The Fully Employed High Income Society

NEW ZEALAND
Planning Council
Te Kaunihera Whakakaupapa Mo Aotearoa

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The Fully Employed High Income Society

by

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New Zealand Planning Council
Wellington
April 1990

ISBN 0-908601-68-9

Foreword

This report by Dennis Rose is a key element in a major Planning Council programme to secure commitment by New Zealanders to achieving *sustainable full employment with high incomes.*

Few dispute the desirability of that goal, but many regard it as impracticable and prefer to concentrate on other objectives. The Council believes commitment to full employment is vital:

- because it is the best base from which to achieve other social objectives;
- because of the long-term social and economic costs of unemployment; and
- because no lesser goal is acceptable.

The full definition of the goal is important. We want *sustainable* full employment — not a short-term bubble of job creation following government pump-priming of the economy or a bout of sharemarket euphoria. We want *full* employment — paid work for all those who seek it. We want *high* wages — rejecting the low-wage solution which is essentially what we have pursued through forty years of decline in per capita national income from 3rd to 30th in the world.

This scenario of the fully employed, high income society is important, first because it helps us to visualise the goal, and to see that while its attainment will not be easy, it is feasible.

It reminds us that full employment in the 1990s will be different from full employment in the 1950s. People, their expectations, and the economic structure they shape have changed. Full employment will not mean 40 hours a week for 40 years in the same job — either for men, or for the increasing proportion of women in paid employment. Career changes, time-out for retraining or child-rearing, self-employment and part-time work will be more common. And change will continue. Sustaining full employment will require a continuing ability to change and adapt.

It also has some important things to say about the requirements for reaching our goal. There are no simple solutions. Full employment will require action and commitment on many fronts — from government, individuals, firms, unions, communities and other agencies. We cannot load all our expectations onto one set of measures, or one agency, and avoid the responsibility ourselves.

We hope this report, and other work in the Planning Council's programme, will help people and institutions to see more clearly the roles they can play and how their contribution can reinforce the wider effort.

Our programme focuses on four areas in particular — the roles of

- macroeconomic management;
- training and education;
- adaptive work places; and
- community initiatives.

In pursuing this programme we look forward to working with everyone with interests in these areas.

One common feature of those countries which have performed well on employment is that they have a commitment to achieving full employment. The Planning Council believes that is a pre-requisite for New Zealand too.

In preparing this report the author was assisted by a resource network which helped define the scope and structure of the report, and commented on the drafts. The report was also distributed in draft to a range of people for criticism and comment. The Council and the author are grateful to and thank all those who have assisted. Particular thanks are due to Bryan Philpott of Victoria University, not only for developing over many years the sectoral modelling systems which enabled quantitative exploration of the consequences of increased productivity, increased investment and increased wage flexibility, but also for his active support and argument at all stages in the project.

Gary Hawke
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Introduction

The challenge

Is full employment possible?

If so, can we also secure increasing levels of income and wealth?

The prolonged recession of the late 1980s, falling living standards, and rapid structural change in an atmosphere of continuing crisis, have bred pessimism about New Zealand's long-term prospects. They have also encouraged the belief that unemployment and stagnant incomes are now permanent features of life.

Such attitudes compound the challenges already facing New Zealanders, and they are partially self-fulfilling.

This report offers something of an antidote. It suggests that sustainable full employment at high wages is a feasible goal — neither simple nor easily achieved, but feasible.

The report sketches something of what a fully employed high income economy might look like in 1995. Any picture of the economy in the future is obviously an approximate one. This is a sketch which highlights the main features of the economy rather than providing a precise set of forecasts.

It explores those areas in which changes will have to occur if sustainable full employment is to be secured. The fundamental pre-condition of simultaneous rises in incomes and employment is improved productivity and the implications of this are examined.

The report does not conclude with an exact set of recommendations — the challenge facing New Zealanders is wider than that and calls for analysis and action at all points within society and the economy.

The purpose is to outline the necessary direction of change and identify the main actors. Central government clearly has a key role to play but so do all New Zealanders — including sector leaders, trade unions and local government, as well as individual workers and employers involved in market and non-market activities.

The Planning Council has re-affirmed the goal of 'sustainable full employment at high incomes' and has decided to continue working in this area during 1990/91. The Council intends to use this document to promote widespread commitment to the full employment goal through consultations with interested groups and sectors, and through identification of ongoing issues.

The shape of this report

The report opens with a brief reminder of the size of the problem — the difficulty of achieving a fully employed high income society. It looks at recent trends in employment and unemployment, and notes official projections of continuing increases in the size of the labour force. Reference is made throughout to an earlier Planning Council publication *Prospects: Economic and Sectoral Trends to 1997*,[1] which forecast a continuing serious unemployment problem. In this report we use those 1988 forecasts as a benchmark against which to measure the consequences of some possible changes.

The report goes on to examine the changes needed to secure a faster rate of increase in productivity. Improved productivity is the continuing precondition of simultaneous movements to higher incomes and higher employment. The restructuring of the New Zealand and international economies, and the associated policy reforms, are reviewed. The report then explores the entrepreneurial, managerial, and employee responses necessary to cope with, and exploit, the opportunities offered by a rapidly changing world. The need for increased effort in education, training and research is also covered.

To this point, the discussion on productivity change is qualitative. Following this, two medium-term computer models of the economy are used to explore the implications of a doubling in the rate of productivity increase, supposing such an increase could be achieved.

The models suggest that an increase in the average annual rate of productivity increase, from 1 to 2 percent, would have a profound effect in the medium term. Such a productivity increase would lift incomes substantially and, at the same time, enable a significant reduction in the unemployment rate, to about the 2 percent rate approximating frictional unemployment (see p.17). It is concluded that increased productivity growth is indeed well worth striving for.

The models are also used to look at the extent to which increased levels of well chosen investments now can enhance the economy's ability to provide employment in the future. The models also enable us to explore the implications of occupational wage flexibility, and to highlight the important issues of adjustment within occupational markets and the role of increased educational participation.

Opinions vary on the role of macroeconomic policy in relation to employment — the contemporary debate on this issue is outlined. The issues of sectoral policy and programmes for the unemployed are also touched on briefly.

Finally, the report looks at possible medium-term changes in labour force participation, including increased education and training, shifts in men's and women's participation, and changes in hours worked. Changes in participation rates reflect the myriad of factors which influence personal decisions. In this area the concern is to give an idea of the possible scale of such changes, rather than to suggest what will in fact be the outcome of a complex social process.

How many jobs are required?

New Zealand's working-age population continues to expand. A return to full employment presupposes sufficient job growth to cover this natural increase, a projected increase in labour force participation, and the requirements of those currently unemployed. The omens for achieving this are not good.

Current official labour force projections suggest substantial, though declining, increases in the number of people in the labour force during the 1990s.

In 1988 the Planning Council assessed likely future growth in employment as part of an overall set of economic forecasts in *Prospects*. Although these forecasts suggested quite strong future growth in employment, this increase was less than forecast for the labour force. As a result it was expected that unemployment would tend to rise slowly to a peak level in the three years centred 1991/92.

Events to date have been worse than forecast. Employment has fallen sharply over a period in which *Prospects* suggested a small increase. Participation rates have also fallen. At this stage we have assumed these are short-term responses to adverse conditions, and the *Prospects* forecasts are used to give an idea of the necessary growth in employment.

These forecasts are summarised in Infogram 1 where both the labour force and employment series are expressed as full-time equivalents (part-timers assumed equal to half a full-timer). The employment numbers record the number of jobs needed to provide full employment, allowing for an assumed 2 percent frictional unemployment, in the years shown.

Infogram 1

Required Increases in Employment

	Projected labour force (000s)	Required employment (000s)	Required annual increase in employment from 1988	
Three years centred at March			(000s)	Percent per annum
1986 (base)	1450	1391		
1988 (actual)	1435	1357		
1992 (forecast)	1561	1530	43	3.0
1993	1582	1550	39	2.7
1994	1604	1572	36	2.5
1995	1623	1590	33	2.3
1996	1642	1609	31	2.2

Source: Derived from *Prospects* SDMACRO base run.

The infogram shows that the required annual increases in job numbers are substantial. A return to full employment by 1995 would require creating an additional 33,000 jobs each year from 1988 — the equivalent of a 2.3 percent per annum increase in numbers employed. Such rates of increase are not out of the range of New Zealand's historical experience. Over the fifteen years from 1962 to 1977, for example, employment did grow at an average annual compound rate of 2.3 percent. But that was a long time ago and in a quite different environment.

The challenge now is to derive policies which will contribute to similar rates of growth in employment in today's circumstances. Recent trends in employment are discussed more fully in another Planning Council report by Lesley Haines.[2]

Increased productivity

Productivity change and macro outcomes

Productivity growth (the rate of change in the level of output per unit of labour and capital combined) is the fundamental source of higher incomes. Less obviously it can also contribute to improved employment outcomes. These linkages are explored using the two computer models. These suggest that quite dramatic changes would flow from seemingly small changes in the rate of productivity increase sustained over a full decade.

A doubling in the annual rate of productivity increase from 1 to 2 percent (sustained in the model run over an eleven-year period) would dramatically alter the competitiveness of New Zealand production by reducing the amounts of labour and capital required to produce any particular level of output. Lower costs of production stimulate exports and import substitution. Production as a whole would rise, by some 16 percent, as compared with the low productivity alternative. Employment would increase by 4 percent more than would otherwise occur, and real wage incomes would rise by 7 percent.

The model runs thus suggest that there need be no conflict between productivity increases and medium-term increases in employment. Indeed, they suggest that productivity improvements directly contribute to future employment growth. At the same time, the short-term consequences of productivity growth can be severe for those displaced by institutional and technical change. A comprehensive policy aimed at maximising the medium-term income and employment benefits of productivity growth needs to promote the redeployment of unemployed resources to areas of opportunity.

The dramatic changes sketched by the models assume a sustained doubling in the annual rate of productivity increase. How realistic is this? Clearly a lot hangs on the answer.

Recent policy reforms have been largely concerned with promoting structural reforms which, it is hoped, will improve the rate of productivity increase, and so reverse the longstanding tendency for New Zealand's comparative economic ranking to fall. The thrust of these changes is examined in the following sections, with a discussion of the types of real world changes required if productivity is to be increased. Before turning to these it will be helpful to place the hypothesised rates of productivity change in their historical context.

Infogram 2 reports some findings from a recent OECD study. This study shows that, in the OECD as a whole, total factor productivity — that is, output per unit of labour and capital combined — increased on average by 1.7 percent per annum over the period from the 1960s to 1986. The annual rate of increase was very much higher in the earlier part of the period.

Other studies show similar orders of magnitude for long-run rates of growth. Infogram 3 records average annual rates of growth in real per capita incomes in the period from the late nineteenth century to 1965. These figures are not identical to (and in countries with fast population growth will tend to be lower than) estimates of total factor productivity, but they are adequate to give an idea of scale.

So much for international experience. What about New Zealand?

The OECD figures in Infogram 2 suggest a slight fall in productivity over the whole period from the 1960s to 1985. It is, however, noteworthy that the OECD estimates see this fall as being concentrated in the period 1973-79 — a period of severe terms of trade shock. The OECD estimates suggest that in the periods before and since, total factor productivity increased in New Zealand at an average annual rate of 0.6 percent.

Infogram 2

Total Factor Productivity
Annual rates of change, %

	OECD average	United States	Japan	Australia	New Zealand
1960s to 1973	2.8	1.5	6.1	2.1	0.6
1973-79	0.7	-0.1	1.8	0.6	-2.5
1979-86	0.6	0.0	1.7	0.5	0.6
Whole period	1.7	0.7	3.9	1.3	-0.1

Source: Englander and Mittelstadt, *OECD Economic Studies* 1988.[3]

Infogram 3

Growth in Real per Capita Incomes
Late nineteenth century to 1965

Annual average growth of real per capita income	Countries
2.0 percent or more	Russia Japan Sweden United States
1.5 to 2.0 percent	Denmark Switzerland Germany Canada Belgium
1.0 to 1.5 percent	Netherlands France Italy United Kingdom
Less than 1.0 percent	Australia

Source: J.D.Gould, *Economic Growth in History*, p.33.[4]

Recent estimates by Brian Easton suggest a rather different pattern.[5] He estimates that over the period from 1961/62 to 1987/88, total factor productivity increased on average by 1.01 percent per annum, and he suggests that this rate has not varied significantly.

