ANZ Research

NZ Insight: Finding neutral

20 August 2021

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Finding neutral

Key points

- The recent COVID outbreak in New Zealand is a blow to morale after a second quarter filled with relentlessly positive data surprises. But assuming that we locked down early and aggressively enough (here's hoping), the question will soon arise once more: how high will interest rates go once the RBNZ does start hiking?
- Fundamentally, the longer-term outlook for all interest rates in the economy depends on the neutral interest rate – ie the level of the OCR where monetary policy is neither contractionary nor stimulatory.
- Neutral interest rates have fallen across advanced economies for decades, and when we look into the global and domestic drivers of the neutral interest rate in New Zealand, it's hard to see any signs that this secular decline in neutral interest rates will stop or reverse course.
- The RBNZ currently estimates that the neutral interest rate is around 2%, and (COVID-permitting) is forecasting OCR hikes to around that level by 2024. However, we think the neutral interest rate will continue to fall in coming years, and as such, we don't see the OCR being increased beyond 1.5% in the current hiking cycle.

Introduction

Until COVID-19 rudely interrupted, the economy was booming, and after cutting the Official Cash Rate (OCR) to a record low of 0.25% in March 2020, the Reserve Bank has now reversed some of that stimulus by ending asset purchases. We expect the next step will be lifting the OCR in steady steps, assuming we deal successfully with this outbreak and see economic activity rebound from lockdown – something we discuss in a recent insight. That implies we'll soon be asking once more, how high could the OCR go?

To answer this question, we need to think about what level of the OCR would theoretically be consistent with keeping employment at its maximum sustainable level, and inflation at 2% over the medium term (if we could somehow stop business cycles from happening). This is a concept that economists call the neutral interest rate – the level of the OCR at which monetary policy is neither contractionary nor expansionary (or in other words, when actual output is equal to the potential output of the economy).

Loosely speaking, this neutral rate is determined by the potential growth rate of the economy, plus longer-term inflation expectations. In simple terms, when the economy isn't doing so well, the RBNZ cuts the OCR to a rate that is below the neutral OCR (although in COVID times they've done more than just cut the OCR – see Box A). This means that monetary policy is expansionary, and should generate stronger inflation and employment outcomes. The reverse holds when the RBNZ hikes the OCR above neutral. The level of the neutral OCR can also move over time – so even if the actual OCR is unchanged, if the neutral OCR falls, then monetary policy is actually less stimulatory than before.

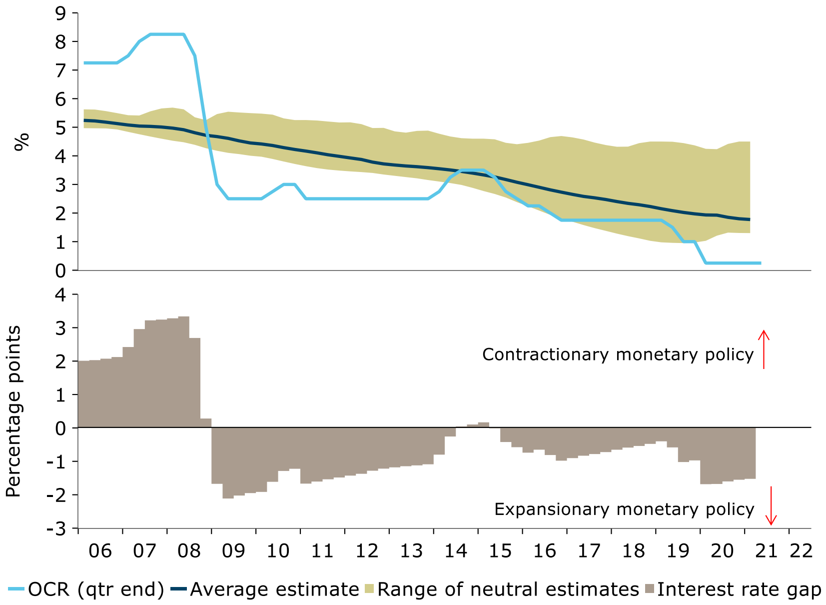
Of course, in practice you could also have confidence impacts related to the *change* in interest rates, particularly around turning points, but those are unobservable and likely small.

