ANZ Research

NZ Insight: Playing by the rules?

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Confused by acronyms or jargon? See a glossary here.

Playing by the rules?

Key points

- Has the RBNZ fallen *"behind the curve"* when setting the OCR, or are they perhaps ahead of it?
- To attempt to answer this question we're going to need a "curve". We present a range of simple monetary policy rules (aka Taylor Rules) to provide a stake in the ground for assessing past and signalled changes to the OCR.
- The simple rules we present will never capture the full complexity of monetary policy setting behaviour, and nor do they attempt to definitively say what policy "should" do (uncertainty around the current and future states of the economy mean there are always risks for policy makers to weigh up). But there are rule specifications that move closely with the OCR over time, suggesting that if the RBNZ looks like it may be departing from the rules, there's likely something unusual going on.
- Policymaking under uncertainty was turned up to 11 in the early stages of the pandemic, and that (with the benefit of hindsight) contributed to the RBNZ delivering too much stimulus for the economic conditions via its least regrets approach. But did the RBNZ depart from the rules? The answer is a matter of perspective!
- Our best-fitting rules (which are far from perfect) suggest it is certainly appropriate for the RBNZ to now be easing monetary policy and that they may even be a little bit behind the curve. However, it would be overstating things to suggest that Taylor Rules are strongly prescribing outsized cuts. Indeed, factoring in market expectations for future easing suggests monetary conditions are in fact ahead of the curve, even if the OCR itself may be behind it. The issue with that, however, is that failure to deliver the near-term outsized cuts that the market is currently pricing in could push monetary conditions back behind the curve. So given it's now clearly on the table, and is consistent with what Taylor Rules suggest is appropriate, we think the RBNZ will take the path of least resistance and cut 50bp in both the October and November meetings, with the long summer break to provide a good opportunity to reassess where things are at after that.

Background

The monetary and fiscal policy response to the COVID pandemic exemplified policymaking under uncertainty. A 'least regrets' approach, combined with extremely dire economic projections at zero hour, justified throwing the kitchen sink at it, and data volatility combined with generalised uncertainty (noting we didn't have a vaccine rollout until early 2021) meant that for a long time, policy was operating in the dark (versus its usual fog).

As it turns out, the degree of fiscal and monetary stimulus was far too much for the economic conditions, with the least-regrets policy response setting the economy on an unsustainably overheated path, pushing domestic-driven inflation to multi-decade highs.

By the end of 2021, it was clear to the RBNZ (and everyone else) that inflation pressures required action. The RBNZ entered the hiking cycle with some degree of caution before the incoming inflation data justified a much sharper policy adjustment. For the person on the street the vibe very quickly changed from the RBNZ signalling that interest rates were going to remain low for a long while yet to interest rates rising rapidly to a point that was set to deliberately induce recession. The *least regrets* approach mitigated the risk of New Zealand being thrown into a deep and lengthy depression, but it wasn't a "*no regrets*" approach. The cost was the subsequent surge in inflation, and more recently the downturn in economic activity required to fix the inflation problem. It certainly hasn't been ideal, but what has prevailed wasn't the worst-case scenario at the time.

Conversely, fiscal policy never really changed tack. *Extreme* fiscal expansion in 2020 was followed by *large* fiscal expansions in the following three years that have not been fully unwound and are therefore still impacting the economy today. In other words, while the pace of fiscal expansion has slowed since Budget 2020's gigantic $50bn Budget, fiscal consolidation has been very gradual. Forecast structural deficits until 2028 are clear evidence of that. But even relatively mild austerity overall hits those affected hard, and the huge cycle in fiscal policy has also been far from ideal.

