

**Business and  
Economic  
Research  
Limited**

Weddel House  
158 The Terrace  
P.O. Box 10-277  
Fax: 0-4-473 3276  
Wellington 1  
New Zealand  
Telephone: 0-4-472 5564



**MEDIUM TERM PROJECTIONS TO 1988/99**

**BY MAJOR ECONOMIC FORECASTERS**

**7 April 1994**

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**Prepared by:**

Allan Catt

Grant Andrews

Adolf Stroombergen

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# EMPLOYMENT TASK FORCE

## 1 INTRODUCTION

### 1.1 Objectives

This study was undertaken to ascertain the views of major forecasting agencies about New Zealand's economic prospects over the next five years, with reference to:

- average annual changes in key variables over the period - Gross Domestic Product (GDP) and employment - and the level of unemployment at the end of the period
- major influences on economic prospects
- key areas of uncertainty which might contribute to better or worse outcomes
- major differences between forecasters.

It is important to recognise what the results actually represent. They highlight what each forecaster feels are the key trends and influences in the economy, and roughly what the results will be if those trends actually occur in line with what is expected. They do not claim to be a precise forecast about what will occur - the economy is too complex and subject to too many unknowns to do that. What they do provide is a basis with which to highlight the most important influences on the economy's future prospects.

### 1.2 Organisations Consulted

The following organisations provided projections for the period, which were then discussed by their own and by BERL staff.

- Infometrics
- Integrated Economic Services (IES)
- New Zealand Institute of Economic Research (NZIER)
- Reserve Bank of New Zealand (RBNZ)
- The Treasury
- BERL<sup>1</sup>

Section 2 contains a comparison of projections for the main variables and a summary of key influences, risks and differences related to each.

Sections 3 to 8 provide summaries of each organisation's projections. They were prepared by BERL and have been confirmed by each organisation.

IES and the Treasury provided short notes outlining their projections. These are attached to this report as Annexes.

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<sup>1</sup> The BERL projections were prepared by a director independently of the work of staff members engaged in the consultation exercise.

## 2. OVERVIEW

In this section the projections of forecasters are compared and influences discussed.

### 2.1 Gross Domestic Product

	Average % change in GDP
Infometrics	3
IES <sup>2</sup>	1
NZIER	3.0
RBNZ	3.2
The Treasury	3
BERL	3.1

#### *Key Influences*

- Competitiveness: New Zealand firms, especially those in the traded goods sectors (those exporting and competing with imports), are expected to remain competitive with their overseas counterparts because of inflation remaining at or below rates of our trading partners, and management practices which maintain or improve their market positions.
- Productivity: firms, especially those in the traded goods sectors, will continuously increase their productivity over the period.
- Exports: because of the above factors and an expected recovery in major overseas markets, exports will continue to grow, albeit at slower rates than in the recent past.
- Investment: the growth in the economy will be sustained by increasing investment in plant and equipment, buildings, transport equipment etc, thus expanding productive capacity.

#### *Other influences*

- the Terms of Trade - the ratio of the prices we receive for our exports and pay for imports - are assumed to remain at similar levels to those at present. If they were significantly better or worse, there would be a corresponding improvement or worsening in outcomes.
- the impact of the GATT is assumed to be gradual, and not have a major impact over the period. However, it could be significantly more beneficial.

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<sup>2</sup> IES provided three scenarios with rising, declining and static GDP, depending on the Terms of Trade. GDP growth ranged from 0-1% pa under the declining scenario to 2-3% pa under the rising scenario.

- inflation is expected to remain low, with no pressures on the CPI for it to move outside the 0-2% target range and offsetting monetary adjustments
- the current government policy framework and fiscal stance is expected to remain unchanged over the period. Some (but not all) forecasters suggested that if there were significant changes in policy (eg re-regulation) or if government budget surpluses were spent rather than used to retire debt, this could undermine business confidence and slow economic growth
- patterns of household savings and consumption were cited as important by some forecasters, although they differed on whether the mix would remain at current levels or change, and what the impact of a change would be.

### *Conclusions*

Most forecasters expected GDP to grow on average by around 3% per annum. This will vary from year to year, and growth is expected to be faster during the first half of the period and slower in the second half.

