

# ON THE EFFECTS OF INFLATION<sup>1</sup>

## INTRODUCTION

It is commonly asserted that a high rate of inflation is inimical to economic growth. At one extreme, there is the view that a major reduction in, or even the elimination of, present high rates of inflation is a pre-requisite to the attainment of reasonable rates of economic growth, such as those experienced by most developed countries in the 1950's and 1960's. On the other hand, some commentators agree that inflation leads to various distortions in the economy but they are less sure or even unclear over whether the easing or removal of these distortions is really vital to a resumption of more acceptable levels of economic growth. Indeed, some would go so far as to argue that growth could be attained despite inflation if only governments would pursue appropriate forms of expansionary policies.

The balance of opinion would appear to rest firmly on the side of those who claim that there would be a better chance of achieving an improved growth performance if inflation could be reduced. But just why this is the case is not always clear, since the arguments in favour of this view are not always well articulated or fully developed. The view seems to be based as often on conventional wisdom as it is on economic analysis.

Accordingly, it is the purpose of this article to set out in a relatively non-technical fashion the economic reasoning underlying the conventional view. If this view is thought to have real substance, then it may well be that we should be prepared to pay a higher short term price to reduce inflation in the interests of enhancing the country's longer term growth prospects.

In this sense, the control of inflation can be seen as possibly integral to any medium term structural economic strategy New Zealand may wish to pursue.

## THE POLICY DILEMMA

The causes of inflation have been documented elsewhere, although there is not general agreement on them, at least in terms of their relative importance. This paper does not delve into the question of whether inflation is primarily due to the money stock rising too rapidly; to cost pressures resulting from high wage increases or rising import prices; to an excess of monetary demand relative to the supply of goods and services; or to some complex interaction of these various factors.

Neither does the article address the issue of policy solutions to the inflation problem, other than to hint at some of the matters which need to be addressed more explicitly than has perhaps been the case to date. The policy prescriptions cover as broad a range of possibilities as do the theories explaining inflation. The monetarists claim that the key is firm and persistent control over the growth of the money supply. The institutionalists argue in favour of an incomes policy which would restrain the expansion of money wages and other incomes (and also perhaps price control). Other

economists are in favour of a tight rein on government spending and reductions in budget deficits.

In any event, the essence of the matter is that any particular policy approach will involve the dilemma of trade-offs with respect to other economic objectives, at least in the short run. For example, the cost of reducing inflation in the short run is likely to be slower real growth, and possibly a recession, and higher unemployment. The problem is how to strike a balance between competing and often conflicting objectives.

If such a balance is to be sought, it is important that the consequences of not adequately controlling inflation are understood, and the nature of the inter-relationships between inflation and the other economic objectives such as growth, full employment, and the need to preserve a tolerable balance of payments position clarified.

This article thus concentrates on describing the effects of inflation on various aspects of economic activity.

By way of providing some historical perspective, table 1 sets out indicators of price movements and economic growth in New Zealand for the past two decades. They show the acceleration in the rate of inflation and the slowdown in growth experienced during the course of the 1970's, although obviously the data tell us nothing about the relationship between these trends.

## ANTICIPATED VERSUS UNANTICIPATED INFLATION

Many of the problems which arise from inflation would of course be greatly eased if people could fully anticipate movements in costs and prices over a sufficiently lengthy future period. But it is the unanticipated character of inflation, or the uncertainty about just how rapid the rate of inflation will be and how one should adjust to it, which makes coping with inflation so difficult.

If the rate of inflation were known for the next twenty years, savers could demand interest rates which would protect the real value of their savings. Borrowers too would have a better idea of what price increases they could expect for their output, which in turn would give them more confidence in undertaking borrowing to finance investment projects. If income increases could also be accurately predicted, consumers would then know whether it was really better to spend now or wait until later. Indeed, such decisions may be little influenced by inflation if movements in prices and incomes were both fully anticipated.

However, the truth of the matter is that we are not able to predict accurately the rate of inflation, especially over periods of several years ahead. Nevertheless much economic activity is based on longer term contractual obligations. Mortgages take 20 or 30 years to pay off. Investment projects may have construction gestation periods of several years and help determine a company's output capacity for an even longer period.

Other major problems arise because inflation tends to be uneven in its impact on different sectors of the economy.

