



Paper 3.2

Border restrictions: Implications

Forecasting team
Primary author: Tom Stannard

SUMMARY

Purpose

- For the past few forecast rounds the potential for largely unrestricted trans-Tasman travel in advance of wider border openings has been raised as an upside risk. The purpose of this paper is to review the impact of the border restrictions at a high level, along with the possible implications and profile of easing them and/or implementing a trans-Tasman travel bubble.

Key points

- International tourism and migration are being significantly negatively impacted by the border restrictions.
- There are indications that global demand for international travel and tourism is still high. Together with the current high demand for international labour, this will likely result in a positive inflow of tourists and overseas migrants as border restrictions are relaxed.
- The overall outlook is positive but political decisions, fierce international competition for tourists, and access to international transport will likely weigh on the outlook.
- A two-way quarantine-free travel agreement with Australia would be a significant positive for New Zealand’s tourism exports. However, due to likely logistical difficulties and uncertainty created by the possibility of COVID-19 developments ending the arrangement suddenly, it may not be as positive as it appears.

INTRODUCTION

New Zealand’s stringent border restrictions on foreign arrivals have significantly reduced exports of services and migrant arrivals (figure 1a and 1b). A sustained recovery in tourism and migration can only begin when border restrictions are eased.

Figure 1a: Exports of services

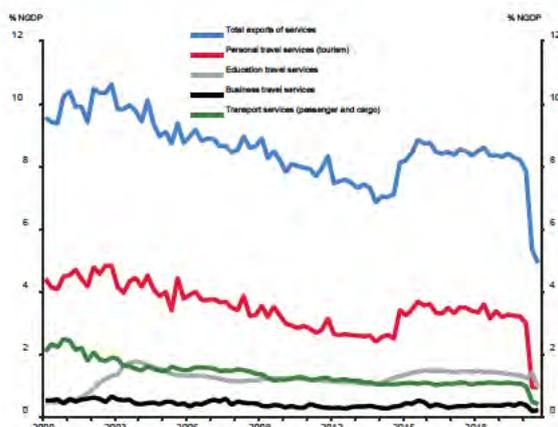
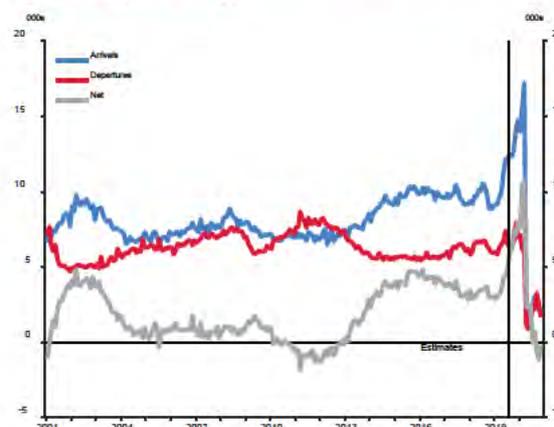


Figure 1b: Estimated working age population migration (monthly)



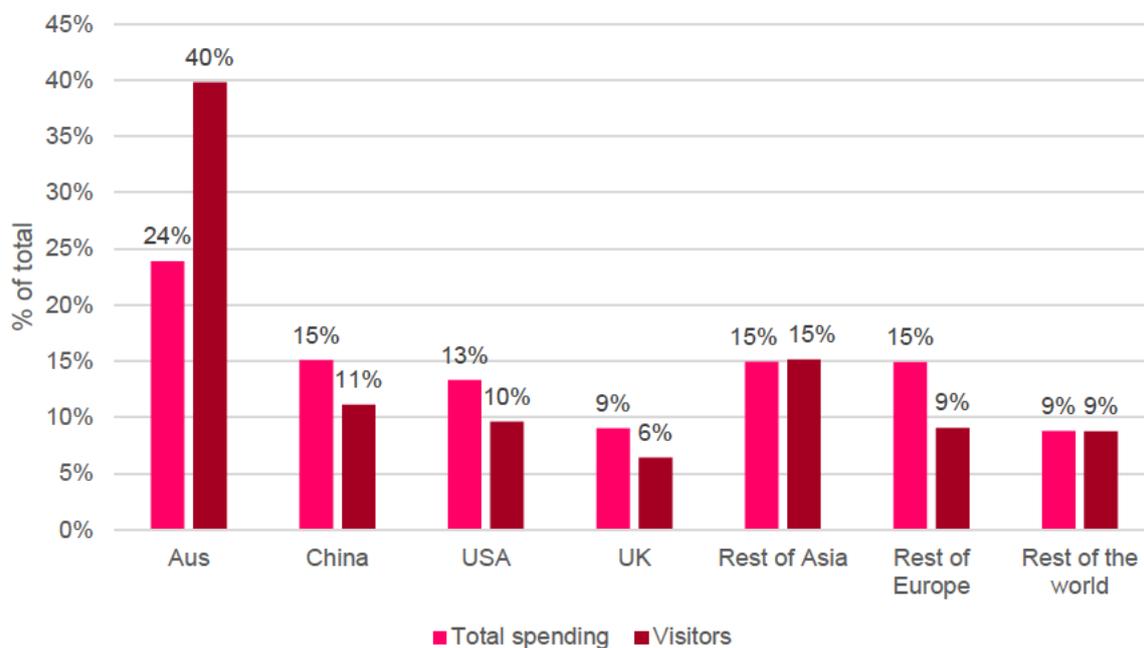
Source: StatsNZ

TOURISM AND THE BORDER

Available travel surveys indicate that global interest in international travel remains high, but the frequency and distances people want to travel has decreased. Sensitivity to health concerns have also increased, particularly for older people.¹

Nevertheless, the market of potential travellers that New Zealand will be appealing to is still likely large. The global pent-up demand for travel, and New Zealand's positive health response may encourage people to visit. However, the distance from high value-per-person markets like China, the US and the UK (figure 2), and the characteristics of those more likely to visit, i.e., younger people who are lower value visitors, will likely act as a moderating force on total tourism exports.

Figure 2: Visitors and spending (2019)



Source: MBIE

The key constraining factors to the size of the market likely to resume travel to New Zealand are:

1. How much demand or pent-up international demand for tourism services materialises or can be captured?
2. What global transport can be supplied and what can be delivered domestically to attract foreign visitors to return?

Firstly, there will be fierce competition for international tourists globally when countries begin to re-open their borders. When borders open will be important in determining which tourists return, and how much global pent-up demand the country can capture. Therefore, there is likely to be a first-mover advantage, with countries opening later likely to lose some market share.

Secondly, the global air passenger transport system will need to recover. Access to international transport will pick up in some parts of the world faster than others, again likely

¹ See [Tourism NZ](#), [BCG](#), [FT](#), [hospitatly.net](#), [McKinsey](#), [luggage hero](#) as a few examples of surveys and coverage. These surveys are largely online and should be treated as an indicator only. Also, most were from earlier in 2020 when more of the world was under more restrictive lockdowns.

depending on when and where restrictions are relaxed globally. This could lead to a gradual pick-up in visitor arrivals, depending on domestic and international airlines' and airports' ability to scale up operations, especially if they have to operate under new health and safety requirements. Health and safety requirements will also be a more significant factor under any travel bubble arrangement (see Box A for more detail).

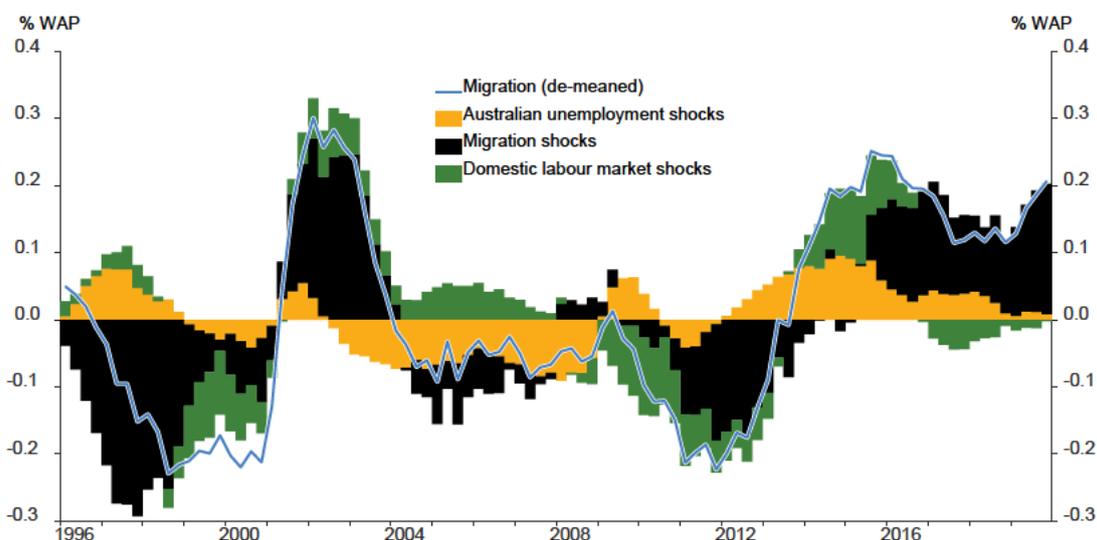
Participants in our BIC discussions have suggested that domestic migration is making staffing difficult in some tourist destinations, such as the West Coast and Queenstown. If staff can't or won't return, or owners have been forced to close up their businesses altogether and then restart quickly, supply shortfalls may mean tourists will opt for other trips with more access to activities and won't visit New Zealand.²

MIGRATION AND THE BORDER

Although migration spiked as people returned to the country, it has been negatively affected by the closed borders. In particular, teaching institutions and firms that benefit from access to international labour pools, both skilled and unskilled, have been most severely negatively affected.

Past work has shown that at times, a key driver of total migration is the relative performance of the Australian and New Zealand labour markets (figure 3). That relationship appears to have been less dominant in the past several years, possibly as migration has become more diversified, leading to local (NZ and Aus) labour markets having a smaller impact on migration outcomes. However, the current tightness of the labour market – with firms reporting ongoing difficulty finding both skilled and unskilled labour due to the closed border – will likely lead to positive migration flows into the country, easing some pressure in sectors of the domestic labour market. The magnitude and nature of migration will naturally be subject to political decisions by Immigration NZ, likely depending on domestic labour market conditions.

Figure 3: Migration shock decomposition (Pre-COVID-19 estimation)



Source: Armstrong & McDonald (2016)

² Businesses have noted in our conversations with them that international tourists book ahead, often quite far in advance. Domestic tourists, however, do so much less. This indicates that international tourists are likely to visit New Zealand with attractions in mind. If those attractions are not available then the tourists may not come.

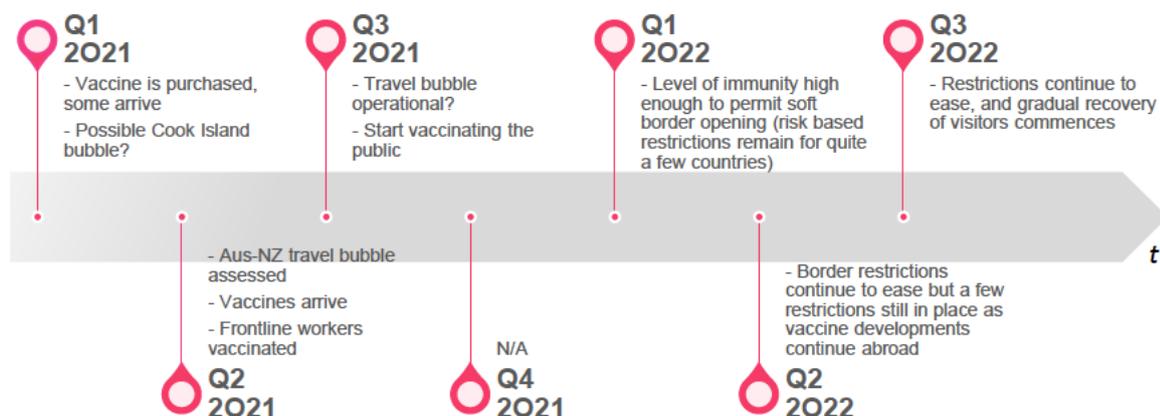
WHAT TIMING COULD LOOK LIKE

In terms of potential timing, figure 4 draws from Government announcements, media coverage, and conversations we have had with officials. Consistent with those conversations, the time-line assumes that the Government does not deviate from its 'elimination' strategy. Under this strategy, health outcomes remain prioritised and the Government's actions remain risk-averse to new transmission of the virus domestically when considering easing border restrictions. This in turn implies that the outlook for the border is more dependent on domestic levels of resilience to the virus, and it is less important whether people or certain countries have reached acceptable levels of immunity. It also assumes there are no more sustained domestic community outbreaks and that the vaccines purchased by the Government are effective and sufficiently adopted by the public. Recent developments have pointed towards some downside risk related to the effectiveness of some of the vaccines.

One thing that has been quite clearly conveyed by some officials is that anything that happens with regard to the border will be gradual. Our current assumption, contained in the central scenario, is for border restrictions to be partially eased by Q1 2022. From there easing continues as New Zealand opens to countries or regions that have been more affected during the pandemic.

All developments and timings are highly uncertain and subject to change, however, the timeline below is presented to help assess the key developments contained within the outlook.

Figure 4: Possible progression for border restriction easing



Note: Key assumptions

- The Govt. does not change from 'elimination strategy', health is prioritised over economy throughout, and the threshold for change remains high and all change is gradual.
- Covid-19 cases remain eliminated in NZ.
- Covid-19 vaccines that prevent transmission are proven and available to travellers.

There is a possibility of travel bubbles with Australia and the Cook Islands, possibly likely in the later half to 2021 (there are currently partial bubbles with both countries, but neither have two-way quarantine-free travel yet). Australia is a significantly large market and without global competition for tourism, interest would likely be high. However, uncertainty of health outcomes ending the agreement without warning and logistical difficulties for airlines and airports will likely constrain demand (see Box A for more detail). **Allowance for these events has been left out of first pass projections due to the uncertainty of it materialising.**

BOX A: TRAVEL BUBBLE AGREEMENTS

Travel bubbles: Australia and the Cook Islands

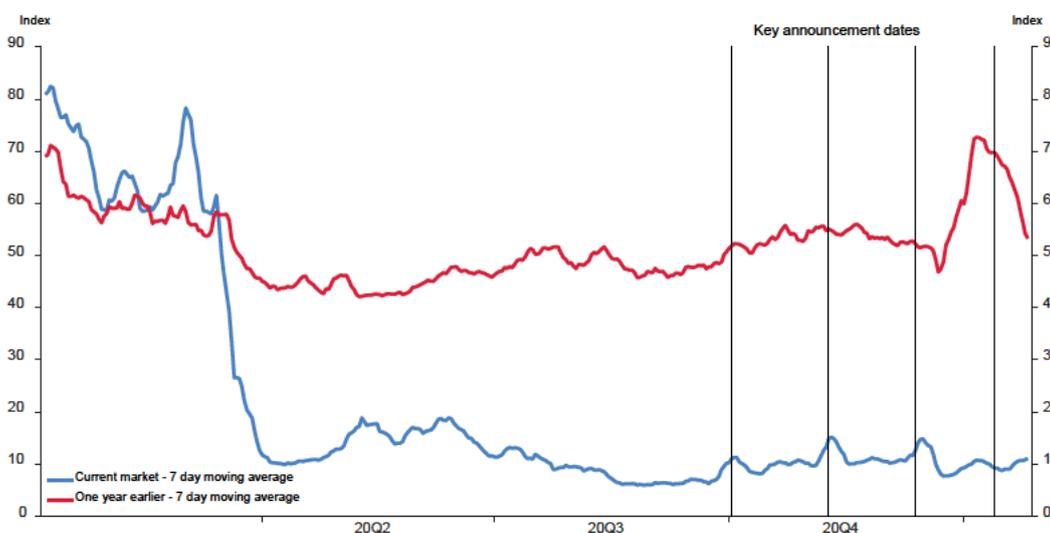
Currently, the Government is exploring travel bubble options with Australia and the Cook Islands. The Cook Islands has progressed further and appears most likely at this stage. These assessments are ongoing and highly uncertain, in terms of both timing and materialisation.

In typical times, Australians make up 40 percent of total visitors. As they spend less per-person on average than visitors from some other countries they make up only approximately 25 percent of total tourism spending (approximately \$2.7b). Likewise, on the imports side, New Zealanders visiting Australia make up a majority of our total travel imports (approximately \$2.0b). Typically, this results in a net inflow to New Zealand of approximately \$700m (or 0.2 percent of GDP).

However, there are a total of approximately 3.5 million trips taken by New Zealanders each year, 40 percent of which go to Australia. Conversely there are typically 11.5 million trips taken by Australians each year, of which only 13 percent head to New Zealand. This means that there is significant additional capacity for Australians to travel here in net terms when the borders open to Australia.

If a travel bubble is initiated with Australia it is more likely that pent-up demand to travel in Australia converts into actual travel to New Zealand, because there is no global competition. However, despite survey results suggesting that Australians would be interested in visiting New Zealand, this has not translated into significant spikes in internet searches around key announcements and media attention relating to the bubble (figure A1). This is likely a result of the high degree of uncertainty around the materialisation and stability of the travel bubble, and indicates that any take-up will likely be after the travel bubble is enacted.

Figure A1: Google search data, Aus to NZ holidays



Source: NZ Customs, News reporting

The take-up is also likely to be gradual, as the uncertainty of an outbreak in either country, closing the bubble with little warning, will likely deter visitors who don't want to become stuck and have to quarantine to return home. In addition, technical safety aspects will likely slow the ability of actual transportation between the two countries. There will need to be significant separation between COVID-19-free travel and travellers going between the two countries, and those returning to either Australia or New Zealand from elsewhere in the world. This could significantly reduce the number of flights that can operate.

For the Cook Islands, tourism exports is essentially zero and probably unlikely to change. However, tourism imports represents about \$250m per year in typical times (0.08 percent of GDP). This is small in terms of its impact on overall imports of services. Also, the potential for significant pent-up demand

from New Zealanders towards the Cook Islands would be limited, as in typical times New Zealand travellers already make up around 70 percent of the Cook Islands' total tourism trade (implying that capacity would be limited).

Outlook and the travel bubble?

Focusing on the NZ-Aus travel bubble, the outlook of what impact it could have on actual tourism spending is very uncertain. As with general easing of border restrictions it will hinge on how many people want to come and how many people can get here. 9(2)(ba)(i)

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This is consistent with our thinking and the risks appear quite balanced. To the upside, there may be a much higher uptake of New Zealand tourism exports and businesses supplying the services may be able to easily return to normal operations. To the downside, businesses are unable to source employees and depending on timing, demand is low as Australians see an imminent general global opening and forego their New Zealand trip, with limited activities available, for a larger Europe or American trip.

Travel bubble and migration

Migration with Australia under a travel bubble scenario may also not be significantly impacted. There is already a one-way quarantine-free travel bubble from New Zealand to Australia (although put temporarily on hold through NZ's most recent community outbreak). On implementation there was a slight spike in New Zealand resident departures.³ However, it did not turn to a net out-flow of New Zealanders.

Given that Australia's economy has also shown resilience through the economic impacts of the COVID-19 pandemic it is also unlikely that there will be a significant inflow of Australians migrating to New Zealand just due to quarantine-free travel. Although this is an upside risk, as MIQ facilities have been operating at capacity and it's possible that New Zealand residents have been finding it difficult to return.

³ This is total departures, however it is likely that most will be migrants as they would have to pay for quarantine should they return to NZ in the near-term.

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13 MAY 2021



Paper 3.2

Supply focus: supply chain and labour market risks

Forecasting team
Author: Daniel Wills

SUMMARY

Key supply-side risks to inflation and employment are more prolonged goods supply disruptions, and entrenched labour shortages.

- **Under the severe assumption of a behaviour shift in wage and price-setting (in response to acute/prolonged goods supply bottlenecks), there would be a material upside risk to the central projection inflation and OCR outlook (+50 to +75bp).** This could see inflation hold near the top of our target band in the coming year, compounding other upside inflation risks. Medium term inflation could also settle just below 2.5%.
- **But the direct impact of more prolonged/acute supply shortages alone would likely be more modest (less than +20bp)** – inflation impacts would be more transitory.
- **We assume goods supply constraints begin to ease by late 2021, and unwind over 2022.** But a sustained global expansion could keep supply chains busier for longer.
- **Wage inflation is expected to temporarily rise in 2021** as labour conditions tighten, private sector wage freezes expire, and the higher minimum wage kicks in. Tighter global labour supply and limited domestic labour mobility could underpin wage growth longer, in addition to any behavioural changes in wage setting/demands (as above).

Part I of this paper explores the inflation and employment impacts if supply-chain bottleneck risks are realised. Part II outlines how goods/services supply has evolved post-COVID-19.

I. KEY SUPPLY RISKS: SUPPLY CHAINS, LABOUR SHORTAGES

Key risks are for lingering supply chain disruptions, entrenched wage growth

Higher and more persistent inflation from supply side-disruptions and changes post-COVID-19 pose key upside risks to the inflation outlook. The key risks associated with our supply-side constraints assumptions relate to global demand and wage/pricing behaviour. These are summarized in table 1 and 2 below.

Table 1: Key risks to goods supply

| Assumption | Risk | Impact vs. baseline forecast | |
|---|---|---|---|
| | | Inflation | Employment |
| Goods shortages begin to unwind from late 2021 as international supply chains gradually catch up on back-orders. | Global expansion prolongs bottlenecks <ul style="list-style-type: none"> A sustained global expansion could keep supply chains busier for longer and feed global inflation, as in the mid-2000s (Box A). Further, new shipping capacity is several years away. | <ul style="list-style-type: none"> +0.3 to +0.9 percentage points out to the end of 2022. Inflation peaks just below 3% upper limit of our target range (2.9%) in 2021. Inflation near 3% over rest of 2021. | <ul style="list-style-type: none"> Marginal impact on wage and price setting over 2021/2022. |

Table 2: Key risks to services supply

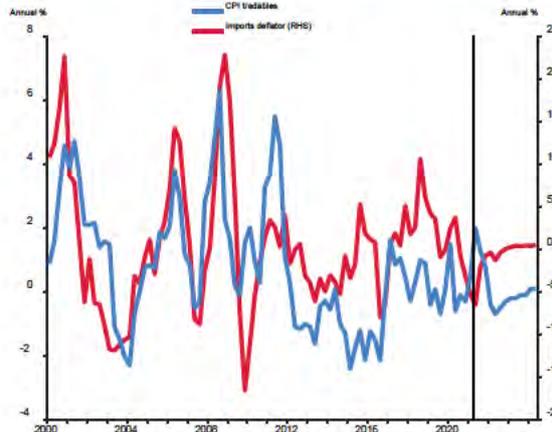
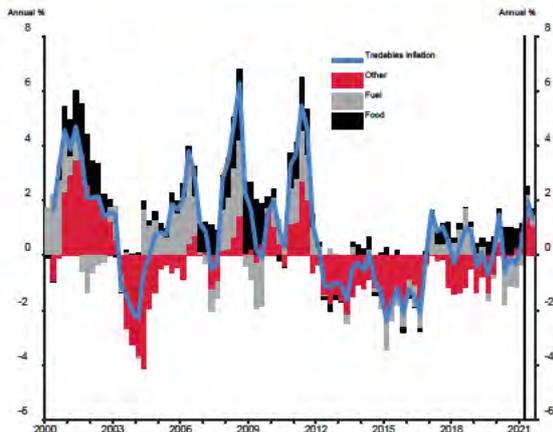
| Assumption | Risk | Impact vs. baseline forecast | |
|--|--|--|--|
| | | Inflation | Employment |
| Wage growth temporarily accelerates in 2021 as the labour market remains tight, minimum wage rises kick in. | Wage growth embeds higher near term inflation <ul style="list-style-type: none"> Sustained strong inflation pressure over 2021 and 2022 (from prolonged bottlenecks, as above) which could alter behaviour, boosting wage demands and pricing over an extended period, as the mid-2000s (Box A). Risk compounded by international labour supply restrictions. | <ul style="list-style-type: none"> +0.3 to +0.9 percentage points out to the end of 2022, +0.3 ppt. in 2024. Inflation peaks just below 3% upper limit of our target range (2.9%) in 2021. Inflation near 3% over rest of 2021. End-point inflation near top quarter of target range (2.4%). Wage growth around 0.5ppt higher vs central projection from mid-2022, near 3%. | <ul style="list-style-type: none"> Similar unemployment rate. Sustained above-average wage growth near 3% from mid-2022. |

We have incorporated initial impacts of higher goods input prices via tradables...

The impact of higher global input prices from the developed economy re-start has been captured in our near-term projections for tradables inflation (figure 1 and 2). We assume that supply-chain constraints begin to ease from late 2021, and largely unwind over 2022.

Figure 1: Tradables inflation breakdown

Figure 2: Tradables/import inflation

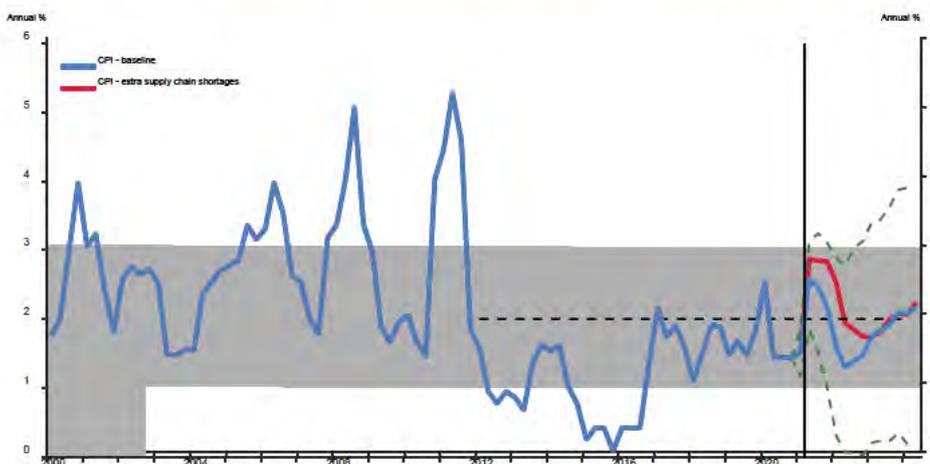


.....but additional upside risk from higher transport costs via tradables.....

There is a risk that supply-chain constraints persist for longer than expected, boosting tradables inflation into 2022. Input cost growth may also rise for longer if the developed economy re-start embeds into a sustained expansion (part 2).

We estimate that more prolonged/acute shortages in global goods would boost inflation by 0.3 to 0.9 ppt. out to the end of 2022. This would put inflation around the top of the target band over the remainder of 2021 (figure 3). We assume that tradables inflation supports inflation out to Q3 2022, versus the end of 2021 under the central projection (table 3, appendix).

Figure 3: Inflation: prolonged transport shortages scenario



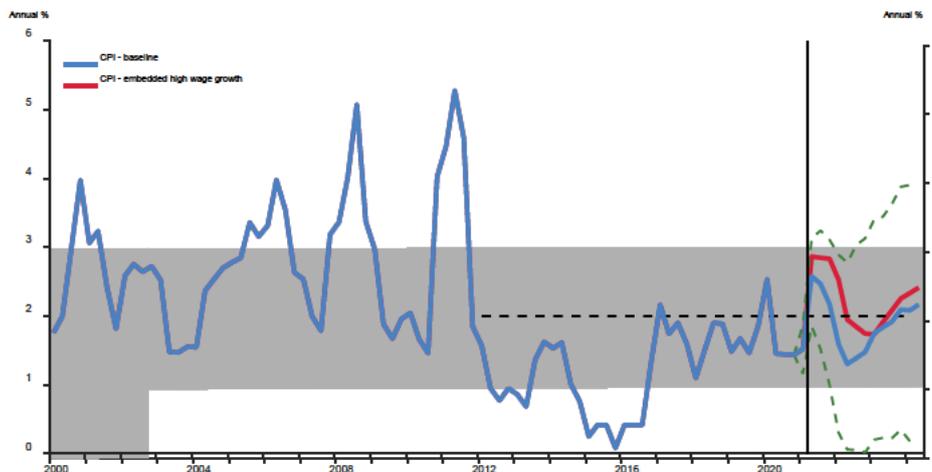
Note: green dashed lines indicate 95% confidence interval around our baseline projection, based on historical forecast errors. Black dashed lines indicate mid-point target emphasis since 2012.

....and higher wage growth via non-tradables...

A second risk is that a sustained period of inflation close to 3% (on prolonged/acute supply chain bottlenecks as above) could trigger a shift higher in wage and price setting behaviour.

We estimate that a shift in pricing behaviour would lift medium-term inflation momentum. This raises end-point inflation to near the top quarter of the target band in 2024 (figure 4). We assume that higher growth levels in wages and domestic inflation from near-term goods supply shortages (from the more acute/sustained supply bottlenecks, as above) continue over the entire forecast, with no OCR response (table 3, appendix).

Figure 4: CPI – persistently higher wage growth/pricing



Note: green dashed lines indicate 95% confidence interval around our baseline projection, based on historical forecast errors. Black dashed lines indicate mid-point target emphasis since 2012.

Wage scenario may see medium term inflation expectations drift above 2%

Wage/price setting is assumed to shift in the top half of the bank's target range under the embedded high wage/price growth scenario (table 3, appendix). This is consistent with the fact that inflation remains around the top of the target band for a sustained period (1 year). It also captures the fact that:

- **there is high starting point inflation momentum** - headline CPI inflation initially increases sharply to near the top of our target band, even under the central projections,
- **there is a significant net upside risks to central inflation forecasts** over the next year across a range of tradables/non-tradables components (see paper 4.3F: Inflation overview),
- **inflation could breach the 3% target band**, if upside range of forecast estimates are realised (based on historical forecast errors (figures 3, and 4), and
- **our modelling approach may underestimate feedback effects** from high wage setting behaviour (table 3, appendix).

Embedded high inflation expectations and wage growth were experienced during the early to mid-2000s in the commodities boom (figure 15 appendix, and Box A). This reflects the prolonged and relatively large impact that non-tradables inflation has on headline inflation.

Labour shortages could constrain further declines in unemployment

Medium term declines in unemployment could be constrained by labour shortages (see paper 4.3D: Labour market overview). This reflects the ongoing impact of low international labour supply via low migration, and some remaining difficulties re-allocating domestic labour. Similar conditions were seen in the mid-2000s, with high employment growth but low migration (figure 10 and 12).

These patterns have lifted structural unemployment and the NAIRU over the near term and persist until border restrictions soften. These trends contribute to a downward revision to potential output growth (see paper 4: how much stimulus do we need (Box B)?).

Our embedded high wage growth scenario incorporates similar rates of unemployment over the forecast versus the central projection (table 3, appendix). However, if policy tightens to return inflation close to the mid-point, unemployment is around 0.1 ppt. to 0.2 ppt. higher from 2023.

II. RECENT DEVELOPMENTS IN SUPPLY CHAINS AND LABOUR MOBILITY

Goods markets struggling with materials production and transport...

Pent-up consumer demand has been released as developed economies have begun to re-open. This sharp synchronized recovery has been supported by a shift in consumer spending towards goods, and stock rebuilding.

Supplies of raw/intermediate inputs have increased slowly as producers gear up production facilities. Prices are starting to recover across a variety of input goods (figure 6 and 11). Global transport chains have faced significant congestion at ports as COVID-19 restrictions have reduced freight handling (figure 7). 'Domestic transport has been constrained by a switch-over to automated container handling at the Port of Auckland.

Figure 6: Global CPI/commodity prices

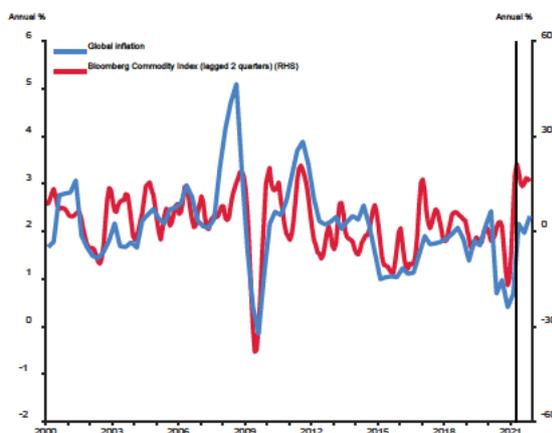
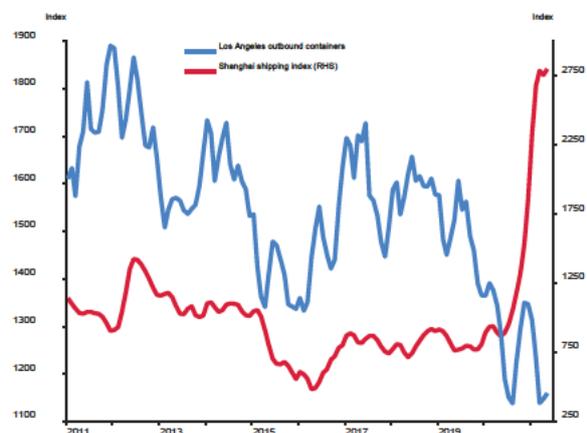


Figure 7: Port activity, shipping costs



...expected to persist over 2021, unwinding over 2022

Estimated times for supply bottlenecks to ease vary from several months to several quarters across the supply chain (figure 8). Our central projection assumes that goods supply chain bottlenecks begin to ease in late 2021, and dissipate gradually over 2022. This is in line with the duration of previous episodes of shipping shortages (Box A).

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Services also constrained, by lower migration and inter-sector/region mobility

Stringent border restrictions continue to restrain the supply of overseas workers versus pre-COVID levels. A sharp increase in the difficulty in finding skilled (and unskilled) labour has emerged as migration remains low in the context of rising employment demand (figure 9).

A skills mismatch between domestic jobseekers and firms is likely to compound overseas-related labour shortages. Firms report inter-sector mobility is low into areas of highest employment growth (e.g. construction). This in part reflects long lead times for training (see paper 3.4: Business sector developments, and Business meetings summary).

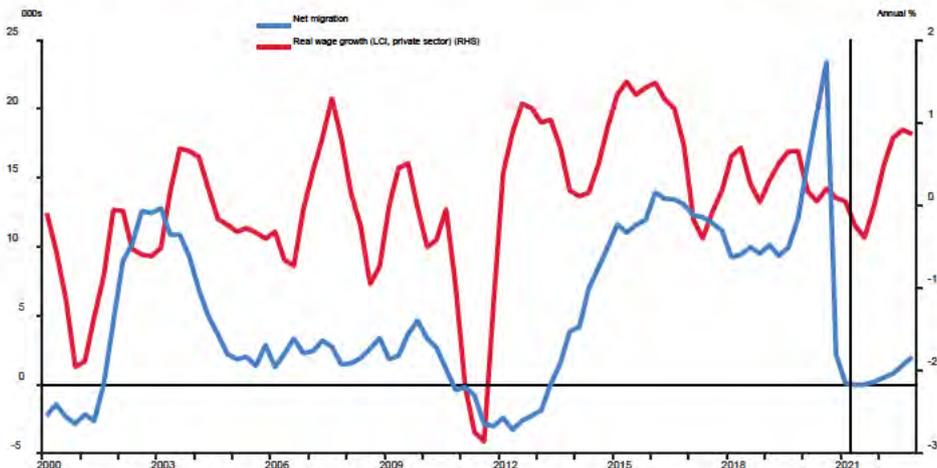
Figure 9: Ease of finding labour and migration



These shortages likely to persist

Forward indicators of the labour market point to a rapidly tightening market, with employment re-approaching maximum sustainable employment (see paper 1: Where are we relative to our economic objectives). We assume that lower migration is associated with a rise in wage growth over 2021 as firms begin to bid up scarcer labour, as in previous historical episodes (figure 10). The minimum wage rise in April 2021 is expected to further underpin wage growth momentum (see paper 4.3D: Labour market overview).

Figure 10: Migration and wage/employment growth



BOX A: THE MID-2000s COMMODITIES BOOM

Globally, the early to mid-2000s saw rapid rises in both commodity inputs and shipping costs – the ‘commodities boom’ (figure 11). The key driver of ongoing cost and price rises was sustained growth in the manufacturing sector in China. Key price pressure came through bulk commodity shipping, reflecting the upswing in manufacturing activity. Supply chains took around two years to respond to successive surges in demand between 2000 and 2006 i.e. to bring prices back towards historical average levels.

Domestically, this period was marked by high terms of trade and rising employment. However, migration was relatively restrained between 2005 and 2010, limiting international labour supply (figure 10). This period was associated with a relatively limited/slow declines in unemployment and escalating wage growth (figure 12). Nonetheless, rising inflation pressure kept real wage growth contained (figure 17 and 18, appendix). Increased national income boosted demand across the economy. The net effect on activity tended to be strongest in the services sector which was insulated from direct foreign competition (RBNZ, 2014)¹.

The mid-2000s commodities boom differed from the mid-1970s spike in global commodity prices in several key aspects, including that:

- the oil price rise was a pure supply-side shock, restricted to limited commodities,
- labour market structure in the 1970s was not as flexible as the early 2000s, with less prominence of collective bargaining, and
- the monetary policy regime in the 2000s had embedded flexible inflation targeting, anchoring medium term inflation expectations.

Figure 11: Global commodities/shipping

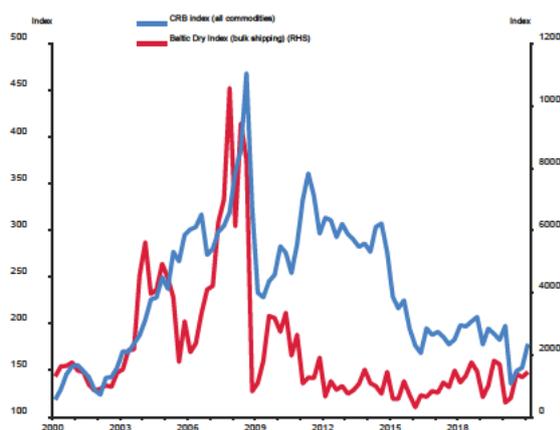
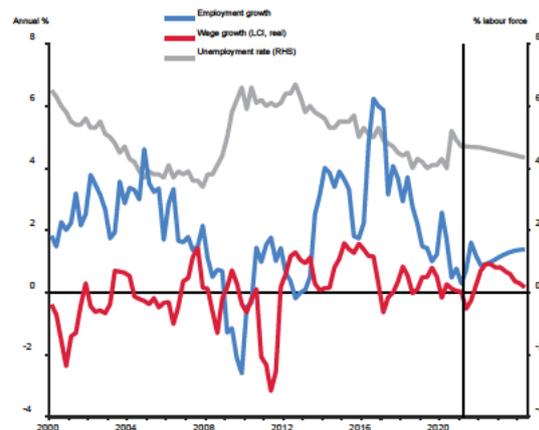


Figure 12: New Zealand labour market



¹ Steenkamp (2014). *Structural adjustment in New Zealand since the commodity boom*. Analytical Note.

APPENDIX: INFLATION AND INFLATION EXPECTATIONS, SCENARIO

Figure 13: Global GDP and inflation

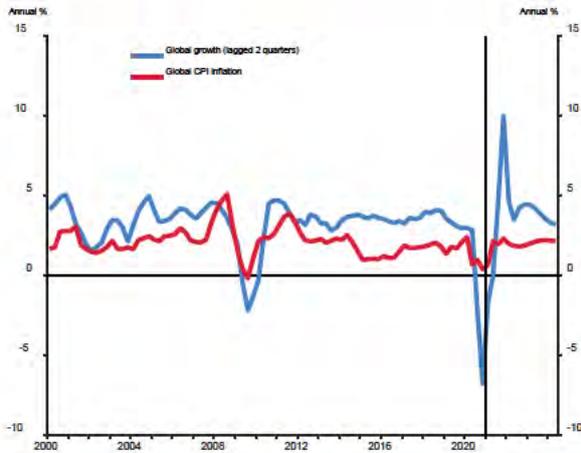


Figure 14: Inflation expectations/wages

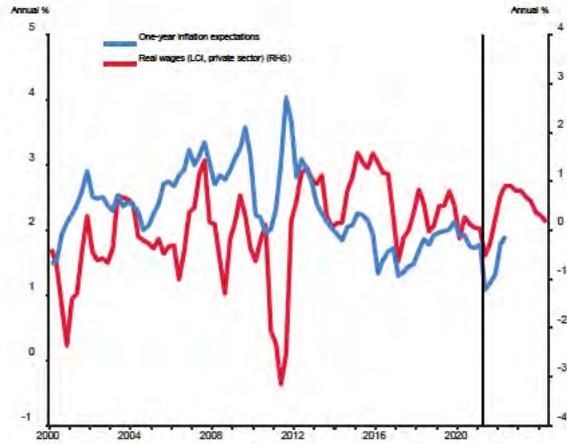


Figure 15: CPI – embedded high wage growth

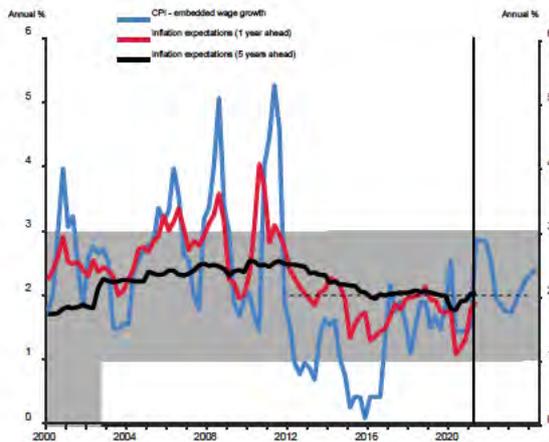
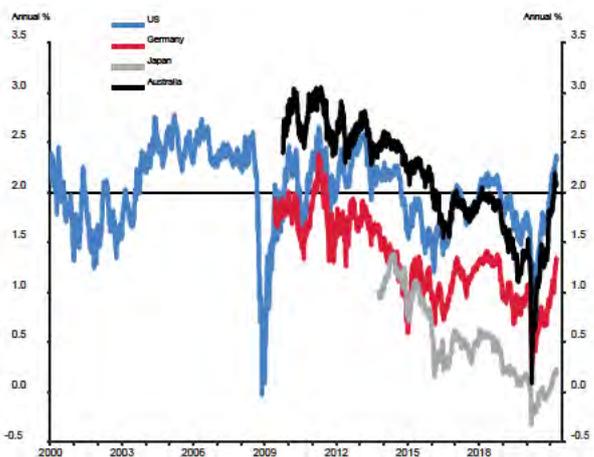


Figure 16: Inflation expectations (10 years, market implied)



Black dashed lines indicate mid-point target emphasis since 2012.

Figure 17: Wages –baseline scenario

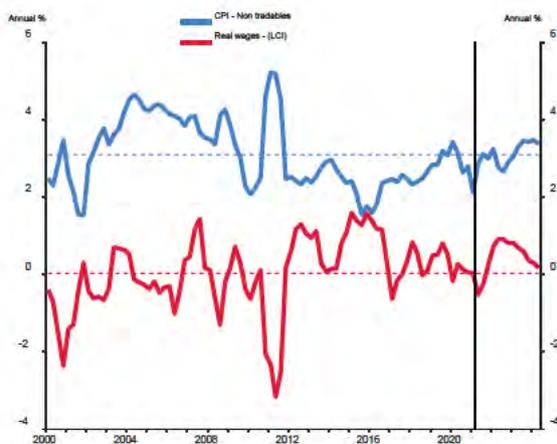
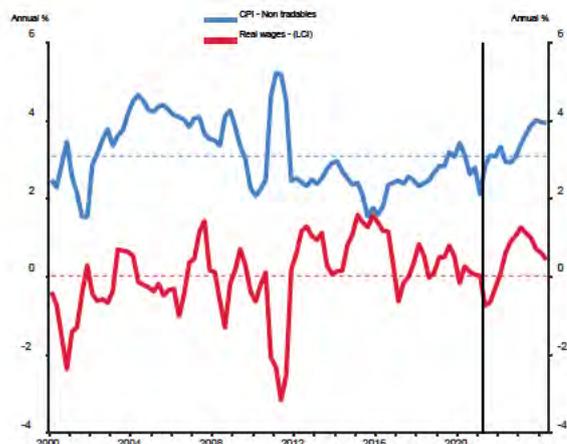


Figure 18: Wages –embedded high wage growth scenario



Note: dashed lines indicate respective long run average since 2000.

Table 3: Scenario assumptions

| | Scenario | | Baseline (first pass) |
|--------------------|---|--|--|
| | 1. Prolonged severe supply chain stretch | 2. Embedded high wage and non-tradables growth | |
| Assumptions | <ul style="list-style-type: none"> Supply chain disruptions lift global inflation by a peak of +0.5% yoy in Q1 2022,² persist into 2022. Positive tradables impact until 3Q2022. Wages increase over the forecast, but the impact declines after 2022. Employment similar to baseline. | <ul style="list-style-type: none"> Near term acceleration in wages (H1 2021) is sustained over the forecast horizon. Wage growth steadily accelerates to 3.1% by 2023. Wage growth remains near 2.8% by mid-2024. Employment similar to baseline. Non-tradables impact doubled and sustained relative to scenario 1. | <p>Import prices</p> <ul style="list-style-type: none"> Supply chain disruptions begin to ebb at the end of 2021. Positive tradables impact until the end of 2021. <p>Employment/wages</p> <ul style="list-style-type: none"> Wage growth acceleration peaks at near 2.5% by the end of 2021. Wage growth holds near 2.5% over most of the forecast horizon, drops to just over 2% by mid-2024. Unemployment rates edges down 0.4ppt over the forecast. |
| Rationale | <ul style="list-style-type: none"> Supply chain disruptions persist for around 2 years (H2 2020-H2 2022), similar to the early 2000s commodity boom | <ul style="list-style-type: none"> Medium-term pricing and wage growth shift up to the top half of the 1-3% target band on combination of: sharply higher near-term inflation (on more persistent goods supply shortages), and ongoing labour shortages (on closed borders and limited domestic labour mobility). Labour shortages constrain further | <p>Import prices</p> <ul style="list-style-type: none"> Supply chain disruptions begin to ease by the end of 2021, consistent with business contact estimates and media reports. <p>Employment/wages</p> <ul style="list-style-type: none"> Wage growth accelerates near term as private sector wage freezes unwind, firms respond to re-emerging labour shortages. |

² Upper estimate from trimmed range of UBS modelling (March 2021).

| | | | |
|-------------------------------|--|---|---|
| | | <p>declines in unemployment (as per early 2000s).</p> <ul style="list-style-type: none"> • Broader non-tradable inflation impact becomes more embedded, resulting in fairly significant second-round (knock-on) impacts. | <ul style="list-style-type: none"> • Medium term pricing/wage growth/inflation expectations remain close to the 2% target midpoint (as per early 2000s). • Unemployment declines limited (as per early 2000s) |
| CPI inflation impact | <ul style="list-style-type: none"> • Impact is largely transitory. Headline CPI is ~+0.15ppt higher at the end of the forecast horizon. | <ul style="list-style-type: none"> • Impact is larger and more sustained than scenario 1, lifting headline CPI to 2.4% by the end of the forecast horizon. | <ul style="list-style-type: none"> • Headline CPI reaches 2.1% by the end of the forecast horizon. |
| OCR impact³ | <ul style="list-style-type: none"> • OCR is held at baseline central projection (to gauge <i>ceteris paribus</i> impact). • If OCR response is turned on, +17bps compared to baseline track. | <ul style="list-style-type: none"> • OCR is held at baseline central projection. • If OCR response turned on, +62bp compared to baseline track. | <ul style="list-style-type: none"> • OCR does not respond to transitory shock to import prices. |

Note: the upside embedded wage growth may underestimate the degree of non-tradables inflation resulting from a more persistent shock to wages. NZSIM does not allow for inflation expectations to become unanchored over the long run.

³ Refer also paper 4: How much stimulus is needed?



Paper 3.3: Interest rates and house prices in New Zealand: Some data, some evidence and some theory

Primary author: Reuben Punnoose Jacob

SUMMARY

- Monetary policy and interest rates can influence house price sustainability. The purpose of this paper is not to advise the MPC on how it *should* take the impact of monetary policy on house prices into account, but instead to just provide some assessment of what that impact might be.
- Persistently declining interest rates and increasing house prices have been observed across many developed economies including New Zealand.
- Empirical evidence suggests that while interest rates are not the only driver of house prices in New Zealand, they do have a relatively large effect. This is to be expected, given that house prices are an important part of the monetary policy transmission channel.
- As a first step in understanding how monetary policy can influence house price sustainability, we illustrate how interest rates influence house price sustainability indicators developed by the Financial Stability department.
- We also discuss the importance of supply responsiveness in determining the consequences of monetary policy for house prices.
- It is difficult to assess what part of the monetary policy impact on house prices is sustainable, and what part is not. More research is necessary to understand these complex aspects of monetary policy transmission.

THE GLOBAL CONTEXT

House prices in New Zealand have risen to historically high levels while policy and retail interest rates have declined to historical lows. The repercussions of the rapid growth of house prices from already-elevated levels, for first-home buyers prompted an [amendment](#) to the Bank's monetary policy remit in March 2021. While the objectives of maintaining low and stable price inflation together with maximum sustainable employment remain its primary focus, the Monetary Policy Committee is now required to 'assess the effect of its decisions on the Government's policy relating to sustainable house prices'.

Figures 1a through 1c confirm that New Zealand is not the only developed economy that has experienced highly accommodative monetary conditions accompanied by elevated asset prices; the phenomenon is global. Declines in real interest rates can also be accounted for by declines in the neutral interest rate such as that seen in New Zealand (figure 1d) and [other developed economies](#). The neutral rate is determined by real rather than monetary factors.¹ Declining productivity growth and

¹ See [Richardson and Williams \(2015\)](#) and [Rachel and Smith \(2015\)](#).

other inter-dependent factors that raise the supply of savings - such as populations that live longer and are increasingly more risk-averse - can combine to place downward pressure on the neutral rate.

EMPIRICAL EVIDENCE: MONETARY POLICY, INTEREST RATES AND HOUSE PRICES IN NEW ZEALAND

We briefly present empirical evidence from two modelling frameworks that confirms that monetary policy, and more broadly, interest rates are important drivers of house prices in New Zealand.

We first examine an indicator regression model used as a starting point to inform our projections. The contributions of changes in the 5-year mortgage rate to house price inflation (figure 2) have been quite sizeable over history, highlighting the role of the mortgage rate as a key determinant of house prices.

Chadwick, Dasgupta and Jacob (work-in-progress) examine house price dynamics at the level of the territorial authorities (TAs; city and district councils) in New Zealand. The authors estimate vector autoregressions for each TA using TA-level house price inflation and national level variables such as the OCR and GDP. Preliminary results on the maximum impacts on each TA-level house price of a *temporary and unanticipated cut* of 25 basis points in the OCR are presented in the histogram in figure 3. Most of the TA-level house price indices increase to less than 2% while the national house price index (REINZ) responds a little more than one-to-one to the OCR, hitting a peak of 0.29%.

Figure 1a: Nominal house price indices²



Figure 1b: Nominal equity price indices

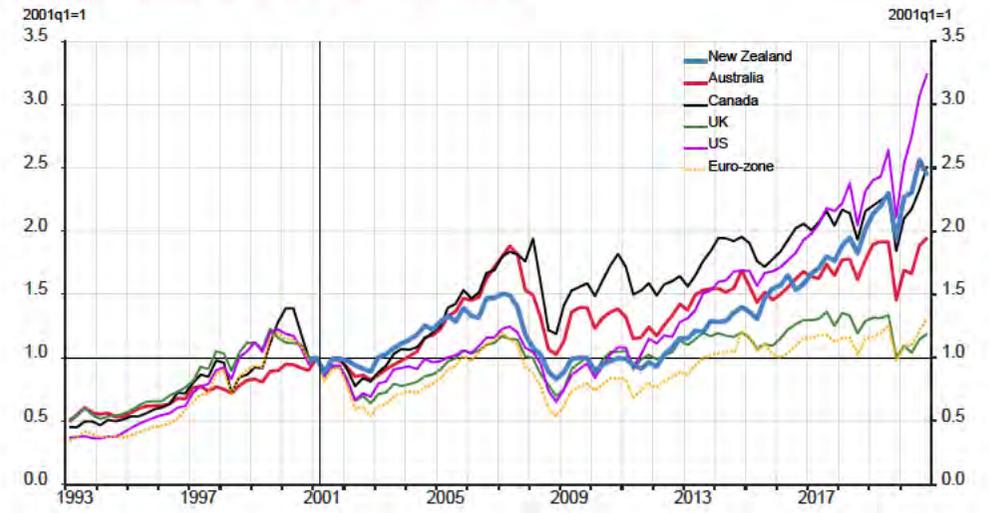


Figure 1c: Ex post real policy rates (Policy rates minus annual CPI inf.)



