

# Navigating Monetary Policy Through the Unknown

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## Introduction

It is a privilege to be invited to speak here at the prestigious Peterson Institute. I have travelled from afar – the nation of New Zealand or Aotearoa. The latter is the name settled on by the descendants of the courageous Polynesian navigators who were the first explorers to arrive sometime between 1200 and 1300AD. These people are now known as New Zealand Māori.

Our ancestors travelled long distances across the South Pacific Ocean to make Aotearoa their home. People tell the story of Kupe, the Polynesian navigator who centuries ago set out from an island by the name of Hawaiki on a voyage and discovered Aotearoa.<sup>1</sup>

From the outset of this voyage, his starting point would have been approximate, the destination was well beyond the horizon, and the expected time of arrival unknown. During the voyage the performance of the vessels would be sorely tested and the information to navigate on continuously changing. The challenges of the voyage were unknowable. They had to sail smart. It can only be assumed there was a strong collective belief in the existence of the destination among the crew and passengers, and equal faith in their navigator.<sup>2</sup>

The premise of the navigator's challenge resonates with the everyday challenges that leaders confront, and it is pertinent to guiding monetary policy through recent times of both calm – the great moderation – and storm – the recent years of COVID-19 induced radical uncertainty.

The voyage to New Zealand is believed to have been over 2,500 kilometres (around 1,600 miles) and to have taken several weeks. But Kupe had a sturdy waka (vessel) and a fine crew – all fit for the task. They had knowledge of the ocean, weather and navigation, accumulated over centuries and passed on through generations. They were able to update their navigation as conditions changed. But most importantly, they had a clear goal in mind – the islands of Aotearoa.

This week I have the pleasure of attending the IMF and World Bank Annual Meetings, where policymakers are discussing how they are navigating their own waters. It's an incredibly valuable opportunity to share notes with others from around the world, to talk about the challenges we have in common, and the ones we don't share but can learn from.

There's never a shortage of emerging issues and perennial challenges to talk about. New means of assessing our current economic position, better means of forecasting ahead, improved strategies for managing through uncertainty, and shared experiences of communicating with confidence during uncertain and unpleasant times – keeping focused on our goals.

I take great comfort from what I see and hear.

As monetary policy decision makers we have retained clear goals – primarily focused on achieving and maintaining low and stable inflation. This helped central banks guide monetary policy through a period of extreme conditions. We retained confidence in 'visualising the island' – or our goal of restoring low and stable inflation.

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<sup>1</sup> In Māori oral history and storytelling 'Hawaiki' refers to the original home of the first inhabitants of Aotearoa.

<sup>2</sup> Like all good stories told over centuries, accounts differ. For example, by some accounts Kupe had initially set out to slay an octopus Te Wheke-o-Muturangi, who had been stealing bait from the fishermen's lines. By other accounts, Kupe had set out to discover new land, perhaps having observed the Pipiwharauoa – migratory birds that would fly off into the ocean horizon every year – or the whales that would journey south and then return. We also know that Polynesian navigators had ways to place themselves within the expanse of the ocean. With no GPS, they used the stars, they looked for the presence of certain fish and bird species, and they observed patterns in the waves and reflections on the clouds. But, far away from landmarks and reefs, no one method could tell them exactly where they were. Crowe (2018) discusses the voyaging achievements of Māori and their Polynesian ancestors.

Retaining this confidence is critical given the significant time between making our policy decision and seeing its full effect on inflation. Our inflation goal is always 1 to 2 years ahead, that is, over the horizon. At the Reserve Bank of New Zealand, this future focus is coded into our Monetary Policy Remit, which tasks us with targeting *future* inflation over the *medium term*.

