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NEW ZEALAND

Planning Council

Te Kaunihera Whakakaupapa
Mo Aotearoa

OVERSEAS DEBT - AN ASSESSMENT

NEW ZEALAND PLANNING COUNCIL

OVERSEAS DEBT - AN ASSESSMENT

DAVID WEBBER
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FOREWORD

Considerable concern has been expressed in recent years over the rapidly increasing size of New Zealand's overseas debt. Expressed as a percentage of Gross Domestic Product, net external debt rose from close to 0% in 1974 to almost 70% by 1985. Although in proportionate terms the debt has stabilised in the last three years, the maintenance of such high debt levels continues to cause concern.

External borrowing on this scale leads to repayment burdens in later years and, unless it helps to produce sustainable growth, lowers future living standards.

Over and above the equity problem of the New Zealanders of tomorrow meeting the borrowing costs of today, is the potentially more serious issue of maintaining financial stability. New Zealand now requires a large surplus on its trade in goods and services simply to pay interest on existing debt. If it cannot achieve such a surplus, the size of the debt will further increase and debt servicing will become even more difficult.

Beyond a certain point the debt accumulation may become unsustainable, with adverse effects on the country's international creditworthiness. Ultimately it is possible to reach a debt crisis of the kind seen in some South American countries. The costs to economies with such problems can be extreme.

The Economic Monitoring Group of the New Zealand Planning Council has commissioned David Webber to examine the situation of New Zealand's overseas debt. His work examines questions of vital importance for the financial sector, policymakers and advisors in both the public and private sectors. Does this country already have a level of overseas debt that threatens stability? What are the likely future changes in the debt/GDP ratio, and what choices face policymakers seeking to improve that ratio?

The Planning Council undertook a comprehensive examination of New Zealand's debt position in the first report of the Economic Monitoring Group in 1983. It is timely that a further in-depth study of the subject should take place five years later as part of the Council's ongoing monitoring programme.

The projections contained in this study carry us through to the year 2000, with different assumptions contained in each scenario producing a variety of outcomes and policy choices.

The overall message is clear: New Zealand's current levels of external debt carry an unacceptable degree of risk. While policies such as asset sales can accelerate the process of debt reduction, a sustained improvement can only be achieved through better economic growth and trading performance. That improvement in our economic conditions depends as much on individuals within the primary, manufacturing, commercial and public sectors as it does on the government and its policy choices.

Tony Rayner
Convenor
Economic Monitoring Group

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EXECUTIVE SUMMARY

Until the mid 1970's New Zealand did not have an external debt problem. From that time a series of deficits in our external trading accounts led to an initial build-up, followed by a levelling-off around the turn of the decade. During the 1980's the primary causes of further debt increases have been interest payments on existing debt and currency revaluations.

It is important to note that the debt we are discussing here is New Zealand's external debt - the total indebtedness of the country to overseas lenders. That overlaps with, but is distinct from, the public debt - the indebtedness of government and its agencies to lenders within New Zealand and overseas.

The distinction is important in relation to some issues in the current public debate such as asset sales and debt servicing. The sale of government assets to New Zealanders is unlikely to reduce total external debt but can reduce the public debt and the cost of servicing it. Thus asset sales to domestic buyers can reduce the amount of revenue government must set aside for interest payments and therefore give government more flexibility in its revenue and expenditure decisions. These issues in relation to public, rather than external, debt will be examined in a forthcoming EMG report.

This paper analyses the position of New Zealand's overseas debt by separating the causes of changes in external debt into active and passive components. The former represent items such as the goods and services trade balance, while the latter includes the cost of servicing existing debt and the way that the value of the debt varies with value of the New Zealand dollar.

By using differing assumptions about likely changes to the active components, and following through the implications of the effects of the passive components, it is possible to calculate the path that the debt/GDP ratio will follow over the next few years. The path depends on the assumptions made. For example, in simplified terms the greater the improvement in the trade balance, the faster the overseas debt will be reduced. Again, the faster that GDP grows, the faster that debt shrinks as a proportion of GDP. In contrast, a drop in the exchange rate worsens the situation.

The paper develops a Base Case scenario, which can be thought of as the evolution of external debt using a "most likely" set of assumptions about the relevant parameters. Under this Base Case the debt/GDP ratio falls slowly at first, but more rapidly as the debt servicing costs start to decrease. By the year 2000 the debt ratio is predicted to be 39% and falling by 3 percentage points a year. While this scenario is attractive in the sense that there is a great improvement over the period of twelve years, it should be noted that the country continues to run the risks inherent in a very high debt ratio for a number of years. Perhaps more importantly, the real economic burden of servicing that debt continues for a decade or more.

Other scenarios explore the effects of different assumptions. For example, an increased real economic growth rate of 3.5% per annum accelerates the reduction of the debt in the latter half of the next decade to reach 32% by the year 2000.

In order to achieve more dramatic improvement to the debt ratio and so reduce the exposure to risk and the cost of debt servicing, the sale of assets to overseas (not New Zealand) buyers has been examined (see Scenario 3(a) and 3 (b)). It is possible to drop the debt/GDP ratio down to the mid-twenties by the year 2000, but it should be noted that this scenario involves a very substantial sale of assets to achieve this result: around 12% of GDP in total. The improvement made could indeed

be less as no allowance is made for profits from these assets being remitted overseas.

Perhaps the single most important point to emerge from this analysis is that, under the assumptions used, New Zealand's overseas debt ratio is technically sustainable, although it is risky and costly. In almost every scenario the ratio falls, although at different speeds. However it is important that the messages of the two worst scenarios are noted. The first of these, described as the Status Quo scenario, examines the outcome if the goods and services balance remains at its current level (i.e. no improvement), if domestic inflation remains at 5% and if real GDP growth is restricted to 1% per annum. In this case the debt ratio remains as high as 57% in 2000, with all the costs that this entails.

The worst scenario examines the impact of a 2% annual depreciation of the New Zealand dollar, which increased the size of the debt, but did not improve the trade balance beyond its current position. In this situation the debt ratio deteriorates slowly, but without limit.

The costs of servicing New Zealand's external debt are very real. They are causing living standards now to be lower than would otherwise be the case. Given the recent trends in the economy it appears most likely that these costs will slowly (at first) but steadily, diminish over the next ten years. However a return to the economic performance of the not very distant past would be likely instead to set these costs on an ever increasing path, until the debt finally became unsustainable.

OVERSEAS DEBT - AN ASSESSMENT

In recent years, considerable attention has focussed on the growing levels of New Zealand's indebtedness. The need to reverse these trends has been identified as an important factor underpinning aspects of current economic policy. Although public understanding of these issues may not have been helped at times by the use of complex or inaccurate (and sometimes conflicting) debt statistics, the essential point - that a continuation of previous borrowing policies would have been untenable - appears to have been widely accepted. Nonetheless, greater consensus on the precise extent of New Zealand's indebtedness, and the directions in which the economy is now moving, would seem desirable for achieving wider understanding (and perhaps greater acceptance) of current policy and structural reforms.

There is ample international evidence of the existence of "acceptable limits" to the level of a nation's external debt. Beyond a certain point, the ability of an economy to function efficiently and competitively is substantially impaired. Recent examples of countries over-reaching these limits include Mexico, Argentina, Peru and Brazil. While the international response to the predicament of some of the seriously indebted countries has been to reduce interest rate and repayment obligations, the net cost of substantial indebtedness remains high. Not only have these countries been required, temporarily at least, to surrender aspects of their economic sovereignty to private and official international financial institutions, but the cost of this cooperation has included transferring an increasing proportion of their wealth and resources in fulfilment of existing and expanding debt obligations. Moreover, other problems associated with high debt (such as inflation and capital flight) have seriously impaired the process of social and economic recovery. There are obvious incentives for New Zealand to develop economic strategies which avoid a similar predicament.

If the costs associated with unsustainable debt policies are reasonably clear, the point at which debt levels become unsustainable is an issue on which there is much less agreement. The experience of other countries, including those mentioned above, suggest that there is no single nor ideal indicator of indebtedness problems, nor are there precise values at which different indicators suggest that an unsustainable position has been reached. However, it is precisely for these reasons that keeping indebtedness under constant review is an essential component of sound economic management.

The focus of this paper is on New Zealand's external or overseas debt. The approach has involved combining diverse sources of statistical information in order to obtain a more detailed picture of New Zealand's current indebtedness position. The paper identifies the principal components of the overseas debt accumulated in recent years and, on this basis, attempts to provide some insight into estimation of the economy's future indebtedness trends.

This focus on external debt is not wholly due to its importance as a catalyst for recent economic policy changes. The growth of external debt in New Zealand may also be helpful in explaining structural imbalances in the economy which are at the root of a number of other symptoms of mediocre economic performance. In particular, the analysis of external debt enables important links to be drawn between the savings, investment and consumption behaviour of both the public and private sectors. It is this behaviour, rather than the growth of debt itself, which should provide the

appropriate focus for policies of economic restructuring. In the short term, however, it is issues of debt sustainability which are of immediate concern and it is these which provide the general framework for this discussion.

II

For much of this paper, a clear distinction can be drawn between internal and external debt. At a later point, however, it will be necessary to identify areas of overlap important to policy formulation. In general, the level of internal debt recorded by the Treasury and Reserve Bank refers to the official liabilities incurred by the government in funding budget deficits or in undertaking "off-budget" financing of government-owned or part-owned operations. This debt, in effect, reflects a re-distribution of private sector savings into public sector consumption and investment spending. It also reflects a potential claim on future taxpayers in the form of additional taxes for debt servicing and repayment and thus a potential inter-generational transfer of wealth. The economic management and inter-generational implications of the build-up of official internal debt were discussed in detail in the Economic Monitoring Group's Report No. 8, Tracking Down the Deficit.