An increase in the annual rate of productivity increase from 1 to 2 percent per annum is thus not something that can be lightly assumed. That acknowledged, it is clear that many countries have succeeded in maintaining faster rates of productivity for sustained periods. We turn now to a consideration of the possibility of achieving faster productivity growth in New Zealand.

The new economic environment

Recent reforms have been mainly concerned with encouraging firms, organisations and individuals to be more responsive to changing commercial and technical conditions.

The removal of export subsidies, reductions in tariffs, transport delicensing, financial deregulation, public sector reform, and the floating of the exchange rate are all intended to encourage producers to respond to what is happening in the marketplace — both in New Zealand and overseas — rather than to what government might imagine to be happening.

It is hoped that a clearer view of real world developments will lead to faster adaptation of production and marketing strategies.

It would be hard to overestimate the importance of such a change. The firm which reacts quickly to a correctly assessed situation can gain important competitive advantages. Prizes come more frequently to those whose timing is right.

The new policies carry no guarantee of success, but depend upon the expectation that a clearer view of emerging trends will enable a greater proportion of firms to succeed in competition with the world. The policy changes were also made in the knowledge that they would disadvantage those who depended most on the protections offered by the old environment. The first signs of change were therefore as likely to be seen in decline as in growth.

In the event, declines in sectors other than agriculture were initially masked by strong economic growth at the time of the 1984 change in government, coupled with the euphoria generated by the rapid pace of deregulation, particularly in the financial sector. However, increasing unit labour costs as a result of the 1985/86 wage round, a resurgence of inflation, tightening monetary policy, and the 1987 sharemarket crash brought that to a halt. Whereas in most countries the sharemarket crash has been weathered with surprisingly little effect upon output, in New Zealand it ushered in a trough which has sapped confidence and encouraged scepticism about the long-term benefits of the policy change.

There are, however, signs that the benefits are occurring as firms respond to the challenges which face them. Some examples will help.

Electronics manufacturing

In the mid 1980s, output and employment in electronics manufacturing fell by more than half as some firms assembling consumer electronics from imported designs collapsed in the face of mounting competition. At the same time a smaller segment of the industry, much more reliant on skilled professionals aiming at the business market, finding niches for products of their own research and exporting half of their output, seemed firmly set on a growth path.

Railways

In Railways, radical reductions in staffing, such as movement from three to single person freight crews, increases in train size, and reductions in head office staff, have led to a near doubling in tonne-kilometres per person employed and significant falls in the relative price of rail freight rates. In turn those falls in freight rates lower the cost structures of all rail users. Against these positive signs it needs to be noted that the Corporation's continuing large scale losses raise a question as to ongoing viability.

The motor industry

In the motor industry, long regarded by many as unsuited to New Zealand because of its small scale, the progressive dismantling of licensing protection and tariff reform encouraged diverse developments, such as the radical changes in work practices at Nissan and the expansion of production of aluminium wheel castings by Ford. The motor industry has a global perspective and most of its larger players see long-term advantage in maintaining activity in major markets. The easing of protective arrangements can thus help companies to gain more cost effective patterns of local production. At this stage the future size of this industry cannot be foreseen. What can be seen, however, is the search for profitable adaptations aimed at the delivery of a lower priced product.

Fisher and Paykel

Fisher and Paykel provide another example of adaptation in an industry noted for significant economies of scale. In this case the local company was faced with the progressive opening up of the New Zealand market to competition from Australia and beyond. It then placed major emphasis on expansion into the Australian and European markets, into the development of automated flexible production plants and into innovative product development. Sales through its major appliances division have been sustained. This contrasts with the earlier noted decline in local production of electronic consumer durables in the face of similar policy changes.

The rural sector

The rural sector was among the first to be hit by changes in policy. One of the more dramatic consequences was the radical drop in land prices. These had doubled in the early 1980s, largely in response to supplementary minimum payments. Farmers who bought in at that price were in effect being encouraged to produce, and indeed some would depend for their survival on, products that would attract Treasury subsidies. The removal of subsidies changed all that. Not surprisingly, in an industry characterised by self-motivating producers, the response has been profound. Despite significant falls in sheep and lamb slaughterings (from 50 million to 38 million between 1985 and 1988), agricultural production has continued to grow, overall (by 28 percent over the four years to September 1989), reflecting the industry's continued diversification, particularly into horticulture.

The common feature of the changes in all these examples is an increased attention to the marketplace rather than to the pattern of signals from government. It is too early to judge the overall outcome of that shift or indeed how pervasive it is. Indeed the policy environment within which firms work is still subject to change. Further developments in the three manufacturing sector areas outlined will, for example, be affected by recently announced changes on the post-1992 tariff. Any of these areas could turn sour. The important thing is that the changed policy environment encourages continuing search in two directions:

- the search for products better shaped to emerging market needs
- the search for cheaper ways of making those products.

The first factor emphasises the need for ongoing improvements in marketing, product development and design. The second emphasises the need for improvements in productive efficiency, the need to use labour and capital more wisely.

Globalisation

One of the most striking features of recent decades is the increased importance of international business organisation and connections. In 1988, 21 percent of New Zealand manufacturing workers and 18 percent of finance workers were in enterprises with at least 25 percent foreign equity. For businesses as a whole the ratio was 10 percent.

For many overseas companies the natural advantages of maintaining a local establishment were made more compelling during the post-war decades by the high degree of regulation in the New Zealand market. Faced with stringent import licensing, many manufacturing companies set up subsidiaries in New Zealand to ensure continued access to the market. Exchange and capital controls encouraged similar reactions in finance.

Recent policy reforms have radically changed these motivations. Closer Economic Relations with Australia, import licensing phase-out, tariff phase-down, deregulation of foreign exchange and financial services, and transport deregulation have increasingly opened the New Zealand economy to the world.

On the one hand this removes any artificial encouragement to protective investment in New Zealand. More importantly, on the other hand, it has reduced legislative barriers to overseas investment in New Zealand, most dramatically in banking and financial services.

These policy changes also increase the ability of New Zealand-based corporations to expand their links overseas. Offshore investments by companies such as Fletcher Challenge, Goodman Fielder Wattie and Brierley, and the sale of Air New Zealand to a Brierley-led consortium which included shareholdings by Qantas, Japan Airlines and American Airlines, mark a major internationalisation of New Zealand-based companies.

Although it is natural to see these trends as the product of financial deregulation, it is clear that they are driven by more fundamental forces.

- Economies of scale in manufacturing have long underlined the benefits of producing for markets beyond the home economy. Organisational benefits also accrue from operating multiple plants in a range of countries.

- Firm-specific product design makes it natural to market to the world rather than to a nation or region.

- Developments in mass communications mean that many more products are targeted to generational rather than geographical markets.

- Radical gains in information transmittal make it easier to maintain close policy, design, and quality control links with overseas production units.

- In many industries the organisational, financial and risk-spreading advantages of operating in multinational mode have become even more apparent.

This globalisation of capital and enterprise has profound implications for employment. Workers within New Zealand enterprises are exposed to international competition in a different way from that which characterised the post-war period.

Today, workers in a plant which is producing at costs in excess of those at which foreign produced goods can be delivered, need to ask:

- not, whether the government can be relied on to continue providing an artificial market for locally produced goods, because it probably won't,

- but rather how long the controlling corporation can be expected, for marketing or investment protection reasons, to carry on supporting the operation of an above cost plant,

- and whether there are feasible strategies which would enable the cost differentials to be removed.

At the risk of understatement, this requires a shift in attitudes from those prevailing during the era of high protection.

We are also witnessing a quite radical shift of the orbit within which the citizen, of a high income industrialised country, lives his or her life.

Increased affluence, lower national protective barriers, movement towards common legal and regulatory norms, easier migration between developed countries, lower airfares, and improved voice and image communication, all mean that the average citizen of affluence identifies more closely with the wider international community.

The effects are profound. The tendency towards harmonisation of policy at corporate and government levels, coupled with enhanced mobility means that people more easily detach from poorly performing areas, regions and countries and move to those that are doing better.

These same forces heighten awareness of a fundamental shift in the balance of responsibility towards the individual. Paradoxically, the putting in place of minimum but adequate support systems for those people who are marginalised in society, for whatever reason, acts to underwrite the greater risks which the average citizen is now asked to accept in assuming more wide-ranging responsibilities. Whether in

terms of more forward-looking educational choices, in playing a more active role in policymaking at work, in deciding whether to migrate, or whatever, the average citizen plays in roles where the stakes have grown larger.

The collective benefits of a citizenry that accepts higher individual responsibilities and risks are considerable. So, for the majority, are the individual and group rewards. The underpinning for both is the recognition and the certainty that the collective is guaranteeing a floor and recuperative support for those who are marginalised.

The increased importance of multinational links in production, and reduced recourse to national commercial policies, marks an important shift in the balance between multinational corporations and the nation state. It would be idle to pretend that the issues raised by this shift have been satisfactorily resolved. Commercial rationality cannot disguise the developing tension between those who do and those who do not benefit from the expansion. The change is secure because the majority benefit. But a minority do not, and their marginality is, to some degree, increased by the fact that it is the nation state which makes good the promise of a social minimum. In turn the state's freedom of action is constrained by the need to take account of possible corporate responses.

Entrepreneurial and other responses

Although all countries share in the reorientation of production within multinational enterprises there is no guarantee, or indeed any expectation, that all will share equally. Multinational enterprises are by and large commercially rational. Their location decisions may or may not benefit a particular country.

The energy at the heart of multinationals works particularly to the advantage of the major commercial centres of North America, Europe and Japan. For more peripheral economies, such as New Zealand's, there are also benefits but these are less certain.

The relative ranking of peripheral countries depends to a large extent on the performance of their own national enterprises, from self-employed farmers, through to small businesses and co-operatives, all the way up to nationally-based conglomerates.

Enterprise has many dimensions, but the defining essential is the preparedness to outlay and manage capital and other resources in the expectation of income over some future time span. The ability to do that is of course limited to those who can access sufficient capital. The inclination also depends upon attitudes of mind shaped by personal experience and social expectations.

We are, arguably, at a watershed in terms of attitudes to enterprise.

The collapse of the post-war, fully employed economy was met with an initial reaction that the core of the solution lay with government. Governments had regularly claimed earlier successes as their own. When the economy faltered there was a natural tendency to lay blame at the same door. Governments responded in kind. The National Government promoted 'Think Big' with confident assertions about the favourable employment consequences. The incoming Labour Government in 1984 publicly welcomed monthly improvements in employment as proof that the new policy framework was working.

Then, as the economy moved into its longest post-war recession, popular recognition grew that there are no easy solutions available, and that government sees as counter-productive any attempts by it to directly promote commercial enterprise. In its mind, its role is limited to creating a framework within which private decisionmakers can more easily read the signals coming from the world's marketplaces. As if to emphasise its limited role, the Government has promoted the sale of state enterprises.

In employment policy emphasis has swung from employment promotion schemes, which had included subsidisation of semi-commercial schemes, to a primary focus on education and training.

Wherever New Zealand enterprise is going to come from, it seems that government does not see this as its role.

Recognition of this has taken some time, as has acceptance of the implicit challenge to all and every grouping in the community to review and exploit such opportunities as may be open to them to create and expand commercially viable undertakings, and thereby develop sustainable employment opportunities.

Evidence of such a change is provided by the reversal of what has been a long standing decline in the proportion of workers who are self-employed. The Economic Monitoring Group of the Planning Council recently summarised the position as follows:

> "During the 1980s there has been a striking increase in the number of self-employed workers. This can be seen in census figures, and in the Household Labour Force Survey which shows the increase to have continued, although more slowly, since the 1986 Census. This appears to be occurring across all sectors of the economy, in farming, construction and the professions where self-employment has traditionally been high, and also in new areas such as forestry and transport. The trend is favourable to increased competitiveness within the economy...."[6]

The need for increased enterprise emphasises the essential role of small businesses in the economy. More than half the workforce are employed in establishments which have less than fifty staff. In many sectors — including agriculture, forestry, fishing, construction, retailing and many services — small businesses are the dominant mode.

In addition, small firms play a critical role in promoting growth and efficiency through ensuring a continuing supply of new firm start-ups, and by nurturing the elusive skills of entrepreneurship.

It is worth emphasising the dependence of the economy on a continuing flow of new firm start-ups. American evidence suggests that attrition within existing businesses creates a need for new firms supplying jobs for about 8 percent of the existing workforce. To this we need to add the growth required by a still expanding workforce and to provide work for those currently unemployed.