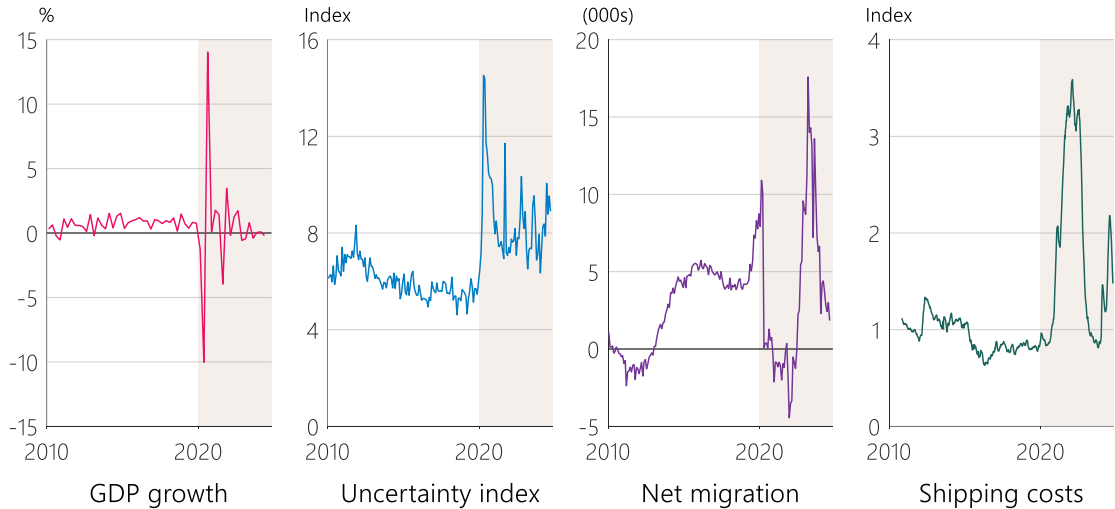
Globally, we have been able to rely on robust monetary policy tools and decision-making frameworks, built upon years of research and experience, and have many bright minds to advise us. Advanced economy central banks are typically strong and credible institutions, with the tools and independence to get on with the navigation task at hand.

Our clarity of purpose, tools, and capabilities make the task simple, but never easy. The institutions, the frameworks, the knowledge and the commitment to a low inflation goal are valuable *because* the task is hard. Let me talk about some of these challenges.

**Heightened volatility since the pandemic**

Central banks dedicate significant resources to understanding the present and divining the future, publishing forecasts and discussions of the economic outlook. But this all happens in the context of widespread uncertainty. Over the past few years central banks have faced radical uncertainty. We see some of this volatility in the data (figure 1), our own forecasting performance<sup>3</sup>, our communication challenges, ebbs and flows in inflation expectations, and price setting.

**Figure 1: Illustration of shocks and volatility in data for New Zealand**



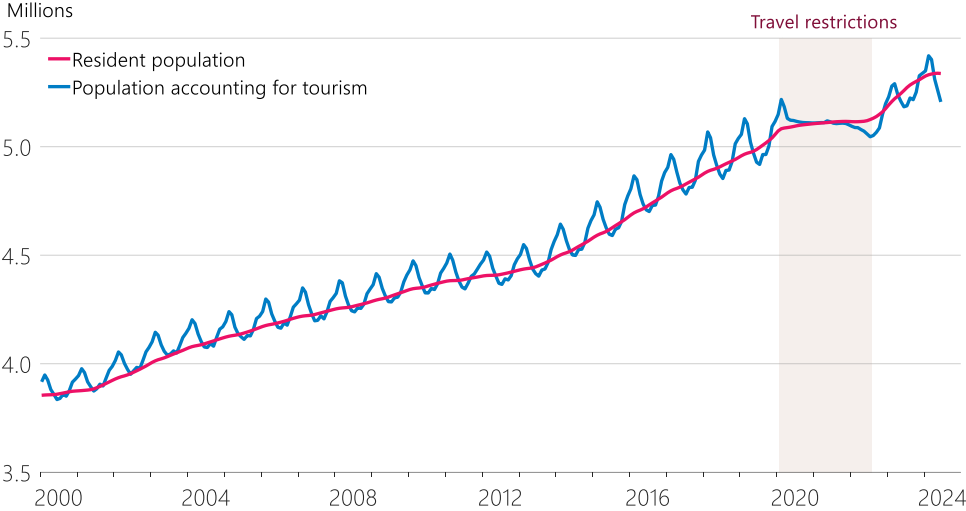
Source: Stats NZ, Sense Partners, Shanghai Shipping Exchange.  
 Note: 'GDP growth' is quarterly real GDP growth (seasonally adjusted). 'Uncertainty Index' is the New Zealand Economic Uncertainty index from Sense Partners. 'Net migration' is monthly net immigration (seasonally adjusted). 'Shipping costs' is the Shanghai Shipping Exchange China Containerized Freight Index (rebased). Shaded areas denote 2020 to today.

Central banks have faced significant challenges assessing the state of their economies in real time. What is our starting point? Like Kupe, central bankers have had to piece together a view of their current location and path ahead with partial and imperfect information.

<sup>3</sup> See Bohm and Sing (2022).

Statisticians have faced real measurement challenges since the pandemic. Historical economic relationships have broken down, and seasonal patterns have shifted and reverted as spending and mobility patterns changed (figure 2). At the most basic level, in-person surveys were hampered by COVID-19 restrictions. In New Zealand, data has been subject to large revisions and at times we could not take our official measures of household spending at face value.<sup>4</sup>

**Figure 2: Seasonal fluctuations in New Zealand's population due to tourism**



Source: Stats NZ, RBNZ estimates.