While this note isn't about the fiscal stance, this is important context when considering the RBNZ's 'reaction function' – how they have responded to the data. In essence, the RBNZ has had to "make room" for the extra demand from Government by curbing private sector activity (households and businesses) via a higher-than-otherwise OCR. But the RBNZ isn't in the business of forecasting fiscal settings beyond what the Government is signalling at the time, meaning that as the Government kept injecting more stimulus into the economy (even as it was becoming overheated), the RBNZ faced a sequence of positive fiscal shocks that were difficult to incorporate into a monetary policy stance until after fiscal decisions had been taken and the Treasury had crunched the numbers. If they had been able to foresee the full extent of fiscal stimulus from the get-go, they may have tightened monetary conditions earlier than otherwise. In other words, it wasn't just a least-regrets approach combined with pandemic uncertainty that led to the RBNZ overstimulating the economy; it also took time to discover how much inflation-fuelling fiscal expansion was going to be delivered by the end.

Now we're out the other side and the easing cycle is underway, the big question is the likely pace and magnitude of monetary easing. It's inherently uncertain, and the data will have the last laugh as always, but this note hopes to shine some light on the question by investigating a swathe of monetary policy 'rules' (aka "Taylor Rules").

What is a Taylor Rule?

Named after the economist John B. Taylor who first proposed it in 1993, a Taylor Rule is an equation that provides a guideline for the policy rate based on the inflation-adjusted (real) equilibrium policy rate (the real neutral rate), how far inflation is away from target, and some measure of economic "slack". We can chop and change some of these variables (eg one could use inflation expectations or core inflation in place of current inflation, or the unemployment rate instead of the unobservable output gap as the measure of economic slack). The assumption for the neutral rate (an inherently unobservable variable that varies over time) will have a large say in the policy 'prescription' too. And finally, there are also a bunch of coefficients required that determine how much weight to put on the various components of the equation. See Appendix (page 10) for links to technical notes.

Broadly there are two main categories of Taylor Rule (at least the two we focus on): *inertial* and *non-inertial* rules. Non-inertial Taylor Rules prescribe an immediate monetary policy response to changing economic conditions, while inertial rules prescribe a more gradual adjustment. The latter is generally more realistic in an uncertain world, where avoiding both unnecessary volatility in financial markets and policy errors and flip flops are considerations.

Sometimes, shocks come along that are so significant, and muddy the waters so much, that you simply can't trust any policy rule to prescribe an appropriate response given risks to the inflation outlook. That is, when it comes to monetary policy implementation, it might be justified to bend or break the rules. But in less exceptional times, following the rules can provide stability, predictability and efficiency, which all carry broader economic benefits – at least that's what proponents of rule-based policy implementation will tell you.

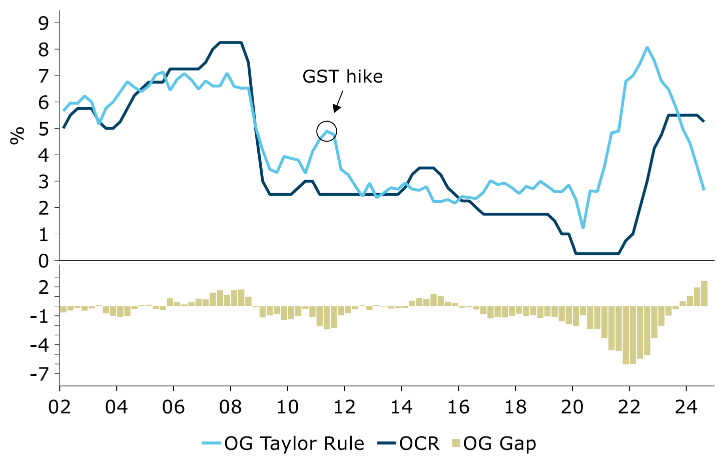
In reality, however, central bankers would never rely on something as simple as a Taylor Rule to mechanically tell them what to do – they have far more sophisticated models for that and other judgements and risks to weigh up too. But Taylor Rules can still provide a guide on whether what they are doing is consistent with the data and assumptions in front of them at the time, and if not, challenge them to justify why 'this time is different'. We can use Taylor Rules to draw a line in the sand from which we can compare the RBNZ's past and signalled policy choices. A good rule will typically move closely with the OCR over time, but no rule will be able to do this perfectly and consistently. Monetary policy making simply isn't that mechanical, and sometimes the rules of the game can change. For example, when facing the "effective lower bound" (ELB) – when conventional monetary policy has run out of road – an ELB-based rule might provide a better fit.