The neutral interest rate is one of those annoying concepts in monetary policy in that it is unobservable, moves over time, and yet is essential for setting interest rates appropriately. In fact, research (summarised here) has shown that it is just as important to adjust the OCR in response to changes in the neutral interest rate as it is to respond to actual inflation outturns. So when the RBNZ is working out how much stimulus to provide to (or withdraw from) the economy, they need to estimate where the current neutral OCR is, and where it's heading, so that they can tweak policy settings appropriately.

The RBNZ uses a range of models to do this, and helpfully publish the average neutral estimate with each MPS (figure 1). In the latest quarterly update this week, the RBNZ's models indicated that the neutral rate has fallen to 1.8% (the Monetary Policy Committee's view is that neutral is currently around 2%). It is immediately obvious that point estimates are very uncertain – hence the shaded area shows the range of RBNZ estimates, which doesn't even factor in uncertainty bands around those estimates!

This neutral rate estimate is very important, as it essentially determines the endpoint for the RBNZ's OCR projection, and by extension, the endpoint of interest rates across the entire economy. So the RBNZ's view that the neutral OCR is around 2% means that they expect to lift the OCR to this level by the end of the hiking cycle. On this metric, interest rates are only expected to return to slightly above pre-COVID levels (which were already very low).

Figure 1. RBNZ neutral OCR estimates



Source: RBNZ, Macrobond, ANZ Research

In the bottom panel of figure 1 we plot the interest rate 'gap', ie the difference between the average neutral interest rate estimate, and the actual OCR. We can see that before the 2008 recession, this gap was very positive because the RBNZ was trying to bring strong inflation under control by raising interest rates to a very contractionary level. From 2017 to 2019, the interest rate gap narrowed quite quickly, showing that even though the OCR was unchanged, monetary policy was becoming less stimulatory because the neutral level of the OCR had likely declined.

Box A. Measuring monetary stimulus during COVID

One thing we've brushed over so far is the question of how you actually measure the level of monetary stimulus that the RBNZ is providing. In normal times, that's relatively simple – you can simply look at figure 1, because the OCR represents the total monetary policy package. But during COVID, the RBNZ was only able to drop the OCR from 1.00% to 0.25% on 16 March 2020, for operational reasons. And at the time, 75bps of stimulus seemed nowhere near enough to provide the support the economy would need to get through the crisis in one piece (with the luxury of hindsight, COVID has turned out to be primarily a supply shock, to which monetary policy is ill-equipped to respond).

So on 23 March 2020, the RBNZ announced their LSAP programme, which would start two days later, purchasing government bonds in the secondary market in a bid to put downwards pressure on long-term interest rates. The Funding for Lending programme was added in November 2020, with the hope that that would "reduce banks' funding costs and lower interest rates". This all means that solely looking at the level of the OCR will give you a very inaccurate read on the amount of stimulus being provided by the RBNZ.

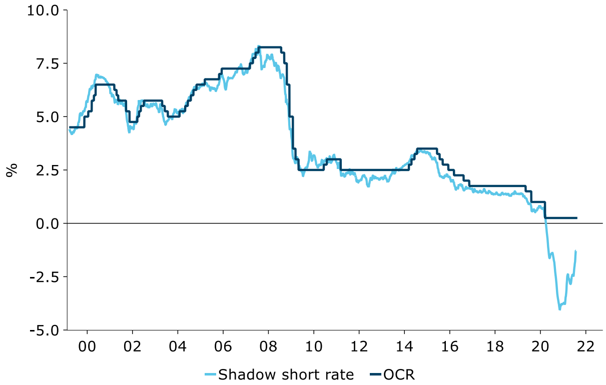
Initially, the RBNZ published an unconstrained OCR, which as they explain "demonstrates the broad level [of] stimulus needed to achieve the Reserve Bank's monetary policy objectives". But they never actually explained what went into that sausage, from the May 2020 MPS until the unconstrained OCR was discontinued a year later.