Figure 1d: RBNZ nominal neutral interest rate suite



² Many thanks to John Knowles and Meltem Chadwick for helping to compile the data in the above charts.
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Figure 2: Contribution of mortgage rates to quarterly house price inflation

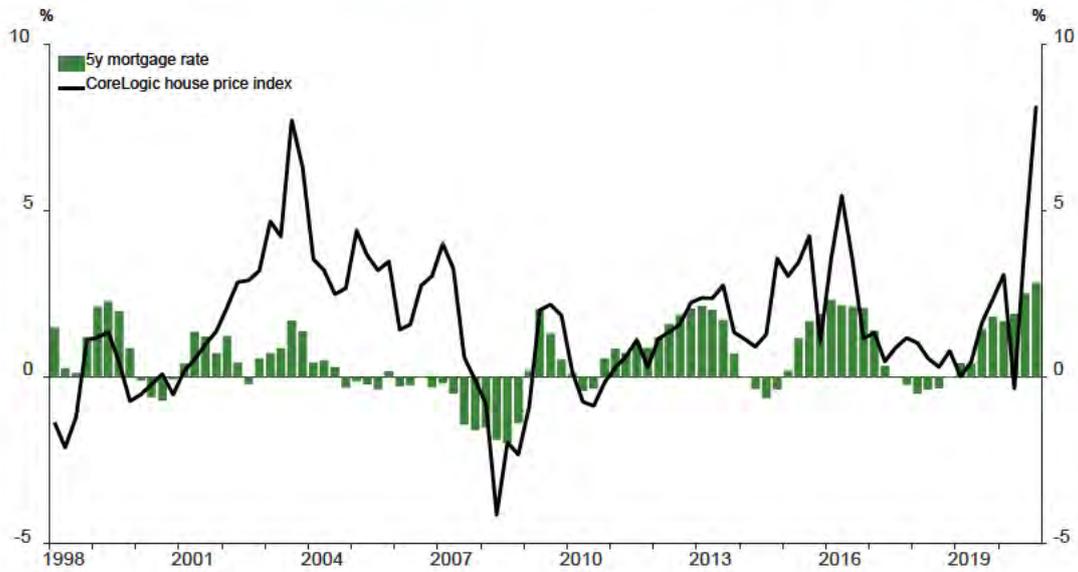
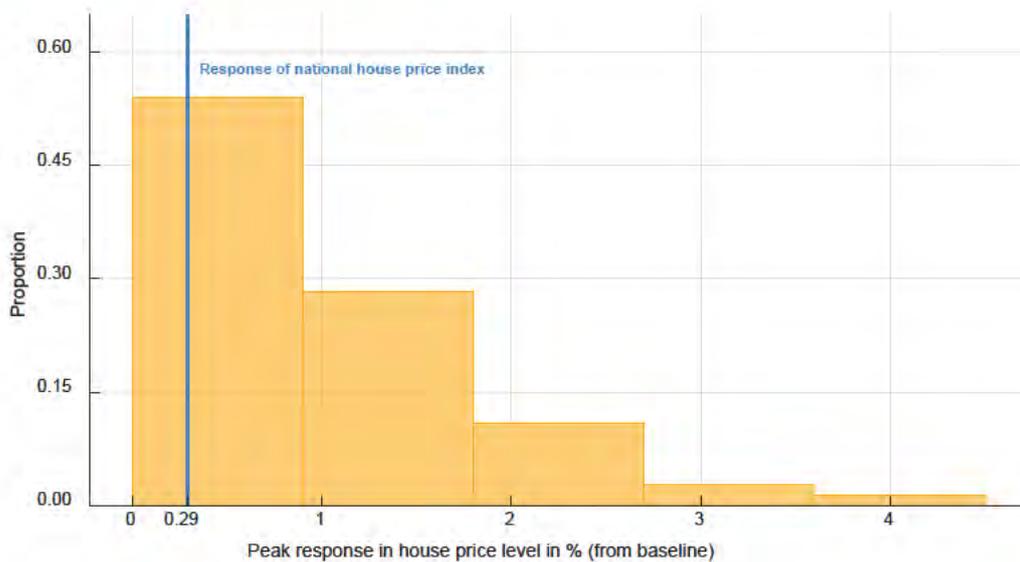


Figure 3: Distribution of the strongest impacts of a temporary 0.25% negative shock to the OCR on TA-level house prices



THE IMPACT OF INTEREST RATES ON HOUSE PRICE SUSTAINABILITY

The amendment to the Remit in March 2021 has drawn attention to the influence of monetary policy on house price sustainability. Disentangling the contribution of monetary policy in generating sustainable or unsustainable levels of house prices is very challenging, and analytical work that examines various facets of this issue is

already underway in the Financial Stability Policy department and the Economics department.

Indicators of house price sustainability from FSA....

A recent IMPACT paper by [Adams-Kane, Brunton and McDonald \(Apr. 7\)](#) has set forth a definition of house price sustainability:

- There exists a long-term sustainable or ‘fair’ value of house prices for a given set of underlying settings such as interest rates, population growth, supply responses and regulatory settings.
- When house prices rise significantly from the sustainable value, the risk of a correction in prices is elevated.

Recognising the roles of various actors in the market for housing, the IMPACT paper describes several indicators that are currently being developed, that will support our assessment of house price sustainability. Table 1 lists these indicators.

Table 1: Indicators of house price sustainability

| | |
|---|---|
| <p><i>Investors</i></p> <ul style="list-style-type: none"> • Rental yield model • Portfolio optimisation models • Investor share of transactions | <p><i>Owner-occupier</i></p> <ul style="list-style-type: none"> • User cost model • Mortgage payments relative to rent • Mortgage credit-to-income |
| <p><i>Supply relative to demand</i></p> <ul style="list-style-type: none"> • Tobin’s Q • Number of people/dwelling • Consents per capita | <p><i>Momentum</i></p> <ul style="list-style-type: none"> • House price growth • Mortgage credit growth • House price expectations |

The indicators mentioned above present many lenses to examine the effects of monetary policy on house prices. Among the indicators, the rental yield model (RYM) and the user cost model, which are based on the present value of income streams, directly depend on interest rates, and hence are particularly useful to illustrate the impact of monetary policy and interest rates. In this paper, we focus on the RYM, although the conclusions would be broadly similar through the owner-occupier equivalent – the user cost model.

Interest rates generate powerful ‘present-value’ effects on house prices in the Rental Yield Model....

In its simplest form, the RYM relates the price of the house bought by the investor to the present value of future cashflows, *i.e.* rents, from the house. A decline in the discount rate will raise the present value of cashflows, and hence will inflate the price the investor is willing to pay for the house.

Note that the house price that is derived from this model is ‘justified’ by fundamentals. However, if the house prices observed in the data, are different from

those consistent with the discounted sum of future cashflows, it implies that the house prices are unjustified by fundamentals, and hence may be unsustainably high or low.

The version of the RYM model that is under development in our Financial Stability Analysis team is much more sophisticated.³ For example,

- Net cash flows are disaggregated into rents net of several cost components such as those incurred on property management, council rates, maintenance and insurance.⁴
- For the first 5 years ahead, the discount rate is a weighted combination of
 - the 5-year mortgage rate which measures the cost of debt and
 - the 5-year government bond yield plus a risk premium factor, which proxies the opportunity cost of the equity that the investor holds in the house.
- For horizons more than 5 years ahead, the RYM uses the neutral interest rate plus a risk premium factor each for debt and equity to calculate the discount rate.

Both temporary and permanent changes in interest rates can support sustainable house price movements....

In discounted cash flow models such as the RYM, monetary policy influences the sustainable level by affecting the discount rate. Monetary policy movements away from the neutral rate of return are 'cyclical' and hence drive cyclical variation in interest rates and house prices. More permanent changes in interest rates, via a change in the neutral interest rate, are likely to have much stronger and more permanent effects on house prices.

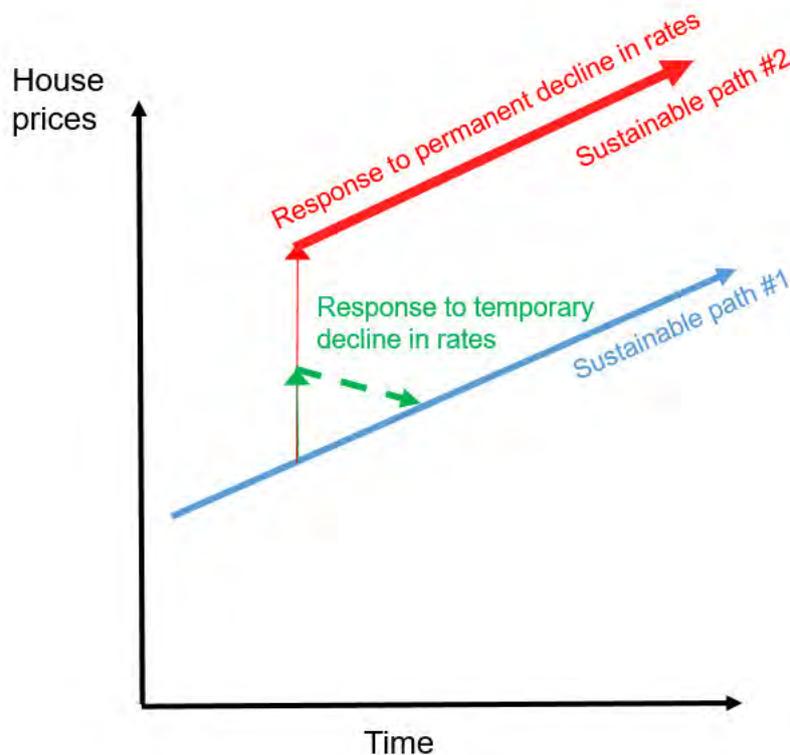
Figure 4 captures these ideas using a schematic diagram. A temporary decline in interest rates may lift house prices temporarily before they return to the previous path. A permanent decline in interest rates can push up house prices permanently. Note that both of the house price tracks presented here are 'sustainable' from the model's perspective, as the price movements are triggered by changes in fundamentals.

In practice, it is difficult to separate the effects of permanent interest rate moves from temporary moves. However, if we see that house prices move a lot in response to what we think are cyclical interest rate moves, this could be a sign of unsustainability. For example, 'unsustainable' movements can be generated by investor activity fuelled by expectations of higher house prices. We will continue to work to understand the channels through which interest rate changes could lead to changes in house prices that are unsustainable.

³ Many thanks to Matthew Brunton for providing details of the operational RYM model and executing the scenario analysis that follows in this section.

⁴ The user cost model prices from the perspective of owner-occupiers also relies on discounted net cash flows, just as the RYM model for investors. However, the income measures are imputed - rather than actual - rents and no tax implications are incorporated for owner-occupiers.

Figure 4: A stylised representation of the effects of temporary changes vs permanent changes in interest rates on house price sustainability



A scenario on the effects of temporary changes in interest rates in the RBNZ Rental Yield Model.....

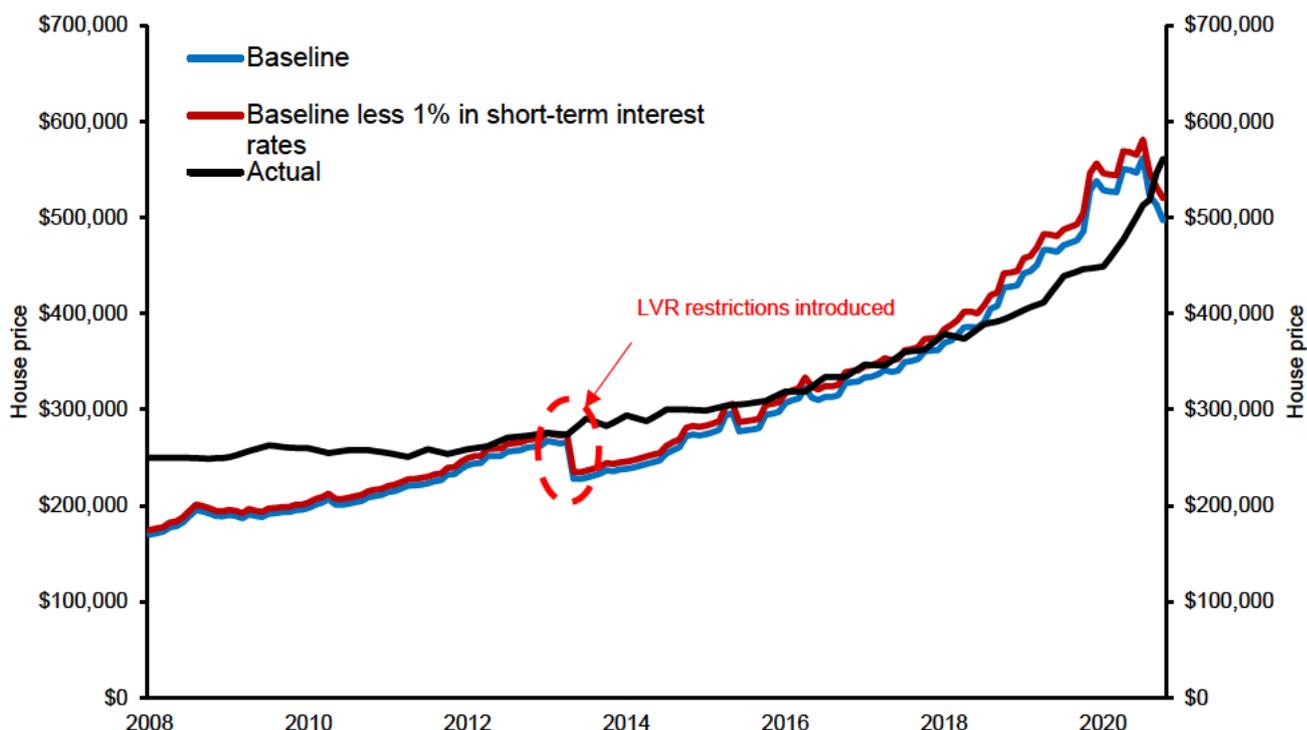
In figure 5, we compare the actual house prices⁵ with the predictions of the current version of the RYM, for the past 12 years. The model under-predicts the house price in the years leading to the introduction of the LVR restrictions, and overestimates the house price from 2018.

To understand the impact of cyclical variation in monetary policy, we consider a scenario where, following an easing of monetary policy, the discount rate for the first 5 years ahead is reduced by 1 percentage point from that used in the baseline RYM. The lower discount rate raises the present value of future net cash flows, and shifts up the model-implied house price. The implied impact is relatively small, an increase in house prices of around 5% based on the latest data. This implies the impact of cyclical monetary policy on the sustainable level of house prices is small, particularly relative to the house price growth experienced in the past two decades.

⁵ We consider the lowest quartile of house prices that is more likely to be relevant for investors.

On the other hand, a decline in interest rates by the same amount, but which is perceived to be permanent, would generate a significantly higher increase in the sustainable level of house prices. This is consistent with house prices having grown substantially, as the broad level of interest rates has fallen alongside declining neutral interest rates.

Figure 5: A scenario of lower interest rates in the Rental Yield Model for investors



Housing supply price elasticities are likely to affect the transmission of monetary policy to house prices....

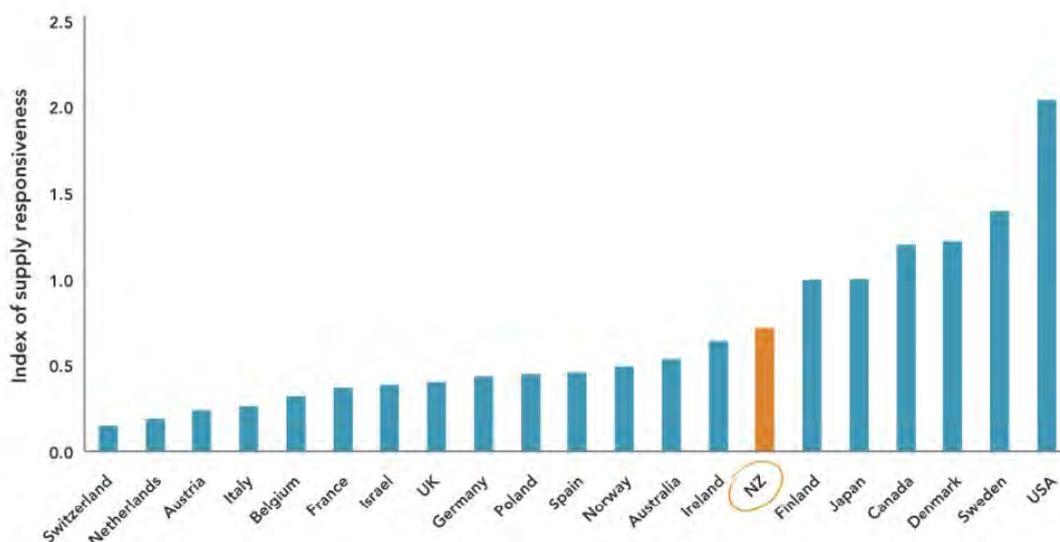
Both the RYM and the user cost models are partial equilibrium models that do not explicitly consider the supply-side of the housing market. The influence of supply-side factors on this framework is indirect, mainly through the effects on rents; where supply is elastic, an interest rate reduction could also result in lower rents, dampening the impact on prices.⁶ The RYM model treats supply as inelastic – a more realistic assumption for the short run.

⁶ This is because if the construction cost component of supplying a house remains relatively stable, lower interest rates reduce the annual rental stream required to 'break even' on this part of the cost of supplying a new house. In a housing market with elastic supply, house prices are more closely anchored to the cost of construction.

Cheaper mortgages will, other things such as income remaining constant, increase the demand for housing. This manifests itself in people demanding to live in bigger and better-quality houses, and with fewer people in each house. In the short run, the more-or-less fixed number of houses means it is not possible to meet this demand. The mismatch between demand and supply in the short run can potentially become a key channel for unsustainable price dynamics – prices overshoot as a result of the initial demand shock, then correct only when higher prices encourage development of new land and houses, and an expansion of supply. Thus, it is likely that the impact of monetary policy on house prices may be less in the long run, after supply has an opportunity to respond.⁷

[Caldera and Johansson \(2013\)](#) have compared estimates of the long-run supply elasticities of housing for several developed economies. Figure 6 presents a snapshot of these elasticities. The long-run estimate for New Zealand is low at 0.70 which is in line with those estimated for several other economies.⁸ However, the short-run supply elasticity that would be more relevant for demand movements induced by monetary policy, is likely to be *even smaller*.

Figure 6: Cross-country estimates of the long-run price elasticity of new housing in Caldera and Johansson (2013)



The role of housing supply elasticities in dampening or amplifying the transmission of monetary policy to house prices has not received much attention in the literature, and is an avenue we have identified for further empirical research, given its clear relevance in New Zealand.

⁷ More elaborate models of housing such as that set out in [Coleman and Scobie \(2009\)](#) also suggest that more elastic housing supply will dampen the impact of monetary policy on house prices.

⁸ However, [Hyslop et al. \(2019\)](#) find that longer-term housing supply price elasticities in New Zealand are higher, their preferred estimate being as high as 1.2.

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13 MAY 2021

Paper 3.4

Business developments

Forecasting team
Author: Thomas Bohm

SUMMARY

The tale of two economies continues – businesses in the primary and goods-producing industries benefit from strong demand whereas tourism firms struggle. Aggregate demand for goods has held up on the back of strong housing activity and robust goods export demand. Tourism-related industries have been supported by domestic tourism over summer. However, pent-up demand is waning and the lack of international tourists has been felt most since Waitangi Day. The trans-Tasman bubble may support winter tourism but also encourages New Zealanders to spend more on trips to Australia than domestically. The indirect constraining impact of the government housing package on demand for firms' goods and services is yet to be gauged but any material cooling has not come through yet.

Labour demand has increased even more, with primary and goods producing firms struggling to find both skilled and unskilled labour. This is exacerbated by the border restrictions making it difficult to source labour from abroad and by limited labour mobility. As a result, structural unemployment is likely above pre-COVID-19 levels.

Despite strong labour demand, businesses have not responded with stronger wage increases yet. Rather, the minimum wage increase in the June 2020 quarter kept annual wage inflation up over 2020. However, firms are reporting that they will increase wages in the coming year by more than usual.

Firms are more confident about increasing investment as capacity pressure in the economy is higher than anticipated. Uncertainty remained elevated, but domestic demand has proven more sustained and the terms of trade have moved even higher, driven by strength in prices for some key export commodities.

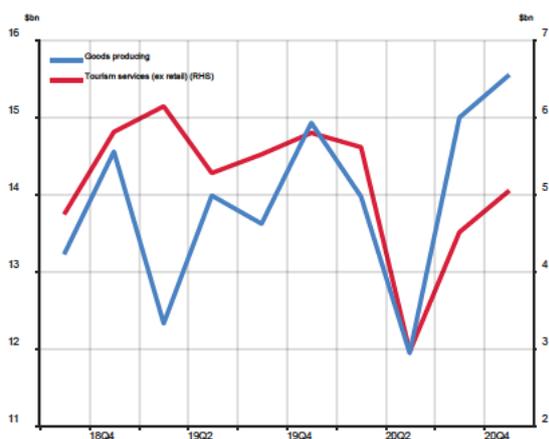
Significantly more firms across industries intend to increase prices. This reflects robust aggregate demand, increased costs due to supply chain disruptions, and higher expected wage inflation. However, competitive business pressures remain, limiting the ability of firms to pass on the higher costs to consumers, resulting in more firms reporting decreased profitability.

DEMAND

The tale of two economies continues. Aggregate demand for goods has held up over the second half of 2020. Businesses in the goods-producing sector have seen net sales above pre-COVID-19 levels (figure 1a). No surprises on the tourism front, net sales have remained below pre-COVID-19 levels although domestic tourism provided a limited offset, especially in late 2020.

Since the initial strong rebound, spending has somewhat softened as pent-up demand has waned (figure 1b). In addition, the lack of international tourists has been felt more strongly since Waitangi Day as most domestic summer holidays came to an end. However, demand for durable goods has remained significantly above pre-COVID-19 levels, in line with strong housing activity.

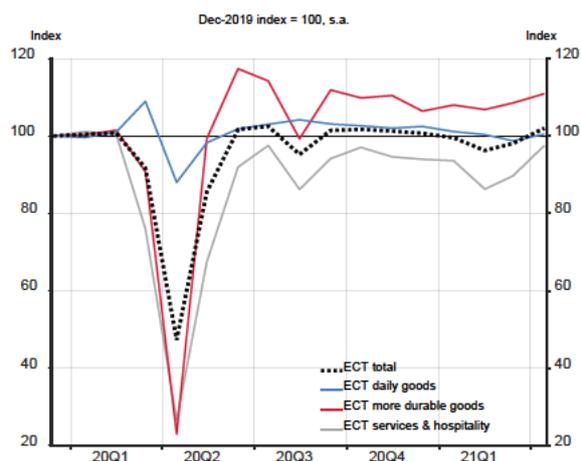
Figure 1a: Strong net sales for the goods producing industry but still below pre-COVID-19 levels for tourism



Net Sales = Sales - Purchases

Source: Stats NZ – Business Financial Data.

Figure 1b: Card spending robust but softening as pent-up demand slows and no international tourists



Share of total:

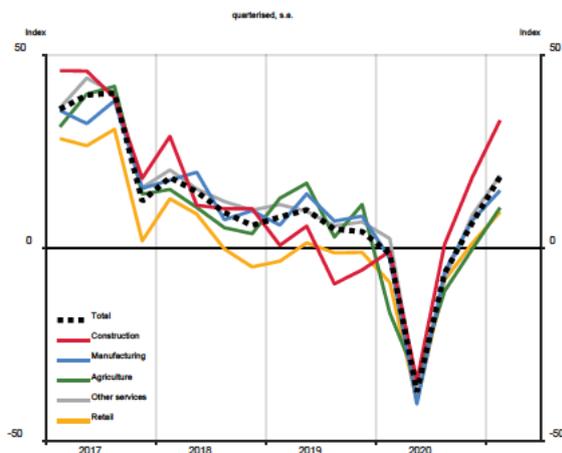
daily 35%; durable 27%; services 37%

Source: Stats NZ – Electronic Card Spending.

Demand has also held up for New Zealand’s export goods. This is reflected in stronger than expected terms of trade driven by higher commodity prices. In particular, prices for dairy products are strong with whole milk powder prices above US\$4,000 per metric tonne and remaining elevated in recent auctions. In addition, prices for meat have been resilient to COVID-19 disruptions and prices for forestry products are trending upwards. These movements seem to be more closely related to structural demand growth post-COVID-19 than supply chain disruptions (see paper 3.2 Supply considerations and the Business meetings summary). However, some other idiosyncratic factors continue to play a role. In particular, the political tensions between China and Australia have caused stronger demand from China for New Zealand’s

timber products, and the lasting impacts from African swine fever have supported meat prices.

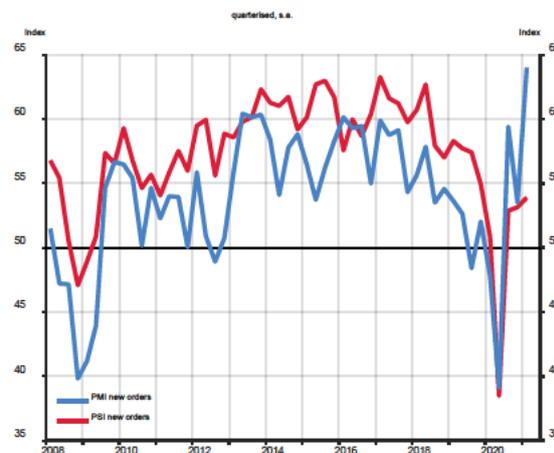
Figure 2a: More firms expect stronger activity, especially in construction



Shows expectation about real business activity in 12 months time

Source: ANZ – Business Outlook (ANZBO).

Figure 2b: Manufacturing firms see stronger orders; less so for service firms



Shows change of orders over the last month

Source: BNZ/BusinessNZ.

Near-term outlook indicators confirm a continuation of these recent trends. On the goods side, many more construction and manufacturing firms expect stronger business activity over the coming year (figure 2a). In fact, the highest share of manufacturing firms on record reported more orders in the March 2021 PMI release (figure 2b). This is in line with our business engagements where construction firms reported a full pipeline for at least the coming year (see Business meetings summary). By comparison, service firms lag behind. Although more service firms expect stronger business activity and received more orders, this will likely be from a relatively low starting point below pre-COVID-19 levels.

It is not yet clear how the trans-Tasman bubble will play out. Tourism operators expect many Australian visitors during the winter holidays. But retailers fear that New Zealanders will spend less domestically and more on trips to Australia (less on-shore spending).

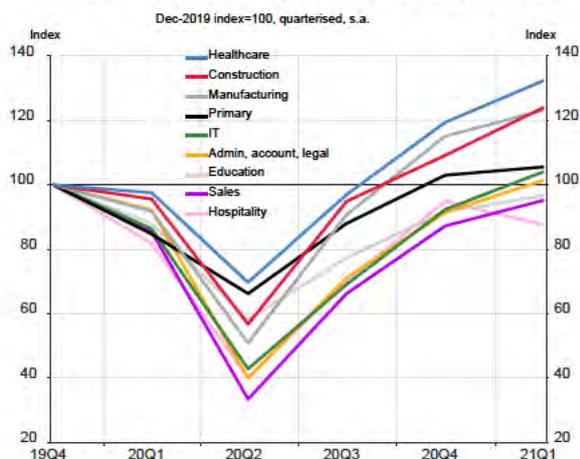
It also remains to be seen how demand will be impacted by the Government’s housing package, especially by the new tax rules for investors (see paper 4 Box A: Housing announcement). Survey data from REINZ & Tony Alexander Real Estate and business contacts suggest that inquiries, especially from investors, have decreased to more normal levels since the announcement of the package. However, the impact on selling pricing has been moderate so far with monthly REINZ house price inflation slowing to 1.9% in April, being far away from any strong price corrections.

LABOUR DEMAND

Businesses' demand for labour has come back strongly since the initial lockdown on the back of robust domestic and goods export demand. On the supply side, the border restrictions have made it difficult for businesses to find the right labour as access to foreign labour is limited (see paper 3.2 Supply considerations).

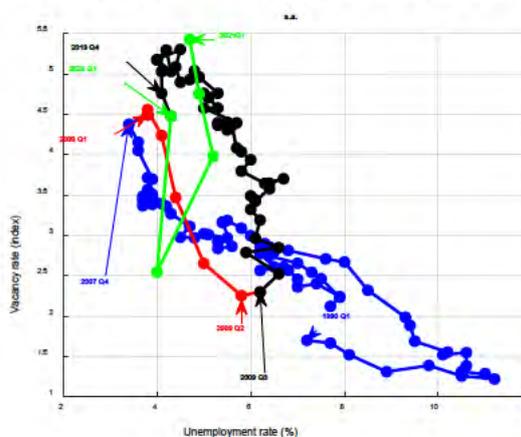
The ability to re-deploy unemployed people to different industries and regions is limited and consequently, many firms have had difficulty finding skilled and unskilled labour. This is a bigger issue for the primary and goods-producing industries (construction, manufacturing) than for the service sector. For the primary and goods-producing industries the number of job vacancies has moved to levels significantly above pre-COVID-19 times (figure 3a). In many service industries the number of job vacancies has also reached levels around pre-COVID-19 times, but remaining behind the primary and goods-producing sector. Healthcare services is the exception, having reached open job vacancies above all other sectors as a result of the COVID-19 health response.

Figure 3a: Job vacancies for many industries above pre-COVID-19 levels



Source: MBIE – Jobs Online.

Figure 3b: Firms struggling to find the right people (steeper Beveridge curve)



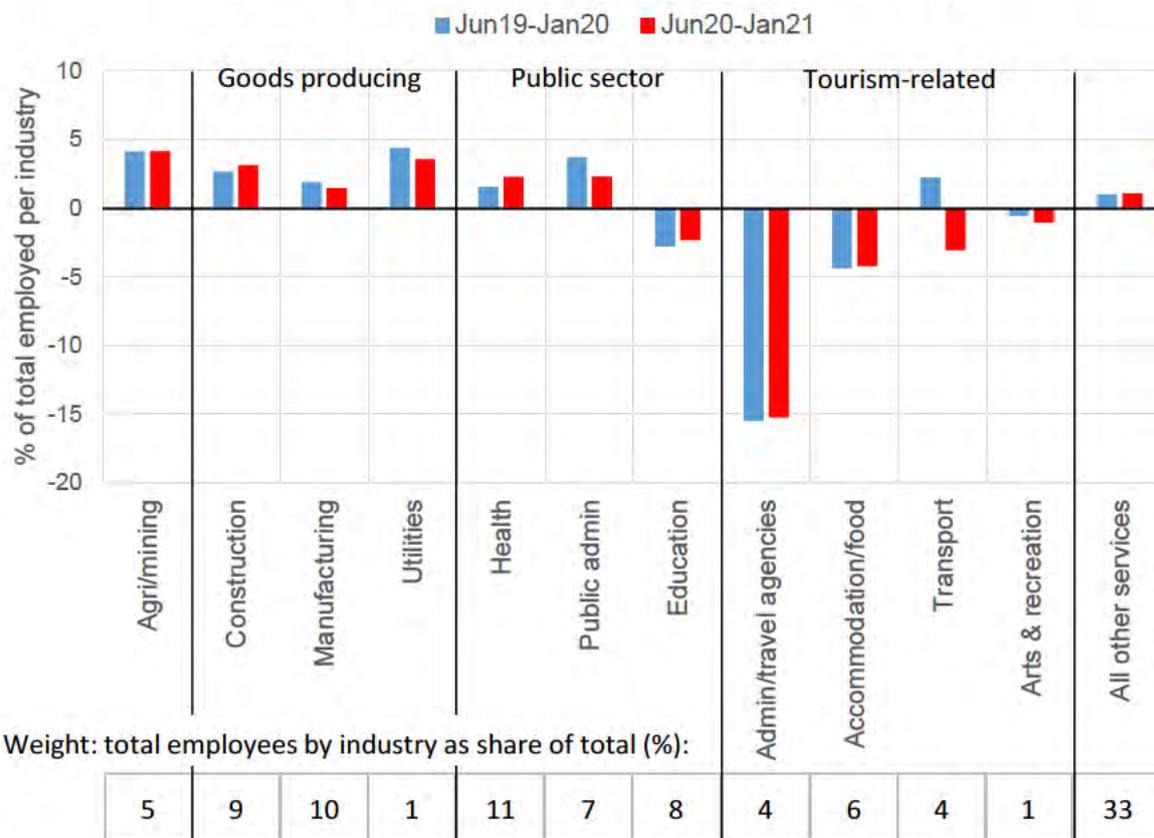
Vacancy rate = number of vacancies / labour force
 Lines: green: COVID-19; black: post-GFC;
 red: GFC; blue: pre-GFC
 Source: Stats NZ, MBIE.

Usually, such a high number of vacancies would be associated with a lower unemployment rate (figure 3b – black dots in the top left corner showing vacancy to unemployment rate outcomes prior to COVID-19). However, ongoing border restrictions and limited occupational and geographic mobility of labour have made it difficult for businesses to find the right employees. This is reflected by small drops in the unemployment rate despite strong increases in the number of job vacancies (figure 3b – green dots of last three quarters show a steepening of the Beveridge

curve). Overall, this points at higher structural unemployment compared to pre-COVID-19 times.

Experimental data developed by Ball (Economics Department) and Stats NZ on net job-to-job flows by industry confirm that labour mobility has not picked up significantly since the initial lockdown (figure 4).¹ As a result, the pool of additional labour for goods-producing firms because of more unemployed people especially in the tourism sector seems limited.

Figure 4: Net job-to-job flows from one to another industry have not picked up significantly and point at limited labour mobility



Note: The data shows only the flows of employees who were employed in the previous month but moved on to work in a different industry in the current month. The net flow for one industry is the inflow of employees coming from other industries minus the outflow of employees moving on to work in other industries.

Source: Stats NZ – Experimental series using Gross Labour Market Flows data from IRD.

However, this data does not account for people who first got unemployed but only later found a job in a different industry. It also does not account for people who have left the labour force to train for positions in other industries. But the latter seems not to play an important role as the labour force participation rate has quickly returned to

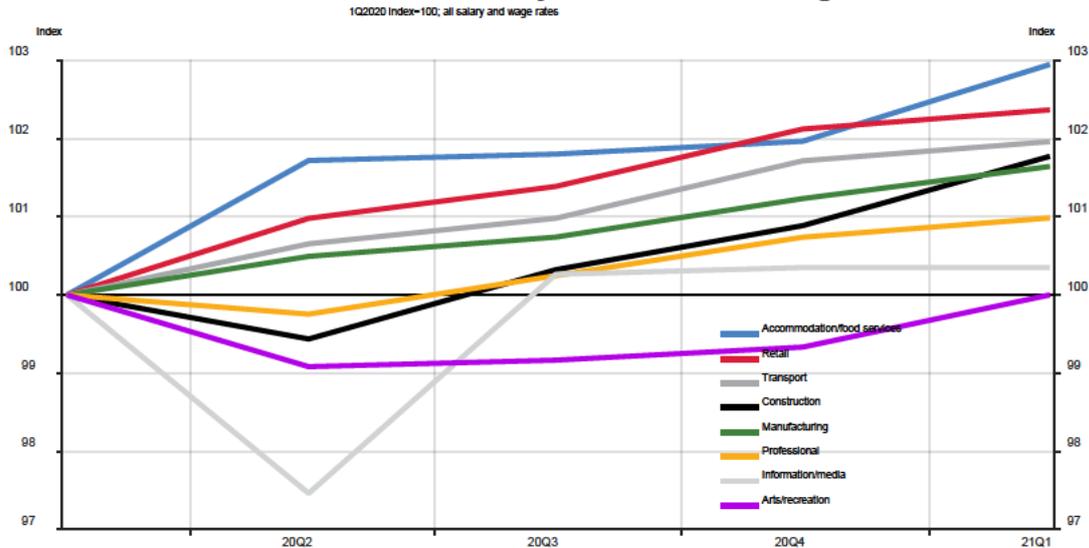
¹ A comparison is only possible for the periods June 2019 to January 2020 and June 2021 to January 2021 as the experimental series has only data from June 2019.

around pre-COVID-19 levels after the initial lockdown. Other early analysis from Zheng (Economics Department) based on microdata from the HLFS confirms no significant change of job-to-job flows. More research from the Economics Department is under way to provide more detailed insights.

Despite strong labour demand, businesses have not significantly increased wages yet. LCI wage inflation in the private sector was only at 1.6% annually in the March 2021 quarter. Annual wage inflation would have been even lower without the minimum wage increase in the June 2020 quarter.

Wage inflation in the more buoyant construction and manufacturing industry, which struggle significantly finding the right labour, has not caught up with the sectors impacted most by minimum wage increases, in particular accommodation and food services as well as retail trade (figure 5). However, in our business engagements especially construction firms reported that stronger than usual wage inflation will come through over the coming year.

Figure 5: LCI private sector wage inflation subdued despite strong labour demand and more driven by the minimum wage increase

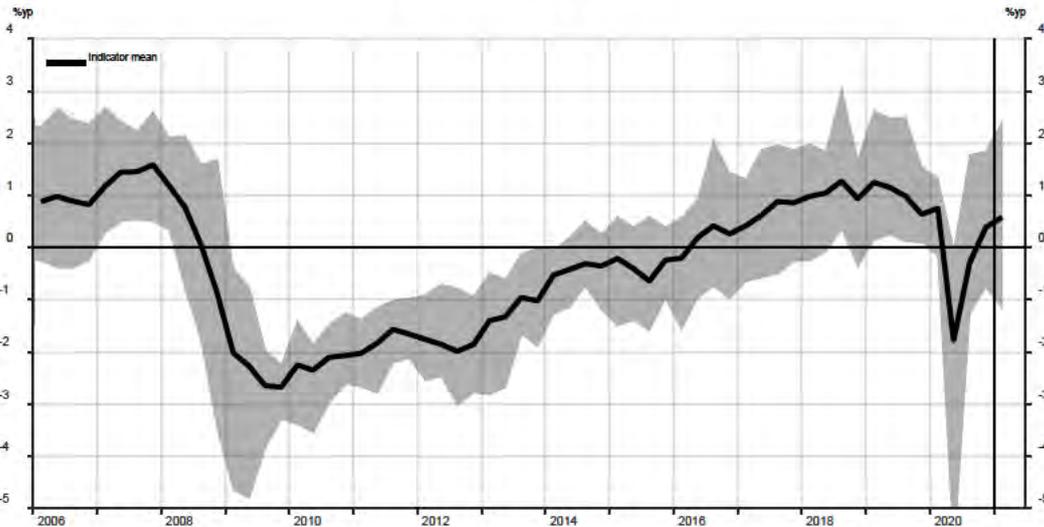


Source: Stats NZ.

CAPACITY PRESSURE AND BUSINESS INVESTMENT

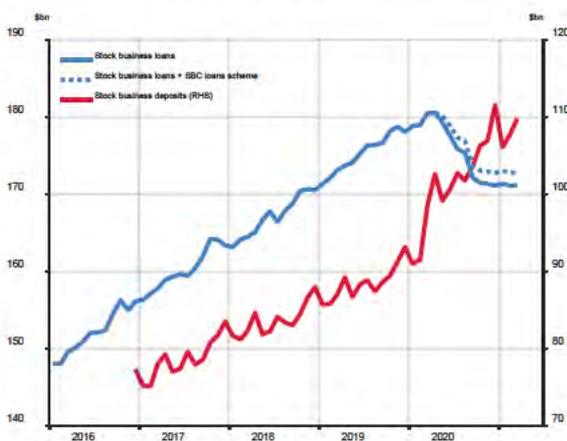
The strong rebound in economic activity and the resilient labour market have led to much higher capacity pressure for many businesses. Most indicators in our Output Gap Indicator Suite (OGIS) point at a positive output gap (figure 6). In our business engagements especially goods-producing firms reported a busy pipeline for at least the year to come.

Figure 6: Output gap indicators point at a positive output gap in March 2021 quarter



Businesses are more confident about increasing investment according to business surveys, despite continued elevated uncertainty. This reflects more sustained domestic demand to date and higher terms of trade on the back of stronger commodity prices. Access to finance seems to be of lower concern as interest rates remain low and as many businesses have strong deposits, reducing the need for new loans (figure 7a).

Figure 7a: Access to finance is less of a concern for investment as business deposits remain elevated, reducing the need for new loans



Source: RBNZ.

Figure 7b: Business investment to pick up as capital imports climb to above pre-COVID-19 levels



Source: Stats NZ.

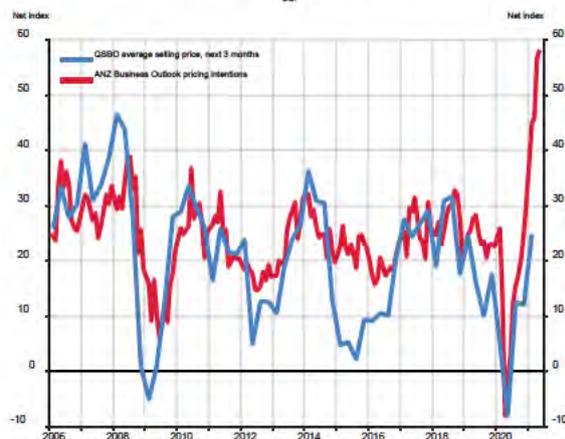
Imports of capital goods have significantly picked up, pointing at stronger business investment than previously forecast (figure 7b). Supply chain disruptions make it somewhat more difficult to source capital goods. However, in our business

engagements firms reported only limited impacts as capital investments have longer lead times anyway.

PRICING INTENTIONS AND PROFITABILITY

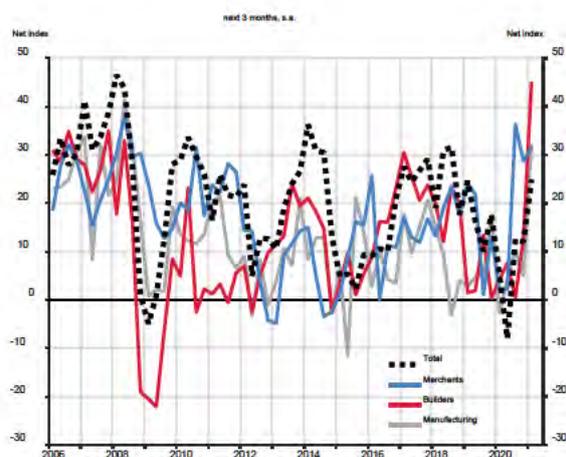
Significantly more firms than usual intend to increase prices. This reflects robust aggregate demand and higher costs due to supply chain disruptions (see paper 3.2 Supply considerations) as well as higher expected wage inflation (figure 8a). Higher pricing intentions are particularly pronounced in retail, construction, and manufacturing industries (figure 8b).

Figure 8a: Significantly more businesses than in pre-COVID-19 times intend to increase prices



Source: NZIER, ANZ.

Figure 8b: Firms in the goods-producing and retail sector plan to increase prices

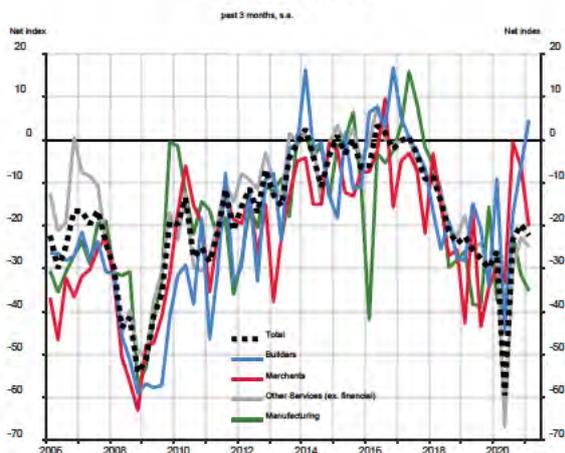


Source: NZIER – QSBO.

However, businesses' short- and long-term inflation expectations are still below or close to our 2 percent inflation target. This suggests that while many firms intend to increase prices, the price increases may only be moderate. In our business engagements many firms reported that they plan to pass on increased costs, but have to be tactful with actual price moves.

Firms are still reporting lower profitability, possibly reflecting a perception of limited ability to pass on increased costs (figure 9a). The exception is construction businesses, profiting from very strong demand. Corporate tax has also plateaued recently at slightly below pre-COVID-19 levels (figure 9b), indicating renewed pressure on firms margins coming from higher costs due to supply chain disruptions and entrenched stronger wage growth (see paper 3.2 Supply considerations).

Figure 9a: Firms still reporting lower profitability except for construction businesses



Source: NZIER – QSBO.

Figure 9b: Net corporate tax has recovered strongly, but remains just below pre-COVID-19 levels



Source: Treasury.

APPENDIX

Abbreviations:

| | |
|-------|--|
| ANZBO | ANZ Business Outlook |
| BFD | Business Financial Data (formerly: Business Data Collection) |
| GFC | Global Financial Crisis |
| HLFS | Household Labour Force Survey |
| IRD | Inland Revenue Department |
| LCI | Labour Cost Index |
| NZIER | New Zealand Institute of Economic Research |
| OGIS | Output Gap Indicator Suite |
| PMI | Performance of Manufacturing Index |
| PSI | Performance of Services Index |
| QSBO | Quarterly Survey of Business Opinion |
| SBCS | Small Business Cashflow (Loan) Scheme |



Paper 4.1

Household developments

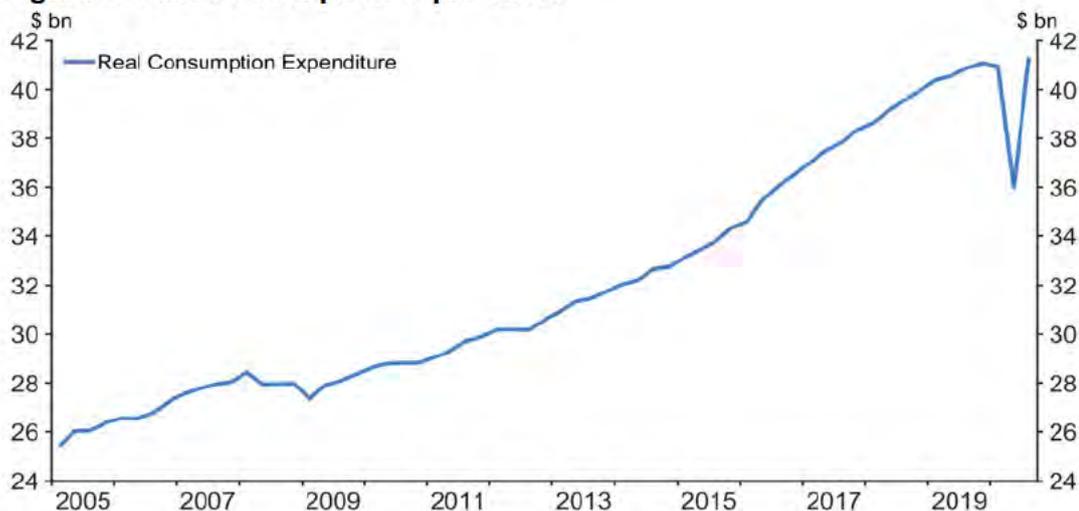
Forecasting Team

Primary author: Waran Bhahirethan

SUMMARY

- The household sector has accounted for much of the recent rebound in economic activity. Household consumption bounced back strongly in the September 2020 quarter to surpass its pre-COVID-19 level (figure 1).

Figure 1: Real consumption expenditure



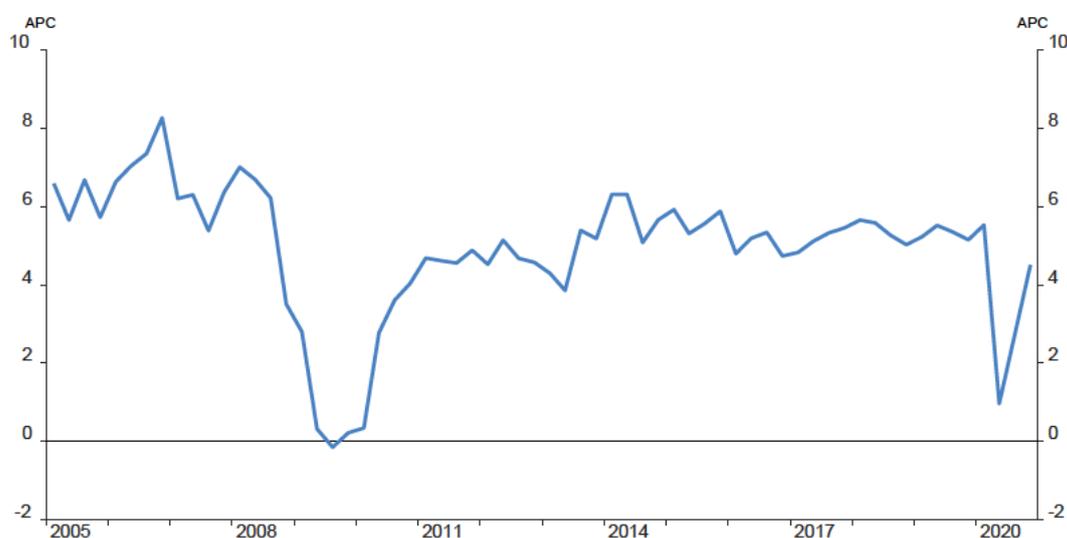
- **Households have been surprisingly resilient to the COVID-19 shock**, with monetary and fiscal stimulus providing them with significant support.
 - Earnings are roughly in line with pre-pandemic levels. Temporary fiscal support programmes helped keep employees attached to their jobs and supported household incomes.
 - The recent recovery in aggregate demand has increased labour demand, underpinning household income and expenditure.
 - Significant monetary stimulus has increased household spending power.
 - Sharp asset price increases have encouraged consumption via wealth effects.
- Although consumer confidence and spending have rebounded sharply since mid-2020, they appear to be flattening off in the near term. COVID-19 uncertainties and the unwind of fiscal support is expected to temper further near-term spending momentum.
- Residential investment has increased sharply, as demand for housing and low mortgage rates stimulate construction activity.

INCOME AND CASH FLOW

Earnings have returned to their pre-COVID-19 level, reflecting resilience in the labour market

The labour market has been surprisingly resilient, with employment in the fourth quarter of 2020 about one percentage point higher than pre-COVID-19 levels (see Paper 1.2). Consistent with the increase in employment and hours worked, total labour earnings have also recovered (figure 2). Businesses continue to indicate difficulties in finding both skilled and unskilled labour, suggesting robust labour demand will persist in the near term. However, these pressures are yet to translate into a material pick-up in wage growth.

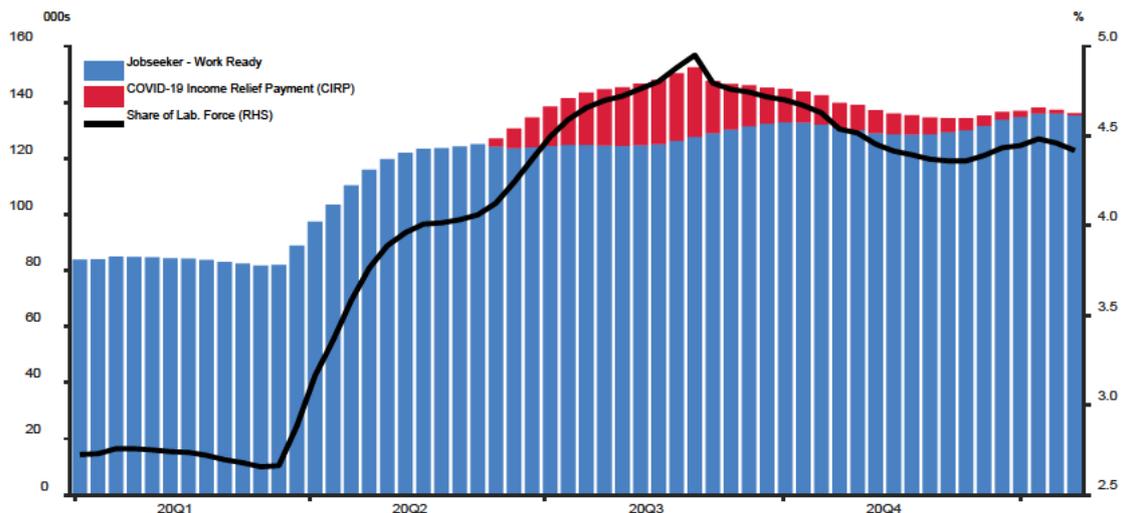
Figure 2: QES Total gross earnings annual growth



Temporary income support programmes, such as the Wage Subsidy helped New Zealanders remain attached to their jobs and also filled shortfalls in income. At its peak, the Wage Subsidy supported as many as 1.76 million unique jobs, with cumulative disbursements to firms amounting to approximately \$13.8 billion (roughly 4.3 percent of nominal GDP). The number of New Zealanders on income support programmes (as a share of the labour force) has steadily declined, further affirming the resiliency of the labour market (figure 3).

Income support programmes are likely to have been a key contributor to the robust consumption growth recorded in the third quarter (figure 1, page 1). Their expiry is also consistent with an observed moderation in spending in the fourth quarter of 2020 (discussed in the next section).

Figure 3: Jobseeker support and CIRP support beneficiaries



Lower interest rates will support households' cash flows

Reserve Bank policies to offset the COVID-19 shock have had both positive and negative cash flow impacts on New Zealand households. Declines in interest rates have reduced households' income from deposits, but have also reduced interest payments on mortgages and consumer loans (which are much larger in aggregate). As deposit tend to be fixed for shorter periods, the impact of lower deposit rates has occurred first. However, as fixed-rate mortgages reprice over time, the positive cash flow impact will grow, further supporting household spending power.

Impacts from other policies, such as mortgage payment deferrals, are playing a diminishing role, but provided significant support for households in mid-2020.