This growth is quite different in character from previous post-War recoveries because it is expected to be sustained, albeit with year-to-year fluctuations, for a seven year period. The boom-and-bust cycles which have characterised previous recoveries are not expected because the institutional factors which caused them are not expected to be significant:

- government spending is expected to remain restrained, rather than expanded as tax revenues rise,
- wage growth in skill-short occupations is expected to be confined to those employees, rather than being transmitted across all occupations and leading to economy-wide wage growth,
- because of import liberalisation, there are not the same pressures for a surge in imports and a blow-out in the Balance of Payment deficit,
- inflationary pressures are expected to remain muted.

In the past, when an initial impetus came from exports, these factors lead to a boom which had to be reversed within 1-2 years. This is not expected to occur; but if this prognosis proves to be unduly optimistic, the ultimate result may not be as positive as the projections suggest. This underlines the difficulty of forecasting in an environment when the economy's dynamics are very different from the past, and previous experience is not a good guide to the future.

## 2.2 Employment and Unemployment

	Average % change in Employment	Unemployment rate, 1998 or 1999 % of the Labour Force
Infometrics	1 - 2	8 - 9
IES	slow or nil	present levels or higher
NZIER	2.1	7.8
RBNZ	1.8	7.0
The Treasury	2.5 - 3.5	below present levels
BERL	2.0	6 - 7

### *Key Influences*

- Output growth: this is expected to generate increased jobs, but the actual amount will depend on a range of factors
- Labour productivity growth: to the extent that employees produce more output per hour, this will reduce the effect of increased output on job numbers
- Labour force participation: some of the extra jobs will be filled by people who are not presently unemployed and seeking work. These people might include people outside the paid workforce; New Zealanders returning from overseas; older employees remaining in employment rather than retiring; and students.

### *Other Influences*

- Real wages (ie wages adjusted for changes in inflation): these are expected to remain at around present levels, with high unemployment restraining wage demands, and increases in labour demand resulting in more jobs rather than increased wages. There will be some real wage growth in skill-short occupations, but this is expected to be confined to those employees, and to some extent offset by productivity growth.
- Skill shortages: some skill shortages are to be expected in a growing economy; however forecasters did not expect that these would be so widespread that they would become a constraint on economic expansion. The major uncertainty is the capacity of education and training institutions to provide upskilling in areas of emerging occupational demand.
- Skill mismatches: will an increase in employment lead to a reduction in unemployment, or will this be restricted by a mismatch between the skills demanded by employers and those possessed by the unemployed?

## *Conclusions*

It should be stressed that the above is a very general summary of an area with a very complex set of interactions, most of which are not well understood. There is a wide divergence of views amongst forecasters about how the interactions actually work. For example:

- labour productivity growth could be seen as something which restricts the flow-on of increased output to extra jobs; but some forecasters stress the importance of increased labour (and capital) productivity to generating improved competitiveness and increased output in the first place
- investment has an uncertain impact on employment; some forecasters pointed to the likelihood of investment being in high technology plant which would lead to only a small number of extra jobs in high skill occupations, or even a reduction in jobs; others expected the level of technology and job opportunities to be more widely based.
- there is no agreement of the impact of wage flexibility on job opportunities at the lower-skilled end of the labour market, especially for the unemployed. One view is that such flexibility would provide openings for the unemployed to re-enter the labour force and in time move into higher-paying jobs; an opposite view is that such flexibility had a negligible impact on the number of such jobs.

### **3. INFOMETRICS**

#### **3.1 Economic Growth**

Growth in GDP is envisaged to expand by at least 3% over the next two years to 1995/96, with growth during 1994 and 1995 likely to around 4% pa. Beyond 1995/96 some reduction is probable but a rate of at least 2.5% pa should still be attained. Over the entire period 1994-1999 the rate of growth should average 3% pa.

The key factor underlying these favourable projections is the solid growth in investment - its quantity and its quality. This ensures that capacity does not fall behind demand, keeps inflation low and maintains the recent growth in labour productivity. Indeed a continuing increase in productivity is seen as essential to maintaining international competitiveness via low inflation. This is another important contribution to the strong growth rate since a deterioration in competitiveness would raise imports (and lower exports), thereby worsening the current account deficit and raising the prospect of a lower currency, higher inflation, higher interest rates and thus lower growth.