Another approach is to estimate something called a 'shadow short rate', which attempts to measure the overall stance of monetary policy, even when the policy rate is constrained at some level (in New Zealand's case, 0.25%). As Krippner (2020) outlines, the intuition behind a shadow short rate comes from the option to hold cash. When interest rates get low enough (be that zero or slightly negative), holding cash becomes a more appealing option, which essentially puts a floor on how low interest rates can go (since at some point you'll just hold cash for 0% return, rather than put your money in the bank for a negative return). This means that during periods of unconventional monetary policy, the yield curve gets flatter, since short-term interest rates can't fall very far, while quantitative easing puts downwards pressure on longer-term rates.

The shadow short rate (SSR) estimates what the yield curve would look like if there were no option to hold cash – ie nothing stopping short-term interest rates becoming significantly negative. As Krippner (2020) notes, "the SSR is then the shortest-maturity interest rate on the shadow yield curve, just like the [policy rate] is the shortest-maturity interest rate on the actual yield curve". In normal times, the SSR will follow the actual OCR very closely (figure A.1). But, when the OCR is at the lower bound, as in 2020, the SSR will deviate significantly, since it captures the influence of the entire suite of monetary policy tools on the yield curve, even when the OCR is constrained.

The SSR in New Zealand went very negative in 2020 as the LSAP ramped up (figure A.1). Thinking back to the interest rate gap in figure 1, that implies a much more stimulatory stance of monetary policy than the OCR alone shows, and highlights the large impact that the LSAP had in easing monetary conditions. Of course, the SSR is just one model, and Krippner shows it is subject to substantial revisions, depending on assumptions made. But in the absence of alternatives, it's a useful gauge of monetary conditions.

Figure A.1. Shadow short rate and OCR



Source: RBNZ, ljkmfa.com, Macrobond

So if the OCR isn't a fully representative measure of monetary stimulus right now, why are we so worried about the neutral OCR?

Well, while we've been on quite the monetary policy journey of the last year and a half, all going well we're about to return to a more 'normal' monetary policy, where the main tool is the OCR, and the long-term outlook for interest rates is determined by the trajectory of the neutral OCR. The LSAP has just come to an end, and while there may be ongoing (contractionary) impacts from the RBNZ letting their LSAP portfolio unwind over coming decades (see our recent Property Focus), the next step for removing monetary stimulus is OCR hikes. That's going to cause interest rates in the economy to also rise, and to estimate how far, we need to think about the neutral OCR.

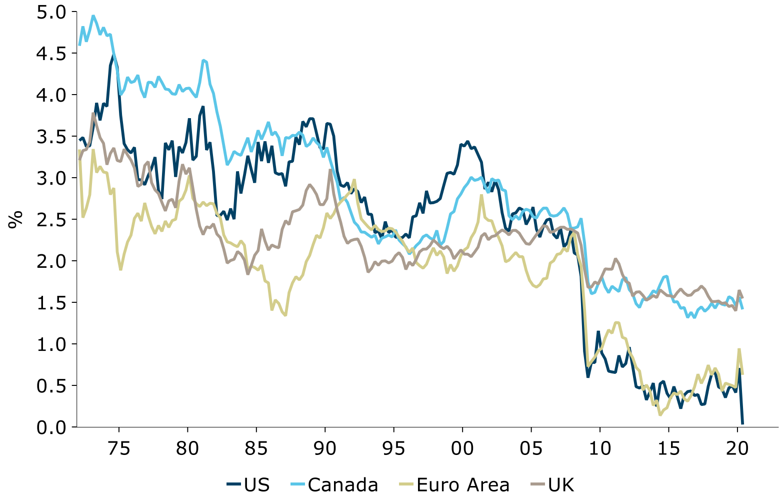
The RBNZ's goal is always to engineer a return to an ideal state where employment is at its maximum sustainable level, inflation is at 2%, actual output is equal to potential output, and by implication, the OCR is at its neutral level. Of course in practice the economy is constantly buffeted by internal and external forces that tilt us away from this state of bliss – and that's why the OCR needs to deviate from neutral to steer us back on course.

Looking ahead, the evolution of the neutral interest rate in New Zealand will underpin the outlook for interest rates across the whole economy – from bond yields to deposit rates to mortgage rates. The OCR is the policy rate that influences all other interest rates, and the neutral interest rate determines where this crucial interest rate will settle in the long run.

Where have neutral interest rates been?