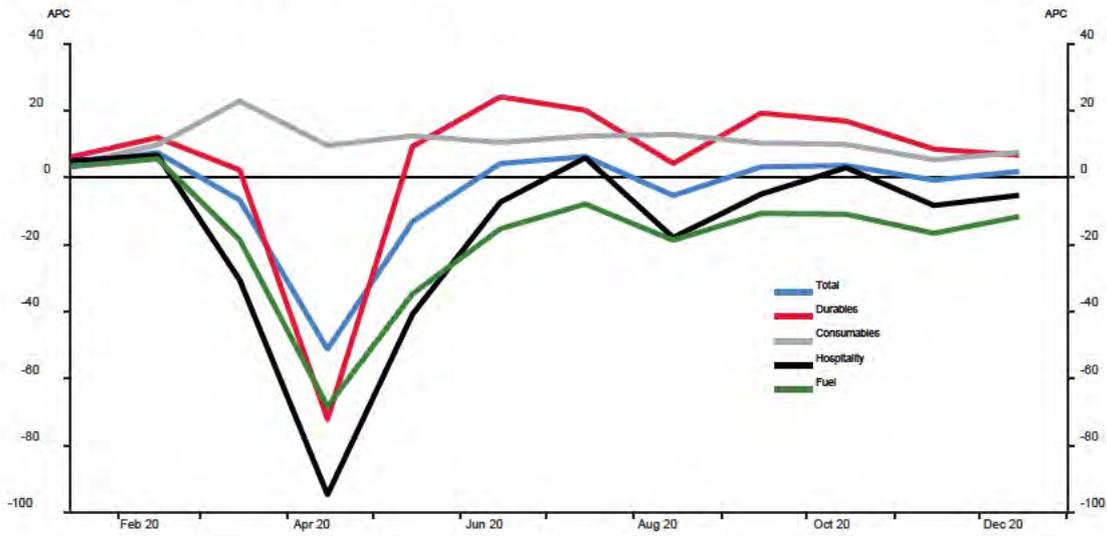
SPENDING AND SAVING BEHAVIOUR

Growth in household spending has taken a breather since the third quarter

Despite the Auckland lockdown, consumer spending rebounded sharply in the third quarter of 2020. Spending on durables rose to above pre-pandemic levels, while non-durables spending was slightly below. Only spending on services was notably below pre-pandemic levels.

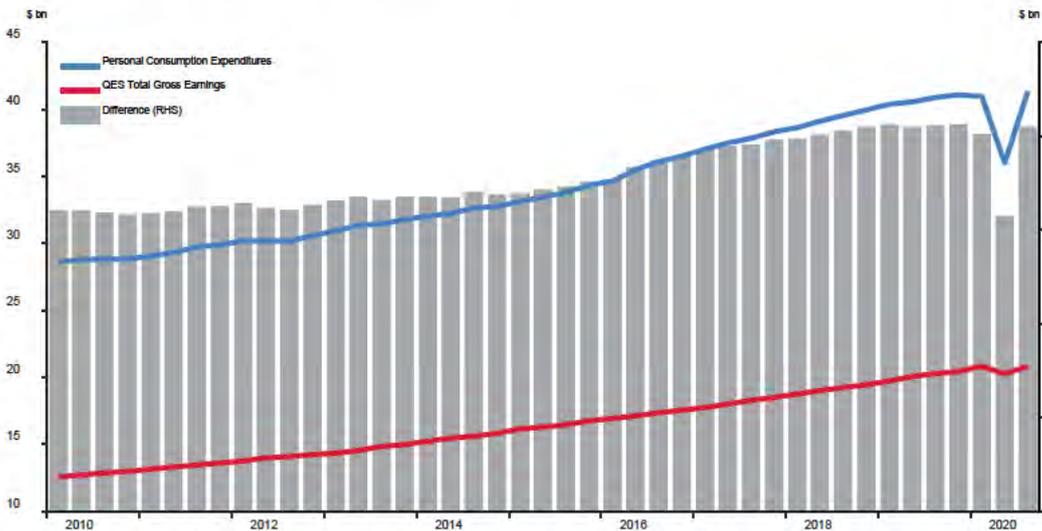
Growth in household spending appears to be taking a breather since the third quarter. Electronic card spending is up 1.8 percent annually (figure 4). The slightly weaker spending was most pronounced in hospitality and fuel industry sales, as would be expected given the decline in tourism and petrol prices.

Figure 4: Electronic card transactions



Household labour earnings since the pandemic began have been buoyant and have returned to pre-COVID-19 levels. As household spending was affected during periods at Alert Levels 3 and 4, this led to higher-than normal saving during the middle of 2020. This is reflected in the larger decline in consumption spending compared to labour earnings in the middle of 2020 (figure 5). The recent recovery in household spending appears to have resulted in a return to pre-COVID-19 savings levels.

Figure 5: Consumption and labour earnings



Note: Total gross earnings captures households' labour earnings only (excludes income from other sources).

Consumer confidence has partially recovered from its trough during Alert Level 4 (figure 6a). Consumers are more confident about both current and future conditions, but overall confidence levels remain subdued compared to pre-COVID-19.

Consumers raised their purchase intentions significantly in the September quarter as confidence found its feet (figure 6b). This is consistent with stronger spending momentum in the quarter. Overall spending intentions are still relatively subdued on a historical basis, consistent with a plateau in current and future expectations at modest levels.

Figure 6a: Household overall, current, and future confidence indices

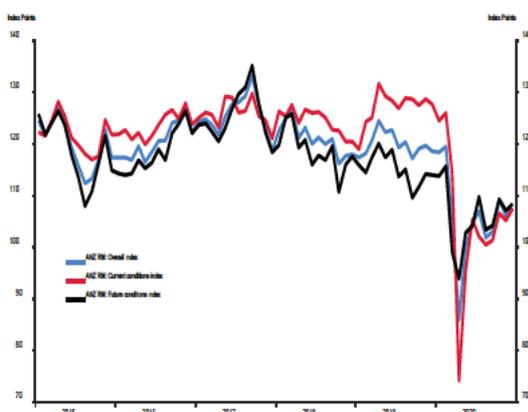
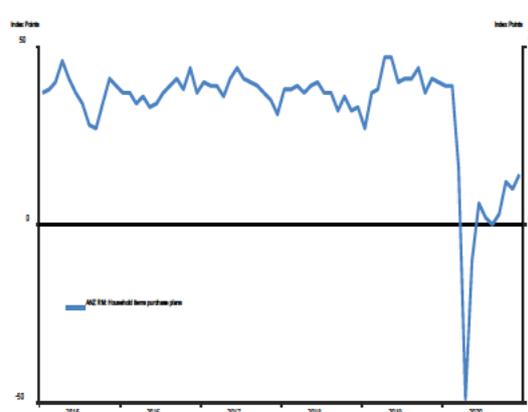


Figure 6b: Household purchase intentions

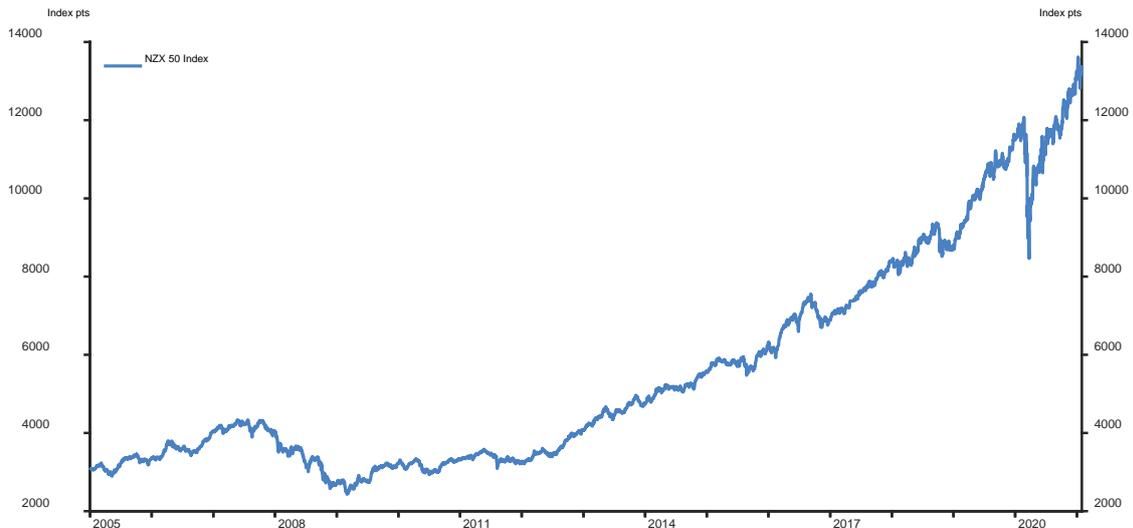


HOUSEHOLD WEALTH AND THE HOUSING MARKET

Equity investments in New Zealand listed corporates are an important component of household financial wealth, accounting for about 12 percent of the total. After declining precipitously in the first quarter of 2020, the NZX 50 stock index has rallied steadily and is currently approximately 50 percent higher compared to the levels recorded during the market turmoil depths in late March (figure 7). The wealth effect of rapidly rising stock prices is likely to have been another positive for consumption in the past few quarters.¹

¹ Empirical work by the Bank has found that although the aggregate wealth effect is stronger for housing wealth, there is also a significant financial wealth effect on consumption. See Wong (2017), 'Revisiting the wealth effect on consumption in New Zealand', RBNZ Analytical Note AN2017/3.

Figure 7: NZX 50 stock price index



Robust house prices support consumption and residential investment

A larger portion – roughly two thirds – of New Zealanders’ net wealth is in housing. House price changes therefore have a material impact on consumption, and residential investment. House prices have risen sharply in recent months. In December 2020, nationwide house prices rose by 2.8 percent on a monthly basis and by approximately 20 percent in annual terms (figure 8a). The gains are broad-based, as indicated by high-level disaggregated regional price indices (figure 8b).

Figure 8a: Monthly and annual house price increases

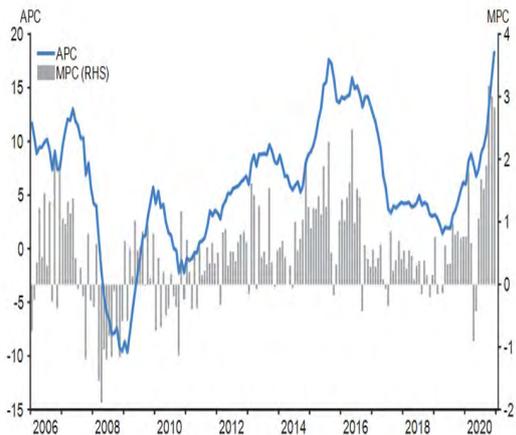
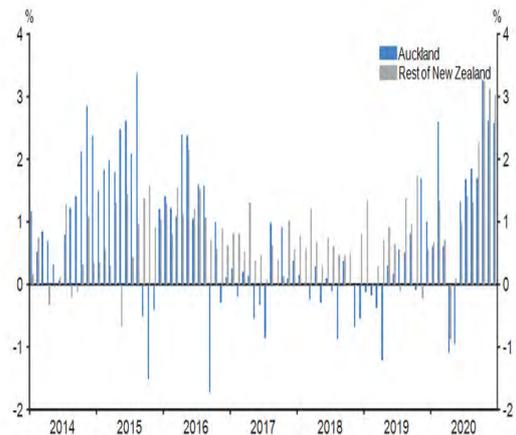
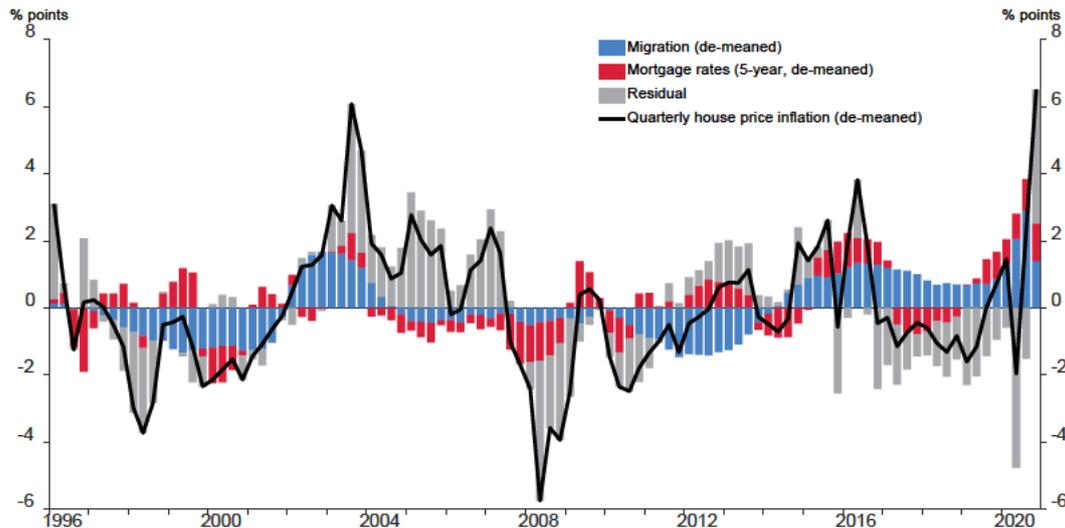


Figure 8b: Broad-based house price strength



Against the backdrop of a resilient household income, migration during 2019 and early 2020 and declines in interest are likely to have contributed significantly to the increase in house price inflation (figure 9).

Figure 9: Contributors to house price gains



The increase in house prices has encouraged household spending via the wealth effect.² A number of temporary measures – government income support programmes, the mortgage deferral scheme (which has limited distressed house sales), suspension of loan-to-value ratio (LVR) requirements – are also likely to have underpinned the rise in prices witnessed in recent months. The expiry of the support programs is likely to temper house price growth going forward, which, in turn, could moderate consumption growth.

The Reserve Bank's announcement on 9 February that LVR restrictions would be reintroduced for owner-occupiers and investors, and tightened for the latter, is expected to moderately dampen house price growth over the near term. Specifically, quarterly growth in house prices is assumed to be around 2-3 percent from the second quarter of this year – prior to the LVR decision, this had been assumed to be around 4-5 percent.

Increased demand for housing, and higher house prices, has been met with an increase in residential investment. The number of residential dwelling consents increased 19 percent in the year to December 2020, suggesting strength in residential investment in the near term (figure 10). While consent issuance has been increasing steadily in Auckland since the start of the year, issuance in the rest of New Zealand has also increased strongly. As discussed in Paper 5, the outlook for residential investment is higher than assumed in November, but is still expected to ease over 2021 as momentum in the housing market generally wanes.

² Wong (2017) and de Roiste et al. (2019) 'Household leverage and asymmetric housing wealth effects – evidence from New Zealand', DP2019/01 contain our most recent empirical assessments of the wealth effect in New Zealand.

Figure 10: Residential consent indicator and residential investment

CONCLUSION

A number of monetary and fiscal policy measures introduced to counter the impact of the COVID-19 crisis have: contributed to the continued attachment of New Zealanders with their employers; supported incomes; positively affected household cash flows; increased household wealth; and boosted confidence. As a result, households have fared well in the last two quarters.

Household spending appears to be losing some momentum at present, and the outlook is for consumption to remain flat in the near term. Continued high house price inflation or strength in the labour market present upside risk to this assessment.

STRICTLY CONFIDENTIAL TO RECIPIENTS
11 FEBRUARY 2021



Paper 4.2

Business developments

Forecasting team
Author: Thomas Bohm

SUMMARY

Overall, many businesses have seen a strong recovery in economic activity in the second half of 2020. Aggregate domestic demand has been much more resilient than forecast. In addition, global demand for New Zealand's goods exports has held up fairly well over 2020.

The strong recovery is not reflected in all sectors. Tourism-related industries are struggling as the lack of international visitors is felt most over the summer period. However, this weakness has been more than offset by strong activity in the construction and retail sectors.

As a result, capacity pressure in the economy has increased substantially and a number of indicators point at a positive output gap. Many businesses are having difficulty finding skilled and unskilled labour and, at the same time, are facing supply chain issues. These factors increase inflationary pressure in the economy, at least in the near term.

However, businesses remain cautious that a lot of the currently strong economic activity has been due only to pent-up demand and fiscal as well as monetary stimulus measures. The impact of these factors is expected to diminish eventually. In an environment where businesses are uncertain about whether demand for their goods and services will prove sustained, many firms are still reluctant to pass on higher costs and to increase selling prices. Firms are holding back wage increases for now – more sustained inflation will require wage inflation to pick up more persistently.

High uncertainty also prevents businesses from investing more. Firms have taken a 'wait and see' approach, despite favourable financing conditions, improved firm profitability and an overall sound business sector.

The aim of this paper is to provide an overview on how businesses are faring and how this feeds back to inflationary pressure in the economy. Table 1 provides a summary overview of some relevant indicators related to business activity and inflationary pressure.

Table 1: Economic indicators on business activity – overall more resilient

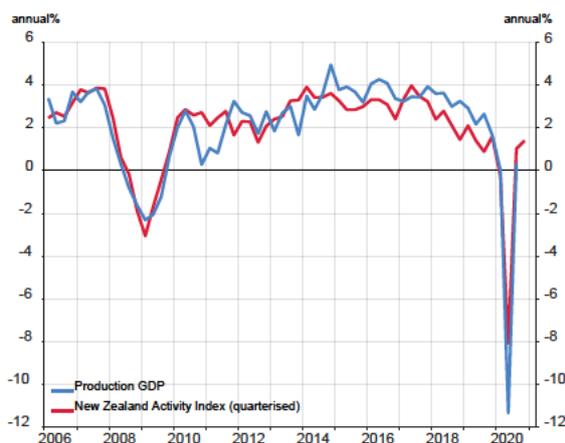
Current outturns relative to 2019 (pre-COVID-19) regarding inflationary pressure in the economy:

| worse | | similar ↓ | Summary | similar ↑ | | stronger | | | |
|----------------------|---------------------------------|-----------------------------|-----------------------------|-------------------------------------|---------------------------|--------------------------------|------------------------------------|---|--------------------|
| PSI activity | PSI new orders | Goods exports (MT) | Demand/production | GDP | NZAC | QSBO dom. trading activity | QSBO orders | WMP prices | |
| | | ANZ World Commodity Prices | | BFD net sales | ANZBO activity | PMI production | PMI new orders | | |
| | QSBO average costs | Baltic Dry index | Supply | QSBO limiting factor labour/capital | | QSBO limiting factor materials | Fewer goods imports (MT) | Fewer overseas ships & containers handled | ANZBO cost expect. |
| Adj. LCI wages | QSBO finding unskilled labour | Vacancy rate | Labour | ANZBO employment intention | QSBO employment intention | QES hourly earnings | | | |
| Unemploy. rate | QSBO finding skilled labour | QSBO finding skilled labour | | | | | | | |
| | OGIS output gap | | Capacity pressure | ANZBO capacity Utilisation | | QSBO capacity utilisation | Share actual to usual hours worked | | |
| VIX volatility index | Sense uncertainty index | | Investment | Non-residential consents | | QSBO investment intention | ANZBO investment intention | | |
| Capital imports (MT) | Retail & office space vacancies | | | | | | | | |
| NPL business loans | Lending to businesses | | Financial conditions | ANZBO ease of credit | | QSBO less overdue debtors | Lower yield on business loans | | |
| | | | Profitability | Corporate tax | ANZBO profitability | QSBO profitability | BFD operating profits | Fewer insolvencies | |
| | | | Pricing | QSBO pricing | | ANZBO pricing | | | |

DEMAND AND CAPACITY PRESSURE

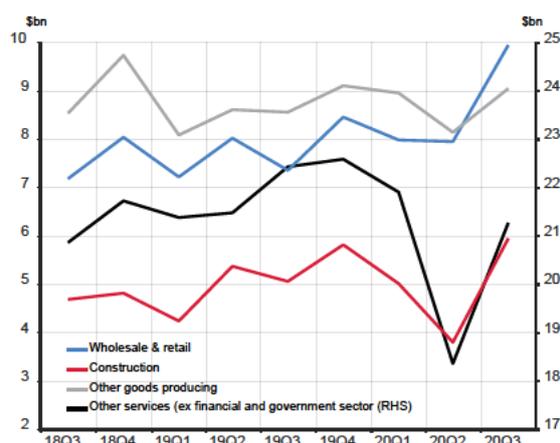
Businesses have seen a strong rebound in economic activity since the COVID-19 lockdowns. A mix of unprecedented fiscal and monetary stimulus, strong housing demand from more New Zealanders staying or coming home, as well as substantial pent-up, and resilient goods export demand have pushed economic activity back to pre-COVID-19 levels. Timely data suggests that this persisted through the end of 2020 (figure 1a). However, this strength is not reflected in all industries. Construction and retail have seen significant rebounds following the high alert-level restrictions. Tourism-related industries remain weak, hampered by the lack of international visitors (figure 1b). In our recent round of business visits, many firms confirmed strong current demand but are concerned how sustainable this will prove going forward. The impact of pent-up demand as well as monetary and fiscal stimulus measures are expected to ebb away eventually.

Figure 1a: NZAC points at near-term strength



Source: Stats NZ, Treasury, RBNZ.

Figure 1b: Net sales strong for retail and construction businesses but still weak for other services



Net Sales = Sales - Purchases

Source: Stats NZ.

Near-term strength is also reflected by new orders indicators. In the December quarter 2020, QSBO new orders have dropped back to pre-COVID-19 levels in the range of factors businesses are concerned of. Also PMI and PSI new orders are back into positive territory. However, for the service sector the indicator is still below pre-COVID-19 levels and for manufacturing it has trended down since the rebound, pointing at a more muted recovery going forward.

Global demand for New Zealand’s goods exports has held up throughout 2020, remaining around pre-COVID-19 levels. New Zealand’s main goods exports are food ingredients for which global demand was little impacted due to the pandemic. This is

also reflected by relatively strong goods export prices. The ANZ world commodity price index has remained elevated at around 2019 levels, with whole milk powder prices trending towards 3,500 USD per metric tonne above our long-run assumption of USD 3,000.

All in all, the strong rebound in economic activity has led to much higher capacity pressure in the economy than previously forecast. Most indicators in our Output Gap Indicator Suite (OGIS) point now at a positive output gap (figure 2).

Figure 2: Output gap indicators point at a positive output gap in December quarter 2020

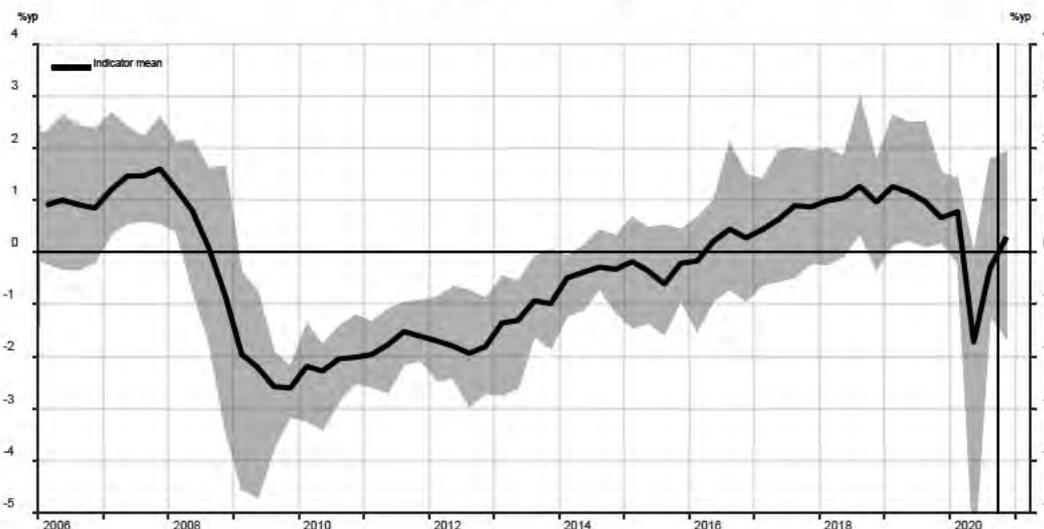
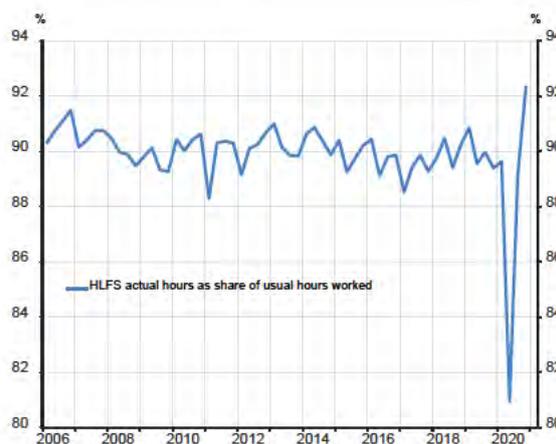


Figure 3a: ANZ Business Outlook capacity utilisation much stronger for construction



Source: ANZ.

Figure 3b: Employees work much more than usual



Source: Stats NZ, RBNZ estimates.

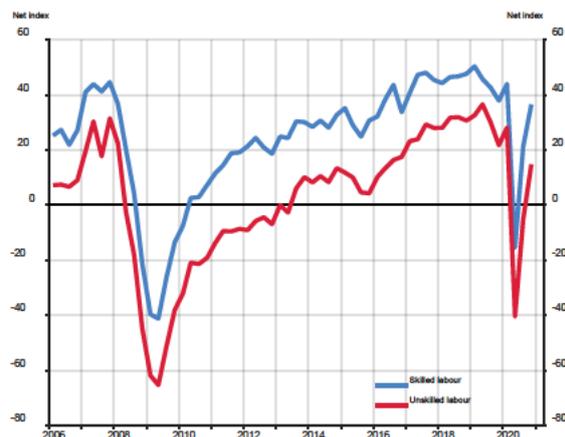
In particular, strong housing demand has increased capacity utilisation significantly in the construction sector (figure 3a). But also all other industries have seen capacity utilisation approach pre-COVID-19 levels. Firms required their employees to work

many more hours than usual in the December quarter 2020 (figure 3b). Border restrictions contributed to this as the inflow of migrants is much lower than usual.

LABOUR AND SUPPLY

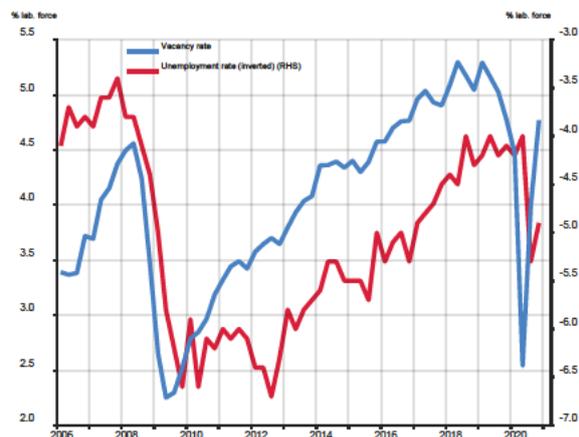
Stronger aggregate demand has seen labour demand indicators recover significantly. However, this is also due to border restrictions causing labour supply constraints. Most evidently, more firms are having difficulty finding skilled labour (figure 4a). This is also true for unskilled labour but to a lesser extent, with the net number of firms remaining materially below pre-COVID-19 levels. In our recent business talks, firms have confirmed that they are struggling to find skilled labour. Some businesses even reported that some skilled migrants went back to their home countries, as they could not bring their families to New Zealand due to the border restrictions.

Figure 4a: QSBO difficulty finding skilled and unskilled labour recovered strongly



Source: NZIER.

Figure 4b: Vacancy rate bounced back



Source: MBIE, Stats NZ, RBNZ estimates.

The stronger labour demand is also reflected by the bounce back of the vacancy rate¹ (figure 4b). However, the size of the fall of the unemployment rate from 5.3 to 4.9 percent in the December quarter 2020 does not match the strength in the recovery in new job vacancies. This highlights labour market rigidities as many employees don't have the skillset to easily move from one industry to another. Hence, in particular for the busy construction sector, the pool of additional suitable labour is quite limited despite many available unemployed people.

As a result, overall wage inflation should increase. However, in the present uncertain environment many firms are not willing to increase wages substantially, causing annual wage inflation to fall to 1.5 percent (figure 5a). In the December quarter 2020, the proportion of employees receiving an annual wage increase fell to 45%, the lowest

¹ The vacancy rate is the number of online job vacancies as a share of the labour force.

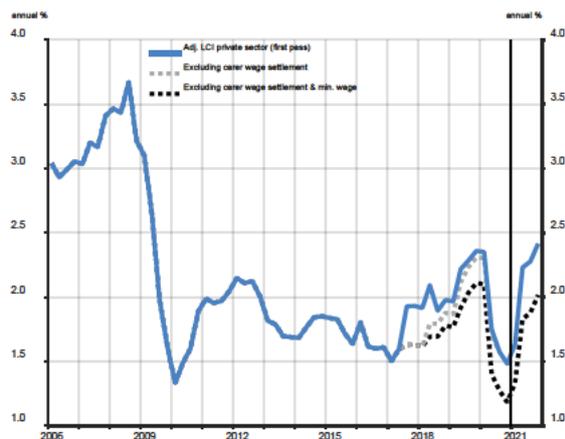
proportion since the March quarter 2010. Nevertheless, more firms reported in the most recent QSBO that their average costs have increased. Underlying wage inflation pressure is expected to build as many businesses struggle to find labour. In addition, the minimum wage increase of about 6 percent to \$20 per hour in the June quarter 2021 will add to inflationary pressure (figure 5b).

Figure 5a: Inflationary pressure from wage inflation and average costs still limited



Source: StatsNZ, NZIER.

Figure 5b: Minimum wage increase expected to push annual wage inflation to above 2 percent in the near term



Source: StatsNZ, RBNZ estimates.

Businesses are not just struggling to find labour but the COVID-19 pandemic has also caused supply chain disruptions globally. New Zealand’s goods imports are still significantly below 2019 levels despite strong demand. Many more firms than before COVID-19 are concerned about access to materials (figure 6a). This is caused by fewer overseas container ships coming to New Zealand (figure 6b). However, New Zealand’s ports also have difficulty handling containers more quickly.

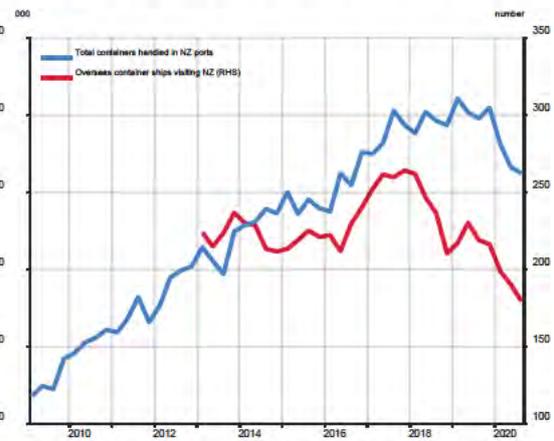
In our recent business talks, firms reported that shipping costs to and from New Zealand have more than doubled. Shipping lines are currently charging a surplus due to disruption to usual shipping routes and New Zealand’s remote location. However, higher shipping prices might remain in place even after normalisation of global supply chains as prices in the past were too low for some shipping lines to be profitable.

Figure 6a: Supply-chain issues: More firms report materials as limiting factor in the QSBO



Source: NZIER.

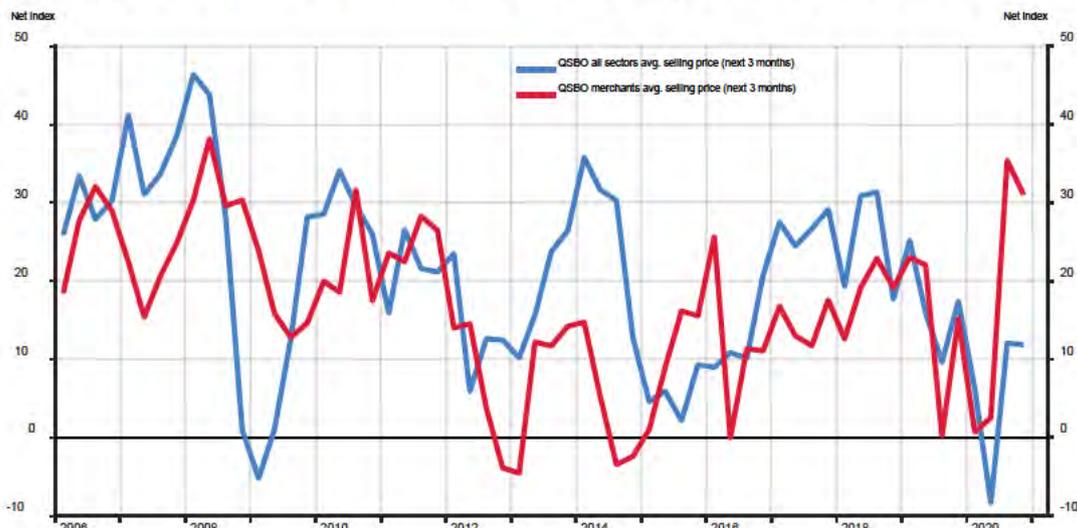
Figure 6b: Supply-chain issues: Fewer containers handled at ports and fewer overseas vessels come to New Zealand



Source: Ministry of Transport.

Together with strong demand for consumer goods (in particular durables), these supply-chain disruptions increase inflationary pressure in the near term. As a result, many retail businesses intend to increase selling prices (figure 7). However, economy-wide pricing intentions have remained subdued so far. Timelier data from the ANZ Business Outlook suggests that, at least in the near term, more businesses will increase prices.

Figure 7: QSBO pricing intentions strong for retail but otherwise subdued



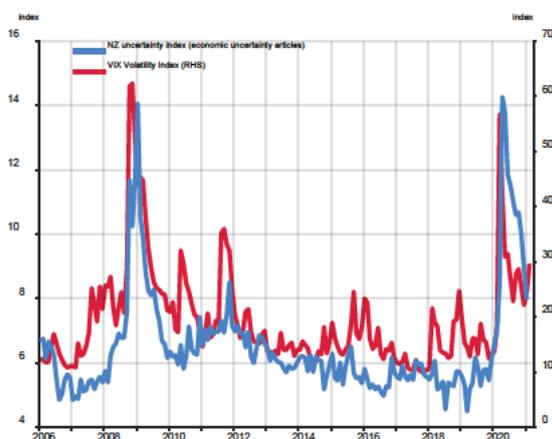
Source: NZIER.

INVESTMENT AND BUSINESS HEALTH

Despite many capacity pressure indicators bouncing back to around pre-COVID-19 levels, many firms stated in our recent business talks that they currently prefer to ‘wait and see’ before they go ahead with or start investment projects. That is, businesses

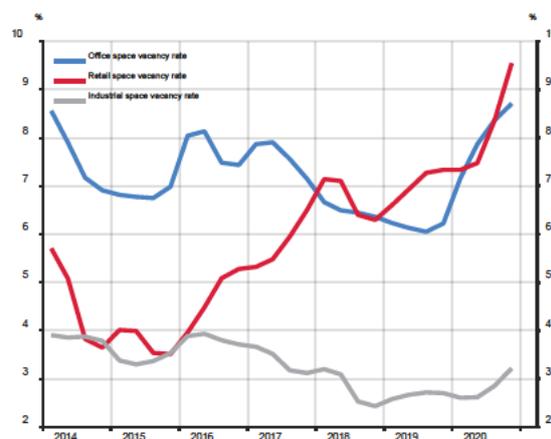
are taking a cautious approach as uncertainty is still high (figure 8a). However, in general, it seems that businesses are planning to invest eventually more again. Non-residential consents remain elevated around 2019 levels. Nevertheless, not all projects might reach implementation phase as COVID-19 has changed how many businesses operate, with more employees working from home and more customers shopping online than visiting stores. As a result, office and retail space vacancy rates in particular have trended up since the beginning of the COVID-19 pandemic (figure 8b).

Figure 8a: Uncertainty still elevated



Source: Bloomberg, Sense Partners.

Figure 8b: Retail and office space vacancy rates rising

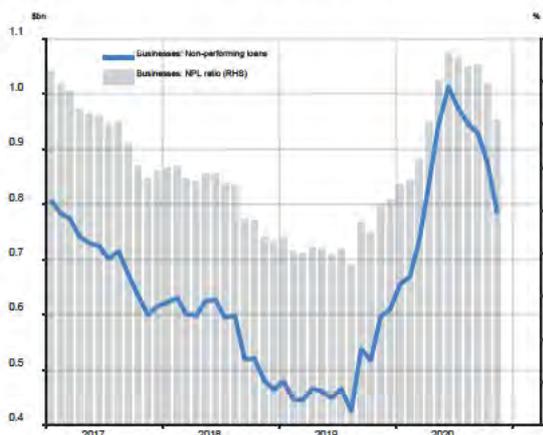


Vacancy rates cover Auckland, Wellington, and Christchurch.

Source: JLL.

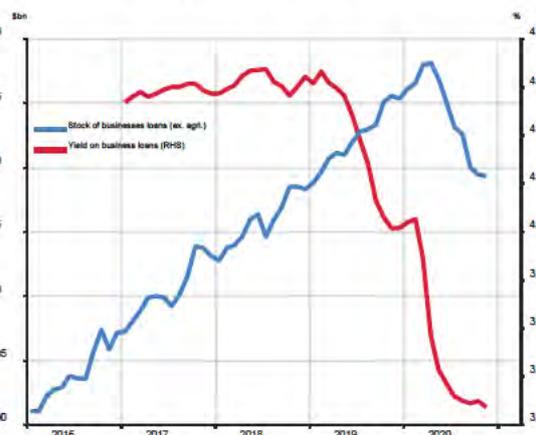
Despite non-performing business loans still being elevated (figure 9a), borrowing conditions have improved substantially. The average interest rate on outstanding business loans has dropped by around 80 basis points since the beginning of 2020 (figure 9b). However currently, uncertainty and real economic factors are more important considerations than borrowing costs for businesses' investment decisions. As a result, lending to businesses has remained weak since the beginning of the COVID-19 pandemic (figure 9b). To some extent, this is driven by fiscal support measures like the wage subsidies (\$14 billion paid out) and the Small Business Cashflow (Loan) Scheme (\$1.7 billion disbursed). Some business have used this support to pay down revolving business loans.

Figure 9a: Non-performing business loans still elevated



Source: RBNZ.

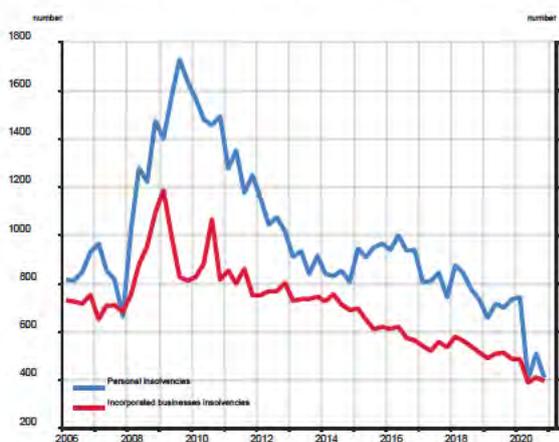
Figure 9b: Lending to businesses weak despite lower yields



Source: RBNZ.

Still, monetary and fiscal support measures helped firms to stay in business and make it through the COVID-19 lockdown periods. Government measures like the Business Debt Hibernation scheme and the 'Safe Harbour' insolvency law changes contributed to very low business insolvencies since the beginning of the COVID-19 pandemic (figure 10a).²

Figure 10a: Insolvencies at historic lows



Personal insolvencies include non-incorporated business insolvencies.

Source: MBIE.

Figure 10b: Corporate tax recovering rapidly



Source: Treasury, RBNZ estimates.

² The Business Debt Hibernation scheme provides temporary protection for businesses from being liquidated to pay back creditors. This scheme will expire on 31 October 2021. The 'Safe Harbour' insolvency law change provides relief to company directors facing significant liquidity problems as a result of COVID-19. This temporary law change expired on 30 September 2020. See: <https://www.companiesoffice.govt.nz/covid-19/relief-measures/>

Even with fiscal support measures running off, we do not expect a strong increase in insolvencies. Most profitability indicators have bounced back to around pre-COVID-19 levels. One exception is operating profits of service companies (excluding retail and construction related services) which are still below pre-COVID-19 levels. However, corporate tax payments have recovered strongly to around 2019 levels over the second half of 2020, pointing at a rather sound business sector overall (figure 10b).

APPENDIXAbbreviations:

| | |
|-------|--|
| ANZBO | ANZ Business Outlook |
| BFD | Business Financial Data (formerly: Business Data Collection) |
| HLFS | Household Labour Force Survey |
| JLL | Jones Lang LaSalle Inc. |
| LCI | Labour Cost Index |
| NPL | Non-performing loans |
| NZAC | New Zealand Activity Index |
| PMI | Performance of Manufacturing Index |
| PSI | Performance of Services Index |
| QSBO | Quarterly Survey of Business Opinion |
| VIX | Chicago Board Options Exchange Volatility Index on S&P 500 |
| WMP | Whole Milk Powder |



Sectoral Overviews

| <i>Forecasting team</i> | | | | | | | | | |
|-------------------------|-------------------|-------------|----------------|------------|------------|-------------|--------------|-------------|--------------|
| Rebecca Williams | Waran Bhahirethan | Thomas Bohm | Andrew Besuyen | Lewis Kerr | Marea Sing | Tyler Smith | Tom Stannard | India Power | Daniel Wills |

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Note: Push ctrl + click on the section you wish to jump to



A External Sector Overview

SUMMARY

Prices

- **Export prices are stronger than expected but will likely normalise over the medium term.** This reflects a significant increase in dairy prices, driven primarily by heightened demand from China. Export prices are also being supported by strong demand for other goods, such as forestry products. However, we expect some softening in meat prices in the near term as exporters face supply chain disruptions which limit their capacity to export high-value chilled products. Over the medium term, the high export prices are expected to ease but remain elevated as global demand profiles normalise.
- **Import prices are expected to hold in the near term and remain higher than the Feb MPS over the medium term.** Foreign import prices are expected to rise in the near term as the cost of continued supply chain disruptions is passed on to customers and oil prices increase to around US\$60/barrel. Supply chain disruptions have impacted on ex-oil goods imports which are expected to ease through the end of the year but remain elevated over the medium term.
- **The terms of trade is expected to rise significantly over 2021 supported by export prices rising more than imports prices before normalising** over the projection horizon as strong export prices ease.

Volumes

- **Exports of services will be stronger in the near term** to reflect the opening of the trans-Tasman bubble, and increase over the medium term as borders re-open globally. However, in the near term, risks of virus outbreaks suspending travel remain. Exports of goods have continued to be resilient, consistent with robust global demand for base ingredients products. However, supply chain disruptions have hampered the capacity of some exporters to get products to global markets. Goods export volumes are expected to remain robust over the medium term, supported by improved expectations of global output and activity.
- **Imports of goods are expected to hold in the near term but remain higher than the Feb MPS.** Import volumes in early 2021 were higher than anticipated as delayed goods arrived in New Zealand. However, import volumes are expected to remain muted in the near term as firms investment intentions remain subdued relative to pre-COVID times and supply chain disruptions continue to cause delays for importers. Particularly for goods reliant on access to shipping containers. Over the medium term, import volumes are expected to normalise as supply chain congestion eases and business sentiment improves.
- **Net exports are expected to hamper domestic growth in the near term**, but this impact reduces as import volumes hold while export volumes rise.

PRICES

Figure 1: Goods and services export prices (real, world terms)

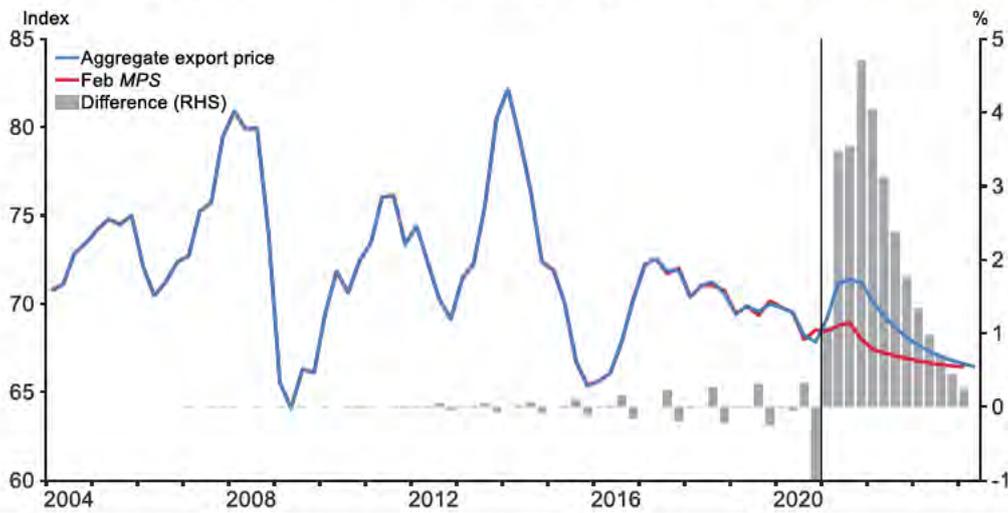


Figure 2: SNA dairy export price (USD terms)

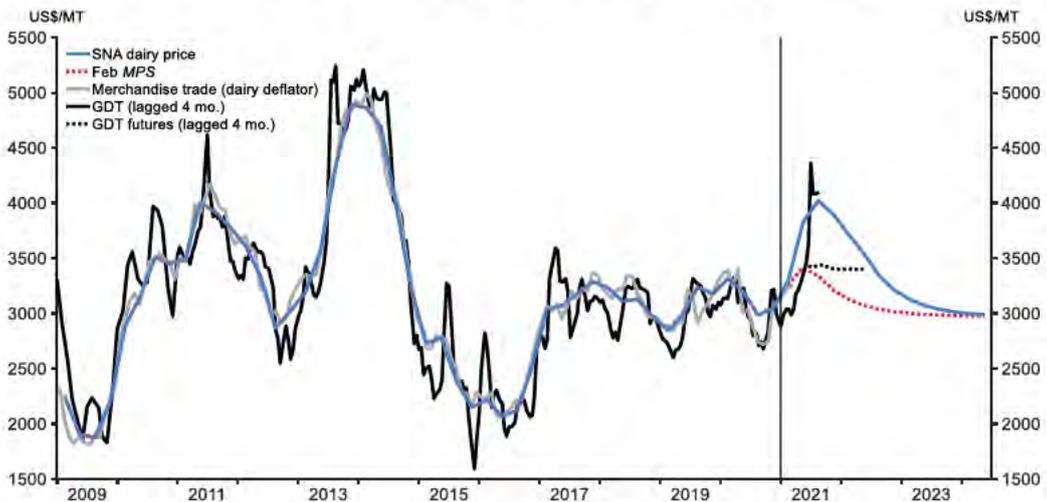


Figure 3: Global dairy production growth for selected exporting countries

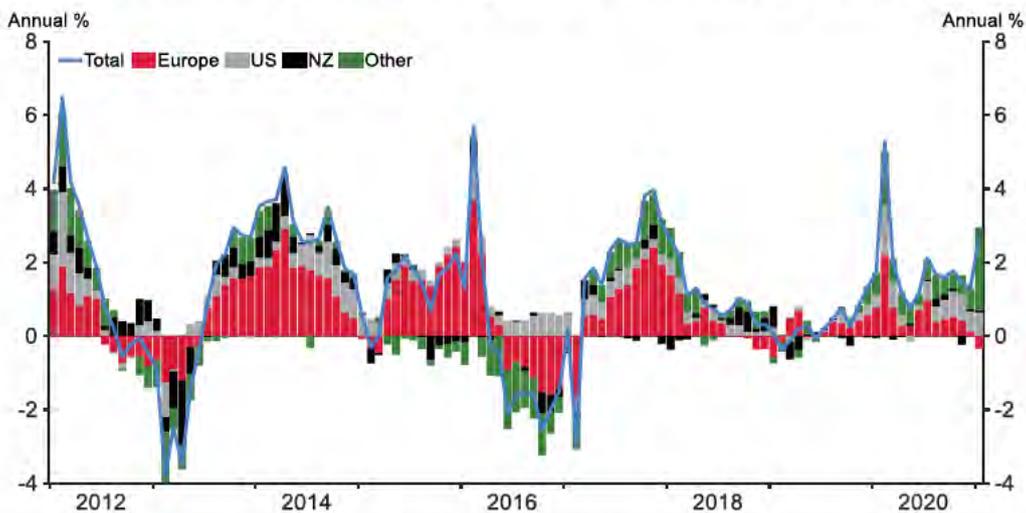


Figure 4: SNA meat price (real world terms)

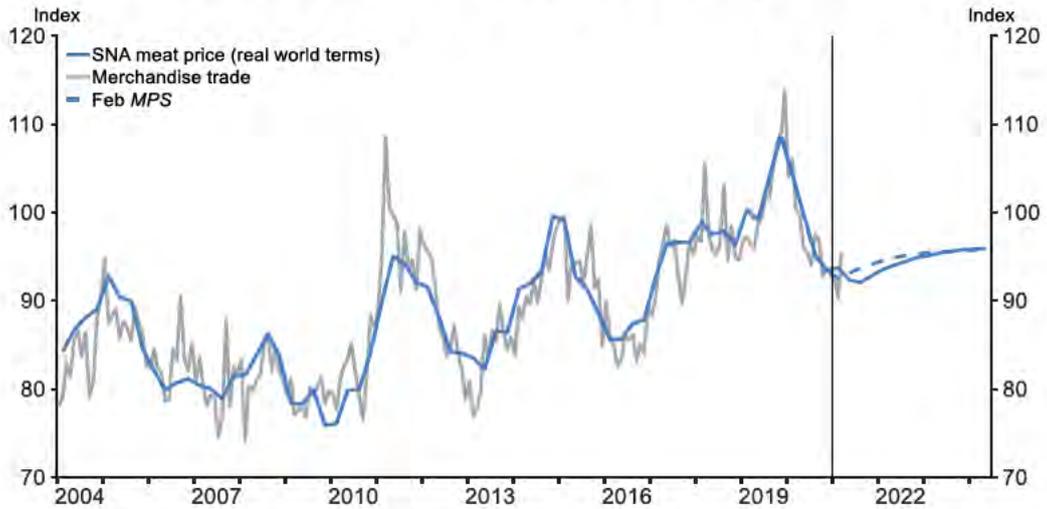


Figure 5: Goods export prices excluding dairy and meat (real world terms)

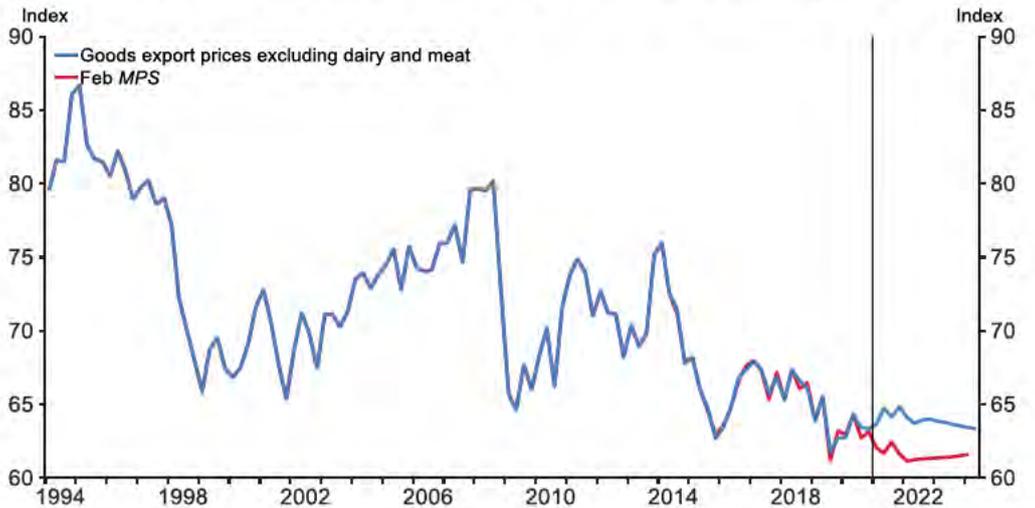


Figure 6: Aggregate import price index (real world terms)

