detail, the general thrust of the conclusions is summarised, together with the implications for New Zealand in the context of the fiscal reforms announced to date.

The discussion which follows is intended to provide only a broad overview of the issues. The article begins by examining the theoretical linkages between deficits and interest rates in the context of a hypothetical closed economy i.e. an economy with no international trade or capital flows. It then looks at the case of a small open economy, which more closely approximates the New Zealand situation, before discussing the results of overseas studies and the implications for New Zealand.

Closed Economy Case

In a closed economy with no international trade or capital flows, a fiscal deficit i.e. the excess of government spending over revenue, must be financed by borrowing on the domestic capital market. An increase in the deficit therefore implies an increase in the overall demand for savings in the economy and this will tend to place upward pressure on real interest rates.[1] The rise in interest rates is necessary to induce the increase in net private sector savings required to finance the higher level of Government borrowing. The higher real interest rates stimulate saving and discourage, or 'crowd-out', private consumption and investment spending, particularly in those areas which are most sensitive to interest rates such as housing investment.[2]

In addition to the effect on the supply of savings available to the private sector there are several other closely related channels by which an increase in the fiscal deficit may influence domestic interest rates.

1 A distinction is made here between real and nominal interest rates. The nominal interest rate (i.e. the conventional annual interest rate payable on financial instruments) is normally thought to incorporate a real component, which represents the expected return after inflation, and an inflation premium, which serves to maintain effective purchasing power of the instrument in times of inflation. Thus, if the expected average annual inflation rate over the next five years is 10 per cent, then a five year government debt instrument yielding a nominal interest rate of 15 per cent would have an effective real interest rate of roughly 5 per cent.

2 The extent to which the deficit feeds through into higher interest rates will depend on a number of factors, including the state of the economy, the specific nature of the fiscal policy measures which generate the deficit, and any direct effects of fiscal policy on private sector savings. Higher real interest rates may also be expected to result from a rise in government spending which is financed by higher taxes (i.e. with no change in the deficit) if the tax increase has the effect of discouraging private sector saving.

First, there is the effect on the market for government stock. A higher deficit means that the Government must sell a larger volume of illiquid government stock in order to maintain an unchanged monetary policy stance (otherwise, the increased deficit will result in more rapid growth in the money supply). Provided there is not a corresponding rise in the demand for stock as a result of the higher deficit, then the excess supply will lead to a fall in the 'price' of government stock. The 'price' of stock is inversely related to the interest rate and so interest rates must rise. The extent of the upward pressure on interest rates will depend in part on the relative size of the existing level of government debt outstanding. For example, if the level of government debt in the hands of the private sector as a result of past deficits is already high, then the rise in interest rates required to induce people to hold even more government debt will be correspondingly larger.

An increase in the deficit may also lead to higher real interest rates through the resulting income and wealth effects on the demand for money. A higher fiscal deficit will tend to raise the level of aggregate demand in the economy, thereby leading to an increase in the amount of money which the private sector desires to hold for transactions purposes. To the extent that this is not accommodated by increases in the money supply, because the Government's monetary policy is constraining the size of financial institutions' balance sheets, then the excess demand for money will put upward pressure on real interest rates.

Wealth effects may also have an influence to the extent that the rise in the level of government stock outstanding, as a result of funding the deficit, adds to the private sector's perceived net wealth. Some economists have argued that this may not be a significant influence, since private sector agents will realise that an increase in the government debt outstanding at present implies higher taxes in future to service that debt. However, the more generally accepted view is that changes in the level of government debt outstanding do have some direct effects on private sector spending, though the direction of these effects is not clear. Provided that a rise in the nominal value of government stock outstanding does increase the private sector's perceived net wealth, then this will tend to reinforce the income effects discussed above. Offsetting this, however, may be the negative effect of a rise in domestic interest rates (resulting from the other influences discussed here) on the capital value of existing government stock and on other financial asset prices, including share prices.

In addition to the above channels, changes in the fiscal deficit may also affect nominal interest rates directly through the impact on private sector expectations. In particular, if people believe that the higher deficit implies a permanent increase in the Government's borrowing programme in the future, then this will tend to be reflected in a rise in current real interest rates (i.e. the expectation of additional demands on private sector savings from the Government in future will be built into the current interest rate structure, particularly longer term rates). Alternatively, to the extent that people believe that the larger deficit increases the risks of more rapid monetary growth in the future, or that higher fiscal deficits are inherently inflationary, then the inflation premium built into current nominal interest rates will tend to rise.