In the wake of COVID, central banks around the world slashed interest rates as countries went into lockdown and economists (including us) predicted a long, protracted, and deflationary economic crisis. But interest rates were declining well before COVID, and in fact long-term real neutral interest rates have been declining across advanced economies for many decades (figure 2). This likely reflects a range of drivers, including population aging, lower potential growth, and changing savings behaviour (more on these below). In that historical context, the drop in interest rates we've seen since COVID almost looks small!

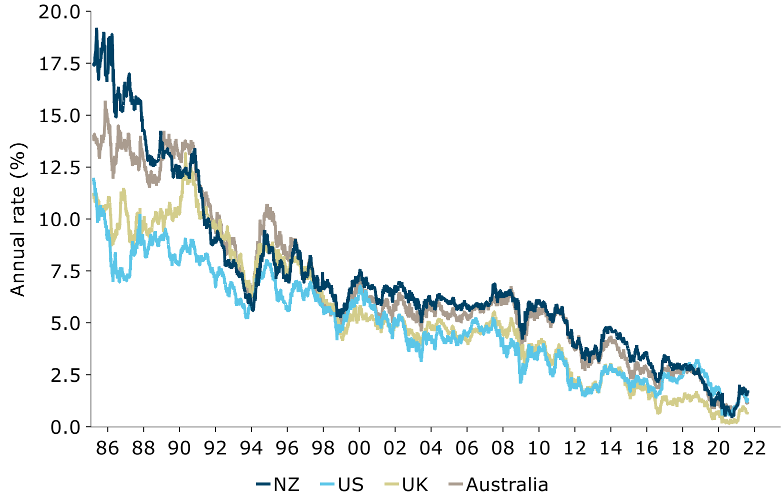
Figure 2. International real neutral interest rate estimates



Source: NY Fed, Holston Laubach and Williams (2017), Macrobond

The decline in neutral interest rates is consistent with a decades-long downtrend in observable market interest rates across different countries. For example, the 10-year government bond yield in New Zealand has fallen from over 19% in May 1985 to just 1.6% today (figure 3).

Figure 3. 10-year government bond yields



Source: Bloomberg, Macrobond, ANZ Research

So what's driving neutral down?

To understand the long-term trend in neutral interest rates, we need to understand what determines the neutral rate of interest in the economy.

But to start at the beginning, what even is an interest rate? At its core, it's the price of borrowing money. And like all prices, it's determined by supply and demand.

Demand to borrow money comes from a range of places, including firms looking to invest, people wanting to purchase houses, and governments wanting to fund infrastructure or other spending. And the supply of loanable funds comes from people who save more than they spend and want to get a return on their money.

The neutral rate of interest will then be the short-term interest rate that generates a level of savings and borrowing that delivers the economy to maximum sustainable employment and inflation to target (2% in New Zealand). So the underlying drivers of demand for borrowing and supply of savings should also be important for understanding the direction in which neutral interest rates are likely to go.

A key factor driving change in the neutral interest rate is the potential growth rate of the economy. What's behind this link? Essentially, economists assume that households will generally prefer a smooth path of consumption over their lifetime. So if people expect underlying economic growth to be stronger in the future, then they will also anticipate higher incomes in the future too, and will (in theory) borrow money or reduce saving today in order to enjoy some of that expected future income now. That would put upwards pressure on the neutral interest rate.

Now that all sounds very theoretical, and assumes that households can accurately predict the future (which, as you may have noticed, even those of us who do it for a living have trouble with!). However, it is a key relationship that's assumed to hold in many models that are used to estimate neutral – so it's worth wrapping one's head around, especially when thinking about the RBNZ's assessment of neutral.

Economists often like to think about potential GDP through the lens of a production function: the amount we produce in the long run will be a function of how many people are in the labour force, how much capital we give them, and how cleverly we combine capital and labour.

Demand for borrowing in the form of investment is strongly related to expectations for growth, so when the trend growth rate in the economy (potential GDP) is higher, firms will expect to face stronger demand, and so will want to borrow money to invest in expanding in their productive capacity. All else equal, that raises the price of borrowing (ie the interest rate).