External debt, on the other hand, refers to the borrowing undertaken overseas by the government and by the private sector. For this reason, it is a measure of the degree to which the economy as a whole has called upon overseas lenders (i.e. the savings of foreigners) to achieve or maintain desired levels of consumption and investment either in New Zealand or abroad. Both forms of debt are important and of course each implies a specific set of obligations in relation to eventual repayment. However, there is arguably less control associated with the cost and scheduling of external debt, as well as more immediate and serious consequences as a result of unsustainable policies.

It is important to note that the recourse to foreign savings (in the case of external debt), or to private sector savings (in the case of internal debt), may be a sensible economic decision where the costs of such borrowing are temporary, or affordable and sustainable. This is clearly much more likely to be the case where the funds are borrowed for sound investment purposes. The principal judgements to be made on the accumulation of both internal and external debt must therefore be based not on any given volume of debt but on its implications for both inter-generational equity and debt sustainability.

New Zealand's economic development during the last 150 years has involved a substantial and on-going reliance on external borrowing. At certain times, such as around 1910 and 1930, the levels of external debt, even allowing for statistical uncertainties, were at least as high in relation to GDP as they are in 1988. (New Zealand's repayment record, and hence acceptability as a sovereign borrower, was also then much less established.) Given that much of that debt was subsequently repaid without serious economic difficulty, it reinforces the argument that qualitative issues, such as the use of foreign borrowing and the potential growth of the economy, are more important than broad measures of the volume of debt in determining how international financial markets assess the sustainability of a country's debt servicing commitments.

There are additional factors which, because of New Zealand's currently high levels of outstanding external debt, are also relevant to questions of sustainability: the presence of positive real interest rates which imply a transfer of real resources in servicing the foreign debt; the

limitations which high government debt servicing costs place on the flexibility and impact of fiscal policy; and the much increased volatility and integration of international capital markets whose judgements of and responses to New Zealand's debt management policies may carry substantial and immediate economic and financial implications.

For these reasons in particular, debt sustainability is now a much more sensitive issue than on earlier occasions. The uneasiness created by the developing country debt crisis of recent years, the range of alternative investments available on international capital markets, and the speed with which capital can be reallocated on the basis of revised economic information, expectations, or market opportunities are further factors underpinning this sensitivity. For small countries borrowing on international capital markets, there are sound reasons for ensuring that international understanding and interpretation of their indebtedness position is at least based on reliable and consistent data and relatively uniform and realistic expectations of future debt trends.

For New Zealand, the progressive downgrading of our international credit rating over the last few years may therefore reflect not only the increased actual risks associated with higher levels of debt and the removal of exchange controls, but an additional element of uncertainty pertaining to the quality of available debt statistics. Policies aimed directly at raising growth and investment and lowering the outstanding stock of debt will clearly help to restore creditworthiness. However, disseminating a more reliable picture of our debt and repayment capability should also help to lower the level of risk perceived by international lenders and thus the cost of borrowed funds.

III

It has already been noted that there exists a range of alternative statistical series or ratios from which the degree of a country's external indebtedness - and by implication the sustainability of its borrowing policies - can be judged. These include the current value of total debt, the total expressed as a percentage of GDP, and the debt servicing cost expressed as a percentage of GDP or export income. Each of these values may also be expressed in terms of "net debt" (gross debt less overseas and foreign currency "assets") and may be identified separately for each of the public and private sector. The potential for varied interpretations of the debt problem is obviously increased when the statistical components within each series are often variable and incomplete.

In practice, the international financial agencies responsible for interpreting economic performance and investment risk determine their own set of statistical indicators and criteria of indebtedness. In this paper, an attempt has been made to remove as many as possible of the statistical limitations to one important series: the ratio of total net overseas debt to GDP. Other series and measures are clearly also important. However, net debt to GDP provides the basis for the most consistent and informative picture of the accumulation of New Zealand's overseas debt. It also provides a useful framework for assessing possible future trends and interaction between the different components. In the longer term, as New Zealand firms and the economy become more international, Gross National Product (GNP) may become the more relevant measure.

Until 1985 - and especially up to the end of the 1960's - the majority of overseas borrowing undertaken by New Zealand was government or "official" debt. More recently, partly as a result of the removal of exchange controls in December 1984, private sector borrowing has increased dramatically as a proportion of total overseas borrowing. From a foreign lender's perspective, this

distinction between private and official indebtedness is of relatively small importance, though a small interest rate premium is usually applicable to private borrowers. Instead, the macroeconomic criteria relevant to risk assessment are mainly expectations of fundamental variables such as exchange rates, international competitiveness, inflation, growth potential, and total debt servicing requirements. Consequently, when assessing trends in New Zealand indebtedness, it is useful to adopt the international financial market's view of the public and private sector in terms of a single "country risk".

This need to regard New Zealand's public and private sector overseas debt as of equal economic importance has increased in recent years due (i) to the corporatisation process (which has added a new category of potentially large government-owned but not necessarily government-guaranteed foreign borrowing enterprises), and (ii) to the effects of the sale of public assets on the portfolios of both the public and private sector and their respective levels of internal and external debt. A shift in the responsibility for debt which is likely to occur as a consequence of these asset transfers makes no difference to the economic necessity for or importance of that debt. (This latter point is of particular importance later in this paper for the assessment of the impact of the government's asset sale/debt reduction programme and issues of fiscal flexibility.) However, the equal importance attributed here to private foreign debt does not imply that it represents a potential claim on taxpayers, rather that debt and debt servicing undertaken by the private sector must ultimately be supportable by aggregate economic performance.

Given that combined public and private sector external debt expressed as a percentage of GDP provides the most satisfactory indicator of indebtedness trends, a remaining decision involves the choice between gross debt and net debt. The difference between these two measures consists primarily of a range of public and privately held assets which have a direct and realisable foreign exchange value. Gross debt therefore exceeds net debt according to the breadth of definition of these assets and the values assigned to them.

Given that the framework adopted for this discussion of debt consists of issues of sustainability, it is reasonable to include those assets which foreign investors might view as readily accessible in the event of serious debt servicing problems. This clearly includes foreign currency assets and loans held by the government and foreign currency assets held by the banking system. In this paper, we therefore focus on net debt defined as gross debt less the liquid foreign assets of the government and the banking system.

This leaves out of the picture substantial foreign private assets, real and financial, which are relevant to the debt servicing capability of the individual corporates involved and, in a wider sense, to overall economic performance. These assets may be substantial (a rough estimate of $20 billion was recently made by the Planning Council), but such assets could not readily be claimed by foreign lenders in the event of specific public or private sector default. For these reasons, assets which are relevant to the assessment of risk in lending to an individual private borrower are not so relevant to a wider view by international capital markets of New Zealand's overall indebtedness position. (In an equivalent sense, foreign direct investment in New Zealand is not regarded here as adding to debt obligations.) Checks with different credit rating agencies and financial institutions showed some variation in this treatment of private sector assets, though most appear to take a similar view.

Net debt as defined here has the added advantage over gross debt that it removes from the analysis the distorting effect of large, but mainly temporary, changes in official reserves. This was most noticeable recently in relation to the public sector's loan reshuffling on the major energy

projects.

Finally, the choice of the net debt/GDP ratio (rather than per capita debt or debt servicing as a ratio of export income) is based on its greater long term consistency as an indicator of debt trends. Ultimately, it is the growth and competitiveness of the economy which determines the degree to which debt levels are sustainable - rather than the size of population or performance of one particular sector. While the ratio of debt to export income may have important short term implications for the availability of foreign exchange, long term growth in the economy, for New Zealand particularly, depends directly on growth in the export sector. Thus GDP growth implies export growth consistent with foreign exchange requirements and therefore provides a reasonably reliable and relevant statistic against which to compare changes in the level of net external debt obligations. (The detailed composition of the net debt/GDP series is provided in the appendix.)

IV

External debt, expressed as a percentage of GDP in this series, is essentially a "stock" of accumulated public and private sector debt obligations. The underlying cause of this accumulation of debt is the extent to which the economy has drawn on foreign savings to finance New Zealanders' investment and consumption decisions. Those "decisions" include such items as new investment in private sector production, investment on major energy projects, other imported goods and services, private sector purchase of foreign capital and financial assets including foreign company acquisitions by New Zealand-based corporations, and the requirement for interest payments on earlier debt. To the extent that the costs of these decisions exceed inflows from New Zealand's own export of goods and services, other remittances and private direct investment in New Zealand by overseas firms, the level of external debt is increased. The move in 1985 to a floating exchange rate has not altered the fundamentals of this relationship, though it has unlocked Government from the borrowing associated with maintaining a given exchange rate.

It follows that the annual "flows" reflecting these borrowing decisions should explain changes in the total stock of outstanding debt. Notwithstanding some statistical limitations, it should also be possible to provide an indication of the relative importance of the different flows in the past accumulation of debt and, on the basis of certain assumptions, of their likely contribution to future indebtedness levels.

As a first step, the contributing factors in debt accumulation can be divided into two broad components: the current account and currency revaluation. Of these, the principal factor in the accumulation of external debt is traditionally the deficit on the current account. This effectively measures the economy's net transactions with the rest of the world and, to the extent that this account is in deficit, it must be offset by foreign capital inflows - either in the form of government or private borrowing or direct foreign equity investment.

To the extent that current account deficits are not funded by direct foreign investment there must therefore be an accumulation of external debt. Furthermore, future transactions with the rest of the world will inevitably include interest payments on the existing stock of debt. The importance of interest payments in contributing to on-going current account deficits, and thus to the accumulation of new debt, can be better assessed by differentiating this flow from the deficits on goods and services which comprise most of the remainder of the current account. This separation of the current

account components is carried out below.

Revaluation, that is the effect of exchange rate changes on the current value of outstanding debt measured in New Zealand dollars, is a potentially important component. To the extent that the NZ dollar gains or loses value against certain other currencies, the total value of debt is obviously affected. Given that at least 99% of New Zealand's external debt has generally been held in foreign (e.g. United States, European or Japanese) currencies, exchange rate changes have frequently been responsible for significant revaluations of the total stock. Of course, currency devaluations which expand the stock of debt also affect other economic variables such as competitiveness and hence the goods and services balance. This interaction of the different components is discussed in more detail below.