In practice, the relative importance of these expectational effects will be heavily influenced by past experience. To the extent that growing fiscal deficits have been seen as a long-term characteristic of the economy, with deficit reductions occurring very infrequently, then any increase in the deficit is more likely to be viewed as implying a permanent increase in the Government's demands on domestic savings and thereby generate an upward adjustment in real interest rates. Similarly, to the extent that deficits have tended to be financed in an inflationary manner in the past, an increase in the deficit will more quickly lead to an additional inflation premium on interest rates.

The above discussion has been in terms of an unchanged monetary policy stance, so that the increased deficit is fully funded by sales of illiquid government stock. However, an increase in the fiscal deficit may be accompanied by a relaxation in the stance of monetary policy if the deficit is partly funded by money creation rather than by sales of illiquid debt. The initial impact of a relaxation in the stance of monetary policy will generally be lower real interest rates, particularly short-term rates, as a result of the easier money and credit conditions relative to the full funding case. However, the effect on nominal interest rates is less clear as more rapid monetary growth will tend to add to inflationary expectations, thereby raising the inflation premium which is built into nominal interest rate levels.

The longer term effects of different monetary/fiscal policy combinations are not discussed here. However, it is generally assumed that more rapid monetary growth will over time tend to feed through primarily into higher inflation, and is unlikely to have a permanent effect on real interest rates.

Open Economy Case

The main change to the analysis once an allowance is made for the effect of transactions with the external sector is that the Government effectively has access to overseas savings, as well as domestic savings, in financing the deficit. It is generally assumed when analysing small open economies such as New Zealand that overseas interest rates can be thought of as given (i.e. New Zealand is too small to influence interest rates in overseas capital markets). Provided there are no major impediments to capital flows between New Zealand and the rest of the world (as is now the case following the removal of exchange control in December 1984) then overseas capital can be expected to flow into New Zealand whenever real returns from investing here, adjusted for the perceived risks associated with such investments[3] and expected exchange rate movements, are higher than the returns available overseas.

In an open economy such as New Zealand, with a floating exchange rate, the initial impact of an increase in the fiscal deficit is still likely to be a rise in domestic real interest rates, through the channels described in the closed economy case. Though the higher relative interest rates will attract foreign investors (or, alternatively, encourage New Zealanders to borrow offshore rather than domestically) this will initially tend to drive up the exchange rate, rather than to moderate the rise in domestic interest rates.

The rise in the exchange rate in response to a fiscal stimulus is often referred to as an example of

3 Considerations which will be taken into account by investors in assessing the risks associated with investing in particular countries include political stability, medium-term prospects for the economy, future debt-servicing capacity and the depth of domestic capital markets.

'overshooting', in the sense that the exchange rate temporarily rises above its long run sustainable level. This phenomenom was discussed in more detail in the February 1986 *Bulletin* in the context of a change in monetary policy stance. The main reason for the initial rise in the exchange rate is that the domestic economy tends to adjust more slowly to the higher fiscal deficit than does the foreign exchange market. In particular, the current account balance is likely to be little affected by the higher fiscal deficit in the short run and, as a result, the increased net demand for New Zealand dollars in the foreign exchange market will put upward pressure on the real exchange rate.[4]

Over time, the current account balance will gradually deteriorate in response to both the effect of the fiscal stimulus on the demand for imports and the negative effect of a higher real exchange rate on the exporting and import-competing sectors. The private capital inflows required to finance the larger current account deficit will in turn permit the inflow of foreign savings to reduce domestic real interest rates back down towards 'world' levels (while at the same time the real exchange rate will tend to fall back towards its original level).[5]

The extent of the initial rise in real interest rates in the open economy case will depend largely on the relative speed of adjustment in the domestic economy. Where the domestic economy adjusts only very gradually to a fiscal stimulus, the upward pressure on real interest rates will, in the short run, be similar to that expected in the closed economy case. As the real economy and the current account begin to adjust, real interest rates and the real exchange rate will both gradually fall back towards their original levels as foreign savings flow in to fund the deficit. However, with a slow adjustment in the current account, the overshooting in both interest rates and the exchange rate may last for some time.

The extent of the exchange rate overshooting involved will be greater if foreign capital flows are highly responsive to interest differentials. In practice, however, capital flows often do not move rapidly between countries to eliminate (risk-adjusted) differences in expected real returns. This arises out of investor preferences and legal and institutional restrictions, as well as the absence of perfect information. In this less fluid situation, real interest rates may be expected to remain at higher levels in the short run but there would not be as much upward pressure on the exchange rate.