The literature on Taylor Rules is vast. For our purposes, we stick to the relatively simple formulations and rely on research undertaken by the RBNZ and others to calibrate the rules that follow.

Taylor Rules for New Zealand

Let's kick off with the original (OG) Taylor rule, noting that this fits into the 'non-inertial' category, meaning it's going to be at the more responsive end of the spectrum. We calculate all our rules from 2002 as that's when the Policy Targets Agreement first moved to a focus on (or around) 2% inflation. And to bring our rules up to the present we plug in the RBNZ's Q3 forecasts for CPI inflation, the output gap, and the neutral OCR. We'll get into the medium-term forecasts in more detail later.

Figure 1. The OG Taylor Rule



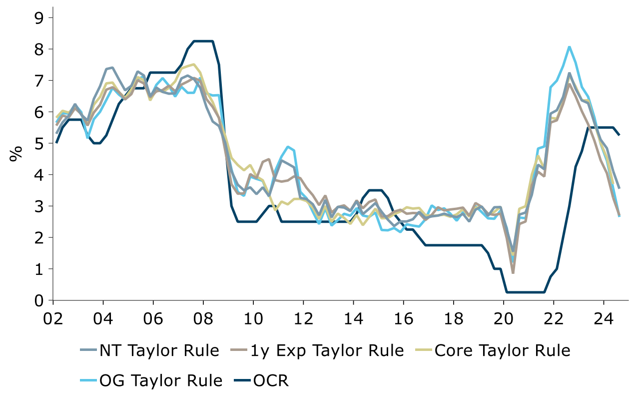
Source: Stats NZ, RBNZ, Macrobond, ANZ Research

Clearly, the above specification suggests that the RBNZ's *least regrets* approach to the pandemic was a significant deviation from the OG Taylor Rule. The RBNZ cut the OCR to 0.25% by mid-2020 and left it there until late 2021. Conversely, this rule prescribes hikes from early 2021 to a peak of around 8% by Q3 2022. In practice, OCR hikes, while about as fast as the OG rule prescribed, came about a year later than that and peaked around 250bp lower.

More recently, the RBNZ has kept the OCR at a more restrictive level than the OG rule. Indeed, according to this specification, the OCR should now be around 2.5-3%. But this is just one (relatively gung-ho) specification. Figure 2 shows a bunch of equivalent Taylor Rule specifications that switch out current inflation with core inflation, inflation expectations, and non-tradable inflation (for non-tradable inflation we define the target as 3% rather than 2%). These specifications are a better representation of the RBNZ's well-founded and well-understood preference to "look through" temporary shocks such as the one-off increase in the rate of GST or the exchange rate.

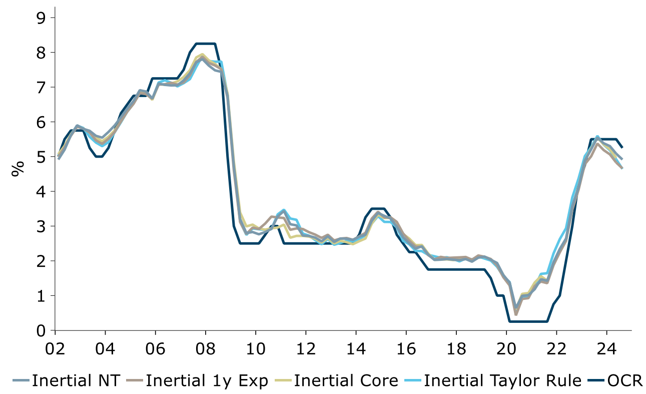
But more significant than the choice of inflation measure in terms of improving the historical fit is the inclusion of policy inertia, ie smoothing the policy response (figure 3). The real-life smoothness of the policy response reflects both uncertainty and the desire to avoid causing unnecessary financial market volatility. Indeed, the RBNZ's remit includes avoiding unnecessary instability in interest rates and exchange rates. Such an approach will inevitably make policy settings a little later to the party than is "ideal", but potentially avoids several wrong turns along the way.

