

# Reserve Bank forecast narratives

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## Editor's note

This paper was prepared primarily as a reference document as a starting point for finding the historical story as an important addition to our statistical analysis. It summarises the basic stories from our Monetary Policy Statements since 1990, and comments briefly on how events evolved relative to our expectations.

## Executive Summary

This note contributes towards the forecast errors project by presenting a review of the Reserve Bank's thinking about inflation as recorded in Monetary Policy Statements (MPSs) since 1990. The key question it addresses is whether there is evidence from MPSs that exogenous shocks might have been a cause of bias in the Reserve Bank's inflation forecasts. It is important to note that what we believed at the time was not necessarily completely accurate, with the benefit of further hindsight.

It appears that both unanticipated exogenous shocks and our acknowledged limited understanding of how the economy works have been significant contributors to inflation outcomes departing from our projections and/or target ranges. The majority of shocks have been inflationary rather than disinflationary, which suggests that they could have been a source of bias. Note, however, that this would require that the shocks over the period have been unusually large versus typical shocks during the preceding period on which our inflation models were based at the time. That is, we build an allowance for 'typical' exogenous inflation shocks (positive on average) into our models. Therefore to be a source of bias, the nature of the shocks would need to have changed relative to the history on which we were basing our models.

The main sources of exogenous shocks over the sample period have been:

- 'international' factors (world growth, tradables prices and the exchange rate),
- government charges (each individually not sufficiently large to be 'caveatable'), and
- a series of miscellaneous positive price shocks, including timber prices, food prices, electricity, health insurance and others.

At times we have also acknowledged that misunderstandings on our part of how the economy would work have contributed to mistaken inflation forecasts (mostly under-estimation).

The [appendix](#) to this note summarises what we said in each MPS would drive future inflation and what we saw as the risks around our forecasts. It also summarises inflation outcomes and what we said at the time had caused these. The main body of the report provides an assessment of that information. It includes a description of acknowledged mistakes in our assessments of how economic developments would unfold, then consideration of whether exogenous shocks have contributed to a bias in inflation forecasts. This involves a comparison of the risks and expected drivers of inflation with the perceived causes of later inflation outcomes.

## Our understanding of how the economy operates

We have acknowledged a number of times in MPSs that limitations to our knowledge of the state of the economy and our understanding of how the economy works could contribute to inflation departing from our projections and/or the target band. We explicitly recognised this as a risk in February 1992, December 1995, June and December 1997 and four times since May 2000. We regarded several factors as risks: uncertainty about the level of potential output, the size of the output gap, the impact of a low exchange rate on activity, and the size and timing of exchange-rate price pass-through.

We have also looked back on five occasions and said that our actions contributed to departures from our forecasts and/or the target range.

- In February 1992 we said inflation had been lower than expected because the weak economy had had a greater impact on cost and price pressures than we anticipated, and because the reforms designed to make a more efficient economy also had had a greater effect than we expected.
- In June 1995 we said we had not anticipated the pace of the expansion and we should have had firmer policy earlier.
- In December 1995 we said we possibly over-estimated the effectiveness of monetary policy, the productive capacity of the economy and the decline in inflation expectations.
- In June 1996 we said demand pressures had been greater than we had expected and/or the inflationary impact of a given output gap was greater than believed. Also, the exchange rate appreciation had had less of a disinflationary impact than we had expected.
- In some recent MPSs we have suggested the pass-through from the exchange-rate fall might be longer and/or larger than we had initially expected.

The acknowledged misjudgement in 1991 related to the period of reducing inflation and achieving price stability. It was distinct from the later period of maintaining price stability in a number of respects. Variations between targets and outcomes are likely to be greater when a significant disinflationary process is being undertaken. Also, given the lags in monetary policy and the comparatively short notice of a change in the target date, it was difficult for the Reserve Bank to readjust settings appropriately. As a result, no lessons can be drawn from this period with regard to possible sources of bias in maintaining price stability. For reference purposes, though, a more detailed account of the 1991 undershooting is given in [appendix 1](#).

We acknowledged that around 1995 we underestimated the strength of the economic recovery and its impact on inflation. More recently we have suggested that underestimation of exchange rate pass-through might be contributing to higher than expected inflation. This seems clear evidence that policy judgements have been one factor for inflation outcomes being greater than we intended at various times since 1991.

## **Risks and outcomes**

Forecast errors can arise from expected drivers of inflation not evolving as anticipated (being either more or less influential than expected), from foreseen risks to the projections actually materialising, and from other completely unanticipated factors. Consequently, this memorandum gives equal consideration to expected drivers and to risks.

The most common expected and actual causes of inflation were as follows:

### **Wages, profit margins and inflation expectations**

Wage growth was a key concern of the Reserve Bank from 1990 to 1995. It was identified as an expected driver of inflation in six of the first twelve Statements (to December 1995) and as a risk in the other six.

Looking at outcomes, however, only on one occasion (June 1994) was it noted that “wages appear to be growing more strongly” – by 2 per cent per annum by one measure. Falling wage growth and wage restraint were observed in three MPSs in the 1990 to 1995 period. We may have been justified a priori in being concerned about wage growth in 1990 to 1995, but this risk did not eventuate.

More recently, wage growth has again been cited as a risk - in three MPSs since late 2000. It has not yet been mentioned as a cause of inflation outcomes.