1. This paper was developed from material originally prepared for addresses by Dr. R.S. Deane, Chief Economist of the Reserve Bank of New Zealand, to the Wellington Rotary Club, 21st July 1980, and to the New Zealand Institute of Engineers, Wellington Branch, 12th August, 1980.

**TABLE 1**  
**Indicators of Economic Growth and Inflation**

<i>Year Ended March</i>	<i>1 Real GDP \$m. (1965/66 prices)</i>	<i>2 Consumer Price Index Base: 1965 = 1.000</i>	<i>3 Real GDP Annual % Change</i>	<i>4 Consumers' Price Index Annual % Change</i>
1960	2,873	0.872	3.9	2.13
1961	3,047	0.880	6.1	0.92
1962	3,148	0.899	3.3	2.16
1963	3,245	0.921	3.1	2.45
1964	3,443	0.940	6.1	2.06
1965	3,656	0.978	6.2	4.04
1966	3,877	1.007	6.0	2.97
1967	4,024	1.039	3.8	3.18
1968	3,989	1.104	-0.9	6.26
1969	4,075	1.152	2.2	4.35
1970	4,280	1.207	5.0	4.77
1971	4,439	1.303	3.7	7.95
1972	4,552	1.432	2.5	9.90
1973	4,753	1.522	4.4	6.28
1974	5,094	1.663	7.2	9.26
1975	5,300	1.860	4.0	11.85
1976	5,389	2.151	1.7	15.65
1977	5,397	2.495	0.1	15.99
1978	5,249	2.860	-2.7	14.43
1979	5,650+	3.172	2.5+	10.91
1980	5,765+	3.671	2.0+	15.73

+ Estimate.

It is this nexus between the unanticipated character and uneven impact of much of our inflation, and the need to take some economic decisions affecting relatively longer periods of time, which helps explain why people worry so much about inflation and particularly fluctuations in the rate of inflation.

## THE PERSONAL SECTOR

### Incomes:

As far as private individuals are concerned, inflation has a variety of effects on their economic behaviour. Uncertainty about the future rate of price increases raises problems for wage and salary earners in their income negotiations. Although wage settlements may allow for some 'catching-up' with respect to past price increases, there remains the uncertainty about how rapidly real wages will be eroded by future inflation. The desire to maintain wage increases at least in line with price rises not only concentrates undue attention on relative income shares in the wage bargaining process but also diverts attention from the fundamental consideration which should underpin real wage increases, namely rises in productivity, or real output per employee.

Clearly (at least for the community as a whole) nominal income increases in excess of rises in productivity must be illusory in the sense that such an excess must by definition spill over into further inflationary pressures. These pressures may take the form of price rises or they may be absorbed by an external current account deficit. The latter implies that New Zealanders draw upon someone else's savings (i.e. foreigner's savings) to finance the excess of spending over domestic production of goods and services.

Inflation is thus a cumulative process, under which price rises generate demands for higher incomes, and in

turn rising incomes increase costs and hence prices. If the institutional linkages are strong between, say, wages and prices, then the risks are greater that inflation will develop in a spiralling sort of manner. Indeed, institutional factors are likely to be such as to encourage a ratcheting effect, under which the rate of inflation can readily rise but not easily fall. The simplest example of this is the existence of statutory and award minimum wage rates which move up from time to time but are never adjusted downwards even if, for example, a major decline in the country's terms of trade necessitated a downwards adjustment in real incomes. Thus inflation may feed upon itself, breeding further inflation.

### Taxation

The process is complicated by the existence of a progressive personal income tax system. Under this system, income earners pay higher proportions of their income in tax as their incomes rise. In other words, under inflationary circumstances, government's total revenue from income tax (with unchanged tax rates), will automatically rise faster than nominal incomes. So wages and salaries will not only be eroded by price rises, but also by more than proportionate increases in taxation. If nominal incomes rise only as fast as prices, and given a progressive tax schedule, real disposable (after-tax) incomes will fall. This effect is known as 'fiscal drag'. Left unchecked, it will in time dampen real spending and generate a recession. Alternatively, if wage demands are based on a desire to maintain after-tax income in real terms, then nominal wages would have to rise faster than prices, so contributing further to the spiralling effect mentioned earlier.