Another factor underlying the strength of the GDP growth forecasts is export growth which is expected to be around 5% pa over the period to 1999. Productivity growth is expected to be strongest in the export industries. Export growth is sourced mainly from the non-food manufacturing and service (tourism) industries.

The other side of the high investment, low current account deficit scenario is a recovery in the domestic savings ratio. It is assumed that government continues to achieve a fiscal surplus and, of possibly greater importance, that household savings rise faster than household incomes. This of course also implies a relatively restrained expansion in private consumption which again helps the current account situation.

#### **3.2 Employment**

With productivity growth at 1% - 2% pa and GDP growth at 3% pa, employment growth is projected at 1% - 2% pa, over the next 5 years. Whilst one might assume that lower labour productivity might be expected to imply higher employment, Infometrics believe that although this might be true for the first year or two, lower productivity would quite quickly undermine growth, for the reasons discussed above. In consequence the overall increase in employment over the whole 5 year period would be lower than under a higher productivity scenario.

#### **3.3 Threats and Uncertainties**

The picture portrayed above is an integrated one which depends on all the components working together. Small adverse movements in one area can be countered by offsetting movements in other areas. For example somewhat lower than envisaged household savings might be countered by slightly higher productivity. A serious shock, however, is likely to confound many components simultaneously.

One less favourable scenario is where imports rise due to an uncompetitive real exchange rate, which might be caused by too high a nominal rate and/or low productivity growth which raises inflation. Increasing margins rather than increasing productivity in a non traded industry such as Construction is a possible example. If this is significant it may not be possible for it to be offset by the quality and depth of investment. Accordingly the growth rate would slow.

Uncertainty also surrounds the use of the fiscal surplus. If too large a proportion of this expended, (perhaps more likely under MMP), government's actions would be pro-cyclical rather than counter-cyclical. This could lead to an increase in demand which exceeds the rate of capacity expansion, leading to inflationary consequences and the expected tightening of monetary conditions and thus to slower growth.

Strong export growth with accompanying profit growth may lead some firms with a high export-output ratio to consider adding their next unit of capacity offshore rather than domestically. This would lead to lower multiplier effects on the domestic economy, especially as regards employment growth. A possible offsetting factor would be higher green field investment in NZ by overseas companies.

Overall the picture is of an economy growing over the medium term at a solid but sustainable rate, implying a limited potential for significantly higher growth. Equally, however, whilst on the downside the risks are greater in number, the likelihood of a major adverse shock which is pervasive enough to undermine the integrated picture is also fairly low. This all points to a reasonably robust forecast implying that even though the projected growth in employment is not rapid at 1% - 2% pa, it is fairly certain.

## **4. INTEGRATED ECONOMIC SERVICES**

### **4.1 General Trends and Assumptions**

Forecasts are in terms of the labour market, over a projection period from 1994 to 1999, with three scenarios.

The main exogenous variable is the income Terms of Trade, comprising both volume changes and exports and in commodity Terms of Trade (world prices). Policy may react to changes in the income Terms of Trade through adjustments in monetary (exchange rate) and fiscal policy.

Variations in investment will be determined by Terms of Trade. Technological development in turn will be determined by the type of investment, especially in "open networks" of firms (see below). This will be a mixture of upgrading and complete replacement of existing capital equipment. The former leads to similar production processes to the present; the latter to quite different processes; with consequent changes to the type and quality of labour demanded.

Industries are categorised into

"open networks" - those with high technical change, predominantly in traded products sector

"closed networks" - those with slow technical change, predominantly in the non-traded sector

The structure of the economy and the policy framework is fixed over the period (changes in structure will take longer to realise), with variations in composition arising from changes in the mix of open and closed industries.

There will be no pressure on the CPI; monetary policy will be used to offset increases in world prices; there will be no overall wage pressure because of high unemployment.

The main social change will be that the income distribution will tend to become more unequal.

There may be political changes as a reaction to high unemployment and improvements in the fiscal situation, particularly in increased expenditure on job creation programmes and public investment.

### **4.2 Projections and Risks**

Three scenarios are projected, indicating likely developments and the consequences of differences in the main variable, the Terms of Trade. Estimates of GDP growth are provided, but only general trends in employment and unemployment.