Figure 2. Non-inertial Taylor Rules



Source: Stats NZ, RBNZ, Macrobond, ANZ Research

Figure 3. Inertial Taylor Rules

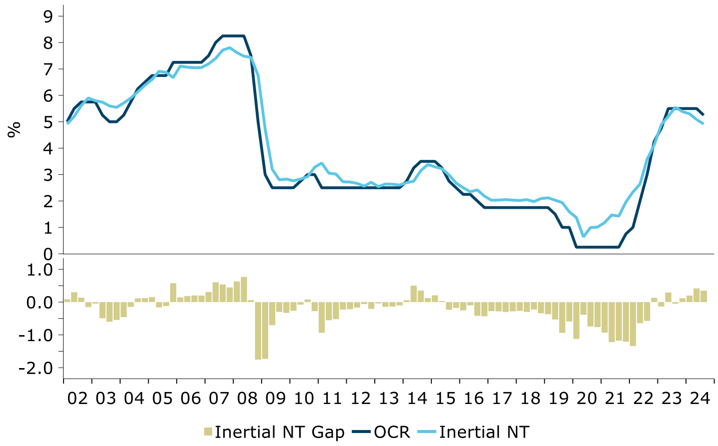


Source: Stats NZ, RBNZ, Macrobond, ANZ Research

From here on in, we'll focus only on inertial rules, given this is how central banks roll. Of these rules, the two that are closest to the actual OCR over time are the core (Sector Factor Model) and the non-tradable inflation measures (the latter with 3% for the inflation target). As at Q3 (plugging in the RBNZ's August MPS forecasts) the non-tradable rule was sitting a little more than 30bp below the OCR. In other words, if the OCR had followed this particular rule precisely, the RBNZ would have delivered 50bp of cuts by now, rather than 25bp. What about the core inflation rule? We won't have core inflation for Q3 until 16 October, but as of Q2 this rule was prescribing an OCR of 5.0% vs the 5.5% maintained by the RBNZ. Because we have forecasts for non-tradable inflation and not core inflation, we'll focus on the non-tradable inertial rule from here.

Figure 4 shows the inertial non-tradables rule and how policy has deviated from it (note: we are not claiming that this rule should have been followed to the letter, as there have been significant risks and uncertainties to weigh up – but it is a stake in the ground).

Figure 4. Non-tradables inertial rule vs OCR



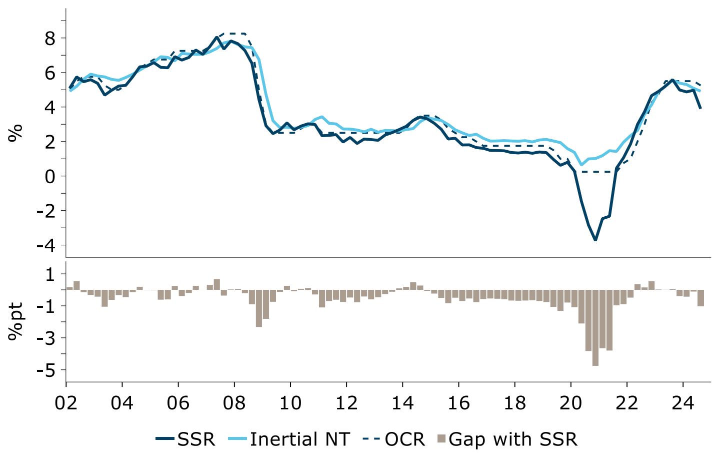
Source: Stats NZ, RBNZ, Macrobond, ANZ Research

Clearly, even with our better-fitting measures there's still a wide and persistent gap between the inertial rule and actual OCR settings over 2021 and 2022 (around 100bp on average). But of course, the RBNZ's stimulatory efforts didn't stop at conventional monetary policy (the OCR):

- the RBNZ deployed unusually firm "forward guidance" in March 2020, noting that the OCR will remain at 0.25% for at least 12 months, while also preparing to take the OCR into negative territory. Together, that was a very clear signal that rates were going to stay low for a long time.
- unconventional monetary policy tools were deployed, such as the Large Scale Asset Purchase programme and Funding for Lending programme.