### Savings:

Private individuals not only have problems maintaining the real purchasing power of their incomes in

times of inflation; they also may find the value of their savings is eroded. Deposits placed in a bank for a fixed term of, say, 5 years at a time of relatively low inflation and low interest rates will be worth much less in real terms after the 5 year period if in the meantime the inflation rate accelerates. And even if savers become wary of inflation and only commit their funds for short periods, so that they can take advantage of rising interest rates, it may still turn out that the real value of savings are eroded if interest rates do not increase as rapidly as inflation rates (as indeed tends to be the case, at least for interest rates on small savings balances). This problem is likely to be even more acute in times of official interest rate controls, as illustrated by the New Zealand experience in the years preceding decontrol of interest rates in March 1976.

Again, since interest on savings is usually taxed, the erosion of purchasing power takes place because of both price rises and taxation effects. The more progressive the tax schedule, the worse is the problem.

The behaviour of savers in times of inflation is still one of the unsolved mysteries of economics. To the surprise of most economists in the early 1970's, when inflation was accelerating sharply in most western nations, consumers became cautious and saved a higher than expected percentage of their income. The 'savings ratio' rose, although it had been thought that the expectation of rising prices might encourage people to spend more rapidly in order to avoid the effect of future price increases.

More recently, however, and especially in the United States in the late 1970's, consumers have indeed stepped up their spending and their borrowing in the face of higher inflation rates. The savings ratio in the U.S. has thus fallen. It is not clear why consumers have reacted in these diverse manners.

In New Zealand, the savings ratio has fluctuated to some extent with the cycles in economic activity during the past decade but, if anything, there appears in a very general way to be a positive relationship between the rate of inflation and the savings ratio — the more rapid are price rises the higher is the percentage of income saved by the personal sector. Perhaps the erosion of the value of savings by price and tax effects has meant that people have to save proportionately more in nominal terms in times of high inflation in order to maintain a similar real value for their savings balances (what economists call a 'real balance effect'). Perhaps also the uncertainty generated by fluctuating rates of inflation of itself generates a cautious attitude; a need to increase savings to guard against that uncertainty.

#### **Fixed Incomes:**

These points illustrate also the dilemma faced by people on fixed nominal incomes or social welfare beneficiaries whose incomes are not indexed or only partially indexed to inflation. It is well understood that inflation redistributes income away from the fixed income earners, in just the same way as it redistributes income from debtors to creditors, and savers to borrowers.

#### **House Finance:**

Inflation can have an important adverse influence on a person's ability to buy and finance a house, partly

because of the nature of the mortgage contracts used by most financial institutions but more fundamentally because of attitudes towards the nature of interest. Lenders traditionally regard interest receipts from a loan as current income. This is indeed the case in non-inflationary circumstances. But if prices generally are increasing, and the purchasing power of money lent is thus declining, then it would seem more appropriate to regard interest, at least at a rate up to the rate of inflation, as simply a capital maintenance payment and not as income. In other words, in times of inflation and high interest rates, much of the interest is essentially helping to maintain the real purchasing power of a loan.

But because institutions do not regard interest in this way, and because our tax laws also insist on the treatment of all interest receipts as current taxable income, then high interest rates lead to major problems for house purchasers who use long term mortgage finance.

Under conventional table mortgage arrangements, repayments of interest and principal are usually fixed in nominal terms, so that regular total payments decline as a proportion of income over time if incomes are rising as a result of inflation. With relatively high rates of inflation and consequent high interest rates the proportion of a house purchaser's income which must be devoted to mortgage interest and capital repayments can rise to very high levels indeed, and can easily be more than double the proportion prevailing under a non-inflationary situation in the early years of a loan.

While this may be sustainable for dual income families or higher income earners, it can create a disincentive or at least some social hardship with respect to house purchasing for lower single income families.

One consolation of inflation, but one which cannot always be relied upon as was discovered in New Zealand in the second half of the 1970's, is that the market value of houses (and land) often tend to increase with inflation. Over the longer term, the movements in house prices and consumer prices generally have tended to be similar. Since a house is the major asset of most households, this is one way in which their savings can be protected.

#### **Speculation:**

But this point is illustrative of another problem with inflation, that of the encouragement it may provide for speculation. Because inflation erodes the value of money, including conventional savings in the form of financial assets, people will look to other means to maintain the real value of their assets. This process leads to speculation in land, antiques, paintings, gold, and so on. Any asset which offers the prospect of price increases in line with or in excess of the overall rate of inflation, becomes very attractive as an investment. Such a process may be damaging to the economy if it becomes too widespread and if it leads to investment in relatively non-productive assets rather than in the more traditional productive assets, such as in the corporate sector (via shares and debentures).