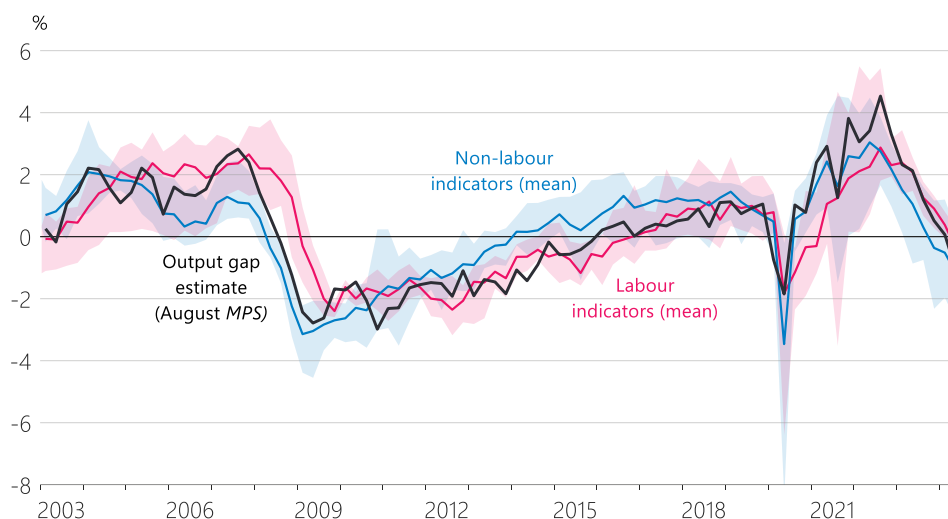
Note: Population accounting for tourism is resident population plus the number of visitors temporarily in New Zealand minus the number of New Zealand residents temporarily abroad.

Every data source has its strengths and weaknesses, so we cast a wide net and make use of as much relevant information as possible. We use suites of indicators, with each one telling a slightly different story (figure 3). To hark back to Kupe, Polynesian navigators observed waves, birds, clouds, changing flotsam and jetsam, and the stars – among other high frequency indicators – to constantly update their navigating decisions.

Another significant challenge is that official data are often released with a considerable lag, so we draw heavily on timelier or higher-frequency information.<sup>5</sup> This includes information from surveys of households and businesses, traffic information, energy consumption, tax data, and financial market data, among other sources. This information is timelier, but it has its own shortcomings: it tends to be noisier and isn't always rigorously constructed.

<sup>4</sup> See [Gross domestic product: March 2024 quarter | Stats NZ](#).  
<sup>5</sup> Significant work is dedicated to testing indicators (e.g., Fitchett and Robinson (2021) and Ball et al. (2020)), combining indicators quantitatively (e.g., Karagedikli and Özbilgin (2019) and Richardson et al. (2019)) and constructing suites of indicators (e.g., Robinson and Jacob (2019), Ball (2024), and Castaing et al. (2024)).

**Figure 3: Our suite of indicators for estimating the output gap**



Source: New Zealand Institute of Economic Research, Ministry of Business, Innovation and Employment, Stats NZ, RBNZ estimates.  
Note: Figure is based on data available at the time of our August 2024 *Monetary Policy Statement*. The output gap indicators based on information from labour market surveys are shown separately from the other indicators. For each group of indicators, the shaded area shows the range of values, and the line shows the mean value. Other considerations also influence our estimate of the output gap.

Measurement is not the only challenge. We must also attempt to separate out what is short-run volatility and what reflects a genuine signal about the underlying state of the economy. These judgements are inherently difficult, and high levels of volatility have made them more so, and more consequential too. As Polynesian navigators understand, following an ocean-going bird can lead you to land, but it is best to follow them in the evening when they are heading home.

Once we've taken a view on the current state of the economy – our starting point – we then consider how the economy will evolve and what this will mean for things we care about, like output, employment, and inflation. What is a reasonable model for how our economy will operate?

New Zealand is a small open economy, of around five million people. We are buffeted by global economic swings and round-about – travel, exports, capital flows, trade relationships, climate conditions, and global investor sentiment. This is why we have an operationally independent central bank, a free-floating exchange rate, and a clear monetary policy remit. Decisions by foreign central banks are important to our decision making, but not sufficient for our monetary policy purposes.

The extreme events we've experienced in recent years – especially following the onset of the COVID-19 pandemic – have fundamentally challenged many of the economic relationships we rely on.

Globally, government policy responses to the initial COVID-19 disruptions were necessarily swift, leaving little time to learn from gradual policy changes. The suite of government policy interventions was unprecedented in modern economic times – health, mobility, trade, fiscal policies – as was the impact on economic activity and the role of central banks.

Understanding the macroeconomic effects of novel fiscal policy tools – such as the wage subsidy in New Zealand – presented real challenges. I cannot think of a time in modern economic history when independently, yet simultaneously, so many governments provided countercyclical fiscal support via direct income to their citizens.