*a) Decline*

**GDP** grows by 0-1% on average, with cyclical variations.

**Employment** growth is low, with no marked shift between open and closed industries and lower and higher skilled occupations.

**Unemployment** rises, with low increased demand not keeping up with increasing supply.

Under this scenario, the ToFT decline by around 5% because of falls in world prices. There is some devaluation of the exchange rate in middle years, but subsequent appreciation.

Investment remains low because of low ToFT, taking the form of incremental upgrading rather than replacement, with no capital deepening and low levels of technical change.

The fiscal position still in deficit because of slow economic growth - deficit remains at around 2% of GDP. There is some expenditure on job creation programmes from 1995.

This scenario is considered the most probable of the three over the first half of the projection period.

*b) Static*

**GDP** grows by 1-2% on average, with cyclical variations.

**Employment** growth is low, with some shift in shares from closed to open industries and from lower to higher skilled occupations, with possibility of skill shortages.

**Unemployment** is static, with reduced demand for lower skilled occupations anchoring these people into long-term unemployment.

Under this scenario, the ToFT remain at around current levels, with no changes in world prices or the exchange rate.

There is a modest increase in investment, but still in upgrading rather than replacement of the capital stock, with modest capital deepening and moderate levels of technical change.

The fiscal position is in balance on average, with some increases in expenditure on infrastructure, health and education from 1995

c) *Rising*

**GDP** grows by 2-3% on average, with cyclical variations.

**Employment** growth remains low, with a marked shift in shares from closed to open industries; however the growth is concentrated in higher skilled occupations, and actually falls for lower skilled occupations. There is a likelihood of skill shortages, resulting in increased immigration and expenditure on education.

**Unemployment** remains static, with reduced demand for lower skilled occupations anchoring these people into long-term unemployment.

Under this scenario, the ToFT rise because of improved world prices and/or depreciation in the exchange rate.

There is strong investment in replacement plant, especially in open industries, with significant capital deepening and levels of technical change. However, this generates high productivity growth and little increase in labour demand, concentrated in higher skilled occupations.

The fiscal position is in balance, with increases in expenditure on infrastructure, health and education, and job creation programmes from 1995. Investment in the former in high technology forms requiring low labour inputs, eg state-of-the-art sewerage plant, medical and educational equipment.

A key theme running through all scenarios is the persistence of long-term unemployment amongst low-skill occupations. This is because the closed sector is their main employer, and this is not seen to grow much over the time horizon under any scenario without deliberate policy changes; and because the more rapidly the open sector grows, the more it will invest in new technology, with high productivity growth and any increased labour demand concentrated in high-skill occupations.

## 5. NZ INSTITUTE OF ECONOMIC RESEARCH

### 5.1 Economic Growth

The projections for key variables are as below:

**Table A1: Domestic Expenditure Forecasts - Volume Changes**

	1993	1994	1995	1996	1997	1998
Private Consumption	2.0	3.1	2.5	2.6	2.7	2.8
Public Consumption	-0.6	0.3	0.7	0.8	1.0	1.2
Total Investment	3.9	13.2	9.9	4.0	2.5	2.4
Stocks	2.0	0.4	-0.3	0.4	0.2	0.2
Exports	0.3	4.2	4.0	3.8	2.9	2.1
Imports (increase = -)	-7.9	-8.4	-2.5	-5.3	-2.4	-2.2
<b>GDP</b>	<b>1.7</b>	<b>3.7</b>	<b>3.8</b>	<b>2.6</b>	<b>2.6</b>	<b>2.5</b>

(Source: *Quarterly Predictions*, March 1994.)

The average growth rate of GDP from 1994 to 1998 is 3.0%.

### 5.2 Employment

**Table A24: Labour Market Forecasts: (000s, as at March 31)**

	1993	1994	1995	1996	1997	1998
Total Employed	1475	1525	1557	1583	1609	1636
Total Unemployed	168	154	150	146	142	138
Labour Force	1643	1679	1707	1729	1751	1774
Unemployment Rate %	10.2	9.2	8.8	8.5	8.1	7.8

### 5.3 Price Assumptions

The following are some of the price assumptions made in the forecasts:

#### Tables A13 and A14: Domestic Prices, Exports, Imports

(Average Annual % Change, Year ended March)

	1993	1994	1995	1996	1997	1998
CPI	1.1	1.4	1.1	1.3	0.8	0.9
PPI (outputs)	2.4	2.1	0.8	2.1	1.5	1.4
Exports	9.2	-0.1	2.0	6.1	2.4	2.5
Imports	2.3	2.4	1.8	2.2	-1.2	-0.4

The exchange rate is assumed to remain unchanged at 56.6 on the Trade Weighted Index.