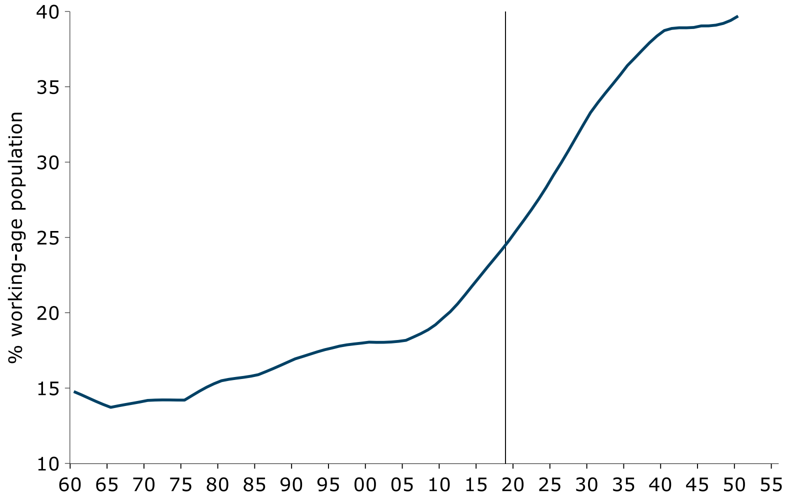
Population growth is also a key driver of potential output, since more people means a larger labour force, and therefore larger national output. So a strong rate of population growth supports the neutral interest rate. The amount that people are working will also be important, since the total amount of stuff that people produce will be proportionate to the number of people *and* how many hours they're putting in.

A more behavioural determinant of neutral interest rates is the time-preference of households in the economy. That is, how patient are consumers? If they are impatient, then they would rather consume now than later, and will either save less (or borrow) in order to fund this expenditure. All else equal, this will act to raise the neutral interest rate, since there will be less savings in the economy, and potentially more borrowing, depending on how much people value consumption today, at the expense of lower consumption in the future.

The age composition and life expectancy of the population matters here too. All else equal, higher life expectancy increases the amount that people save during their working years, since they need to fund their consumption over an even longer retirement. The New Zealand population is projected to continue to age in coming decades (this is a global phenomenon as countries become richer and fertility rates fall while life expectancy trends upwards). Based on current demographic trends, that means a sharp increase in the number of retirement-age people relative to working-age (figure 4).

Without changes to superannuation payments and/or the retirement age, the burden of funding the retirement of this age group will fall on a relatively smaller pool of working-age people. This will require higher taxes, or fewer government services – leading to reduced spending, and putting downwards pressure on interest rates. That said, there is a bulge of baby boomers who are about to start running down their savings in retirement, which could push interest rates in the other direction.

Figure 4. Old-age dependency ratio (World Bank projections)

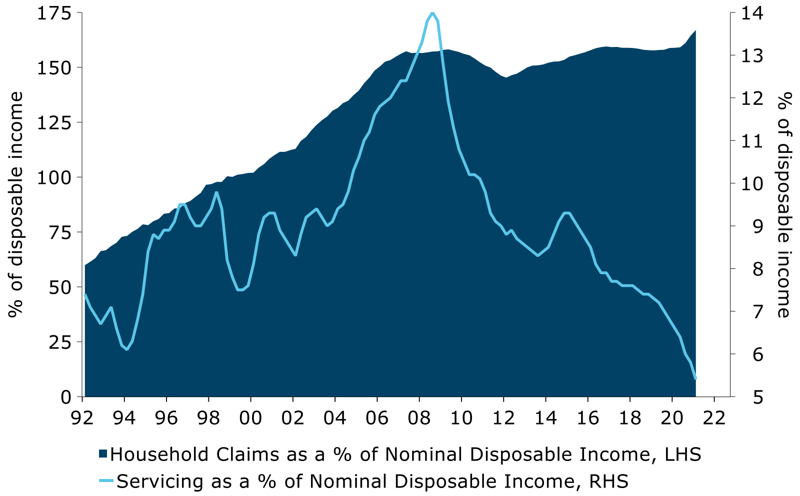


Source: World Bank, Macrobond, ANZ Research

And we haven't even talked about the effect of debt on the neutral interest rate yet.