Small businesses play important roles in developing new ideas and products, in identifying and filling gaps in markets, and shifting production into profitable areas. All these roles closely intertwine with national improvements in productivity and efficiency.[7]

These things seem obvious enough. More elusive, however, are the attitudinal changes necessary to ensure that more people take it on themselves to create new enterprise and employment rather than waiting for a vacancy to appear.

These changes relate not only to individuals. Government needs to ensure that its own support systems are effective, and that tax and regulatory requirements do not impose unnecessary constraints. There is widespread evidence of increased efforts by local and community groups to assist in providing 'real' jobs for the unemployed.

The devolution to iwi of responsibility for development within Maori communities can be expected to reinforce the widespread search for commercially viable projects of benefit to Maori — a search which will hopefully be assisted by resolution of current fishery and other resource claims. Success will also depend upon initiatives in providing training, business advice, and commercial finance to individual and collective Maori enterprises.

Local authority responses have ranged from more flexible provision of services, to the creation of business incubator units in which fledgling entrepreneurs can access workshop space and basic services at low initial cost.

Finally, we need to return to the world of the larger corporations. As we have seen, their success depends very much on increased responsiveness, both internally and in relation to the outside world.

Internally, this is very much a matter of management structures and communication, an emphasis on openness, span, and appropriate speed in decisionmaking. Corporate structures are being changed, away from large centralised head offices to small strategy and treasury functions at head office, with greater devolution of operating and entrepreneurial responsibility to smaller profit centres.

Current interest in these issues is high, as evidenced in the cluster of productivity studies published recently by the Institute of Policy Studies and the New Zealand Institute of Economic Research. The last paragraph of one of these studies provides a convenient summary:

> "The most powerful quality and productivity strategies appear to be: the improvement of service; of labour and management priorities; the introduction of new computer-based systems and methods; an extensive array of human resource development techniques including team building, communications, training, the setting and measurement of standards of performance; quality assurance and control, especially for manufacturers; and improved inventory control."[8]

As the economy moves away from the structured environment created by the old protective systems, producers are finding themselves faced with new challenges in defining and responding to common needs. Industry associations, whose work has often focused on lobbying government, can expect to see such activity fade. At the same time there is collective work that remains to be done.

Whilst the great majority of commercial decisions are either decisions made solely within the scope of a single enterprise, or are financially validated by transactions between market equals, others depend critically upon as clear as possible an understanding of the evolving situation and of the objectives and expectations of other parties, including other enterprises, employee organisations, and government. While a view of these matters can and almost always is formed in-house, critical improvements can often be secured by collective action — not invariably but arguably, over the longer haul, decisively.

Industrial relations responses

We are all familiar with the successes that can flow from creative co-operative effort — from the moments when family, whanau, workplace, team or nation bring their act together in pursuit of some common objective. Equally familiar are the difficulties of achieving and sustaining those highs.

Such problems are a reminder of the basic conflicts which arise around the organisation of work, and they suggest that smoother resolution of these conflicts is essential in shaping an economy more responsive to the world around it.

Everything we use depends upon work. The cost, and thereby the quantity of goods and services available, depends fundamentally on the efficiency with which producers work together.
The organisation of work is therefore basic to economic functioning.

In smaller concerns work organisation is essentially a matter of personal interaction between employer and employee. This varies from case to case but the essential elements of effective organisation are fairly straightforward — clear definition of roles and reponsibilities, reward for effort, openness, explicitness, clarity of communication, accountability and so on.

Smallness also has advantages in dealing with those beyond the firm. Close contact with customers and suppliers provides an ongoing opportunity to assess how well the firm is responding to their needs.

Larger problems arise in bigger organisations where the characteristic mode of organisation has been the pyramid of a command structure. The structures of empires, churches and armies have been reflected in those of factories and corporations.

In the new economic environment such structures look ever less appropriate. Flexibility and responsiveness to rapidly changing market conditions require organisations which can quickly assess the new situation, and decide upon appropriate responses. This suggests reduced numbers of layers in

management and increased devolution of decisionmaking. Because more decisions will be made closer to the point of service delivery, there is a parallel need to develop compatible systems of consultation and review.

The need for more responsive decisionmaking within the average production unit calls for upgrading of inter-personal and analytic skills. This creates new challenges in ongoing training as well as in initial education.

It also challenges traditional industrial relations which mirrored the command structures of major institutions with something akin to trench warfare. One person's gain was somebody else's loss, and for every loss there was always the possibility of some compensating gain at some other point on the front. In the language of economists, industrial relations was a zero sum game.

There is, of course, a basic conflict at the point at which the wage bargain is struck. But where improvements in method lead to gains in productivity there is the potential for all to share in the benefits derived from more successful working together.

Symptomatic of the change is the debate over labour market flexibility. In the early 1980s, calls for greater labour market flexibility were usually intended, and seen as, calls for lower wages or lower rates of increase in wages. On this view the emergence of mass unemployment reflected a rigid cost structure which was best addressed by reducing wage rates.

More recent debate has emphasised the far greater potential for reducing costs through more effective use of labour. There are two main elements to this; first to develop more flexible work practices and, second, to encourage the active participation of employees in decisionmaking within their firm.

The agenda under the first item is long, covering as it does the need to increase the skills of the average employee, increasing the range of tasks which the employee can handle, changing the pattern of hours worked and so on. In many of these areas change is made difficult by the negotiating structures imposed by the traditional industrial award system. One response is to focus awards around enterprises and industries rather than around crafts. Another is to develop regular forums within which the major industrial parties can discuss issues away from the particular pressures of the award round.

Greater employee involvement comes in many forms. It can range from team working at points on the production line, to more extensive consultation over wider aspects of plant policy, to direct worker representation on the management team or on the board and employee shareholding, to union participation in industry-wide initiatives.

Despite the potentially large benefits, reforms in these areas are not easily secured. Work situations are complex so that effective innovations may require considerable time and effort. In addition, it has to be acknowledged that changes which may promote the fortunes of the enterprise as a whole, as well as those of most within it, have to be tested against their implications for the separate interests of management, owners and different groups of employees. A potential for promoting common interests should not obscure the fact of conflicting interests and claims. In any process of change there are almost inevitably some short-term losers who may need to be assisted or compensated.

One test of new initiatives in industrial relations is that they should, by assisting easier identification and more rapid resolution of areas of conflict, contribute to the more rapid exploitation of opportunities to advance common interests. Faster productivity increase presupposes more responsive institutions and firms. In turn that requires that firms more successfully engage the skills and energies of all their members.

Educational participation

The changes already discussed suggest a need for increased responsiveness and self-reliance at all points within the economy.

Fundamentally, that is a requirement about people. About their ability to analyse and respond to situations, to discuss other people's ideas and communicate their own. Economic change thus raises questions about people's ability to respond, and the role of education in developing those abilities.

Similar pressures confront all countries. Two recent quotations will help put this in perspective:

> "New skills are needed everywhere, both for the rejuvenation of old industries and the growth of new ones. Without enough skilled people it is impossible to embark on the design and redesign of products and processes needed to use information and communication technology efficiently; ..... It is not just a question of high level skills, critical though these are, but of the transformation of the skill profile of the labour force at all levels."[9]

> "The French government has set a tough education target for the year 2000 — by then, it wants 80 percent of teenagers to be capable of passing their university level baccalaureat examination before leaving school."[10]

New Zealand has a relatively low level of post-compulsory educational attendance by OECD standards. For each age from 16 to 24, the New Zealand educational participation rate is lower than those for Germany and Australia, and lower than the average for the twelve OECD countries cited in the source from which Infogram 4 is drawn.

These low levels of educational participation suggest that New Zealand will be relatively disadvantaged in building economic and trading opportunities within the new high technology, international information and service economy.

Infogram 4

Educational Participation

Age-specific enrolment rates: full-time and part-time

Age in years	Germany	Australia	Twelve OECD countries	New Zealand
15	100.0	95.5	95.8	91.4
16	100.0	85.8	88.8	73.3
17	99.7	60.6	77.9	47.6
18	83.8	46.4	59.6	33.2
19	55.9	41.3	41.8	31.1
20	34.8	31.6	30.3	26.5
21	25.5	25.0	22.8	21.6
22	26.9	20.1	18.5	16.5
23	16.7	16.9	14.5	12.9
24	16.5	15.2	12.6	9.7

Source: Nicholas Pole [11] (New Zealand data for 1987, other countries for 1985/86, OECD figure simple mean of twelve national rates).

The analysis suggests that New Zealand needs to place increased emphasis on educational attainment and work-related training. This will raise complex questions in relation to course and curriculum design, financial support for learners, and funding for capital expansion and operations. These issues will have to be addressed during a period of radical change in the administration and governance of education.

These issues are not addressed further in this document, but their critical importance is emphasised.[12] It is also noted in passing that projected declines in the number of people in these age groups over the next few years would reduce the financial cost of securing increased post-compulsory education participation rates. At the same time, falling numbers in these age groups will restrict the number of new entrants to the labour force, thus creating a greater need to upgrade the skills of existing members of the labour force.

Research and development

A defining characteristic of modern, high income economies is the stream of new products and processes developed through ongoing research and development. Household electronics and durables provide some of the more obvious recent examples, but changes are equally obvious in foods, building materials and fuel economy. Changes in productive methods are not so open to casual observation but are equally pervasive. Inquiry in almost any area will reveal dramatic shifts in the way things are done, and the reductions in the number of people needed to perform particular tasks.

We readily associate countries with the waves of innovation which they hosted — Great Britain with steam and the mechanisation of textiles, Germany with chemicals, the United States with automobiles, and Japan with electronics. From these centres the new products and processes spread out around the globe.

Policy in relation to innovation is frequently contentious, with much argument about the links between public and private funding, and between basic and applied research. Most important developments trace their origins back to a host of prerequisite developments — public, private, basic and applied. To suggest primacy for any one would be to mistake the nature of the process.

New Zealand has certainly experienced difficulty in getting the balance right. Our problems are not unique and they in part stem from the fact that research carried out in New Zealand is, in any field, necessarily a small part of a very large international endeavour. Inevitably most of the research and development from which we benefit will be done in other countries. Choosing where our national efforts should be concentrated is not an easy matter.

These difficulties are reflected in a low research ranking and a relatively high proportion of research being carried out by government. In New Zealand in 1987, research and development spending equalled 1.09 percent of GDP, as compared with 1.64 percent for the OECD as a whole. In New Zealand 60 percent was carried out by government, the fifth highest ranking within the OECD. Nevertheless, government spending on research and development was, at 0.66 percent of GDP, still a little less than the OECD average of 0.70 percent.

The big differences arise in relation to private sector research. Here the New Zealand effort, at 0.43 percent of GDP, is about half the OECD figure of 0.87 percent.

Viewed from another perspective, these patterns are reflected in the very heavy New Zealand emphasis on research into biological sciences. During the period of pastoral expansion, research requirements were most easily met through a tax-funded agency disseminating its research findings to the large number of self-employed farmers.

Research funding for other sectors has proved more problematic. It is less easy to argue the case for public research in areas where the major benefits will clearly accrue to a small number of firms. At the same time, many New Zealand firms are not of a size to mount a significant research effort. One response has been to establish research associations funded both by government and industry levies.

There is now a significant debate around the need for higher levels of research and development spending. In 1986 a ministerial working party — the Beattie committee on the role of government in science and technology[13] — recommended policies directed to a doubling of New Zealand's expenditure on research and development by 1993/4. Government has responded by noting that its own spending is in line with OECD levels, so that any increase needs to come from industry. In turn industry notes the absence of incentives and contrasts this with the situation in Australia where research and development spending is tax deductible at 150 percent.

These are issues which will need to be progressed over the next few years. However they are resolved, three points can be made with reasonable certainty:

- Increased levels of private sector research and development spending will usually be associated with faster rates of product and process innovation, and thereby with higher levels of productivity and output.

- The major initiatives within this area need to come from within the senior management levels of a relatively small number of firms. Their decisions will be influenced by government policy but will be more fundamentally determined by the 'enterprise culture' within which they operate. In this respect, particular issues arise with reference to New Zealand subsidiaries of overseas companies.

- Enhanced levels of product and process innovation will usually require significant investment in translating research results into marketable output. In addition, the replacement or expansion of existing production capacity implies investment in new plant and equipment.

What the models suggest

Introduction to the model runs

In this section two computer models are used to explore the implications of increased productivity, higher investment, and more flexible wage relativities. A picture is also drawn of the possible sectoral shape of the future economy.

Economic models are dogmatic but uncertain creatures. Once their mathematical structure has been set, outcomes are determined by the assumptions embodied in any particular model run. Model results depend on how well the model's structure mirrors the economy, and on the accuracy of the assumptions made in each particular run.