### 5.4 Threats and Uncertainties

The following are the risks to the Institute's unemployment forecasts as perceived by the Institute itself.

#### ***DOWNSIDE*** (ie leading to LOWER than forecast employment, MORE unemployment)

- The forecasts assume that inflation remains within the Reserve Bank target range without policy change. If the Bank has to react to higher-than-assumed inflation by higher interest rates and exchange rate, both of these would reduce the rate of growth and lower forecast employment levels.
- World prices assumptions could be too high, in which case employment projections would be too high due to less competitive tradeable goods industries.
- The Institute sees downside risk of declines in consumer confidence and increases in the household savings rate, due to higher interest rates.
- Profit rates have been assumed to be high due to some increase in margins as wage rates remain low, thereby encouraging investment. If profits not so high, investment would be down and so would employment. On the other hand, the Institute feel their investment assumptions may, for other reasons, be too low in the short term.
- As to specific industries, they point to Comalco, the meat industry and the finance industry as areas where employment growth could be less than assumed.

- Some areas of previous employment growth (eg health) may have run their course, in which case forecasts would be too high.

**UPSIDE** (ie leading to HIGHER than forecast employment and LESS unemployment)

- Regarding export forecasts, the Institute is very comfortable with its forecasts but recognises that it has been conservative compared with other forecasters. If the latter were correct and exports higher, the Institute's employment forecasts would need to be raised.
- Their forecasts of employment growth could be too low in the short run if previous labour shedding has left firms less able than previously to call on existing employees for more output.
- The growth in tertiary student numbers of recent years (when unemployment has been high) could slow down, thereby providing a supply side effect, lifting the number of school leavers entering the labour force and increasing the unemployment rate.

**INDETERMINATE** (ie factors which could go either way or could increase unemployment rate but not the level of employment.)

- The effect of wage escalation in reducing demand for labour may be over-estimated, but it could be the other way.
- The participation rate could be a volatile factor and may already be under-stated. This could lead to a higher unemployment rate if it rises, but it too could go the other way.
- Migration is another factor which could vary in either direction. Thus good employment prospects in New Zealand could attract New Zealanders back, particularly from Australia, but good employment prospects in Australia could lead to a net outflow.

It should be emphasised that although the Institute recognises the above risks, it has consciously attempted to provide forecasts where the risks are balanced each way.

## 6. RESERVE BANK OF NEW ZEALAND

### 6.1 Economic Growth

Components of Real GDP Growth (Years Ended March: % change)

	1995	1996	1997 - 1999
			Average Range
Private Consumption	4.5	3.5	2.5 - 3.5
Public Consumption	0.9	-0.8	-0.5 - 0.5
Total Investment	7.9	4.8	4.5 - 5.5
Stocks	0.8	-0.4	-0.5 - 0.5
Exports	5.7	5.6	6.0 - 7.0
Imports (increase = -)	9.0	6.4	4.5 - 5.5
<b>GDP</b>	<b>3.7</b>	<b>3.3</b>	<b>2.5 - 3.5</b>

The average growth in GDP for the years 1995-99 is 3.2% per annum.

### 6.2 Employment

	94/95	95/96	96/97	1997-98	1998-99
Employment (% change March Years)	+2.7	+1.9		{Average of 1.5% pa}	
Unemployment (%/Labour Force, March)	7.9	7.7	7.5	7.3	7.0
Labour Force Participation Rate	64.3	64.5	64.7	64.8	64.9

### 6.3 Price Assumptions

The following are the forecasts of the CPI and the TWI

(Average Annual % Change, Year ended March)

	1995	1996	1997	1998	1999
CPI	0.6	1.7	{Average of 1.0% to 2.0% pa}		
TWI	57.3	58.1	58.9	59.7	60.6

## 6.4 Threats and Uncertainties

The following are the risks to the Bank's unemployment forecasts.