Profit margins were listed as an expected upward driver or risk in five MPSs in 1990 to 1995. On one occasion they were later identified as rising and on one occasion falling. They have been mentioned twice in the last two years as risks.

Our concerns over wages and profit margins were often closely linked to worries about inflation expectations. We said inflation expectations were a risk in eight MPSs, mainly in the early period and since 1999. In a further three MPSs we referred to “spillover” from other price increases without specifically saying that this would occur because of changed expectations (but that might have been the mechanism that we had in mind). These concerns seem to have been unfounded. On two occasions (August 1991 and December 1993) we noted inflation expectations falling. Not once did I see us saying they had risen, although in December 1995 we said we possibly over-estimated the decline in inflation expectations.

Clearly, under-estimating wage growth has not been a contributor to our tendency to underestimate inflation. If anything we have been surprised by the lack of wage growth. Exogenous shocks such as the Employment Contracts Act may have played a role here. Similarly, we have kept a wary eye on price expectations but they do not appear to have been a key source of upside surprises.

### **International economic growth, tradables prices and the exchange rate**

As you would expect, the outlook for international growth has figured prominently in Reserve Bank thinking. Strong growth (or stronger than expected growth) has been included as a risk five times, weak growth seven times and risks both ways eight (additional) times. That represents twenty of the thirty-four MPSs.

Surprisingly, world growth was specifically mentioned as an expected driver of inflation, as opposed to a risk, on only two occasions, and as a specific cause of outcomes on three occasions. This is probably because it was often implicitly incorporated in other factors such as export and import prices, including oil (both forecasts and outcomes), and because our exchange rate sometimes moved to dampen price movements (up and down). These factors are all inter-related and are all mainly in the 'exogenous shock' category. So it is best to consider them together.

There were thirteen times when we said in the MPS that these factors surprised us on the upside in the sense of boosting prices. There were six times that we said they contributed to inflation being lower than we expected. There were also related instances when import prices, as reported by Statistics New Zealand, did not decline as expected after the mid-1990s exchange rate appreciation. In other words, these were occasions when inflation outcomes were higher than expected. In particular, we forecast the prices of imported cars to fall but this did not come through in the CPI for some time.

It seems clear that the external sector was a source of more positive shocks than negative ones over the period. It was probably a contributor to the observed bias in our CPI forecasts.

## **Government taxes and charges**

Changes in government charges can be regarded as exogenous shocks. A very large increase in government charges would be 'caveatable'. As it happened, most of those listed below were of sufficient size to have a moderate impact on inflation, but not so large as to cross the threshold required for a 'caveat'.<sup>1</sup>

Perhaps due to their unpredictable nature, they have never been cited as risks. Occasionally they have been mentioned as expected drivers of inflation but only in the short-term, well before monetary policy could have an effect.

On the other hand, they have been counted as causes of inflationary pressures, ex post, about twelve times (depending on how you regard successive increases in the same item.) Examples have been increases in GST, local authority rates, Housing NZ rents, tertiary fees (a number of times), the cigarette excise tax, motor vehicle licence fees, hospital charges and taxes on alcohol. The removal of cross-subsidisation to households in the electricity industry probably also counts as an inflationary shock (although in theory reductions in electricity costs to producers could have provided offsets, in the form of lower prices for other goods and services).

Changes in government charges and taxes have been counted as contributing to lower prices on only about four occasions. These instances have been reductions in doctors' fees, hospital charges, motor vehicle tariffs and Housing NZ rents.

There is reasonably strong evidence here that changes in government charges have been a source of net positive exogenous shocks. However, some of these shocks would have been known in advance. The Forecasting team's practice was to scrutinise the Budget and make allowance for all positive and negative price impacts, eg arising from tertiary fee increases.

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<sup>1</sup> Successive Policy Targets Agreements recognised that inflation could be expected to go outside the range in response to some types of shocks. These potential shocks included significant changes in the terms of trade, indirect taxes or government charges, and natural disasters. Should this happen the Reserve Bank would invoke a 'caveat'. It would publish an estimate of the direct impact of the shock and would explain how it intended responding.

Unanticipated government-sourced shocks might have contributed a little to bias in our forecasts but probably not to a substantial degree.

## **House prices, construction costs etc**

We referred to house prices and construction costs as likely drivers of inflation (upward) six times, including five times between June 1993 and June 1996. On two occasions we said they could go up or down (December 1995 and June 1997) and on one occasion we said they were likely to fall (May 1998). In December 1992 we stated that the new low inflation environment would generate low capital gains in housing and thus constrain the demand for houses.

On the outcome side, we reported house prices and related items rising by more than we expected in September 1990, three times in 1995 to 1996 and three more times since August 1999. We reported them below our expectations three times from December 1996 to November 1998.

Clearly we were picking rises around the time prices for these items rose, and falls around the time they fell. The general impression, however, is that we did not pick the rises (or their strength) until they were underway and too late to control. I would say this reflected our limited understanding of how the economy would unfold rather than exogenous shocks. One might be able to argue that the rapid migration inflow of the mid-1990s was an unpredictable shock, which played a major part in the house price rises. However, our understanding at the time was that the low level of interest rates, not immigration, was the main cause of house price inflation.