The contribution of goods and services deficits, interest payments and currency revaluation to the build-up of debt are depicted in dollar terms in Fig. 1. These component flows clearly explain a large proportion of the foreign debt, expressed in NZ dollars, accumulated over the period 1971-1987. The rapid accumulation of New Zealand's net overseas debt is clearly apparent, as is the extent to which deficits on the goods and services account in the mid-1970s were responsible for the initial build-up of debt. By 1987, however, interest payments and currency revaluation were the primary causes of further increases in debt. Figure 2 provides a similar picture, but expressed as percentages of GDP.

FIGURE 1:

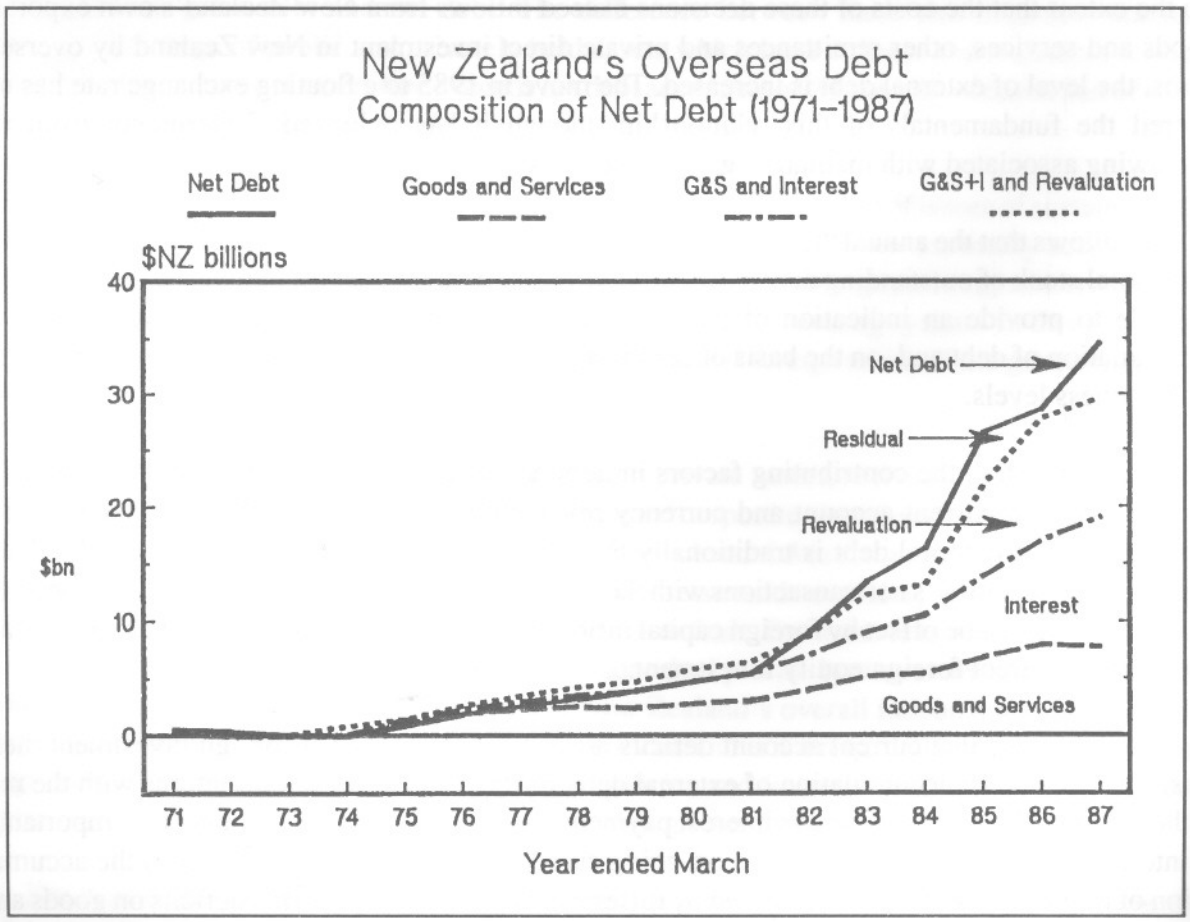
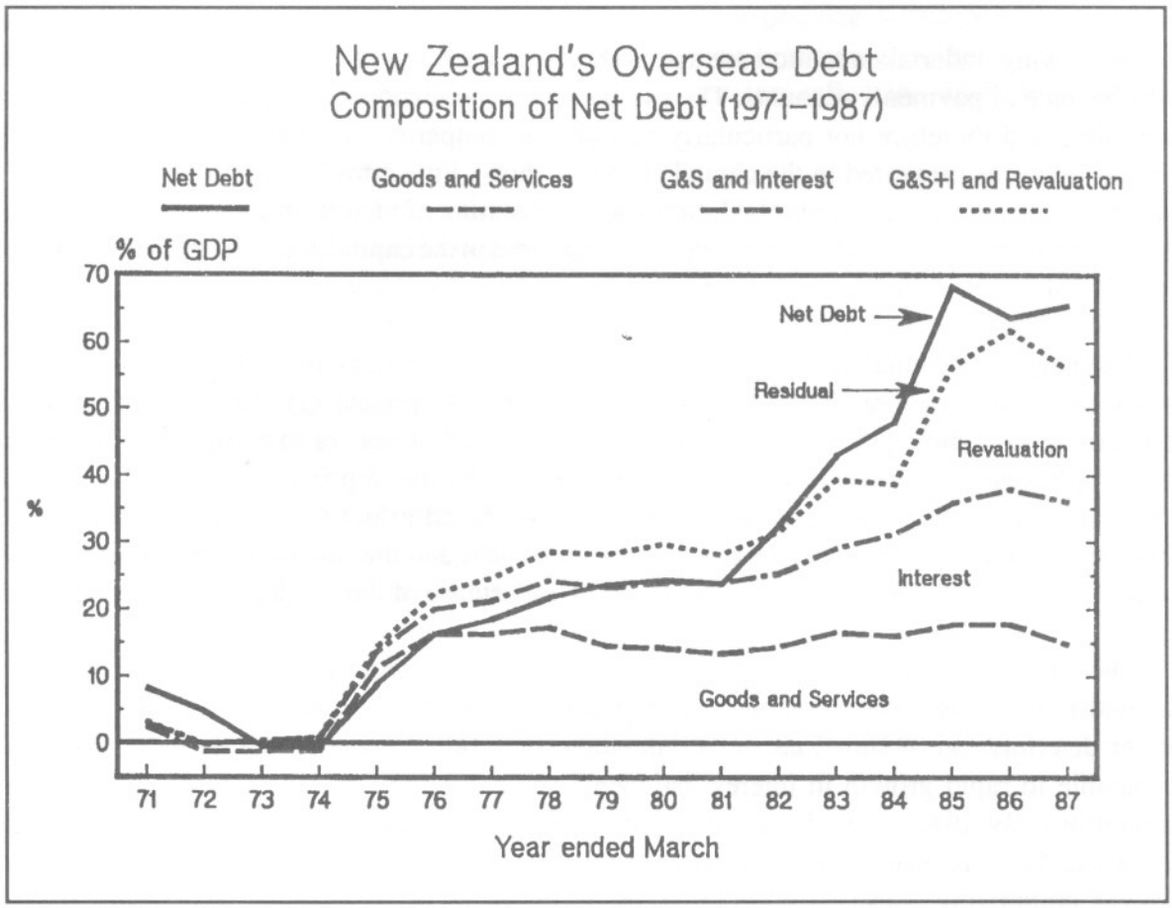


FIGURE 2:



There are obviously constraints on the quality of the statistical series underpinning these diagrams. Considerable cross-checking of statistical sources and re-estimation of some data cells have eliminated many inconsistencies but cannot completely overcome major deficiences in the data. Since 1982, the stock of net debt has significantly exceeded the sum of the combined flows: by 1987, "residual" factors were responsible for the accumulation of approximately $5 billion (about 15%) of net debt. Prior to 1982, the residual had been negative in most years - i.e. net debt was growing more slowly than the effects of current account deficits and revaluation would have suggested.

As can be seen from the diagram, the size of the residual component (calculated as the difference between total net debt and the sum of the component flows) is sufficiently large to warrant closer attention - particularly if modeling of these separate components is to provide the basis for estimating future indebtedness levels. Moreover, the consistent nature of the gap between net debt and the combined flows suggests that it cannot be explained simply by lags or timing differences in the two sets of statistical series.

One explanation for the (positive) residual of recent years is borrowing undertaken by the private sector in order to acquire fixed and other non-financial assets overseas. Much of this

borrowing shows up as an increase in New Zealand's external debt statistics, but it is not part of the current account flows. (Note, however, that had our definition of net debt included non-financial private assets, total net debt would have been reduced and the residual "gap" significantly smaller.)

Borrowing undertaken to increase assets should be captured in the capital movements section of the balance of payments accounts. The capital account statistics for New Zealand, however, are incomplete and therefore not particularly reliable. A comparison in Table 2 of net increases in overseas assets as measured in the capital accounts shows little correlation in most years with the residual component. Thus the available statistics - consisting of identifiable current account flows, plus a small allowance for net asset increases as measured in the capital account - explain only a little over 85% of New Zealand's total accumulated net debt.

The negative residual apparent in the years 1975 -1982 also has relevance to this discussion. It suggests that private direct investment or the sale of assets overseas may have helped to slow the growth of net debt during this period. Future decisions to sell assets (or to accept increased foreign ownership/investment in New Zealand) in order to retire public or private debt could be expected to have a similar effect on these series. Thus the combined effect of a decline in the overseas investment activity of New Zealand companies after 1987, and the sale of assets or equity in New Zealand institutions is likely to reduce the size and importance of the residual in the next few years.