Household debt has surged over the past year as people have taken on massive mortgages, desperately trying to get onto the housing market ladder even as prices have gone into the stratosphere. Thanks to historically very low mortgage rates, debt-servicing costs are currently as low as they've ever been (as a share of income), but that's not going to last with interest rates on the rise. Given record levels of household indebtedness (figure 5), it's clear that higher mortgage rates would very quickly bite into disposable incomes.

Figure 5. Household debt in New Zealand



Source: RBNZ, Macrobond, ANZ Research

Policy changes are important here as well – for example, the recent removal of interest deductibility means landlords will be more exposed to higher debt-servicing costs than before (although the phase-in means the impact will be gradual). Regulatory costs such as the Healthy Homes Bill or tougher environmental regulations for agriculture could also have an impact – although the direction of that impact is uncertain, as businesses may need to borrow more to meet requirements, or could choose to borrow less due to more onerous requirements eating into margins.

Government debt has also increased sharply in response to the COVID shock, as the wage subsidy, while very effective, was a massive expense, and the current lockdown will make another dent, potentially very significant. All of this debt means that the New Zealand economy is probably as sensitive to higher interest rates as it's ever been. Any interest rate hikes by the RBNZ will be very potent, limiting how far interest rates can – or need to – rise. And with households and the Government already loaded up on debt, future borrowing capacity is now reduced, which will put downwards pressure on interest rates too.

A final complication is that all the factors listed above are playing out in different ways across every country that we trade with around the world. As we saw in figure 2, neutral interest rates have trended down for decades across advanced economies, and even if domestic New Zealand conditions were supportive of higher neutral interest rates (which they're not), we would probably see some convergence with the rest of the world over time.

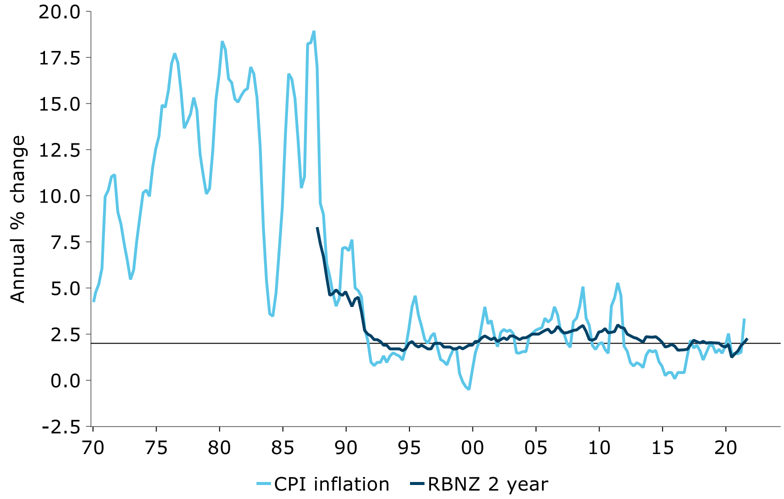
This global channel is explained intuitively in a bulletin by the RBA. Suppose that New Zealand experiences an increase in productivity growth – this would lift the neutral interest rate here, and by extension, the return on capital. In turn, this would make New Zealand a more attractive place for international investors to put their money. Not only would this increase the supply of funds available in New Zealand; it would also put upwards pressure on the New Zealand dollar, eroding our exporters' competitiveness, and offsetting some of the higher return on investment initially generated by the productivity increase. Basically, global capital flows mean that we can't get too far out of whack with other advanced economies – as long as global neutral rates continue their inexorable march downwards, so too will New Zealand's.

Great expectations

Another important distinction is whether we're talking about the nominal or real neutral interest rate. A quick recap: a real interest rate is roughly equal to the nominal interest rate, less the expected rate of inflation over the period. In the context of the neutral interest rate, this means the nominal neutral interest rate will be the real neutral rate (determined by the factors explored above), plus long-term expected inflation.

It's fair to say that inflation expectations have declined markedly in recent decades – central banks waged a successful war against high inflation in the 1980s and 90s, and inflation has remained low ever since. We can see this in New Zealand, in the RBNZ's 2-year inflation expectations measure (figure 6).

