

NZ Insight: Oil shocks and the NZ Economy

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[Miles Workman](#)
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Key points

- Oil shocks are not simple: oil prices move for various reasons, with very different implications for economies. Using the oil-market shocks identified by [Baumeister and Hamilton](#), we trace how the New Zealand economy has historically evolved following oil shocks that can be attributed variously to oil supply, global activity, oil consumption demand and oil inventory demand.
- The current episode has so far been dominated by an adverse oil supply shock, the largest in the series' history (back to 1975). Weaker global activity is partly offsetting the price impact. Inventory demand added to the price impact ahead of the disruption but fell sharply in Q2 as emergency oil stocks were released.
- History shows that oil shocks can evolve very differently, and our analysis suggests that how this episode develops from here may matter as much as the initial disruption itself. We find:
 - Adverse oil-supply shocks have historically been followed by a brief rise in headline inflation, but with no reliable spillovers to core inflation, inflation expectations or activity, and no systematic change in the Official Cash Rate (OCR).
 - Oil-specific demand shocks (oil consumption and inventory demand) have in the past been followed by higher inflation expectations, but not core inflation, activity or the OCR. Shocks to oil consumption and inventory demand are hard to separate in the data, so we interpret their individual effects cautiously and consider them alongside one another.
 - Global activity shocks have tended to coincide with changes in the terms of trade, activity, the NZD, inflation pressure and the OCR. This reflects changes in world demand rather than the oil price itself.
- The international literature finds that adverse oil supply shocks weigh on global activity, with the hit building over one to two years and falling hardest on energy importers. That said, economies with floating exchange rates tend to be more insulated. While we don't find a reliable impact on New Zealand activity following an oil-supply shock, our estimates are too imprecise to rule out such a lagged effect. Given NZ's sensitivity to world demand, a subsequent global slowdown could prove to be the most important transmission channel.
- That said, history offers only limited guidance for a shock of this magnitude, and it's possible the impacts of the current shock aren't linear.
- The challenge for policymakers is balancing inflation risks against the possibility that a weaker global (and therefore domestic) economy in 2027 becomes a significant disinflationary force. Given the uncertainty, withdrawing monetary stimulus and waiting to see how the data evolve remains appropriate. But history does suggest the inflation effects arrive first, while the effects on global activity may come later. Leaning too heavily against the initial inflation threat could mean monetary conditions end up too tight for economic conditions further down the track.
- This supports our expectation that the RBNZ will be reluctant to move the OCR beyond the bounds of its medium-term neutral estimate (2.5-3.5%) without clear evidence that it is necessary.

Identifying oil price shocks

Oil prices move for different reasons, meaning “the impact of oil price shocks” is too simple a concept. [Baumeister and Hamilton's](#) model (see [Appendix A](#)) attributes unexpected monthly movements in four variables (world crude oil production, industrial production in the OECD plus six major emerging economies, the real price of oil, and changes in OECD oil inventories) to four structural shocks:

- **Oil supply:** an unexpected change in oil production. An adverse shock lowers production and raises the oil price. The international literature finds that adverse oil supply shocks weigh on global activity with a lag (over one to two years). We discuss this further in the monetary policy implications section.
- **Global economic activity:** an unexpected change in world economic activity that raises demand for oil (along with everything else), lifting oil production and prices together. As a small open economy, New Zealand moves with world demand itself, not with the oil price.
- **Oil consumption demand:** a shift in demand for oil that isn't explained by the broader global cycle. This shock raises both oil production and prices, and in Baumeister and Hamilton's estimates has no clear effect on world activity.
- **Oil inventory demand:** a shift in demand to hold oil in storage, sometimes described as a speculative demand shock, as it can reflect expectations of future scarcity.

Realistically, we assume changes in New Zealand supply or demand conditions have no impact on the global oil market/price (we're too small to matter).

Past shocks

Figure 1 (over) shows that past oil price shocks have had very different drivers. Baumeister and Hamilton's published historical decomposition and our analysis of their updated shock series indicate that:

- supply and demand shocks were equally important in the 1990 Gulf War;
- the 2007-08 run-up reflected strong demand and stagnating supply;
- the collapse in late 2008 coincided with a massive negative global activity shock; and
- 2020 mixed very large supply and activity shocks.

Notably, Baumeister and Hamilton find that inventory demand shocks have played a much smaller role in past oil price movements than earlier studies suggested – partly because world inventory data are measured with considerable error.

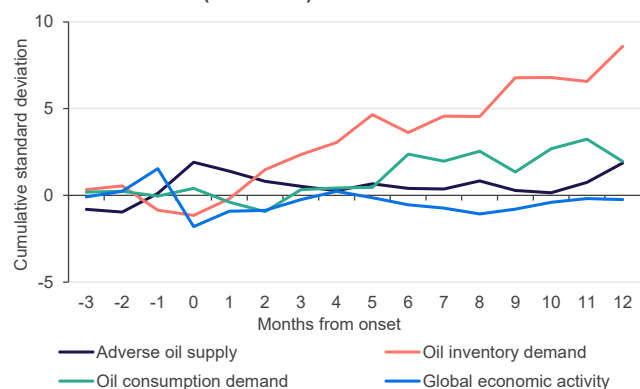
Interestingly, what happens after a supply disruption can matter as much as the disruption itself. Historically, two broad patterns have emerged:

1. **Disruption followed by an inventory build.** After the Iranian revolution (1979) and the outbreak of the Iran-Iraq war (1980), the initial supply disruption was followed by a large, sustained rise in inventory demand reflecting precautionary stockpiling. An inventory build also followed the Venezuelan strike and the lead-up to the 2003 Iraq war.
2. **Disruption followed by inventory drawdowns.** In the 12 months following the 1990 Gulf War and the 2022 Russian invasion of Ukraine, inventory demand fell sharply. Both episodes coincided with coordinated releases of emergency oil stocks by International Energy Agency members.

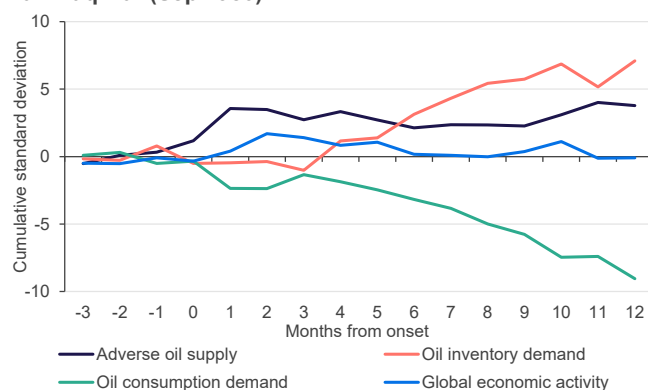
Across all months since 1975, adverse oil-supply shocks (which are unpredictable by construction) do not systematically predict inventory demand shocks. What happens next depends on how long the supply disruption lasts, how oil consumption demand responds, how aggressively buyers stockpile, and how governments deploy and ultimately rebuild strategic reserves.