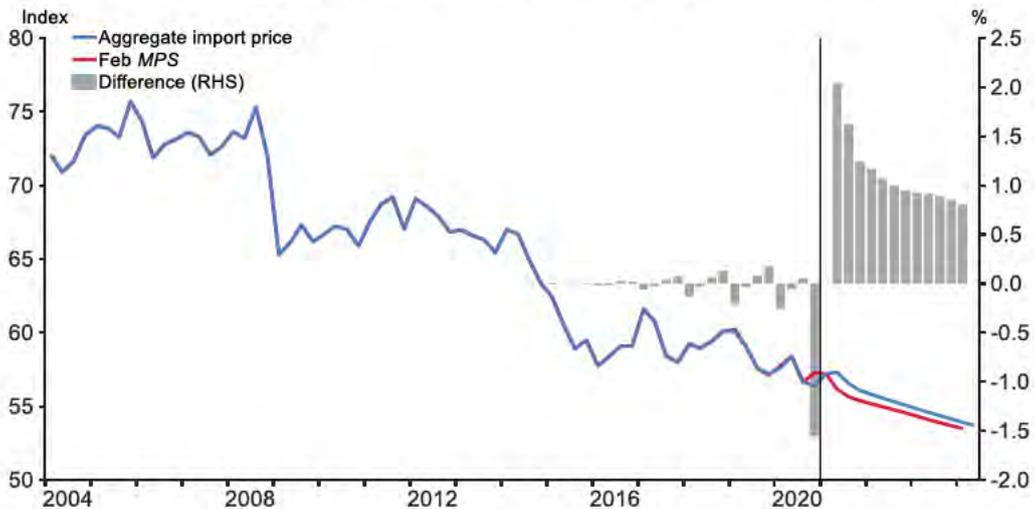


Figure 7: Dubai oil spot and futures pricing



Figure 8: Terms of trade

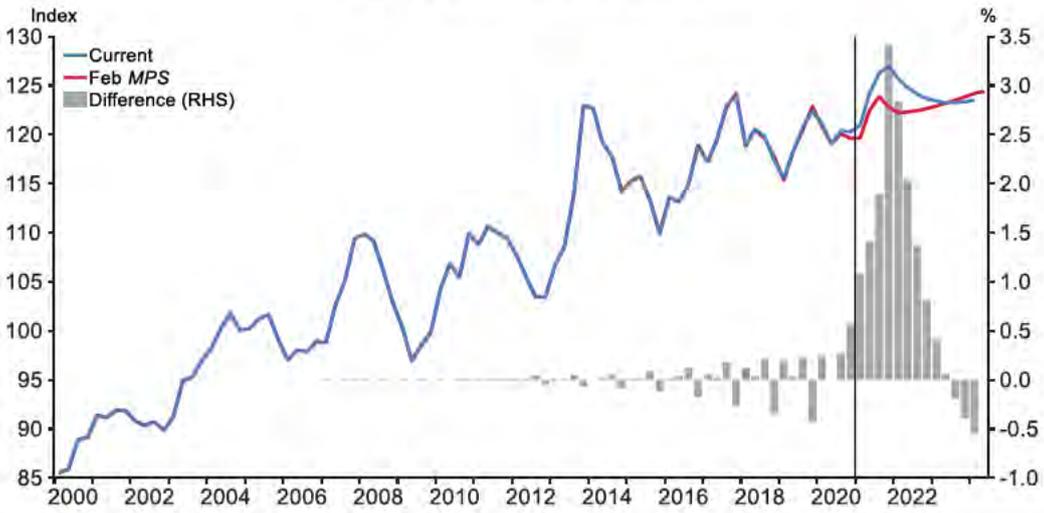


Figure 9: Contributions to growth in the terms of trade

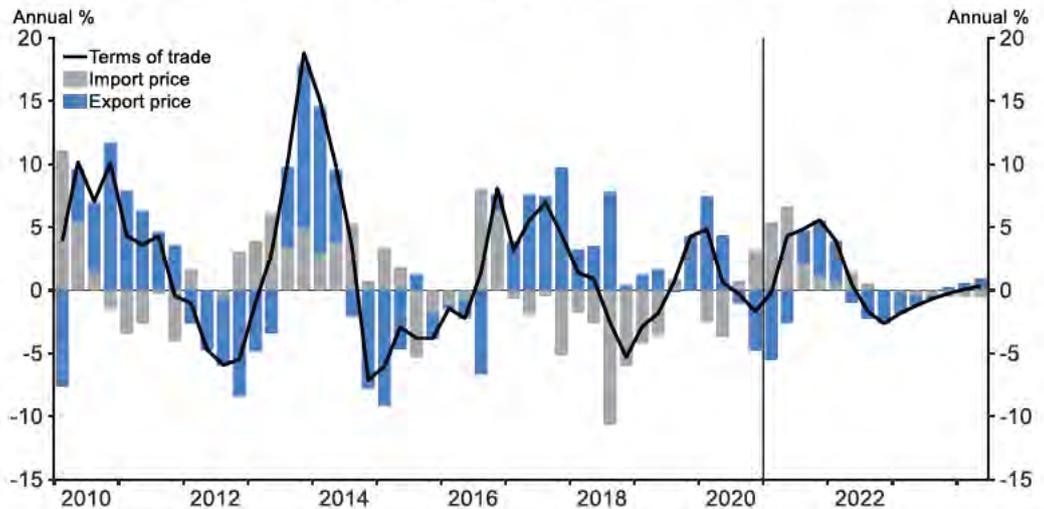


Figure 10: Commodity price global factor (real, foreign currency terms)



VOLUMES

Figure 11: Export volumes as a share of potential output

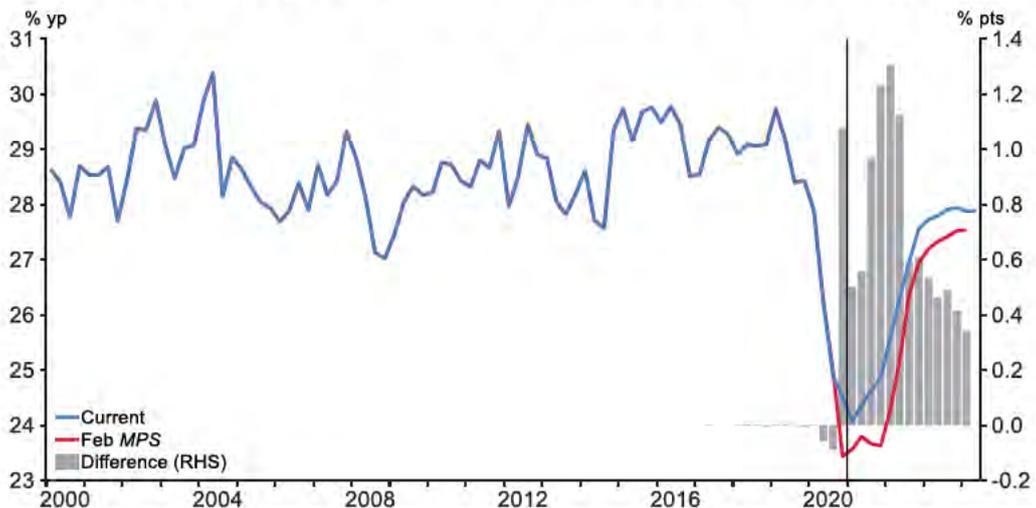


Figure 12: Contribution to export volumes growth

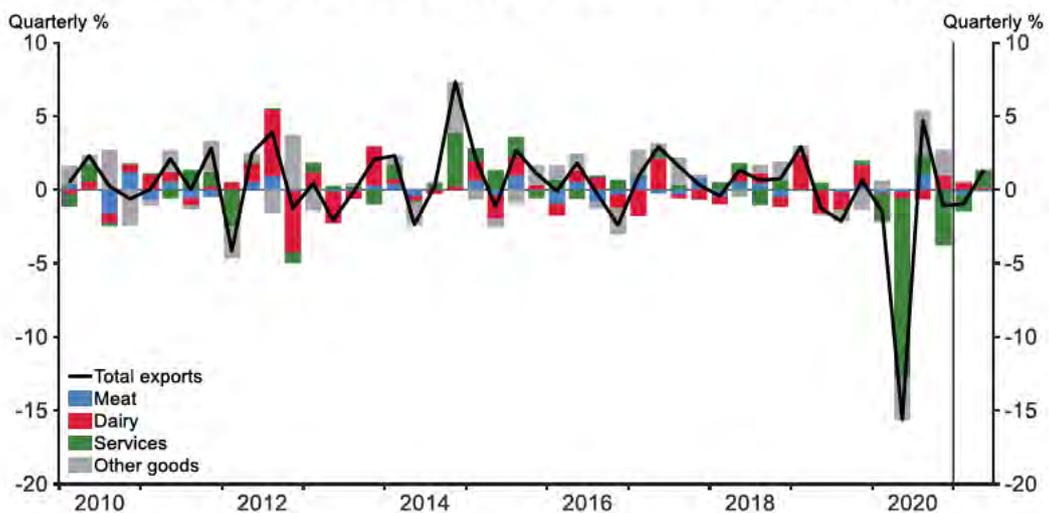


Figure 13: Production of milk solids

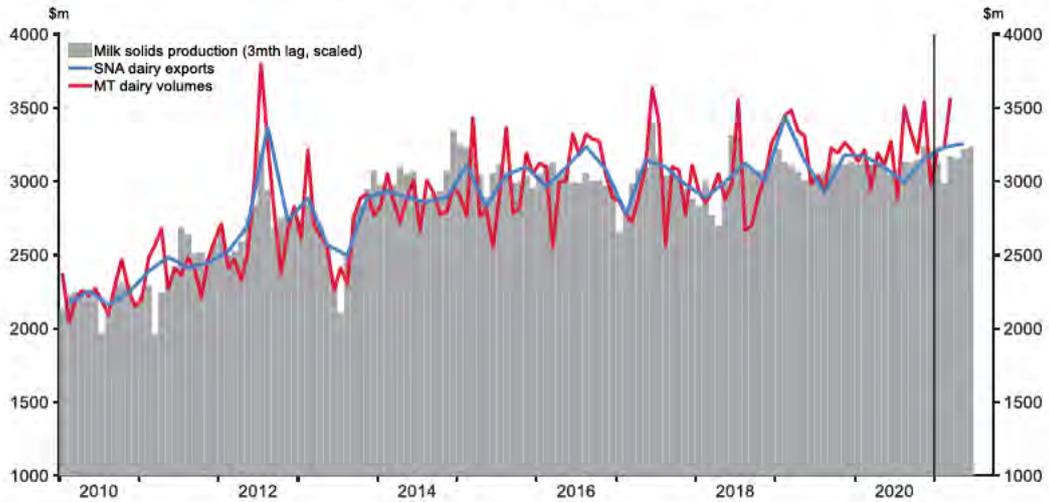
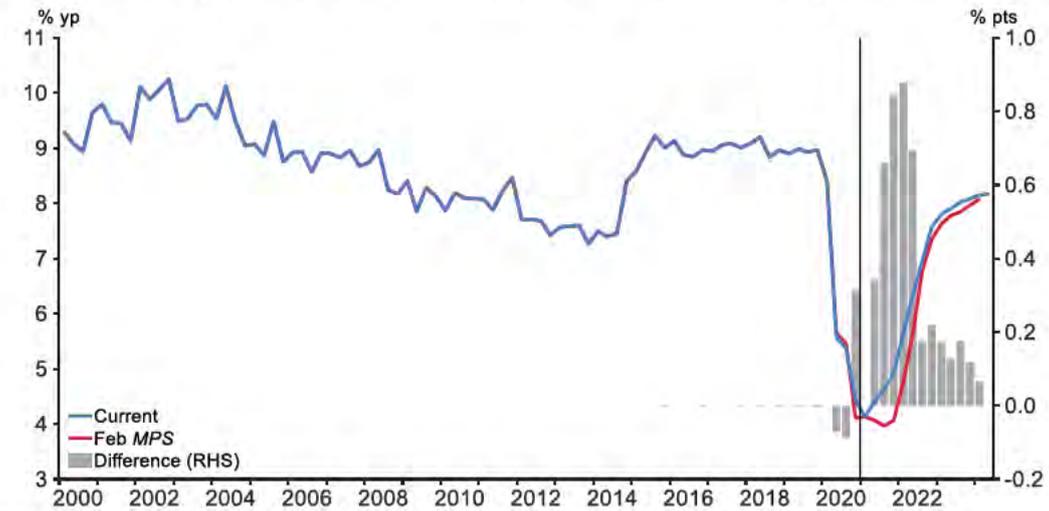


Figure 14: Exports of services volumes as a share of potential output



Note: There is a structural break in 2014 based on a change in calculation methodology.

Figure 15: Customs total border crossings (7 day moving average)

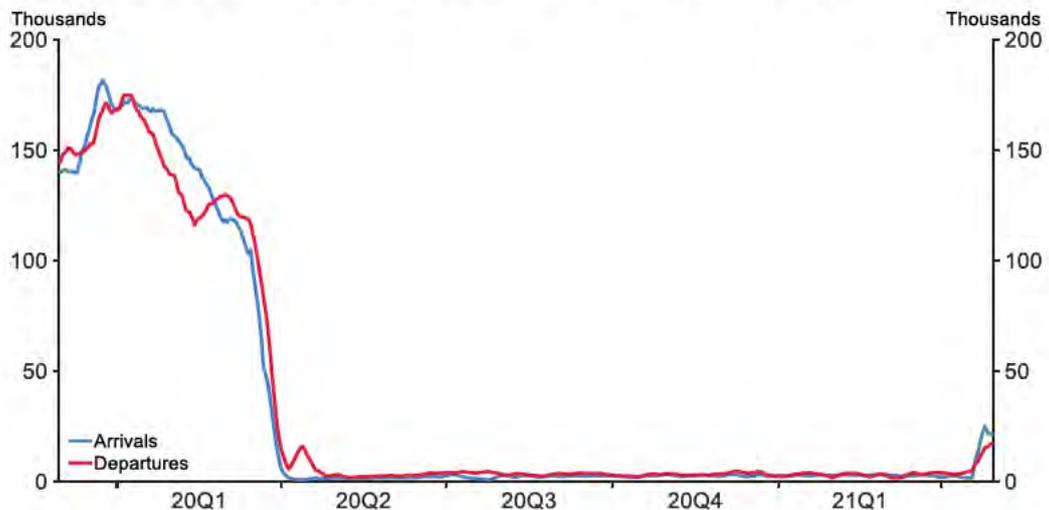


Figure 16: Import volumes (share of potential)

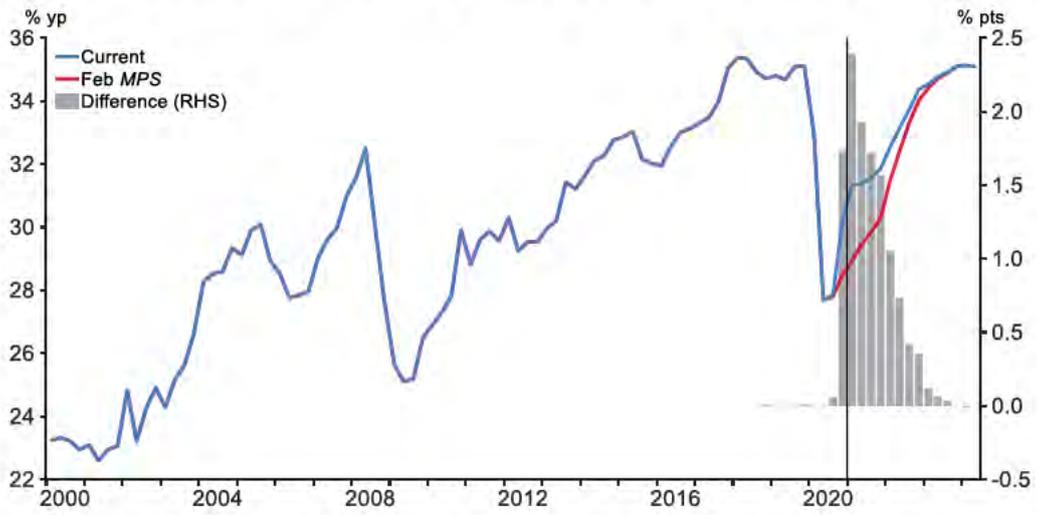
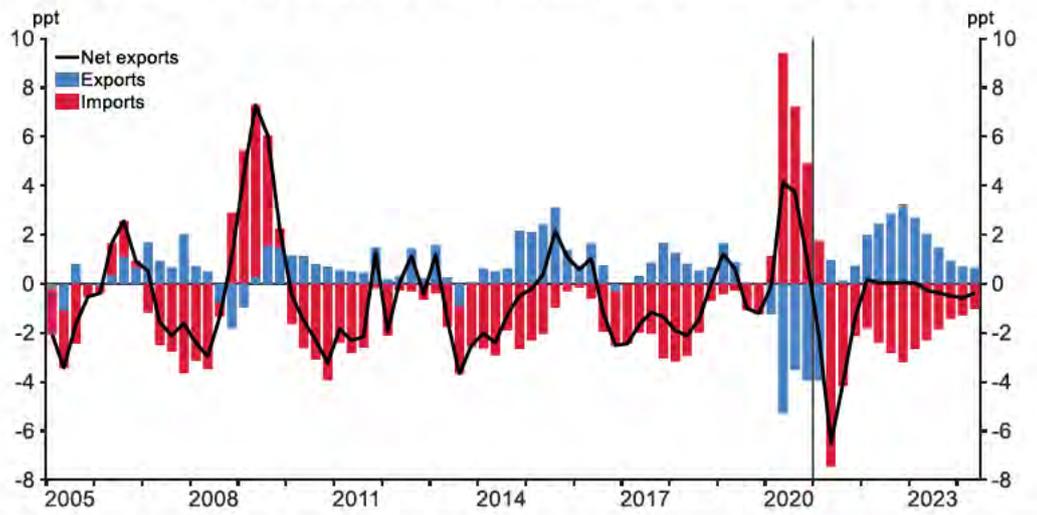


Figure 17: Net exports contribution to annual GDP growth



EXTERNAL BALANCES

Figure 18: Trade balance (share of GDP)

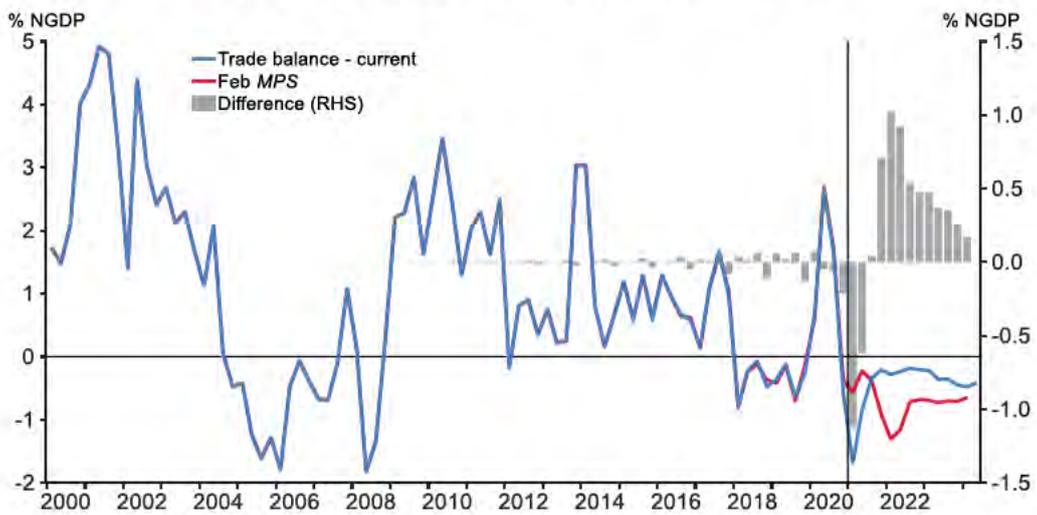


Figure 19: Contributions to the trade balance

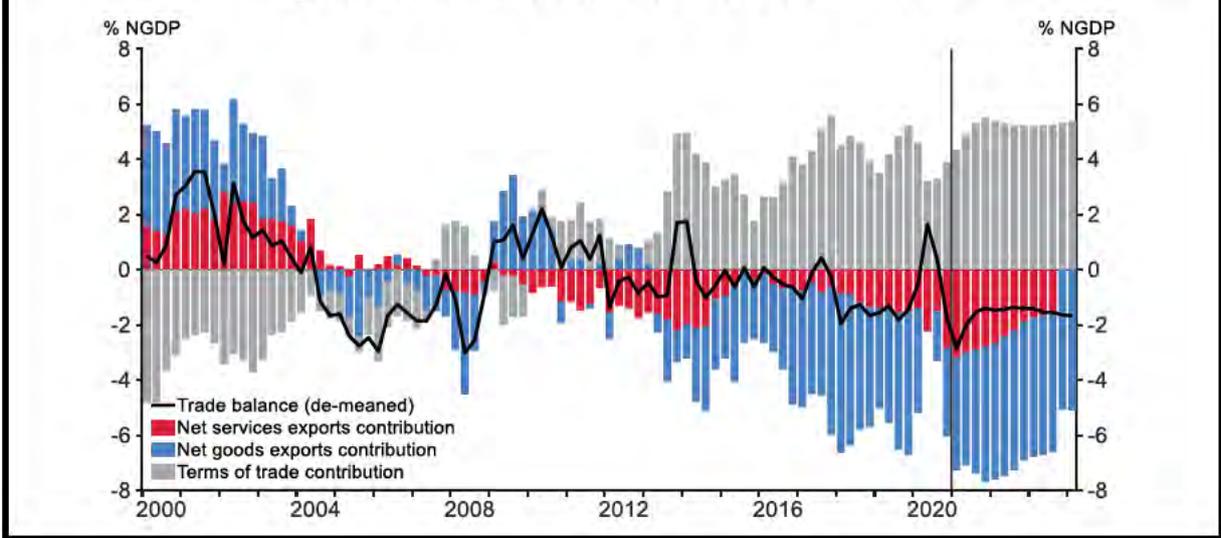


Figure 20: Goods and services balances

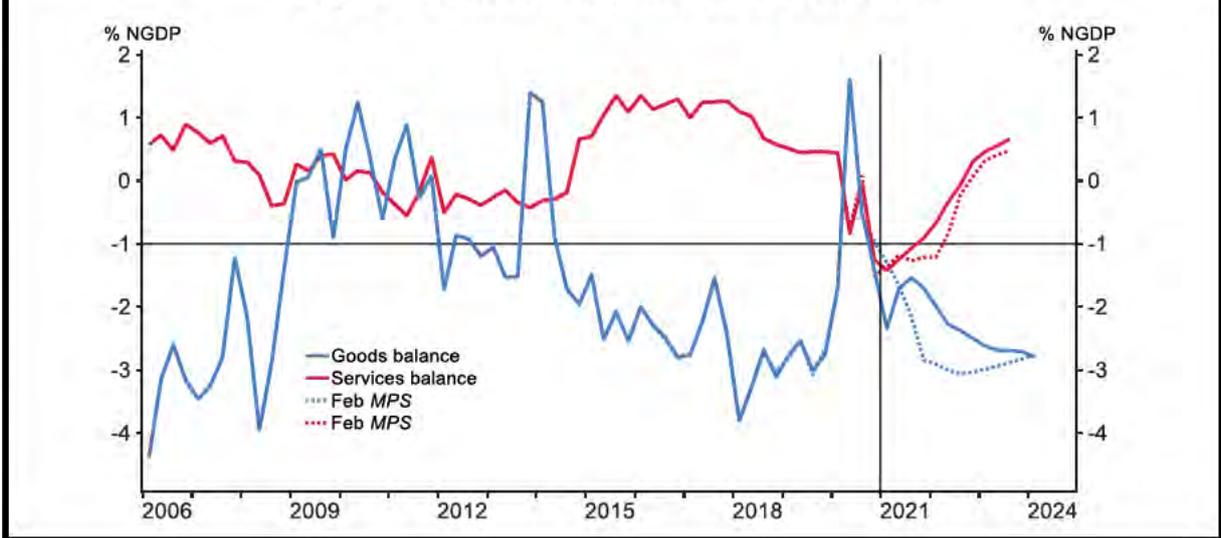


Figure 21: Net foreign liabilities

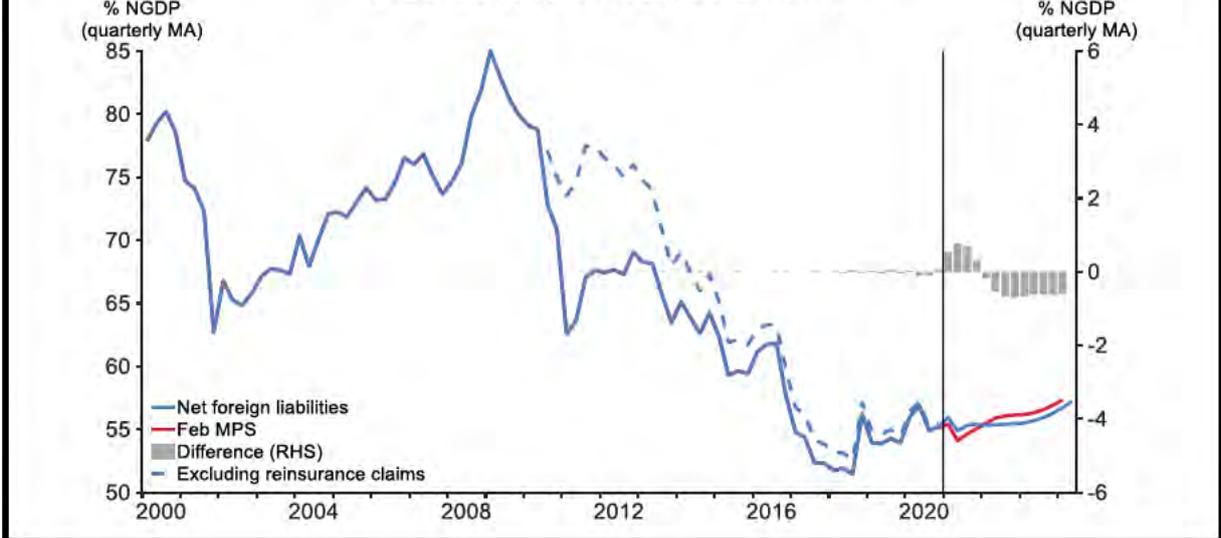
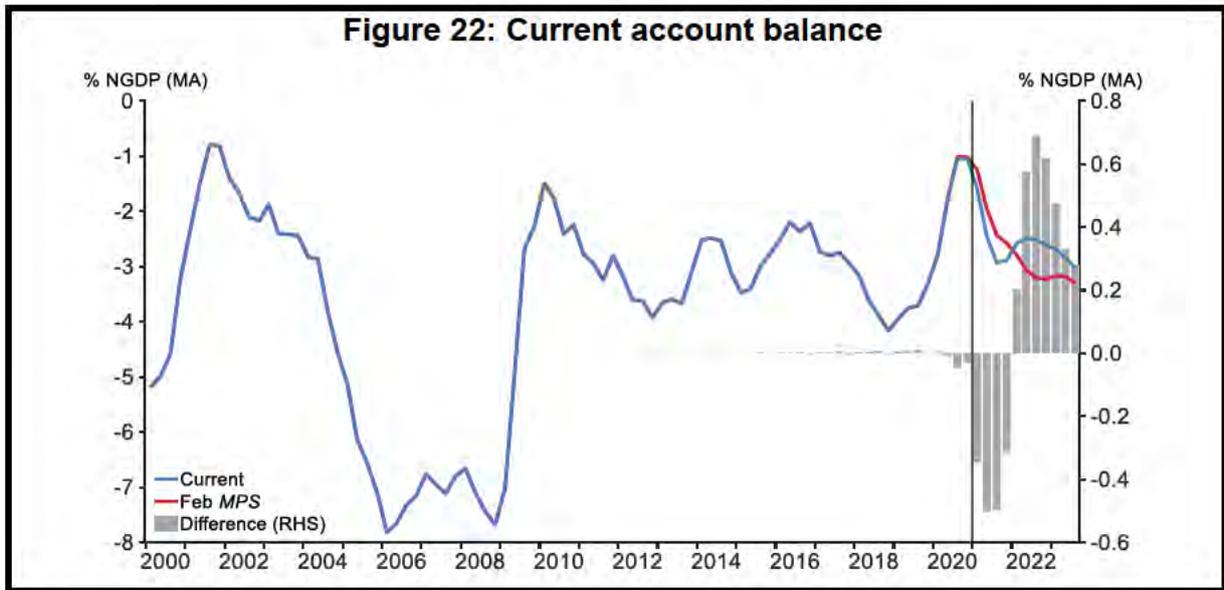


Figure 22: Current account balance





SUMMARY

House prices

- **House prices continued to rise sharply in recent months.** In March, house prices continued their robust gains, raising quarterly growth to 7.9 percent and annual growth to 21.8 percent at the end of Q1 2021. Price gains were broad-based across regions.
- **Despite the strong price gains, sales eased, while inventories and median days to sell rose, indicating the housing market was losing steam at the end of the first quarter.**
- **LVR restrictions and policies introduced by the Government are expected to notably moderate house price gains in the medium-term.** Softer labour markets, low population growth, higher mortgage rates, and increases in supply are also expected to restrain house price inflation going forward.
- **House price gains are expected to peak in Q2 2021 and moderate thereafter.** At the end of the forecast horizon, house price inflation is expected to average around 5% in annual terms.

Household consumption

- **Consumption is projected to be weak in the near-term (QPC: Q1 2021: -0.5%; Q2 2021: 0.2%) after posting robust gains in the second half of 2020.** Sharp moderation in house price gains will weigh on consumer spending in the near-term.
- **Consumption is expected to recover when borders restrictions ease in early 2022.** The global recovery and easing border restrictions bolster aggregate incomes, which are expected to support consumption over the medium-term.

Residential investment

- **On the back of strong consent issuance and robust price gains in recent months, residential investment is expected to be buoyant in the near-term.**
- Construction firms surveyed for QSBO indicated momentum is waning, with a small, but growing share of construction firms notably pessimistic. Construction firms contacted during BIC calls, however, did not share the sentiment and were pretty optimistic about their prospects, with solid order books for the next 12-18 months.
- **Capacity pressures remain acute in the construction sector for both labour and material. This is widening the chasm between actual investment and investment implied by consents indicators.** Moderating house prices are expected to weigh on residential investment over much of the forecast horizon.

HOUSE PRICES

Figure 1: National house price inflation
(s.a.)

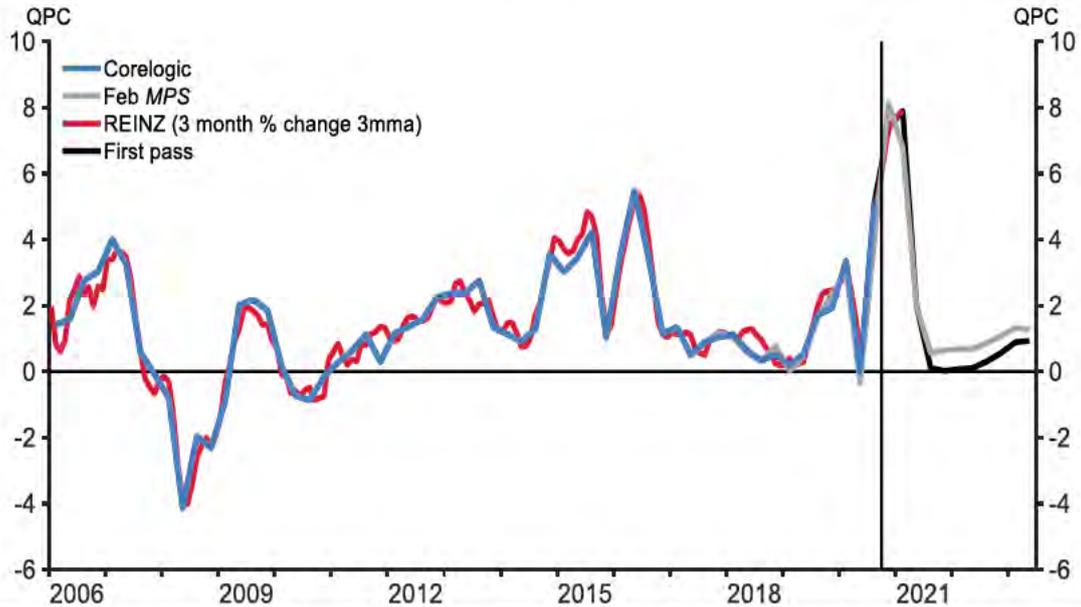


Figure 2: REINZ regional house price inflation

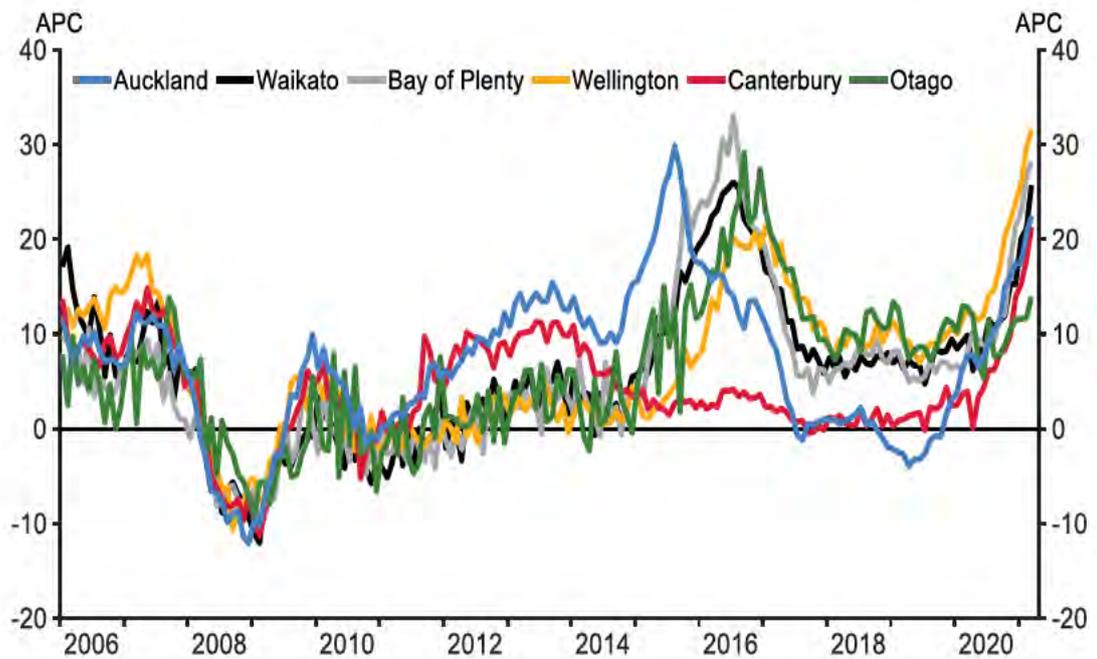


Figure 3: House sale inventories, days to sell, and house prices
(s.a.)



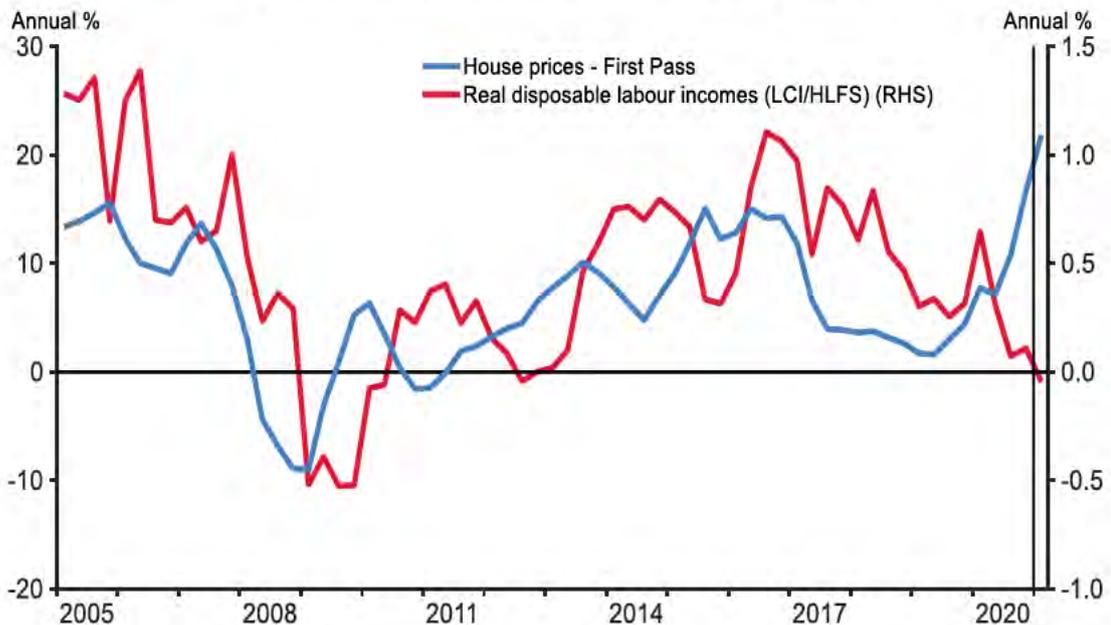
Figure 4: House price expectations and house prices



Figure 5: Housing lending and house prices

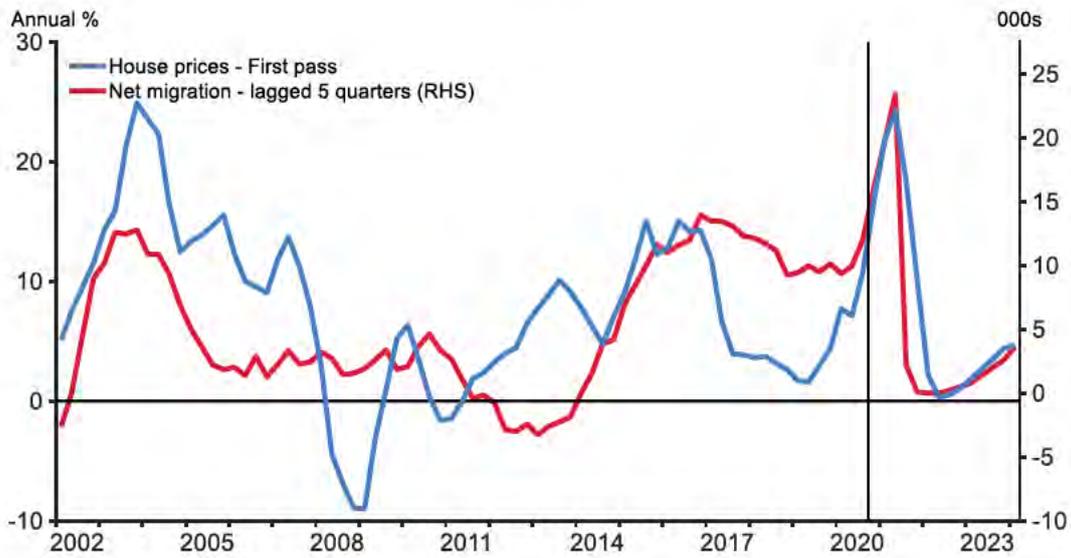


Figure 6: Labour income and house prices



Note: Real disposable calculated as HLFS employment*LCI wages (private sector), adjusted for inflation and average tax rates.

Figure 7: Net migration and house prices
(s.a.)



HOUSEHOLD CONSUMPTION

Figure 8: Real household consumption
(s.a.)

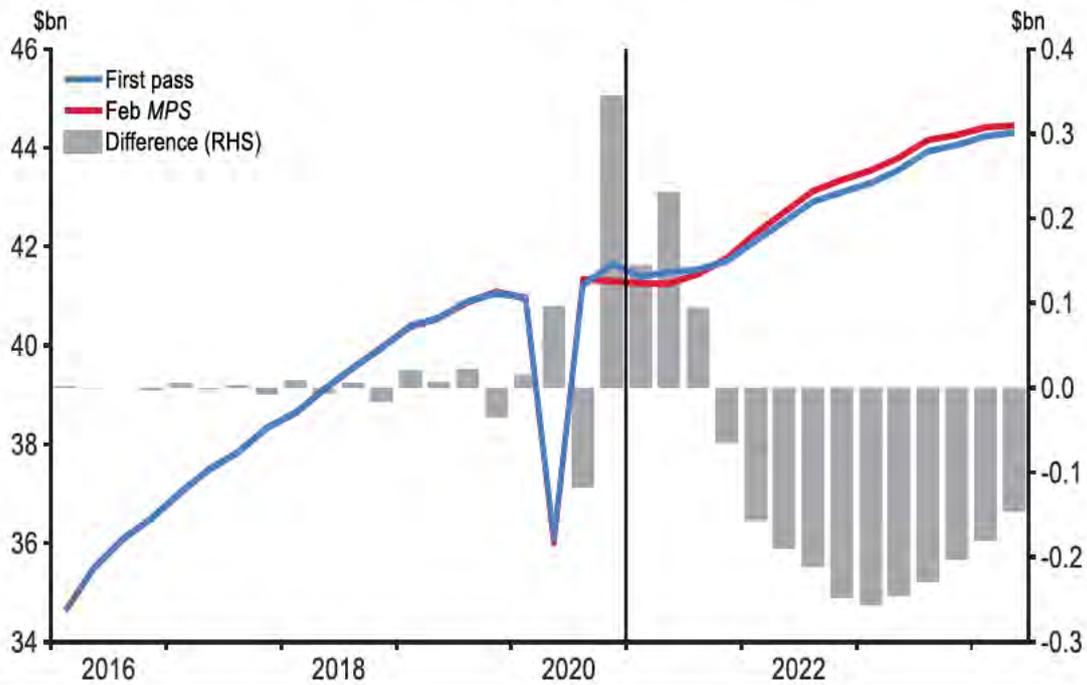


Figure 9: Consumption growth
(s.a., quarterly)

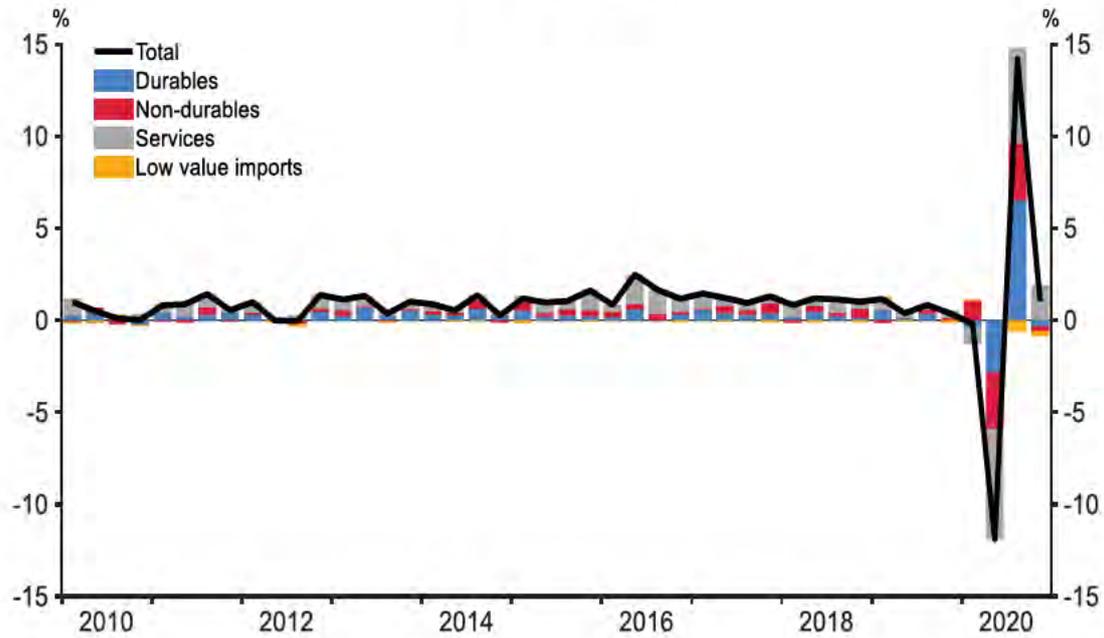
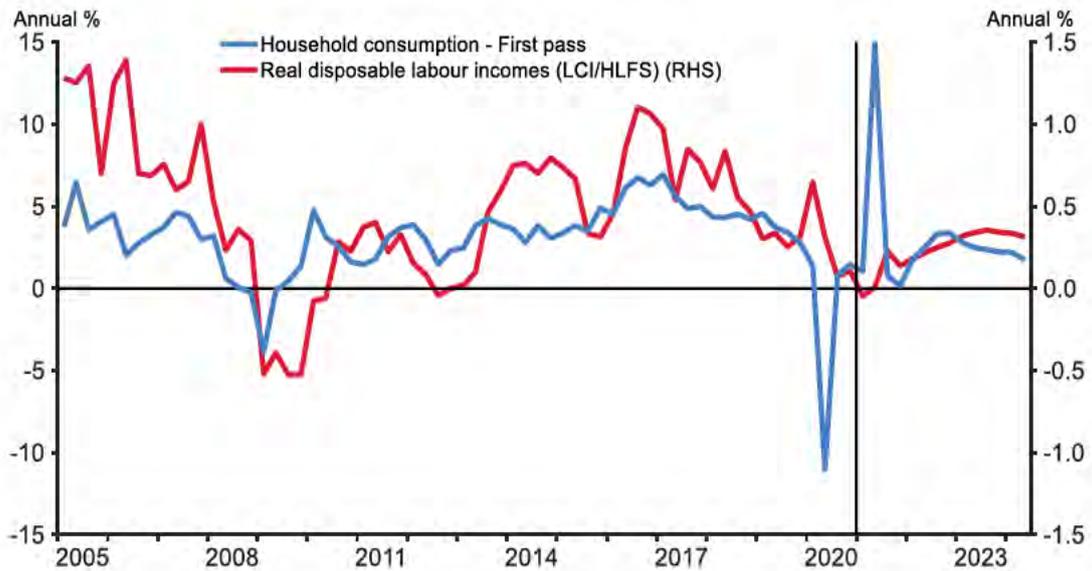
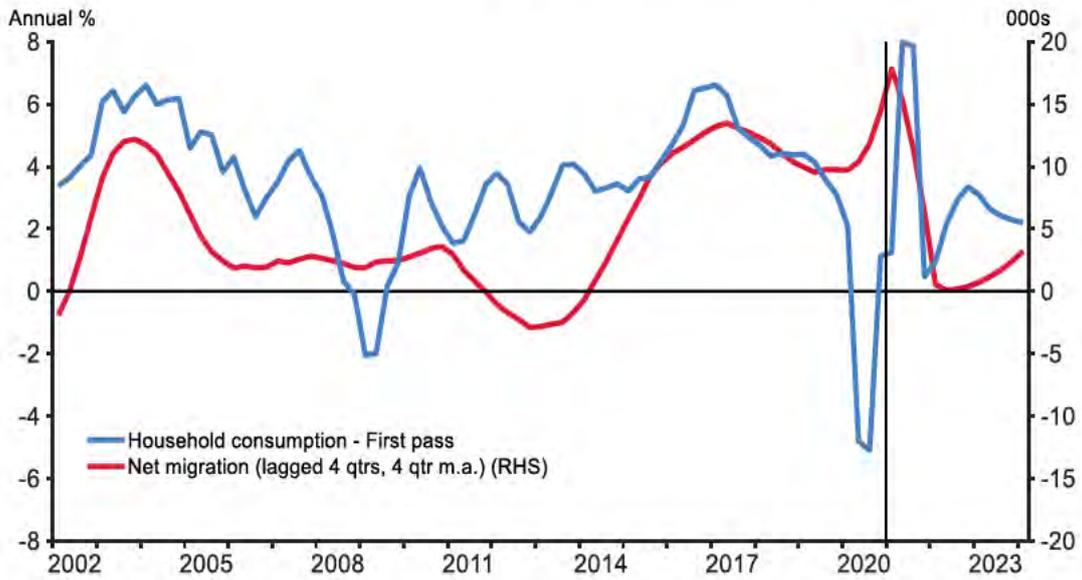


Figure 10: Labour incomes and consumption



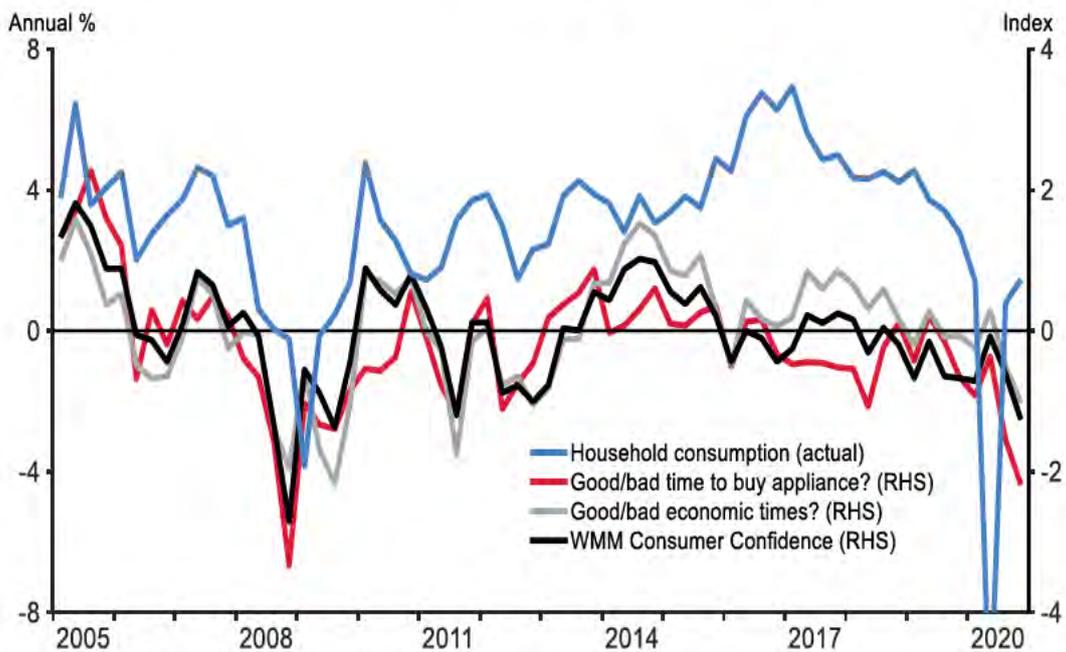
Lower household incomes are a key constraint on consumption growth over the coming year.

Figure 11: Migration and consumption
(s.a.)



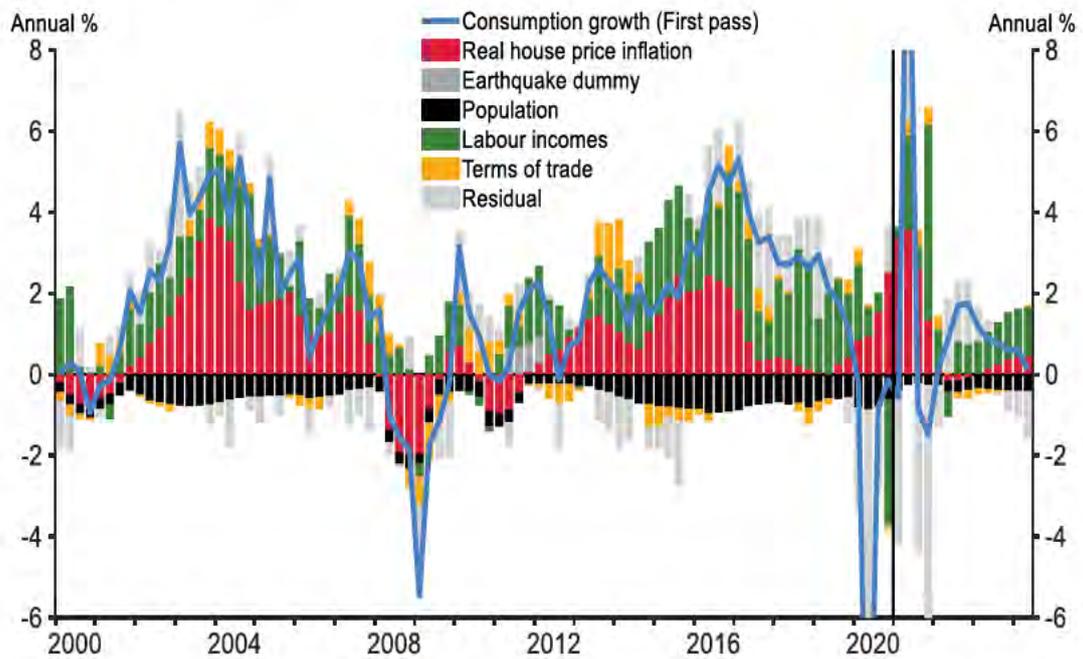
Migration has tended to have a gradual, sustained impact on the average level of household consumption. The eventual opening of New Zealand borders in early 2022 is assumed to help underpin consumption growth.

Figure 12: Consumer confidence (Westpac McDermott Miller) and consumption



Note: all confidence series are lagged two quarters.

Figure 13: Medium-term drivers of consumption



RESIDENTIAL INVESTMENT

Figure 14: Residential investment
(s.a.)

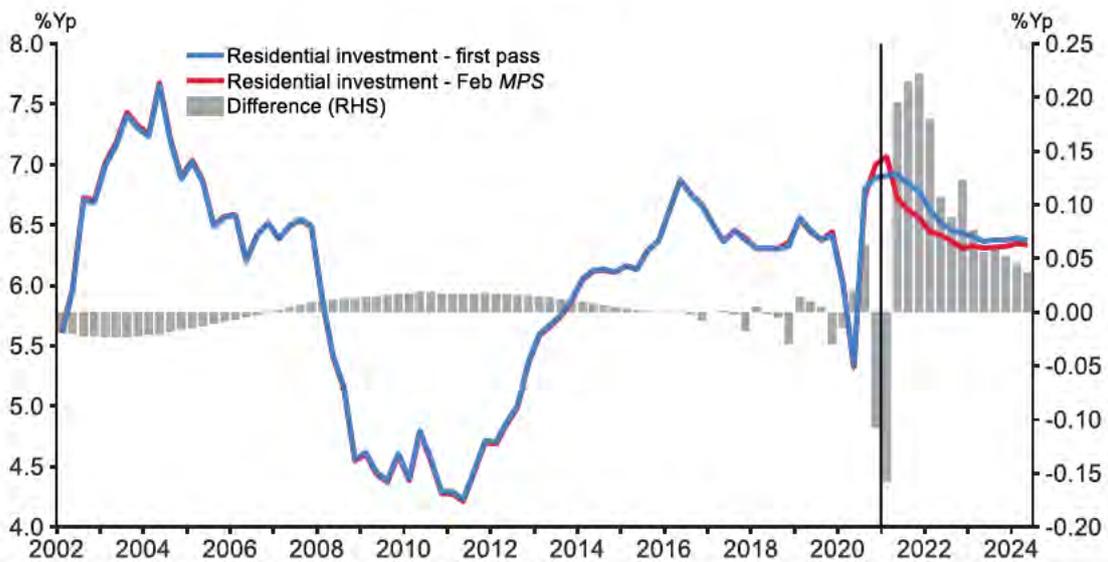


Figure 15: Residential investment and consents
(s.a.)