New Zealand's 'Phillips curve' – the relationship between capacity pressures and inflation – appears to have steepened since the beginning of the COVID-19 pandemic.<sup>6</sup> Likewise, investors' and consumers' preferences changed significantly, as mobility restrictions and supply chain squeezes waxed and waned.

And then there were the changing preferences for, and performances of, our monetary policy instruments. At the time of the COVID-19 outbreak many central banks were already sailing in shallow waters, near the 'Effective Lower Bound' for their official interest rates.

Central banks had to quickly learn how best to use a wider range of policy instruments together as conditions in the economy evolved.<sup>7</sup> Modern 'quantitative' monetary instruments were comparatively new for many central banks and in the case of New Zealand had not been used before. What will the impacts on output, employment and inflation be from the use of quantitative rather than price-based instruments? Communications became very complicated.

Finally, while we could observe in real time the growing threat of COVID-19, we had no way to predict what events or 'shocks' would happen in the future. And, as we learnt of 'shocks' we had to make assumptions around how big they would be, how they would impact the economy and inflation – is it a demand or supply shock, or a bit of both – and how long their effects would be felt – 'team transitory' versus 'team persistent'.

Policymakers have had to grapple with many large shocks, including national lockdowns, travel restrictions, significant armed conflict between nations, supply-chain breakdowns, energy price spikes, and the impact of extreme climate events on food prices. It has been a long time since we've experienced calm sailing conditions.

## How should policymakers deal with uncertainty?

Navigating monetary policy, with a 1 to 2-year lag between policy action and ultimate outcome, is akin to ocean circumnavigation. Ocean-going sailors do not need to 'tack' when other boats do. They are in their own vessel pursuing their own ultimate destination.

Further, navigators can't change the weather, but they can change their course and alter their pace as conditions change. However, given the time and distance being travelled, they must also retain the confidence of their crew and passengers over the long term. Mutiny is not a sign of success.

As central bankers, we can improve the way we measure and interpret information. We can research the economy and update our models of how it works. We can think ahead to future shocks, modelling them and gaming them out, and we can learn from past ones. But this can only take us a small way to reducing the uncertainty we face.

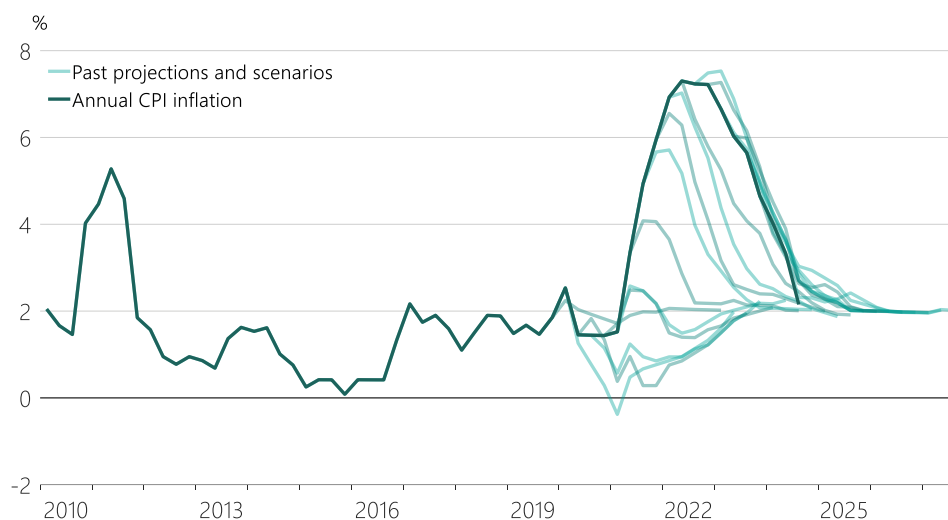
We therefore accept uncertainty, and we navigate through it. We chart a course, and then look for signs that tell us whether we need to deviate and chart a new one. When we experience a shock, it doesn't change the goal, the island doesn't move, it just changes how we will get there (figure 4). We focus on the goal over the horizon that matters to us.

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<sup>6</sup> See Alanya-Beltran et al. (2024).

<sup>7</sup> There have been numerous reviews of central banks' policy responses over recent years. Our own [Review and Assessment of the Formulation and Implementation of Monetary Policy \(RAFIMP\)](#) provides nine lessons from the Reserve Bank of New Zealand's experience between 2017 and 2022.

**Figure 4: Revisions to our inflation outlook since 2020**



Source: Stats NZ, RBNZ estimates.

Note: Past projections and scenarios are from our published *Monetary Policy Statements*. Between the May 2020 and February 2021 *Monetary Policy Statements* these outlooks were 'baseline' scenarios.