Figure 1. How oil shocks have evolved around past major geopolitical and economic disruptions

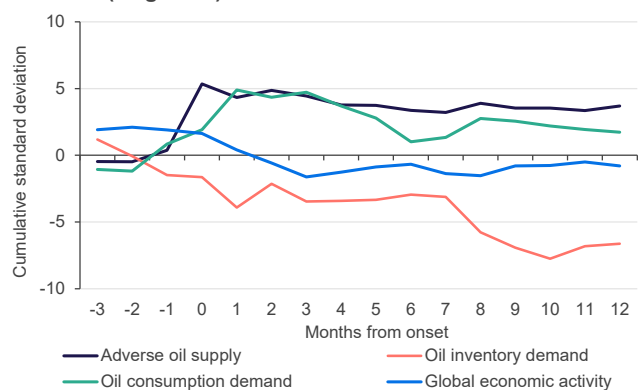
Iranian revolution (Jan 1979)



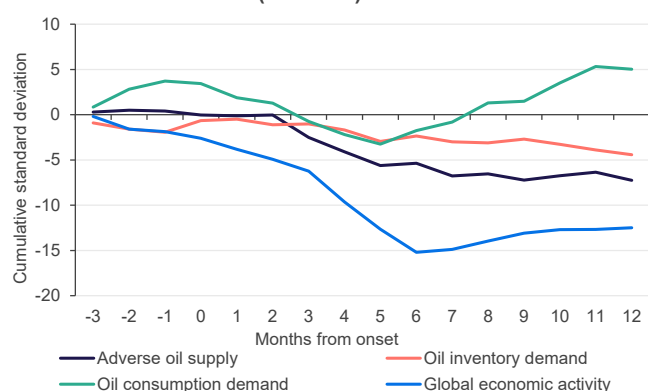
Iran-Iraq war (Sep 1980)



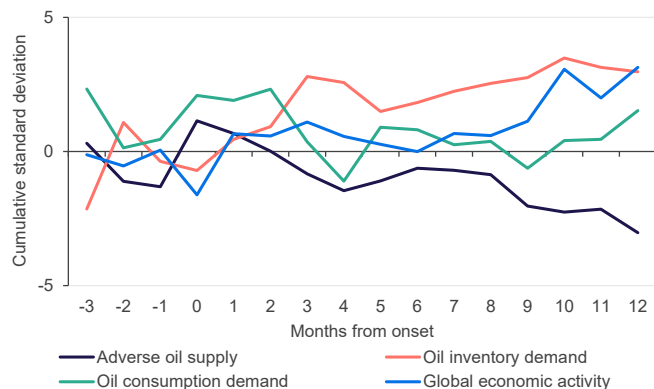
Gulf War (Aug 1990)



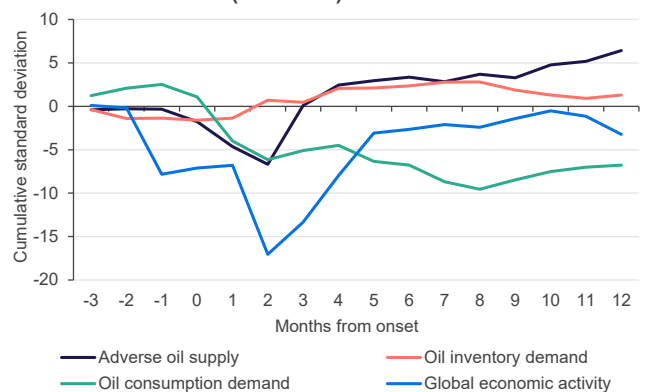
Global Financial Crisis (Jul 2008)



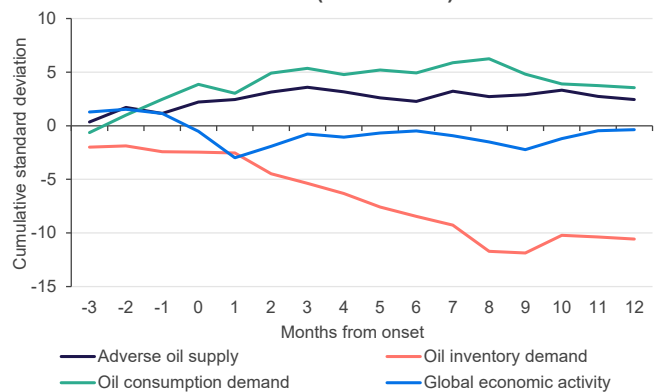
Venezuela strike / Iraq war (Dec 2002)



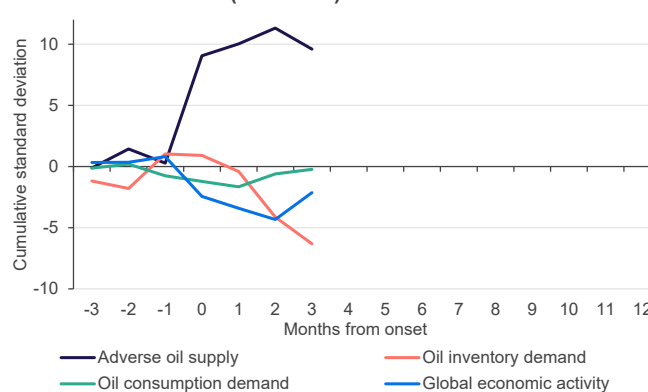
COVID-19 Pandemic (Feb 2020)



Russian invasion of Ukraine (March 2022)



Middle East Conflict (Mar 2026)