The diagrams indicate the extent to which deficits on goods and services transactions were the principal initial causes of the dramatic accumulation of net debt experienced in the mid 1970's. Further deterioration of New Zealand's indebtedness from the early 1980's, however, was more attributable to rapid growth in interest payments and the effects of revaluation (esp. July 1984 devaluation). By 1987, a small surplus on the goods and services balance and an appreciating currency had combined to restrain the growth of debt as a percentage of GDP. The residual element, however, comprising especially corporate foreign borrowing for the acquisition of overseas assets, has increased in importance - partly as a result of the deregulation of the foreign exchange market (and the flexibility this has given to the private sector in raising overseas loans.)

V

Knowing the relative contribution of these different components of New Zealand's accumulation of foreign debt may be of interest from an historical perspective. The real value, however, of this analysis lies in the scope which it provides for determining future debt trends and the relative importance of different aspects of economic policy and performance. In the following sections an attempt is made to use this information to determine the extent of interaction between the different components of debt accumulation and to develop alternative scenarios for future net debt/GDP ratios.

For the analysis of future debt trends, it is useful to separate the components identified in Section IV into "active" and "passive" groupings. Active accumulation of debt arises from deficits on the goods and service balance and from the decisions of private firms to borrow overseas in relation to net increases in their asset holding (i.e. borrowing represented, in the main, by the "residual" component). Passive changes, on the other hand, occur as a result of interest rate obligations and the effect of exchange rate changes on the value of the outstanding stock of debt. Both forms of passive accumulation have the potential to increase the stock of debt quite independently of the current savings, investment and consumption decisions which underpin the

active components. (Revaluation effects from exchange rate changes may of course be either positive or negative and may be accompanied by opposing changes in the goods and services balance as a result of the change in competitiveness.) In a purely arithmetic sense, the debt ratio declines as nominal income (GDP) grows. However, whether this occurs in practice, will depend on the nature of that growth and the extent to which it is accompanied by new borrowing, exchange rate changes, import growth etc. Trends in the debt/GDP ratio over time therefore reflect the outcome of these different (but interactive) components in the debt equation.

The algebra describing the contribution of these components in determining changes in the debt ratio is relatively straightforward. (However, readers not familiar with algebraic expressions may easily skip this section.) Following Dixon & Parmenter (1987) it is possible to express the interaction of these active and passive components and their effect on the debt/GDP ratio as follows:

$$\left[\frac{\text{Debt}}{\text{GDP}}\right]_t = \left[\frac{\text{Debt}}{\text{GDP}}\right]_{t-1} + \left[\frac{\text{Debt}}{\text{GDP}}\right]_{t-1} . P_t + \left[\frac{A}{\text{GDP}}\right]_t$$

where P_t = passive accumulation factor in period t
= rate of interest payable on the stock of debt plus rate of (debt-weighted) devaluation, minus the rate of nominal growth of GDP.

and A_t = active accumulation in period t
= deficit on goods and services plus net borrowing to finance the acquisition of assets overseas (represented by the "residual" component).

The passive accumulation factor, P, can be expressed as

$$P = i_f + d - g$$

or, in real terms:

$$P = (i_f - p_f) + (d - p_{NZ} + p_f) - (g - p_{NZ})$$

where i_f = foreign interest rates applicable to New Zealand's overseas debt
p_f = foreign rate of inflation
d = rate of devaluation of New Zealand dollar
p_{NZ} = inflation in New Zealand
g = rate of growth of nominal income

i.e. passive accumulation on New Zealand's overseas debt is determined by real foreign rates of interest plus the real rate of devaluation less the real rate of growth of GDP.

VI

Having labelled the components driving the accumulation (and possible decumulation) of New Zealand's overseas debt, alternative values can be assigned to these factors to forecast alternative debt path scenarios for the New Zealand economy. Such an exercise should be carried out within a

general equilibrium framework so as to incorporate the full interaction of the different variables involved. However, useful information can be obtained about the relative importance of the different components and their possible impact on longer term debt trends from a sensitivity analysis using current data and realistic assumptions of future values. The results of this analysis should therefore be seen as an indication of the relative importance of the different variables in the debt equation and the extent to which different emphases in policy may affect New Zealand's indebtedness position over the following 12 year period.

In the approach adopted below, an attempt has been made to develop realistic estimates of future trends in the factors affecting the debt/GDP ratio. This initial set of estimates - referred to as the "base case" - is then used to determine the future growth path of the debt ratio. Following this, alternative scenarios are depicted in which key values are changed from the base case assumptions. The first of these alternatives is a "status quo" scenario, in which key variables are held at their mid-1988 values.

A. Passive Accumulation Factors

Not all foreign interest rates, inflation rates and currency values are relevant to New Zealand's debt position. In this paper, foreign rates have been weighted according to the proportion of private and public New Zealand debt held in each particular currency as at 31 December 1987. Table 1 shows the interest rate and inflation rate weightings assigned to each of these currencies. From these weightings average (current) "foreign" interest and inflation rates are determined as 7.1% and 2.9% respectively. The average current interest rate has been determined on the basis of prime commercial bill rates in each country as at 1 April 1988. The average current inflation rate has been determined from the Consumer Price Indices of the same countries for the 12 months prior to 1 April 1988. On this basis, the following (base case) assumptions have been made for the years 1988/89 to 1999/2000. These assumptions are generally in line with those used in the Planning Council's National Sectoral Programme (NSP) modelling of the New Zealand economy over a similar period. The base year debt ratio is March 1987 with actual data used where possible for the year to March 1988. The assumptions outlined below therefore apply mainly from the current (1988/89) year forward.

(i) Foreign Interest Rates

Both private and public borrowers are expected to maintain debt portfolio management policies which seek to minimise debt servicing costs. However, recent movements in some countries suggest that a slight firming of foreign interest rates can be expected over the period 1988-2000 and this will ultimately affect the average rate of interest applicable to the outstanding stock of debt. The average rate for the period over all foreign debt is therefore assumed to be 7.5% p.a.

(ii) Foreign Inflation Rates

The average foreign inflation rate is also assumed to rise slightly over the forecast period. The present debt-weighted average of 2.9% is assumed to rise to an average rate of 3.5% p.a. from 1989. This compares with current IMF forecasts of an average 3.6% p.a. for the period 1988-1992 (for both CPI and GDP/GNP deflators). Recent world economic indicators suggest 3.5% p.a. average inflation may be slightly conservative given the economic stimulus provided by recent monetary policies in the major industrial countries. However, for the purposes of this model, a slightly higher average

foreign inflation rate is unlikely to affect the debt growth scenarios; higher inflation suggests higher interest rates - thus leaving intact the key assumption of average real foreign interest rates of around 4% p.a.

(iii) NZ Currency Adjustments

The debt-weighted exchange rate index is assumed to depreciate at an average rate of 1% per annum over the three years 1987/88, 1988/89 and 1989/90. From 1991, the index is assumed, on average, to remain constant over the remainder of the period. In other words, the NZ currency is assumed to neither appreciate nor depreciate against the debt-weighted basket of currencies in nominal terms after 1991. This is a questionable assumption since both public and private sector debt portfolio management policies may lead to a shift of debt into currencies against which the NZ dollar performs most strongly. However, it is not at all clear that the NZ dollar is substantially overvalued nor, therefore, can a period of sustained nominal or real devaluation be expected. The debt-weighted index constructed for this analysis shows a small (3-4%) appreciation compared to March 1987. During this period however there have been substantial movements in the index which have generated wide, but short term, fluctuations in debt levels. However, the sensitivity of the debt position is later tested against alternative exchange rate scenarios - including allowances for the effect which currency movements are also likely to have on the debt equation through active accumulation/decumulation on the goods and services and balance. No attempt to incorporate variations in the terms of trade are explicitly contained in the model.

(iv) Domestic Inflation

The New Zealand inflation rate is expected to continue its declining trend to a position equal to "world" inflation after 1991. Intermediate rates for 1988/89 and 1989/90 are 5.0% and 4.0% respectively. The assumption of domestic inflation rates comparable with the world rate over the period 1991-2000 (3.5% p.a.)is broadly consistent with the early assumption of no change in the nominal debt-weighted exchange rate index.

(v) Domestic Growth

Real growth in the New Zealand economy is expected to average 2.5% p.a. after 1991. This figure is consistent with growth performance over the last 15 years and consistent with the assumed improvement in the goods and services balance discussed below. Real growth rates for 1987/88, 1988/89 and 1989/90 are 0%, 0% and 1.5% respectively. The sensitivity of the debt path to assumptions of a higher rate of real growth is tested in subsequent runs.

B. Active Accumulation Factors

(i) Goods and Services Balance

The recent improvements in the goods and services balance are assumed to continue. The surplus of 1.5% of GDP estimated for March 1988 provides the starting point. In the base case, this balance is assumed to improve to 2.0% in March 1989 and by a further one quarter of one per cent of GDP per annum thereafter (i.e. an annual improvement of approximately $150 million per annum in 1988 terms). The surplus on the goods and services account is assumed to rise to 3.5% of GDP

by 1995 and remain constant thereafter. Current projections within the Planning Council's National Sectoral Programme suggest that this is not an unreasonably optimistic set of assumptions.

(ii) Residual Components

Given the uncertain composition and trends of the residual factors affecting debt accumulation no net increase or decrease is assumed. This assumption is questionable given the increased importance of this component in recent years. However, its contribution to the growth of external debt may be less significant in future than in the last 2-3 years; this latter period not only included exchange market deregulation and the overseas expansion of a number of larger New Zealand corporates, but included a period of comparatively high real interest rates in New Zealand and a consequent rise in private off-shore borrowing.

The potential for understating the debt ratio due to the assumption of no net increase in the residual component may be small due also to the corresponding exclusion of net increases in foreign equity investment in New Zealand. To the extent that such direct foreign investment occurs, it substitutes for explicit indebtedness. However, the potential importance of the residual component in this respect is further considered in the sensitivity analysis - especially as it may be affected by government plans for debt reduction from the proceeds of asset sales.