Of course there are some basic safety strategies. In stormy weather it's best to avoid sailing too close to the shore or reef. When setting monetary policy, we think not only about the most likely scenario for the economy (a central projection) but also the risks around it.

Some outcomes are so bad that we must steer forcefully away from them if they become probable. We *really* don't want to experience a long and persistent downturn, with monetary policy stuck at the effective lower bound, or an inflationary spiral. First, stay afloat.

Of course, there are times when policymakers can afford to progress with circumspection. When we're uncertain about the performance of our policy tools, gradual adjustments can sometimes keep us closer to course.<sup>8</sup>

Risk management has featured heavily in our Monetary Policy Committee's (MPC) decision making. In 2020 when COVID-19 was bearing down on the economy, the MPC was humble in its ability to gain sufficient conviction in any one economic scenario playing out.

The Committee did however consider the worst-case scenario to avoid was one of doing 'too little too late' in response to the global shutdown. The reasonable threat of a deep and sustained recession, and a dysfunctional financial system, led the Committee – and broader Reserve Bank decision makers – to take swift and dramatic action with our policy instruments.

We did everything possible to stay in deep waters, stay afloat, and remain aware of the opportunities ahead to plot a new course. Our response was a 'least regrets' approach.

On a personal note, I often reflect to early 2020 and ask myself the question: If someone offered me a peak of 7.3 percent inflation and unemployment around 3 percent in two years' time – would I have accepted it? Yes!

That sounded like nirvana compared to what the world was leaning into at the time. This was the eventual outcome in New Zealand – with many lessons learnt – and new shocks having been faced

<sup>8</sup> These approaches to navigating uncertainty are reflected in the policy literature through ideas such as robust control (e.g., Hansen and Sargent (2008)) and Brainard conservatism (Brainard, 1967).

on the voyage, such as Russia's invasion of Ukraine, energy price spikes, and weather-related food price shocks.

By early-2022 the navigational signs had changed. The risk of a deep and sustained recession had receded, and persistent inflation had begun to permeate the economy. Inflation expectations had risen significantly. The biggest risk to our objectives was now that of high inflation becoming entrenched, and the economic and social costs that would be required to subsequently bring it back down. We soon reversed our quantitative easing programme.

One of our key navigational stars – the estimated neutral interest rate – was a long way north of where we sat, so we again moved swiftly to get back on course. Again, the MPC steered policy forcefully to avoid the most serious risk – the worst-case – by tightening our policy setting to return inflation to target. This meant risking a shallow recession in the short-term to avoid the risk of deeply entrenched inflation, and a much deeper recession in the long term.

A monetary policy 'mutiny' needed to be headed off, with inflation expectations rising and price setting behaviour changing. I am pleased we are now in relatively calmer waters and the crew and passengers are believing again in low and stable inflation.

## **Communicating in an uncertain environment**

Central bankers are given great responsibility, and to earn the trust to lead we need to display perspective, empathy and courage. We cannot rest on our legal remit alone or over-rely on the credibility earned over recent decades of inflation targeting. When it comes to our decisions, we must communicate them clearly and be humble and transparent about the uncertainties we face.

A key part of monetary policy communication is often published central projections that summarise and communicate changes in our views on the economic outlook from meeting to meeting. Because central projections offer a simple narrative they draw a lot of focus by financial audiences.

On their own, however, a central projection can create an unhelpful sense of accuracy, which does a poor job of communicating uncertainty and contingency. As a navigator, imagine drawing a single line on your ocean map to chart your voyage, knowing only limited things about your location, the weather and currents ahead, and the performance of your boat. It is blindingly obvious that this line is very unlikely to be the eventual course followed for the rest of the journey. This chart is going to be updated on a frequent basis.

Central banks have adopted quantitative tools to help provide a sense of the uncertainty around the central projection (e.g., alternative scenarios and fan charts) and discuss 'what ifs' in terms of outlining a reaction function to news. But there is no silver bullet to outline the real uncertainty faced.

Scenarios support a rich discussion of key risks and their policy implications. However, the choice of which scenarios to publish is often interpreted as a policy signal, and it's a signal that is challenging to fine-tune and balance. Likewise, the sheer width of most fan charts hammers home the idea of uncertainty, but they can provide their own spurious sense of precision. And once you've seen one, you've seen them all.



Qualitative discussion – simply talking about uncertainty – is just as important. You can see the theme through my talk – central bankers must be trusted leaders.

Both navigators and leaders need to tell a story that people can understand. They need to show perspective – we are not losing sight of our goal. They need to show empathy – seeing things through the eyes of many and speaking in plain language. And leaders need to display courage – central bankers need to make the necessary calls even in times of radical uncertainty and discomfort.