A comparable problem exists in the farm sector in New Zealand where investment in land offers the prospect of substantial tax free capital gains whereas the current income from farming is subject to conventional income tax. In inflationary circumstances there is thus the risk that people who might not normally own farms will wish to acquire land as a hedge against inflation and thus push up farm prices. This process reduces the

income yield from farms and may concentrate undue attention on the tax free capital gain element to the detriment of current farm development expenditure, to say nothing of making it more difficult for regular farmers to acquire farm land.

This sort of difficulty suggests the need either to consider taxing capital gains in such a way as to treat them as windfall income, or to enhance the attractiveness of conventional outlets for savings by ensuring that, for example, financial assets maintain their purchasing power even in the face of rapid inflation. This has led some commentators to favour indexation of financial assets, a subject which will be referred to again later.

## THE BUSINESS SECTOR

### Investment:

Inflation sets up a number of disincentives to investment in new productive capital assets. Uncertainty about the likely future rate of inflation may increase risk premiums and induce cautiousness on the part of the business sector. Entrepreneurs may be less confident about future sales and profits, and less assured about the future costs of their inputs. Even if profitability is apparently maintained in current dollar terms in the face of inflation, real returns may be declining and cash flows contracting in real terms. These latter points represent some of the problems raised in the debate about historic cost accounting procedures as compared with current cost accounting or some other variant of accounting for inflation in a meaningful way.

Not only is uncertainty reflected in the variable impact inflation has on future dollar values, but also it encompasses uncertainty about the intentions of consumers and government itself. There is the problem of attempting to anticipate government's own policy response to fluctuating rates of inflation, especially if these are associated with external difficulties, erratic rates of growth and rising unemployment (as has been New Zealand's experience in the late 1970's). Faced with uncertainty, the business sector is likely to bias its investment decisions towards the shorter term so that the acquisition of capital assets with relatively long lives may be discouraged and the demand for replacement plant and equipment dampened.

In other words, inflation induces uncertainty which in turn inhibits long term investment of a sort which is essential for structural readjustment and economic growth. If new investment is indeed adversely affected in this way then so too will the economy's potential output capacity be impaired.

These difficulties are likely to be compounded by the present taxation system, under which depreciation allowances are fixed in nominal terms since depreciation is computed on the basis of the historic costs of assets. These costs may bear no relationship to the likely replacement cost of the equipment or buildings after a period of years in which inflation has taken place. Even if the net cash receipts associated with a particular investment project rise more or less in line with the rate of inflation, the fact that depreciation allowances related to the project are fixed in nominal dollar terms means that the taxes paid (on the net cash receipts less the depreciation charges) will rise over time as a proportion of the net cash receipts, assuming a constant tax rate. Thus it is likely that the after-tax cash flow will

not rise as rapidly as the cash receipts in before-tax terms. If the after-tax cash flow is deflated by the rate of inflation to determine the purchasing power of this final cash flow, then real declines are likely to be recorded. Accordingly, even though an investment project may appear to hold the promise of a constant yield over time in before-tax real terms, it may well suffer from a gradually declining real return in after-tax terms.

The source of the reduced real yield on investment is the increased taxation associated with fixed nominal depreciation allowances. Even though the real value of cash inflows (before taxes) may be insulated from the rate of inflation, the real value of the depreciation expense falls over time, and falls more as the inflation rate rises. This results in faster growth in taxable income — and the outflow of funds for taxes — than would be the case if depreciation allowances reflected the rising price level and the replacement cost of capital. In effect, taxes are being levied not only on the income generated by the capital, but also on the capital itself. This taxation effect reduces the incentive of firms to invest.

Similarly, the valuation of stocks in current price terms means that over the course of a normal financial year the same volume of stocks may rise in value simply as a result of inflation. Under the present taxation arrangements, items sold from stocks are taxed on a profit based on the original cost of the stock with no allowance for the fact that it may cost more to replace the stock because in the meantime inflation has resulted in increased prices. In effect, this implies the imposition of taxes on what amounts to artificially inflated profits. Again, this illustrates how the tax burden of the business sector can rise in inflationary circumstances despite the fact that tax rates may be held constant. Just how important an effect these arrangements have had on the behaviour of business firms in New Zealand is uncertain, especially given that a variety of other adjustments have been made to the business tax structure during the past decade or so, especially in the form of export incentives.