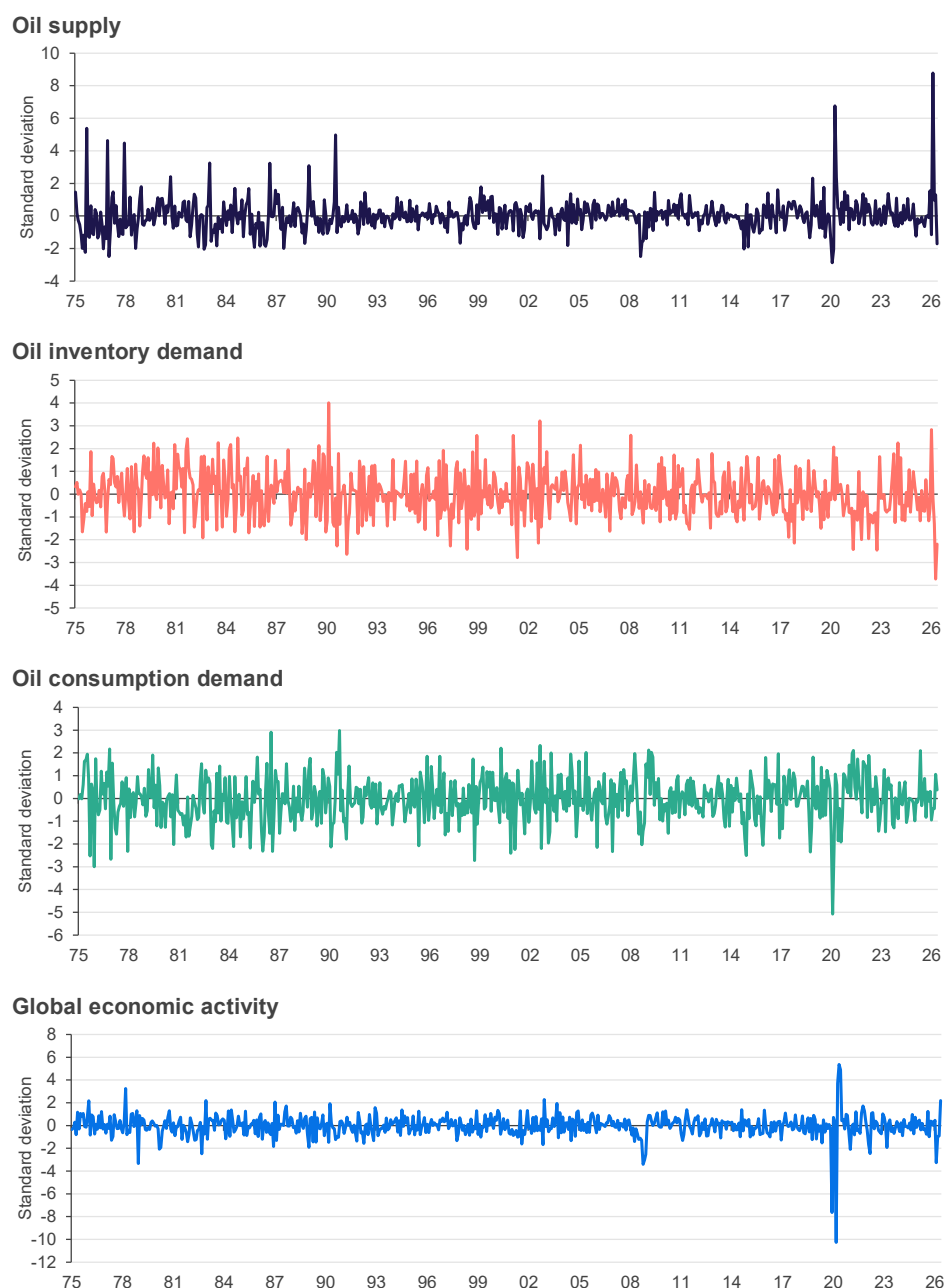


Source: [Christiane Baumeister](#) (Baumeister and Hamilton, 2019), ANZ Research

The current shock in perspective

On the updated monthly Baumeister-Hamilton series, which runs to June 2026, March 2026 saw an adverse supply shock of around 9 standard deviations (sd) – the largest monthly supply shock in the series, which starts in 1975 (figure 2), and almost twice the size of the 1990 Gulf War disruption. It coincided with a negative global activity shock (around -3 sd), and followed a jump in inventory demand in February (around +3 sd), ahead of the disruption itself. Inventory demand has since fallen sharply, with May the largest monthly fall in the series. Cumulative inventory demand is down around 7 sd since March – similar to the 2022 drawdown, but in a third of the time. This sharp fall in estimated inventory demand has coincided with emergency stock releases.

Figure 2. Time series of monthly shocks



Source: [Christiane Baumeister](#) (Baumeister and Hamilton, 2019), ANZ Research

For our purposes, we convert the monthly shocks to quarterly averages to match New Zealand's quarterly data, and scale them by the standard deviation of the quarterly shocks. On this basis, Q1 2026 was an adverse supply shock of 6.0 sd, the largest quarterly supply shock in the series, and in our NZ data sample, which begins in 1986. It was accompanied by a negative global activity shock (-1.9 sd) and a positive inventory demand shock (+1.2 sd). The mix shifted quickly in Q2: only a small further supply shock (+0.4 sd), but the largest quarterly fall in inventory demand in our sample (-4.3 sd).

Oil price shocks and the New Zealand economy

We now trace how New Zealand inflation, inflation expectations, activity, spare capacity, trade prices, the trade-weighted index exchange rate (NZD-TWI), the OCR and short-term interest rates have evolved following each of the four shocks described above, using local projections (see [Appendix A](#) for a description of our analysis and [Appendix B](#) for results). Note the results reflect average historical patterns rather than being a guarantee of cause and effect, and they become more uncertain at longer horizons. Our main findings can be summarised in four points:

1. Supply shocks are followed by a short, sharp impact on headline inflation

A 1 standard deviation adverse oil supply shock lifts annual headline CPI inflation by almost 0.3 percentage points (ppt) after two quarters, with the effect gone within a year. For the current shock, that implies annual inflation briefly around 1½ ppt higher than otherwise after two quarters (all else equal). This is consistent with how most forecasters (including us) initially treated the impact of the Middle East conflict on the inflation outlook – we initially hoped for a short supply disruption that would pass through to (and drop out of) annual CPI inflation relatively quickly. For the stickier inflation measures that the RBNZ tends to focus on (core and non-tradables inflation and two-year inflation expectations), we find no consistent and statistically significant second-round effects. Nor do we find evidence that supply shocks have hit the economy hard: GDP, the unemployment rate and output gap barely move. Meanwhile, export prices tend to rise alongside import prices, leaving the terms of trade little changed (consistent with food and energy prices moving broadly together, which is helpful from the point of view of NZ Inc, if not from the point of view of supermarket shoppers). But there is no obvious impact on the NZD-TWI. Lastly, the RBNZ has not historically systematically moved the OCR in response to an oil supply shock. The 30-day rate, which extends the policy-rate analysis back to 1987, confirms the lack of a systematic response in short-end rates.

2. Global activity shocks move activity and inflation, and the RBNZ has responded accordingly

Global activity shocks are very different from oil-supply shocks. They barely move the oil price in the quarter they hit, so New Zealand is responding to world demand itself rather than to the oil price impact. A positive 1 standard deviation shock is followed by a rise of around 2% in the terms of trade within a year. Real GDP lifts briefly (around 0.3% after two quarters), spare capacity is absorbed, the unemployment rate dips, and two-year inflation expectations edge higher after two to three quarters. The NZD-TWI has also tended to appreciate by around 1½% after one quarter, before fading. Inflation pressure then broadens, with core inflation around 0.1-0.2ppt higher than otherwise after six to ten quarters in our baseline model (see [Appendix A](#)). The RBNZ has consistently tightened in response, with the OCR around 0.6-0.7ppt higher after one to two years. The 30-day rate, used for its longer history, shows the same pattern. At around the 2.5 year mark, non-tradables inflation turns significantly lower, consistent with the monetary policy response. For the current shock, global activity is likely to push the New Zealand economy in the opposite direction – that may go some way towards explaining why the NZD is currently so low.

3. Both oil consumption demand and inventory demand shocks impact inflation expectations, but neither shock has a reliable effect on GDP or spare capacity

A positive 1 standard deviation oil consumption demand shock lifts headline inflation by around 0.3ppt after three to four quarters in the full sample but not in our baseline, so we treat this as imprecise (see [Appendix A](#)). However, these shocks are most consistently associated with higher two-year inflation expectations – up around 0.1ppt for the first year and a half, a result that holds in every sample we test.

Positive 1 standard deviation inventory demand shocks also lift inflation expectations in our baseline (by 0.05-0.10ppt for almost two years), though this is less robust to how the pandemic is treated. The estimated effect on headline inflation is sizeable and persistent in our baseline (0.2-0.4ppt for about a year

and a half), but also not robust to how the pandemic is treated, so we put less weight on it. Inventory demand shocks also see the NZD-TWI rise by around 1% over the first two to three quarters, a result that holds across samples.

Neither oil consumption nor inventory demand shocks have a reliable effect on GDP, the output gap or core inflation. Oil-specific demand shocks therefore seem to lift inflation expectations without lifting core inflation, consistent with expectations responding to salient fuel prices rather than domestic demand pressure. Neither shock produces a robust OCR response (the inventory-demand response is significant in only one isolated quarter in the baseline). The estimated consumption- and inventory-demand series are negatively correlated in our data. Baumeister and Hamilton's treatment of inventory measurement error helps explain why their individual contributions are difficult to disentangle, so we interpret their separate effects cautiously. Even so, oil-specific demand shocks appear to matter for New Zealand inflation expectations.