Accounting for the impact of unconventional monetary policy is no easy feat, but the Shadow Short Rate (SSR) has a crack. The SSR is a proxy for the effective policy rate after taking into account the impact of unconventional monetary policy. It can take on a negative value when the OCR is near the effective lower bound, providing a better sense of how much stimulus the RBNZ is deploying via unconventional monetary policy.[1] Figure 5 shows that once we factor in unconventional monetary stimulus, the gap between the RBNZ's policy response and the inertial non-tradables rule becomes significantly wider through the post pandemic era, with the "peak gap" over this period widening from around 130bp of above-rule stimulus to around 475bp. That's next level!

Figure 5. Inertial non-tradable rule vs Shadow Short Rate

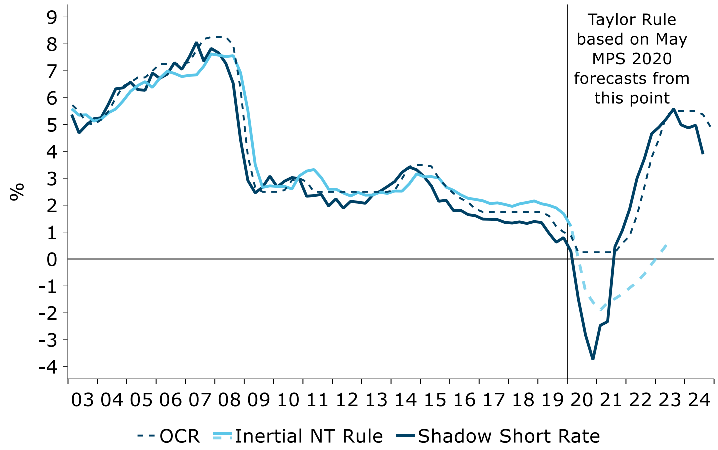


Source: Stats NZ, RBNZ, LJKmfa, Macrobond, ANZ Research

[1] The SSR was developed by Dr Leo Krippner. For more info see here.

To be clear, we're not saying that the RBNZ was wrongheaded to respond as they initially did to the pandemic. If we plug their May 2020 forecasts into our inertial non-tradables rule, noting that this was around the time of peak pandemic uncertainty (and that our broad economic outlook at the time was similarly dire), the rule prescribes a policy response much closer to how much stimulus was delivered. Of course, those forecasts turned out to be well off the mark, meaning the resulting stimulus was still way too much, but at the time it was entirely justifiable.

Figure 6. Inertial non-tradable rule using May MPS 2020 forecasts

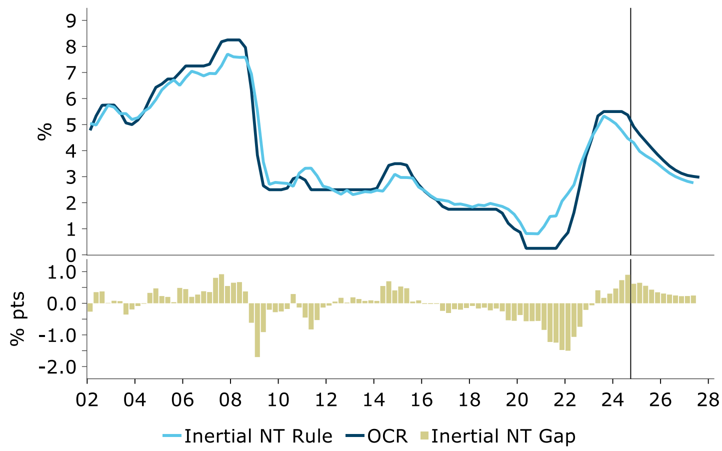


Source: Stats NZ, LJKmfa, RBNZ, Macrobond, ANZ Research

Note that for Q3 2024, the SSR was a decent clip below the OCR (figure 5, previous page), reflecting that market expectations of outsized OCR cuts in coming meetings have created easier-than-otherwise monetary conditions. We noted previously that the OCR was around 30bp *above* our internal non-tradables rule – but the SSR is around 100bp *below* it! That certainly waters down the Taylor Rule's prescription for imminent outsized OCR cuts. But it's circular, of course: a failure to deliver those expected outsized cuts would cause term rates and the SSR to increase.