* simple indicator based on residential consents. Complex indicator based on residential consent type.

Figure 16: Regional dwelling consent issuance
(s.a.)

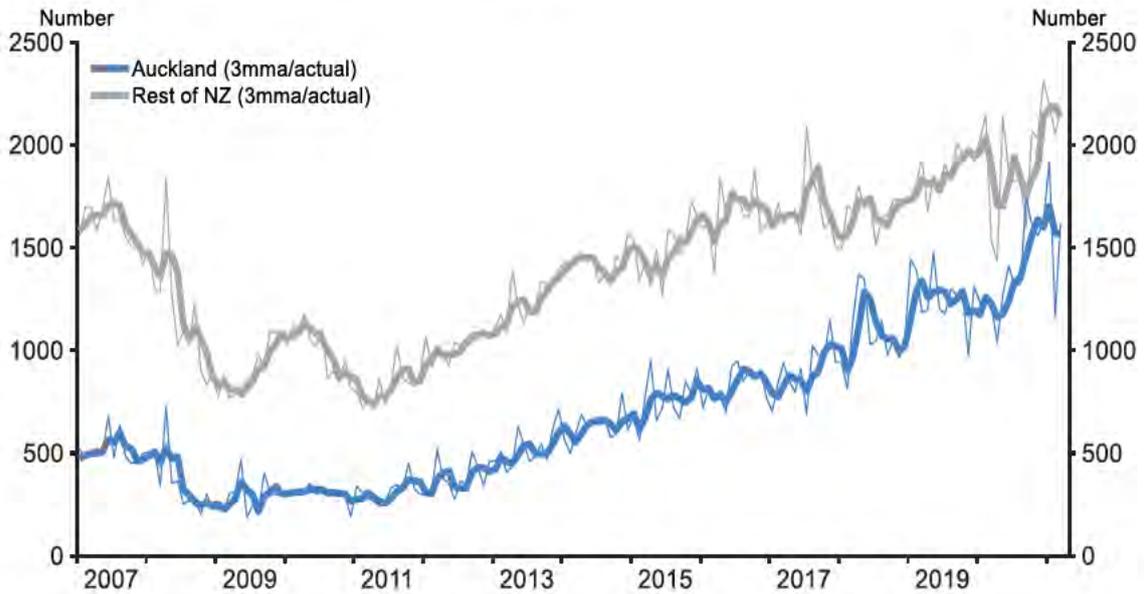


Figure 17: Consents by type

(s.a., 3mma)

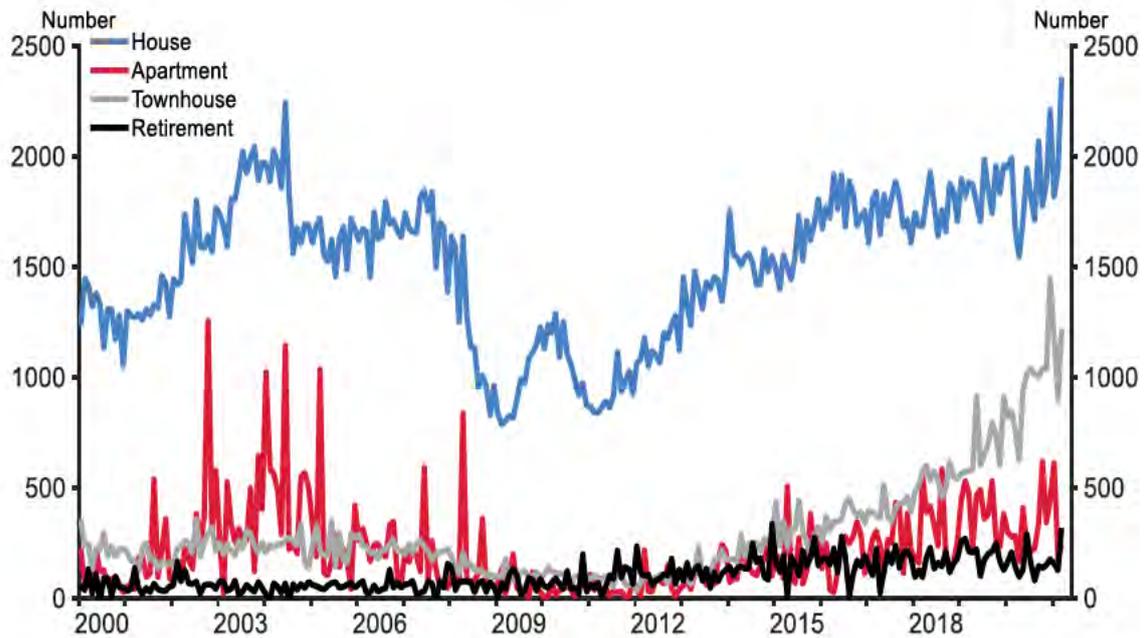


Figure 18: Residential construction and housing sales

(s.a.)

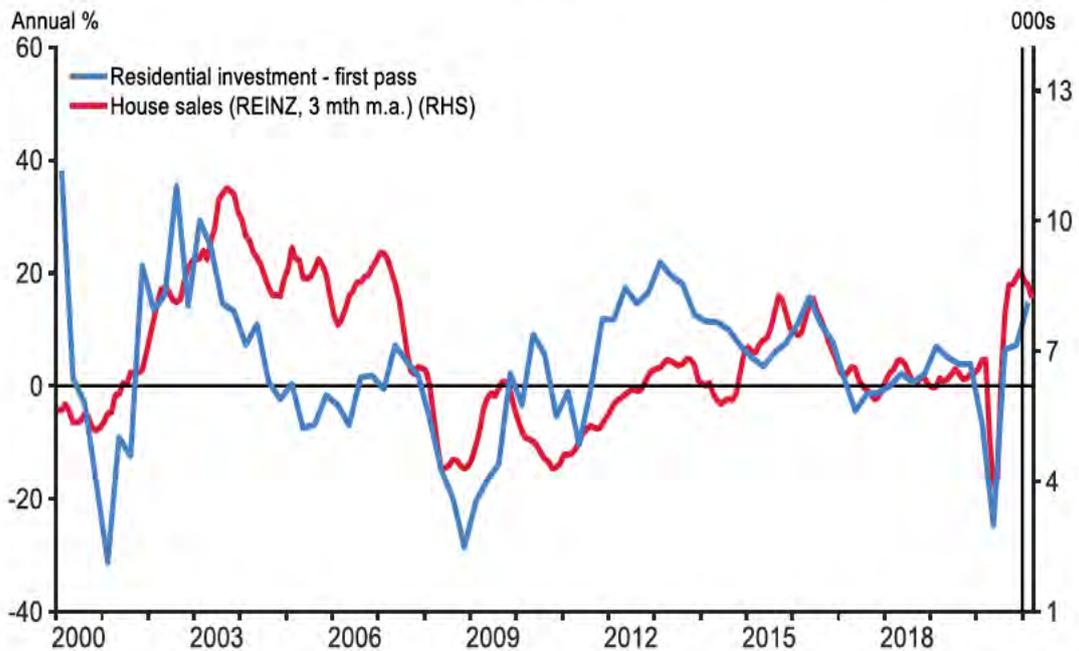


Figure 19: Builder confidence and construction

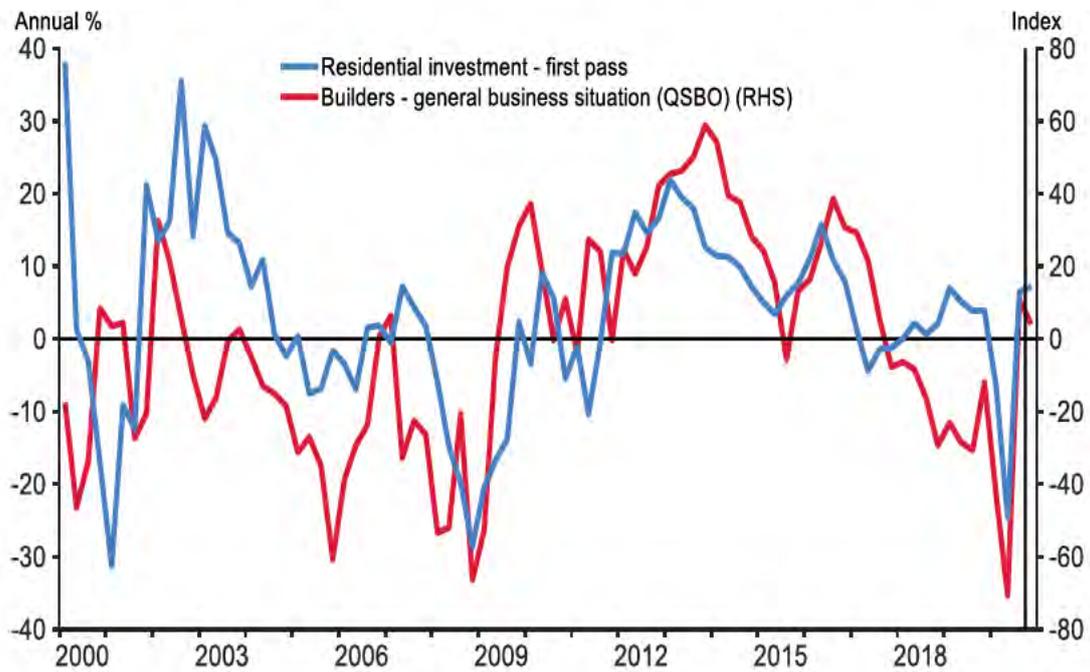


Figure 20: QSBO builders most limiting factor (s.a.)

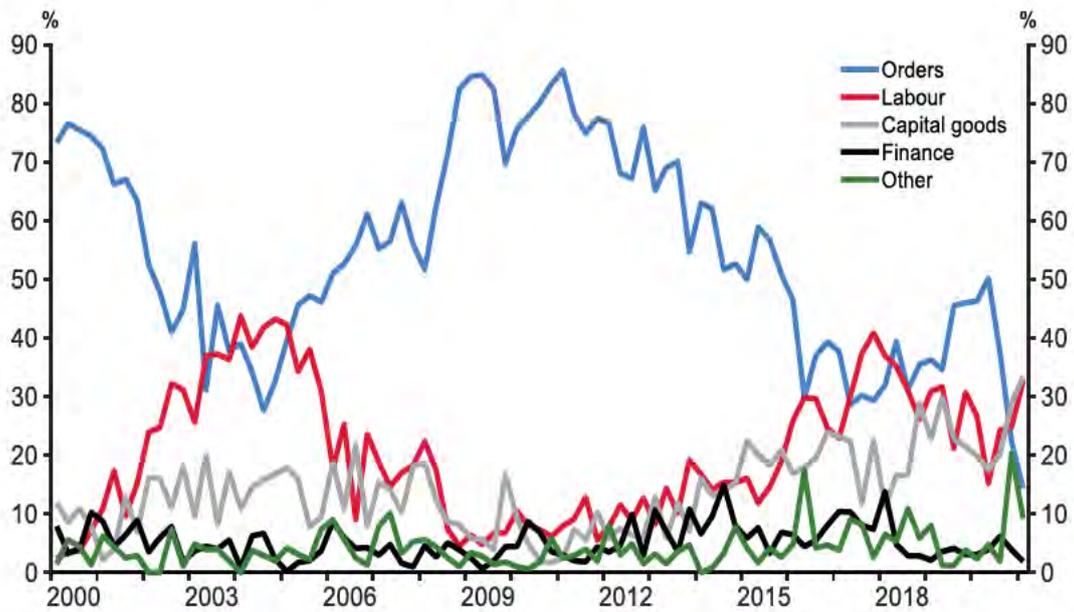
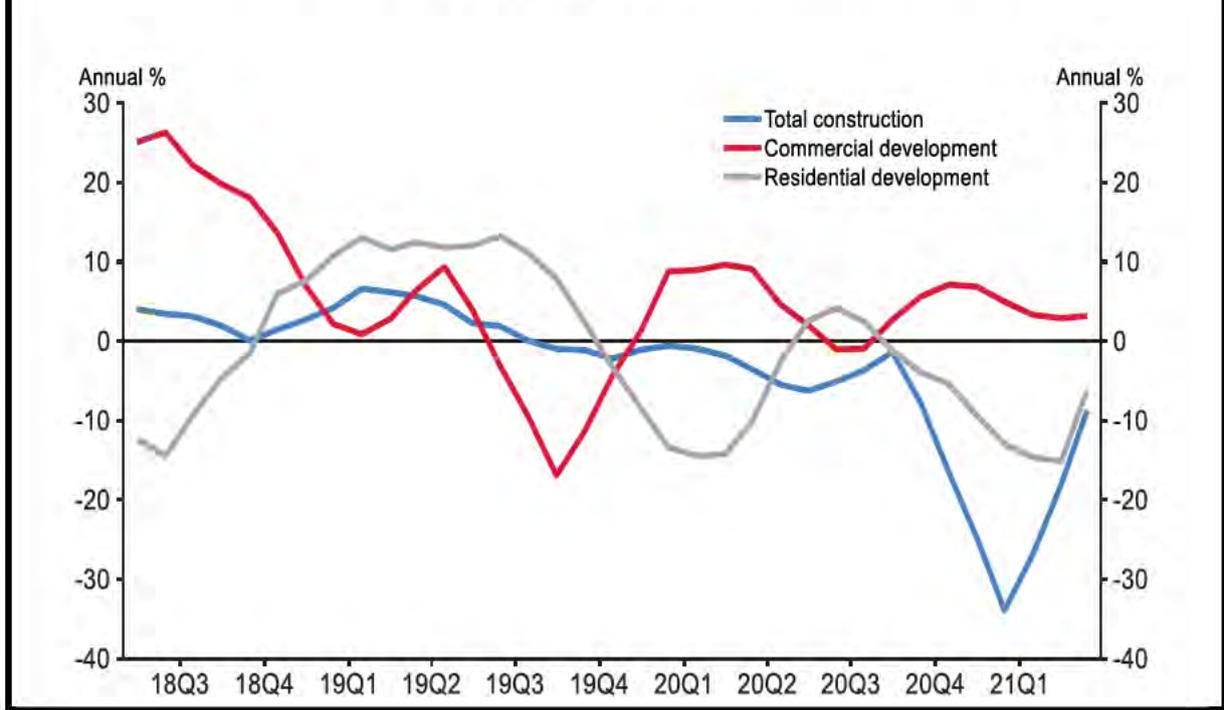


Figure 21: Bank lending to construction sectors
(4qtr-moving average)





SUMMARY

Business investment is still lagging behind

- Business investment fell by 2% in the December 2020 quarter, remaining below pre-COVID-19 levels. In particular, investment in computers and non-residential investment weakened. For computer investment this is due to some correction after strong June and September 2020 quarters when computers were in high demand as many businesses made the switch to working from home. For non-residential investment this likely represents volatility but also represents a lasting impact of COVID-19 as some firms demand less office and retail space.

The outlook has brightened for business investment

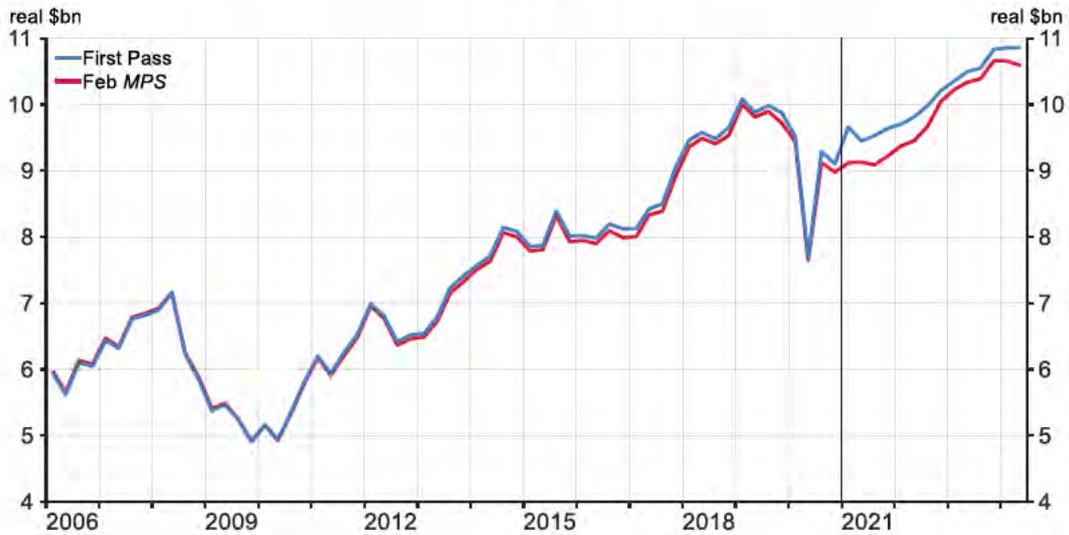
- Business investment is forecast to increase by 6.1% over the March 2021 quarter.
- This stronger starting point is expected to persist. As a result, business investment is forecast to return slightly earlier to pre-COVID-19 levels by mid-2022.
- Aggregate demand has proven more sustained. Domestic housing activity is strong and export demand remains robust. Commodity prices have developed favourable for New Zealand's exporters.
- The strong rebound in economic activity and the resilient labour market have led to higher capacity pressure in the economy than anticipated. Many of our indicators in the Output Gap Indicator Suite (OGIS) point at a positive output gap.
- All this together has made businesses more confident about investing more. This is reflected by various indicators, for example:
 - Business surveys show that many more businesses compared to pre-COVID-times intend to invest more.
 - Capital imports have picked up significantly, moving close to pre-COVID-19 levels.
- In addition, financing conditions have remained positive. Interest rates are low and many businesses have strong deposits reducing the need for new business loans.

But uncertainty remains elevated, preventing a faster recovery of investment

- In many countries the slow roll out of COVID-19 vaccines, still high infections rates in some countries, supply chain disruptions, and domestically the government housing package have kept uncertainty elevated.
- Supply chain disruptions and increased shipping costs have hampered business activity and profitability.
- The government housing package will weigh on house prices. However, the flow-on effects to aggregate demand remain to be seen.
- Without these uncertainties business investment would likely recover faster than currently expected.
- On the upside, the trans-Tasman travel bubble and domestic vaccine rollout might provide a stronger boost to the tourism sector than anticipated, causing tourism-related business to invest more.

BUSINESS INVESTMENT OUTLOOK

Figure 1: Business investment outlook (levels)
(s.a.)



TOP DOWN INDICATORS

Figure 2: Output gap and business investment
(s.a.)

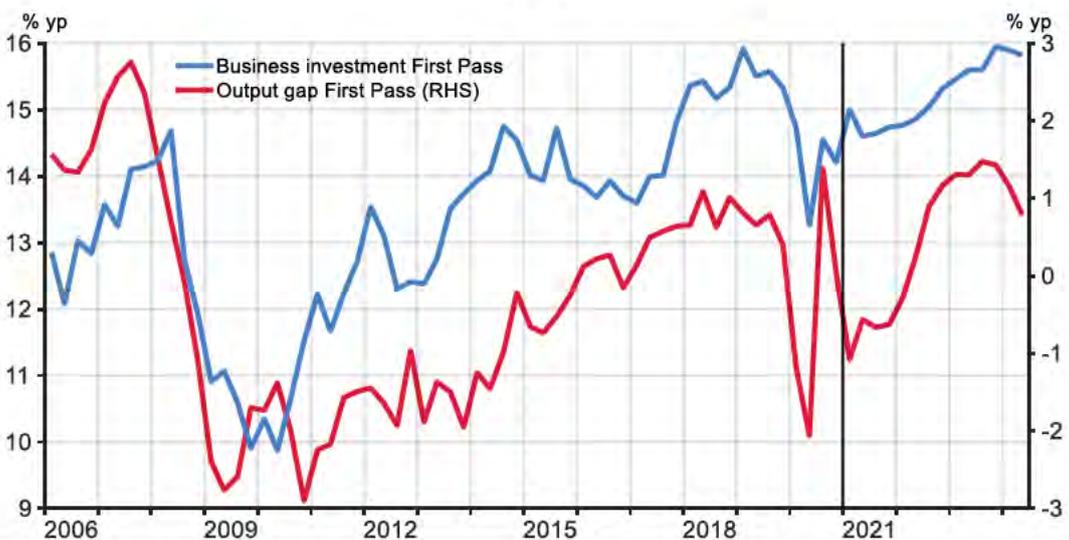


Figure 3: Business investment decomposition

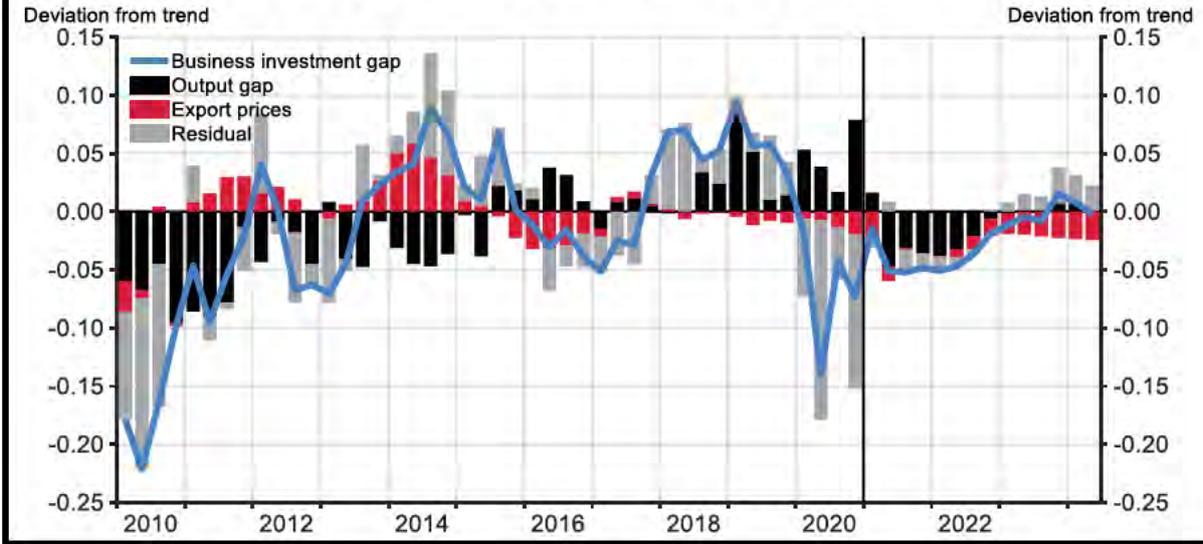


Figure 4: QSBO investment intentions
(s.a.)

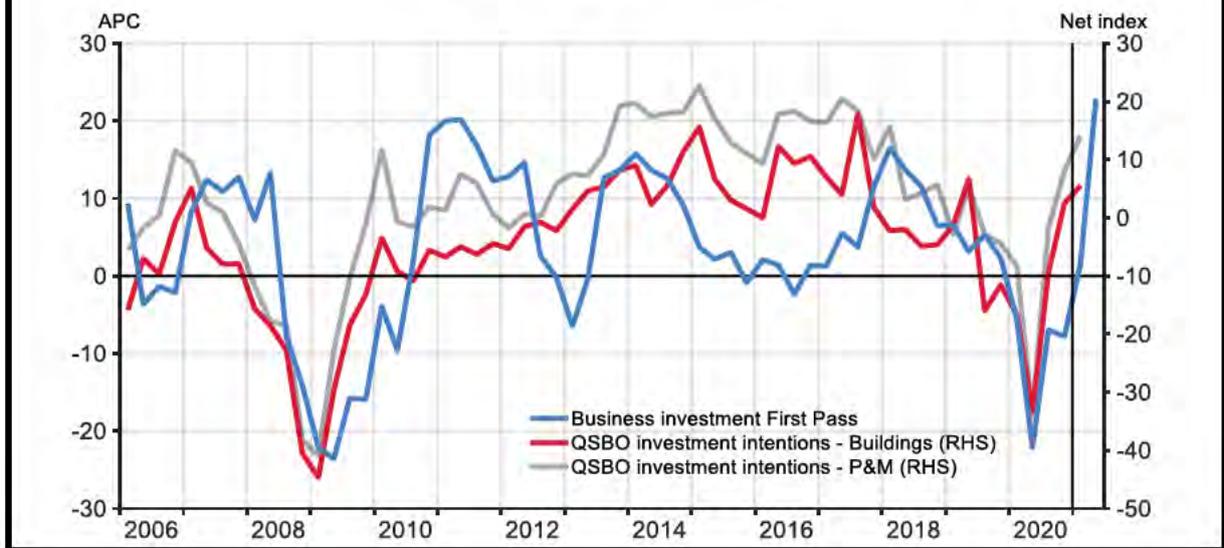


Figure 5: ANZBO investment intentions
(s.a.)

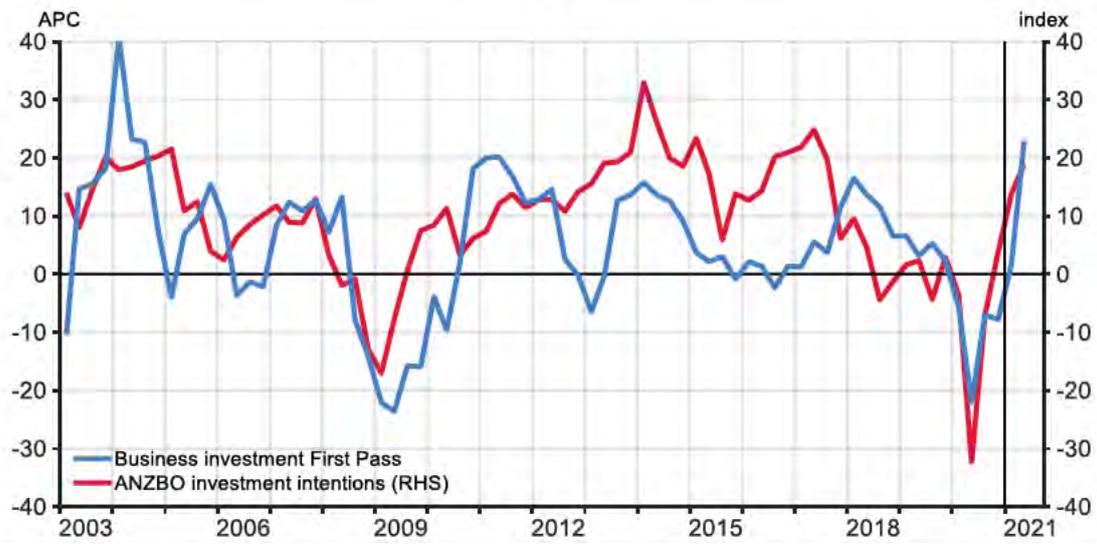


Figure 6: Uncertainty Indices

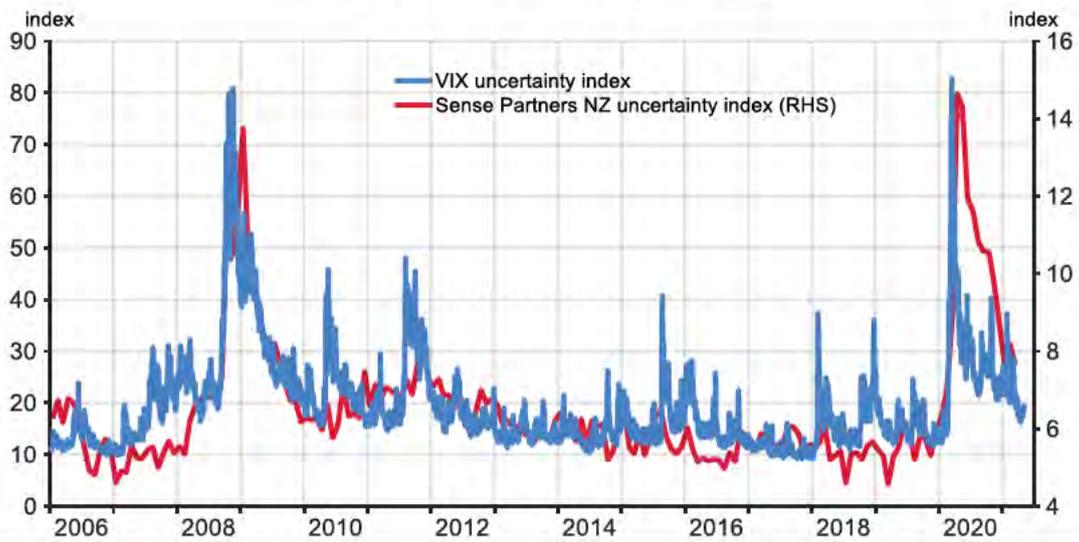
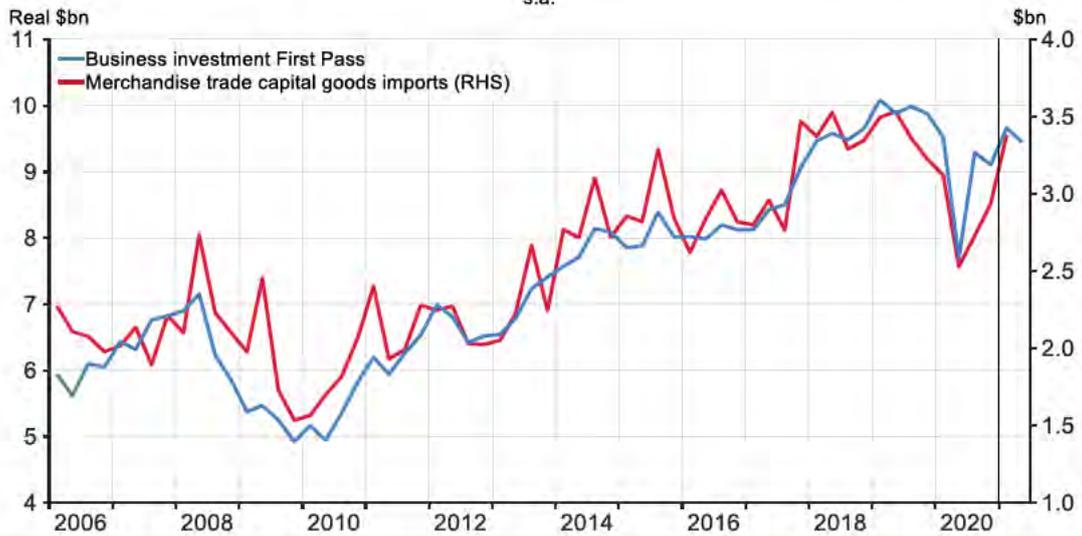


Figure 7: Business investment and Merchandise Trade capital imports
(s.a.)
s.a.



FINANCIAL INDICATORS

Figure 8: Stock of business loans and deposits

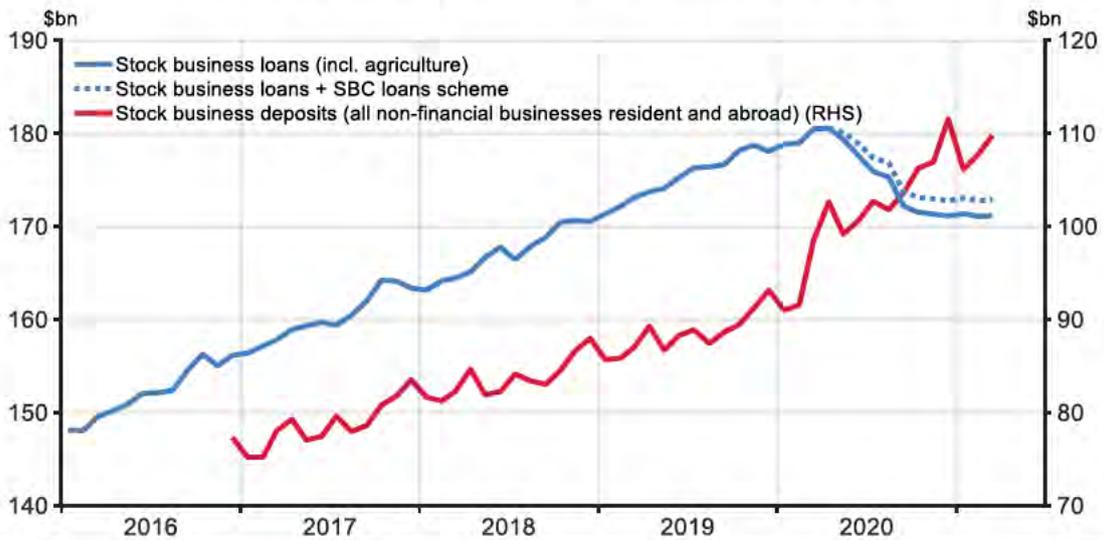


Figure 9: Lending to businesses

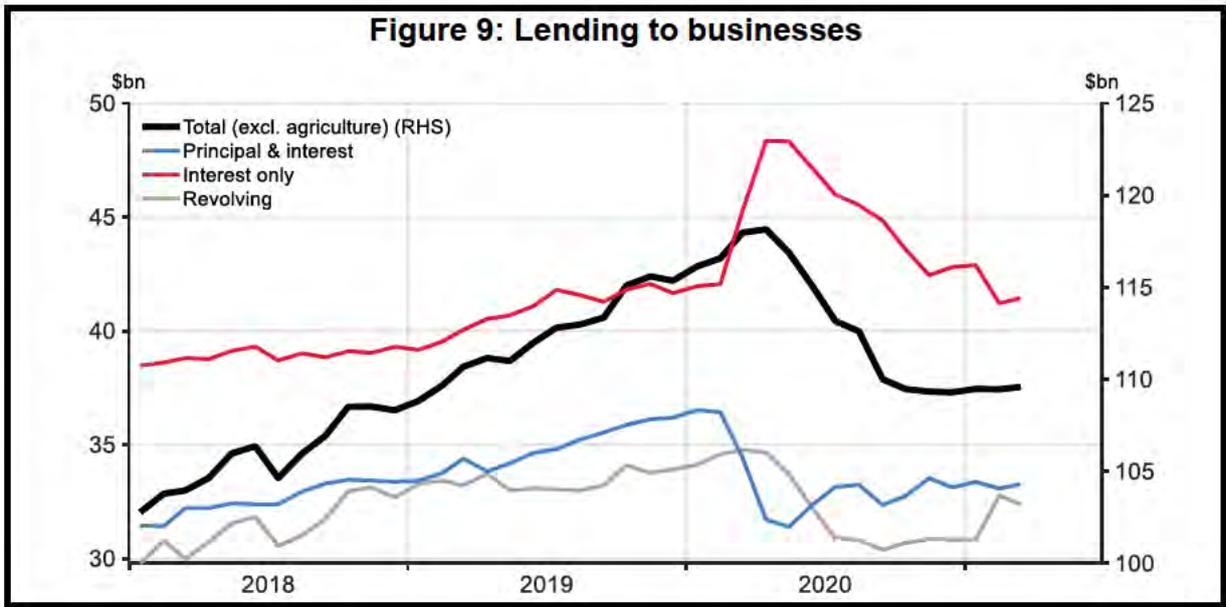


Figure 10: Non-performing business loans

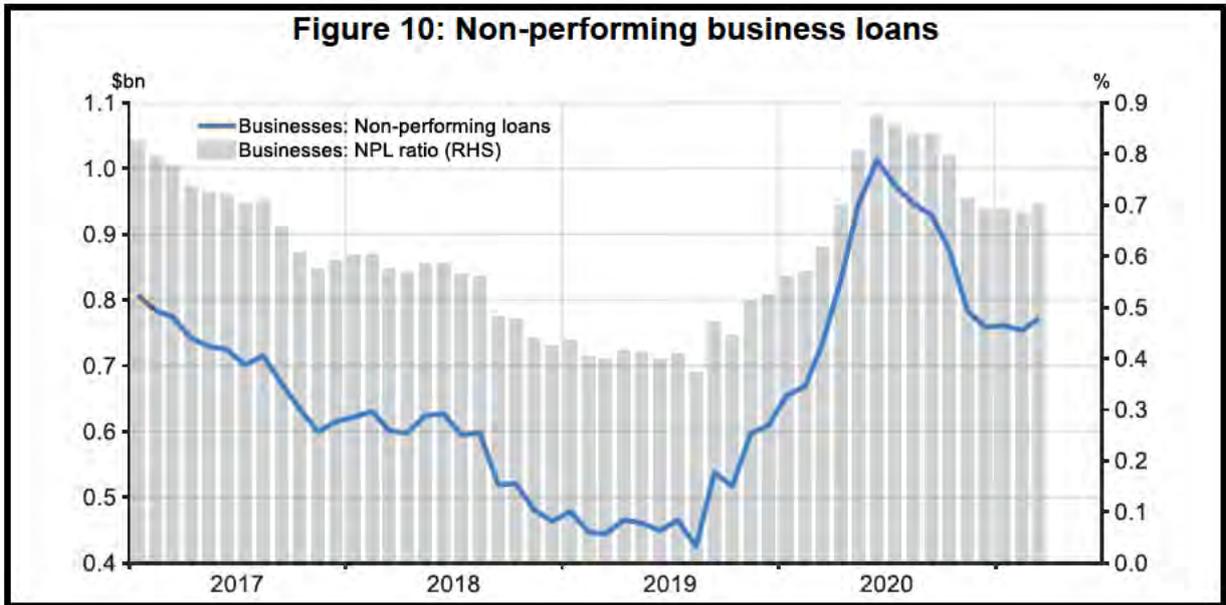


Figure 11: Yield on business loans

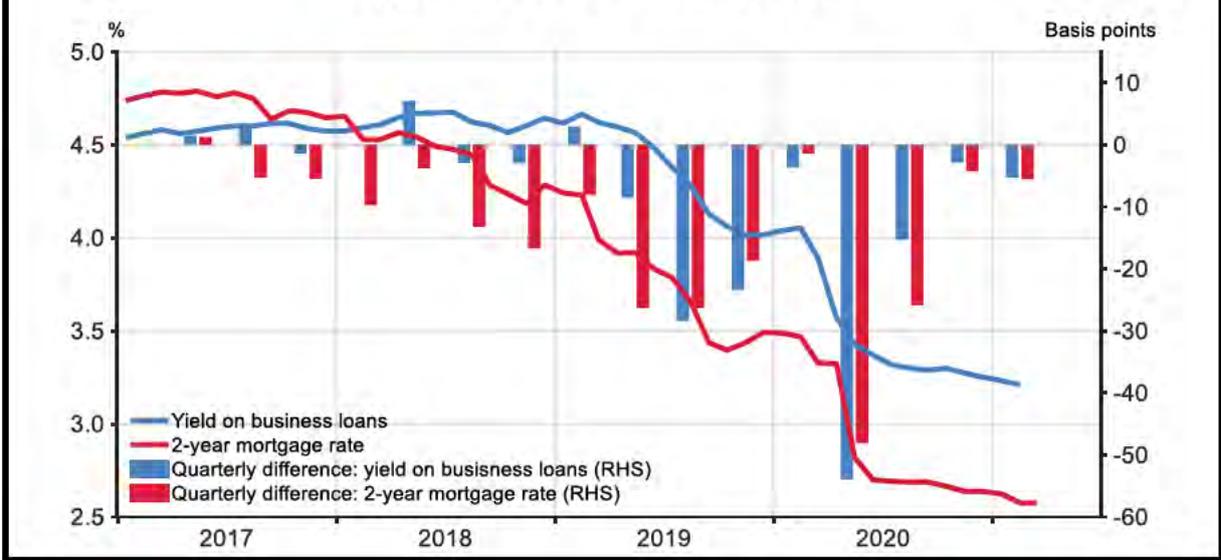
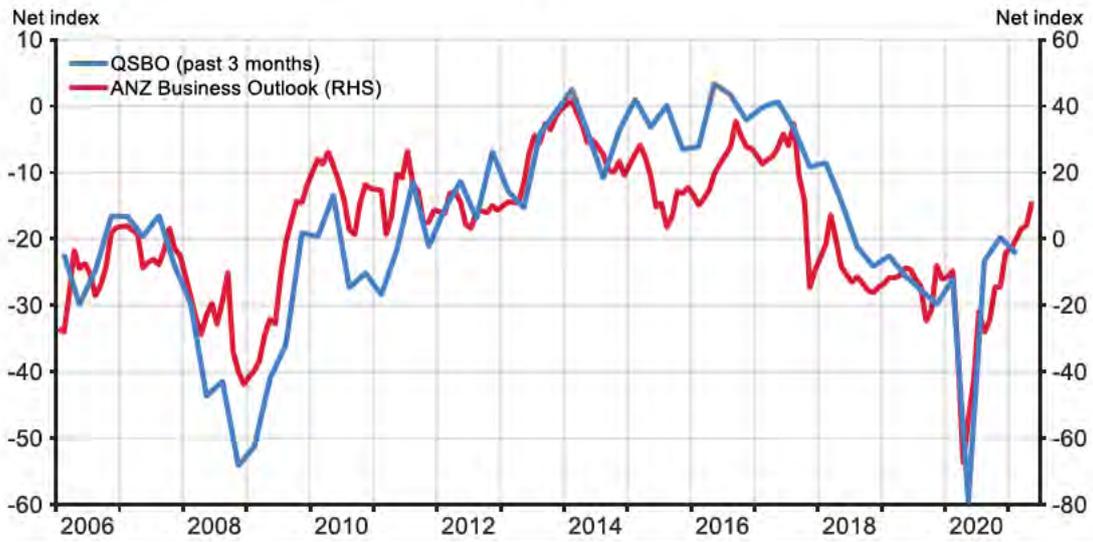


Figure 12: ANZ Business Outlook ease of credit
(s.a., 3-month moving average)

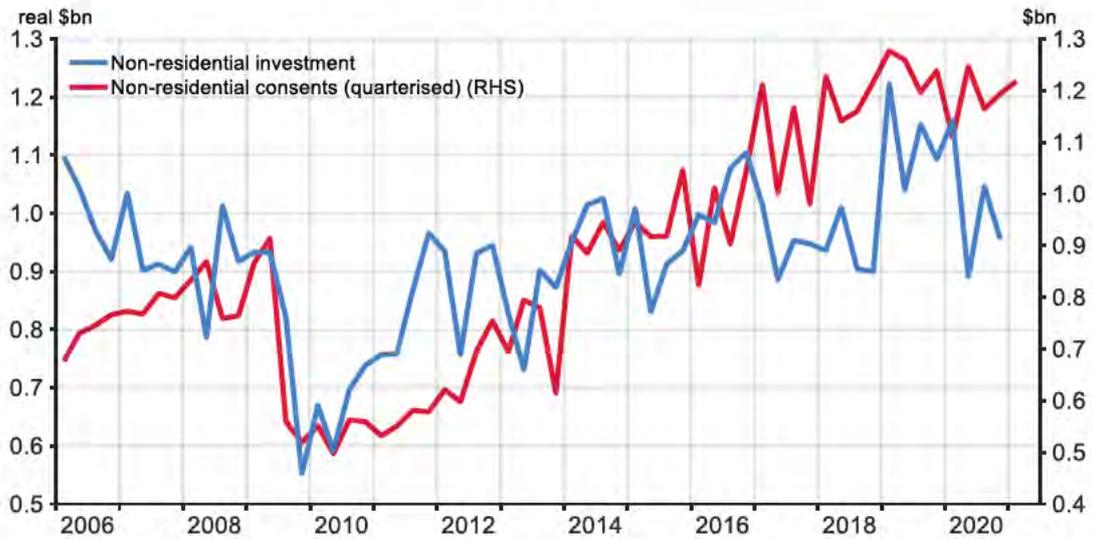


Figure 13: Firm profitability
(s.a.)



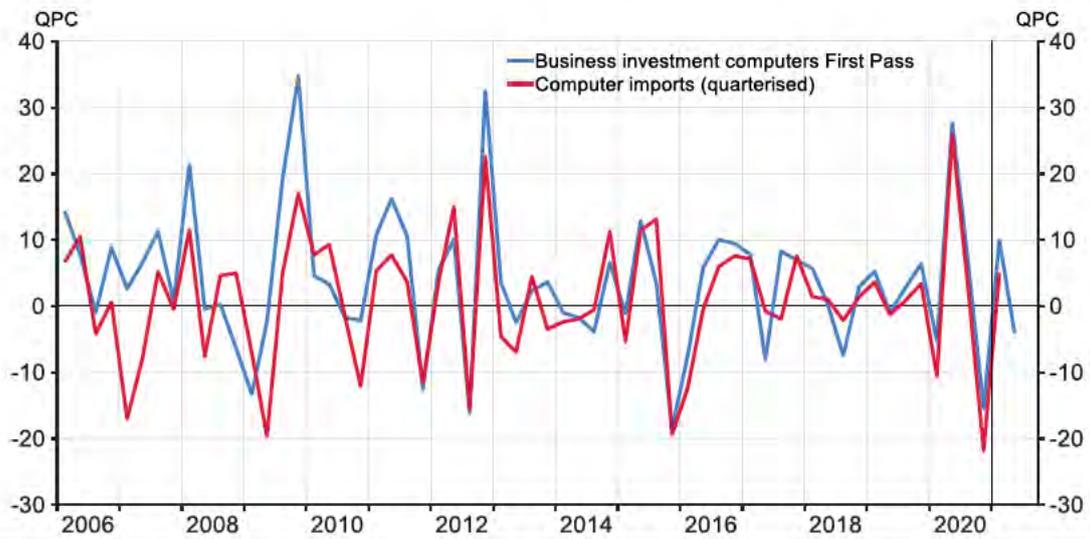
BUSINESS INVESTMENT COMPONENTS

Figure 14: Non-residential consents
(s.a.)

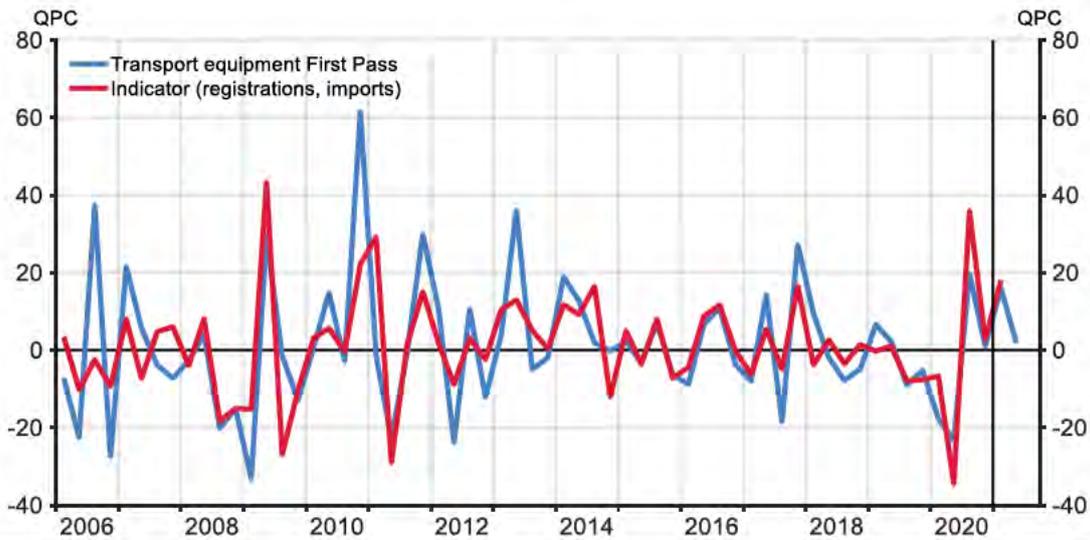


Non-residential consents exclude consents for hospitals, educational and cultural buildings.

**Figure 15: Computer investment
(s.a.)**



**Figure 16: Transport Equipment
(s.a.)**





SUMMARY

Labour Market Remains Resilient

- The labour market surprised and strengthened again with the unemployment rate falling to 4.7% in 2021Q1, despite a higher participation rate. The unemployment rates for men and woman converged at 4.7%, with the female rate falling from 5.3%. Females were disproportionately affected by COVID-19 downturn, so the bounce back in their unemployment rate is reflective of the broader economic recovery.
- For those industries doing well, labour demand is exceptionally high. Vacancies are at their highest level ever and closed borders mean many specialist roles cannot be filled. Unfortunately, the skillsets of tourism workers do not easily transfer into healthcare or construction generating some structural unemployment. Until vaccination programmes domestically and internationally gain traction to allow borders to open this story is likely to persist.
- The QSBO measure of difficulty finding labour has risen sharply and is above pre-COVID-19 levels for skilled workers. In this round's BICs, many firms noted the difficulty finding workers with the 'right skills'. While the travel bubble provides the opportunity to attract Australians and expat New Zealanders, it is a two-way street and labour demand is also high in Australia so it is unlikely it will fill the shortages.
- While the picture for the labour market is quite positive, there was an increase in the underutilisation rate to 12.2% driven largely by the increase in underemployment for women. More underemployment can be partially explained by the bounce back in the female participation rate as there are not enough hours to meet the higher labour supply.

Wage Inflation delayed for now

- There is strong labour demand in some sectors and supply shortages but it has not equated to substantial wage inflation yet. LCI rose 0.4% for the quarter, 0.2 percentage points below the February MPS forecast. Anecdotal evidence from BICs and vacancy rates suggest that wage growth is still to come.

Still Below Maximum Sustainable Employment (MSE)

- Although the headline unemployment rate has been better than expected the last couple of quarters, it hides the divide in the labour market. Large gains in some sectors have been enough to cover the losses in the weakest and soak up the slight rise in the working age population and participation rate.
- There is still some capacity in the labour market as indicated by our suite of labour market indicators, on this basis we think that employment is closer to but still below Maximum Sustainable Employment (MSE).
- The Beveridge Curve shows that job matching has deteriorated slightly, with a record high number of vacancies failing to lead to a substantially lower unemployment rate. However, this is unsurprising giving the uneven recovery across industries.

EMPLOYMENT

Figure 1: Unemployment Rate
(quarterly, s.a.)

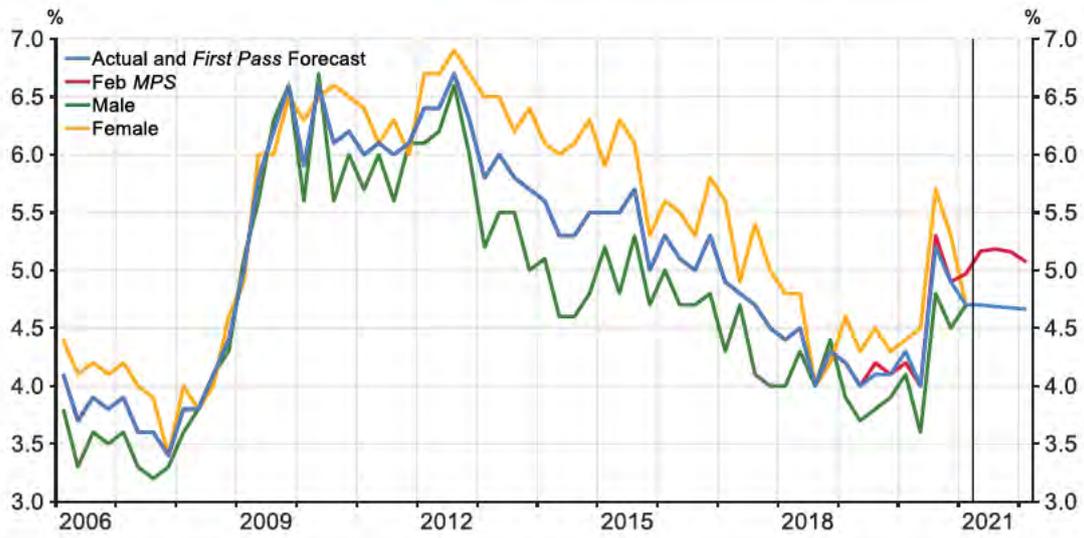


Figure 2: Underutilisation Rate
(quarterly, s.a.)



Figure 3: Participation Rate
(quarterly, s.a.)