4. What we *don't* find is also interesting:

- No reliable GDP drag or rise in spare capacity following oil-supply shocks. This doesn't contradict the international literature that finds that supply shocks weigh on world activity with a lag: our estimates may just be too imprecise to detect it. The point estimates for the output gap, inflation and the OCR lean lower two to three years out, but none is statistically significant.
- No significant second-round effects from supply shocks. That said, the supply-to-core estimate is imprecise rather than zero: it peaks at around 0.15ppt just over two years out, with a 90% confidence range of roughly 0 to 0.3ppt.
- No systematic OCR or 30-day rate response to supply shocks, and no significant change in the terms of trade or the NZD-TWI.

Not finding strong evidence of these effects doesn't mean we can rule them out: no evidence of an impact is not the same as evidence of no impact! It's also worth remembering that these results come from a period when inflation expectations were generally well anchored under inflation targeting, and a shock as large as the current one could test that.

Table 1. Key responses to oil price shocks

Outcome	Adverse oil supply	Global activity	Oil consumption demand	Oil inventory demand
Headline CPI	▲ (brief)	–	–	△
Core CPI (Sectoral Factor Model)	–	△ (lagged)	–	–
2yr inflation expectations	–	▲ (brief)	▲	△
Real GDP	–	▲ (brief)	–	–
Output gap	–	▲	–	–
OCR	–	▲	–	–
Goods terms of trade	–	▲	–	▲ (brief)
NZD-TWI	–	▲ (brief)	–	▲ (brief)

▲ signifies statistically significant (at 90%) impact and robust to how the pandemic is treated.

△ signifies a statistically significant response in the baseline that is less robust to alternative pandemic treatments.

– signifies no statistically significant effect, or in some cases a single isolated significant quarter that we treat as noise (these are still starred in the impulse response charts).

Scaling to a shock that moves the oil price by 10%

So far, results reflect a 1 standard deviation shock to the variable in question. That makes it hard to compare the various “oil price” shocks, as a typical shock of each type moves the oil price by a different amount. Following [the IMF \(2024\)](#), we therefore rescale each shock so that it raises the real oil price (Brent, deflated by US CPI) by 10% in the quarter it hits (see [Appendix A](#) for details).

A typical adverse supply shock (1 sd) lifts the real oil price by around 6% on impact, an oil consumption demand shock by around 7%, and an inventory demand shock by around 5%. The oil price then keeps rising for a while (table 2).

Scaled this way, an oil-supply shock that lifts oil prices by 10% is followed by headline inflation rising around 0.5ppt after two quarters but has no significant effect on core inflation or inflation expectations. Oil-specific demand shocks that move the real oil price by 10% see a lift in two-year inflation expectations by around 0.2ppt. Inventory demand shocks have a larger, though less robust, effect on headline inflation (up to around 0.8ppt) and see the NZD-TWI rise by around 2½%.

Unfortunately, global activity shocks can't be scaled this way: they barely move the oil price in the quarter they hit (around 0.7% per standard deviation, and not statistically significant), with the effect building to around 6-7% only after two quarters. Scaling them on impact would imply implausibly large effects, so we leave them out of table 2. Note that 10% is the oil price rise in the quarter the shock hits. For all three shocks, prices keep climbing for a while afterwards – peaking around 16-17% higher – so the total rise in oil prices behind these estimates is larger than 10%.

Scaling up the typical response to the size of the current shock (6.0 sd), the 2026Q1 oil-supply shock alone implies a rise of around 45% in the real oil price, with the other three shocks in Q1 roughly netting out. That looks large against the 21% rise in the Q1 average real Brent price, but the shock hit in March, so the quarterly average captures only part of the move. Real Brent rose around 40% from February to March, and the Q2 average was a further 22% higher than Q1 – around 49% above 2025Q4. Over the period in question, the model is therefore in the right ballpark; the rise has simply been spread over two quarters. The same holds for what followed: on impact, the Q2 inventory demand shock (inventory release) implies a fall of almost 20% in the real oil price, close to the 18% fall in real Brent that was seen from May to June. Overall, these comparisons put the model-implied oil-price movements in broadly the right ballpark, but do not validate the estimated consequences for New Zealand.

Table 2. Peak responses to shocks that raises the real oil price by 10%

Outcome	Adverse oil supply	Global activity	Oil consumption demand	Oil inventory demand
Real oil price (peak)	+17% (6q)	N/A	+16% (1q)	+17% (6q)
Headline CPI	+0.46 (2q)	N/A	–	+0.81 (3q)
Core CPI (SFM)	–	N/A	–	–
2yr inflation expectations	–	N/A	+0.19 (4q)	+0.23 (3q)
Real GDP	–	N/A	–	–
OCR	–	N/A	–	–
NZD-TWI	–	N/A	–	+2.4% (1q)

Peak statistically significant (90%) response within two years of a shock that raises the real oil price by 10% on impact; quarter of peak in brackets. Oil-price responses are measured in log points and interpreted approximately as percentage changes.

q = quarters.

Real oil price, GDP and NZD-TWI in %; inflation, expectations and OCR in ppt.

– signifies no statistically significant response, or a single isolated significant quarter that we treat as noise (supply shock effects on GDP; inventory demand shock effects on the OCR).

Global activity shocks barely move the oil price on impact, so can't be scaled this way.

Entries are from the baseline estimates; see Table 1 for which are robust to the pandemic treatment.

Implications for monetary policy

The conventional wisdom is that central banks should look through oil supply shocks, reacting only if the net impact on spare capacity and inflation inertia shifts the medium-term inflation outlook. The good news is that we find no evidence that oil supply shocks have historically generated significant second-round inflation effects. The bad news is that the scale of the current supply shock is so large that it would be unwise to assume estimated impacts based on historical experience will provide a precise estimate.

Meanwhile, the literature suggests the lagged hit to global activity is something to keep a close eye on. Baumeister and Hamilton estimate that a supply disruption lifting the real oil price by 10% lowers world activity by around 0.5% after a year, and the IMF (2024) finds global industrial production around 1% lower after two years. Energy importing economies bear the brunt ([IMF 2024](#)).

Weaker world demand could be an important transmission channel to New Zealand: global activity shocks have historically moved the terms of trade, activity, the OCR and, less reliably, core inflation. However, the floating NZD (which has depreciated meaningfully in recent months) is a key shock absorber, as the IMF finds tends to be the case for energy importers with flexible exchange rates. Further, if export prices hold their own against import prices through the supply-induced downturn, as they have tended to after past supply shocks, New Zealand's terms of trade may be better protected than in a global slowdown driven by other causes (when the terms of trade typically fall alongside world demand).

One thing's for sure: the current episode is unlikely to play out as a single, sharp supply shock. Inventory demand is likely to be volatile – falling as global reserves are released, then rising as they are eventually rebuilt. For New Zealand, that rebuilding phase could be important, with inflation expectations typically higher in the aftermath. But there's also a risk that oil consumption demand goes the other way with the rise of EVs, providing a degree of offset (though diesel has fewer substitutes than petrol). Global activity, meanwhile, is likely to be weighed down for some time, both by the current oil shock itself and by global monetary tightening. Global activity shocks have historically moved New Zealand's terms of trade, activity, the OCR and (less reliably) core inflation together, so a sustained downturn would, in time, take pressure off inflation.