While bearing in mind we've just illustrated how unreliable a Taylor Rule based on forecast assumptions can be, let's now plug the RBNZ's latest forecasts into our rules.[2]

Figure 7. Inertial non-tradable Taylor Rule using RBNZ forecasts



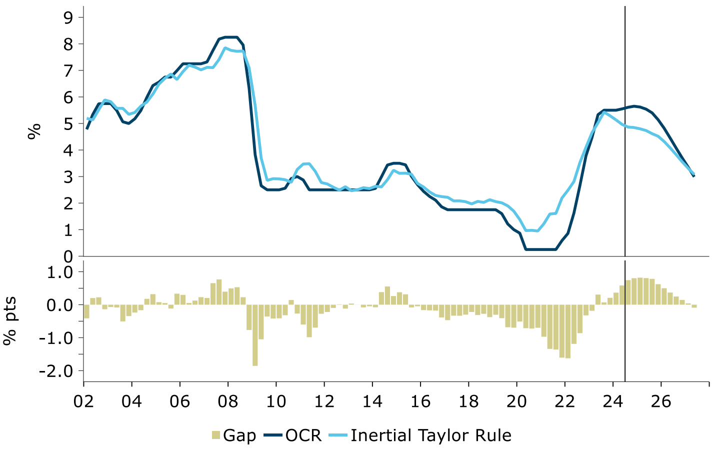
Source: Stats NZ, RBNZ, Macrobond, ANZ Research

[2] Note: The RBNZ's OCR forecasts are provided on a quarter average basis (vs the quarter-end we have been using to date). This will have a small impact on how far away our rule is from the OCR in a given quarter. That may introduce more or less "policy urgency" in a particular quarter, but doesn't change the overall story.

Of note, the RBNZ's August forecast OCR sits above this rule over the entire forecast, narrowing from around 60bp by the end of 2024 to around 25bp by early 2028. That persistent above-rule tightness is at odds with the years leading up to the pandemic, when the OCR was slightly below this rule, but back then the risk of inflation undershooting target and the OCR reaching the effective lower bound were larger considerations. If the RBNZ were to follow this rule to the letter (assuming all the forecast inputs are bang on, which they inevitably will not be), they'd need to deliver 50bp cuts in both October and November to close the gap, which is now our forecast.

While the "forecast gap" is not unusually wide, it could reflect a judgement that non-tradables inflation will be hard to tame going forward (eg as a result of stickiness in some components of the CPI, such as council rates and insurance). As confidence in the disinflation outlook increases over time, it's possible that the RBNZ will make incremental changes to signalled OCR cuts to reflect the changing risk profile. Indeed, if we go back to the May MPS (when the RBNZ's OCR forecast implied decent odds of a hike) the August forecast narrowed the near-term gap between the signalled OCR and the inertial non-tradable inflation rule by 20-30bp. In other words, between the May MPS and August MPS, the RBNZ moved closer to our rule because of judgements, rather than data surprises. Perhaps it has further to go.

Figure 8. Inertial non-tradable Taylor Rule using May 2024 RBNZ forecasts



Source: Stats NZ, RBNZ, Macrobond, ANZ Research

At the end of the day, the accuracy of the forecasts feeding into these rules is likely going to swamp everything else in terms of conclusions about how far the RBNZ might be 'behind the curve'. That is, the data is inevitably going to surprise to some extent, and the RBNZ is going to react to that.

Projected Taylor Rules using forecasts won't just be thrown around by inevitable forecast misses on the inflation and spare capacity front. Uncertainty around where the neutral OCR is (and will be) is also critical.