VII

The outcome of these Base Case assumptions for net debt/GDP trends is shown in Table 4(i) and Figure 3. Improvement in New Zealand's total net debt position is shown to be gradual at first, picking up to an improvement of nearly 3% p.a. in ten years time. Even so, net debt is still estimated to be relatively high at just over 50% of GDP in 1996, improving to around 39% by March 2000. This acceleration in the rate of debt reduction over the final 5-year period is due to the assumed continuation of surpluses on the goods and service balance, and the fact that the passive accumulation factors are operating on a reducing stock of debt.

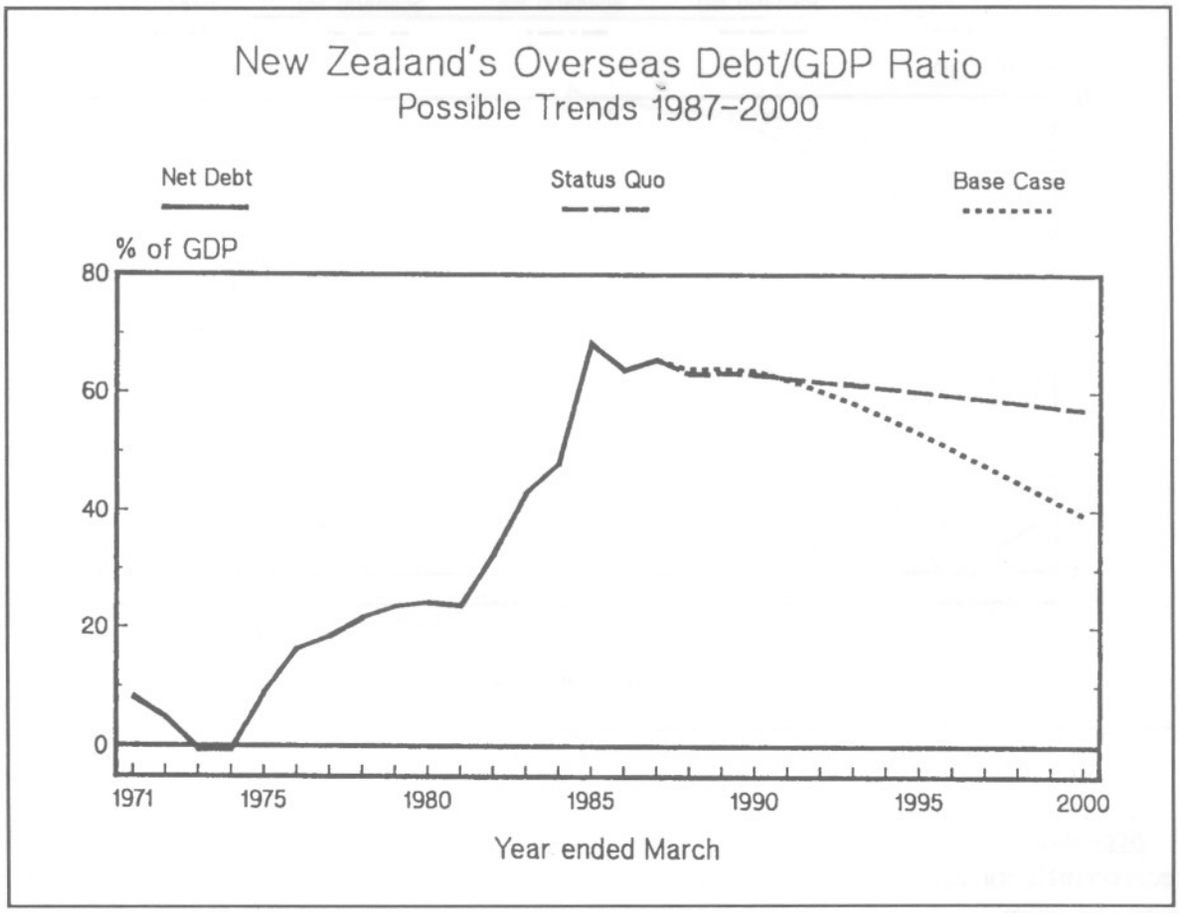
The moderately slow forecast decline in New Zealand's debt ratio arising from these "base case" assumptions reflects the lengthy process involved in bringing substantial levels of external indebtedness under control. The slowness of this turnaround should not seem surprising given the rapid escalation of the economy's debt growth path identified earlier in Figure 1. Considerable progress has already been made in stabilising those trends and the subsequent decline in the ratio suggested by this model should perhaps be viewed as a highly positive, and plausible, improvement.

VIII

In addition to attempting forecasts of future indebtedness, a further purpose of the model is to reveal the importance of the different components driving the debt equation and how these may be affected by future policy decisions, or economic events. The sensitivity of the debt growth path to variations in the assumptions underlying these components is described in this section. These outcomes are depicted graphically in Figures 3 - 6. The underlying assumptions of these alternative scenarios are as for the base case, but with the following modifications:

Status Quo : All assumptions with regard to foreign interest and inflation rates remain as for the Base Case. Similarly, there is no revaluation of the currency, and the goods and services balance remains at its present (March 1988) level of 1.5% of GDP. Domestic inflation remains above world rates at 5% p.a. and real growth is held at an average of 1% p.a. As a result of these assumptions indebtedness levels improve only very slightly to 57% of GDP by March 2000. The importance of trade surpluses to New Zealand's debt recovery is evident from this scenario.

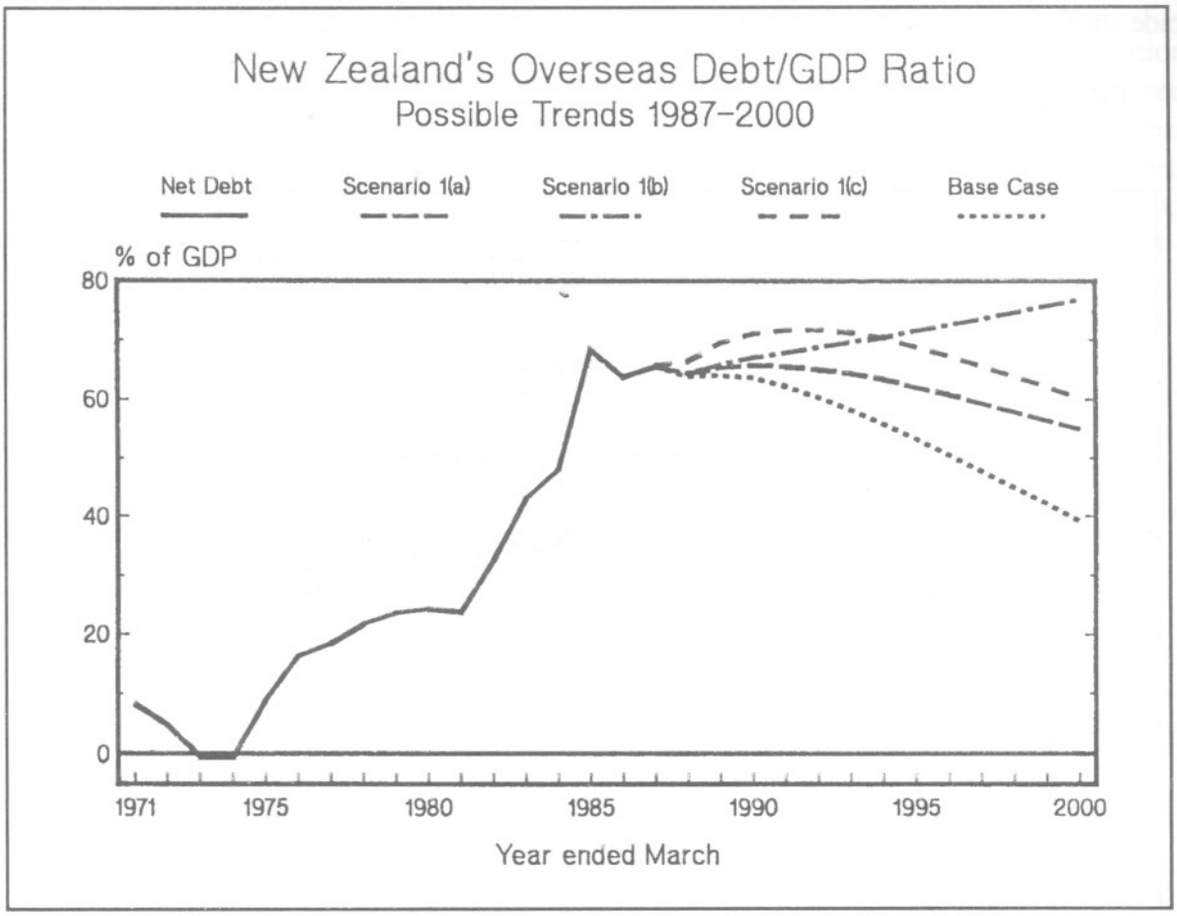
FIGURE 3:



Scenario 1(a) : See Figure 4. The nominal rate of NZ dollar devaluation against the debt weighted index is raised to an average of 2% p.a. over the whole of the forecast period. All other assumptions remain as for the base case (i.e. domestic inflation falls to world levels and the goods and services balance improves to 3.5% of GDP). The effect is to produce no significant improvement in the debt ratio for at least another five years. However, after 1995, the assumed surpluses in the goods and service balance bring about a gradual improvement in the ratio to around 55% of GDP.

Scenario 1(b) : A similar 2% p.a. devaluation of the New Zealand currency which did not improve the trade balance beyond its current position (with all other assumptions as for the base case) would induce a progressive deterioration of the debt ratio. Under these assumptions, the debt ratio increases slowly, though without limit. Such conditions are not implausible given New Zealand's recent economic performance.