The model runs reported in the following pages are, in each case, contrasted with a set of 1995 figures corresponding to those originally published by the Planning Council in *Prospects* in December 1988. Although the 1995 figures are usually labelled as forecasts they are not really that. They are projections made from two linked models based in the mid 1980s over the span to 1994/95. The early years of that period are already history, but are not part of the written record available to the models. The forecasts should be seen as indicative of the scale of change that could occur in the period ahead, rather than as actual forecasts for 1995.

It is assumed, having set the snapshot or forecast year, five years into the future, that it would be feasible to move to that future scenario over the five intervening years. This is not certain. The types of changes that are discussed in this report range from changes which can be expected to operate in the short term (changes in overseas conditions, monetary policy), through the medium term (increased investment and training), to those whose influence will be felt further down the track (such as a gearing-up of educational participation rates).

The original *Prospects* forecasts drew on extensive research into likely future trends in exports, productivity, and other variables in each of the 22 sectors distinguished in the models. Given this information, the models sketched the shape of the economy in 1992 and 1997. The unfavourable employment outcomes contributed to the Planning Council's decision to place major emphasis on employment in its 1990/91 work programme.

The *Prospects* forecasts are used as a reference point, against which the effect of making two or three changes in assumptions in each particular run can be assessed. Except for these stated changes, the models are primed with the full set of data used in *Prospects*.

In each section the changes being made are discussed, a table contrasting the outcome of the experiment with that of *Prospects* is presented, and there is comment on the more important features. The text is intended to be self-sufficient, but readers interested in more detail may like to refer to the original *Prospects* publication.

Any set of economic forecasts necessarily depends upon some view of likely developments in the world economy. Most current assessments of the international economy are reasonably buoyant. For example, in October 1989 the International Monetary Fund suggested that the major industrial countries would enjoy a 3 percent annual growth rate over the period 1991-94.[14] The forecasts in this report similarly assume reasonably strong international economic growth. There are some risks to this, including the needed correction of imbalances in the United States economy, Third World debt, and the radical restructuring that is occurring in production and trading arrangements within the Pacific Basin. These risks are discussed in the Appendix to this report.

Finally, by way of introduction, the term 'full employment' needs to be defined in modelling terms. In a mobile society, where people change occupation from time to time or shift to another location, and where the structure of the economy and the pattern of employment changes in response to demand and technology, a proportion of the workforce will always be looking for new jobs. It is assumed here that such change entails unemployment of 2 percent, or about 30,000 people. There is room for debate over what, indeed whether any, level of frictional unemployment should be considered consistent with 'full employment', and on the measures necessary to ensure that such unemployment is indeed short term, but for the moment the model needs some working assumption. A figure of 2 percent frictional unemployment is the one that has been adopted. This corresponds approximately to levels prevailing in Sweden and Japan which are currently the best performing OECD members in employment terms.

The implications of increased productivity

In the real world, productivity gains depend on wide-ranging technical and social changes, and cannot be garnered by a wave of the modeller's hand. But, for this model run, it is assumed that the rate of productivity increase has doubled across the board because of changes such as discussed in preceding sections, and the sectoral model is used to explore the results. Because some part of the increase in productivity is likely to result from innovations embodied in new equipment, buildings and systems, it is assumed that the capital stock available in the future reference year — 1995 — is 5 percent higher than in the *Prospects* forecast. This requires a significant lift in capital formation, given that we are now more than half way from the model's 1984 base to the 1995 'snapshot' year. Finally, the model is told to reduce the unemployment rate to 2 percent of the available labour force.

The model confirms that a doubling in the rate of productivity growth would have a powerful effect upon the economy. The main elements of the story are reported in Infogram 5 and sketched in the following paragraphs. Note, however, that in a general equilibrium modelling system, such as being used here, causation runs in many directions. Change at any point will, to some extent, be associated with changes at all other points within the system. The tale is necessarily simplified.

Increased productivity reduces the labour and/or capital required to produce any particular level of output. The price of production thus falls relative to the *Prospects* run. This is evident in the figures in the central section of Infogram 5 where the GDP deflator and the cost of producing exports fall by 5.8 and 6.3 percent respectively. In reading price information from the model runs, readers need to be aware that all prices are expressed relative to world import prices and that these are assumed stable throughout the projection period.

Faster productivity increases in New Zealand are assumed to occur in a world in which productivity changes in other countries are as they were in the *Prospects* run. New Zealand output prices therefore decline relative to those in the rest of the world — that is, our real exchange rate falls — so creating a competitive advantage. The results of this are most clearly evident in the substantial 19 percent increase in export volumes.

Lowered production costs also assist local producers competing with imports. This improvement is obscured in the infogram because increased export earnings fund a partially offsetting increase in imports, but it is consistent with the fall in the import/GDP ratio as shown.

Increased productivity means that more output can be secured from given amounts of capital and labour. At the same time, increased competitiveness stimulates production for local and export markets. Together these forces enable a marked 15 percent expansion in GDP.

The scale of this increase in GDP is, at first sight, surprising. It is less so when recognised that the model spans an eleven-year period. The annual differences in productivity gains compound to an 11 percent increase. When the more than 4 percent increase in both employment and capital between the two scenarios is also taken into account, the higher level of GDP is fully explained.

Infogram 5

Macro Outcomes of Higher Productivity 1995

	Prospects	Higher productivity	Difference %
Private consumption	27,277	30,514	11.9
Investment	9,011	11,638	29.2
Exports	15,242	18,182	19.3
Imports	13,978	15,854	13.4
Gross Domestic Product (all above $m 1984)	45,066	52,124	15.7
Employment (000s)	1,495	1,558[1]	4.2
GDP deflator	1.037	0.977	-5.8
Export prices	1.022	0.958	-6.3
Real exchange rate (all indexes 1984 = 1.0)	1.055	0.995	-5.7
Total factor productivity (1984 = 1.0)[2]	1.093	1.210	10.7
Wage rate ($ 1984)	16,370	16,959	3.6
Real wage rate (1984 = 1.0)	1.102	1.182	7.3
Return on capital (%)	11.27	11.81	4.8
Import/GDP ratio	0.310	0.304	
Investment/GDP ratio	0.200	0.223	

Source: Data from Bryan Philpott, Project on Economic Planning, Victoria University, using the Julianne general equilibrium model. The data in the first column are from a new run aligned to the assumptions embodied in *Prospects* runs for 1992 and 1997.

[1] The full employment figure shown here and in subsequent tables differs from that in Table 1 because of minor differences in base year values between two models used in the *Prospects* forecasts.

[2] Total factor productivity is measured as an index of the level of output per unit of labour and capital combined. The rate of change in total factor productivity is often referred to as the rate of technical change.

As just noted, employment increases by some 4 percent, so reducing the unemployment rate to 2 percent of the labour force numbers forecast in *Prospects*. This increase is associated with a small 3.6 percent rise in the nominal wage above the level suggested in the *Prospects* run. Because New Zealand prices are falling relative to the world as a whole, real wage rates rise by more than the nominal rate. The real wage rate — defined here as the nominal rate divided by the GDP deflator — increases by more than 7 percent relative to *Prospects*.

When contrasted with the 10.7 percent gain in productivity between the two runs, this increase in real wage rates implies a degree of restraint in wage setting.

Wages rise relative to prices but by less than the combined effect of prices and productivity, including allowance for changes in returns to capital. Implicitly, wage earners are foregoing part of the increase that could be funded from productivity increases in favour of promoting increased employment through lower cost structures and increased investment.

The increase in output between the two runs enables a parallel increase in final expenditures. The increase in investment is particularly noticeable because of the requirement for a 5 percent increase in the capital stock above *Prospects* levels. Given the low levels of investment in recent years, annual investment has to lift markedly from now on to support the required $8 billion increase in capital stocks.

This substantial increase in investment needs to be funded through increased savings. This means that private consumption increases by less than the estimated change in GDP. Private consumption nevertheless rises by a substantial 12 percent between the two runs, reflecting the combined influence of the 7 percent lift in real wages and the 4 percent growth in employment.

Taken as a whole, the results portrayed in Infogram 5 are clearly encouraging. Two major points need to be made.

First, as has been discussed, increases in productivity as large as those assumed are not easily secured. They require major changes in institutions and attitudes. The figures suggest, however, that such changes are well worth striving for.

Second, the figures suggest that increasing productivity is consistent with, and indeed will contribute to, a better performance in employment terms, provided it is accompanied by the necessary restraint in wage setting. This is an important outcome and it needs to be placed alongside the frequently expressed fear that increased technical efficiency is in some way inimical to employment.

Job losses are indeed often one of the first outcomes of innovation, but in the longer run the resulting improvements in competitiveness can contribute to improved employment outcomes. The long-term balance of such forces cannot be determined by exercises such as this, but they do support the view that technical progress is part of the solution. They thus underline the importance of securing the types of changes already discussed.

Increased investment

In any country the quality and quantity of production is conditioned by the available stock of capital — in buildings, roads, wharves, plant and machinery, vehicles, telephone systems and so on. This stock is the legacy of earlier investment decisions. Similar decisions over the next few years will help determine the levels of output and consumption that we can attain in the mid 1990s. In the model run just reported it was assumed that a doubling of sectoral productivity growth rates would require an increase in the capital stock available in the scenario year, and this was arbitrarily set 5 percent above the levels that would otherwise prevail. The earlier run thus combines the effect of increased productivity and higher levels of capital.

The model was then used to sketch the outcome of an increase in the capital stock without a parallel doubling in the rate of technical change. This intermediate sketch helps to assess the relative strength of the two changes. The outcomes are summarised in Infogram 6.

The results are quite dramatic, as are the contrasts between the two variant runs. The first point to note is that the model was required to move to 'full employment' between the *Prospects* and 'higher capital stock' runs. Employment thus increases by 100 percent of the full increase secured by the combined influence of capital and productivity. At the same time real wage rates are practically unchanged between the *Prospects* and higher capital runs.

In this run full employment is being secured without any significant shift in real incomes, solely through an expansion in the capital stock. The mechanism is clear enough. The required increase in employment is equivalent to 4.2 percent of the *Prospects* level. If by 1995 our capital stock was 5 percent larger than in *Prospects*, and provided that investment had been well placed in profitable uses, then there should in principle be little problem in providing additional employment in about the same proportion.

This highlights the importance of both micro and macro policy frameworks. The investment has to be efficient (the micro requirement) and it has to be there in sufficent quantity (the macro requirement). The former issue is discussed earlier in this report. The question of macro policy is returned to later.

Note also that the model suggests that higher levels of capital stock taken on their own will lead to a reduction in the rate of return on capital which falls by just over a quarter of a percent. Over the modelled range the rate of return on additional capital is below 6 percent. This illustrates the importance of the efficient use of capital. It is only when we model an increase in capital in company with increased productivity that we see an increase in the average rate of return on capital.

The second major feature of Infogram 6 is that an increase in capital alone expands GDP and exports by about one-third of the movement that would be induced by both capital and productivity changes. This provides a reasonable summary measure of the comparative strength of these two forces.

Infogram 6

Macro Outcomes — Investment and Productivity

	Prospects	Higher capital stock	Higher capital and productivity	Percent attributable to capital
Private consumption	27,277	27,578	30,514	9
Investment	9,011	10,709	11,638	65
Exports	15,242	16,284	18,182	35
Gross Domestic Product (all above $m 1984)	45,066	47,418	52,124	33
Employment (000s)	1,495	1,558	1,558	100
Real exchange rate	1.055	1.027	0.995	47
Real wage rate (indexes 1984 = 1.0)	1.1020	1.1047	1.1822	3
Return on capital (%)	11.27	11.01	11.81	-48
Investment/GDP ratio	0.200	0.226	0.223	
Consumption/GDP ratio	0.605	0.582	0.585	

Source: Data from Bryan Philpott, Project on Economic Planning, Victoria University, using the Julianne general equilibrium model. The data in the first column correspond to the *Prospects* base run using interpolated data for exogenous variables.

As seen, earlier annual investment increases dramatically between the *Prospects* and higher productivity runs. Two-thirds of this increase stems directly from the assumption of a higher capital stock, but the model suggests that higher levels of economic activity associated with higher productivity would significantly augment capital formation in the scenario year.

Finally, the infogram shows that whilst an increase in the stock of capital can lift the economy to full employment, it does not by itself have much effect on real incomes. The effect on real wages is small, whilst that on capital returns is negative. Consumption rises but only by about one-tenth of the shift that occurs when we combine capital and productivity effects.