Figure 6. Inflation and 2-year-ahead expectations



Source: Stats NZ, RBNZ, Macrobond, ANZ Research

Central banks have been largely successful at keeping a lid on inflation in recent years, and that means both actual and expected inflation has been a lot lower than previous experiences. All up, lower expected inflation feeds into a lower nominal neutral interest rate. When you combine the decline in expected inflation with the dampening impact of the drivers discussed above, it is easy to see why we've seen such a persistent decline in neutral interest rates.

Short-term inflation expectations have increased recently in New Zealand, but longer-term (5 and 10 year) measures remain glued to the 2% target midpoint and are likely to stay there as long as the RBNZ remains committed to 2% inflation, and markets continue to view that as a credible target.

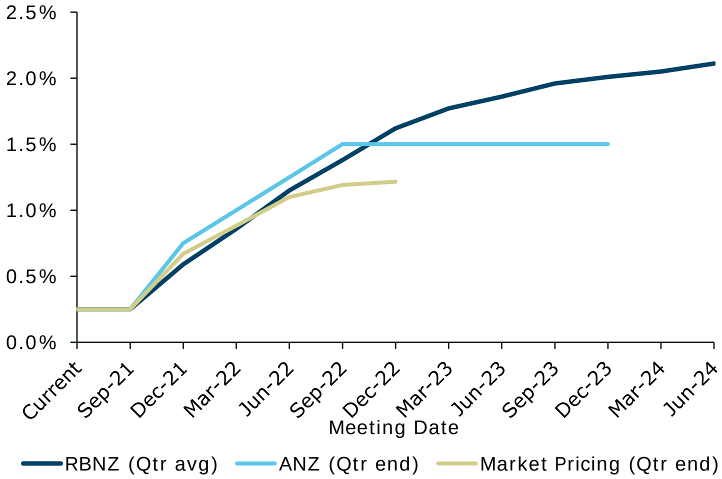
The long term: all downhill from here?

Overall, the fundamental drivers of neutral interest rates are pointing flat or down.

- Potential growth is likely to slow as the New Zealand population grows at a slower pace;
- Population aging will increase the country's preference for saving – driving rates lower still.
- High levels of debt will mean that any interest rate rises from here will act as a serious handbrake on growth – and while some slowdown is needed to contain surging inflation, it's going to be a very difficult balancing act for the RBNZ.

The neutral interest rate has fallen quickly during the COVID recession. And due to the factors discussed above, we think that the neutral interest rate is only likely to fall further in coming years (assuming that the inflation targeting framework globally is not undermined). This underpins our forecast for a terminal OCR of 1.50% for this hiking cycle, though the path there is obviously highly uncertain (figure 7). If the RBNZ does its job, then absent any other shocks, the economy should settle at full employment, 2% inflation, and an OCR at neutral over the next few years. Or at least it would, if we could stop life happening. What's clear is that the neutral level is lower than it's ever been.

Figure 7. OCR forecast and market pricing



Source: RBNZ, Bloomberg, ICAP, Macrobond, ANZ Research

The economy may have experienced a stellar cyclical recovery from COVID (fresh outbreaks aside), but in a structural sense, it is weaker than before. High levels of debt have likely accelerated the long-term decline in interest rates, and made the economy more vulnerable to OCR hikes. With the neutral OCR so low, it potentially puts the RBNZ in a difficult position. Assuming that the neutral OCR is at 1.50% and stays there, then whenever renewed stimulus is required, the RBNZ will only be able to get the OCR a small distance below zero (depending on their appetite for going negative). Whatever the case, it means the RBNZ has very limited space to support the economy through conventional policy.

And, the Government's books are in much worse shape after COVID. As we wrote about last year, there's a longer-running issue that future governments will have to deal with – ie how do we balance the books when low fertility rates mean that there will be relatively few tax-payers funding lots of pensioners?

COVID has made this problem even more pressing by lumping current and future generations with billions of dollars of debt that will also have to be paid off. With the Treasury warning that current fiscal settings will lead debt to eventually explode as a share of GDP, it's clear that fiscal policy will either have to provide less services or raise more tax revenue. So there's less room for fiscal policy to step in when monetary policy hits its limits.

All up, both fiscal and monetary policies now have much less room to manoeuvre whenever the next crisis happens, and that means the economy is more vulnerable. It may sound strange to be so pessimistic when the economy is so cyclically strong, but when we look at longer-run trends, there are clearly storm clouds on the horizon.

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