## **Other risks and shocks**

Other expected upward drivers of inflation have included timber price rises in 1992, food prices at various times and migration inflows in 2001. Other upside risks included food prices in 1995, the impact of the AMP demutualisation in 1998 and immigration in 2002.

Other expected downward drivers of inflation have included motor vehicle prices in 1997 and reforms to the electricity and petrol retailing industries in 1999. Other downside risks have included the possibility that the 'new paradigm' would apply in New Zealand in 2000 and Housing NZ rent cuts in 2001.

On the outcomes side, upward shocks have included food, particularly fruit and vegetable prices, six times, electricity charges in 1994 and 1999, health insurance in 1997 and 2002, changes to the CPI treatment of credit charges in 1995 and airfares. The only downward shock not listed in earlier sections was airfare cuts.

This indicates that there has been a range of miscellaneous exogenous shocks not covered earlier. They have been predominantly inflationary. To the extent that they are 'typical' they should be implicitly included in our models of the inflation process. But if this were not the case then they would have contributed to the bias in our forecasting.

## **Excess demand or capacity**

Various expressions representing excess demand (or a positive output gap) have been identified as future drivers of inflation a number of times in the early 1990s and again more

recently. They have been included as risks seven times from June 1994 onward. In March and May 1999 we specifically cited excess capacity as a downward pressure.

We attributed higher than expected inflation outcomes to generalised excess demand in 1995 to 1996. We attributed lower than expected inflation outcomes to excess capacity in MPSs published in 1991, 1992, 1996 and 1999.

I would not regard any of these as examples of exogenous shocks that might cause bias in our forecasts. Exogenous shocks would affect components of demand or supply, and would be picked up in one of the previous sections rather than here.

## **Appendix 1: Achieving price stability**

When the first MPS was published in April 1990, the Reserve Bank had been given the objective of reducing inflation to 0 to 2 per cent by the end of 1992. The Reserve Bank said that it would adopt monetary policy settings designed to achieve annual increases in the CPI of:

- 3 to 5 per cent for the year to December 1990;
- 1.5 to 3.5 per cent for the year to December 1991; and
- 0 to 2 per cent for the year to December 1992.

However, a new Government was elected in November 1990 and it extended the target date for lowering inflation to 0 to 2 per cent until the end of 1993. In the February 1991 MPS, the Reserve Bank published a new target track for ex-oil CPI of:

- 2.5 to 4.5 per cent for the year to December 1991;
- 1.5 to 3.5 per cent for the year to December 1992; and
- 0 to 2 per cent for the year to December 1993.

Inflation actually fell to 1.0 per cent in the year ending December 1991. Inflation was outside (below) the Reserve Bank's target track for at least three quarters. The Reserve Bank did not publish a quarterly target track but it seems clear that inflation would have been below the mid-point of any interpolated track for a longer period.

It is unclear from MPSs whether the Reserve Bank still felt bound by the post-election indicative track after price stability (0 to 2 per cent inflation) was achieved in December 1991. One could argue that allowing inflation to rise above 2 per cent in 1992, in order to get back to the mid-point of that year's range, would have imposed longer run costs on the economy. However, the February 1992 MPS projected "underlying inflation rising to about 3 per cent in early 1993, before falling back to around 1.2 per cent at year's end." This suggests the Reserve Bank decided not to completely "bank the gains" of reaching 0 to 2 per cent early.

We acknowledged at the time that our limited understanding of how the economy operated was an important contributor to the 1991-92 outcomes. Unanticipated exogenous shocks, such as weaker than expected world growth and fiscal tightening, might also have been influential.

## Appendix 2: MPS assessments

In reading the MPSs one should be aware of some changes that have taken place as time has passed, for example in presentation and assumptions in the underlying projections. Some of these are as follows.

In recent MPSs we have tended to describe our projections and say what factors (risks) might cause departures from these. In the early MPSs it was taken as given that we would achieve inflation objectives. If risks became realities then monetary policy would be tightened or loosened accordingly to achieve the target (unless adverse developments fitted our definition of 'caveatable' shocks). This approach presumably reflected our determination to establish our inflation-targeting credibility.

In early MPSs we used the technical assumption of a continuation of current monetary conditions, ie the exchange rate and the 90-day interest rate were fixed in the forecasts at their current level (eg the average over the previous month). This meant that if inflationary pressures were expected to increase then projected inflation would indeed rise towards the end of the projection horizon, possibly even breaching the target band.

In June 1994 we adopted a rising exchange rate assumption, whereby the exchange rate appreciated (or conceivably depreciated) according to the expected inflation differential between NZ and the rest of the world.

The MCI was introduced in December 1996.

Forecasts incorporating an endogenous monetary policy response were adopted in June 1997.