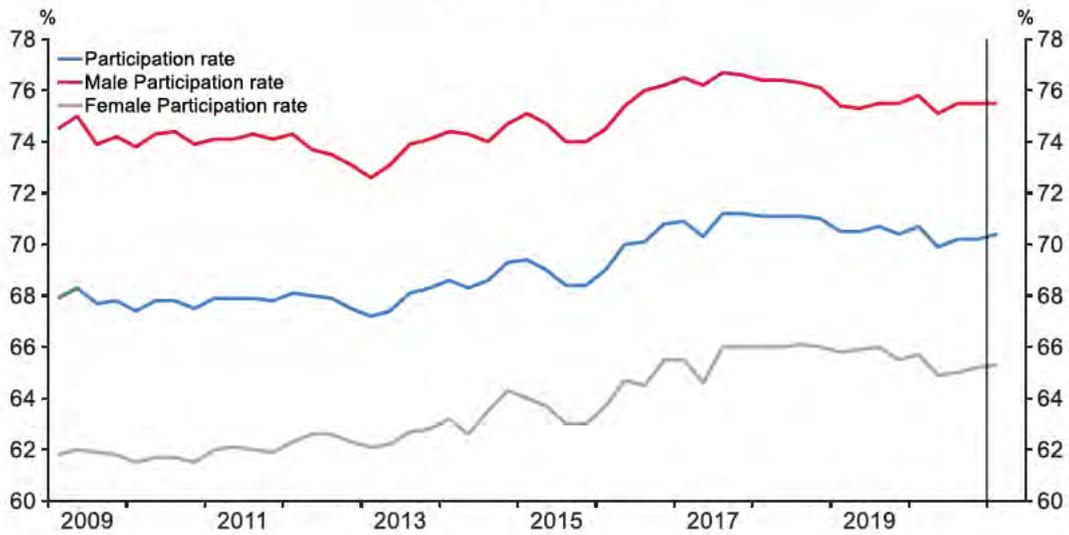


Figure 4: Filled Jobs

Change in filled jobs by industry 2020Q1 to 2021Q1

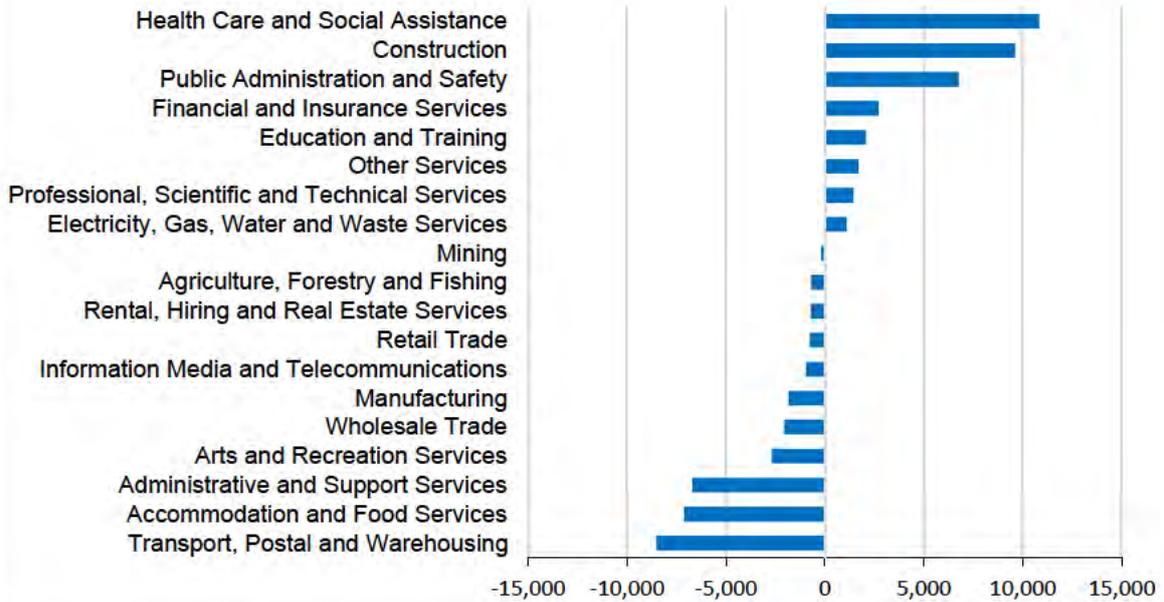
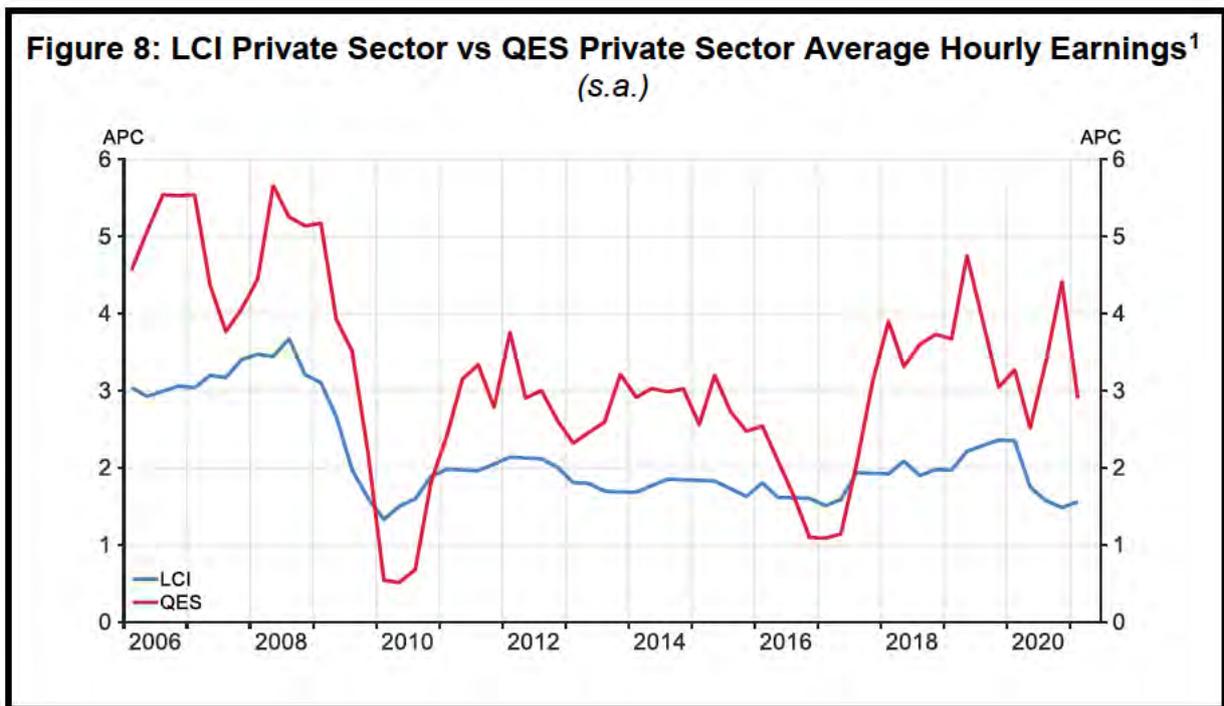
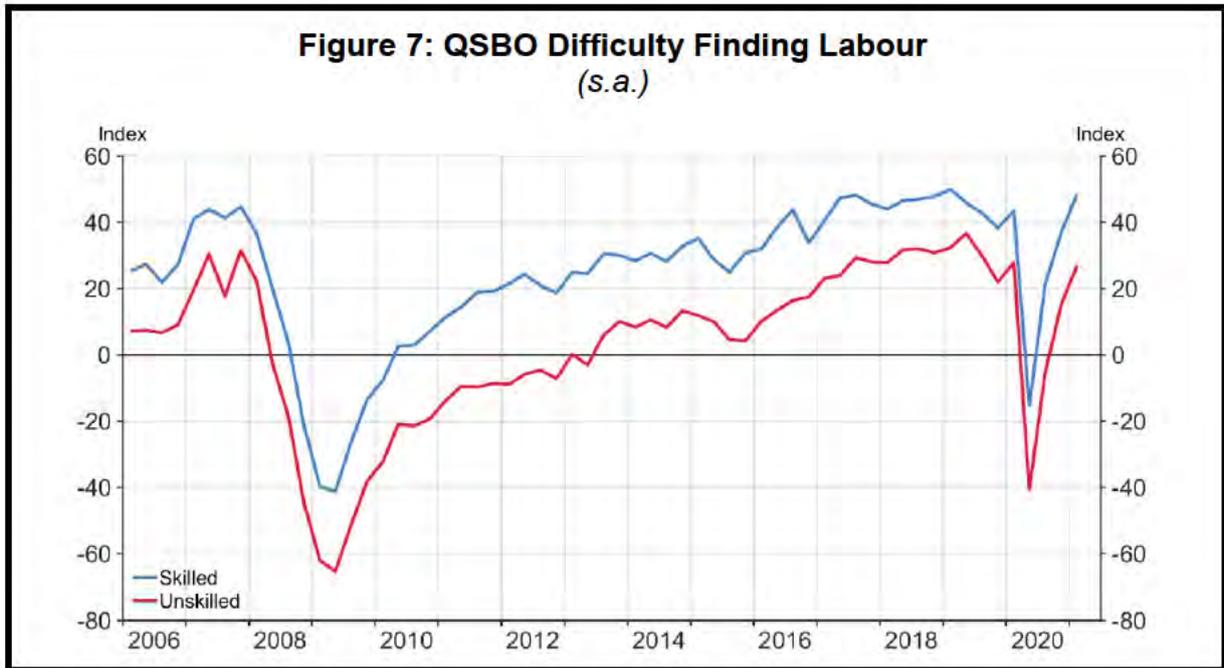


Figure 5: Vacancy Rate & Unemployment Rate
(quarterly, s.a.)



Figure 6: QSBO Intentions To Hire in the Next 3 Months
(s.a.)





¹ The March 2021 labour market release is the first under the redesigned Quarterly Employment Survey (QES). There are limitations with comparing the new data to the series published before the redesign.

Figure 10: LCI Wage Inflation Projection
(s.a.)

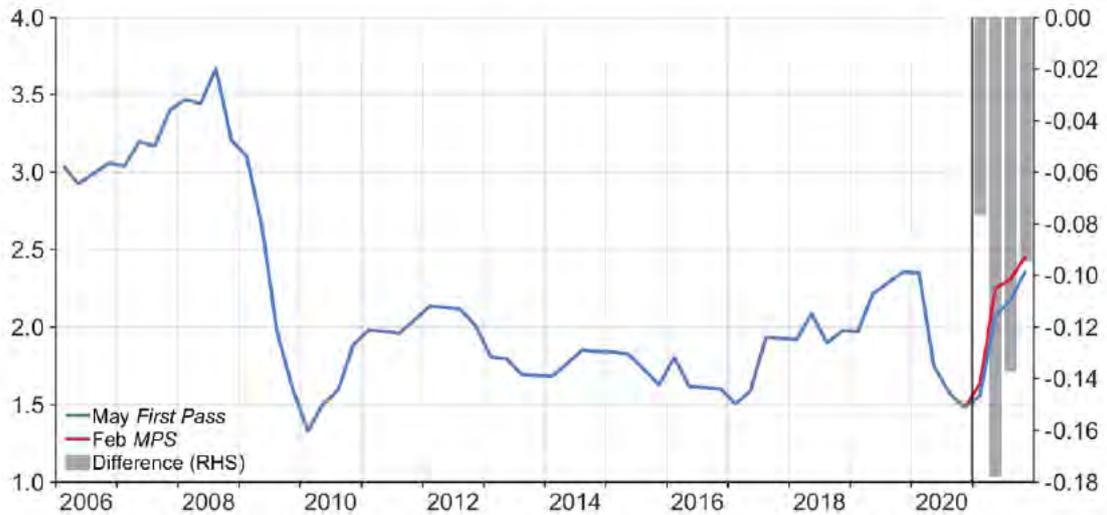
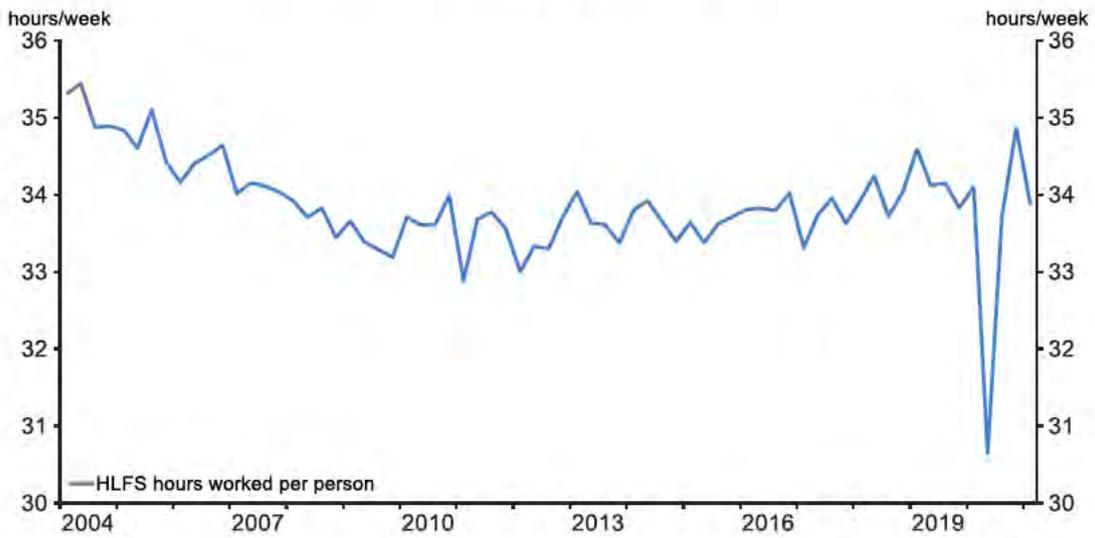
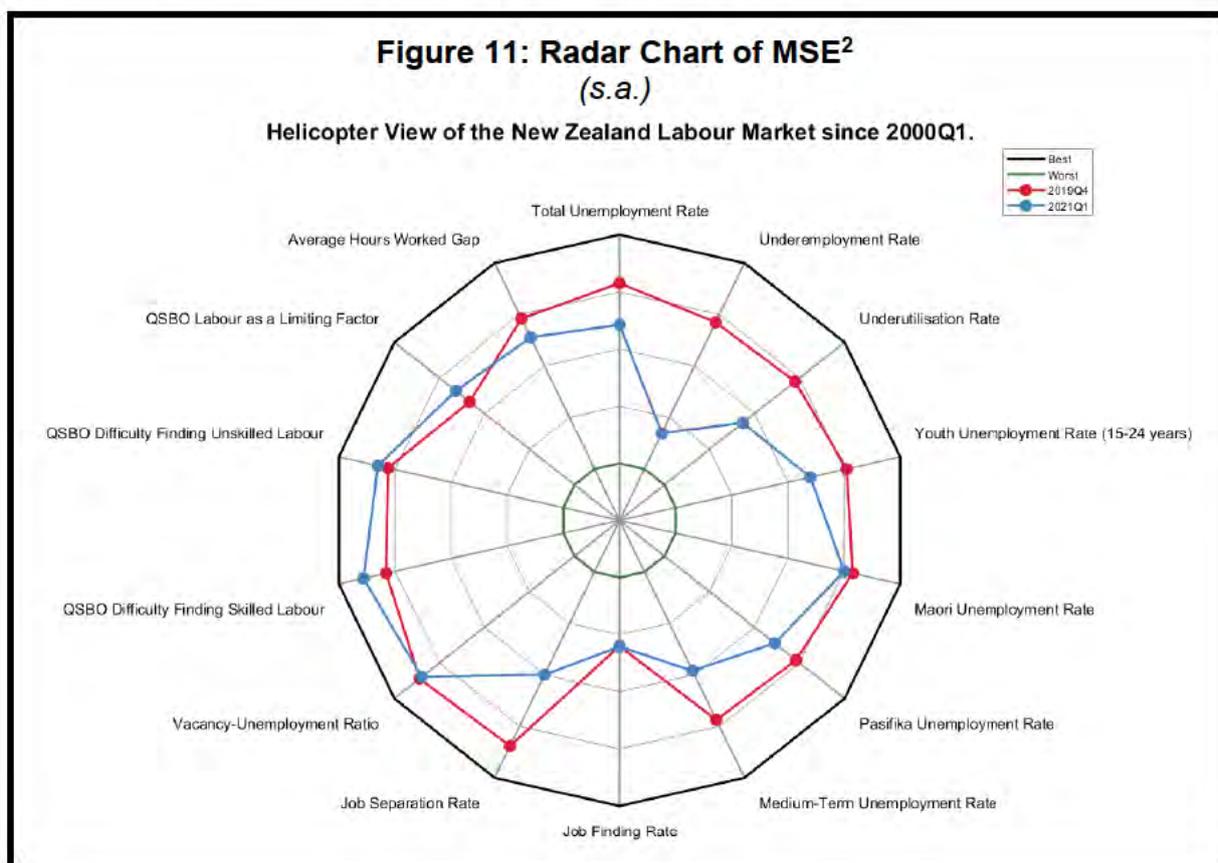
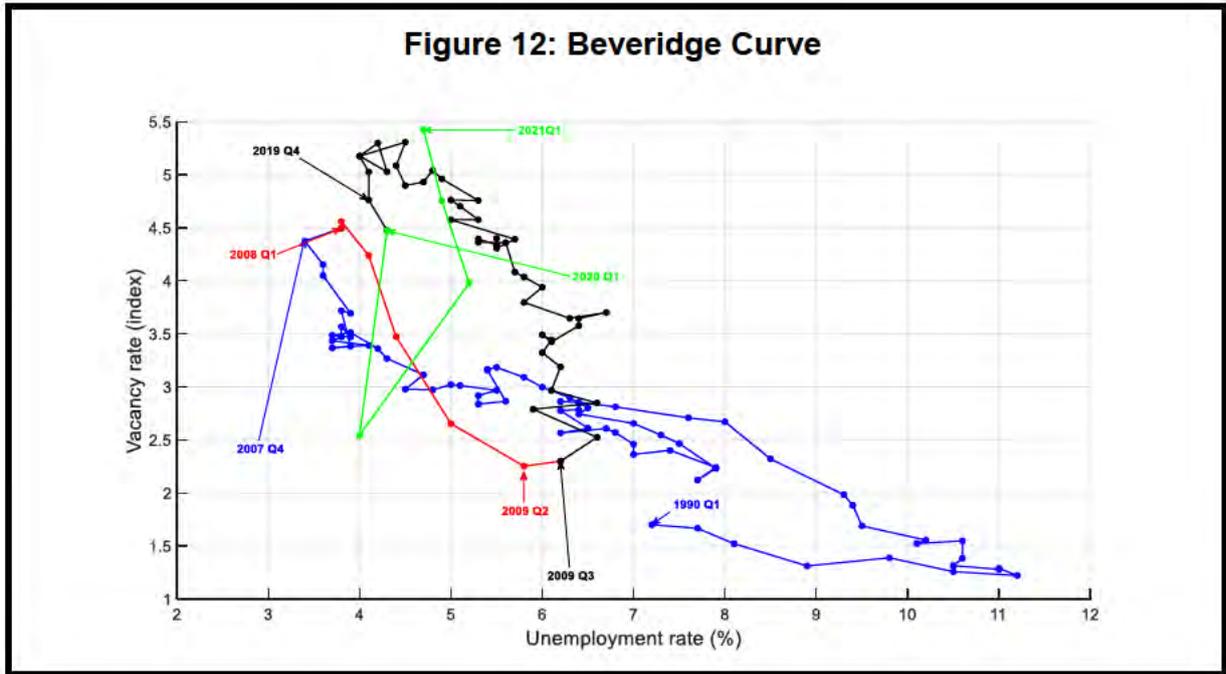


Figure 9: Hours worked per person
(s.a.)

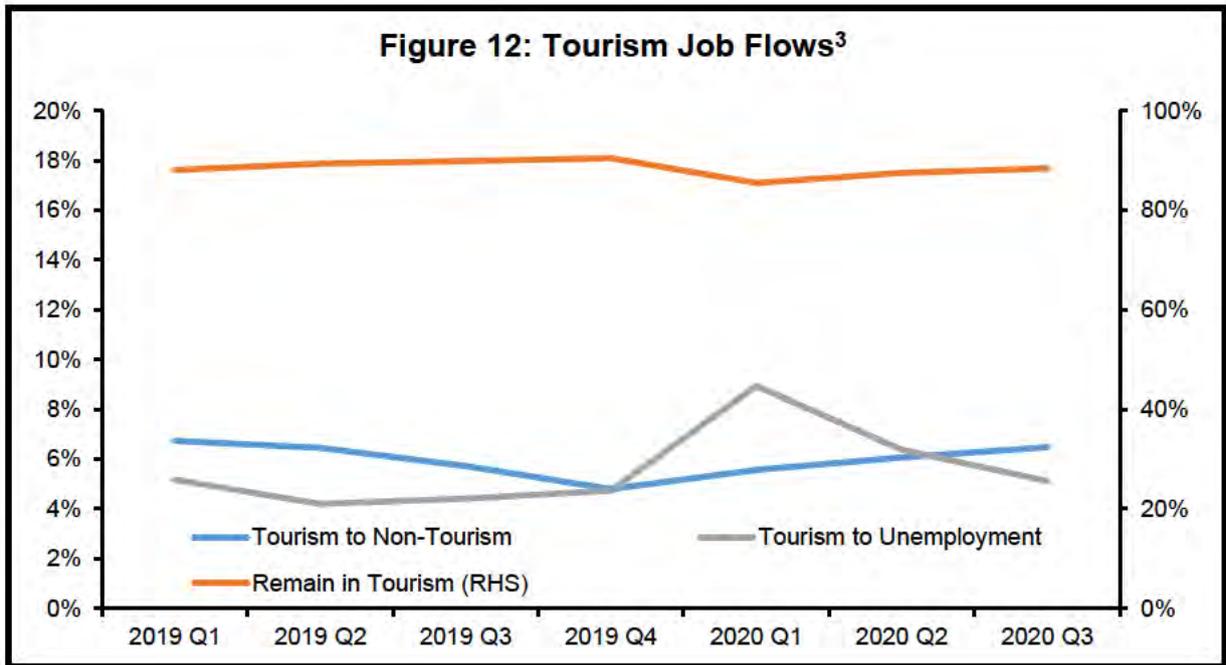




² This radar chart summarises labour market conditions and replaces the usual table. The black ring indicates the highest level of utilisation of labour while the green ring shows the lowest level. MSE would not mean that the current levels (blue ring) is on the black ring as that would most likely indicate an overheating labour market. MSE is judged on where the current levels are against a period in time (red ring) which is judged as when MSE was achieved (2019Q4). The yellow ring shows the previous labour market release. If the blue ring is near the red ring this would indicate a result close to MSE.



ADDITIONAL CHARTS



³ Access to the data used in this study was provided by Stats NZ under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975. The results presented in this study are the work of the author, not Stats NZ or Reserve Bank New Zealand.



SUMMARY

Q4 GDP

- The economy ended 2020 slightly weaker compared to pre-COVID-19. The Q4 outturn (-1% qpc) came in slightly weaker than expected. The economy is now 0.9% smaller than it was in Q4 2019.
- The main contributors to this 1% decrease were the construction, manufacturing, and agriculture sectors. Specifically, construction fell 8.7% (qpc) through Q4 2020. This weakness reflects the normalising of many sectors following massive gains in Q3 resulting from pent-up demand and capacity constraints beginning to emerge with difficulties getting access to labour and ongoing supply chain disruptions. There is some evidence the booming housing market is beginning to reach a ceiling with new construction struggling to keep pace with the strong consenting levels. Seasonal weakness from the absence of international tourism kept the economy below pre-COVID-19 levels in the last outturn.
- Those sectors more heavily exposed to international tourism are still feeling the deficit. Transport, postal and warehousing have stayed subdued reflecting the absence of Air NZ flights and international tourists in New Zealand. These sectors will continue to struggle with fewer people in the country through summer but there is increased optimism with the announcement of the trans-Tasman bubble reigniting international travel in Q2 2021.
- Despite the loss of tourism, our recovery from the economic impacts of COVID-19 is unrivalled globally, except for China. And, with many nations facing fresh outbreaks, it is likely we will continue to outperform. Further stimulus packages in the US, boosting their recovery and continuing strong growth China means there are upside risks for New Zealand exporters.

Economic activity will continue to ease in Q1 2021

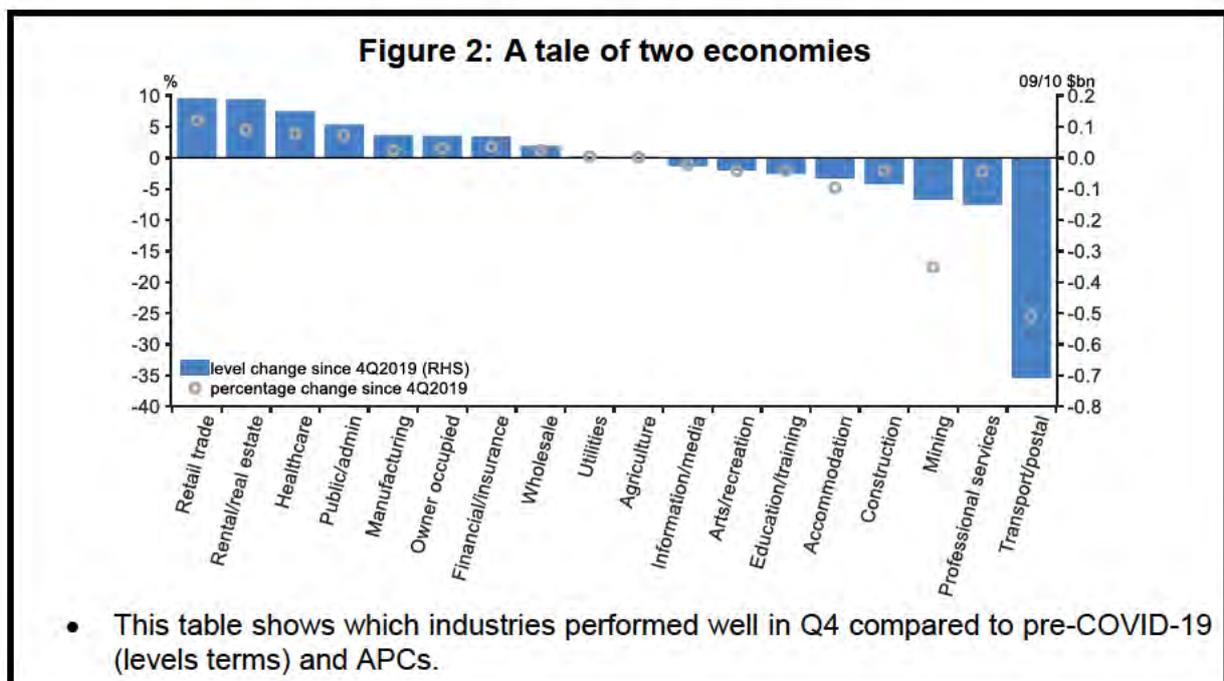
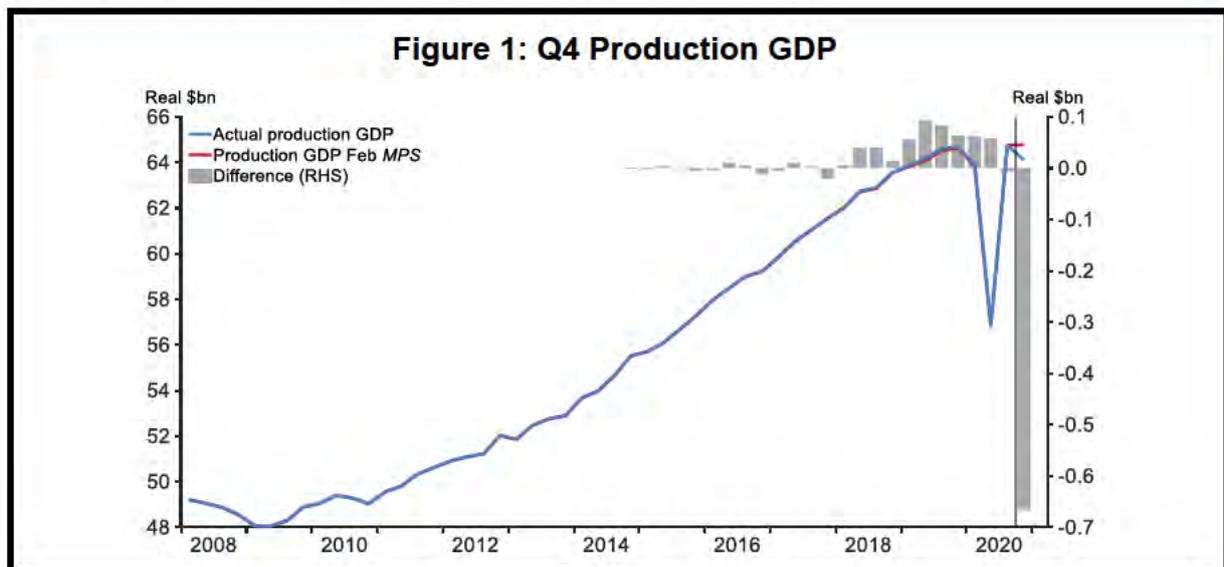
- More timely indicators of activity in Q1 2021 have continued to contract. Consumption spending slowed and businesses reported trading activity came in weak across the first quarter.
 - The successful reopening of the Chinese economy has been a key support for our exports. Dairy has seen prices surge recently off strong demand from Asia.
- Two regional lockdowns in response to community outbreaks in Auckland dampened economic activity. Our estimate for the lost GDP from an extra week of Auckland in Alert level 3 and the rest of NZ in level 2 is about \$330 million.
- The outlook for profitability has fallen with business confidence going sideways. Uncertainty remains elevated with many businesses unsure of their future in our most recent round of BICs.
- Strong consents issuance over the course of 2020 has highlighted a surging housing market. In recent months, consents issuance has begun to tail off but BIC contacts note that this likely reflects capacity pressures inhibiting firms from completing work on

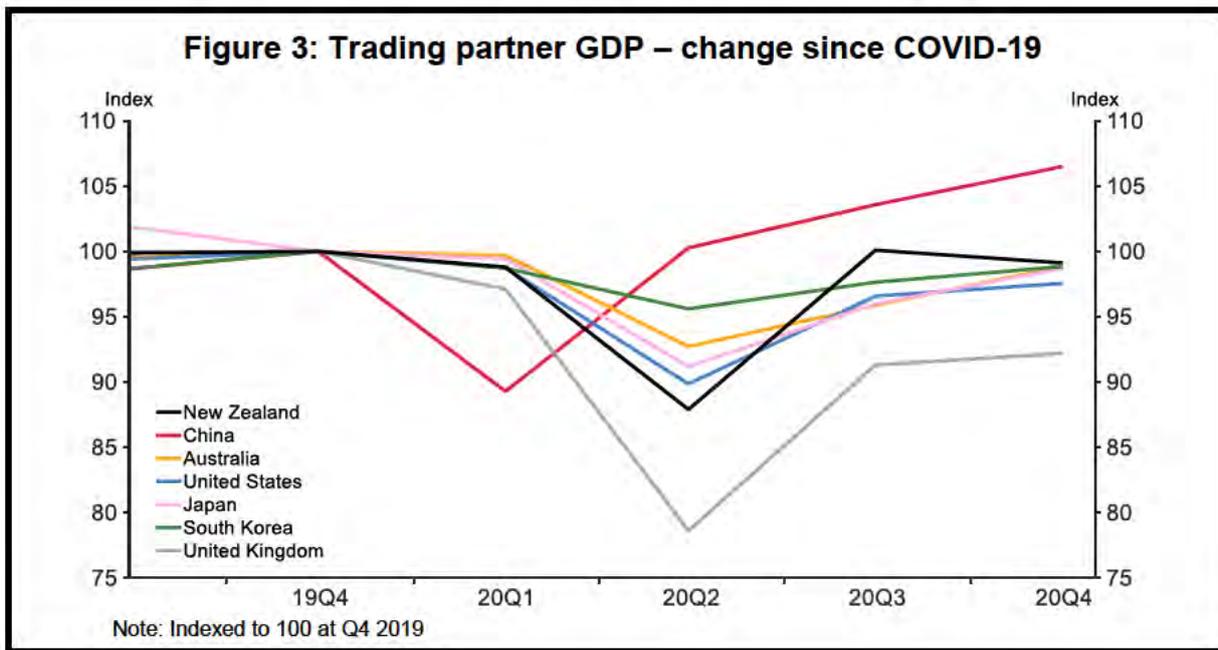
all the outstanding consents. Construction appears likely to improve steadily over the near-term, recovering to pre-COVID-19 levels.

Capacity pressures

- A strong QSBO release for Q1 2021 demonstrates capacity pressures have increased. The updated indicator suite suggests that the output gap has risen, with the mean back into positive territory.
 - QSBO measures of access to labour (both skilled and unskilled) have tightened again, whilst all sectors are now looking to hire again.
 - Supply chain disruptions remain elevated with many firms reporting difficulty in obtaining a range of imported goods.

GDP MOVING SIDEWAYS IN Q4





POST-COVID ECONOMIC DEVELOPMENTS

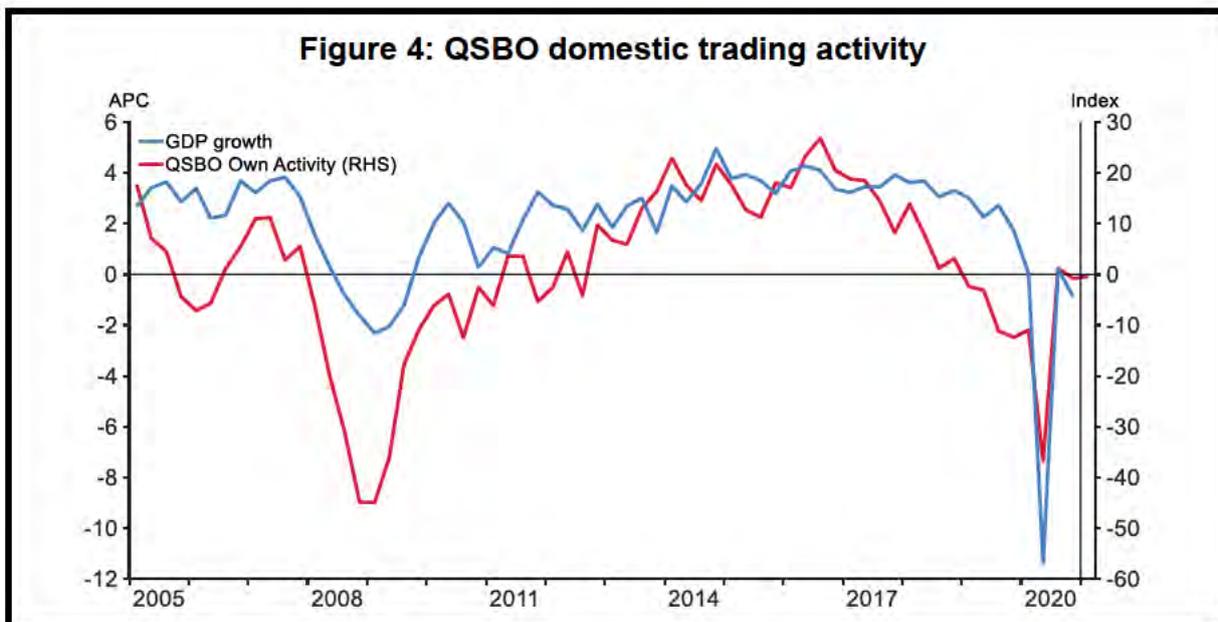


Figure 5: NZ activity index and GDP

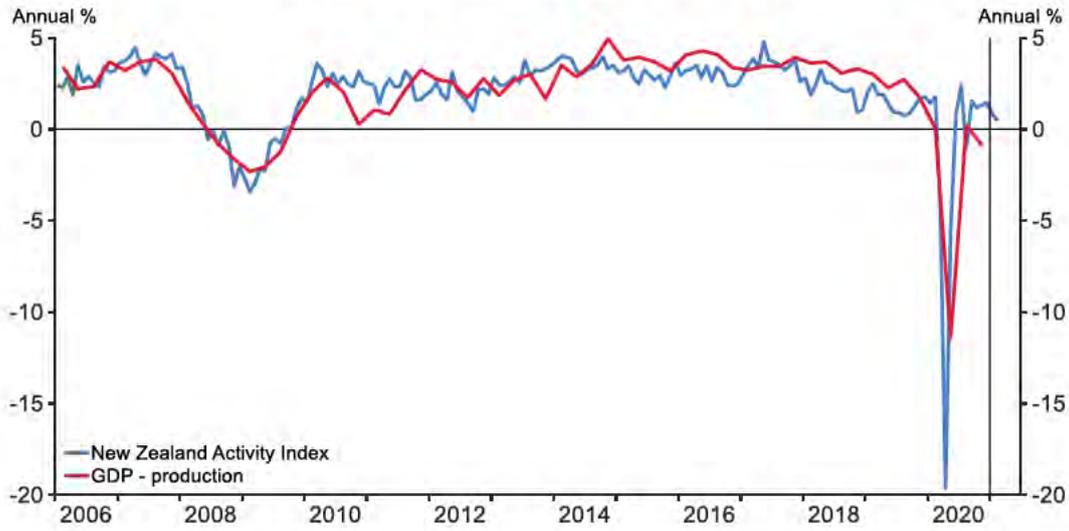


Figure 6: Electronic Card Transactions

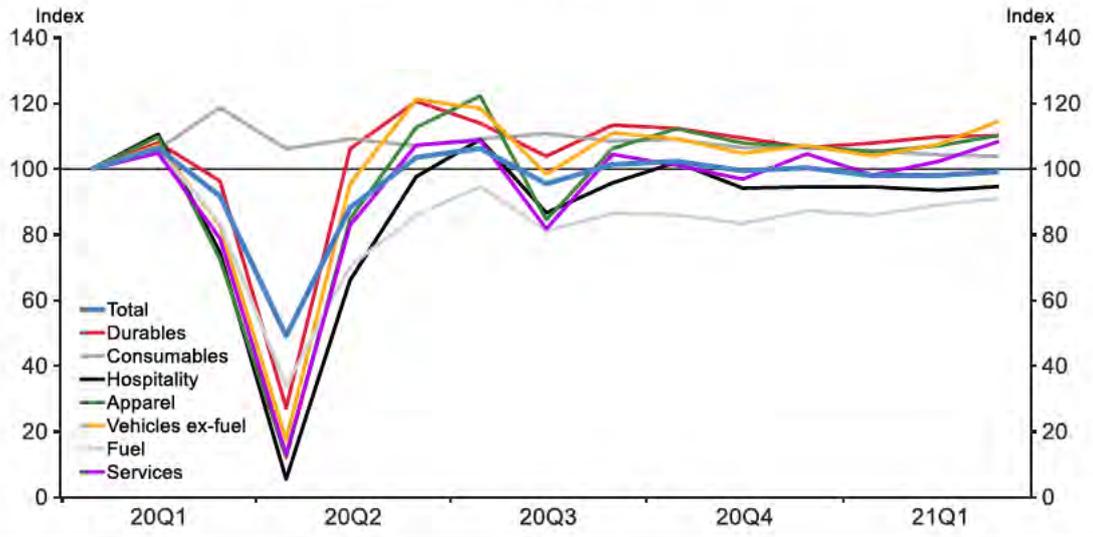


Figure 7: QSBO profitability: tailing off

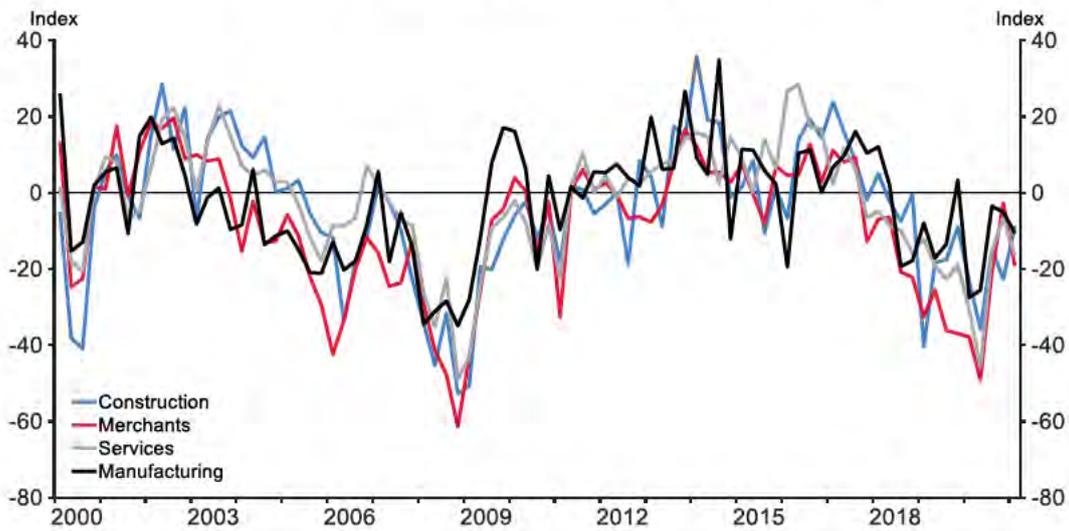


Figure 8: Confidence going sideways: ANZBO by sector

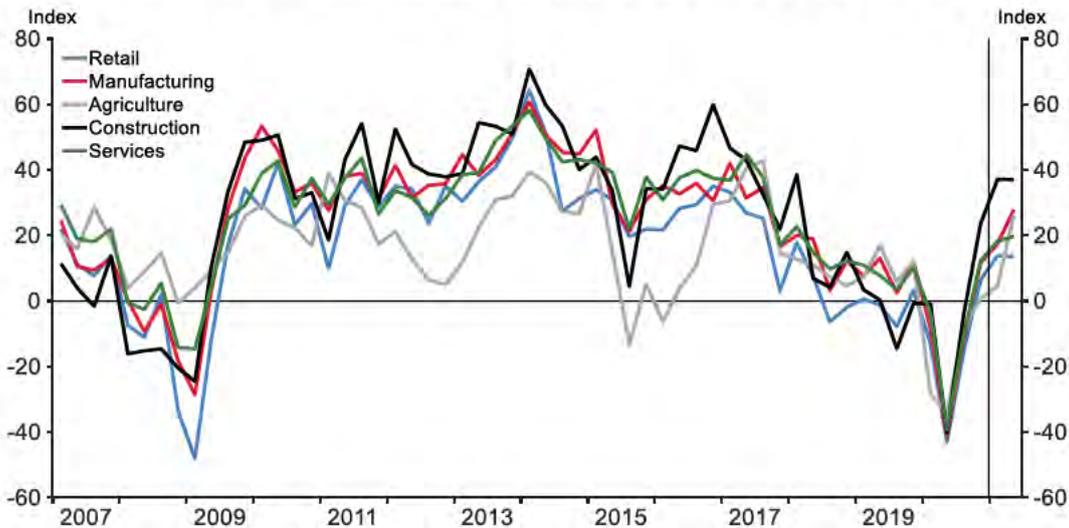


Figure 9: Residential consents

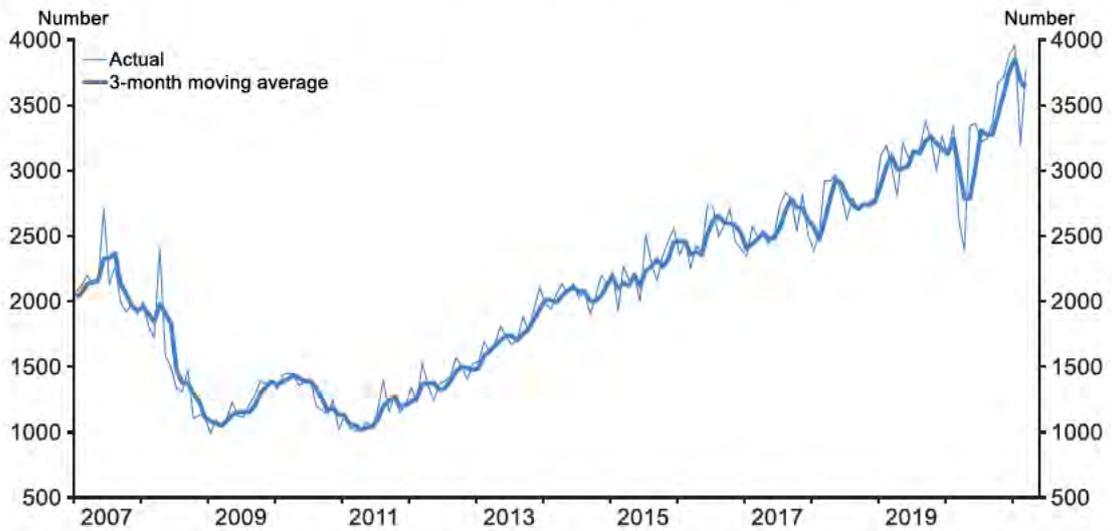
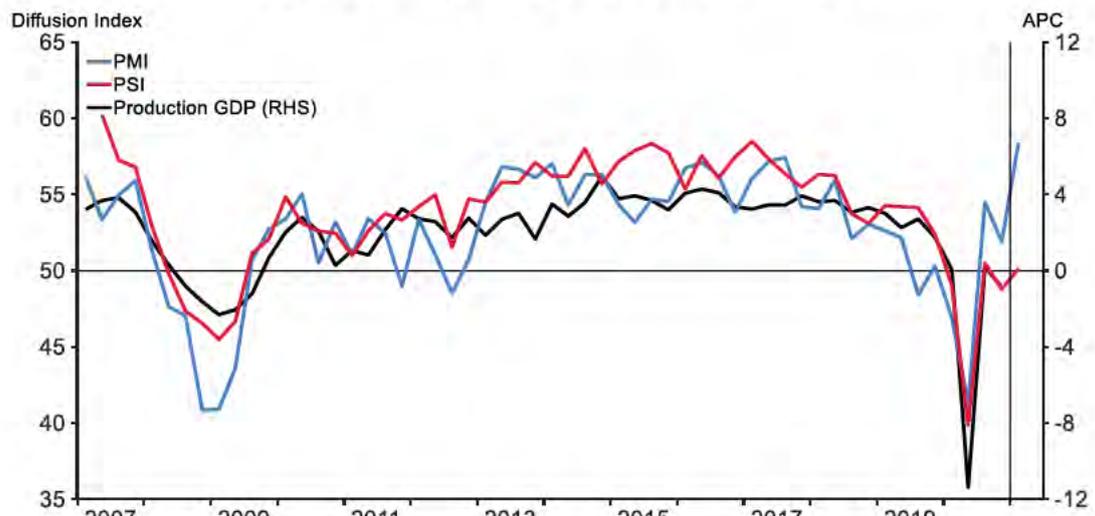
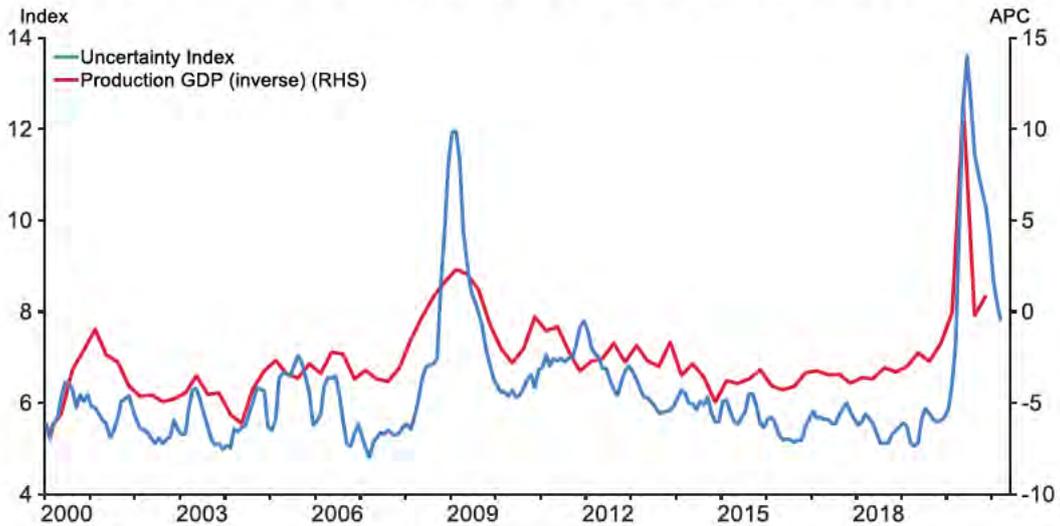


Figure 10: NZ PMI & PSI (Quarterised)



- Reading for PMI and PSI above 50 are expansionary and below are contractionary

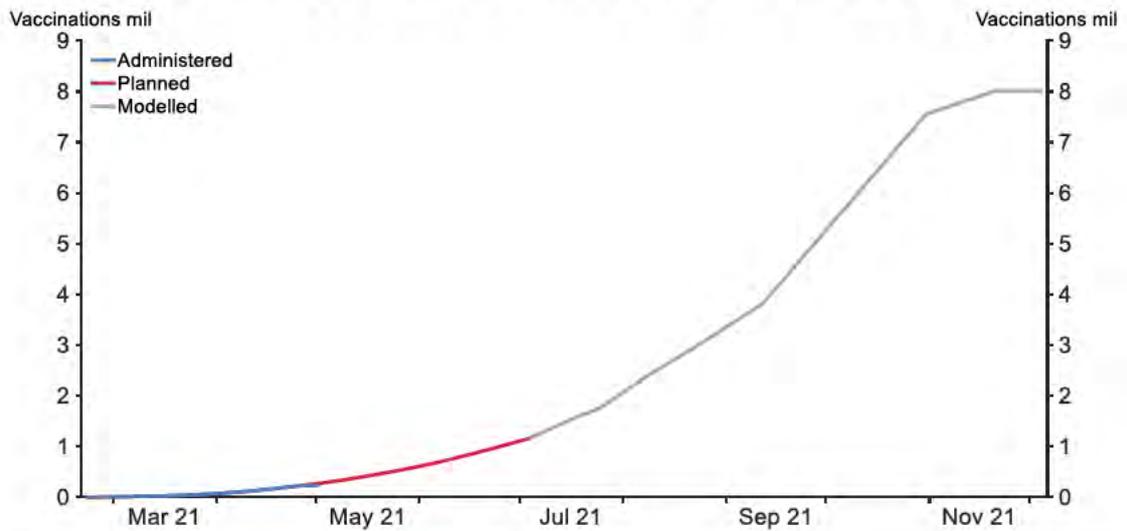
Figure 11: Economic uncertainty in NZ is elevated, but is declining



Source: Sense Partners

Note: This index measures uncertainty by web-scraping to assess the number of times particular words linked with terms associated with uncertainty are mentioned in NZ media. They then normalize the index by dividing the number of articles with economic uncertainty terms by the total number of articles published, and available.