### Business Finance:

Not only may the real rate of return on investment projects be diminished by high inflation, but also the cost of funds to finance investment and other activities is likely to be increased. High inflation is normally associated with higher interest rates, at least in nominal terms. Indeed, because of the nature of progressive taxation, it could be argued that savers really require higher real rates of interest in inflationary circumstances if they are to protect the real after-tax return on the funds they supply for investment purposes. On the other hand, if real interest rates do not rise to compensate for the price and tax effects mentioned earlier in this paper, then it is likely that this would imply a reduced flow of funds for investment purposes, all other things being equal. While this type of effect can be stated in theoretical terms, it is unfortunately difficult to determine its actual influence in practice since a wide variety of factors determine the supply and demands of funds in financial markets.

### Rising Costs:

If wages and salaries in nominal terms rise faster than prices, which they are likely to do if the purchasing power of wages in real disposable terms is to be

preserved, then business profits will be squeezed. To avoid such a loss in their income share, the business sector is likely to react in a variety of ways:

- Businesses may push up their prices even faster than other-wise in order to compensate for rapidly increasing wage costs, which will induce further inflation and aggravate the other problems described in this paper.
- Alternatively the business sector may incur a loss in their relative income position, which in turn will have a depressing effect upon the corporate sector and upon business investment activity generally. Clearly, this is an option which could only be envisaged in the short term if the business sector is to survive adequately.
- Another possible response to high wage costs is to economise on labour by the introduction of new technologies or new methods of a labour saving kind. Part of this process may involve the price of labour rising relatively faster than the cost of capital, thus stimulating a tendency towards the adoption of capital intensive technologies. Alternatively, new methods may be adopted which need not necessarily involve the acquisition of additional fixed assets, e.g. the reorganisation of retail stores in such a way as to require less labour to service fewer counters and a reduced number of cash registers.

By these processes higher wages may in time produce increased unemployment. Although it is commonly recognised in economics that expansionary fiscal and monetary policies can in the short run be used to stimulate aggregate demand and hence increase employment opportunities, it also must be recognised that in the longer run there may not be such a trade-off between inflation and unemployment. In other words over the longer term it may unfortunately be possible to have both high inflation and high unemployment, of a type which is not relatively amenable to solution by the use of conventional macroeconomic policies. The existence of statutory minimum wage laws is another factor likely to add to unemployment problems, commendable though the original intention of the laws may have been in social terms.

#### **Debtor/Creditor Relations:**

Inflation tends to favour debtors at the expense of creditors, and borrowers at the expense of lenders and savers. Traditional debtor/creditor relationships may be distorted. This process will add to the uncertainty described above and may result in suppliers of funds seeking shorter terms in order to cope with the variability of interest rates in inflationary circumstances. The problem is that this also heightens the degree of uncertainty for borrowers, especially those concerned to raise finance for longer term projects, since if funds are only available for relatively short periods they are faced with the need to refinance more often at uncertain interest rates. This process will induce additional caution on the part of both lenders and borrowers.

#### **Exporters:**

Apart from incurring the above effects in the same way as producers for the domestic market, exporters may face the additional problem of a serious erosion in their

overseas competitive position if rises in their domestic costs exceed the rate of inflation in the countries to which they export. Most exporters operating from a small country such as New Zealand would have little influence over the prices they receive for their exported goods since these prices are likely to be determined by the broader influences of demand and supply in the overseas market. Accordingly, the exporters' profit margins will be squeezed if domestic costs rise more rapidly than foreign prices.

The flexible exchange rate system introduced in the 1979 Budget, under which the exchange rate is moved to offset differentials between changes in input costs for New Zealand exporters vis a vis overseas inflation rates, is designed to alleviate this problem but it can do this in only a rather general manner. Nevertheless, this approach is to be much preferred over the former system of occasional large changes in the exchange rate which could leave exporters exposed to different rates of inflation at home and abroad for rather lengthy periods. However, it must be acknowledged that export tax incentives have undoubtedly been of great assistance to exporters over the past decade or so, and particularly those in the manufacturing sector. These incentives have probably moderated some of the other problems encountered by exporters.

#### **Business Profits:**

In an inflationary environment, rising costs, higher interest rates, and the nature of the tax system all contribute to pressures on business cash flows and corporate profits. These problems are compounded by the use of historic cost accounting conventions which during periods of sustained price increases understate costs in real terms, overstate profits in real terms and lead to a misleading impression of the value of assets and the net worth of a firm. Comparisons of such accounts over time, and across different firms, are rendered inconsistent by inflation, often seriously so.