MPS	Outlooks	Outcomes
Apr 1990	<p>Inflation was expected to fall within the bands leading down to 0 to 2. Export and import prices were expected to rise by 4-5 per cent p.a. later in the period, but this would be offset by TWI appreciation.</p> <p>Risks seen were:            If <b>wage growth</b> does not decline in line with falls in inflation then tighter monetary policy will be needed.            If <b>offshore interest rates</b> rise then our rates will need to rise to some extent.            Marked changes in the <b>exchange rate</b> might cause the Reserve Bank to take actions that would result in both interest rate and exchange rate changes.            Exchange rate fluctuations might be caused by political events or economic developments such as balance of payments trends.</p>	<p>Recent inflation outcomes were attributed to:            The 2.5 per cent rise in <b>GST</b> on 1 July 1989.            The strength of NZ's <b>terms of trade</b>.            Falls in wage growth.            Rising productivity.</p> <p>The first two were seen as one-off events that the Reserve Bank did not need to respond to. Their impact on inflation expectations was seen as small.</p>
Sep 1990	<p>Important factors are:            A possible impact of short-term price pressures on <b>inflation expectations and</b></p>	<p>The main recent influences on prices were:            Rises in provincial house prices</p>

	<p><b>wage claims.</b> A possibly extended period of high and/or rising <b>oil prices.</b> Lower <b>car prices</b> and <b>doctors' fees</b> (as a result of budget changes).</p> <p>The first-round effects of the oil price rise after the Iraqi invasion of Kuwait were seen as caveatable.</p>	<p>Increases in <b>government charges</b> and local authority rates <b>GST</b> effect High commodity prices Price rises for houses, fruit and vegetables, and public transport.</p>
Feb 1991	<p>Generally favourable outlook. <b>Import</b> prices are weak. Slowing <b>house</b> price rises Lower <b>oil</b> prices Moderate <b>wage</b> increases But <b>TWI</b> fall possible</p>	<p><b>Economy weaker</b> than expected Global weakness Monetary tightening due to Budget <b>Wage restraint</b> (Growth Agreement)</p>
Aug 1991	<p>Favourable outlook as individual components look OK. Further out, when the recovery takes place, price and cost pressures must be contained. Risks: Direct impact of <b>government charges</b> or their effect on expectations. Possible <b>TWI</b> fall.</p>	<p>One-off price changes: <b>Oil</b> up then down Mortgage rates down Public sector charges up Also, the weak economy meant profit margins fell. Increased credibility is shown in expectations surveys.</p>
Feb 1992	<p>Upward pressures Rising <b>export</b> and <b>import</b> prices <b>TWI</b> fall (the "key") Government charges Downward pressures Domestic demand weak Interest rates falling <b>House</b> prices weak Risks evenly balanced Our understanding of the <b>monetary policy transmission mechanism</b> might be faulty. Fiscal slippage causing <b>confidence</b> slump <b>TWI</b> not as projected.</p>	<p>Inflation lower than expected. The weak economy had a greater impact on cost and price pressures than anticipated. So did reforms designed to make a more efficient economy. Prolonged international sluggishness. Low export and import prices. <b>TWI</b> held up.</p>
Jun 1992	<p>Reserve Bank is comfortable. Risks: Wages Profit margins Strong global growth <b>Fiscal</b> policy <b>TWI</b> tumble</p>	<p>Low inflation is due to: Firm <b>monetary</b> policy Weak <b>import</b> and <b>export</b> prices Weak domestic demand, causing <b>Wage</b> moderation, and <b>House</b> prices contained.</p>
Dec 1992	<p>Few difficulties are seen in 1993 and 1994. The reduction in inflation is seen as lasting. The new low inflation environment will generate low capital gains in housing and thus constrain the demand for houses. Risks:</p>	<p>Inflationary pressures have been under control, eg <b>wages, profit margins, and house prices.</b></p> <p>If the <b>TWI</b> had not fallen then inflation would have been zero.</p>

	<p>Stronger international growth  <b>Skill shortages</b> (but wage pressures should be constrained by the ECA).  Rising incomes and confidence</p>	
Jun 1993	<p>Inflation outlook is up a little but is still within the target range. Expected pressures:  <b>Timber</b> prices (first round effects might be caveatable).  <b>Electricity</b> prices (due to elimination of cross-subsidy to households).  Expected <b>wage</b> growth (but ECA should mute it).  <b>House prices</b> due to rising incomes, confidence and timber prices.  <b>Commodity</b> and <b>export</b> price rises.</p> <p>Risks  Higher <b>wage</b> growth than expected.  World growth, export and import prices.</p>	<p><b>TWI</b> depreciation in 1991 contributed to upward price movements.  So did higher <b>export</b> prices, eg <b>timber</b>.</p> <p>TWI fell sharply in January but it recovered by June.</p>
Dec 1993	<p>Inflation forecasts up a bit further.  <b>Domestic demand</b> to rise, and with it <b>profit margins</b> and <b>wage</b> growth.  But <b>investment</b> will rise, easing capacity constraints.  Dwelling construction costs to rise.  Political developments not a worry.</p> <p>The main risks relate to the pace of <b>economic growth</b> and the responses of <b>wage</b> and <b>price (margin)</b> setters. We assume reforms will moderate these pressures. Risks are balanced in the near-term but more upside in the medium-term (eventually growth will cause capacity constraints to bite).</p>	<p>Inflation up to 1.5 per cent. Pressures were:  Domestic demand up  Profit margins up  <b>Wage</b> growth moderate  External influences weakened  Inflation expectations flat or declining</p>
Jun 1994	<p>Inflation is expected to rise toward the top of the band by March 1996 but is seen as under control.  Upward pressure:  Profit margins  Wages  Construction costs  Risks  Profit margins  Wages  Real activity</p>	<p>Headline CPI:  <b>TWI</b> up 4.5 per cent over 12 months  <b>Tradable prices</b> restrained or down  World commodity prices weak  Wage growth up a bit.</p> <p>Underlying inflation:  <b>Oil</b> prices down  Housing NZ rents up  Tertiary fees up</p>
Dec 1994	<p>“Inflation stresses are beginning to emerge.” Projections revised up (again).</p>	<p>Construction costs up  <b>House prices</b> up, <b>Auckland</b></p>