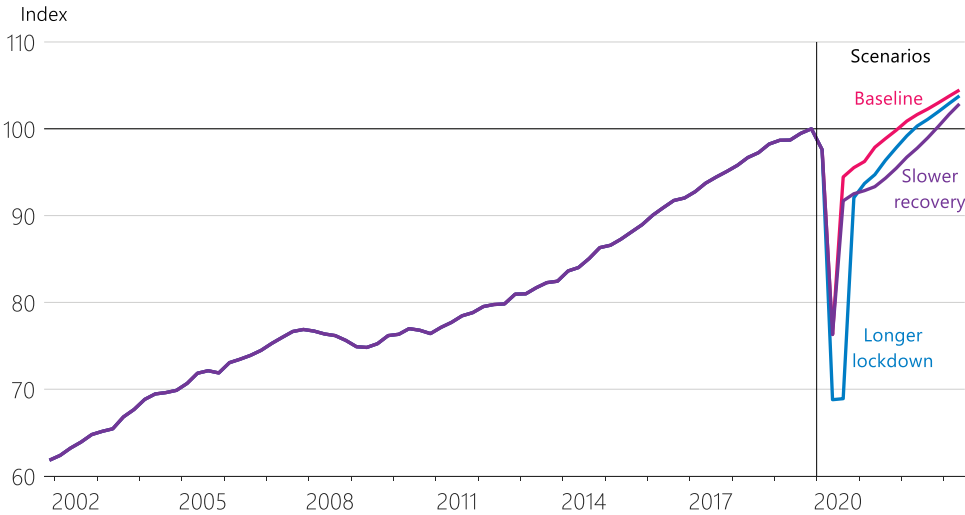
This storytelling is an important feature of the MPC’s *Record of Meeting* which provides the public with a window into the MPC’s discussions. All navigators talk to their crew and passengers on a regular basis, updating their position, their outlook, and their next preferred sailing course.

I will note, however, that few people appear to read our official documents (our *Monetary Policy Statements* including our *Record of Meeting*) first hand. And I am surprised how few economic experts refer to or query the *Record of Meeting*. This is not a criticism of the public or economic commentators, it is a continual communications challenge for us as a central bank.

We need many ways to reach multiple audiences on a continuous basis. Otherwise, our story is re-told in sound bites and through others’ filters.

The best way of communicating policy will no doubt depend on the circumstances. For example, at the time of our May 2020 *Monetary Policy Statement*, uncertainty was so extreme that we switched to publishing three scenarios instead of a central projection (figure 5). It was a year before we used the term ‘projection’ again.

**Figure 5: Scenarios for New Zealand GDP from the May 2020 Monetary Policy Statement (2019Q4 = 100)**



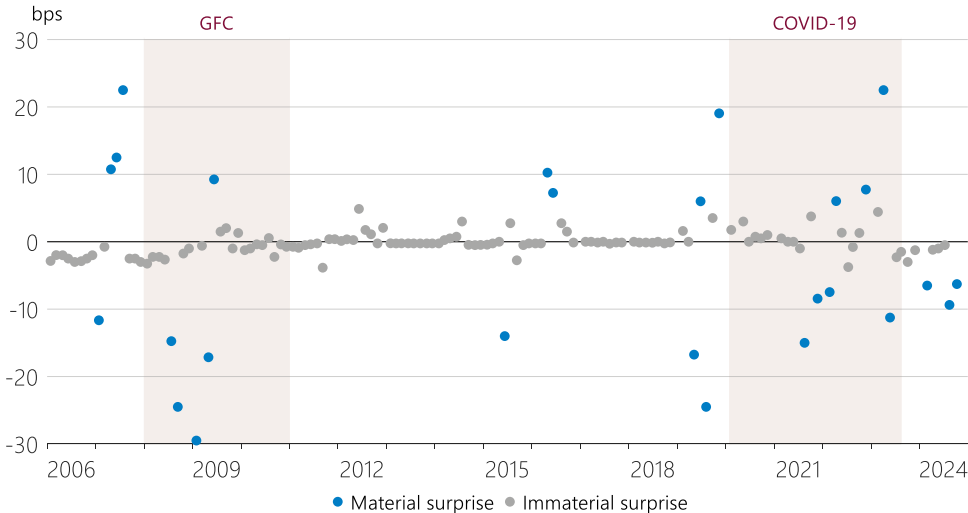
Source: Stats NZ, RBNZ estimates.

We deliberately told our citizens that we were experiencing an unprecedented storm, and we would be sitting it out in high water, far from the reef, but remaining focused on the destination. In this regard, uncertainty shouldn’t be equated with helplessness. We are guided by robust frameworks, and we can adapt course as new information comes to light.