This being the case, there is the risk that investors will misread the progress of companies in which they hold shares; taxes will be applied inequitably and inefficiently across firms; and employees may be led to believe the firm can meet higher wage increases than can be justified by the true performance of the enterprise.

The solution to these difficulties lies fundamentally in eliminating inflation. However, much could be done to improve the situation by suitable modifications to the tax system and by the adoption of inflation accounting procedures. Under current cost accounting arrangements, allowances would be made for realistic current-value depreciation write-offs; a cost of sales adjustment would help cope with the stock replacement problem mentioned above; and appropriate adjustments would be incorporated for monetary assets and liabilities to allow for changes in their real value (or purchasing power) as a result of inflation.

#### **THE GOVERNMENT SECTOR<sup>2</sup>**

While some of the problems inflation raises for the government sector are similar to those experienced by the private sector, the impact of inflation on govern-

2. Some of the problems discussed in this section, and especially those related to the financing of budget deficits, are analysed in more detail in R. S. Deane and R. G. Smith, *The Stabilisation Role of Fiscal Policy*, New Zealand Planning Council, Planning Paper No. 5, Wellington, May, 1980.

ment expenditure is complicated by the fact that more than half of total government spending is in effect indexed to the rate of inflation. This is because social welfare benefits and government sector salaries and wages move in line with formulae based on a linkage to private sector salaries and wages. This leaves the government with only limited scope for the exercise of discretionary policy with respect to the remaining elements of government expenditure, which are of course also likely to be strongly influenced by rising domestic costs and prices.

On the other hand, the progressive income tax system acts to protect the real value of government revenues in a way which the private sector is unable to emulate. This is because during periods of rapid inflation, the progressive tax scale ensures that taxpayers pay increasing proportions of their income in taxation as their incomes move up in line with inflation. If this process is left unchecked, then government revenues will rise more rapidly than private sector incomes. If the government uses this additional revenue to finance further expenditure then the government sector will grow as a proportion of the total economy.

Alternatively, the government may from time to time adjust the tax scales in order to ease what is commonly known as fiscal drag, but this implies also the need either to exercise corresponding restraint with respect to government spending or to live with an enlarged government deficit before borrowing which will itself have inflationary consequences. When the progressive tax system was originally devised, it was seen as a method which could achieve certain equity effects in terms of income redistribution and as an automatic stabiliser with respect to economic activity. Under the latter concept, it was intended that tax revenues should rise faster than incomes in times of rapidly expanding economic activity. Conversely, in times of relatively slack economic activity when incomes may be easing, the progressive tax schedule would help to protect disposable incomes and the spending power of the community in order to offset a recession.

With the passage of time, these effects have become somewhat confused since nominal income movements have been dominated by inflationary effects rather than real effects. It is now uncertain whether the progressive tax system really does act as a useful automatic stabiliser, particularly given the propensity of governments to spend the additional revenue yielded by fiscal drag, rather than to freeze the funds as intended by the original theory in order to have a dampening effect on economic activity and thus on inflation.

This concern has led a number of economists to advocate the introduction of indexation of the tax scales in New Zealand along the lines employed now in a number of other countries, such as Canada. If the tax scales were automatically linked to the inflation rate then as a general rule government tax revenue would move more or less in line with the rate of inflation and the progressive effects would only be marked in times of significant real economic growth. Government revenues would no longer automatically increase faster than the private sector's income simply as a consequence of inflation. Indeed, if the tax scales were indexed, and if the government wished to increase tax revenues more rapidly than incomes, then an explicit policy decision with respect to tax rates would be required. It is argued that this would encourage governments to look more carefully on a continuing basis at their own expenditure programmes.

If inflationary pressures aggravate the Government's budget deficit, or alternatively if the Government decides to use a fiscal deficit to stimulate economic activity which has been dampened by some of the influences described above, then there is the risk that the deficit will itself contribute more to inflation than to real activity. In the same way, excessive money supply growth, which may be partly due to a budget deficit, is also likely to have inflationary consequences.

In other words, the use of the conventional instruments of macroeconomic policy may be more complicated under conditions of rapid inflation as compared with the no-inflation case. This is because of both the additional forecasting problems inherent in a situation of variable and not fully anticipated rates of inflation, and the fact that expansionary policies may worsen the inflation problem, apart from any impact they have on real incomes and spending.