	<p>Expected pressures:  <b>Import</b> price inflation to rise a bit  <b>Export</b> price growth to moderate  <b>Wage</b> growth to accelerate  Limited <b>profit margin</b> rises  Construction costs to rise (skill shortages)  <b>Demand</b> growth should slow due to falling <b>confidence</b>.  Risks (upside predominate):  <b>Wage</b> growth is the main risk. This might happen due to skill shortages and spillover, or headline CPI being used as benchmark for wage increases.</p>	<p>especially - due to high level of activity (migration not specifically mentioned)  Private sector rents up  Electricity up  Tradable prices flat</p>
Jun 1995	<p>Inflation is expected to exceed 2 per cent soon and this is bad. But a return toward the centre of the band is expected after a June 1995 peak.  Expected influences:  <b>Wage growth</b> to rise further  Profit margins to fall   Risks:  <b>Tax cuts</b> have not been incorporated, as details have not yet been published.  Construction costs might fall  Wages, profit margins, exchange-rate pass-through and commodity prices might depart from projections.</p>	<p>Causes of rise in inflation have been:  Unsustainable rapid <b>pace of expansion</b>  <b>Reserve Bank</b> should have been firmer  <b>Bad weather</b> causing <b>fruit and vegetable</b> prices to rise by 25 per cent  <b>Change to treatment</b> of credit services in underlying inflation measure (contributing 0.2 per cent).  <b>Commodity prices</b> up, only partly offset by <b>TWI</b> rise  Construction costs, rents, electricity, and restaurant prices.</p>
Dec 1995	<p>Inflation will be close to the top of the band for several quarters longer than expected a few months ago. Due to:  Pressure from positive output gap  Greater <b>wage</b> rate pressures  But low <b>profit margin</b> growth  Risks:  <b>Exchange rate pass-through</b> (from the appreciation) might be less or slower than expected, (which would cause inflation to be higher).  Our <b>output gap</b> estimate could be wrong  <b>Construction costs</b> might be higher or lower  <b>Labour supply response</b> to the fiscal package.  <b>Fruit and vegetable prices</b> might take longer to return to “normal” levels.</p>	<p>Inflation has been driven by:  Auckland <b>house prices</b> (“monetary policy is a blunt instrument”).  Fruit and vegetable prices up  <b>Export prices</b> up but TWI up too.  Also possible over-estimation of:  Effectiveness of monetary policy  Productive capacity of the economy  Decline in inflation expectations</p>
Jun 1996	<p>The (near-term) outlook is worse than projected even a few months ago due to further expected increases in <b>house prices</b> (particularly), <b>food, transport costs</b> ...</p>	<p>In general terms, demand pressures were greater than expected and/or the inflationary impact of a given output gap was greater than believed. The exchange rate appreciation had less disinflationary impact than expected.</p>

	<p>In the medium-term inflation will fall and would even undershoot our target if policy was not changed in due course.  <b>Commodity prices</b> will fall (though <b>oil</b> might rise).  Growth in <b>unit labour costs</b> will slow.  <b>House price</b> growth will slow.</p>	<p>Perhaps the rise in the TWI and in demand allowed agents to increase profit margins.  In detail:  Government charges were up, eg tertiary fees and tobacco.  Higher <b>house prices</b> had a <b>direct</b> impact and an indirect one via the <b>wealth effect</b> on consumption.</p>
Dec 1996	<p><b>Aggregate demand</b> will strengthen in 1997 then slow in 1998. Pressures on capacity will ease. We will see slower growth in <b>house prices</b> and <b>import prices</b>. Underlying inflation will fall rapidly.  Risks are balanced:  Weaker world possible  Strong <b>fiscal stimulus</b> possible</p>	<p>Inflation at 2.3 per cent was above the band but less than forecast (2.7 per cent).  Weaker <b>economic activity</b> (Q3 GDP), at least in the housing sector.  Construction costs down  <b>Non-tradables</b> inflation low</p>
Jun 1997	<p>Inflation is expected to decline over the next 18 months due to the effect of the recent <b>TWI appreciation</b>. Then it will rise as the <b>fiscal stimulus</b> contributes to a positive output gap.  Uncertainties (MPS title):  Risks are evenly balanced.  Our estimate of the <b>sustainable growth rate</b> could be too high or too low.  Our (cautious) assumption of a long lag in <b>ER pass-through</b> could be wrong.  <b>Car prices</b>, as recorded by Statistics NZ might fall more than we expect.  <b>House price</b> trend could go up or down.</p>	<p>Endogenous policy were introduced.  Inflation was 2.0 per cent and less than expected.  <b>Construction costs</b> were less than expected.  International airfares fell.</p>
Dec 1997	<p>In the near-term inflation is expected to rise as the impact of the ER appreciation “no longer masks domestic price trends”.   After mid-1998 it will decline due to:  <b>Asia crisis</b> (and thus import prices)  Weak house prices and rents  Flatter <b>electricity</b> and local authority <b>rate</b> charges   Uncertainties:  <b>World economy</b> (the principal unknown)  Household spending  NZ’s productive capacity  <b>Non-tradables</b> inflation might be low  ER pass-through</p>	<p>Inflation is down to 1.5 per cent due to firm policy. Over the last year or so main influences have been:  House prices and rents,  Electricity,  Tertiary fees, and  Medical insurance (partly offset by falls in GP fees and hospital out-patient charges).  Unit labour costs have been OK.</p>
May 1998	<p>Near-term neutral. Weak (falling) <b>house prices</b>, removal of <b>car tariffs</b> and weak <b>world prices</b> (including <b>oil</b>) will be</p>	<p>Inflation 1.7 per cent.  <b>Fruit and vegetable</b> prices and tertiary fees were up.</p>