While international capital flows will eventually return real risk-adjusted interest rates in New Zealand to world levels, nominal rates may still differ from world rates where there are differences in the expected inflation rates in New Zealand compared with the rest of the world. Thus, if a higher fiscal deficit is viewed as being inflationary, either because it is currently being financed by money creation rather than government stock sales or because the deficit has reached levels where future monetization of the deficit[6] is considered inevitable, then this will be reflected in higher nominal interest rates in New Zealand, without generating an offsetting capital inflow or necessarily affecting the exchange rate.[7]

A rise in the fiscal deficit may also have a more permanent effect on real interest rates to the extent that it alters investors' perceptions of the risks which are associated with investing in New Zealand. This could arise, for example, where the existing level of official debt resulting from past deficits has reached a level which is considered by overseas investors to be too high in relation to the country's ability to service that debt. In this case, a further rise in the deficit may lead investors to require a significantly higher real return in New Zealand to compensate for the perceived increased risks involved, so that we are again brought closer to the closed economy case where the deficit must be financed primarily with domestic savings. Similarly, an ongoing current account deficit is unlikely to represent a sustainable long-term situation for a small economy such as New Zealand. Eventually, there are likely to be limits to the willingness of foreigners to lend their savings to New Zealanders and the real exchange rate will ultimately have to depreciate as a result (to bring the current account back into balance).

Empirical Studies

Although there is general agreement among most economists on theoretical grounds that large budget deficits, financed by debt sales, place upward pressure on real interest rates, there has been no clear consensus among studies based on actual country data to date. However, the apparently conflicting conclusions from such empirical studies, which mainly relate to the United States, can be largely attributed to differences in the approaches taken by various researchers.

One of the major differences concerns the form of the data used. Both interest rates and budget deficits respond to cyclical changes in economic activity, so that it is important to use a measure of the deficit which has been adjusted for cyclical influences when examining the relationship between deficits and interest rates. For example, a slowdown in economic growth will tend to increase Government spending in such areas as unemployment benefits and social welfare payments, while it will also tend to decrease tax revenue, thereby leading to an increase in the size of the deficit. Also associated with a slowdown in the economy will be a decline in the demand for money and credit leading to a fall in real interest rates. This apparent negative correlation between the fiscal deficit and interest rates could easily obscure a significant positive influence on interest rates arising from policy-induced changes to the budget deficit.

Another important difference between studies is the way in which interrelationships between fiscal policy

4 The real exchange rate is a measure of the competitiveness of domestic producers and is usually calculated by deflating the nominal exchange rate by the ratio of the domestic to foreign price level. Thus a rise in domestic prices in the absence of a fall in the nominal exchange rate will lead to a loss of competitiveness and an appreciation of the real exchange rate.

5 As noted earlier, the expected real return on New Zealand dollar assets faced by overseas investors is a combination of the current interest rate and the expected change in the exchange rate. Thus, when real interest rates rise in New Zealand, the resulting foreign capital inflows may reduce expected real returns back down to world rates either by reducing domestic interest rates directly or by pushing the exchange rate up above its longer run sustainable level. The latter effect lowers the expected real return on New Zealand dollar assets by inducing the expectation of a future depreciation in the New Zealand dollar. In practice, some combination of these two effects will occur, but the exchange rate effect will tend to predominate in the early stages prior to a deterioration in the current account balance which takes the pressure off the foreign exchange market.

6 Financing the deficit by money creation, rather than by selling longer-term government debt.

7 The exchange rate will be expected to depreciate over time in line with the higher relative inflation rate in New Zealand and this depreciation will reduce the effective relative real return expected from investing in New Zealand, thus partly offsetting the higher nominal interest rate available.

and monetary policy are handled. Specifically, if there has tended to be a positive relationship between money growth and budget deficits, and if episodes of accelerating money growth are associated, at least initially, with falling interest rates, then failure to account for money growth will bias downward the estimated effects of the fiscal deficit on interest rates. Similarly, any other variables which interact with fiscal policy and also affect interest rates (such as the rate of inflation) should be taken into account. Differences in the results from various empirical studies may also arise because of differences in the choice of interest rate (long or short) and in the choice of sample period from which the data are drawn. A final problem with all the empirical studies is the general absence of reliable measures of price expectations leading to difficulties in measuring real interest rates.