So, more capital investment could, in the right circumstances, secure our full employment target. But there would be little scope for increased wages, and investors would receive lower rates of return for their increased capital investment. To achieve full employment with high incomes, we need extra investment and improved productivity.

More flexible wage rates

The discussion in the previous section touched again on the issue of wage rates. In the higher capital run the capital stock was arbitrarily augmented at the same time as the model was instructed to move to full employment. It responded by generating a very small rise in real wage rates.

Given the sectoral model's structure, it can also be used to ask what would happen if it was told to move to full employment by reducing wage rates so as to encourage a greater use of labour and a lower usage of capital. To this point, this option has been avoided as inconsistent with the primary objective of full employment at high incomes. What, though, does the model suggest about the trade-offs that might be involved in following this course? It may be that hopes of increased productivity are but a pipe dream or that, as a nation, we will not find our way to policies which augment both the quality and quantity

of our investments. In that case we would be locked into something like the scenario painted in the *Prospects* run.

If that does turn out to be the attainable real structure of the economy, what would be the size of the income adjustments needed to secure full employment?

At this point the discussion moves into an area of some controversy. As can be seen in a later section in this report, there is argument about the extent to which it is feasible in the short term to influence employment through wage adjustments.

There is, however, less argument over the medium-term importance of these linkages. The model structure assumes that markets, including that for labour, are able to clear in the medium term by appropriate adjustments in prices. The extent of such price adjustments depends upon the size of needed quantity adjustments and the asssumed elasticities of response between prices and quantities. The labour substitution elasticities embodied in the Julianne model are subject to revision in the light of ongoing research, but are judged robust enough for an initial exploration of this area.

The data base for the Julianne model includes a picture of major skill groupings within the labour force, both now and in the future. The figures for future years are quite approximate, and are built up combining employment data extrapolated from recent trends with current data on the occupations of people seeking work. The figures are provisional but provide a base strong enough for an initial sketch.

Infograms 7 and 8 present information derived by requiring the model to clear all occupational labour markets so as to yield full employment. Infogram 7 presents some of the major macroeconomic results.

The new model run suggests that a wage-clearing path to full employment would require a drop of 4.5 percent in the real wage level (taken over all occupations), and that this would be associated with a lift of 0.50 points (or 4.4 percent) in the rate of return on capital. This shift in income from labour to capital is associated with an increase of about 2 percent in GDP and other macroeconomic aggregates. This degree of economic expansion, coupled with the adoption of more labour-intensive production methods, leads to the required 6.2 percent increase in numbers employed.

Infogram 7

Full Employment Through Wage Adjustment

	Prospects	Market clearing wages	Percent change between runs
Private consumption	27,277	27,892	2.3
Investment	9,011	9,167	1.7
Exports	15,242	15,622	2.5
Gross Domestic Product (all above $m 1984)	445,066	45,916	1.9
Employment (000s)	1,495	1,558	4.2
Real exchange rate	1.055	1.057	0.2
Real wage rate	1.1023	1.0530	-4.5
Return on capital (%)	11.27	11.77	4.4

Source: Data from Bryan Philpott, Project on Economic Planning, Victoria University, using the Julianne general equilibrium model. There are some minor differences from previously quoted figures as a result of occupational disaggregation.

Infogram 8

Occupational Wage Changes

Occupation	Fixed relativities *Prospects*			Flexible relativities		Percent change wage rate
	Employment (000s)	Unemployment (000s)	Wage rate $[1]	Employment (000s)	Wage rate $[1]	
Professional white collar	226.4	3.1	21.25	229.5	21.61	1.7
Skilled white collar	163.5	6.7	22.16	170.2	22.27	0.5
Skilled metal workers	120.1	5.5	16.70	125.6	16.04	-4.0
Skilled building workers	60.7	2.8	13.19	63.5	13.29	0.8
Other skilled workers	115.2	1.0	16.09	116.2	16.64	3.4
Low skilled white collar	359.0	8.8	14.27	367.8	14.58	2.2
Low skilled blue collar	269.9	28.1	13.71	298.0	9.84	-28.2
Rural	168.6	5.9	14.25	174.4	14.38	0.9
Other	11.6	1.1	13.29	12.8	12.30	-7.4
Total	**1495.0**	**63.0**	**16.37**	**1558.0**	**15.73**	**-3.9**

Source: Bryan Philpott, Project on Economic Planning, Victoria University, using Julianne model with Stroombergen labour categories.

[1] Wage rates are expressed in 1983/4 prices. The overall change differs from the previously quoted real wage rate fall of 4.5 percent because the latter is also affected by a small rise in prices.

Infogram 8 shows that the required change in the national wage rates is made up of widely divergent movements between semi-skilled and unskilled workers and other occupational groups. The quoted wage rates are expressed in 1983/84 prices and differ from the previously quoted real wage rate which also reflects movement in the GDP deflator. (Technical readers should note that we assume world inflation of zero. All reported price changes are simply changes in relativities.)

The most striking feature of the infogram is the extreme unevenness of the required wage response. Whilst average wages for all occupations as a whole are required to fall by 3.9 percent, those for low skilled blue collar workers, where about half the unemployed are concentrated, would need to fall by some 28 percent. At the other end of the spectrum skilled and white collar rates tend to rise a little.

The model thus suggests that any attempt to remove unemployment by letting wage rates adjust, so as to clear occupational labour markets, would require very marked shifts in relativities, in particular a dramatic fall for low skilled blue collar workers. Even if such a shift were to be judged socially acceptable (and it would seem to conflict with income standards built into existing benefits and retirement incomes), it would not be easily achieved either politically or technically.

The model run underlines the unattractiveness of low wage solutions to New Zealand's unemployment problem. It thus reinforces the argument for more positive responses of the type explored elsewhere in this paper. It emphasises yet again the importance of upskilling. Quite simply the class of labour in least demand, relative to supply, is the unskilled. This situation is unlikely to change. Skill needs must be addressed across the workforce as a whole, but clearly there are extra rewards to be won from any policies which successfully focus on the learning requirements of the unskilled.

In closing, we reiterate that the modelling in this area is at this stage quite tentative. The results quoted are designed to give something of the flavour of the case, but can be expected to alter to a greater or lesser degree as the systems are developed.[15] Theoretically, full employment could be achieved by cutting wage rates. But the models suggest that the costs required, particularly for the unskilled, would be very substantial — and, we suggest, unsupportable.

The sectoral pattern

The models provide detailed information on possible changes in the pattern of sectoral activity, consistent with the scenario of a fully employed high income economy. In this report attention is limited to changes in the patterns of exports and employment.

The conditional and essentially illustrative nature of these projections is re-emphasised. The figures presented in Infogram 9 should thus be seen as indicative of the scale of change that could occur in the period ahead, rather than as actual forecasts for 1995.

The forecasts include the full range of assumptions built into the *Prospects* run, except for new assumptions on sectoral productivity, total investment, and overall employment. Some of the original assumptions, such as resource constraints on some exports, could arguably be affected by radical shifts in productive efficiency, as was the case with the energy to GDP ratio after the oil crisis.

Infogram 9

Exports 1994/95

$m

	1986/87	1994/95			Change from 1986/87[1]
		Prospects	Higher productivity	Difference between runs	
Wool	1160	1078	1129	51	-31
Dairy	1296	1451	1557	106	261
Meat	1868	1460	1567	107	-301
Fish	432	609	609	0	177
Horticulture	641	972	1097	125	456
Other food	486	629	876	247	390
Textiles	770	963	1348	385	578
Wood products	200	331	331	0	131
Paper	545	813	813	0	268
Chemicals	660	746	999	253	339
Energy	122	135	175	40	53
Mining products	50	370	370	0	320
Ceramics	46	34	40	6	-6
Basic metals	706	829	946	117	240
Fabricated metals	343	569	740	171	397
Other manufactures	225	258	333	75	108
Tourism	1110	2190	2872	682	1762
Other services	1593	1805	2380	575	787
Total	**12253**	**15242**	**18182**	**2940**	**5929**
Traditional	4324	3989	4253	264	-71
Non-traditional	5226	7258	8677	1419	3451
Services	2703	3995	5252	1257	2549

Source: Julianne runs from Bryan Philpott, Project on Economic Planning, Victoria University.

[1] Change between 1994/95 higher productivity run and 1986/87.

The forecast changes in exports are presented in Infogram 9. The differences in exports between the *Prospects* and higher productivity runs are quite dramatic. They arise from two main causes.

First is the considerable variation between sectors in the productivity rates assumed in *Prospects*. These range from zero in owner-occupied dwellings and private services to as high as 5 or 6 percent in finance and mining. A simple doubling of these rates markedly affects price relativities within the model.

Second, for a range of resource-based sectors, including fishing, forest products and mining, the model is constrained from increasing exports beyond biological or policy-imposed limits. In these cases, price reductions flowing from improved productivity cannot lead to further expansion in exports of the type in question. They can, however, by lowering costs to other industries, conceivably lead to increased exports of other commodities.

The model suggests that increased productivity is likely to have only a limited effect on exports of the traditional big three sectors — meat, wool and dairy products. Interestingly, increased productivity helps the meat industry to recover a part of the very large reduction in exports that was suggested in the original *Prospects* run, due largely to assumed increases in meat- and dairy-processing industries.

The forecast increases in exports are more or less evenly split between 'non-traditional' goods exports, and exports of services.

Amongst non-traditional goods, significant rises above *Prospects* levels are recorded in horticulture, other food, textiles, chemicals, base metals, fabricated metals and other manufactures. It is possible that, in reality, resource constraints — such as wool required for textile production — would limit some of these possibilities.

The increase in service exports is evenly distributed between tourism and the wide range of outputs which flow into other services. These include transport and trade margins, financial, business and other services.

It is necessary to emphasise the illustrative nature of the export forecasts already discussed. They combine export expectations drawn in early 1988 with arbitrary assumptions about an increase in productivity. Nevertheless the sketch is useful and we will be interested to test the implication of any modifications to these assumptions suggested by industry responses to this document.

The model indicates that there is ample scope for improved export performance. Where these improvements will be achieved in practice depends upon which sectors — or rather which firms — achieve the required improvements in both domestic productivity and international marketing.

The employment consequences of the increase in productivity are set out in Infogram 10. The central feature of this infogram is the predominance of the service sector. This continues a well-established trend usually seen as stemming from two factors.

First, the generally faster productivity increase in production of physical commodities — both primary and secondary — than in the production of services, implies that equal increases in output require less labour for physical commodity-production than for services. Thus whereas the service sector accounts for 44 percent of the total increase in output from 1983/84 to 1994/95 it requires 70 percent of the total increase in employment.

Secondly, as living standards rise, a greater proportion of consumption tends to be expended on services.

Other features of the infogram are as follows. (Note that comments are focused on the 1994/95 differences between the two runs. Figures for the full-period increase from 1983/84 to full-employment under the higher productivity assumptions are shown in the final column of the infogram.)

There is an increase, between the two runs, of 3,500 in numbers employed in agriculture — this arises primarily from the faster increase in horticulture.

Infogram 10

Employment 1994/95
000s — full-time equivalents

	Prospects	Higher productivity	Difference between runs	Change from 1983/84
Agriculture	147.6	151.1	3.5	23.2
Fishing	7.9	8.1	0.2	2.7
Logging	13.1	13.4	0.3	3.0
Mining	8.4	7.1	-1.3	2.0
Food, beverages	73.6	69.1	-4.5	-5.6
Textiles, footwear	47.8	49.0	1.2	5.0
Wood	24.5	24.6	0.1	2.0
Paper	39.7	36.5	-3.2	2.2
Chemicals	31.7	35.5	3.8	9.5
Non-metallic	11.8	13.5	1.7	2.8
Base metals	10.0	10.2	0.2	1.2
Fabricated metals	84.0	94.4	10.4	19.4
Other manufacturing	7.0	7.2	0.2	1.0
Electricity, gas	18.8	18.5	-0.3	2.8
Building	89.1	95.3	6.2	7.8
Trade, hotels	287.0	312.0	25.0	83.8
Transport	82.3	91.1	8.8	30.5
Communications	32.6	27.8	-4.8	-7.2
Finance	124.3	134.6	10.3	35.1
Private services	89.4	101.9	12.5	36.7
Public services	264.2	257.1	-7.1	7.3
Total	**1495.0**	**1558.0**	**63.0**	**265.1**
Primary	177.0	179.7	2.7	30.9
Manufacturing	330.1	340.0	9.9	37.5
Utilities, building	107.9	113.8	5.9	10.6
Services	879.8	924.5	44.7	186.2

Source: Julianne runs from Bryan Philpott, Project on Economic Planning, Victoria University.