This serves to emphasise the importance of the way in which a budget deficit is financed. If this is done mainly by borrowing from the non-bank domestic private sector, then the stimulus of the deficit before borrowing is moderated by the flow of funds to the Government induced by this form of financing. On the other hand, borrowing from overseas or from the Reserve Bank does not assist to demonetise the effects of a fiscal deficit, which then simply feeds directly through to increases in spending and the money supply. Thus these forms of financing are relatively more inflationary than is domestic non-bank borrowing from the private sector.

One problem with the latter procedure however is that it will inevitably place some pressure on interest rates. This drain of loanable funds to the Government, combined with the higher interest rates, may result in some 'crowding-out' of private sector borrowing and investment activities. This problem seems to be more acute in times of relatively high rates of inflation, perhaps because it adds to the disincentives to private sector investment already discussed.

### THE ROLE OF MONEY<sup>3</sup>

Some of the inequities and inefficiencies described in this article arise because high inflation rates seriously impair some of the traditional functions of money. While money may continue to offer a convenient albeit depreciating means of facilitating the exchange of goods and services, its usefulness as a store of value and a unit of account is greatly diminished by the process of inflation. A variety of problems arise as a consequence of money having an unstable value over time.

First, complications emerge for borrowers because of the fact that interest is a current revenue item payable in cash each year whereas the loan itself is invariably repayable over a lengthy period. Conventional loan contract arrangements imply that in times of rapid inflation, and thus high interest rates, there is a shift in the burden of debt repayments in real terms towards the earlier years of a loan.

This can be particularly burdensome to low or single income families repaying house mortgages. Business

3. This section is based largely on part of the Reserve Bank of New Zealand's *Annual Report*, 1979-80. Further details of these problems are provided in a series of articles prepared by Mr R. W. R. White, Governor of the Bank, and published in the Bank's monthly *Bulletins* for October, November and December, 1979, and May, 1980.

entities suffer from a similar sort of problem since they rely heavily on borrowed funds. Although there is some mitigation in the form of interest deductibility for tax purposes for business enterprises, high interest rates, themselves induced by inflation, increase the rate of payback of loans in real terms, aggravate business cash flow difficulties, and thus add to the deterrents to investment.

Secondly, savers and providers of loan funds find that inflation depreciates the purchasing power of the dollar amount lent, a problem which is only partly overcome by the high interest rates which prevail in inflationary circumstances. Conventional interest rate arrangement may fail to compensate them for this deterioration in the real value of their financial assets both because changes in nominal interest rates often lag behind changes in the rate of inflation (leading to negative real interest rates) and because interest income is taxable i.e. is treated as income even though it may be doing no more (or less) than maintaining the capital value, or the real purchasing power, of the savings balances. In other words in this context, interest receipts up to the rate of inflation should probably be regarded as a capital item rather than as current revenue.

Thirdly, the taxation of interest may induce savers to invest in real assets where any appreciation in the value of the asset, whether it be land or antiques, represents a tax free capital gain. This process encourages speculative activity, distorts resource allocation, and may diminish the pool of funds available for investment in what would normally be considered more productive purposes.

Fourthly, inflation can create a variety of distortions in financial markets. The use of interest rates to compensate for the depreciation of the principal of debt, associated with the continued widespread use of fixed interest, fixed maturity securities may result in wide variations in the market value of securities held by savers and institutions. This impairs the attractiveness of financial assets to savers, and may create problems for the overall stability of financial institutions.

Inflation, by changing the value of the basic unit of account, the dollar, over time, also causes difficulties in fixing the price of contracts for transactions to take place in the future. This leads to ad hoc indexation of various forms, such as the insertion of escalation clauses. These really only serve to transfer the uncertainty generated by inflation from one party (say the lender) to the other party to the contract (say the borrower) and they can cause problems of interpretation and settlement.

To ease these distortions caused by the changing real value of money over time would require either (and preferably) the elimination of inflation or (more realistically) the introduction of a number of changes to accounting procedures, taxation arrangements and the use of conventional dollars as a measure of value of time. Indeed, it could be argued that changes in each of these latter areas would assist the implementation and operation of other economic policies to combat inflation.

Clearly, an appropriate form of inflation accounting is required, and within this context the Reserve Bank has suggested that serious consideration should be given to the use of a constant value unit of account, i.e. a constant unit of purchasing power. This would avoid many of the distortions inherent in present accounting procedures, would assist the cash flow positions of commercial enterprises, and would facilitate appropriate accounting treatment of monetary assets and

liabilities (an area which has always presented problems for inflation accounting methodologies).