Figure 12: COVID-19 vaccination rollout is gathering pace



GDP COMPONENTS

Figure 13: Milk production

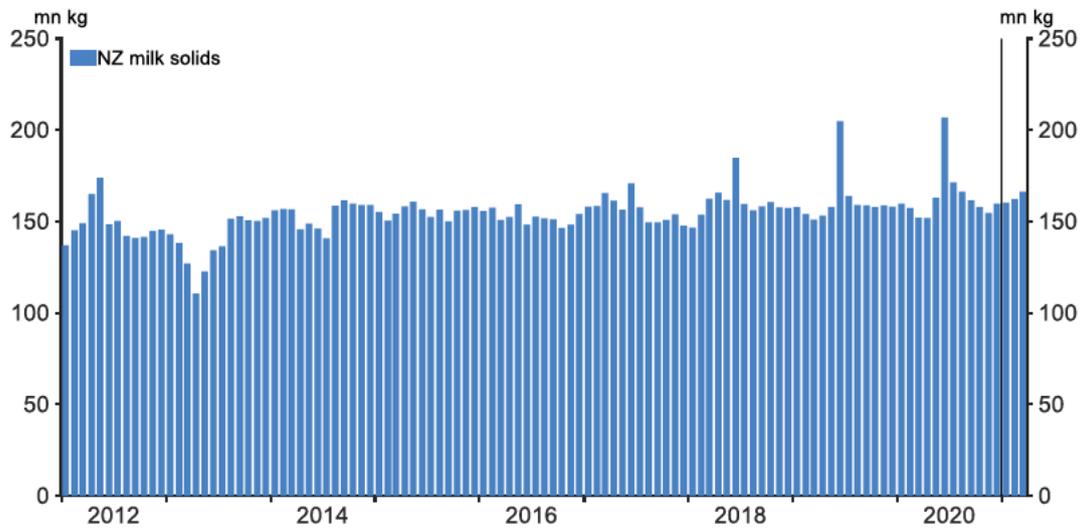


Figure 14: Meat production

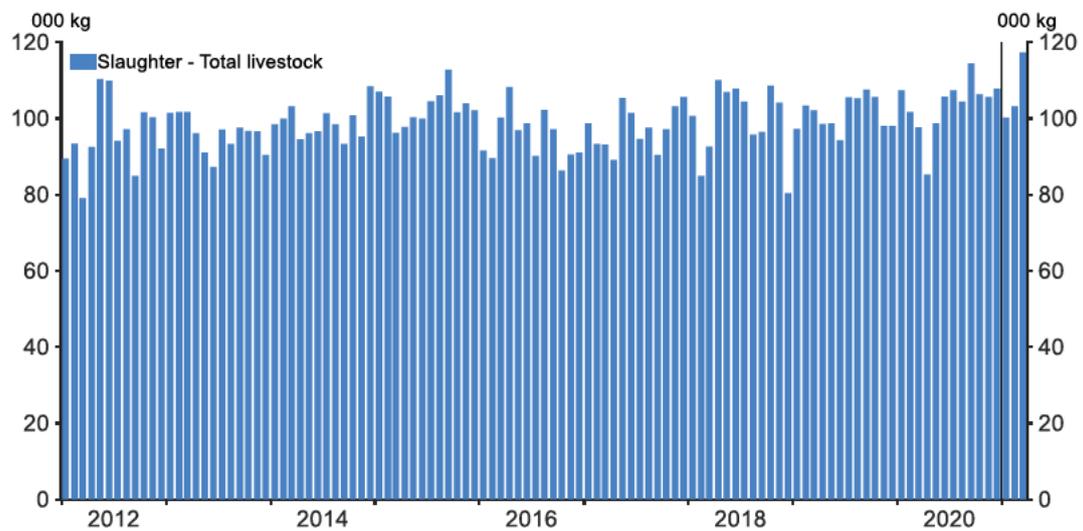
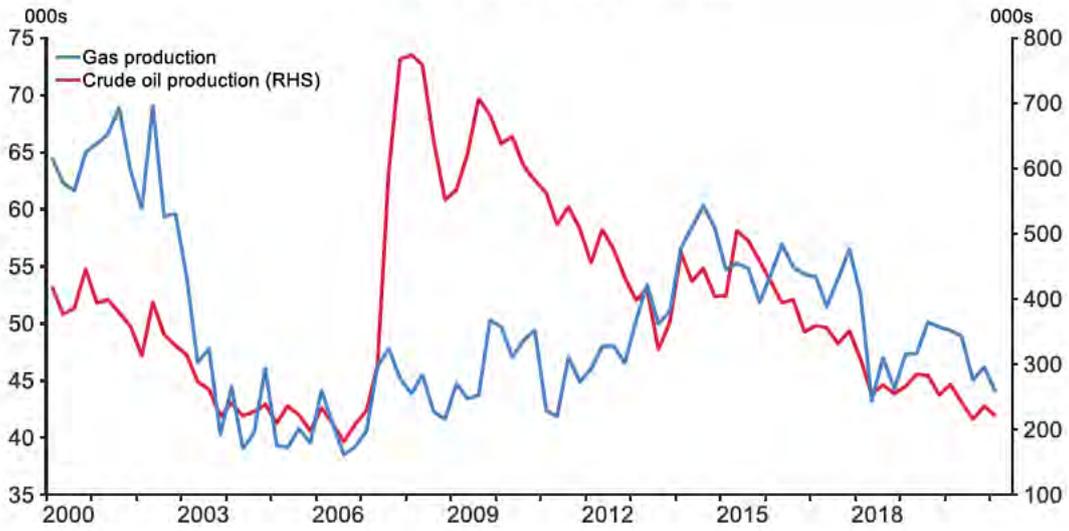
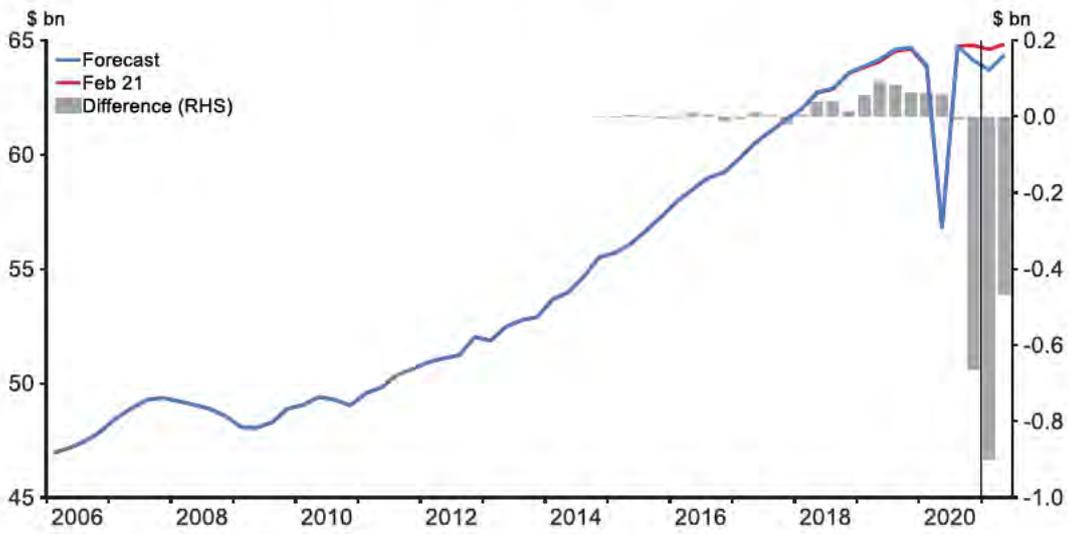


Figure 15: Mining activity



GDP FORECAST

Figure 16: GDP levels



CAPACITY PRESSURES

Figure 17: Capacity pressures spike

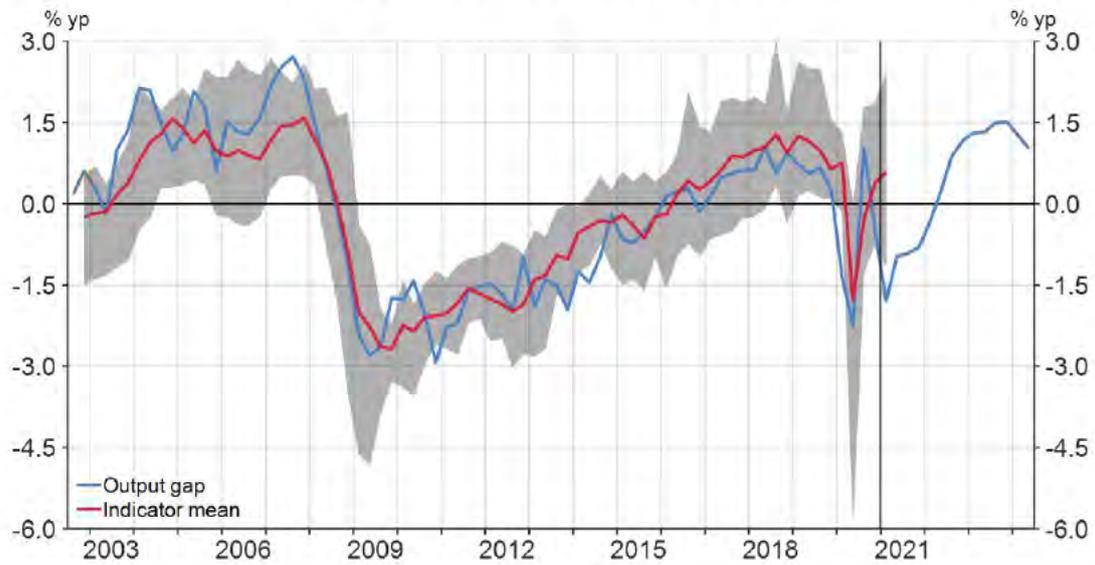


Figure 18: Capacity pressure increases led by QSBO indicators

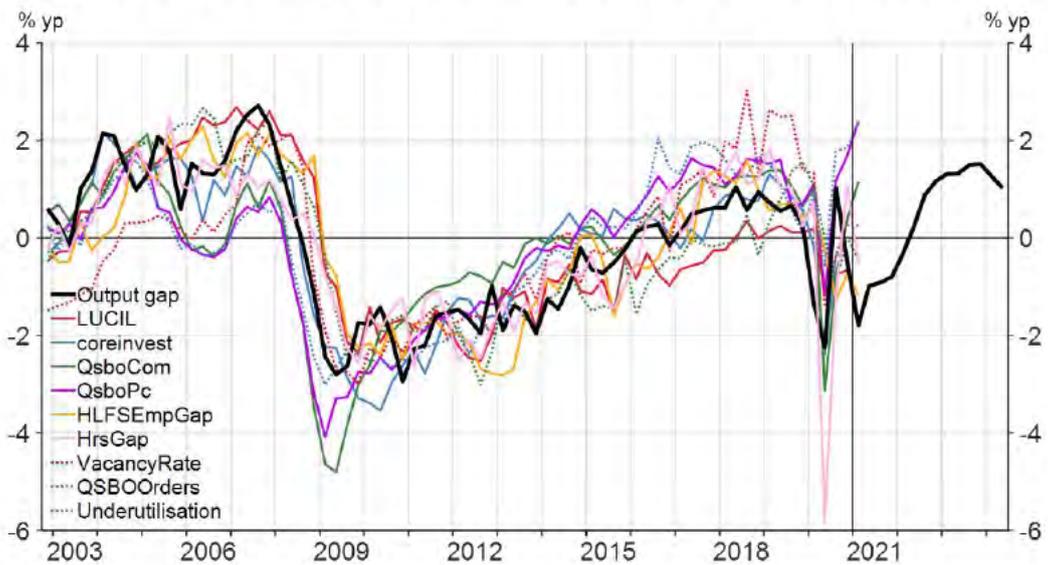
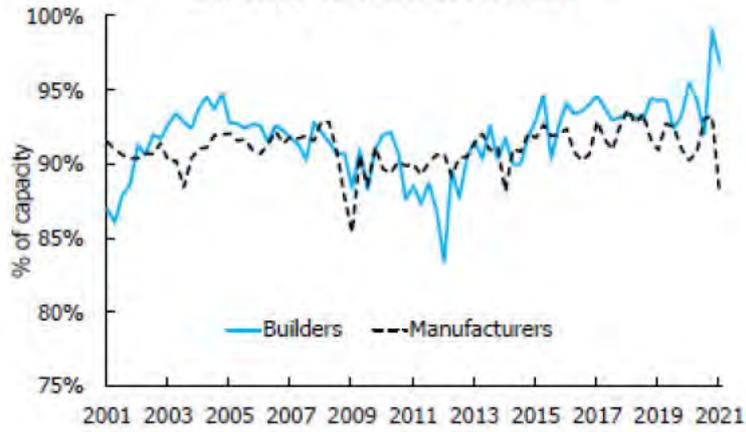


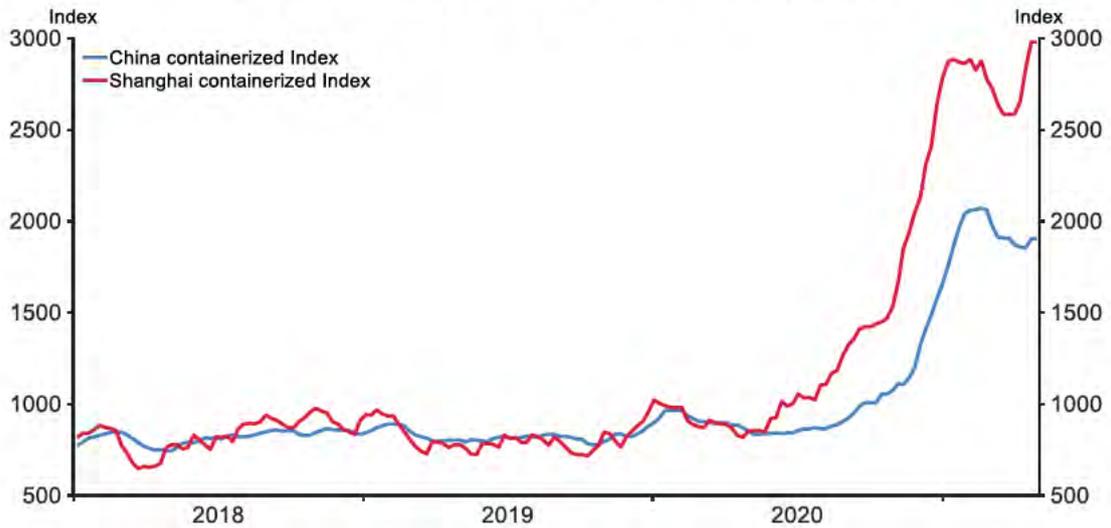
Figure 19: Capacity utilisation by industry

Capacity utilisation: industry



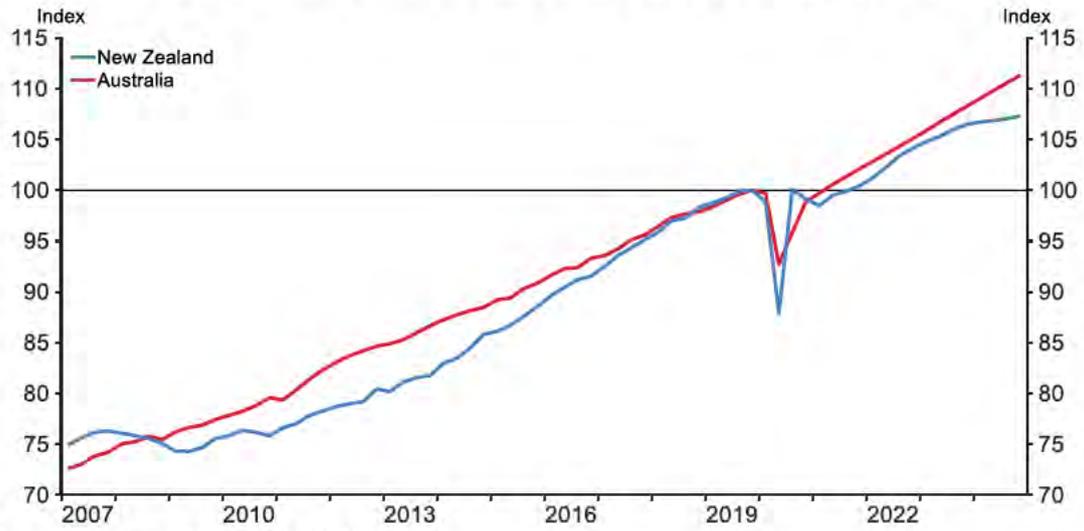
Source: NZIER

Figure 19: Shipping costs remain elevated



• This index reflects the weekly spot rates in the Shanghai and China export container transport market.

Figure 20: New Zealand and Australia growth projections



• Note: Indexed to 100 at Q4 2019.



SUMMARY

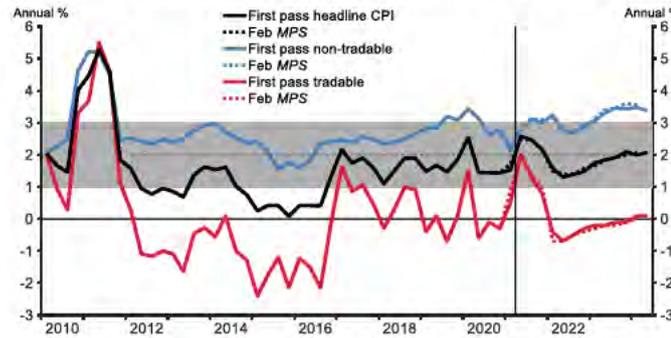
March 2021 CPI outturn**Headline inflation steady as imported price inflation rises**

- **Inflation held steady at around 1.5% recently, against expectations of a gradual rise.** Annual CPI inflation edged up to 1.5 percent in the March quarter of 2021 (1.4 percent previously). This was lower than expected in the February *MPS* (1.7 percent).
- **Tradables inflation is providing increasing support to the CPI outlook.** This reflects a gradual re-opening of the global economy and rising demand, set against acute bottlenecks in supply chains. However, this has been tempered by patches of price competition re-emerging as retail momentum slackens. Diversion of peak summer crops exports to domestic markets (on shipping shortages) also suppressed food prices early in 2021.
- **Non-tradables momentum is largely intact.** Housing remains the key driver of non-tradables pressures. This momentum is likely to continue as capacity pressures and input shortages linger. However, any slowing in the housing market will increasingly weigh on the market later in 2021. Furthermore, ongoing support from successive annual tax-related tobacco tax rises has ended.

Outlook**CPI inflation to rise into the top half of the Bank's 1-3% target range in 2021.**

- **Tradables inflation provides a temporary boost to inflation pressures.** Global supply chain bottlenecks boost transport costs for imports in 2021, exacerbated by the recent Suez Canal blockage and domestic port constraints. The New Zealand dollar TWI is largely tracking sideways as assumed, with little recent impact. But the lagged impact of 2020 appreciation could temper tradables later in 2021.
- **Sustained momentum in non-tradables inflation provides ongoing support to headline inflation** in the near term. Housing demand momentum exacerbates supply constraints in residential construction across both labour and materials.
- **Risks remain to the upside** as international tourism begins to resume gradually and capacity constraints persist in residential construction.
 - Cost-push factors from global supply chain bottlenecks could also persist longer, to later in 2022. 'Higher for longer' inflation could shift up wage/pricing behaviour ([Paper 3.2: Supply focus - supply chains and labour market risks](#)).
 - A tightening labour market and limited international and domestic mobility could lead to rising skills mismatches and persistently high wage growth.

Figure 1: Annual medium-term inflation forecasts (MPS)



Note: Light black dashed lines indicate mid-point target emphasis since 2012.

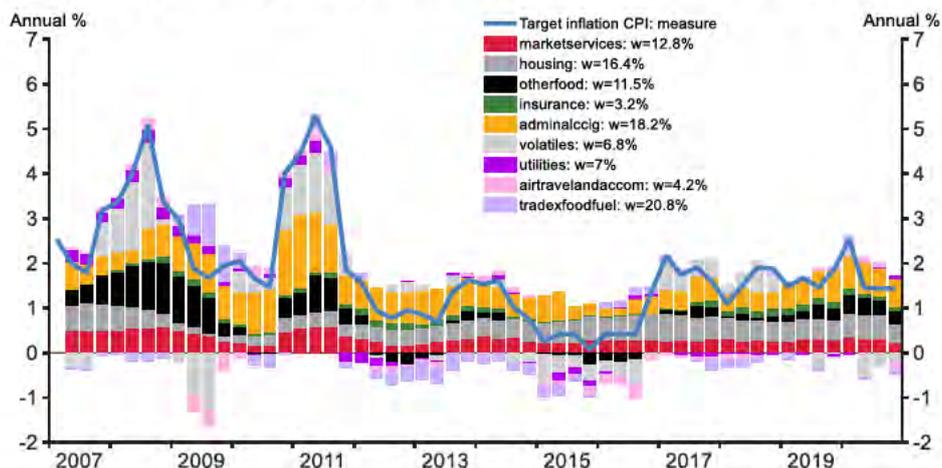
INFLATION SNAPSHOT

Table 1: Percent change for inflation

| QPC | Mar-2021 | Jun-21 | Sep-21 |
|-------------|----------|--------|--------|
| CPI | 0.8 | 0.6 | 0.6 |
| PTR (39.9%) | 0.9 | 0.3 | -0.1 |
| PNT (60.1%) | 0.7 | 0.7 | 0.9 |
| APC | Mar-2021 | Jun-21 | Sep-21 |
| CPI | 1.5 | 2.6 | 2.5 |
| PTR (39.9%) | 0.5 | 2.0 | 1.3 |
| PNT (60.1%) | 2.1 | 2.9 | 3.1 |

CPI CONTRIBUTIONS

Figure 2: Contributions to headline CPI inflation



CORE INFLATION AND INFLATION EXPECTATIONS

Figure 3: Core inflation

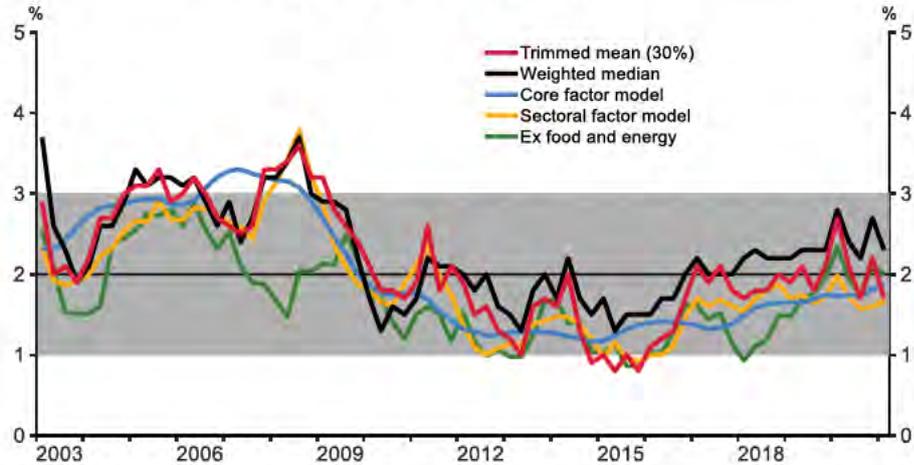


Figure 4: Cyclical inflation

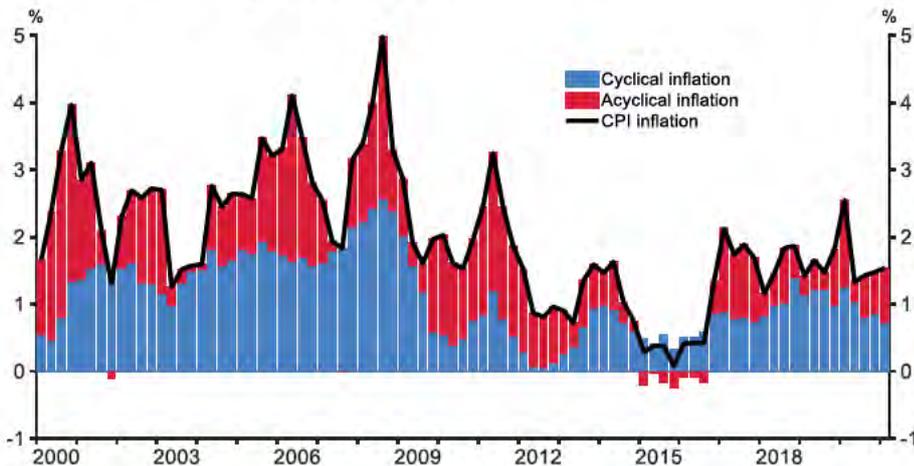


Figure 5: Contribution of 'acyclical' inflation to headline CPI

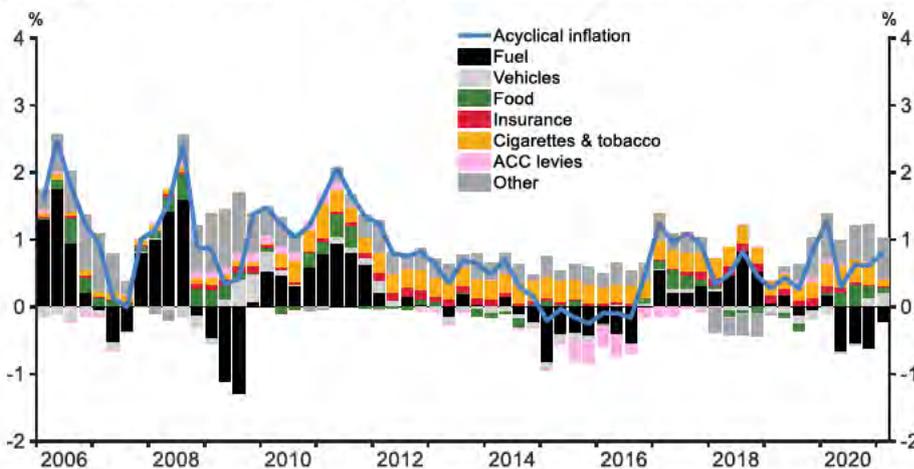


Figure 6: Contribution of 'procyclical' inflation to headline CPI

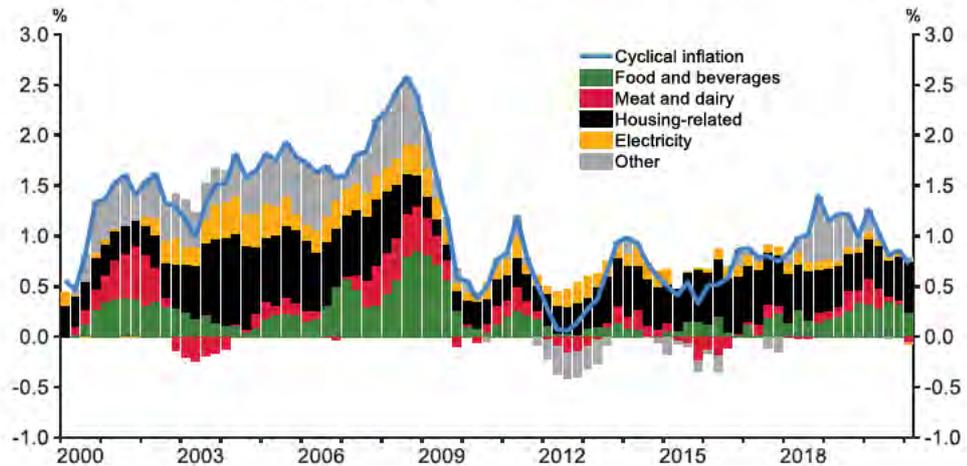
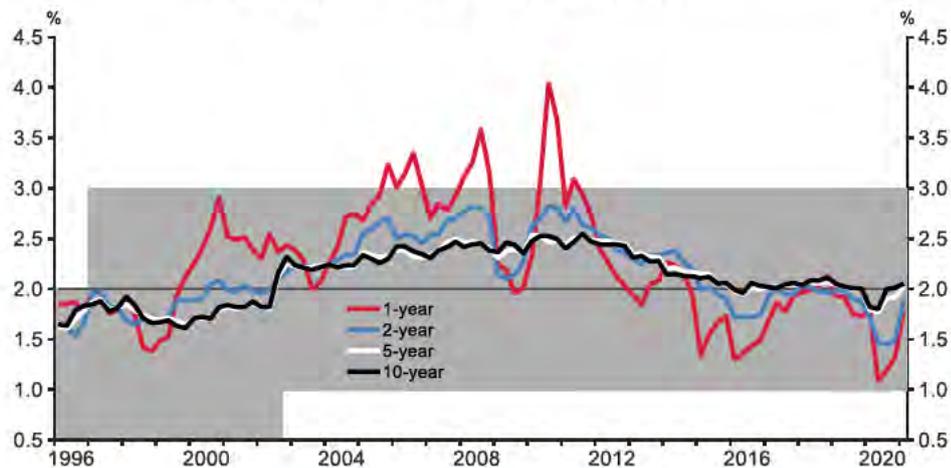


Figure 7: Inflation expectations



TRADABLES INFLATION

Figure 8: Components of annual tradables inflation

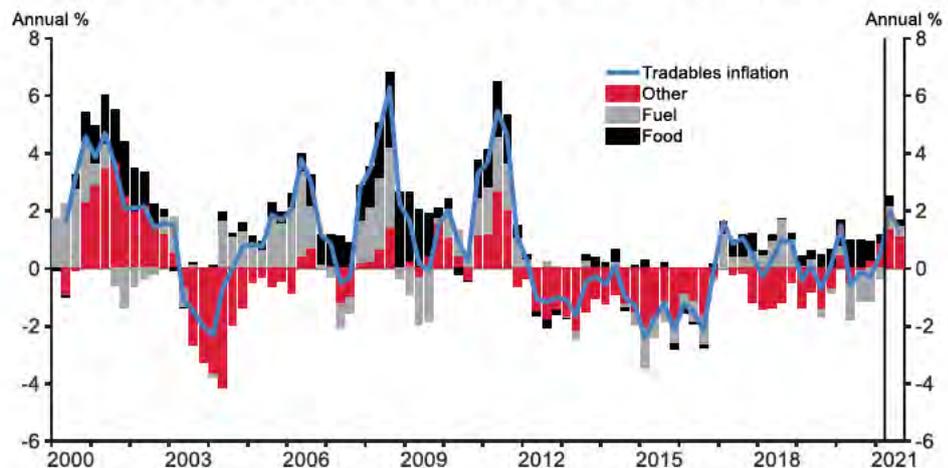


Figure 9: Tradables inflation ex-food and ex-fuel

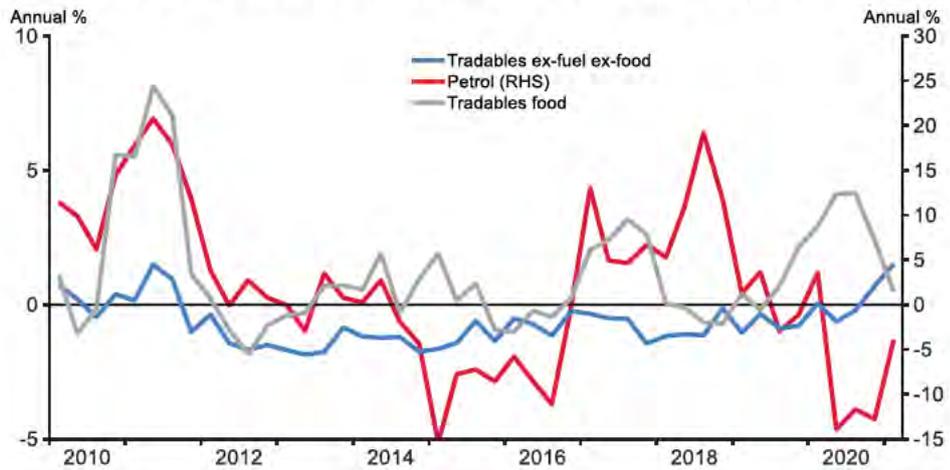


Figure 10: Annual tradables (ex-fuel) inflation and indicator



Figure 11: Petrol prices



Figure 12: Petrol price inflation forecast

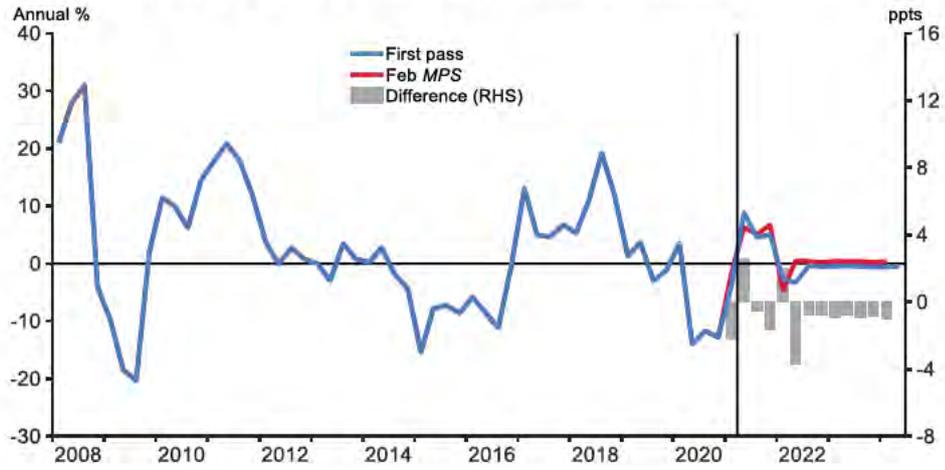


Figure 13: Food price index (FPI)

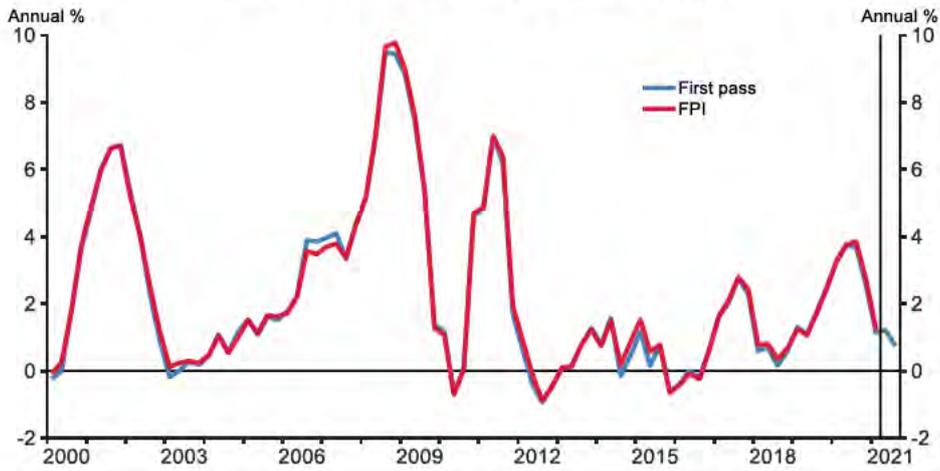


Figure 14: Food price inflation (s.a.)

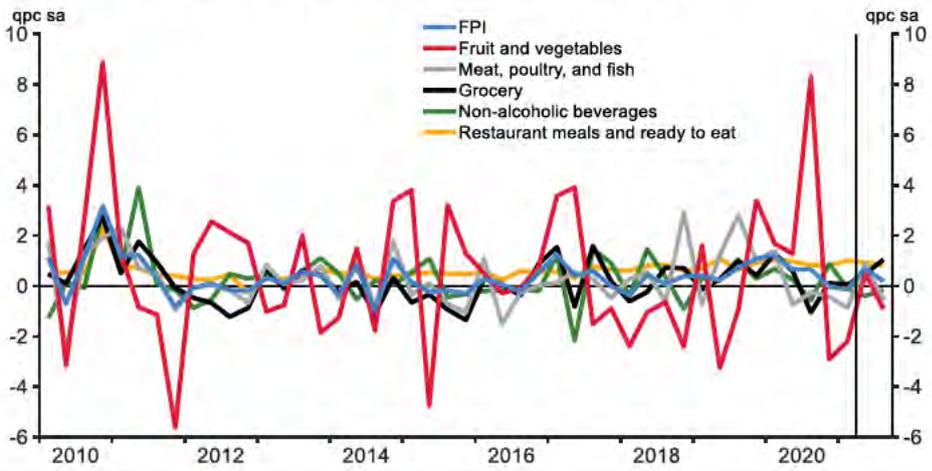
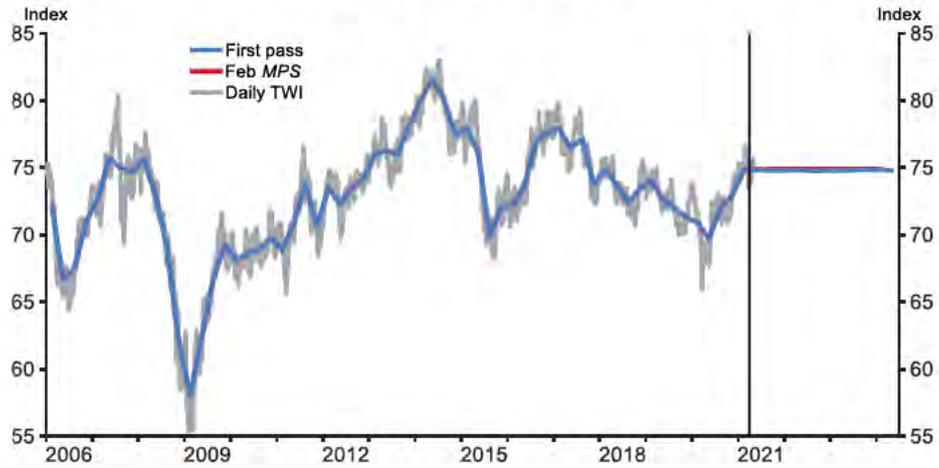


Figure 15: NZD TWI



NON-TRADABLES

Figure 16: Non-tradables and average



Figure 17: Cost pressures (QSBO)



Figure 18: Annual construction cost inflation

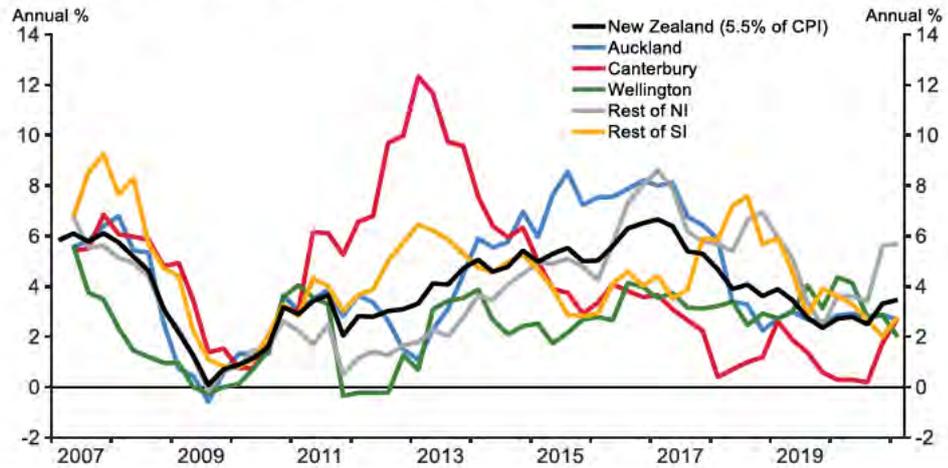


Figure 19: Construction cost inflation and indicator

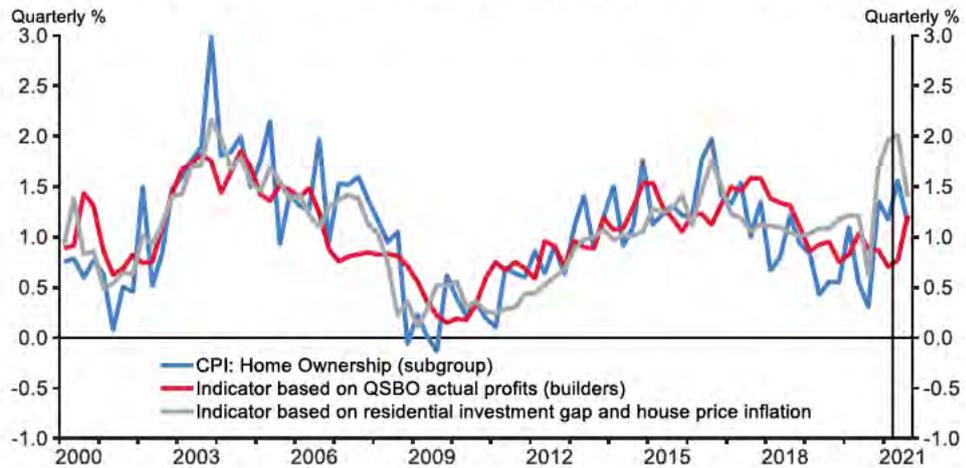


Figure 20: Non-tradables inflation and labour costs

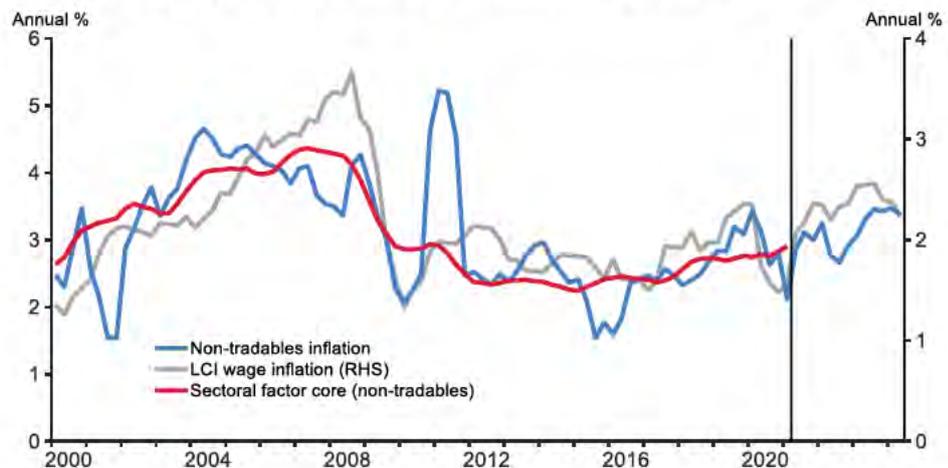
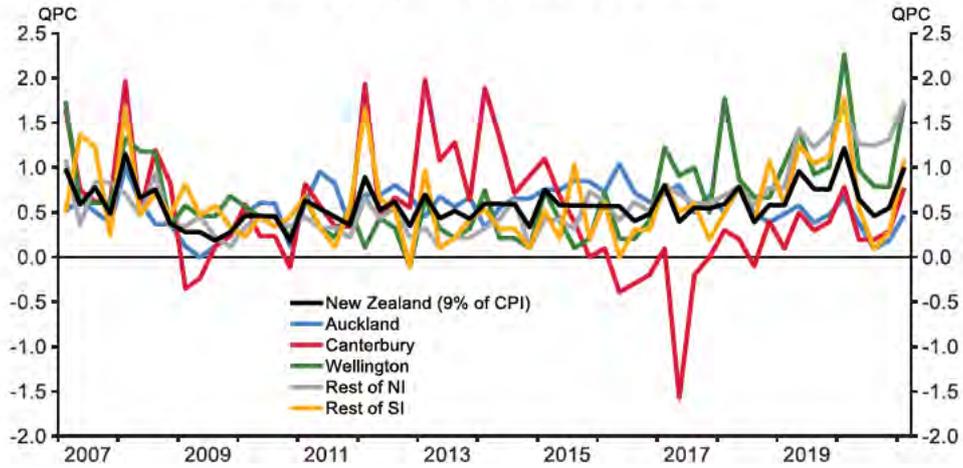


Figure 21: Rent inflation by region



MEDIUM-TERM INFLATION

Figure 22: NZSIM annual non-tradables inflation decomposition

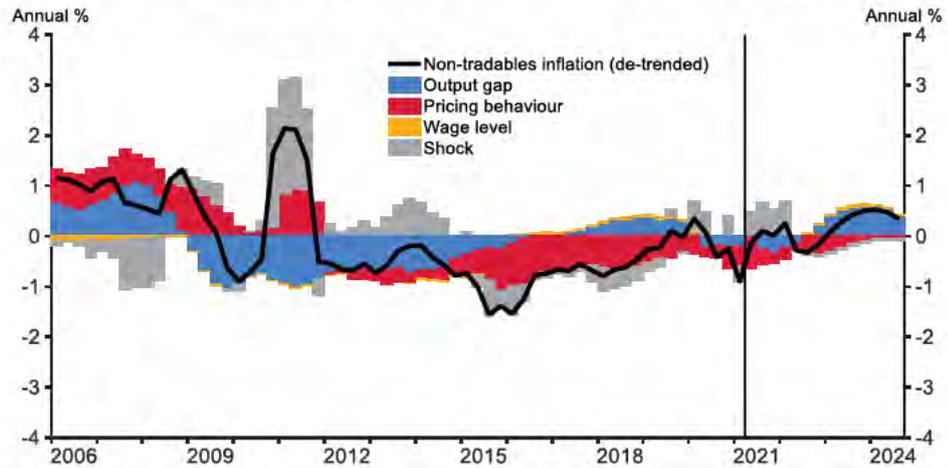


Figure 23: Non-tradables inflation decomposition

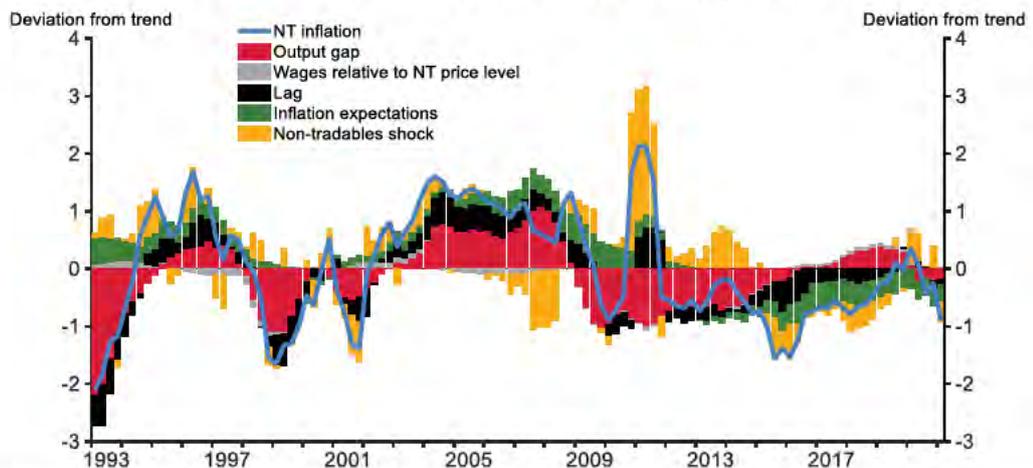
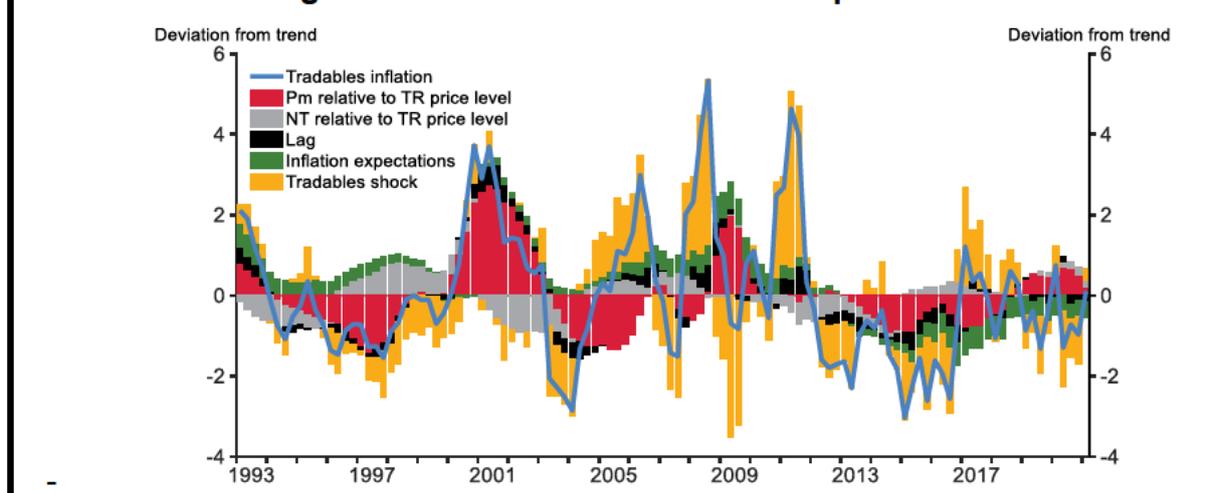


Figure 24: Tradables inflation decomposition



CPI COVID-19 DATA COLLECTION

Minimal data impacts from higher alert levels in Q1 2021.

In the March quarter there were minimal impacts on CPI data collection from higher COVID-19 alert levels in Auckland/rest of New Zealand over February/March. A vast majority (around 80%) of field collection had already occurred before higher restriction levels came into force, and field collection was able to resume later in the quarter. Survey collection rates were similar to the previous quarter.

Air flights and overseas accommodation prices are increasingly being re-measured as travel activity picks up.

Several Australian routes (Auckland to Sydney/Melbourne) have now reached the threshold of activity (20% of pre-COVID level) in the March quarter. This will likely accelerate in the June quarter as the Trans-Tasman bubble sees travel frequency and range of flights increase. International travel booked domestically (associated with these flight paths) will also be re-measured in tandem. This re-measurement is likely to accelerate from June with the Trans-Tasman travel bubble (assuming the bubble remains open and travel uptake is relatively high). Current measured flight costs in March were higher than pre-COVID-19, reflecting restricted plane capacity in the quarter.

These re-measured prices will be re-introduced at a lower weighting.

Weights on international airfares and overseas accommodation were reduced in the 3-yearly CPI re-weight in the previous (September) quarter. This reflects the enduring impact of international border restrictions on consumer expenditure patterns. StatsNZ intends to re-weight these specific items annually, in addition to the regular 3 year re-weight.

**SUMMARY****The Government has provided wide-ranging support to households and businesses**

In early 2020, the Government announced discretionary spending envelopes totalling \$62.1bn for the COVID-19 response and economic recovery (\$12.1bn initial support package + \$50bn COVID-19 Response and Recovery Fund (CRRF)). As at the *Half-Year Economic and Fiscal Update (HYEFU) 2020*, around \$53bn of the combined envelope had been (or was about to be) allocated, with another \$10.3bn available to be allocated in the future.

A significant portion of announced spending is financial support to households and businesses, including subsidies, transfers, loans, and tax relief. A key scheme has been the Wage Subsidy, under which \$14bn has been paid to employers. Income support has also been increased, including through the COVID-19 Income Relief Payment (CIRP) for people who have lost their job due to COVID-19, higher jobseeker payments, and a larger winter energy payment. Schemes for businesses are many, and include the wage subsidy, loans, tax relief, and support to adapt to changes in the economy.

Some significant measures, such as the Wage Subsidy, CIRP, and the higher Winter Energy Payment have ended. The Small Business Cash Flow Scheme has been expanded and extended to the end of 2023, with around 113,520 firms having drawn down a loan totalling \$1.7bn as at 2 March 2021.

Treasury's economic baseline forecast in the *HYEFU 2020* was that only \$50bn out of the \$62bn would be spent, implying a \$12bn underspend. In part this underspend reflects that New Zealand's economy has performed better than previously expected, so people and firms have required less support. There is also considerably less net spending coming through automatic stabilisers (\$6.9bn less over the 2021 and 2022 fiscal years than in *PREFU*). The stimulus through automatic stabilisers might turn out even less when taking into account recent tax revenues which have come in stronger than expected by Treasury.

Updated information will be provided in Budget 2021, to be released on 20 May 2021.

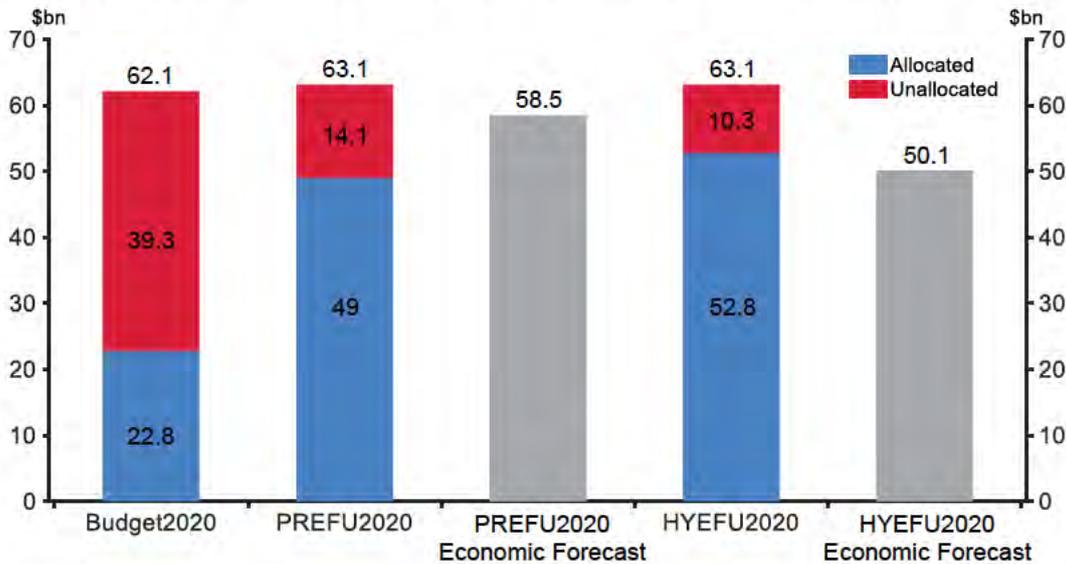
Not significantly more than usual government investment has come through from announced Government investment packages yet

The Government has allocated a further \$3bn for infrastructure spending, which adds to the \$12bn New Zealand Upgrade Programme that was announced with *HYEFU 2019*. In March 2021 the government announced a housing package which included additional residential and infrastructure spending amounting \$3.8bn. The funding for this package will be taken from the unallocated \$10.3bn of the CRRF.

However, these additional spending announcements have not increased government investment to much above usual levels, at least for now. Ramping up government investment (especially for bigger projects) takes very long lead times. Already the selection of potential projects for the NZ upgrade programme took almost a year. It also seems that some of the projects marked as "shovel-ready" were in fact not. As Treasury's Budget forecasts for crown government investment have constantly overstated spending in the first two years of the forecast horizon, we have decided to take these errors into account in our government investment forecast leading to a much lower track.

CRRF AND OTHER SUPPORT MEASURES

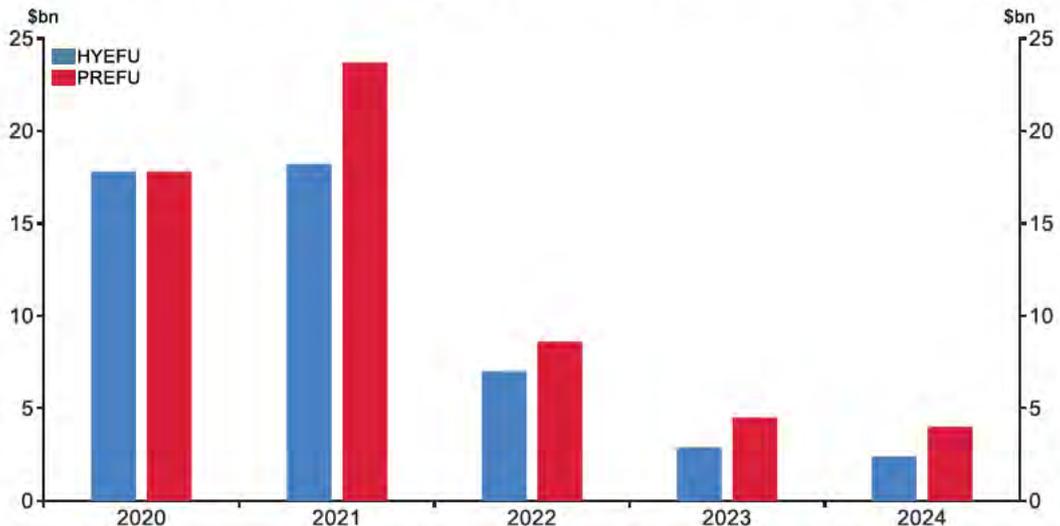
Figure 1: Summary of COVID-19-related government spending



Note: All values are nominal. The CRRF includes the initial support package of \$12.1bn. From Budget 2020 to the following PREFU 2020 and HYEFU 2020 \$1bn, a fraction of the expected underspent, is assumed to be added back to the fund. The funding for the \$3.8bn for the government housing package announced in March 2021 will be taken from the unallocated \$10.3bn of the CRRF.

Source: Treasury.