Numbers employed in fabricated metals increase by 10,400. This is the largest sector within manufacturing and it includes a wide range of engineering industries. The original *Prospects* run included buoyant export forecasts for this sector and these are reflected in Infogram 9. The sector also benefits from the assumed increase in investment.

There is a significant 6,200 increase in employment in building and construction. This follows directly from the assumption that higher productivity increase presupposes higher levels of investment. It was assumed that the capital stock in 1994/95 needs to be 5 percent higher than under the *Prospects* base case. This increase has to be achieved through higher investment in the intervening years.

About 40 percent of the total increase in employment between the two runs occurs in the trade, restaurants and hotels sector. There are three elements to this increase. The sector has a very low rate of productivity increase whilst its rate of output tends to increase very much in line with the economy as a whole. It must, therefore, increase its relative share of employment. Because the sector also includes restaurants and hotels it receives a major boost from the projected increase in international tourist earnings. Finally with rising incomes, an increasing proportion of two income families, and changing social patterns, spending on these services is likely to increase faster than incomes.

Employment in transport increases by some 8,800 between the two runs. As with the trade sector, demand for increased transport output, and thereby employment, is generated by higher economic activity overall.

The finance sector increases employment by 10,300. Output in this sector tends to expand faster than economic activity in general. At the same time productivity increase is relatively low.

Private services show an increase in employment of 12,500, more than offsetting a 7,100 decrease in public sector employment. The latter decrease follows directly from the assumption that government service output is constant between the two runs. Higher levels of productivity in the public sector thus necessarily imply a reduction in employment. Given the substantial increase in total output generated under this run, it is clearly possible that government would decide to increase its spending.

A final caution is appropriate. The relatively large increases in employment in the service sector are particularly evident in the whole-period summary figure at the bottom right-hand corner of Infogram 10. These flow from low productivity assumptions which may well be called into question by those same increases in employment.

Sectors with slowly increasing, or static, productivity face the same wage structure as those with rapidly rising productivity. They thus tend to increase their output prices relative to other sectors. This is likely to have an effect on demand for their products and so intensify cost-cutting pressures. Firms and industries with low productivity increase thus work under a mounting incentive to break out from that situation by radical innovation. Indeed many of the more obvious recent innovations are to be found in service industries. Automatic tellers take over routine dispensing of cash, retail establishments are designed for self-service, and tolls operators are replaced by subscriber dialling.

The areas showing the largest increases in employment in this run can, from another perspective, be viewed as a short list of industries which deserve particularly close attention from potential innovators.

As already noted, the results reported here reflect but one of a wide range of possible sectoral patterns. Sectors in which more firms find their way to faster increases in productivity than are embodied in the model, or expand their markets faster through more effective product design, placement and marketing, are likely to show better outcomes than suggested.

Some policy issues

The primary focus of this report is on the contribution which medium-term changes in economic structure and behaviour can make to the objective of sustainable full employment at high wage rates. Until this point, little time has been spent on shorter-term policy issues. Three of these — macroeconomic policy, sectoral policy, and programmes for the unemployed — are important in moving towards that goal. Macroeconomic policy in particular is controversial and some time is spent on this. The other two topics are touched on only briefly.

Macroeconomic policy

It is generally agreed that government's most basic economic role is to provide the necessary legal underpinning for commercial activity, and to ensure that this is integrated with legal requirements in other areas, such as social and environmental policy.

The reforms of the 1980s aimed to get these structures right, with success being judged against three main criteria:

- The desirability of openness and transparency — the rules should be clear, and decision-making bodies should be accountable.
- Public decisionmaking should be more devolved to make public agencies more amenable to control by those whom they serve.
- In framing laws and regulations the starting presumption should be one of neutrality. Only when clear and compelling cases can be established should policymakers seek to promote particular economic ends.

It is hoped that the application of these principles, in areas such as tariff and licensing reform, deregulation and corporatisation, will create an environment which enables entrepreneurs and others to identify options more clearly, and which motivates them to respond to opportunities more rapidly and more imaginatively, thus stimulating growth in output and incomes.

Some economists argue that the new policy stance implies that industrial and macroeconomic policies of the types followed by governments in the post-war, full employment decades, would be quite misguided in current circumstances.

From this perspective, inevitable lags in correctly identifying macroeconomic problems, and in deciding upon and implementing responses, means that many macro initiatives will prove misguided. Moreover, private sector responses in anticipation of, or reaction to, such policies will often neutralise their effect. As the number of interventions builds, so does the difficulty of discerning the level playing field which the programme of microeconomic reform aims to create.

Other economists, while acknowledging the force of these arguments and generally supporting the programme of micro reform, draw different conclusions on the role of macro policy. From their perspective, not only is there scope for a more active policy, but correctly designed and balanced macro policies are seen as a necessary element in promoting the growth and investment, which all agree is a precondition of promoting full employment at high wages.

For the purposes of this report, these are serious differences in that each school suggests that the other's prescription is likely to take us well away from the common objective. In context we can do no more than sketch elements of the argument on two contemporary issues — monetary and fiscal policy, and the sustainable rate of change in real wages — in rather more detail and relate these to the model runs reported earlier in this paper.

In explaining the high employment levels of the 1950s and 1960s, contemporary commentators saw the successful application of flexible fiscal and monetary policies as an essential element. The role of such policies was seen as offsetting the influence of fluctuating cycles of activity in the world economy. The use of such policies implied a preparedness to either stimulate or restrain the economy as circumstances changed.

The scene in the late 1980s was in sharp contrast. From at least the middle of the decade, fiscal and monetary policies were directed to the re-establishment of balance. In 1984 government's net financial deficit had reached a record level, in excess of 6 percent of GDP. In the following year official net external debt, which had been zero as recently as the early 1970s, reached a peak equal to 68 percent of GDP. Inflation, although temporarily restrained by a price freeze, was also at high levels.

These imbalances dictated substantial adjustment over a prolonged period. Monetary and fiscal policies were switched to medium-term objectives, and attempts to fine tune the economy eschewed, partly on the grounds that the size of the necessary adjustment removed the opportunity for manoeuvre. More fundamentally, it was argued that timing lags in forming and implementing policies, reactive behaviour by firms and unions, and the bewildering history of policy changes, reduced, effectively to nil, government's ability to influence output, through short-term variations in macroeconomic policy.[16]

By the end of 1989, government could claim a large measure of success in correcting the macro imbalances other than unemployment. Inflation was much reduced, government's own accounts were in approximate balance and the external deficit, which is currently deteriorating, has nevertheless been reduced over a sufficient period to enable significant progress in reducing overseas debt. It is argued that these successes vindicate the medium-term focus of macro policy and support its continuation.

The elements of the policy framework as they relate to the traditional macroeconomic objectives of growth in investment and employment, external balance, and the control of inflation are:

- Growth of output and investment will be promoted by the efficiency-promoting programme of microeconomic reforms, complemented by confidence generated by the medium-term focus adopted in public policy.

- External balance is maintained through the freely floating exchange rate, and the external responsiveness of the productive sector is enhanced by the continuing reform of industry assistance.

- Inflation is restrained by increased competive pressures, as a result of deregulation and reduced protection, and the adoption of a firm monetary stance. This latter is being reinforced by making inflation control the normally prevailing objective of the Reserve Bank. Provided price and wage setters take the impact of the Reserve Bank's commitment to low inflation fully into account, it can be argued that there need be no significant effect on real wages or unemployment.

- Employment will be promoted in the medium term by renewed growth resulting from increased efficiency, and by more rapid adaptation within the labour market. The radical restructuring of the economy inevitably entails some degree of unemployment, but the extent and persistence of this is largely a reflection of rigidities in the labour market and could be reduced by more flexible work practices.

- Fiscal attention is directed to issues such as the micro effectiveness of government revenue and expenditure decisions and longer-term debt management. It eschews attempts to influence the level of macroeconomic activity.

Finally, the medium-term focus of each of these elements is reinforced by the view that attempts to use any of the major macro instruments to directly promote output and employment would undercut the efficiency promoting pressures of the programme of micro reform.

Such in brief is the focus of established policy. What is the counter position? There are two main elements to this. It is argued that inappropriate macro policies which depress the economy below its sustainable growth path will, by inhibiting investment, have long lasting detrimental effects upon the levels of output achievable in the future. Secondly, critics are usually more sympathetic to the potential for short-term economic stabilisation.

The most common assertion by critics of contemporary macro policy is that tight monetary policy is sustaining interest rates at levels which discourage investment, and the exchange rate at levels which discourage exporters and import substituters. The outcome is low growth. In turn, it is argued, current low levels of output and investment mean that productivity growth is retarded and will not increase at hoped for rates. The economy is thus locked into a low growth mode which generates pessimistic expectations and so perpetuates itself.

In addition, many critics argue that confidence in the adequacy of official policies depends on a somewhat unreal picture of the way in which micro markets react to changes. It is suggested that official views insufficiently acknowledge the commercial rationality of slower rates of price adjustment and more rapid quantity adjustments than would, at first sight, seem appropriate in the light of current circumstances.

Thus for example, it is often suggested that unemployment in an industry facing competitive pressures could be reduced or even avoided by a downward adjustment in nominal wage rates. In response, other economists note that many employers, as well as their surviving employees, will prefer to ride out a downturn in demand for their product without cutting wages, because to do so would threaten the loss of their most experienced and effective workers and thereby the long-term viability of their enterprise.

For reasons such as these, many product and factor markets rationally adjust at slower speeds than suggested by simple 'market clearing' models of behaviour. These slower adjustment speeds mean that imbalances, such as unemployment, may persist for a long time. This prospect, coupled with the fact that employers typically respond more rapidly to quantity or demand signals, raises the possibility that macroeconomic policies should be used to support faster growth in output, ideally without compromising the search for lower real unit costs.

Even if desirable, such interventions may or may not be feasible. Arguments around macro policies show many differences of opinion on just what should be done. The essential issues relate to the assignment of policy instruments to particular purposes and to the overall balancing of objectives, such as employment and inflation control, one against the other.

Thus there is, for example, a continuing debate over the role of monetary policy within overall macroeconomic policy. Should it be focused essentially on the control of inflation, as now provided for in the Reserve Bank Act? Is such a focus consistent with the need to recognise, as argued in a recent IMF Staff Paper, that "a healthy and sustained rate of economic growth is central to an adjustment strategy intended to achieve long-term viability in the balance of payments and a permanent reduction in the rate of inflation"?[17]

The resolution of these issues lies beyond this paper, but their importance is underlined by the model runs as they relate to exchange rates and wage rates.

The model runs tell us what exchange rate would be consistent with the picture drawn in each particular run. Thus the *Prospects* and higher productivity runs (as reported in Infogram 4, p.13) show the real exchange rate (measured as the ratio of the GDP deflator to import prices) as 1.055 and 0.995 respectively, against the 1983/84 base of 1.000.

First a word on the meaning of 'real' in this context. Exchange rates as quoted in the daily press are affected by the differing inflation rates of the countries being compared. The estimated 'real' rate clears these inflationary differences away and leaves measures of the extent to which the underlying competitiveness of the economy has been affected by factors such as changing productivity, changes in the balance of spending and saving, and changes in the terms of trade.

The Reserve Bank publishes a real exchange rate index which we have converted to provide a measure of movement from the base year of our projection to date (see Infogram 11).

In 1984/85 the index moved sharply down, reflecting the 1984 devaluation of the nominal rate prior to the floating of the New Zealand dollar. From 1984/85 to 1988/89 the real rate trended upwards. This implies that the nominal rate, which was lower in 1988/89 than 1984/85, had not fallen enough to compensate for the fact that prices increased faster in New Zealand than overseas. More recently New Zealand's inflation rate has fallen relative to that of her trading partners', and in June the real exchange rate stood at 1.064 as compared with the 1983/84 base of 1.000.

Infogram 11

Real Exchange Rate Index
March years

1983/84	1.000
1984/85	0.907
1985/86	0.960
1986/87	0.946
1987/88	1.072
1988/89	1.096
June quarter 1989	1.064

Note: The original Reserve Bank index is based on June 1979 = 100.
The Bank's index figures for 1983/84 and the June quarter of 1989 were 98.4 and 104.7 respectively.

In comparing movements in the Reserve Bank's real exchange rate index since 1983/84, with the model projections, we need to note that the actual index is likely to have been affected by the marked upward movement in New Zealand's terms of trade during 1988 and 1989. The model runs assumed no such improvement in the terms of trade. Although the increase may prove transient it is certainly of an order which could explain the difference between actual movements in the index and the outcome of the model runs. The model thus does not give a clear reading on this issue.