**DOWNSIDE** (ie leading to LOWER than forecast employment, MORE unemployment)

- Forecast consumption could be too high, due to possibility that the household savings rate could rise from its present very low level. If consumption is lower, employment would be below the forecast.
- Skill shortages could be a more immediate constraint on growth than the Bank has assumed, as employers are still very selective.

**UPSIDE** (ie leading to HIGHER than forecast employment and LESS unemployment)

- Allowance for the benefits flowing through from GATT is conservative and increased employment could result from this factor.

**INDETERMINATE** (ie factors which could go either way or could increase unemployment rate but not the level of employment.

- The level of investment assumed could be too high or too low. Normally one would expect employment to be higher if investment is increased. However, it should be noted that there is a strong tendency for investment to be in labour-saving equipment, therefore possibly contributing to lower rather than higher employment.

On a number of other matters the Bank commented as follows:

- There are no expectations of early inflationary effects leading to any need for tighter monetary policy in the near term. Insofar as constraints become effective, the rate of growth expected to slow rather than inflation increasing. Thus any capital constraint is seen as being relatively easy to correct by investment in new plant etc. Insofar as employers are increasing wages they are doing so through revised packages which include performance criteria, so that the higher wages are balanced by increased productivity. Asset inflation is not regarded as a problem at present and not expected to become one. Nor is it expected that wage-led inflation will result from flexibility of wage bargaining under the ECA in a tighter labour market.
- Profit expectations are for healthy growth but not as rapid as in recent years. No problem is seen with regard to investment.
- With regard to education, no problem is seen arising from the higher cost of tertiary education. However, there could be a problem due to inadequate upskilling opportunities in general.

## **7. THE TREASURY**

### **7.1 Economic Growth**

The economy will grow strongly over the next two to three years, at about 3-4%, and then trend growth will slow down, averaging 2<sup>1</sup>/<sub>2</sub>- 3<sup>1</sup>/<sub>2</sub>% thereafter. The trend growth rate may rise again at the end of the decade.

Productivity growth is central to increases in GDP. There is still significant room for improvement as this is low by OECD standards. The growth will be driven by export firms who will gradually "drag" others along.

Economic fundamentals are sound and there are no obvious constraints to growth.

### **7.2 Employment**

This should grow by about 40,000 over the first two-three years, and by 20,000 to 24,000 on average in later years.

Unemployment numbers and rates are not forecast, but are likely to fall over the period with increases in employment and labour market flexibility enabling the unemployed to re-enter the workforce.

Real wage growth is unlikely to be strong in the initial period, and this is expected to contribute to strong employment growth. Still shortages may lead to some real wage growth in later years, which will slow employment growth down. Household incomes will increase predominantly through employment rather than wage growth.

Understanding of the dynamics of the labour market is still limited, but New Zealand appears to be more like the US rather than Europe. In particular we do not know the extent to which unemployment affects a large number of people moving in and out of jobs, with unemployment duration short (the US experience) or a smaller number with limited mobility and long durations (the European experience). The flexibility of the Employment Contracts Act should lead to something more like the former, with unemployed people able to get into work at low wages and then move up the income scale.

Participation in the labour force is likely to rise with any employment growth, especially as it was rising prior to five years ago, and participation rates are below the OECD norm. Increased youth and young adult participation in tertiary education and training may be levelling off and stabilising at current levels, but does not appear to be reversing with improved job prospects.

### 7.3 Threats and Uncertainties

The economy may grow more strongly with a strong international recovery.

However its growth could be slower if there is excessive volatility in the economy - uncertainty will lead to lower investment - and if there are policy reversals or uncertainties undermining business confidence. Because of its size, New Zealand will always be vulnerable to unpredictable international shocks, but improvements in fundamentals - lower debt, improved competitiveness - means that it should be less vulnerable than in the past.

On the balance of risks, there is more likely to be a better rather than a worse outcome in the first half of the period, and about an even or slightly favourable balance of risks in the second half.

The Balance of Payments is not seen as a risk, because of the absence of fundamental macro-economic imbalances and increased competitiveness in both export and import-competing industries. However it is acknowledged that if there were serious BofP problems, the above scenario might not necessarily hold.