Putting all that together suggests the RBNZ's strategy of withdrawing monetary stimulus as a first port of call is the right one. But caution is warranted. If it is the case that the inflation effects arrive quickly and then fade, but the activity hit comes later, then leaning too heavily against the former could mean monetary conditions end up too tight for the economic conditions further down the track. But no one knows how the current shock will play out, so policymakers will need to stay nimble and continue to weigh the evolving risks to medium-term inflation on both sides.

Appendix A: Shock data, the model, caveats and robustness checks

Baumeister and Hamilton's shock series

[Baumeister and Hamilton](#) employ a structural vector autoregression of the global crude oil market estimated on monthly data for the four variables mentioned on page 2. While earlier studies separated supply from demand by imposing ordering assumptions – for example, that oil production cannot respond to the price within a month – Baumeister and Hamilton use a Bayesian approach that draws on evidence from other studies, such as how responsive oil supply and demand are to price in the short run, and how oil demand rises with income. Their central estimates imply a short-run price elasticity of oil supply of 0.15 and of oil demand of -0.35. In other words, oil producers and consumers can't adjust quickly: a 10% rise in the oil price lifts global oil production by only around 1.5% in the short run and reduces oil consumption by only around 3.5%. That lack of responsiveness means even a small disruption to supply needs a large price move to bring the market back into balance.

The model

We estimate local projections ([Jordà, 2005](#)). For each quarter ahead ($h = 0$ to 12) we run a separate regression of the NZ outcome on the oil shock of interest, controlling for one lag of the shock itself, the other three oil shocks (current quarter and one lag) and four lags of the outcome. The coefficient at each horizon traces out how the outcome typically moves after a shock, without imposing a full model of the economy. This specification follows the [IMF External Sector Report 2024, Chapter 2](#), adapted to a single country. While the model is estimated to 12 quarters, the impulse responses in [Appendix B](#) display 8 quarters only as results at longer horizons warrant caution.

Estimating equation

For each outcome y , each shock of interest k and each horizon $h = 0, 1, \dots, 12$ quarters, we estimate a separate regression:

$$y_{t+h} = \alpha_h + \beta_h s_t^k + \gamma_h s_{t-1}^k + \sum_{i=1}^4 \phi_{i,h} x_{t-i} + \sum_{j \neq k} (\delta_{j,h} s_t^j + \lambda_{j,h} s_{t-1}^j) + \varepsilon_{t+h}$$

where:

- s_t^k is the shock of interest in quarter t , and s_t^j are the other three shocks, which enter as controls;
- x_{t-i} are four lags of the outcome variable (e.g. CPI, GDP...);
- β_h is the impulse response at horizon h .

All four shocks are treated identically: each takes its turn as the shock of interest, with the other three as controls. Shocks are scaled by their standard deviation, in the direction that raises oil prices. Inflation measures, expectations, the output gap, unemployment, the OCR and the 30- and 90-day rates are levels; GDP, the TWI and trade prices are cumulative log changes ($\times 100$, approximately % changes) from the quarter before the shock. For these cumulative outcomes, the lagged controls are quarterly log changes rather than levels.

Inference

Local projection residuals overlap across horizons, so they are serially correlated by construction. Following [Montiel Olea and Plagborg-Møller \(2021\)](#), we include a lag of every variable – including the shock of interest – and use heteroskedasticity-robust standard errors, which are valid in this setting without a correction for serial correlation. This is more conservative than the Newey-West standard errors commonly used: in short samples like ours these can understate uncertainty ([Herbst and Johannsen, 2020](#)), and they were around 7-17% narrower in our data. Bands show 68% and 90% confidence intervals – see impulse response functions in [Appendix B](#).

Data and samples

Each outcome uses all the data available for it. Estimation samples start in 1987-88 for most series (headline CPI, inflation expectations, unemployment, GDP, trade prices, the TWI and the 30- and 90-day rates), in 1994 for core inflation (the RBNZ's Sectoral Factor Model), and in 2000-01 for the OCR, the output gap and non-tradables inflation. Because the OCR exists only from 1999, it misses some large supply shocks in history. We therefore also estimate the 30-day rate, which tracks the OCR closely and extends back to 1987. It is a proxy for the policy stance before 1999, and as a market rate it can move a little ahead of the OCR. The 90-day rate gives very similar results.

Our baseline model sample leaves out the current shock (2026Q1-Q2), which is ongoing and whose shock estimates may yet be revised, and any observation affected by the pandemic. In practice, that means dropping any shock whose data – from a year before the shock to the horizon being estimated – overlap 2020-2021.

In the full sample, pandemic quarters dominate the estimates: 2020Q2 (a large adverse supply shock) is followed six to eight quarters later by the 2021-22 inflation surge, generating a spurious persistent core inflation response, while the 2020 collapse and rebound in GDP generates a spurious positive GDP response to adverse supply shocks. However, excluding these observations also removes the 2022 energy price episode from our estimates (though not from the episode analysis).

Scaling to a 10% oil price rise

To express results per 10% rise in oil prices (table 2), we follow [the IMF \(2024\)](#) and [Stock and Watson \(2018\)](#) in normalising each shock by its effect on the real oil price (Brent, deflated by US CPI) rather than by its standard deviation. We re-estimate each regression by instrumental variables: the quarterly change in the real oil price replaces the shock of interest, which becomes the instrument, with the same controls and sample. As the model is exactly identified, this is equivalent to dividing each baseline response by the shock's estimated impact on the real oil price. Global activity shocks can't be scaled this way, as their impact on the oil price in the quarter they occur is small and insignificant (first-stage F-statistic of around 1). For the other three shocks the instrument is strong (F-statistics of around 51-76) on impact.

Caveats

Our estimates describe average historical relationships. The models are linear and symmetric: they assume oil price rises and falls have mirror-image effects, and that bigger shocks have exactly proportionally bigger effects. That may not hold true – particularly for a shock as large as the current one. But because large adverse supply shocks are rare – excluding the pandemic, the largest in our sample (1990Q3) is around half the size of the current one – history offers little guide to how a shock of this scale might behave differently.

Estimates also become less precise at longer horizons. The further out we look, the more the economy is buffeted by other shocks, and the more time monetary and fiscal policy have had to respond – both to the oil shock and to everything else. Our estimates capture how the economy responded given how policy reacted at the time, not what would happen with no policy response. For supply shocks this matters less: neither the OCR nor the longer-history 30-day rate response is statistically significant, although the point estimates are positive over the first year, so some tightening can't be ruled out. Indeed, when we include the current episode (2026Q1-Q2), the OCR response to supply shocks becomes statistically significant over the first three quarters (rising to around 0.2ppt), suggesting policy has moved more during this shock than history would imply, but that rests on a single episode, which isn't over yet. It may also reflect the fact that the OCR was at cycle lows when the oil shock hit – that is, the next move was already looking like it would be a hike. Responses two to three years out also rest on fewer observations, as the pandemic exclusion removes more shock dates at longer horizons.

Structural change also means the past may be an imperfect guide. New Zealand's only oil refinery, at Marsden Point, stopped refining in 2022, so the country now imports all of its refined fuel, mainly from Asian refining hubs such as Singapore and South Korea. That leaves domestic fuel prices more directly exposed to international refining margins. Shocks to crude oil markets don't capture these, and the period since is too short to test whether pass-through has changed. Separately, the US has become a net petroleum exporter. The IMF (2024) finds this has changed how the US dollar responds to oil supply shocks, with implications for the NZD and global financial conditions.