In practice, judgements on the appropriateness of a prevailing exchange rate have to be based on a much wider canvassing of the current situation. Any such judgement needs to take account of current trends in output, investment and the balance of trade and, in interpreting such trends, opinions frequently differ.

The central policy question is whether it would be wise to encourage a lower nominal exchange rate and lower interest rates through a more relaxed monetary policy, in the hope that this would encourage increased investment and production for export and local markets without encouraging a resurgence of inflation, and thus the erosion of the hoped for incentive to production.

So stated, it is clear that the case for a reduction in the nominal exchange rate depends upon a presumption that it will translate into a fall in the real exchange rate. Here we come to the crux of the argument.

On the one hand, supporters of a tight monetary policy will suggest that the best way to secure a lower real exchange rate, and thereby the sought for increases in output, investment and employment, is to ensure that real unit costs increase more slowly in New Zealand than overseas. From this standpoint, no relaxation in monetary policy is required. Any relaxation would be undesirable, in that it would lead to a surge in inflation which would soon offset the short-term effect of any initial fall in the nominal exchange rate.

The opposing view is that monetary policy can only influence inflation via its effect on wage rates, producer margins and import prices. To influence wage rates and margins requires a dampening of activity. To influence import prices requires an appreciating exchange rate. Thus a tight monetary policy, by sustaining interest rates and the exchange rate at unwarranted levels, is precluding the growth in output and investment which is basic to securing lower unit costs, and the sought for productivity gains which alone can provide the basis for ongoing growth in real incomes.

This difference of opinion is fundamental and it goes to the heart of our concerns in this project. Given the size of the stakes it is important that this debate should continue so as to inform the decisions of policymakers.

The next issue relates to wage rates. As noted earlier the runs suggest there is room for a quite significant rise in real wage rates over the period of the forecasts, but that this increase needs to be less than the overall increase in productivity if full employment is to be secured. In the *Prospects* run, with its unsatisfactory employment outcome, real wages increased by 10 percent as compared with a 9 percent rise in productivity.

Under an alternative run with the same productivity assumptions, but under which wages are allowed to fallback so as to clear excess unemployment, the real wage index rises by only 6 percent.

Finally, under the high productivity assumptions real wages rise by 18 percent by 1994/95 as compared with an increase of 21 percent in productivity.

In assessing the meaning of these shifts account has to be taken of wage movement from 1983/84 (the models' base year) to date. This immediately poses a problem. Whereas the Prevailing Weekly Wage Index has risen over this period by the same amount as Producers Output Prices, thus suggesting stable real wage rates, average hourly earnings have increased by a further 10 percent over the five-year period. Conceptually, the Prevailing Weekly Wage Index provides the better measure of the changing price of labour as it is not affected by the changing occupational and industrial composition of the workforce, or by any change in the relative importance of part-time working. But the diffference between the two measures is sufficiently large as to raise a question mark about its accuracy.

Working on the assumption that real wage rates in 1988/89 were about the same as in 1983/84, the movements suggested in the model runs can also be viewed relative to the present with the additional proviso that in each case they depend for their validation upon the achievement of the posited increases in productivity.

The figures carry two clear policy implications. First they underline the fundamental fact that real income increases depend ultimately on improved productivity and efficiency. Wage earners thus have a direct interest in policies directed to improvements in production, marketing and overall management. The expression of this interest through in-house, within-enterprise and within-industry forums is an issue which deserves to be more widely addressed.

The second implication relates to the need to secure wage increases somewhat lower than productivity increases, both on competitive grounds and to help fund the increased business investment necessary for a return to full employment. Can such a course be best secured by increasing competitive pressures within the labour market? Or by adopting some form or other of incomes policy — for example, along the lines of the Australian 'accord' in which the trade unions accepted a lower real wage path in exchange for policies designed to produce faster growth in output and employment?

They also relate to the earlier discussion on monetary policy which noted the fear that any relaxation could lead to inflationary pressures which would offset the gains expected from lower interest rates and exchange rates. The question which arises is would it be possible to devise an incomes policy which could ease such inflationary pressures without prejudicing the objectives of the programme of microeconomic reform.

These issues cannot be taken further at this time. It is, however, appropriate to note that the Planning Council is continuing with programmes of work related to linkages between macroeconomic policy and employment, and to industry-level policy analysis. We will also be particularly interested in reactions to the arguments presented above.

Sectoral policy

In the earlier discussions on productivity change, the primary focus was on changes at the individual firm level, but the potential for industry-wide initiatives within today's market environment has also been noted at a number of points.

For well recognised reasons, government no longer approves of policies which favour particular sectors. At the same time, it needs to be acknowledged that post-war policies which encouraged the expansion of manufacturing and pastoral industries were associated with full employment and growth in incomes. Whilst those policies have been found unsustainable because of their untoward effects on resource allocation, and therefore in the longer run on macroeconomic balance, output and incomes, in the shorter term they did provide a framework conducive to employment. Arguably this was because government, by defining and holding to the broad shape of a development strategy, effectively reduced the risks faced by investors.

The question which needs to be examined is the extent to which the major players in an industry can, in contemporary circumstances, themselves reduce risk by collectively building clearer views of the prospects facing their industry, of common problems and of the environment within which they work. The Planning Council has paid some attention to this issue in recent years, but for a variety of reasons its initial efforts to promote interactive planning exercises in meat-processing and whiteware industries did not progress far. We intend to mount further initiatives in this area in 1990.

Programmes for the unemployed

Whilst this report is essentially concerned to explore the means by which the economy might be returned to sustainable full employment with high incomes, the analysis makes it clear that that outcome lies some distance away. There is, therefore, a continuing need to consider the appropriate design of programmes for the unemployed. This lies beyond the scope of this paper, but the following quotation serves as a reminder of some of the main issues:

> " ... I have previously argued the case for developing assistance programmes within a wider framework where we attempt to marry a wide range of options for the unemployed with the government's proper concern for cost effectiveness in such programmes. The key steps seem to me to be:
>
> 1. a community commitment to provide programme places for a definite proportion of those registered as unemployed;
>
> 2. provision of as wide a range of programmes as possible, including direct employment subsidies, training programmes, and direct employment in community and public works programmes;
>
> 3. leaving the choice of who goes on to those programmes open to the people concerned so far as that is possible. The community accepts responsibility for the unemployed but it should enable and encourage them to accept responsibility for choice within the unhappily restricted range of options available to them;
>
> 4. cost effective provision: taking all costs and benefits into account, the community should be prepared to pay the same additional amount to assist a person into private sector employment, as to place them on a training programme, in a co-operative, or to use them on public works; and
>
> 5. continued appraisal of the adequacy of these programmes in terms of the original objective of securing sufficient programme places for the targeted proportion of the unemployed."[18]

Labour force participation

Participation changes

The goal of full employment — which implies the availability of paid work for all those who seek it — requires a better matching of the supply and demand for work at the individual level as well as at the macro level.

As peoples and societies grow more affluent the balance of their choice between work and leisure changes. Viewed over many decades this is evident in the slow shortening of the working week, the lengthening of leave entitlements, and reductions in the rate of men's labour force participation. The scale of these long-term changes is illustrated, with reference to the United States, in the following quotation:

> "Another trend .... which is important in evaluating the welfare impact of technological change is that of increasing leisure time. On the average, the employed person in the private sector of the economy worked 36.2 per week in 1977, while in 1890, the average worked per week was 61.9 hours. While the shortened workweek has accounted for most of the gains in leisure during a person's work life, there have also been substantial increases in paid holidays, vacation and sick leave. The total of these three has added an average of three more weeks of leisure per year. Even more important in creating potential leisure, however, has been the shorter time people spend in the workforce. Since the turn of the century, the average worker has entered employment later and left it sooner. One study estimates that a worker has gained an extra nine years of leisure with these changes."[19]

Taken together these figures suggest that the average American worker puts in less than half the annual number of hours worked by his or her counterpart at the end of the last century. The direction and scale of movement in New Zealand is no doubt much the same.

Against this longer-term picture, two contrasting strands are evident. The last two decades have witnessed a dramatic increase in women's labour force participation. In addition, the emergence of mass unemployment has meant that many have been excluded against their will from paid participation in the economy. Between 1966 and 1986 the proportion of adult women engaged in full- or part-time paid work increased from 36 to 63 percent. Over the same period men's labour force participation rate fell from 90 to 86 percent.

The increase in women's participation in paid work reflects many influences, including economic needs, changes in aspirations, reductions in family size, and the mechanisation of much household work. These changes were closely associated with an increase in the proportion of multiple-income households, and thereby with changing trends in the pattern of consumption between household types.

More recently there has been some tendency for women's labour force participation rates to fall in response to economic depression. In the longer term women's rates are still expected to increase but the extent of that increase is clearly quite uncertain.

Unemployment excludes a person from paid participation in economic activity. Although society partly makes good the loss by payment of a benefit, a more fundamental response could be to encourage changes in the pattern of work which make it easier for people to choose part-time work, time-out for retraining, or early retirement, so creating opportunities for others to move into paid employment.

If, over time, society's need for paid work reduces, because increasing productivity enables overall consumption to be expanded at satisfactory rates with less total effort, then there is an opportunity to reduce that effort. If this is so (and, given the complexity of the picture, that cannot easily be determined) there is a challenge to individuals, families and society as a whole, to ensure that the reductions in effort are secured in appropriate ways. The challenge is to move from a situation in which some percentage of the available workforce is arbitrarily excluded from work, to one in which a similar proportion of people, who would rather reduce their hours or leave the workforce, find it easier to make that transition.

Thus, for example, society might encourage people to spend a greater proportion of their adult life in learning. Or it could encourage more fathers to make the transition to unpaid work, or encourage earlier retirement. The average number of hours worked per year could be reduced by shortening the working week, increasing annual leave or increasing the number of public holidays.

The number of possible variations, always assuming that aggregate consumption standards are judged to be satisfactory, is infinite. The practical problem is to work forward in ways which meet three basic tests. First, the new pattern should be freely chosen and not exacerbate existing inequalities — a difficult test, inasmuch as the prime beneficiaries of economic activity tend to be those with the greatest power to influence the overall pattern of economic life.

Second, and closely related to the first point, is the need to secure patterns of personal and public income transfers to support the new pattern of activity. A moment's reflection is enough to suggest that this is no simple matter. Student support, within-family income sharing, and provision of retirement income are all issues of the moment.

Third, the pattern of change has to be one which does not prejudice the overall efficiency of the productive system or, if it does, this trade-off needs to be recognised and compensated. Thus, for example, proposals to reduce the working week need to be weighed against the costs of reduced utilisation of capital equipment.

In an area driven by forces as complex as those which determine the overall pattern of participation in work, it is difficult to sketch the possible course of future events in a meaningful way. Participation patterns evolve as individuals test the appropriateness of new and alternative patterns. It is, however, sensible to suggest the scale of change that would result from varying the pattern of participation in particular areas. In doing so we need to make it clear that we do not advance these in a prescriptive manner. The changes discussed here are all ones which seem conceivable in the light of current trends, but they are no more than that. The benchmark against which possible changes have to be measured is the current level of unemployment (see Infogram 12).

The March 1989 Household Labour Force Survey measured unemployment at 116,300 or 7.4 percent of the labour force. In addition there were a further 57,000 people either immediately available for, or actively seeking, work but not both, giving a total jobless of 172,300 or 10.6 percent of the augmented labour force. Inasmuch as a large part of the difference between the official measures of unemployment and joblessness arise from the partial withdrawal from the labour force of persons who see little chance of their finding work, the latter figure in many ways provides a more appropriate base for the comparisons we wish to make.

It is also necessary to bear in mind that Infogram 12 does not differentiate between full- and part-time employment. Part-time work is much more important for women — 39 percent of total women's employment — than for men where the comparable figure is only 12.5 percent.

The infogram provides a basic framework against which the scale of changes, that would absorb something like 8 percent of the current labour force, can be assessed. At present the jobless total is 173,000. If 140,000 people left the paid workforce as a result of changes in participation rates, unemployment could be reduced to the frictional level of 2 percent.

How does this figure of some 140,000 compare with some current or feasible trends in labour supply? Recall that in each case these are changes which are seen as arising from changing individual, family and social attitudes. They are not seen as being established by decree. In the event, they may or may not occur and opinions on them will no doubt differ. The arithmetic is nevertheless of interest.