Nor are skill shortages necessarily seen as a problem. Some imbalances are to be expected in a growing economy; key issues are responses in [a] labour contracting - will relative wage rates change to reflect skill differentials and provide incentives to upskill? and [b] education and training institutions - are they able to provide upskilling in emerging areas of occupational demand?

## 8. BERL

### 8.1 Introduction

BERL's projections are obtained by linking macro control model with a general equilibrium model; a process developed by the National Sectoral Programme of the NZ Planning Council.

The structure of the three sector control model is described in an appendix based on a paper presented to the NZ Association of Economists in August 1993. The version of the model used here incorporates new routines relating to the division of output between the model's three sectors and includes a new foreign liabilities and direct investment module.

### 8.2 Projection to 1997/98

In establishing a model run the user needs to introduce a number of exogenous data sets or choose amongst available options within the model. The main choices made for the March 1994 runs for the Department of the Prime Minister and Cabinet are as follows;

- **exports** the model has to be primed by an exogenous set of export forecasts. Our current practice is to include a set derived from the most recent forecasts contained in the NZIER Quarterly Predictions. These were drawn from the December 1993 issue of Quarterly Predictions;
- **productivity** the model requires the user to provide forecasts of the rates of change in labour and capital productivity ratios for primary secondary and tertiary sectors. At present the model incorporates three options. In these runs we used a set of rates of productivity change which were 0.5 % pa lower than the standard NSP set. The effect of this was to generate a somewhat lower and it is thought more realistic overall rate of growth in GDP.

The rates of productivity change used are

	<b>Capital</b>	<b>Labour</b>
Primary	2.0	1.1
Secondary	1.4	1.8
Tertiary	0.3	0.8

- **employment objective** the three sector model contains two direct reaction functions linking employment and the balance of payments to the likely future level of economic activity. Higher unemployment is posited to lead to reactions tending to stimulate growth. In

contrast higher balance of payments deficits tend to depress growth. The model user is required to define the relative importance attached to these two influences and to calibrate the likely strength of the reaction.

For the runs reported here we have attached a lower relative ranking to the employment objective (0.4 as opposed to the usual 0.6) and used an weaker employment reaction function.

The effect of these two changes is to slightly weaken the rate of growth generated within the model.

- **import coefficients** the model incorporates forecasts of the expected level of direct and indirect imports per dollar of spending on each final demand category (consumption, investment, exports of goods and services, stock change). The current standard set of coefficients incorporates slowly rising trends. This set was used in the first scenario reported here. The second scenario incorporates a rather stronger increase in import coefficients to a level some 5% higher in the year 2000 than under the standard scenario.

### 8.3 Macroeconomic Outcomes

The outcomes of these two model runs are summarised in the following figures

	Standard	Higher imports
Rate of growth in real GDP, % pa 1992-98	3.2	3.0
Rate of growth in employment, % pa 1992-98	2.1	1.9
Unemployment rate, % 1998	6.0	7.0
Ratio of investment to GDP, % 1998	21.3	19.4
Ratio of imports to GDP, % 1998	27.5	28.3

### 8.4 Risks and Uncertainty

The two key areas of uncertainty that BERL sees as endangering its projections are productivity and import propensity. The import liberalisation of recent years has undoubtedly raised the ratio of imports to domestic output. What is unclear, however, is whether the import ratio will continue to rise as GDP rises. To some extent this will depend on domestic capital formation (although this itself has a high import requirement), but of greater importance is the household income elasticity of demand for imports. The likely behaviour of this parameter over the next few years is difficult to project. Hence the two scenarios.

Productivity especially labour productivity has both substitution and income effects on employment. In the short term the former usually dominate, but over longer periods the rate of productivity affects both the rate of growth of output and of employment. Thus it is not clear that faster productivity growth is a negative influence on employment in the medium term. In BERL's projection models both the substitution and income effects of higher productivity are captured. The net effect on employment depends on the time horizon and on other model closure assumptions.

The rate of unemployment is subject to another key area of uncertainty - the rate of change in labour force participation. In its projections BERL assumes the same participation rate change which occurred in past economic upturns, but this may be too low. If so the unemployment rate would be higher than projected in 1998.