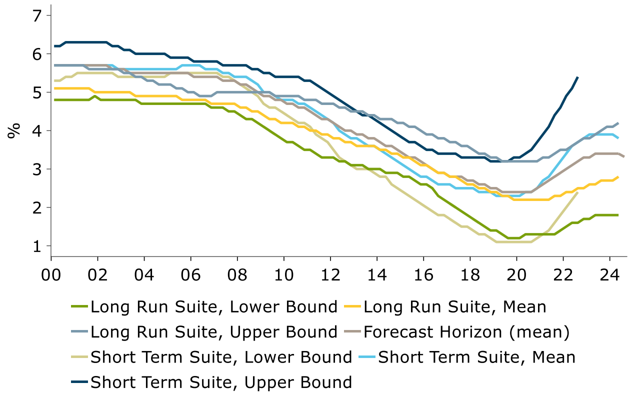
The neutral OCR is the level of the OCR that's considered neither stimulatory nor contractionary (if nothing else were going on). That is, it's the goldilocks OCR that's consistent with stable inflation, and where we can expect the OCR to settle once any supply-demand imbalances in the economy are resolved and the economy is in equilibrium (which of course it never reaches in practice, as life keeps getting in the way). You can think of neutral as being the rate that brings balance between aggregate savings and investment demand, which in turn is a function of all manner of things including demographics, risk appetite, expectations for incomes and profits, technological change and adaptation, access to global capital markets and trade, institutional arrangements, regulatory settings; the list goes on.

The neutral OCR varies over time, because all the things described above do. It is also unobservable, and is a key ingredient for all Taylor Rule specifications.

The RBNZ produces a range of neutral estimates, but as a general rule, estimates for where neutral is or will be in the future are far less certain than estimates of where it's been, given you can at least observe how inflation turned out over history. So far, all our Taylor Rules have used the RBNZ's central estimate used in their forecasts and projected that forward to wherever they have said neutral is assumed to settle over the longer run (eg that's currently 2.75%). Now we take a look at how our Taylor Rule might change if we change the neutral assumption.

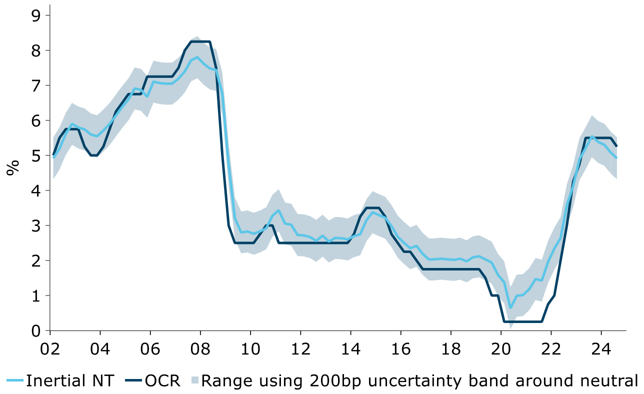
Based on the most recent estimates provided by the RBNZ, neutral could be pretty much anywhere. Figure 10 shows that if we plug in a range on either side of neutral (±200bp, which is close to the range presented by the RBNZ in mid-2022), our Taylor Rule comes in at a range between 5.5% and 4.3% as at Q3 2024. This highlights how this one assumption can have very meaningful implications for where our rule suggests policy should be. It also highlights the layers of uncertainty the RBNZ is always operating under every time the Committee meet to set the OCR. Good thing monetary policy is a repeat game!

Figure 9. RBNZ's neutral estimates



Source: RBNZ, Macrobond, ANZ Research

Figure 10. Inertial non-tradable rule with neutral uncertainty bands



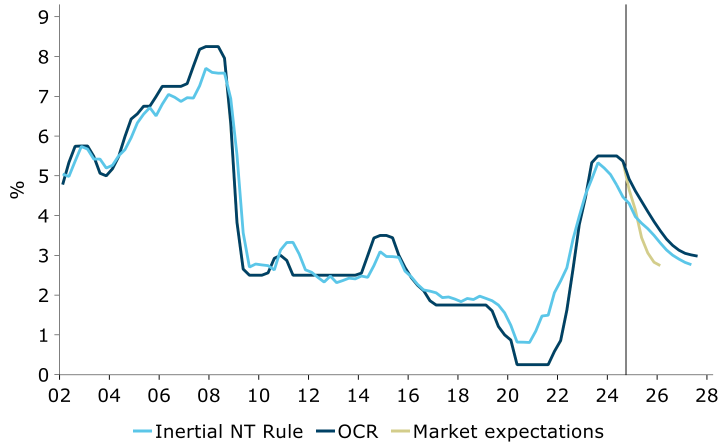
Source: RBNZ, Macrobond, ANZ Research

Implications and summary

So what does this all tell us about the path for monetary policy?