Infogram 12

Labour Force Participation by Age

	Age	Employed (000s)	Unemployed (000s)	Not in labour force (000s)	Working-age population (000s)	Participation rate %
Men	15-19	80.1	15.4	57.5	163.1	62.4
	20-24	101.9	16.1	12.6	130.6	90.4
	25-54	570.7	33.2	36.5	640.2	94.3
	55-59	52.2	3.0	15.8	71.0	77.7
	60+	38.5	n.a.	175.9	215.2	18.3
	Total	**843.2**	**68.5**	**298.4**	**1210.1**	**75.3**
Women	15-19	70.7	14.1	62.3	147.1	57.6
	20-24	79.5	8.2	39.8	127.5	68.8
	25-54	422.9	23.7	209.9	656.7	68.0
	55-59	32.4	1.1	36.7	70.1	47.6
	60+	16.6	n.a.	246.4	263.6	6.5
	Total	**622.2**	**47.8**	**595.1**	**1265.1**	**53.0**
Total	15-19	150.8	29.5	119.8	300.2	60.1
	20-24	181.4	24.3	52.4	258.1	79.7
	25-54	933.6	56.9	246.4	1296.9	81.0
	55-59	84.6	4.1	52.5	141.1	62.8
	60+	55.1	n.a.	422.3	478.8	11.8
	Total	**1465.4**	**116.3**	**893.5**	**2475.2**	**63.9**

Source: Household Labour Force Survey, March 1989.

Educational participation

An immediate shift from New Zealand to OECD education participation rates for those aged 15-24 would lift total enrolments from 176,000 to 213,000 — an increase of 37,000. If such a change in educational participation could be effected rapidly it would thus make a significant contribution to reducing unemployment. But adjustments of this kind take time and, as we have noted, the falling trend in population in this age range means that it will be feasible to increase educational participation rates significantly over a five-year span without causing major increases in rolls.

Earlier retirement

The last 15 years has seen a notable increase in early retirement partly as a result of the provision of more generous retirement incomes. A continuation of this trend could raise difficulties. The direction of change suggested by employment concerns is directly contrary to that being canvassed in relation to the reform of superannuation to take account of the longer-term ageing of the population. The other major area of concern is likely to be the loss to the economy of the skills of some of its most experienced members. This is, however, a somewhat uncertain cost. Retirement ages are culturally conditioned and the setting of a normal retirement age will, as well as encouraging the premature retirement of those with a substantial contribution to make, freeze into the workforce others well past their prime.

Moving past these issues of principle we can note that were shifts in policy to occur which encouraged retirement from the age of 55 (the level currently prevailing in Japan), and if such changes were to lead to a halving of the participation rates for those of 55 or more years, then the reduction in numbers would be as follows. For men, there would be a reduction in numbers employed of 40,000; for women, a reduction in numbers employed of 25,000.

Increased caring roles for prime-age men

A striking feature of labour force changes in recent decades has been the disparity between the very marked rise in women's participation rates and the small fall in men's participation rates. The picture can be most clearly seen if we focus on the age range 15-64. A comparison of 1966 and 1986 Census data suggests that, over this period, the women's participation rate (expressed in full-time equivalents) rose from 36 to 53 percent. For men the rate fell from 90 to 84 percent. The average — for both men and women — participation rate (again expressed in full-time equivalents) rose from 63 to 68 percent.

Increased labour force participation on this scale over a period in which real wage rates also rose implies a substantial rise in the real income of the average household, associated no doubt with marked divergences between households. This rise raises the question as to whether the tendency to devote a higher proportion of adult hours to income earning, rather than to the provision of non-market services, can be expected to continue.

The arguments in favour of a continuation of this trend are clear enough. Rising incomes widen the range of consumption choices open to the average consumer. Although many may cavil at some of the choices of those in the upper income ranges, few would reject the opportunity to exercise those choices on their own behalf. The drive for higher material standards seems to be a fundamental aspiration. In addition, many two-income families face additional expenditures on child care and home operation. These can lock both the parents and the new providers into the paid workforce.

It is, however, also possible to envisage future reductions in participation rates. Increased consumption itself demands time and thus, for example, the new found affluence of two-income families may lead, after a period of capital accumulation, to changes in work patterns and participation so as to facilitate the enjoyment of that affluence.

Another factor likely to work in the same direction is the recognition that increased levels of paid work imply reduced attention to unpaid activities within the home, family, whanau and the wider community. Unpaid activities are not drained of value by the market's failure to reward them. Indeed all would agree that they are fundamental to individual and community welfare.

Changes in the balance between paid and unpaid work depend upon individual decisions made within the cultural context and thinking of the time. We cannot accurately predict the movements that will occur over the next decade. The expectation in official projections is that the women's participation rate will continue to rise and that of men to fall.

To give an idea of scale we hypothesise a lowering in the overall participation rate in the 25-54 age range, comprising a fall in the men's rate partially offset by a rise in women's rate. Current participation rates are displayed in Infogram 13.

Suppose, for example, that the percentage of men in the 25-54 age range who worked part-time or were not in the labour force both increased to 10 percent (as compared with the present figures of 7.6 and 5.7 percent respectively). Suppose that at the same time the proportion of women not in the labour force fell by 2 percent owing to a movement into full-time work.

The net effect of such a pattern of change would be a reduction of somewhat more than 20,000 full-time equivalents in the paid labour force. Not a large amount in response to what would be quite significant behavioural responses.

Changes in work patterns

It is easy to estimate the arithmetic implications of changes in work patterns. For example, in broad terms we would expect that if everyone currently in paid employment reduced their hours of work by 10 percent, total numbers employed would need to increase by a similar percentage if output and consumption were to be maintained at present levels. This assumes no change in productivity but, in practice, such shifts are certain to occur during the long periods over which such changes in work patterns occur. Furthermore, reductions in effort by one segment of the workforce carries no guarantee that opportunities for employment will increase elsewhere in the system.

Infogram 13

Labour Market Status — 25-54 Age Group

March 1989

		Men	Women
Employed:	Full-time	81.6	39.2
	Part-time	7.6	25.2
Unemployed:	Full-time	4.9	1.9
	Part-time	0.3	1.7
Not in labour force		5.7	32.0
Total		100.0	100.0
Full-time equivalents		90.4	54.6

Source: Household Labour Force Survey, March 1989.

It is nevertheless useful to form an idea of the arithmetic equivalents of some marginal changes in work patterns. A one hour reduction in the length of the average working week would entail a reduction in hours worked of 2.5 percent. If this loss in effort was made good by adding extra people to the active workforce, some 32,000 people would be required.

An increase of one week in leave entitlements would reduce hours worked by more than 2 percent. This might be seen as resulting from an increase in annual leave entitlements or from the addition of five public holidays to the calendar. If this loss in effort were made good by extra employent, some 27,000 people would be required.

At this point we can summarise the results of the various calculations:

		Number of people
Immediate lift in educational participation		37,000
Earlier retirement:	Men	40,000
	Women	25,000
Changes in caring:	Men	34,000
	Women	-13,000
Working week		32,000
Working year		27,000

Viewed against the overall requirement of places for 140,000 people, each of the changes discussed could make a potentially significant contribution. One reduction in labour supply, the increased participation in education and training, is necessary to the achievement of the goal. But, as we have seen, such changes raise major issues of financing, equity and productive efficiency which cannot be taken further at this point. That said, these labour supply issues clearly deserve serious consideration alongside the demand-side issues discussed in earlier sections of this report.

Conclusion

In conclusion the major findings are briefly restated:

- Labour force forecasts suggest that New Zealand needs to increase employment by an average annual rate of close to 2.5 percent if it is to return to full employment by 1995.
- The model runs suggest that faster rates of productivity increase will provide the fundamental basis for competitive expansions in output, employment and incomes.
- Thus, a doubling in sectoral rates of productivity increase (from those in *Prospects*) could lead, by 1995, to full employment and to a level of real GDP 15 percent higher than suggested in the base line medium-term forecasts.
- National productivity increases of 2 or more percent per annum are not all that exceptional in international or historic terms but they are well ahead of those in recent New Zealand history.
- Productivity increases stem from a wide range of factors, but they hinge on the responsiveness of institutions, enterprises and individuals to the rapidly changing international economy.
- There is a consequential need for institutions, enterprises and individuals to enhance their adaptability. Improved management of people and processes, well-directed research and development, attention to quality and imaginative marketing are all important. Adaptive workplaces and an adaptive workforce are essential elements of a fully employed high income society.
- New Zealand's levels of educational participation are low by OECD standards. The analysis in this report emphasises the importance of raising levels of attainment and skill and encouraging people to play more active roles in employment creation.
- The model runs suggest that higher rates of investment would, by enlarging the nation's capital stock, and provided the investments were well chosen, make it easier to expand economic activity and employment.
- The models also suggest that attempts to clear labour markets by adjusting wage relativities would require very large drops in wage rates paid to semi- and unskilled blue collar workers.
- The report notes differences of opinion relating to the role of macroeconomic policy in relation to employment, and it suggests that resolution of these differences is important in terms of securing movement to a fully employed high income society.
- It is suggested that there is a need for increased attention to the possibility of forming clearer common perspectives on prospects and policy issues at industry level.
- The report notes that changing social and community patterns cause changes in labour supply. The conceivable scale of changes is illustrated in the areas of educational participation, earlier retirement, gender changes in unpaid caring, changes in the working week, and changes in the working year.

The analysis certainly suggests that a fully employed high income society in New Zealand is possible and well worth striving for. It also suggests that the goal cannot be reached easily, nor simply by changes in the policy decisions made by central government. Changes will also be required in the responses and behaviour of individuals, families, communities, firms, unions, educational institutions, investors and many others. Attainment of the goal of sustainable full employment at high wages presupposes that all institutions and individuals exercise such options as are open to them to help shape that dream to reality.

Appendix

The international economy

Current forecasts for the world economy in the 1990s are generally favourable. The International Monetary Fund's *World Economic Outlook* of October 1989 suggests that the major industrial countries will grow at an average annual rate of 3 percent in 1990-94 as compared with 2.7 percent during the 1980s.

The continuing strength of the industrial economies after more than six years of expansion reflects, in the opinion of the IMF staff "the reorientation of macroeconomic policies towards medium-term objectives". The question implicit in most commentaries is how long can the expansion continue and what might follow. The quietly stated hope is that the world economy will continue to expand and cope successfully with several major adjustments. Three of these deserve comment.

The first issue relates to adjustments within and between the major industrial economies, particularly the correction of the United States budget and external deficits. Excessive domestic spending during the supply side years of the 1980s has transformed the United States from the world's largest creditor to its largest debtor. Although the level of net international indebtedness in that country is, at about 10 percent of GDP, very much less than that of Australia or New Zealand, it is is very large absolutely, particularly for the country which provides the world's major trading and reserve currency.

Correction of the United States' external balance links closely to correction of the internal budgetary deficit. Both are medium-term operations requiring care so as to maintain confidence in the American dollar and avoid the risk of serious instability in foreign exchange markets. Co-ordination between the major industrial economies and supportive management from the main surplus economies — Germany and Japan — are generally seen as essential.

Of lesser importance on the world scale, but nevertheless of importance to New Zealand, is the likely future course of the Australian economy where mounting external imbalances suggest a coming correction.

The second major area of risk is third world debt. Although the ratio of external debt to exports in net debtor developing countries has fallen from its peak 1986 level of 202 percent of exports of goods and services, debt levels are still at very worrying levels. The total amount of the debt (some $2.2 trillion in 1988) is five times the external debt of the United States. Although IMF projections suggest a significant reduction in developing country debt ratios, their size and the long period over which they must be reduced creates significant risks, particularly during periods of high interest rates.

In developing countries high debt levels are reflected in austerity programmes designed to stem demand for foreign exhange and to free such exchange for debt servicing. Access to loan finance becomes more difficult. At the same time financial institutions in creditor countries find the value of their assets depreciating.

The third factor which needs to be borne in mind is the radical restructuring that is occurring in production, productive techniques, and trading arrangements, particularly within the Pacific region. Rapid growth in the Pacific seaboard of Asia, and the onward sweep of the information revolution, mean that the international economy is ever less like the one in which New Zealand's old systems of licensing and tariffs were designed. Our own programme of regulatory reform increases our exposure to that change.

These tensions in the international economy expose all forecasts to a substantial margin of error. Faster world growth would provide the opportunity for faster correction of New Zealand's employment problem. The worrying possibility is that the international forecasts might be too optimistic and outcomes very much worse. For the purposes of this report, and in particular in the economic modelling, it was assumed that the IMF forecasts are broadly right and thus suggest a relatively favourable environment for expansion in New Zealand.

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