Robustness across samples

We test the results against three alternative samples: the full sample with a COVID dummy; excluding only the 2020-21 shock dates; and the baseline including 2026Q1-Q2. We also re-estimated the inflation and expectations results from 2001 (when non-tradables data begin). The signs are unchanged, but most estimates are smaller and less precise – that sample is shorter and excludes the 1990 Gulf War – so we do not rely on it.

- The supply-shock effect on headline inflation at two quarters is significant in both alternative pandemic treatments and when 2026Q1–Q2 is included. The 30-day rate, which extends back to 1987, also shows no statistically significant response to supply shocks.
- The global-activity-shock effects on the terms of trade, inflation expectations, GDP, the output gap, the OCR, the 30-day rate and the NZD-TWI are significant in every alternative sample.
- The global activity effect on core inflation holds in the baseline model sample but not in the full sample.
- The oil consumption demand effect on inflation expectations is significant in every alternative sample. Its effect on headline inflation is significant in the full sample (at three to four quarters) but not in the baseline or when only the 2020-21 shock dates are excluded, so we treat it as imprecise.
- The inventory demand effect on headline inflation is not robust: it is not significant in the full sample, and only partly significant when only the 2020-21 shock dates are excluded.
- The inventory demand effect on inflation expectations is significant in the baseline for almost two years, but in the full sample only at three quarters, so it is less robust than the consumption demand result. Its effect on the NZD-TWI is significant in every alternative sample.

Finally, because we look at many outcomes over many quarters, some results will look significant purely by chance. The asterisks in the impulse response charts mark any response that is significant at 90% in at least one quarter, so some will reflect chance. We only draw conclusions from results that hold over consecutive quarters and across the alternative samples – or, in the case of the supply-shock effect on headline inflation, from a single quarter that holds across the alternative pandemic treatments.

Table A1: Robustness of key results across samples

Outcome	Quarter	Baseline	Full sample	Excl. 2020-21 shocks	Incl. 2026Q1-Q2
Oil supply					
Headline CPI	2	+0.27*	+0.22*	+0.28*	+0.27*
Goods import prices	6	+1.88*	+1.84*	+1.72*	+1.88*
Core CPI (SFM)	9	+0.14	+0.29*	+0.07	+0.14
30-day rate	4	+0.30	+0.23	+0.29	+0.30
Global activity					
2yr inflation expectations	3	+0.09*	+0.08*	+0.07*	+0.09*
Output gap	2	+0.32*	+0.29*	+0.31*	+0.32*
Real GDP	2	+0.32*	+0.63*	+0.32*	+0.32*
Goods terms of trade	4	+2.05*	+1.39*	+2.05*	+2.05*
OCR	4	+0.65*	+0.48*	+0.53*	+0.65*
30-day rate	4	+0.60*	+0.51*	+0.56*	+0.60*
Core CPI (SFM)	8	+0.18*	+0.06	+0.16*	+0.18*
Non-tradables CPI	11	-0.28*	-0.30*	-0.34*	-0.28*
NZD-TWI	1	+1.60*	+1.32*	+1.57*	+1.66*
Oil consumption demand					
2yr inflation expectations	2	+0.13*	+0.11*	+0.11*	+0.12*
Headline CPI	3	+0.30	+0.34*	+0.32	+0.30
Oil inventory demand					
Goods terms of trade	0	+0.49*	+0.44*	+0.45*	+0.67*
OCR	1	+0.11*	+0.07	+0.04	+0.09
30-day rate	2	+0.36*	+0.22*	+0.20	+0.36*
2yr inflation expectations	3	+0.10*	+0.07*	+0.09*	+0.10*
Headline CPI	3	+0.36*	+0.13	+0.25*	+0.36*
NZD-TWI	1	+1.12*	+1.04*	+1.01*	+0.98*

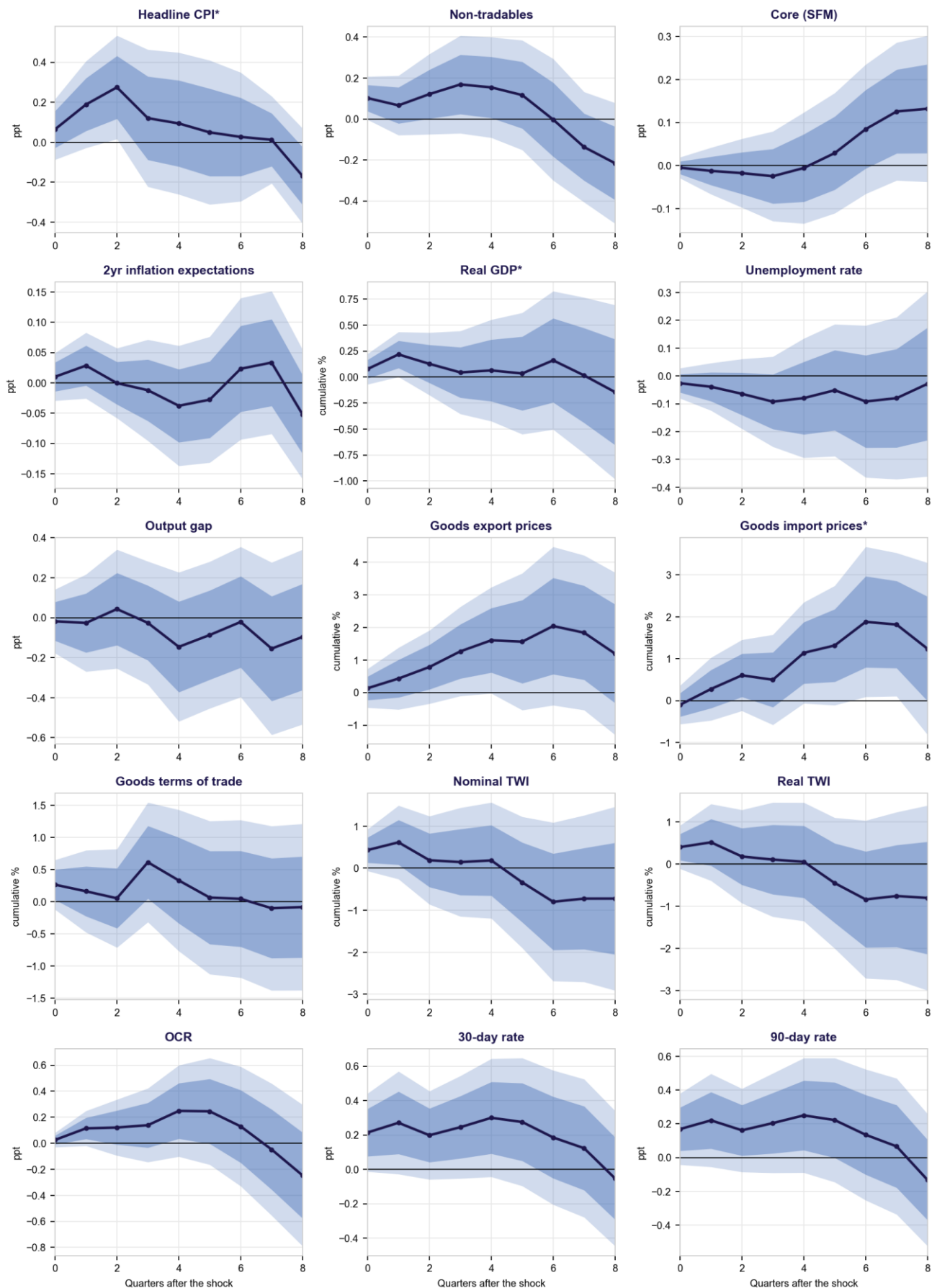
Response per 1-sd shock that raises oil prices. Quarter = quarters after the shock at which the response is shown.