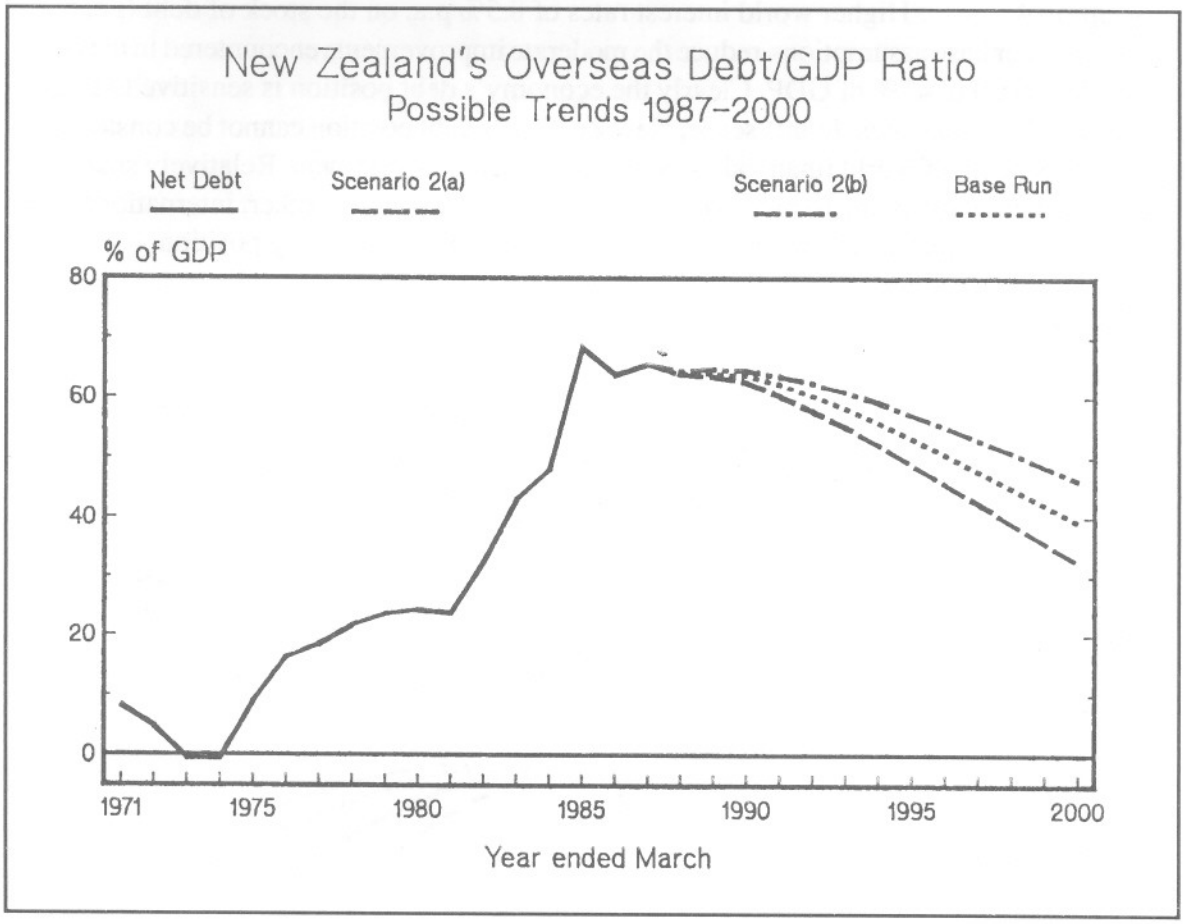
FIGURE 4:



Scenario 1(c) : The nominal rate of devaluation is raised further to 5% p.a. with consequent effects on inflation (also averaging 5% p.a.) and the goods and services balance (improving by 0.5% p.a. to a maximum of 5.0% of GDP by 1995). Nominal income growth is raised by the inflation increase. This combination of conditions results in an immediate deterioration of the debt ratio due to revaluation effects, though the increased trade balance surplus begins to reverse this trend from 1993. The debt ratio, however, is only marginally better at present than at the end of the 12-year period.

Scenario 2(a) : See Figure 5. Increased real growth in the economy (3.5% p.a. after 1990) has a helpful impact on the debt ratio. Provided this is achieved within the context of the assumed levelling out of NZ inflation at world rates and no nominal devaluation after 1991 (i.e. base case assumptions), the debt ratio declines steadily to around 32% of GDP. The improving trend, however, is still slow in the first 2-3 years due to high on-going debt servicing (interest) costs.

FIGURE 5:



Scenario 2(b) : The effect of even slight devaluation in the course of achieving higher growth is pronounced. Much of the improvement achieved in the previous scenario is eroded by the effect of the devaluation on the outstanding stock of debt. The debt ratio remains at over 60% of GDP for another 5 years, and remains considerably higher than the base case at the end of the period.

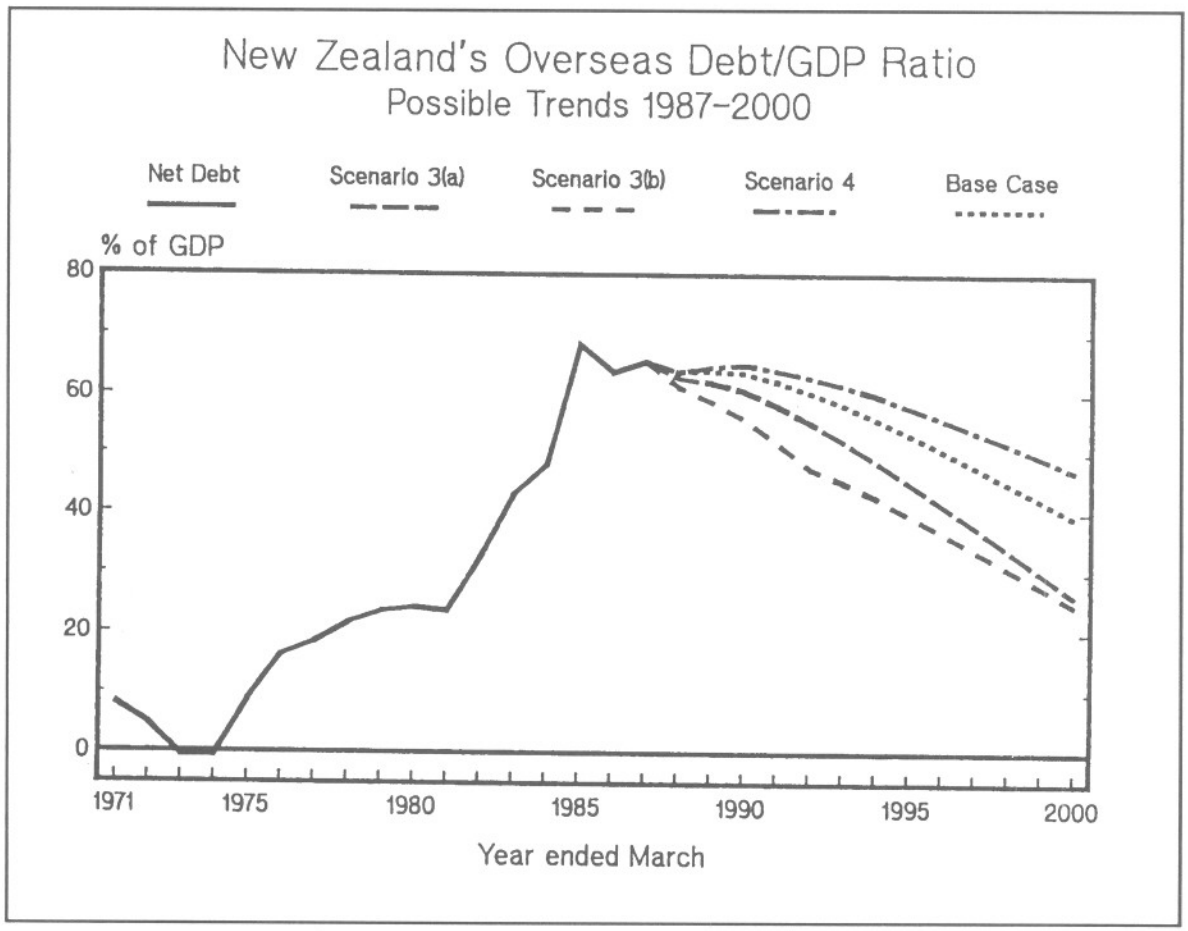
Scenario 3(a) : See Figure 6. The effect of an assumed net repayment of debt from government asset sales (on top of base case assumptions) is marked. In this run, net repayment is assumed to be at the rate of 1% p.a. of 1988/89 GDP (i.e. around $600m in 1988/89 terms) for each year of the forecast period (total net repayment of around $7.6 billion dollars). The debt ratio declines to approximately 26% of GDP by March 2000.

Scenario 3(b) : Higher initial debt repayment (2.5% of 1988/89 GDP each year for five years - $1.5b per year in 1988/89 terms) from asset sales has, as expected, a more substantial initial impact and a similarly marked effect overall. The ratio at the end of the period,however, is only slightly improved on the previous run at 24.7% of GDP. (Some implications of this result are dis-

cussed below.)

Scenario 4 : Higher world interest rates of 8.5% p.a. on the stock of debt (i.e. 5% real) on top of the other base assumptions reduce the moderate improvements encountered in the base case to a final debt ratio of 47% of GDP. Clearly the economy's debt position is sensitive to even a 1% increase in real interest rates. In this sense, New Zealand's debt position cannot be considered to be entirely independent of world financial market trends and risk assessment. Relatively small interest rate premia on NZ debt owing to increases in perceived country risk (or other, international, market factors) may have significant impacts on this country's debt sustainability position.

FIGURE 6:



IX

The clear impression from the model runs is that New Zealand's debt position should improve steadily given relatively moderate and realistic assumptions regarding the component factors, and the continuation of policies which avoid the need for external public borrowing. Rapid improvement in the debt ratio, however, is most unlikely unless there are either highly favourable economic conditions, or substantial early net repayment of outstanding debt.

Despite the improving trend, New Zealand's debt position will remain highly sensitive to exchange rate movements. Currency depreciation therefore has the potential to seriously worsen the debt/GDP ratio unless it is accompanied by substantial improvements in the trade balance. Although, as emphasised earlier, "unsustainable" levels of foreign debt are often difficult to determine, the above scenarios suggest that New Zealand's external indebtedness is currently under control, but remains worryingly exposed to unfavourable movements in internal and external economic conditions. Movement towards this position would therefore seem to be accurately reflected in the progressive downgrading of New Zealand's creditworthiness in recent years.