It has also been suggested that the tax system should be altered so that the proportion of interest income equivalent to the inflation rate (i.e. the effective adjustments of the capital of debt to allow for inflation) would be non-assessable for tax purposes. In essence, this would give savers a better chance of maintaining the real purchasing power of their financial assets. If a constant value unit of account were to be introduced, interest rates would still be determined by market forces but actual interest rates would be comparable with those prevailing in non-inflationary circumstances.

As far as the tax system is concerned, the corollary would be that interest payments would no longer be deductible for tax purposes. The cost of this to the business sector would have to be considered in the context of the taxation gains that sector would achieve under inflation accounting. In particular, depreciation charges would be higher, since they would be calculated on the basis of the current value of fixed assets, and the increase in the money value of inventories would not be taxed in the way which prevails at present under historic cost accounting.

The concept of a constant value unit of account is of course simply a form of financial indexation. As such, it would enable savings balances, other deposits, loans, mortgages, and indeed the full range of financial assets and liabilities, to be expressed in real terms, rather than being eroded by inflation. Such an arrangement would also make explicit the distinction between the two components which contribute to nominal interest rates under present circumstances: the income portion and the capital maintenance (the inflation adjustment) component.

These proposals are not the same as automatic indexation of prices and incomes. The expression of asset values in a unit of constant purchasing power does not alter the fact that the prices at which assets are bought and sold would still be determined by market forces. So too would real interest rates be freely determined by the forces of demand and supply in financial markets. Profits would not be indexed in the sense that they would be automatically linked to inflation; instead profits would depend, as they do now, on efficiency and appropriate pricing policies.

Compared with the present arrangements, the main differences would be that profits would more fairly reflect the current worth and efficiency of the enterprise, that tax would fall on the income and not the capital portion of savings, that borrowers would repay debts on the basis of fully maintained purchasing power and not in terms of depreciated dollars, and that the profile of loan repayments would be more stable as a proportion of income than is the case under fluctuating rates of inflation.

## POLICY IMPLICATIONS

Inflation clearly has a wide range of distributional and distortionary consequences. Indeed, some of these appear to be so severe as to risk damaging an economy's prospects for economic growth. Inflation sets up competing income claims, thus making it a cumulative process with a built-in upwards ratchet effect.

Because variations in inflation rates often tend to be unanticipated, inflation impairs the role of money as a store of value and as a unit of account; generates uncer-

tainty, caution and a lack of confidence; erodes incomes, savings and business cash flows; acts as a disincentive to investment, lowering the real return on investment and distorting its pattern; biases attention towards the short term and away from longer term, possibly more fundamental, considerations across a wide range of activities; makes macroeconomic policy management of the economy more complicated; may aggravate unemployment, at least in the longer run; and damages the international competitiveness of the economy.

These problems are compounded by the persistence with the use of misleading accounting procedures and an unsatisfactory taxation system. Some of the difficulties could be eased by the introduction of such changes as;

- financial indexation;
- interest receipts being tax free (or the capital maintenance element of them at least);
- interest expenses being non-deductible for tax purposes;
- inflation accounting;
- appropriate tax treatment of depreciation and stocks;
- indexation of personal income tax scales

## CONCLUSION

The major case this article makes is for a more concerted effort on the part of the whole community to adopt attitudes and accept policies which will reduce the rate of inflation. Such a process would take time and cause some discomfort. The preceding analysis suggests however that the ultimate net gains could be substantial. Indeed, if inflation is not reduced, many of the other policy initiatives adopted to assist the restructuring of the economy will not realise their full potential.

This means that inflation is not only a short term stabilisation policy problem; its solution should be integral to any medium term economic strategy as well. This implies that the reduction of inflation probably needs to be accorded a higher priority in the list of policy aims, since satisfactory achievements with respect to other economic objectives may well partly depend on lowering the inflation rate.

Apart from the policy changes mentioned above, there is also a need to employ an appropriate mix of monetary, fiscal, incomes and exchange rate policies. But government policies on their own will not perform the necessary task, other than at possibly substantial cost in terms of output foregone and rises in unemployment. The crucial factor is the need for a change in attitudes on the part of the community as a whole. It is only with the backing of community-wide acceptance that anti-inflation policies stand any reasonable chances of being successful.