It is also an iterative process. You often see this in central bank communications phrases like ‘meeting by meeting’ or ‘data dependent’.<sup>9</sup> Signalling our ‘reaction functions’ can also help interest rates and exchange rates to adjust appropriately as the facts change.

It is somewhat pleasing that for the most part our interest rate decisions come as little surprise to financial market observers during calm periods – with surprise moves in the policy rate appearing mostly during storms (figure 6).<sup>10</sup>

**Figure 6: Estimated policy surprises for Official Cash Rate decisions**



Source: RBNZ estimates.  
 Note: Chart is based on Grant and Poskitt (2024). For the purposes of this chart, a material surprise is one that exceeds  $\pm 5$  basis points. The surprise measure is based on Overnight Index Swap pricing. The indicated GFC period covers two technical recessions in New Zealand and the period in between. The indicated COVID-19 period reflects the duration of significant COVID-19-related public health restrictions in New Zealand.

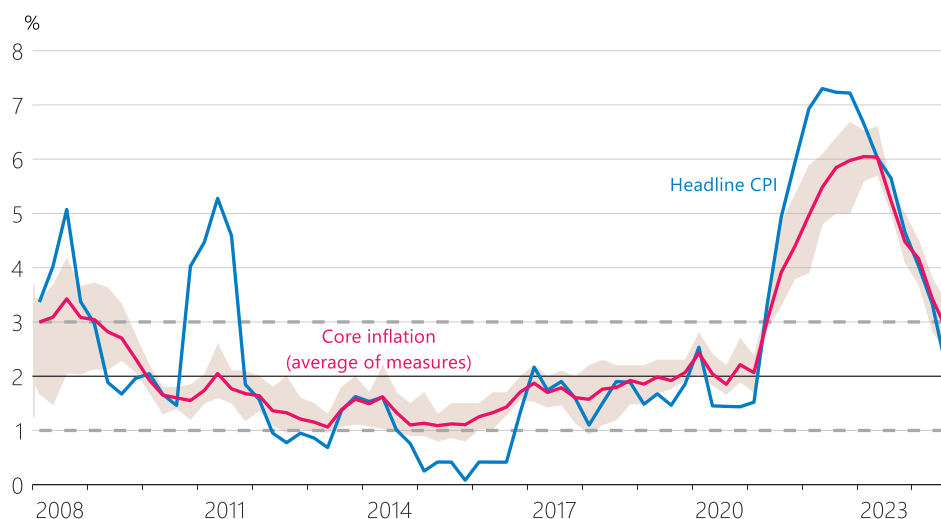
**Price-setting in a changing economic environment**

“He ao! He ao! He ao tea roa!”: A cloud! A cloud! A long white cloud! By some accounts this is what Kuramārōtini, Kupe’s wife, announced upon spotting a large cloud. They both knew that the cloud meant land. In fact, Aotearoa – the Māori language name for New Zealand – is usually translated as the “land of the long white cloud”.

Our ‘monetary policy island’ is again in sight. In New Zealand, Aotearoa, consumer price inflation is now at 2.2 percent, within our 1–3 percent target range (figure 7). That’s something to celebrate. But I say *in sight*. We have been able to ease monetary policy, but it’s still at a level we think is contractionary. It’s still working to lean against the last of the inflationary pressures that have lingered on from the recent burst in inflation.

<sup>9</sup> Stronger policy signals – such as forward guidance – have a place, but they should be used with caution. Our recent [Review and Assessment of the Formulation and Implementation of Monetary Policy](#) recommended that the Reserve Bank should be cautious in providing forward guidance in uncertain times.  
<sup>10</sup> See Grant and Poskitt (2024).

**Figure 7: Headline and core measures of annual inflation**



Source: Stats NZ, RBNZ.

Note: The dashed lines represent the MPC's 1 to 3 percent target range for inflation over the medium term. The shaded area shows the range of core inflation measures. The core inflation measures include the sectoral factor model, factor model, trimmed mean (30%), weighted median, and CPI excluding food and energy.

A key question now for policymakers globally is how long it will take for these lingering inflationary pressures to dissipate. The sooner this happens, the sooner we will be able to truly claim to have put the inflationary pressure of the COVID-19 period behind us.

The answer to this question depends heavily on how firms make their price-setting decisions, and how persistent that process is. Firms tend to set their prices based on a broad range of price signals in the domestic and global economy – the prices of competing and complementary products, wage rates and the broader costs of labour and capital, transport, exchange rates and so on.