Continued improvement in the trade balance is essential for on-going debt reduction. This requires a continuation of recent surpluses, improving to (and remaining around) at least 3 - 4% of GDP emphasising the importance of investment and growth in the export sector to the recovery process. Moreover, from this analysis, it appears that these improvements must be achieved in the absence of any significant currency depreciation, if the debt ratio is to improve.

Early net repayment of overseas debt, for example through asset sales or increased foreign investment, would help to reduce current levels of debt exposure and therefore diminish some risk and uncertainty associated with New Zealand debt. However, while some government debt repayment is likely as a result of asset sales, it should be noted that this could easily be offset by increases in net private sector borrowing overseas either related or unrelated to the purchase of government assets. In other words, to the extent that the sale of assets to the private sector results in private overseas borrowing (either directly or as a result of a "crowding out" of other domestic borrowing) the positive impact of the asset sale programme on the economy's indebtedness will be reduced. Asset sales undertaken to reduce debt must involve a net inflow of foreign capital with which repayment of debt can be made. This "debt-equity swap" should not, from an international sustainability perspective, simply involve a switch from public to private sector balance sheets. Such a switch does little, if anything, to diminish country risk. (It was for this reason that total external debt repayment from asset sales income in the two model scenarios was limited to around $7.5 billion - i.e. about half of the government's target asset sales figure.)

The model also indicates that New Zealand's longer term indebtedness position is not significantly improved by an early reduction of debt as opposed to a slower, more gradual process. Thus the debt ratio in March 2000 is only slightly lower if asset sales result in debt reduction at the rate of $1.5 billion per year for the next five years, compared to a reduction of around $600 million annually throughout the 12-year period.

However, there are a number of other factors which should be considered in determining the extent and speed of the asset sale process. Asset sales which help to reduce external debt in the short term, may give rise to profit remittances overseas which reduce the balance on the current account over the longer run. This paper has not attempted to model these second round effects, nor is it clear that remitted profits will exceed new injections of foreign capital in the short to medium term. Such judgements can only be made on an asset-by-asset basis and are thus beyond the scope of this paper. The potential exists, however, for the net stream of remittances over time to exceed the debt reduction and debt servicing gains of the initial sale. The straightforward gains from an accelerated programme of asset sales are therefore neither as clear nor as great as they may have first appeared.

There are clearly a number of difficult judgements to be made concerning the need for and implementation of an asset sales programme. The benefits identified in this paper relate primarily

to the reduced period of risk and uncertainty (and to reducing the costs imposed by that uncertainty), and to the added fiscal flexibility from lower government debt servicing commitments.This latter benefit is given particular emphasis in recent government statements. Overall, the sensitivity of New Zealand's debt exposure to unfavourable changes in economic conditions would tend to support the case for a judicious approach to asset sales in a way which helped to "cement in" the present improving debt trends. Debt reduction alone, however, is not a sufficient argument for any particular sale. In the longer term, sustained viability in the external accounts can only be achieved by actions and policies which raise the level of savings of individuals, the business sector and government. Until this problem is addressed, as much by the private sector and individuals as by the government, asset sales or other debt-relief measures can provide only temporary respite.

The net overseas debt measures developed in this paper are as accurate as present statistics allow. Recently announced steps by the Department of Statistics to improve the collection of data on overseas debt and capital transactions are overdue and should, in time, provide a more reliable picture. It should be noted, however, that the present measures of debt are likely to understate actual private borrowing and that improved statistics may generate an impression of a worsening trend. The policy implications described here will be reinforced by any new data which raise the debt ratio.

TABLE 1 (A)

COMPONENTS OF NEW ZEALAND'S OVERSEAS DEBT

(All figures in NZ$ millions)

	Official Debt*			Market Sector Debt					
				Other Govt	Private Sector				
March Year	Long Term	Short Term**	Total	All	Long Term	Short Term	Total	Total Market Sector	TOTAL DEBT
1971	na	na	582	na	na	na	175	175	757
1972	na	na	654	na	na	na	196	196	850
1973	na	na	564	na	na	na	169	169	733
1974	na	na	465	na	na	na	140	140	605
1975	na	na	1081	na	na	na	324	324	1405
1976	na	na	1983	na	na	na	595	595	2578
1977	na	na	2563	na	na	na	769	769	3332
1978	na	na	3256	na	na	na	977	977	4233
1979	na	na	3676	na	na	na	1103	1103	4779
1980	na	na	4297	na	na	na	1289	1289	5586
1981	na	na	4809	na	na	na	1443	1443	6252
1982	na	na	6777	1114	na	na	2033	3147	9924
1983	9178	74	9252	2469	3079	525	3604	6073	15325
1984	9336	52	9388	3138	3885	1183	5068	8206	17594
1985	13916	44	13960	5249	5449	3997	9446	14695	28655
1986	15595	292	15887	5601	5228	4958	10186	15787	31674
1987	21822	1191	23013	7211	7204	5196	12400	19611	42624
1988	19269	na	na	6016	7554	na	na	na	na
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

TABLE 1 (B)

NET DEBT

NZ$ millions

March Year	TOTAL DEBT	Assets* Official	Assets* Private	Assets* Total	Net Debt	GDP	Net Debt/ GDP (per cent)
1971	757	202	77	279	478	5843	8.18
1972	850	455	70	525	325	6874	4.73
1973	733	700	78	778	-45	7901	-0.57
1974	605	612	51	663	-58	9199	-0.63
1975	1405	442	70	512	893	10117	8.83
1976	2578	587	100	687	1891	11669	16.21
1977	3332	603	130	733	2599	14105	18.43
1978	4233	842	164	1006	3227	14889	21.67
1979	4779	609	196	805	3974	16852	23.58
1980	5586	532	269	801	4785	19715	24.27
1981	6252	495	315	810	5442	23002	23.66
1982	9924	563	318	881	9043	27841	32.48
1983	15325	1666	271	1937	13388	31149	42.98
1984	17594	1128	171	1299	16295	33967	47.97
1985	28655	1940	272	2212	26443	38729	68.28
1986	31674	2667	429	3096	28578	44868	63.69
1987	42624	7544	397	7941	34683	52879	65.59
	(9)	(10)	(11)	(12)	(13)	(14)	(15)

TABLE 1 (C)

NET INTEREST FLOWS

	Official Net Interest Flows International Investment Income (Govt and Official Institutions)			Calculated from Market Sector Net Interest Flows Direct Private Investment & Other International Investment Income Flows							
March Year	Debits	Credits	Net Debit	DPI Debits	DPI Credits	DPI Net	Other III Debits	Other III Credits	Other III Net	Total Market Sector Net	TOTAL NET INTEREST
1971	33	4	29	22	1	21	22	31	-9	12	41
1972	33	19	14	25	1	24	16	17	-1	23	37
1973	37	31	6	37	1	37	34	22	12	49	55
1974	34	51	-17	53	2	51	27	22	5	56	39
1975	51	42	9	37	2	35	52	24	28	63	72
1976	104	34	70	44	2	41	93	32	61	102	172
1977	159	30	129	83	4	79	109	35	74	153	282
1978	195	35	160	72	5	68	150	38	112	180	340
1979	244	34	210	84	3	80	171	41	130	210	420
1980	304	36	268	54	5	50	161	41	120	170	438
1981	331	31	300	72	7	65	201	53	148	213	513
1982	450	48	402	114	11	103	232	111	121	224	626
1983	615	73	542	128	12	116	277	97	180	296	838
1984	744	95	649	151	15	137	581	93	488	625	1274
1985	1084	138	946	157	15	142	882	89	793	935	1881
1986	1251	153	1098	168	16	152	890	129	761	913	2011
1987	1518	208	1310	170	17	153	917	189	728	881	2191
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)

TABLE 1 (D)

ANNUAL COMPONENTS OF THE CHANGE IN TOTAL NET DEBT

March Year	TOTAL NET INTEREST	Adjustments for Revaluation: Change in Public Debt	Adjustments for Revaluation: Per cent Revaln	Adjustments for Revaluation: Imputed Reval on Total Net Debt	Annual Gds &Svcs Deficit	Annual Residual
1971	41	8	1.45	7	141	289
1972	37	3	0.49	2	-233	41
1973	55	-40	-6.57	-9	-10	-406
1974	39	-41	-7.97	4	3	-59
1975	72	97	14.61	61	1236	-418
1976	172	178	15.31	213	771	-158
1977	282	137	8.33	187	387	-148
1978	340	137	6.41	187	265	-164
1979	420	126	4.69	169	-112	270
1980	438	249	7.68	336	342	-305
1981	513	-147	-3.77	-193	287	50
1982	626	514	10.51	761	924	1290
1983	838	893	13.41	1504	1157	846
1984	1274	-362	-4.53	-672	272	2033
1985	1881	2612	25.31	5408	1397	1462
1986	2011	1371	10.11	2781	1116	-3773
1987	2191			-205	-146	4265
	(26)	(27)	(28)	(29)	(30)	(31)

TABLE 1 (E)

ACCUMULATED COMPONENTS OF TOTAL NET DEBT

March Year	Gds & Svcs Deficit	Interest Flows	Debt Revaln	Residual	Gds & Svcs + Interest Flow	Gds & Svcs + Int + Reval	Gds & Svcs Contrib. (32) %/GDP	Gds & Svcs + Interest (36) %/GDP	Gds & Svcs Int + Reval(37) %/GDP
1971	141	41	7	289	182	189	2.41	3.11	3.23
1972	-92	78	9	330	-14	-5	-1.34	-0.20	-0.07
1973	-102	133	0	-76	31	31	-1.29	0.39	0.39
1974	-99	172	4	-135	73	77	-1.08	0.79	0.84
1975	1137	244	65	-553	1381	1446	11.24	13.65	14.29
1976	1908	416	278	-711	2324	2602	16.35	19.92	22.30
1977	2295	698	465	-859	2993	3458	16.27	21.22	24.52
1978	2560	1038	652	-1023	3598	4250	17.19	24.17	28.54
1979	2448	1458	821	-753	3906	4727	14.53	23.18	28.05
1980	2790	1896	1157	-1058	4686	5843	14.15	23.77	29.64
1981	3077	2409	964	-1008	5486	6450	13.38	23.85	28.04
1982	4001	3035	1725	282	7036	8761	14.37	25.27	31.47
1983	5158	3873	3229	1128	9031	12260	16.56	28.99	39.36
1984	5430	5147	2557	3161	10577	13134	15.99	31.14	38.67
1985	6827	7028	7965	4623	13855	21820	17.63	35.77	56.34
1986	7943	9039	10746	850	16982	27728	17.70	37.85	61.80
1987	7797	11230	10541	5115	19027	29568	14.74	35.98	55.92
	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)