* (bold) = significant at 90%.

Full sample uses a COVID dummy instead of excluding pandemic-affected observations. All samples exclude the current shock (2026Q1-Q2) except 'Incl. 2026Q1-Q2'. NZD-TWI is the nominal trade-weighted index (+ signifies an appreciation). The 30-day rate extends the policy-rate comparison back to 1987.

Appendix B: Results – impulse response functions

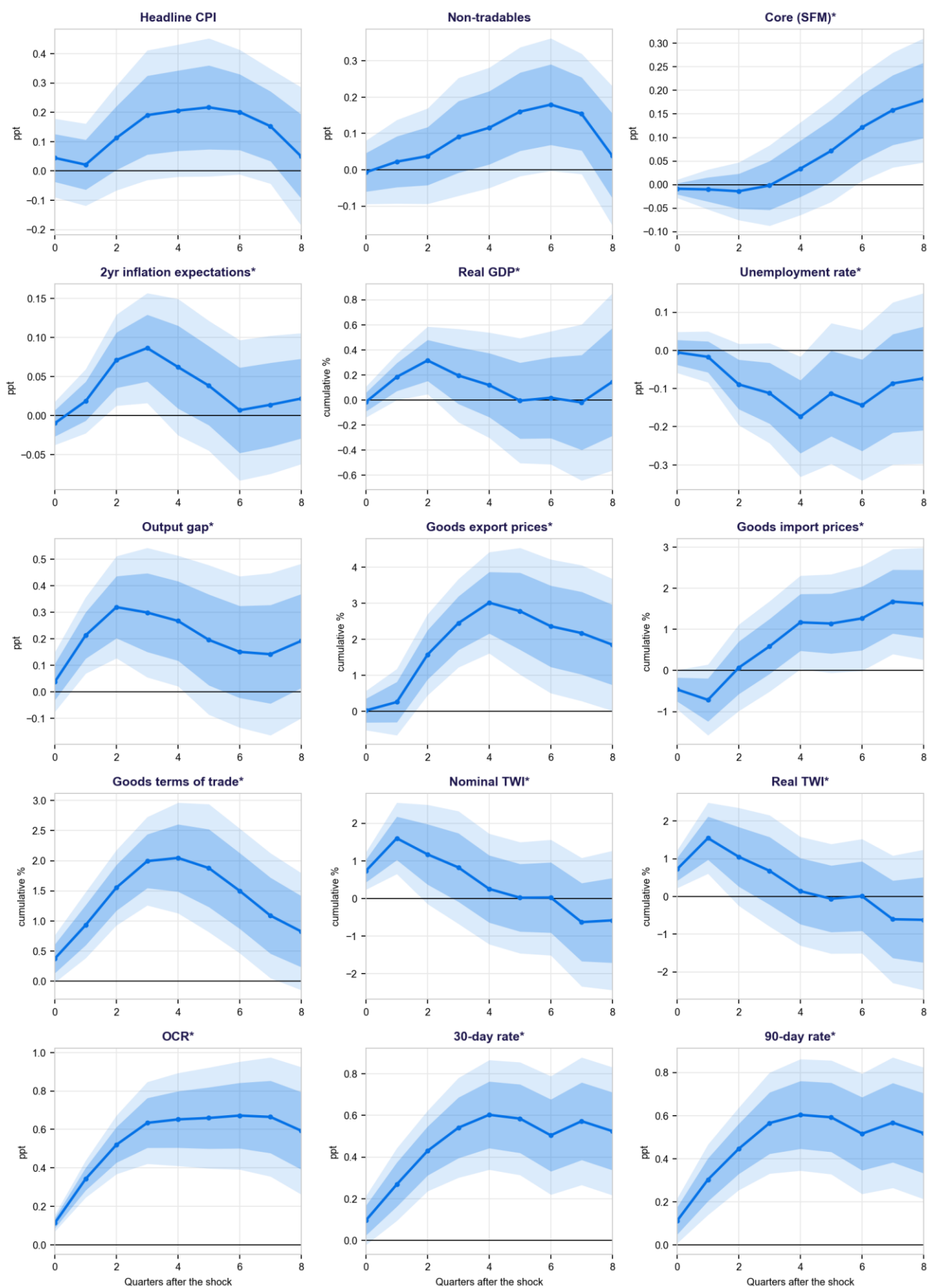
Impulse responses to a 1-standard deviation adverse oil supply shock



IRFs are shown to eight quarters; estimates at longer horizons should be interpreted with greater caution.

* indicates that a response is statistically significant at the 90% level in at least one quarter. While responses that are statistically significant in only a single quarter are also denoted with *, these are given little weight in our interpretation, as some will reflect chance (see [Appendix A](#)).

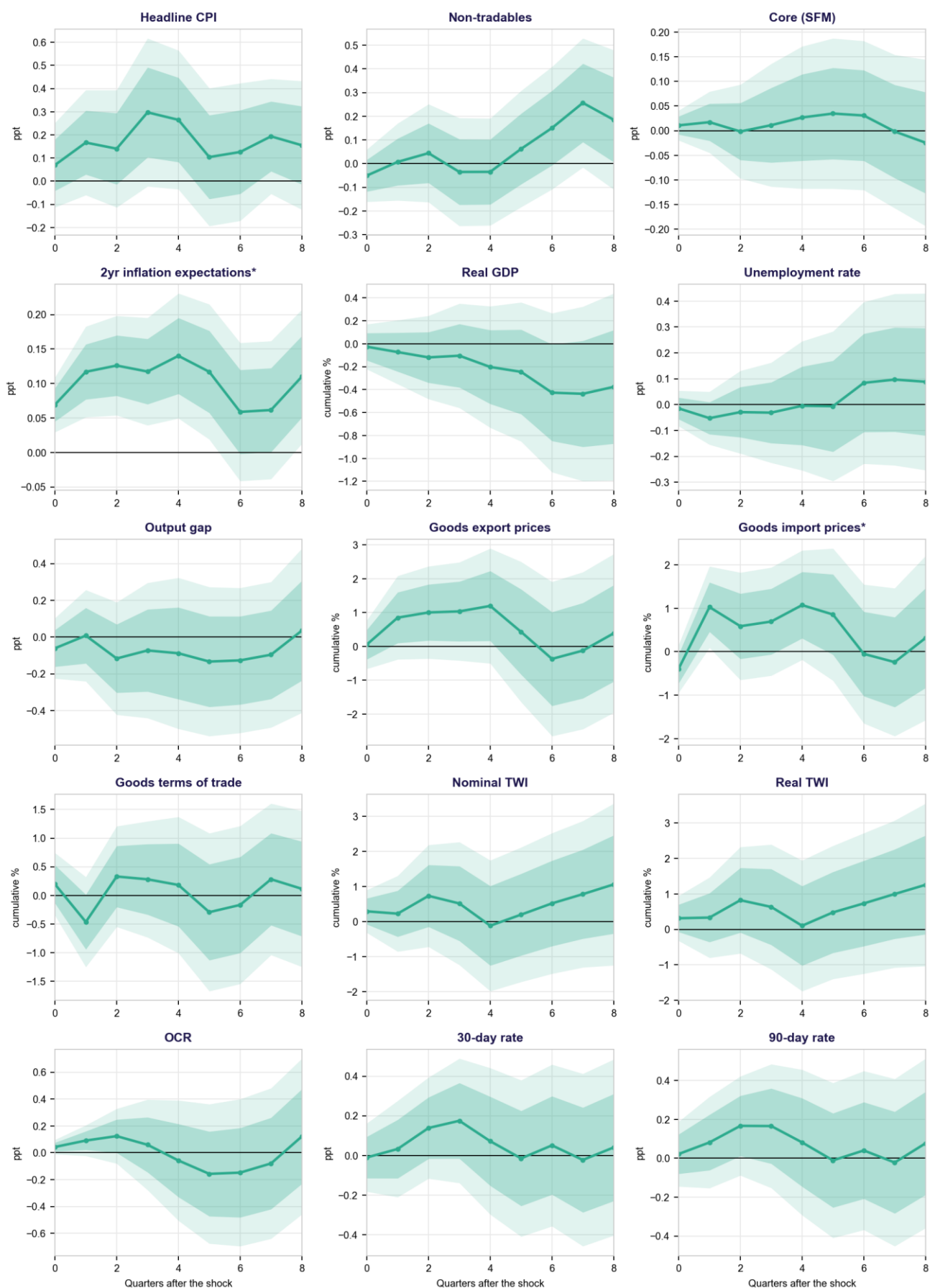
Impulse responses to a 1-standard deviation global activity shock