	<p>partly offset by flow-through from the <b>ER fall</b>.</p> <p>Medium-term: after falling, inflation rises to 1.8 per cent as output gap turns positive in latter half of 1999.</p> <p>Uncertainties are balanced. Downside risks include <b>policy reforms and structural change</b> (eg, petrol retailing, excise taxes, tariffs and the electricity sector), a <b>global downturn</b>, a fall in domestic <b>confidence</b> and a sharp <b>house price</b> fall. Upside risks include higher <b>import prices</b>, faster <b>world</b> or <b>NZ recovery</b>, <b>fiscal</b> policy, <b>AMP</b> demutualisation and the impact of monetary policy easing.</p>	<p>Petrol, international airfares and telephone toll charges were down.</p>
Aug 1998	<p>Near-term inflation will be subdued due to falls in <b>toll charges, petrol and car prices</b>.</p> <p>Medium-term: Inflation will remain between 1 and 2 per cent in 1999 and 2000. A <b>weak world</b> will keep import prices down, even though the <b>TWI</b> is down. The <b>negative output gap</b> will ensure <b>housing</b> stays weak.</p> <p>The main uncertainty is the <b>international outlook</b>, which we assume is moderately weak.</p>	<p>CPIX 1.7 per cent, ie under control. The only notable movement was the 20 per cent fall in <b>telephone toll charges</b>, which contributed 0.1 to the CPIX. Some discussion of weighted medians, trimmed means etc.</p>
Nov 1998	<p>Near-term outlook flat. There will be some <b>ER pass-through</b> but this will be offset by subdued <b>house prices</b> and by falling <b>electricity</b> prices due to new entrants.</p> <p>Medium-term outlook downward due to <b>weak world</b>, negative <b>output gap</b>, but could be partly offset by changed <b>road-user charges</b> (petrol tax) and <b>HNZ rents</b>.</p> <p>Risks: "There has rarely been a time of greater uncertainty." <b>World growth</b> (high or low) Stronger ER pass-through Weak current account and TWI</p>	<p>Inflation up slightly to 1.7 per cent due to rises in <b>fruit and vegetable</b> prices and in some <b>tradable</b> prices. These were partly offset by a reversal of the <b>toll charge</b> cuts and falls in <b>section prices, construction costs and real estate agent fees</b>.</p>
Mar 1999	<p>Expect inflation to be subdued (mainly below the target mid-point) throughout</p>	<p>CPIX 1.1 per cent in Dec 1998, the first time in the lower half of the</p>

	<p>the projection period.  Near-term factors:  Weak international <b>commodity prices</b>  <b>Petrol and electricity reforms</b> will create downward pressure  New <b>car prices</b> (import tariffs removed May 1998)  Medium-term:  Main factor is <b>excess capacity</b> which will persist  Also, <b>import prices</b> will be subdued.  Uncertainties: risks balanced:  Downside are that the <b>world</b> (Asia) continues to slow or that there is a sharp US correction.  Upside is that NZ <b>household spending</b> grows more strongly (despite debt).</p>	<p>band.  Recent <b>excess capacity</b> is reflected in <b>non-tradables prices</b> falling 0.4 per cent in the Dec quarter.  ER pass-through has been muted.</p>
May 1999	<p>Near-term:  Local authority <b>rates</b> to rise  <b>Electricity</b> to rise (by 11 per cent by one supplier)  <b>Petrol</b> to rise  <b>Food</b> to fall as drought ends  Housing lending is up so <b>housing items</b> might rise  Despite short-term increases we still expect <b>petrol</b> and <b>electricity</b> to fall due to reforms.  Mortgage interest rates are down so the CPI will be low or negative, but that is irrelevant for monetary policy.  Medium term:  We still see a balance of downward forces so stimulatory monetary conditions to end of period.  <u>Uncertainties</u>: balanced again  Downside risk = weak <b>trading partners</b>  Upside = <b>consumption</b> growth  A smaller risk is <b>spillover</b> from coming price rises.</p>	<p>CPIX = 1.0 per cent  Housing-related items fell further  <b>Petrol</b> down again  <b>Food</b> up, particularly <b>fruit and vegetables</b> due to drought  <b>International airfares</b> up (seasonally adjusted)</p>
Aug 1999	<p><u>Near-term</u>: Trend to stay around 1.5 per cent but one-offs will cause blip up. As in May, <b>rates, electricity and petrol</b>, plus <b>motor vehicle registration fees</b> too now.  <u>Medium-term</u>: Comfortable situation.  Inflation will rise to 2 per cent due to one-offs then fall back to 1.5 per cent.  Later in the period interest rates will need to rise to contain inflationary pressures.  Uncertainties:</p>	<p>CPIX = 1.2 per cent  Motor vehicle licensing fees up  Electricity up  Little pass-through from ER fall  BICs: “Businesses say that competition means they can’t raise prices.”  Rising <b>house price</b> inflation, 6 per centpa, is the only exception to the flat trend in persistent inflation.</p>