Generally those studies which take account of the cyclical influence on deficits and interest rates, and are properly specified to include monetary policy, expectations and other relevant variables, have found a significant positive relationship between budget deficits and interest rates. Furthermore, recent research examining the effect of news (or information) on financial asset prices, suggests that interest rates (and exchange rates) in the United States react quickly to news concerning the budget deficit (and other variables such as the money supply). This indicates that market participants believe budget deficits to be an important influence on interest rates, and of course their actions tend to make these expectations self-fulfilling.

Very little empirical evidence is available for New Zealand, partly reflecting the fact that the policy of fully funding the deficit through medium-term debt sales is a relatively recent phenomenom and partly reflecting the distorting impact of interest rate controls during much of our recent history. However, market responses over the past year certainly indicate a general concensus on the relevance of the fiscal deficit for domestic interest rate levels.

Conclusion — The Implications for New Zealand

Theoretical and empirical literature suggests that there is a positive relationship between the fiscal deficit and real interest rates in the short run. For a small open economy such as New Zealand, this relationship may be weakened in the longer run as international capital flows will tend to bring domestic real interest rates back into line with world rates. However, significant changes in the deficit may still have long-lasting effects on real rates to the extent that they alter investor's perceptions of the risks associated with New Zealand dollar investments or of the longer term prospects for the New Zealand economy. Fiscal policy may also have a significant effect on nominal interest rates if it alters inflationary expectations.

Putting this in the current context, the Government has adopted a policy of reducing the relative size of the fiscal deficit over time and, in addition, has announced its intention to make substantial changes to expenditure and revenue policies. These changes are intended both to improve the efficiency of Government spending and to broaden the tax base, thereby reducing the reliance on income taxes.

To the extent that these policies are successful in reducing the size of the fiscal deficit, then the above discussion would suggest that they should lead initially to a fall in domestic interest rates. The fall in real interest rates will be larger to the extent that the changes are viewed as representing a major re-orientation of fiscal policy which will lead to greater efficiency in the public sector and a more sustainable fiscal position in the future. The benefits in this regard may well occur in advance of actual reductions in the size of the deficit if the policy is perceived as being credible and as offering the potential for significant future gains.

A fall in domestic real interest rates relative to prevailing rates overseas should in turn lead to a reduction in the real exchange rate. To the extent that the exchange rate may have been raised above its long-run sustainable level by the high real rates domestically, then this would represent a return to that longer run equilibrium level.

The effect of such a depreciation on the nominal, or actual, exchange rate may be reduced to the extent that fiscal restraint also leads to a fall in inflationary expectations in New Zealand by easing concerns over the Government's ability to maintain a firm monetary policy stance in the future. However, a decline in inflationary expectations would also have benefits in terms of lower nominal interest rates. Also, while a major fiscal reform package could lead to an increase in the longer run sustainable exchange rate, this would be unlikely to have a significant effect in the short run.

There are good reasons for expecting the potential beneficial effects of a credible fiscal reform package to be both significant and long-lasting. Public concerns have heightened over the relative size of the budget deficit and the rapid growth in the level of official debt relative to GDP in recent years. Many commentators have pointed to the budget deficit as being one of the major structural imbalances in the economy which must be corrected before New Zealand's relatively poor economic performance, in terms of real growth over the past decade, can be corrected. Moreover, financial market participants also appear to view the size of the deficit, and the resulting Government borrowing programme, as being a major determinant of domestic interest rate levels. In this environment, a major public sector restructuring combined with concerted efforts to reduce the fiscal deficit could give significant and quite rapid gains.

The final issue addressed here relates to the possibility of achieving lower real interest rates by moving away from the policy of fully funding the deficit through sales of medium to long-term government stock the earlier discussion suggested that there would be initial reductions in real interest rates, through the stimulatory impact of more rapid monetary growth. However, it was also noted that expectational effects would be a major determinant of the ultimate impact on medium and long-term interest rates. At present, New Zealand's inflation rate remains significantly above the rates of most of our major trading partners, while, in addition, we have not yet established a long track record of operating a firm anti-inflationary monetary policy. In the current context, then, there would seem to be a high risk that an easing in the stance of monetary policy would have an adverse effect on the overall nominal interest rate structure by raising inflationary expectations.

Accordingly, the combination of a continued firm monetary policy and a major reform of fiscal policy would seem to offer the best prospects for achieving a significant and lasting improvement in both domestic interest rates and New Zealand's international competitive position.