First, the elephant in the room: not one of our Taylor Rules currently sit above the current level of the OCR, and based on the August MPS forecasts, are not going to any time soon. Even our closest-fitting inertial rules suggest that the gap vs the RBNZ's August OCR forecast could be as wide as 50-75bp by the end of the year. However, that gap could quickly be closed by delivering 50bp cuts in October and November, which is our forecast. What's also true is that the easing in monetary conditions that has already occurred in anticipation of outsized OCR cuts (figure 11, over page) means the RBNZ needn't be worried about the potential impacts on the real economy and inflation outlook of not having delivered more cuts already at this stage (all else equal).

Figure 11. Inertial non-tradables rule vs RBNZ forecast and market pricing



Source: Stats NZ, Bloomberg, RBNZ, Macrobond, ANZ Research

When we use the SSR to put the post-pandemic unconventional monetary policy response into perspective, it's clear that the RBNZ injected way more stimulus into the economy than a policy rule (which has the benefit of hindsight) suggests was appropriate (recalling part of that was because the RBNZ couldn't foresee the amount of fiscal stimulus that eventually came to pass). But when we use the RBNZ's forecasts from the time of peak uncertainty, the goliath policy response followed the inertial rules much more closely. In other words, the RBNZ didn't depart from the rules *given the information available at the time* as much as some may argue with the benefit of hindsight on their side. Yes, they overstimulated, but that was due more to inaccurate forecasts than an unusual response to those forecasts.

At the end of the day, whatever the cause, the question now is whether policy needs to remain more restrictive than currently prescribed by policy rules as penance for that overstimulation. The answer to this question cannot be revealed by a projected Taylor Rule using forecasts – because inevitably those forecasts will be wrong. But if we assume for a moment that the pandemic has led to a shift in the economy, leaving the neutral OCR on the higher side of central estimates, then it makes sense to be running policy a little above where a reasonable Taylor Rule might suggest. On the other hand, if inflation expectations are anchored and neutral isn't on the rise, then cutting more aggressively could easily be justified. The data will eventually reveal which world we're in.

But running policy tighter than otherwise now just because past inflation was high doesn't hold water. With a forward-looking inflation target, bygones are bygones unless inflation expectations prove sticky. The RBNZ will not (and should not) aim for below-target inflation just because we've been through a period of significantly above-target inflation. Policy will continue to be tweaked as data dictates, and if inflation goes under target, the RBNZ will start to worry about effective lower bound risks.

Here and now, it's fair to say that all Taylor Rules suggest it is appropriate for the RBNZ to be easing monetary policy. And, conditional on the RBNZ's forecasts and neutral rate assumptions, all Taylor Rules are prescribing something a little more aggressive than the path signalled in the August MPS (but that's nothing a couple of 50bp cuts can't fix). However, the SSR and recent easing in monetary conditions (given markets already expect outsized cuts) suggests that the urgency is not great. Further, just because inflation risks are feeling a little more balanced now (meaning it might be appropriate to remove positive judgement from the OCR track – if there is any as our simple rules imply), that doesn't mean upside inflation risks have gone away. While it might look like the RBNZ is a little bit behind the curve right now, we're only ever one significant data surprise away from the RBNZ looking like they are ahead of it.

Appendix: further reading

The following links provide additional information, and in some cases have informed how we have calibrated the rules presented in this note.

John Taylor's OG Taylor Rule paper: Discretion versus policy rules in practise.

RBNZ note: Estimated Taylor Rules updated for the postcrisis period.

US Federal Reserve note: An Overview of Simple Policy Rules and their Use in Policymaking in Normal Times and Under Current Conditions.

US Federal Reserve resource: Monetary Policy Principles and Practice.

See this link for more on Dr Leo Krippner's Shadow Short Rate.

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