TABLE 2

NEW ZEALAND CAPITAL MOVEMENTS/ASSET CHANGES 1971/72 - 1983/84

(As a possible explaination of residual component in debt accumulation)

All figures in NZ$ millions

March Year	Private Direct Inv Incr Assets (Net)	Other Longterm Capital Movt Net Asset Change	Total Govt Capital Movts Net Asset Change	Total Net Asset Change	Net Transfers	Total Asset Changes + Transfers	Total Change Accum	Residual (Table 1 D)	Residual Accumltd
1972	10.7	-7.0	0.4	4.1	na	4.1	4.1	41.0	41.0
1973	2.7	-9.0	2.1	-4.2	na	-4.2	-0.1	-406.0	-365.0
1974	13.5	-8.0	1.9	7.4	na	7.4	7.3	-59.0	-424.0
1975	15.0	0.0	8.8	23.8	na	23.8	31.1	-418.0	-842.0
1976	17.7	-9.0	21.9	30.6	na	30.6	61.7	-158.0	-1000.0
1977	37.3	-24.0	28.6	41.9	na	41.9	103.6	-148.0	-1148.0
1978	31.0	1.0	22.7	54.7	17.0	37.7	141.3	-164.0	-1312.0
1979	53.5	-18.0	3.5	39.0	-19.0	58.0	199.3	270.0	-1042.0
1980	73.3	-64.0	5.1	14.4	24.0	-9.6	189.7	-305.0	-1347.0
1981	118.4	-64.0	39.9	94.3	56.0	38.3	228.0	50.0	-1297.0
1982	114.7	-13.0	4.1	105.8	49.0	56.8	284.8	1290.0	-7.0
1983	604.5	-6.0	49.8	648.3	139.0	509.3	794.1	846.0	839.0
1984	na	na	na	53.7	106.0	-52.3	741.8	2033.0	2872.0
1985	na	na	na	na	211.0	na	na	1462.0	4334.0
1986	na	na	na	na	186.0	na	na	-3773.0	561.0
1987	na	na	na	na	239.0	na	na	4265.0	4826.0
1988	na	na (See Table 2 A)	na (See Table 2 A)	na	266.0	na	na	na	na

SUPPLEMENTARY TABLE 2 (A)

March Year	Other Longterm Capital Movts (Incr Asset)	Other Longterm Capital Movts (Decr Asset)	Total Govt Capital Movts (Incr Asset)	Total Govt Capital Movts (Decr Asset)
1972	14.4	21.4	0.4	0.0
1973	18.5	27.9	2.1	0.0
1974	9.6	17.3	1.9	0.0
1975	12.2	12.3	8.8	0.0
1976	12.7	22.1	21.9	0.0
1977	8.7	32.9	28.8	0.2
1978	25.3	24.4	22.7	0.0
1979	27.2	45.3	3.5	0.0
1980	24.2	88.4	5.4	0.3
1981	114.8	179.0	39.9	0.0
1982	125.2	138.7	5.8	1.7
1983	149.5	155.3	53.4	3.6
1984	na	na	na	na
1985	na	na	na	na
1986	na	na	na	na
1987	na	na	na	na
1988	na	na	na	na

TABLE 3

DEBT WEIGHTINGS
(Debt as at 31/12/87)

	Long term	Short term	Total	Per cent	Weight
Official Govt	18653	1300	19953	49.78	0.50
Other Central Govt	6783	517	7300	18.21	0.18
Private Sector	7626	5200	12826	32.00	0.32
TOTAL	33062	7017	40079	100.00	1.00

CURRENCY WEIGHTINGS
(As at 31/12/87)

	$US	Yen	Pound	Swiss Fr	D-mark	Other*
Official Govt	0.37	0.30	0.09	0.11	0.07	0.06
Other Central Govt	0.49	0.24	0.07	0.09	0.06	0.05
Private Sector	0.70	0.08	0.05	0.02	0.00	0.14
AVE. WEIGHT.	0.50	0.22	0.07	0.08	0.05	0.08

DEBT INTEREST RATES
(As at 1/4/88)

Prime Commercial	8.50	3.38	9.50	5.25	5.50	9.50
Debt weighted	4.23	0.74	0.70	0.41	0.25	0.80
Debt weighted average =		7.12				

INFLATION RATES
(Per cent for year to 1/4/88)

Consumers Price Index	3.90	1.10	3.30	1.70	0.90	3.50
Debt weighted	1.94	0.24	0.24	0.13	0.04	0.29
Debt weighted average =		2.89				

TABLE 4

SCENARIOS - DEBT/GDP TRENDS 1987-2000

	Table 4 (i) (Fig.3)		Table 4 (ii) (Fig.4)		
	Base Case	Status Quo	(1a) Higher Deprec (2% pa)	(1b) Depreciation 2%pa Lower Gd & Sv Surplus (max. 1.5%)	(1c) Depreciation 5%pa Gd & Sv Surplus Rises (0.05% pa - 5%) Inflation 5%
1987	65.6	65.6	65.6	65.6	65.6
1988	63.8	63.1	64.4	64.4	66.4
1989	64.0	63.2	65.3	65.8	69.4
1990	63.7	63.0	65.7	67.0	71.0
1991	62.1	62.4	65.5	67.8	71.6
1992	60.3	61.8	65.0	68.7	71.7
1993	58.2	61.3	64.3	69.6	71.2
1994	55.8	60.7	63.3	70.5	70.3
1995	53.2	60.1	62.0	71.5	68.8
1996	50.5	59.5	60.7	72.5	67.3
1997	47.7	58.9	59.3	73.5	65.6
1998	44.9	58.3	57.9	74.6	63.9
1999	42.1	57.6	56.4	75.7	62.1
2000	39.2	57.0	54.9	76.8	60.2

Table 4 (iii) (Fig.5)

		2(a)	2(b)
	Base Case	Increased Real Growth Rate (3.5% pa)	Real Growth 3.5% pa Depreciation 2% pa
1987	65.6	65.6	65.6
1988	63.8	63.8	64.4
1989	64.0	63.4	64.7
1990	63.7	62.4	64.4
1991	62.1	60.2	63.5
1992	60.3	57.7	62.3
1993	58.2	55.0	60.9
1994	55.8	52.1	59.1
1995	53.2	48.8	57.1
1996	50.5	45.6	55.1
1997	47.7	42.3	52.9
1998	44.9	39.0	50.8
1999	42.1	35.7	48.5
2000	39.2	32.4	46.2

Table 4 (iv) (Fig.6)

		3(a)	3(b)	4
	Base Case	Asset sale & Debt Repayment (1% GDP pa)	Asset sale & Debt Repayment (2.5% GDP for 5 yrs)	Higher World Interest Rates (5% real)
1987	65.6	65.6	65.6	65.6
1988	63.8	62.8	61.3	63.8
1989	64.0	61.9	58.8	64.6
1990	63.7	60.5	55.8	65.0
1991	62.1	58.0	51.7	64.1
1992	60.3	55.1	47.4	62.9
1993	58.2	52.0	45.1	61.5
1994	55.8	48.6	42.5	59.8
1995	53.2	45.0	39.6	57.8
1996	50.5	41.3	36.7	55.8
1997	47.7	37.6	33.8	53.6
1998	44.9	33.8	30.8	51.5
1999	42.1	30.0	27.8	49.3
2000	39.2	26.2	24.7	47.0

Notes to Tables:

Table 1 (A):
* Official = Treasury + Reserve Bank Debt
** Short Term = Less than 12 months
na = not available
(1) Department of Statistics (series began 1983)
(2) Bank of New Zealand estimates from Bank of International Settlements data
See also New Zealand Institute of Economic Research Quarterly Predictions March 1988, Table D5a.
(4) 1982: Reserve Bank Survey, 1983-87 Department of Statistics
(5) Department of Statistics
(6) NZIER: Quarterly Predictions March 1988, Table D5a
(7) 1971-82: Private Debt = estimated 30% of official debt
(8) Market Sector = Private sector + other government
(9) Official debt = Market Sector debt

Table 1 (B):
* Refer to text for definitions
(10) Official Reserves, Reserve Bank Bulletin, Table G1
(11) Overseas Reserves of trading banks, Reserve Bank Bulletin, Table B1
(13) Column 9 - column 12
(14) Department of Statistics

Table 1 (C):
(16), (17) Department of Statistics
(18) Department of Statistics. The interest component is taken as 32% of the total income flow.
(20) Department of Statistics. The interest component is taken as 9% of the total income flow.
(22), (23) Department of Statistics
(26) Columns (18) + (25)

Table 1 (E):
(32) Department of Statistics

Table 2:
Conclusion: Annual net capital movements plus net transfers show little or no correlation with annual residual component. Accumulated flows correspond closely by 1983, but appear to diverge again immediately after. No satisfactory explanation of trends in the residual component is therefore provided by capital account data.
Source: Department of Statistics (Infos) Balance of Payments data.

Table 3:
Other* includes Australian, Netherlands & Canadian currency debt.
Debt interest rates - Australian 13%, Netherlands 5.75%, Canadian 9.75%.
Inflation rates Australian 7.1%, Netherlands -0.5%, Canadian 4.0%.

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