	As in May	
Nov 1999	<p>Short-term: We expect the rise in <b>oil prices</b> (and ER fall) to lead to rises for <b>petrol, airfares, taxi fares, petrochemical products and freight</b>.</p> <p>Medium-term: A more pronounced cycle than projected in August but still within 0 to 3. <b>Housing costs</b> will be the main contributor to rising inflation. <b>Spare capacity</b> initially, but less later.</p> <p>Uncertainties Upside risks are faster <b>world recovery</b> and <b>oil price</b> rises generating generalised inflation. Pricing intentions are up which suggests a risk regarding <b>price expectations</b> and generalised inflation – but we don't think this is a significant risk yet. Downside "risks" are that the US "<b>new paradigm</b>" applies here, ie high growth with low inflation, and a downturn in the US and/or Japan. Also noted: Y2K stock build-up makes some data difficult to interpret. Another <b>drought</b> is a possibility.</p>	<p>CPIX = 1.3 per cent Sept Q = 0.6 per cent</p> <p><b>Petrol</b> (particularly) up Rates up MV registration up Core inflation low but rising.</p>
Mar 2000	<p>Near-term: <b>Petrol and related prices</b> will rise in the short-term. Generalised inflation will bottom out in a few quarters then rise.</p> <p>Medium-term: Some tightening will be needed later in the projection period to reduce the risk of inflation rising.</p> <p><u>Risks</u> ("policy issues"): balanced Domestic momentum and <b>consumer behaviour</b> surging up. New paradigm in NZ Exchange rate up or down.</p>	<p>CPI = 1.3 (less than expected) Dec CPI would have been zero were it not for petrol. There were downside surprises from a wide range of items including <b>rates, food ...</b> <b>House price</b> inflation is down. <b>Import price</b> inflation is low and growth in <b>unit labour costs</b> has been low. There is material excess capacity.</p>
May 2000	<p>Near-term: Output gap is mildly positive (earlier than expected). An upward trend in inflation is becoming apparent with the strengthening economy.</p> <p>Medium-term: Capacity is expected to grow about in line with demand. The small positive output gap won't grow, and later will close (based on tightening endogenous conditions). Inflation will be 1.5 to 2.0</p>	<p>CPI = 1.7 per cent</p> <p>Petrol up Fruit and vegetables up Used cars up Tertiary fees up Construction costs up International airfares down</p>

	<p>per cent over the next few years.  <u>Uncertainties:</u> (risks are balanced)  Similar to March, ie global economy, domestic momentum, ER developments, response of inflation to output growth, and now also the degree of excess demand.</p>	
Aug 2000	<p>Near-term:  Inflation to rise further as <b>petrol</b> and <b>cigarette</b> price rises are not fully captured in CPI yet, eg <b>transport costs</b> are expected to increase.  Inflation above 3.0 per cent is possible.  Medium-term:  Inflation will be around 3 per cent from late 2000 to mid-2001 then quickly return to about 1.5 per cent.  Uncertainties:  Upside are a recovery of <b>confidence</b> (the fall might have been caused by concerns about the Employment Relations Act) and external sector responding strongly to the low exchange rate.  Downside are that the fall in confidence may be indicating/causing a weakening, with investment and employment falling.  Also noted: Magnitude and timing of ER passthrough is uncertain, and one-off price increases might cause generalised inflation. But this is unlikely. It would be more likely if there was significant excess demand.</p>	<p>CPI = 2.0 per cent June Q = 0.7 per cent  <b>Oil</b> up again  Cigarette excise tax  Import prices up</p>
Dec 2000	<p>Near-term: We expect 3.8 per cent for Dec 2000 and Mar 2001, due to the impacts of the low NZ\$ and high <b>oil price</b>, eg on <b>airfares, household appliances</b> and <b>taxi fares</b>. It is difficult to disentangle these increases from 1<sup>st</sup> round effects but we think there is little pressure on core inflation. And inflation should drop back quickly to the mid-point of the band.   Near-term risks:  More <b>oil price</b> hikes  Effects of <b>HNZ rent</b> cuts  Impact of very recent <b>PPI</b> rise  Rising <b>import prices</b>, or falling import prices if ER picks up. (But we expect limited spillover in our open, competitive</p>	<p>Inflation at 3.0 per cent, ie the top of the band due to:  <b>Oil</b> price up  Cigarette excise tax  Depreciation of the <b>exchange rate</b>. (Tradables rose at 2 per cent for the quarter and 4 per cent for the year. Non-tradables at 0.5 per cent and 2 per cent.)   But over the last several quarters the economy has been fluctuating close to its neutral cyclical position, so there has been no pressure on “core” inflation.</p>