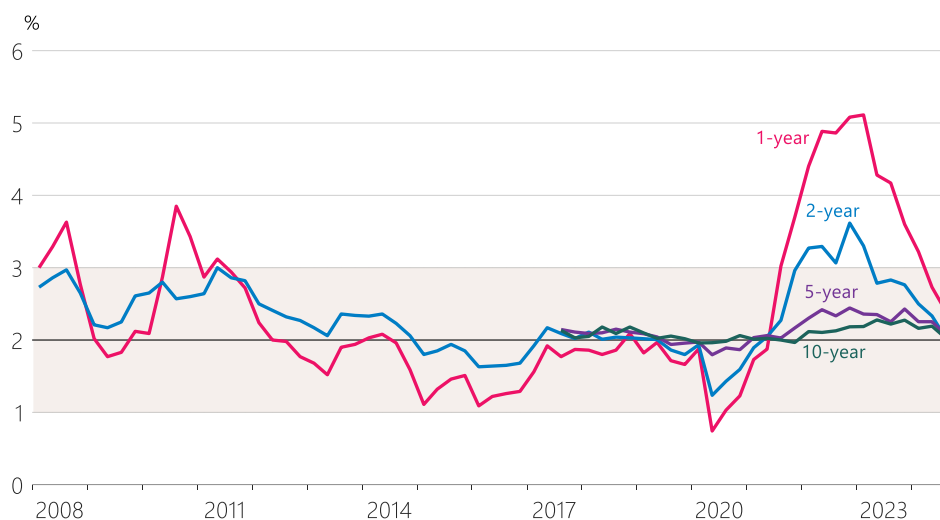
Because these prices and costs all move with general inflation, firms' pricing decisions will reflect recent actual and expected inflation. The same goes for wages. These interdependent price changes can see actual inflation persist even if demand and supply in an economy are broadly balanced.

We see this in New Zealand in persistence in domestic and services inflation, despite significant spare capacity now emerging in the economy. This isn't surprising given the recency of high inflation.

### Has price-setting behaviour changed?

We are alert to changes in price setting processes. In New Zealand, firms' inflation expectations have returned towards our 2 percent target midpoint, after having risen materially (figure 8). Household inflation expectations have also declined. This is encouraging. However, surveyed inflation expectations alone don't explain the persistence in inflation we've observed over the past year.

**Figure 8: Inflation expectations**



Source: RBNZ *Survey of Expectations (Business)*.

Note: The shaded area represents the MPC's 1 to 3 percent target range for annual CPI inflation over the medium term.

We've found that accounting for *observed* inflation in our models helps us to better explain inflation. This is likely to reflect – among other things – that following a period of high (or low) inflation, some prices may need to adjust by more (or less) to restore relative prices to equilibrium. Contracts and government policies that index charges to inflation also contribute to this persistence.

Reflecting this, we often model this part of the price-setting process using a moving average of past inflation, with more weight on the recent past than on the distant past. Our approach implied that the recent bout of high inflation would be embedded in firms' price-setting decisions for years to come.

But is this a good assumption in all conditions?

At the time of our recent *August Monetary Policy Statement*, we altered our price-setting assumptions so that they adapt more quickly to a low inflation environment. This is a judgement that we have had to make with perspective, empathy and courage. The outcome was material to our policy decision in August, giving us more confidence to reduce our policy interest rate.

Other changes in pricing behaviour are equally challenging to model. For example, it's possible that firms' price-setting behaviour has been 'scarred' by the recent period of high inflation.

But it could also normalise more quickly. There is evidence to suggest that people (businesses and households) pay more attention to the state of the economy when inflation is high and volatile. By contrast, when inflation is low and stable, people have less to gain from understanding the nuances of the inflation outlook as they often have better things to do. This is coined 'rational inattention'.<sup>11</sup> Firms also adjust prices more frequently when inflation is high as it becomes more costly not to keep up.<sup>12</sup> Alan Blinder famously remarked that price stability is when "ordinary people in their ordinary course of business are not thinking and worrying about inflation".<sup>13</sup>

<sup>11</sup> We observe 'rational inattention' in survey data of New Zealand households (Bayarmagnai, 2023).

<sup>12</sup> This dynamic is influenced by rigidities arising from menu costs and strategic complementarities in firms' pricing decisions.

<sup>13</sup> Blinder (1995).

These dynamics give us reason to assume that price-setting behaviour may normalise quickly as we return to a low inflation environment. Rationally, attention will go elsewhere.

### **Implications for the MPC's monetary policy strategy**

In New Zealand, uncertainties about firms' price-setting behaviour and the persistence of inflation continue to influence the MPC's thinking. However, these uncertainties are now set against a lower central outlook for inflation. Inflation has declined back to within our target band, as have inflation expectations.

We are in a situation where we can credibly provide the perspective of an economy returning to low and stable inflation, interest rates becoming less restrictive, and economic activity being revitalised. But that is just the most recent navigational plot on the ocean chart.

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