IRFs are shown to eight quarters; estimates at longer horizons should be interpreted with greater caution.

* indicates that a response is statistically significant at the 90% level in at least one quarter. While responses that are statistically significant in only a single quarter are also denoted with *, these are given little weight in our interpretation, as some will reflect chance (see [Appendix A](#)).

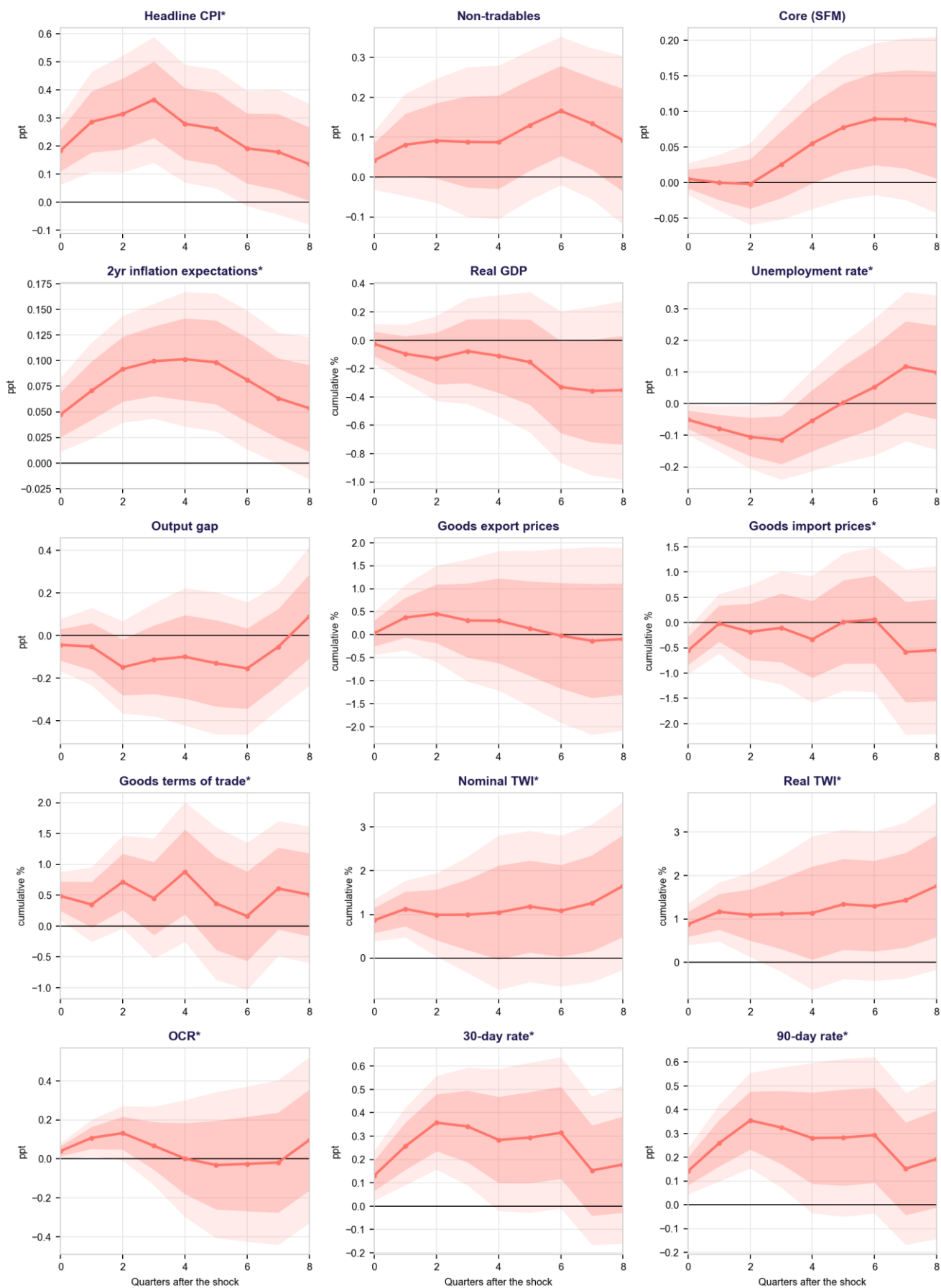
Impulse responses to a 1-standard deviation oil consumption demand shock



IRFs are shown to eight quarters; estimates at longer horizons should be interpreted with greater caution.

* indicates that a response is statistically significant at the 90% level in at least one quarter. While responses that are statistically significant in only a single quarter are also denoted with *, these are given little weight in our interpretation, as some will reflect chance (see [Appendix A](#)).

Impulse responses to a 1-standard deviation oil inventory demand shock



IRFs are shown to eight quarters; estimates at longer horizons should be interpreted with greater caution.

* indicates that a response is statistically significant at the 90% level in at least one quarter. While responses that are statistically significant in only a single quarter are also denoted with *, these are given little weight in our interpretation, as some will reflect chance (see [Appendix A](#)).

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Sharon Zollner

Chief Economist, New Zealand

Telephone: +64 9 357 4094

Email: sharon.zollner@anz.com

General enquiries:

research@anz.com

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David Croy

Senior Strategist

Market developments, interest rates, FX, unconventional monetary policy, liaison with market participants.

Telephone: +64 21 243 0945

Email: david.croy@anz.com



Matt Dilly

Agricultural Economist

Primary industry developments and outlook, structural change and regulation, liaison with industry.

Telephone: +64 21 221 6939

Email: matthew.dilly@anz.com



Miles Workman

Senior Economist

Macroeconomic forecast co-ordinator, economic developments, labour market dynamics, inflation, fiscal and monetary policy.

Telephone: +64 21 661 792

Email: miles.workman@anz.com



Matthew Galt

Senior Economist

Macroeconomic forecasting, economic developments, GDP, housing and credit dynamics.

Telephone: +64 21 633 469

Email: matthew.galt@anz.com



Natalie Denne

PA / Desktop Publisher

Business management, general enquiries, mailing lists, publications, chief economist's diary.

Telephone: +64 21 221 7438

Email: natalie.denne@anz.com

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