	<p>economy.)</p> <p>Medium-term: Inflation will rise to 4 per cent then fall back quickly to about 1.5 per cent as special factors drop out. A bit further out there will be upward pressure as the output gap becomes more positive. Medium-term risks are skewed upward: <b>World economy</b> weaker than expected. <b>Exchange-rate</b> doesn't rise as projected. Economy responds as strongly to a low <b>exchange rate</b> as in the past. (We assume it doesn't.) <b>Wages and profit margins</b> rise in response to current spike.</p>	
<p>Mar 2001</p>	<p><u>Near-term</u>: Inflation will come back quickly from 4 per cent. <u>Medium-term</u> (expected) influences are: Available resources will roughly match growth in demand. Past ER depreciation implies high-ish inflation. Expected later ER rise should reduce inflationary pressure, but this would be diminished if profit margins rise. Overlaid special (one-off) factors include <b>petrol</b> and <b>cigarette price</b> rises that will soon fall out. <b>Housing NZ rent cuts</b> will be greater than previously thought, implying a very quick return to the target mid-point. Risks/Judgements: Spillover from <b>oil price</b> rise and ER spike. <b>Weaker world</b> likely (bad US news) Impact of <b>weaker world</b> on our export prices. Direct effects of assumed modest <b>exchange rate</b> rise.</p>	<p>CPI = 4.0 per cent due to: <b>Oil</b> price up Cigarette excise tax Depreciation of the <b>exchange rate</b>.</p> <p>However, the pass-through from the ER depreciation is seen as low as a result of profit margins being squeezed all along the chain. Exchange rate up 7.5 per cent since December MPS.</p>
<p>May 2001</p>	<p>Near-term: The recent spike is expected to dissipate quickly so that measured inflation returns to around 1.5 per cent. Medium-term: Persistent inflation returns to 1.5 per cent (from somewhat above 2 per cent) in 2 to 3 years. Risks/uncertainties: <b>World growth</b> not weak as assumed Weak world growth does not exert downward pressure on NZ prices. <b>Low ER</b> gives greater stimulus than so</p>	<p>CPI fell to 3.1 per cent as expected due to: HNZ rents down <b>Petrol</b> down (over quarter not 12m) Even without special factors, inflation is running at 2.8 per cent, mainly as a result of the earlier ER depreciation. <b>NZ export prices</b> have held up. Businesses are optimistic about their own activity though <b>confidence</b> is low.</p>

	far to exports and import-substitutes. <b>Wages</b> rise rapidly.	
Aug 2001	Near-term: Inflation should track back to the mid-point of the range Medium-term: We are assuming little spillover from the recent spike in inflation. As rates rise we should see inflation track back down. Risks/uncertainties: Economy is not at neutral but above full capacity. Assumption that <b>price expectations</b> are well anchored could prove wrong – an <b>electricity</b> shortage could contribute to another spike. <b>Weak world</b> might not cause our export prices to fall. <b>ER</b> might not gradually appreciate.	CPI=3.2 per cent due to: <b>Oil</b> prices up Cigarette prices up Airfares up
Nov 2001	Near-term: Headline inflation will continue to be driven mainly by large movements in a limited number of items.  Medium-term: Bringing inflation down will take some time. We now believe there has been a positive <b>output gap</b> since mid-2001 (as noted in last MPS). There are lingering effects of the past ER depreciation. An upswing in inward <b>migration</b> has been incorporated. Risks/uncertainties: Threatening <b>international environment</b> (OCR was cut 50bps after 11 September). Risks: Stronger NZ economy and <b>global recovery</b> . Inflation expectations rise.	CPI down to 2.4 per cent, and Sep Q = 0.6, due to: <b>Meat and milk</b> up Annual alcohol excise tax Petrol down Airfares down <b>HNZ rent cuts</b> (impact of -0.6 on the CPI in the March quarter) <b>World economy</b> much weaker. NZ <b>export prices</b> down but still high.
Mar 2002	Near-term: Special factors keep inflation at around 3 per cent over the March and June quarters. Medium-term: Further out inflation falls away but not as quickly as earlier MPSs suggested. Demand will rise and will affect wages and prices. Risks/uncertainties: mildly to upside. Inflation expectations become unanchored Size of <b>migration</b> inflow and its impact	CPI=1.8 per cent in 12m to Dec 2001 but is distorted by <b>HNZ rent</b> cuts. Excluding rents and petrol it would be about 3 per cent. A major cause over the year has been <b>food</b> price rises. In the latest quarter <b>food</b> and <b>airfares</b> have risen while <b>petrol</b> dropped.

	Global outlook	
May 2002	<p>Near-term: We expect June quarter rises for <b>petrol</b>, <b>insurance</b>, and <b>electricity</b>. We note QSBO pricing intentions are up.</p> <p>Medium-term: We expect demand and the ER to rise. A fall in inflation is not now expected until 2003.</p> <p>Risks/uncertainties: balanced World demand might rise Greater impact of <b>migration</b> on local demand Offset by: Fragility of <b>world demand</b> Faster <b>ER</b> appreciation And <b>price expectations</b> could go either way</p>	<p>CPI=2.6 per cent</p> <p>Upward influences: Construction costs Cigarette tax Petrol Health insurance Long <b>pass-through</b> from ER fall</p> <p>Downward influences: <b>Food</b> price fall (but less than expected) Clothing Household appliances Furnishings</p>