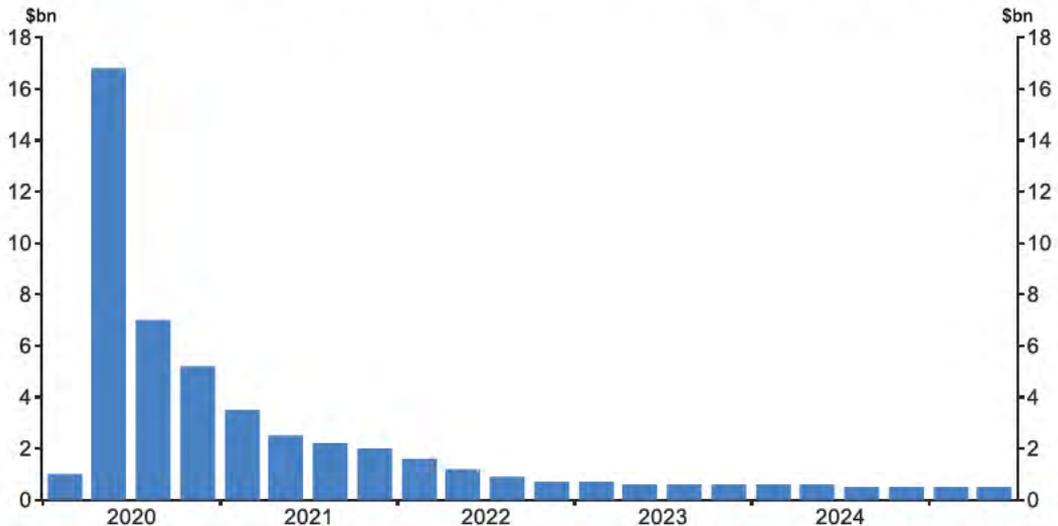
Figure 2: Indicative timing of COVID-19 discretionary spending



Note: In this chart, timing is based on when payments are made (or taxes forgone), not when these payments impact private spending. Total adds to ~\$50bn for HYEFU, but ~\$58bn for PREFU.

Source: Treasury.

Figure 3: Timing of COVID-19 fiscal stimulus in baseline scenario



Note: In this chart, timing is based on when payments are made (or taxes forgone), not when these payments impact private spending. Total adds to ~\$50bn. This is based on Treasury assumptions underlying the HYEFU.

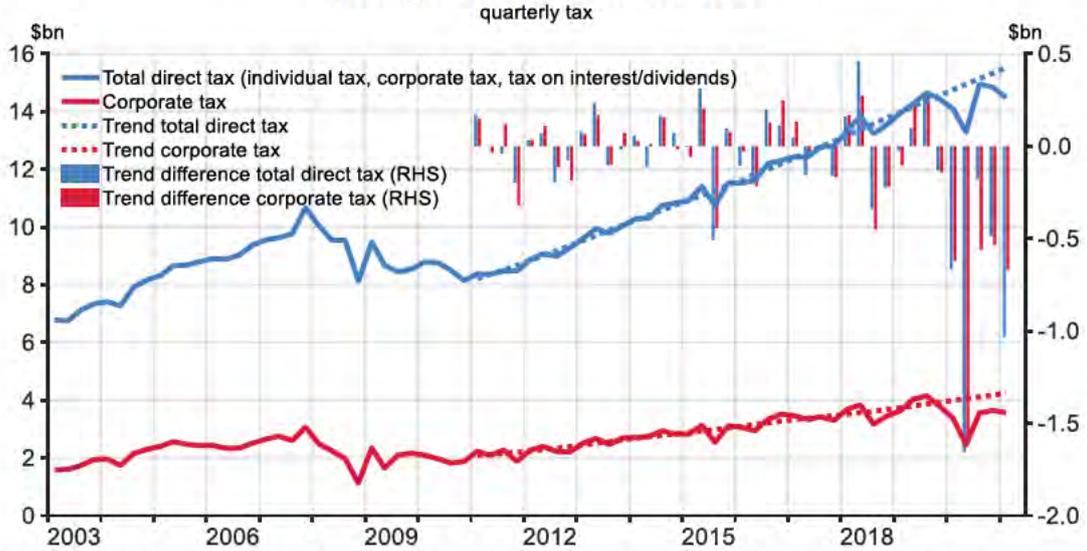
Source: Treasury.

Figure 4: Government support for businesses recovering from COVID-19



Diagram taken from [Government support for businesses recovering from COVID-19](#), which provides further information.

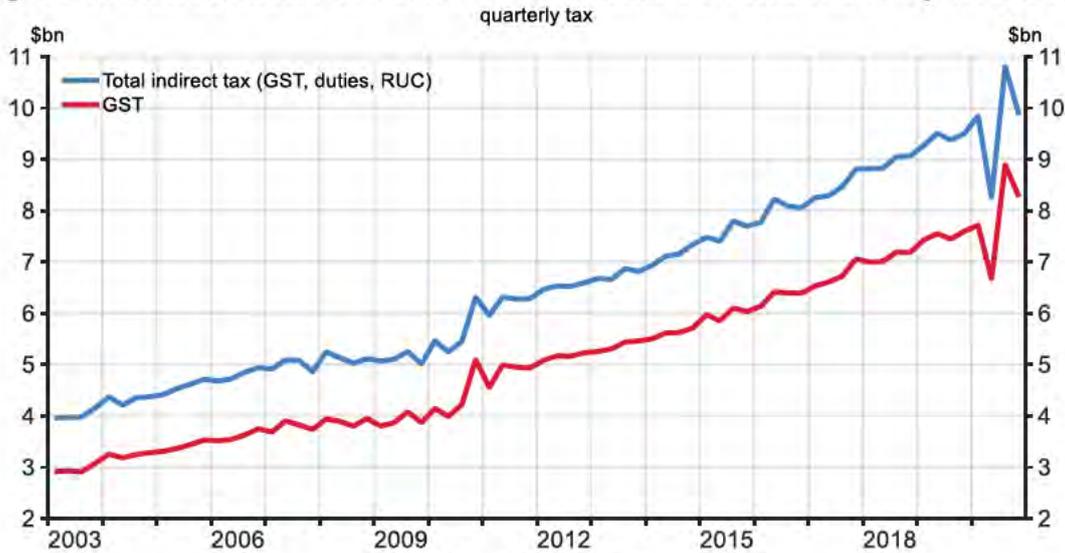
Figure 5: Differences of direct taxes to trend indicate less significant stimulus through automatic stabiliser



Note: This is only a very simplified approach to easily visualise the impact of automatic stabilisers through direct taxes.

Source: Treasury, RBNZ estimates.

Figure 6: Indirect taxes are back to trend and GST has made up its losses

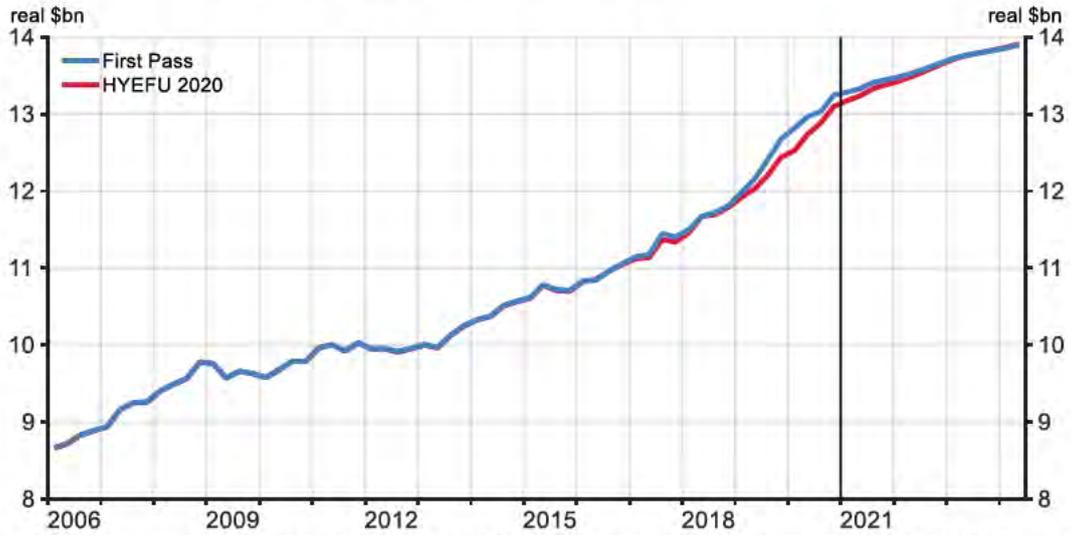


Source: Treasury.

Note: RUC stands for Road User Charges.

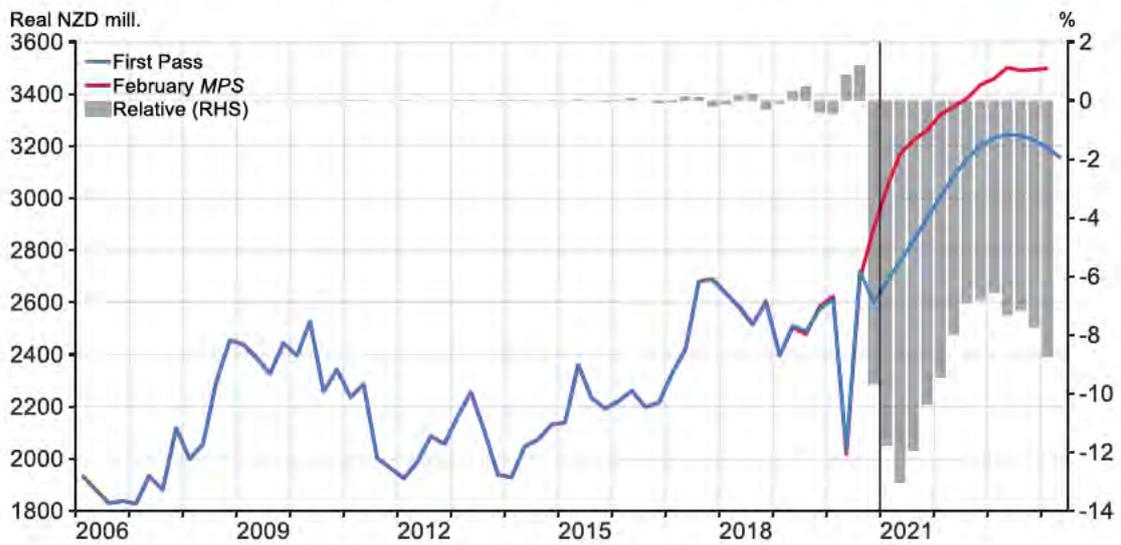
GOVERNMENT CONSUMPTION AND INVESTMENT

Figure 7: Real government consumption



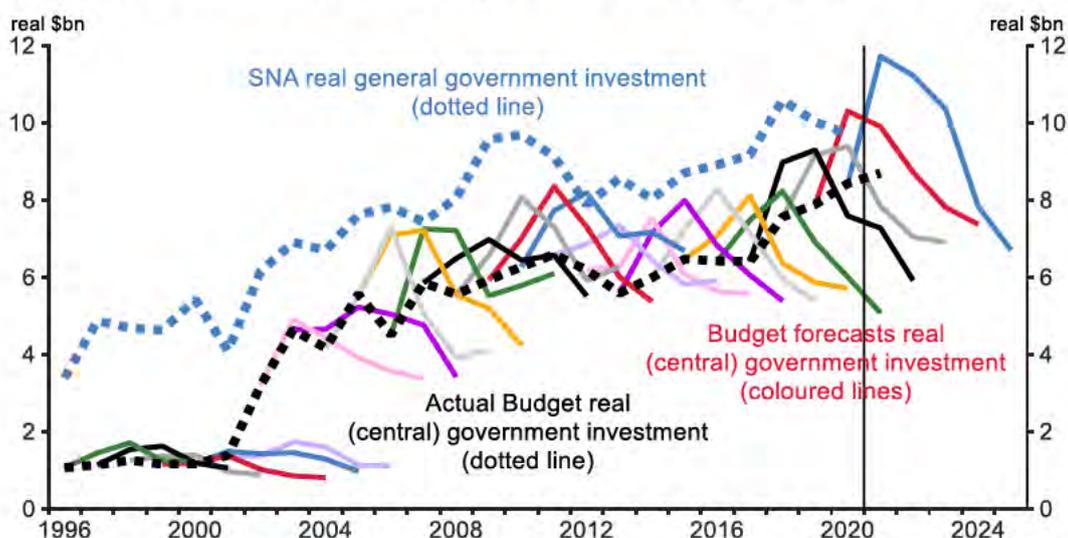
Note: We directly use the economic forecast from Treasury for government consumption and only adjust for more up-to-date GDP outturns.
 Source: Stats NZ, Treasury, RBNZ estimates.

Figure 8: Real government investment



Source: Stats NZ, RBNZ estimates.

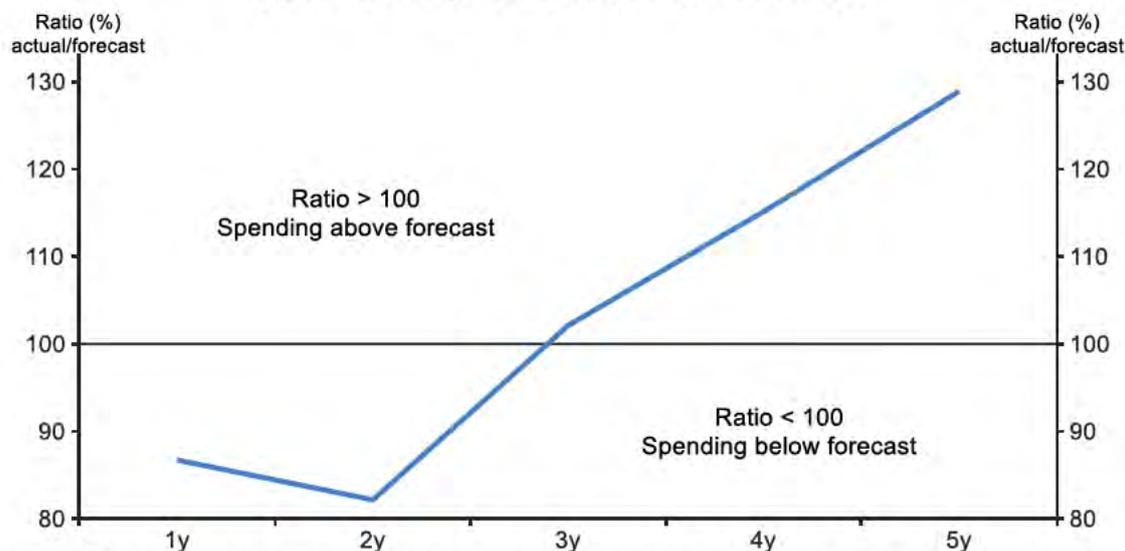
Figure 9: Persistent error in Budget forecasts for government investment



Note: June years. Budget investment shown is for total crown and the sum of 'Net (purchase)/sale of physical assets' and 'Net (purchase)/sale of intangible assets' (i.e. without 'new capital spending' which covers unallocated investment). The outturn for 2021 (black dotted line) is an estimate based on the Interim Financial Statement of February 2021 which covers therefore 8 months already but is scaled up to a full year.

Source: Treasury, Stats NZ, RBNZ estimates.

Figure 10: Average adjustment coefficient for government investment Budget forecasts to get closer to actual outturns

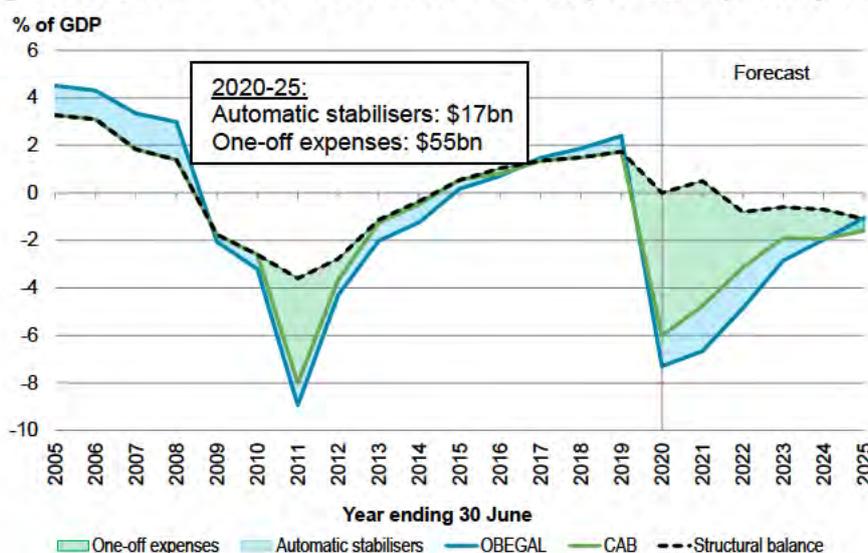


Note: The chart shows the average adjustment coefficient needed in each year of the Budget forecast for government investment to bring the forecast closer to actual outturns.

Source: RBNZ estimates.

FISCAL BALANCES AND CORE CROWN DEBT

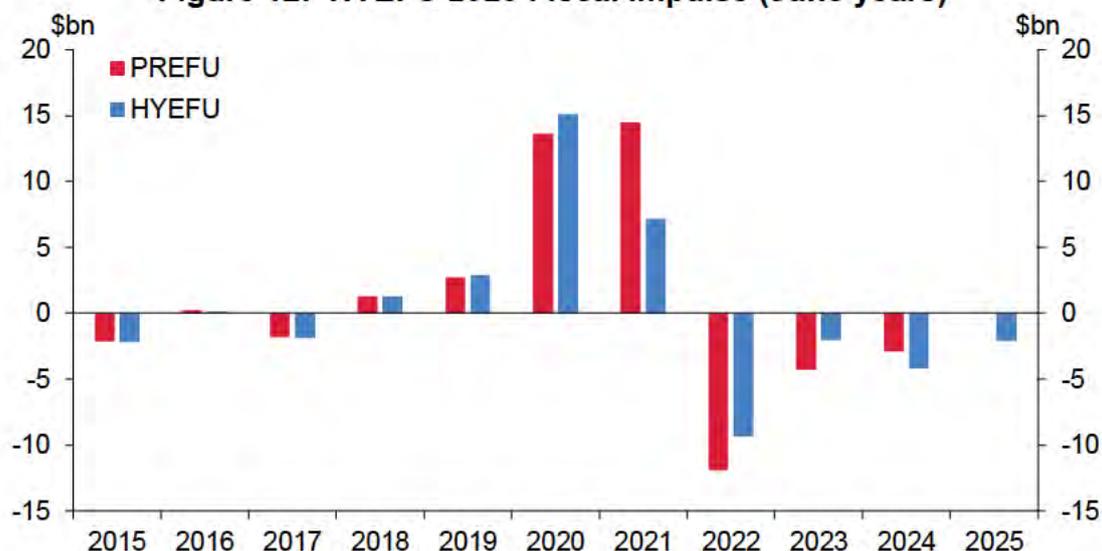
Figure 11: HYEFU 2020 OBEGAL decomposition (June years)



Note: CAB refers to the Cyclically-adjusted balance which excludes the impact of changes in spending/revenue through automatic stabilisers. It is used to indicate discretionary-changes in government spending.

Source: Treasury.

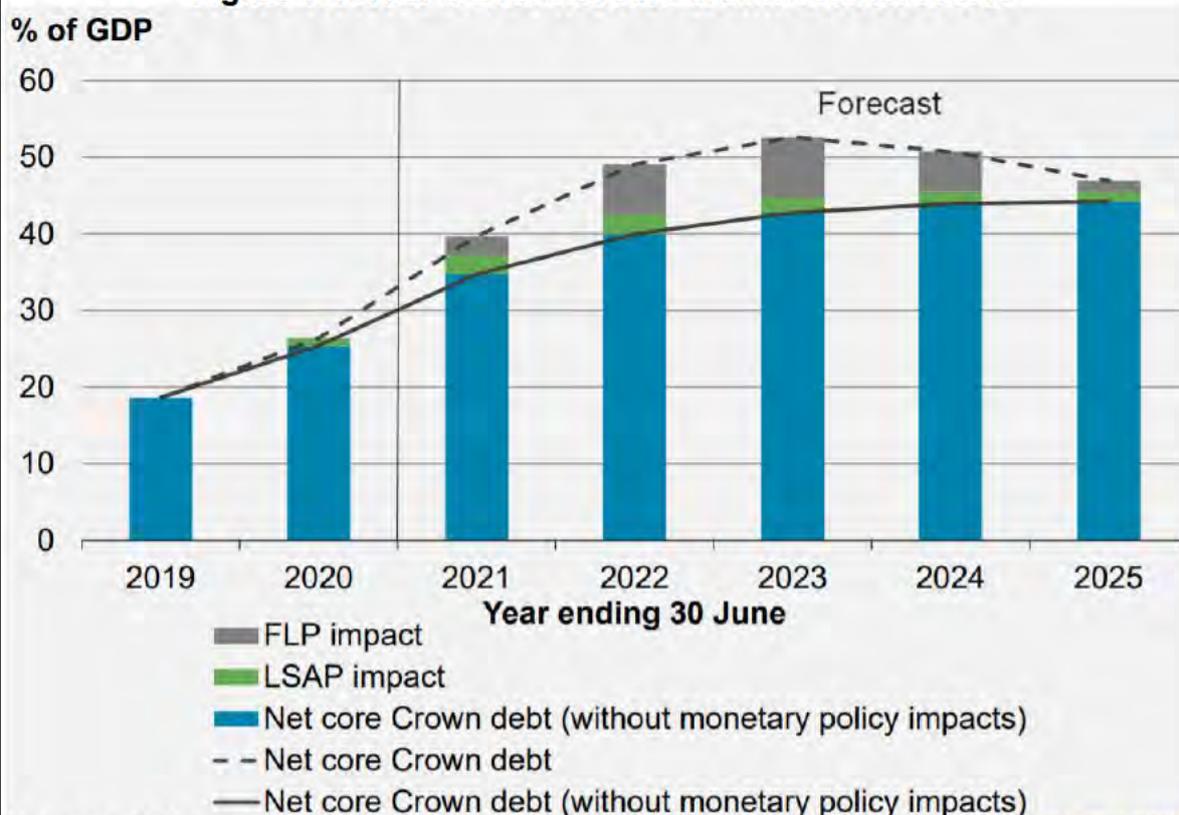
Figure 12: HYEFU 2020 Fiscal impulse (June years)



Note: The fiscal impulse is an indicator of the first round effects on aggregate demand of discretionary fiscal policy. The idea is that a decrease in the operating cash surplus generates a positive impulse to demand and vice versa. The impact of spending on capital and student loans is also taken into account. The fiscal impulse is a measure in the *change* in these factors year-on-year, which is why it is strongest in the 2020 Fiscal year.

Source: The Treasury.

Figure 13: HYEFU 2020 net core crown debt forecasts



Note: The LSAP and FLP interactions with these measures are outlined on page 40 of [HYEFU 2020](#). Both are form-over-substance issues.

- For FLP the usual net core crown debt measure doesn't net off the FLP assets (our loans to the banks), but treats the higher settlement cash as debt.
- For LSAPs, when the bonds are purchased by RBNZ the bonds are 'eliminated' through consolidation of RBNZ w/ the rest of government. The reduction in reported debt is 'matched' by the increase settlement account balances 'owed' to banks. Ideally these should offset. However, the 'eliminated' bonds are usually recorded on a 'historical cost' basis, lower than the current market value the RBNZ pays for them. Had they been recorded at fair value, this issue wouldn't arise. This issue also impacts the interest revenue/expenses reported by Treasury.

Source: The Treasury

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11 FEBRUARY 2021

Paper 5

How much stimulus is needed?

Forecasting team

Authors: Hamish Fitchett and Marea Sing

SUMMARY

New Zealand's growth, employment, and inflation have surprised to the upside over the second half of 2020. Economic activity has been more robust and the economy is in a much better starting point than previously anticipated.

Asset prices, in particular house prices, have been more resilient to COVID-19 disruptions than initially expected. This momentum is likely to persist in the near term. Asset price growth has supported consumption, helping nudge up firms' future investment intentions. As a result, the output gap has been revised upwards.

The global growth outlook has improved slightly since the November *MPS*, and demand for New Zealand exports has been strong. Increased demand for dairy exports has driven prices significantly upwards. This more than offsets the increase in oil prices over late-2020 and early-2021, improving New Zealand's terms of trade. Higher export prices, a more resilient domestic economy, and declining global uncertainty has put upwards pressure on the TWI, dampening medium-term tradables inflation.

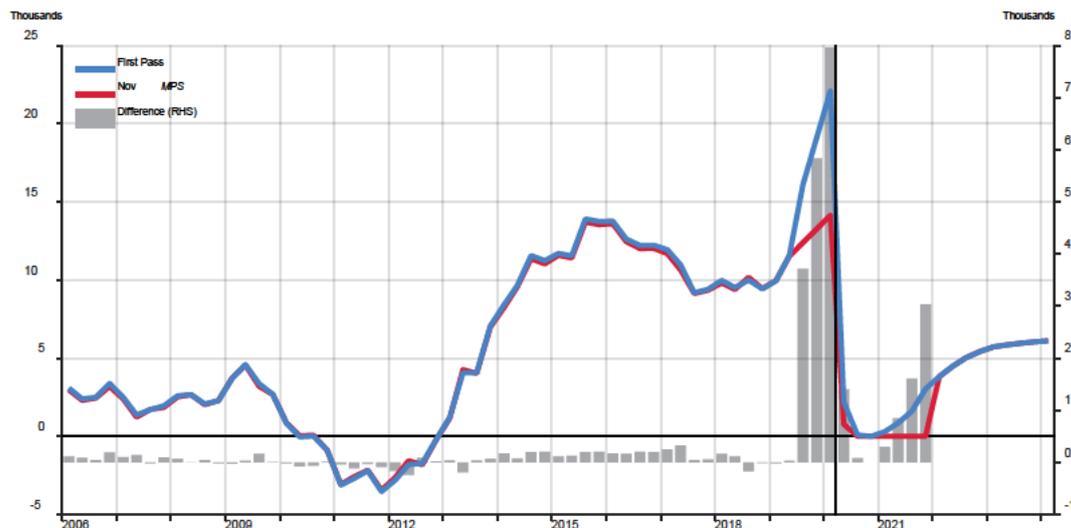
CPI inflation has been revised upwards over the forecast to reflect a stronger domestic economy and the impact of supply-chain disruptions. The unemployment rate has been revised significantly downwards since the November *MPS*. However, it remains elevated compared to pre-COVID-19 levels, tracking down over the forecast. The projections explicitly allow for a moderate overshoot in inflation and employment, in line with the "least regrets" stance of the MPC.

The resilience of the domestic economy has meant the need for fiscal and monetary stimulus has been reduced. The COVID-19-related fiscal spending has been scaled back. The OCR track is higher than projected in the November *MPS*, as strong economic outcomes and expected momentum have reduced the total amount of monetary stimulus required to meet our economic objectives in the baseline scenario. Given that potential remains for additional FLP pass-through, we project that no significant additional stimulus will be needed.

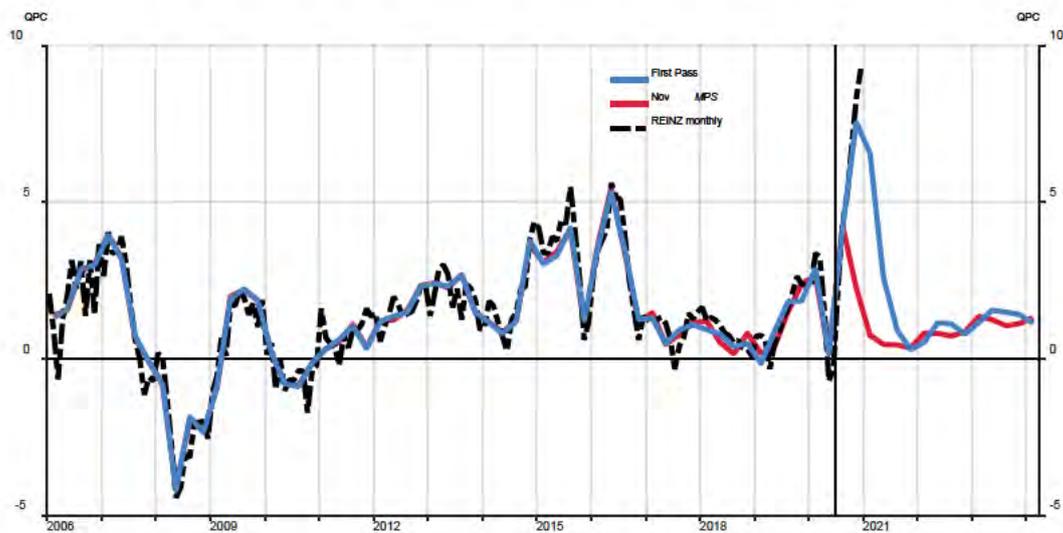
Strong house prices support an economic bounce-back...

- **House price growth was substantial over late 2020.** House prices have surprised to the upside. Key drivers include the stronger-than-expected labour market, low mortgage rates, the removal of LVR restrictions, and the large number of New Zealanders returning home from abroad (see *Paper 4.1: Household developments*).
- **Migration supports house price growth.** We have revised up our view of migration prior to the implementation of border restrictions. We now expect more of the New Zealanders who arrived to stay, and more non-New Zealanders to have behaved like migrants instead of tourists (figure 1). This stronger flow of migrants explains much of the previously unexplained strength in house prices.

Figure 1: Migration pre-COVID was stronger than previously thought



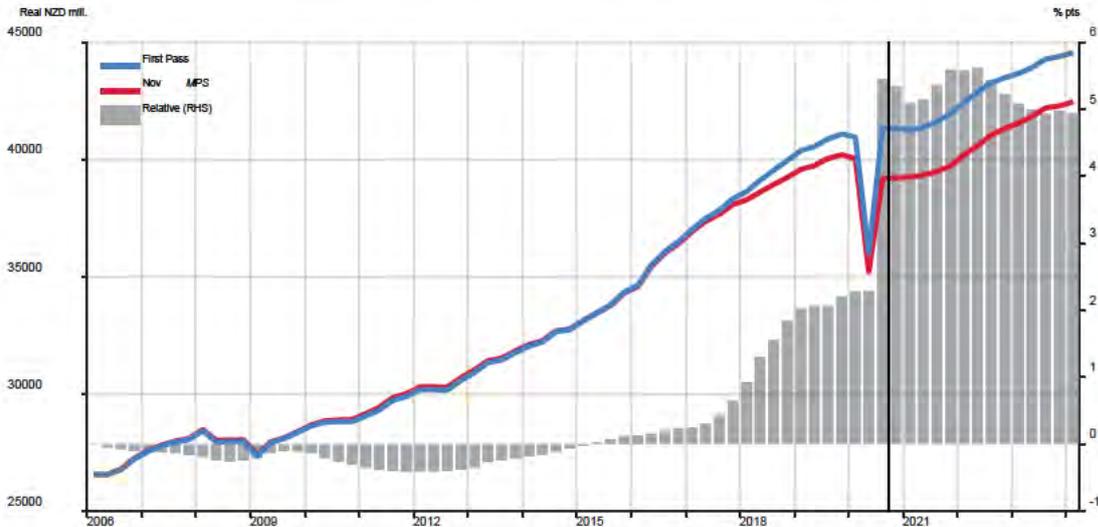
- **The housing market is expected to cool over the medium-term.** The house price growth forecast incorporates some additional moderation from mid-2021 for the reintroduction of LVR restrictions and the signalled government housing package (figure 2). Over the projection horizon, growth in house prices is expected to return towards trend as mortgage rates stop declining, borders reopen, residential investment eases supply constraints, and sentiment shifts to moderate the “buy now or never” effect reported by BIC contacts.

Figure 2: House price strength dissipates over the medium term

... *but momentum is expected to soften over the coming year.*

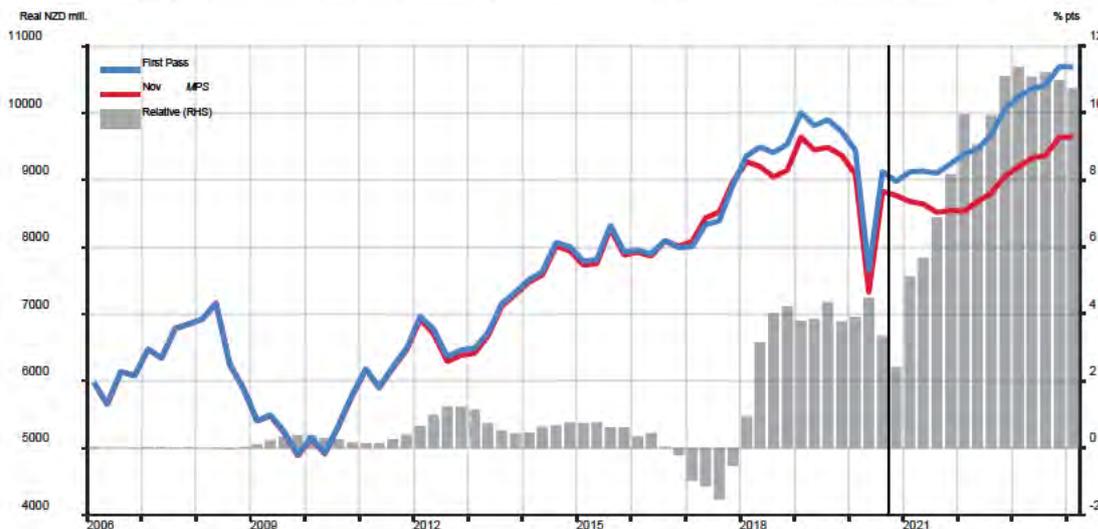
- **The domestic economy has been stronger than expected, with near-term strength in consumption a key driver.** Timely indicators for aggregate activity have returned to similar levels to a year ago, suggesting that some momentum will continue into early 2021 (*see Paper 1: Where are we relative to our economic objectives?*).
- **Consumer spending is likely to consolidate, as opposed to pull-back** as previously expected. Consumption is expected to follow a high, yet flat, profile over 2021. This is largely driven by a moderation in house price growth (figure 3), and a mild deterioration in employment and activity as domestic tourism starts to wane and borders remain closed.

Figure 3: Consumption to remain robust



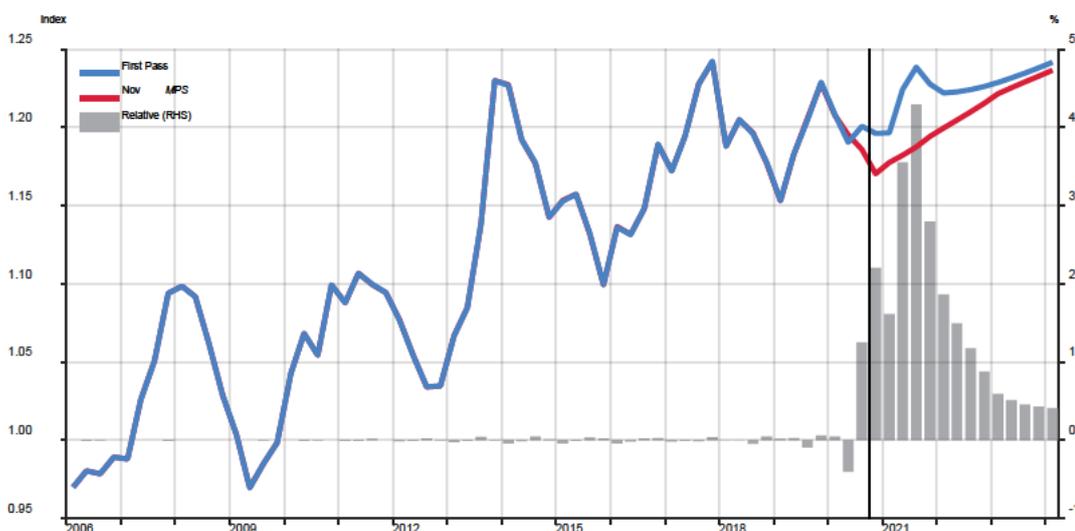
- **Another key driver has been the strength in business investment.** Business investment has been revised up significantly, but remains below pre-COVID-19 levels until late 2023 (figure 4). The near-term strength reflects rebounding business confidence and investment intentions as current domestic demand surpasses previous expectations (see *Paper 4.2: Business developments*). Over the medium term, the less negative output gap and low interest rates feed through into strengthening business investment, but uncertainty still weighs on firms and causes the recovery to be relatively gradual.

Figure 4: Business investment muted until borders re-open



- Residential investment is stronger in the near term, reflecting a robust housing market.** House price inflation sustains residential investment growth until house price rises start to moderate towards the second half of the projection. This reflects insights from our BIC contacts that report a large backlog of construction work, and that ongoing low interest rates also continue to underpin demand in the sector.
- New Zealand's goods exports have performed well and are expected to provide additional strength over the forecast.** Goods export volumes have been robust through the last year and prices have increased. In particular, dairy export prices have increased significantly as Chinese demand continues to grow. China has been more resilient to the pandemic than other economies, and it is likely that prices will remain elevated over the medium term.
- Import prices have ticked up with an increase in oil prices.** Near-term supply-chain disruptions have also temporarily increased freight costs and reduced import availability. Medium-term imported inflation pressures in our key trading partners are expected to be low as global spare capacity lingers following the COVID-19 economic disruptions.
- Stronger export prices relative to import prices results in a higher terms of trade** (figure 5). As a result, our trade balance and current account positions are improved relative to our previous expectations. TWI appreciation over recent months provides a partial offset to some of this strength (*see Paper 3.1: International economic and financial markets developments*).

Figure 5: Higher export prices drives a terms of trade increase

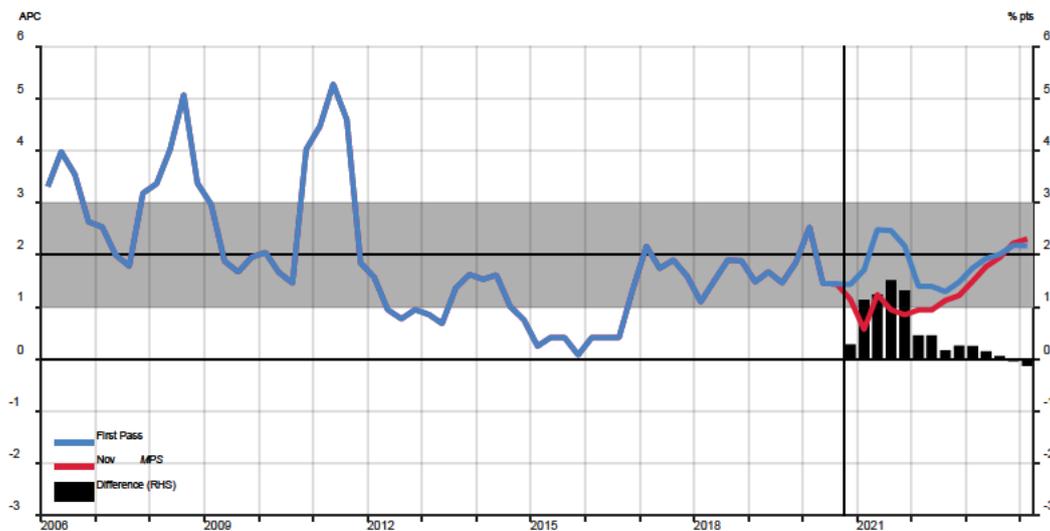


GDP and potential growth modest in the near term, recover in the medium term

- The level of GDP is expected to consolidate over 2021 after the recent strong recovery. Future growth is expected to be flat until borders reopen. Potential growth is expected to be low but positive, resulting in a widening output gap over the near term – albeit more muted than previously expected. Skills shortages persist while borders remain closed, weighing on firms ability to expand production.
- A comparison of our forecasts to the major banks is provided in the appendix.

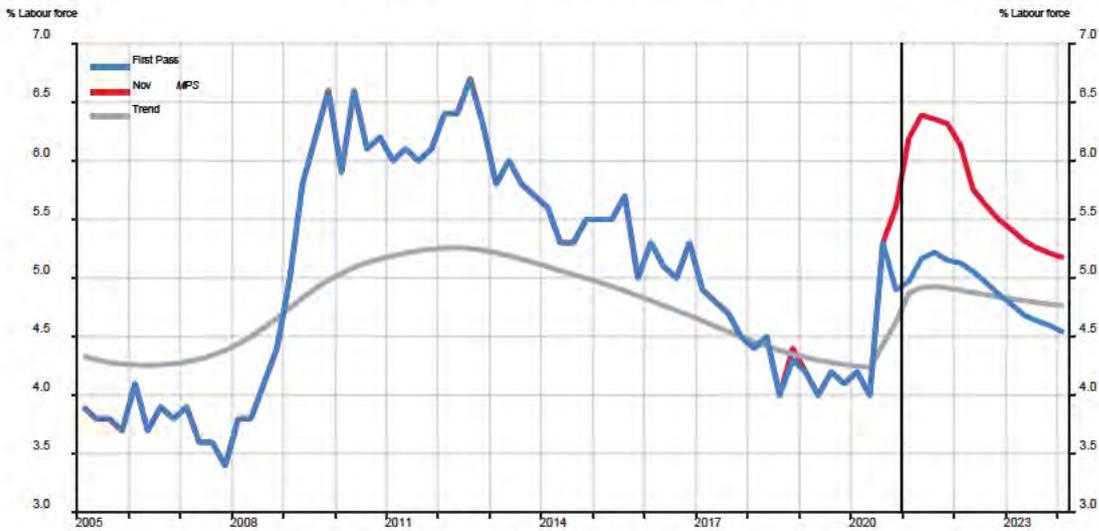
IMPACT ON OUR TARGET VARIABLES

- **Inflation remains within the target band and oscillates around the 2-percent target midpoint, slightly overshooting at the end of the forecast horizon.** Inflation is expected to reach 2.4 percent in 2021 (figure 6). Tradables inflation is strong over the next few months due to rebounding oil prices. Non-tradables inflation is boosted by strong price and cost momentum in the housing market, including construction cost growth. Business contacts also point to above average rates rises by larger councils, including Wellington and Auckland. These temporary factors partly unwind later in 2021 as house price growth and oil prices moderate. A slight widening of the output gap sees inflation temporarily dip back into the bottom half of the inflation target band.
- **Inflation recovers over the second half of the projection horizon** as the output gap turns positive, driving non-tradables higher. Borders open and exports of services recover. Higher inflation expectations help embed higher inflation. The unconstrained OCR remains softer for longer to allow for an overshoot in inflation at the end of the forecast horizon.

Figure 6: Targeted inflation forecast

- **The labour market has been far more robust than anticipated, with unemployment falling to 4.9 percent at the end of 2020** (see *Paper 1: Where are we relative to our economic objectives*). This reflects significant monetary stimulus and fiscal spending, in particular the wage subsidy. Our revised view reflects a slower softening in labour markets with unemployment dipping below the NAIUR towards the end of the forecast horizon – consistent with the MPC’s ‘least regrets’ strategy.
- **This is a tale of a two-speed economy.** The tourism industry bore the brunt of the closed borders and faced significant job losses, despite domestic tourism running at over 100 percent. This spilled over into the retail sectors in mid-2020. The lost jobs in tourism are unlikely to return until borders open, assumed at the start of 2022 (see *Paper 3.2: Border restrictions: Implications*).
- **A booming housing market and construction sector have been able to absorb some of these job losses** and keep unemployment from skyrocketing towards the teens, as feared during the early days of the COVID-19 world. A softening housing market over 2021 will put pressure on what has been a rock star sector over the last year.
- Together, this causes unemployment to slowly increase towards a peak of 5.2 percent in late 2021 before borders reopen and the tourism industry comes back online. The unemployment rate eases slowly back towards 4.5 percent at the end of the forecast horizon (figure 7).

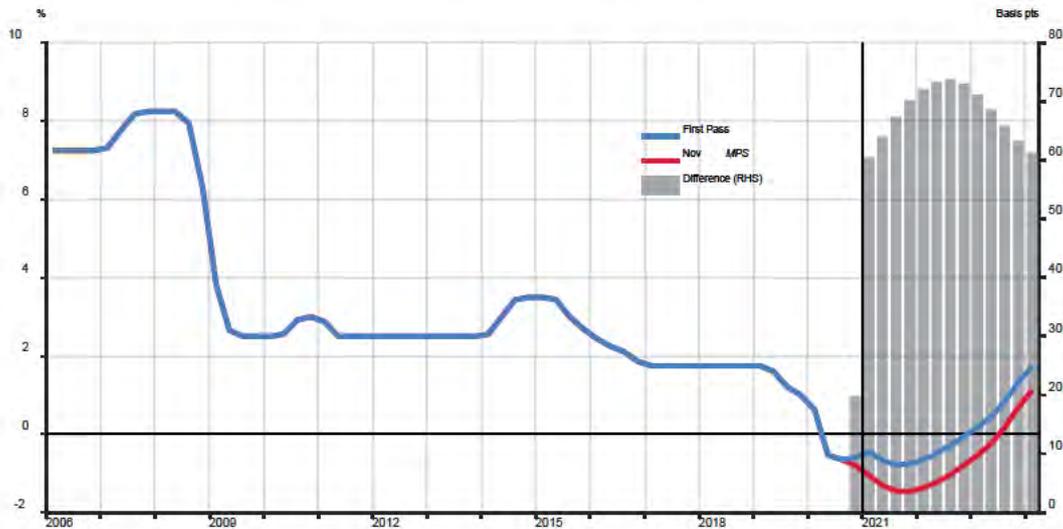
Figure 7: Unemployment rate



POLICY OUTLOOK

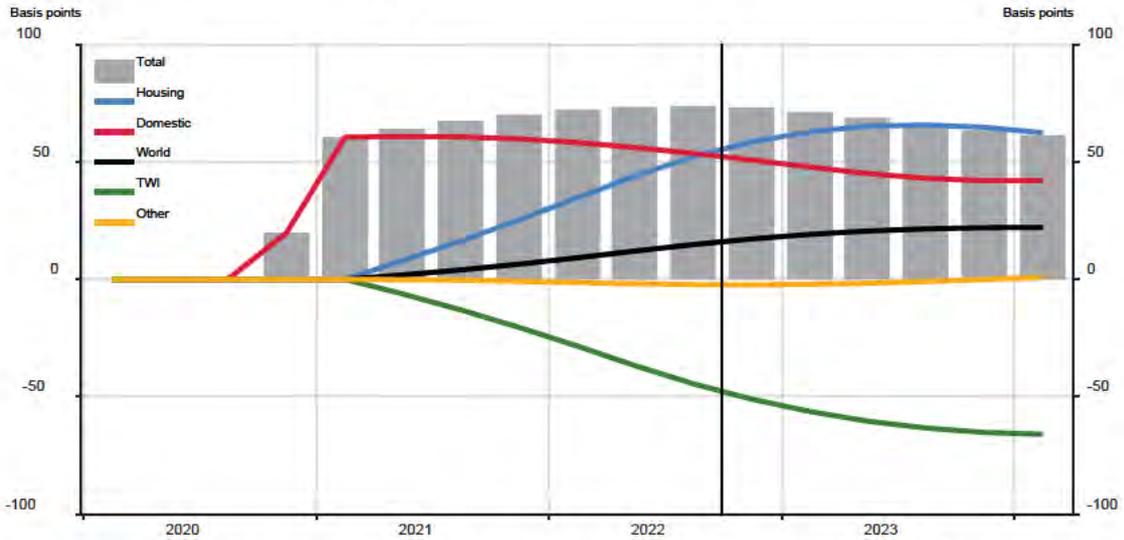
- **The OCR track has been revised upwards since the November *MPS*, and now reaches a trough of -0.78 percent in 3Q2021** (figure 8). The upward revision to the OCR mainly reflects the near-term strength in the economy, which has reduced the total monetary stimulus required. There has been a tightening in estimates of the unconstrained OCR since last round. However, given that potential remains for additional FLP pass-through, we project that no significant additional stimulus will be needed (*see Paper 2: How much stimulus are we providing*).

Figure 8: OCR track: Upwardly revised



APPENDIX

Figure 9: OCR Reconciliation chart



Note: **'Housing'** captures the strong upward revisions of the house price and residential investment tracks. **'Domestic'** shows near-term positive revisions to exports, consumption, business investment, GDP and the labour market. **'World'** shows the positive impact of a stronger global outlook and an improved terms of trade. **'TWI'** shows the negative impact of a higher TWI not explained by domestic fundamentals. **'Other'** mainly shows the aggregate impact of a downward revision of the neutral OCR from 2.25 to 2 percent, adjustments to potential GDP and the NAIRU, a decrease in mortgage spreads, and a delayed start to changes in capital requirements.

MAJOR BANKS' FORECAST COMPARISON

The RBNZ and major banks are expecting a broadly similar outlook for the economy, although the range of estimates remains wide.

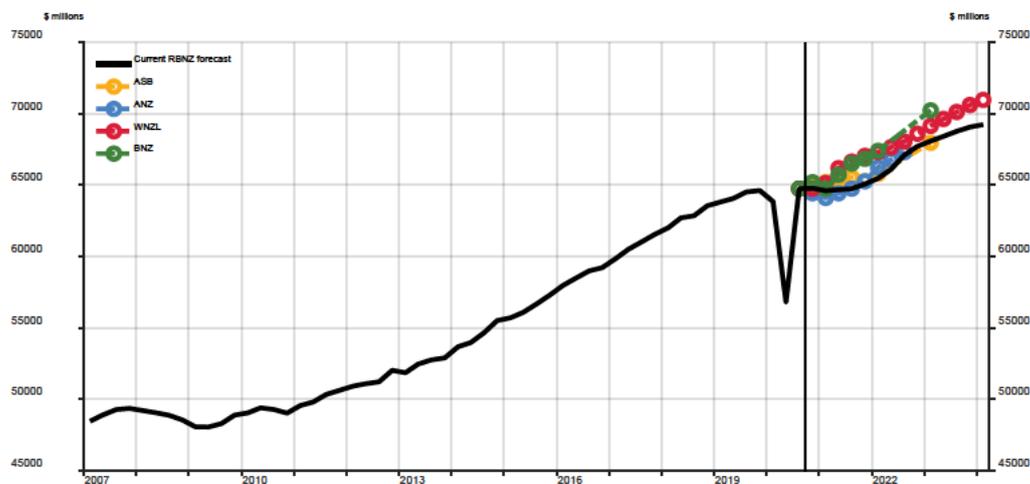
- The banks expect that GDP momentum continued after the strong rebound in the September quarter 2020. Some banks expect growth to be soft over 2021, consistent with the *First Pass* scenario while others anticipate strength to persist.
- Labour market conditions are expected to improve over the forecast, with most banks expecting that unemployment has already peaked. Unemployment is expected to recover much faster than previously.
- The banks expect CPI inflation to spike around 2 percent in 2021, before easing as temporary factors drop out. As the economy starts to recover the banks are predicting a similar return to 2 percent as in the *First Pass*.
- The banks expect a flat OCR of 0.25 percent over the forecast, with one picking an increase.

[Note: private bank forecasts sourced from 5th-9th February 2021]

Economic outlook

- Most of the private banks forecast that the strong rebound in economic activity over the September 2020 quarter will not be unwound (figure 1). They are split into two groups. Some anticipate a subdued pace of economic growth heading into early 2021, before growth picks-up again through late 2021 and 2022. Others expect the pre-COVID-19 growth rates to return from early 2021. The projections for GDP are largely consistent with the *First Pass* scenario but indicate some upside risk.

Figure 1: GDP forecasts
(Real \$ millions, s.a.)



Labour market outlook

- All of the private banks have revised down their unemployment forecasts after the Q4 labour market surprise (figure 2). The private banks are forecasting unemployment to either peak in 2021 or have already peaked. They are expecting it to decline relatively quickly compared to previous forecasts. Our forecast recovery is slower than the private banks – again indicating that there is upside risk over the medium term.

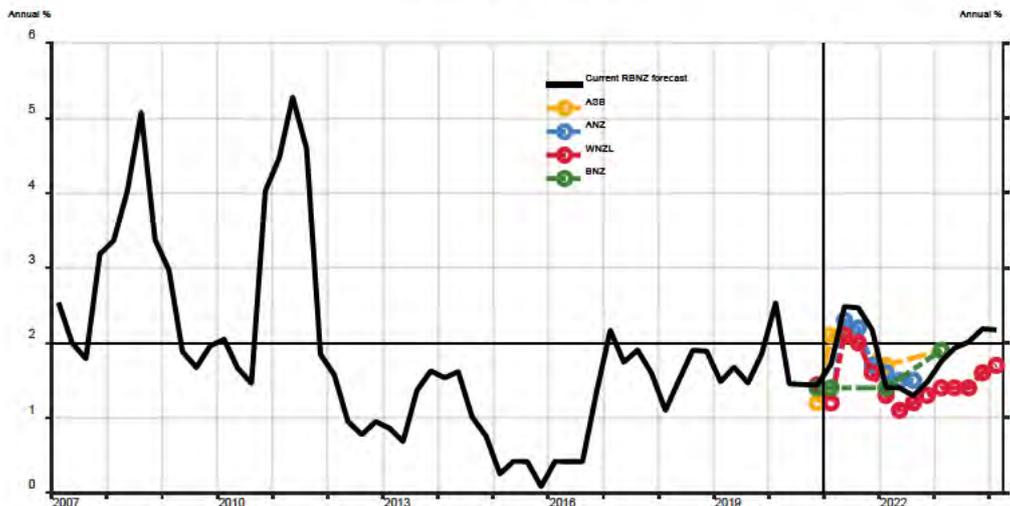
Figure 2: Unemployment rate forecasts
(Percent, S.A.)



Prices

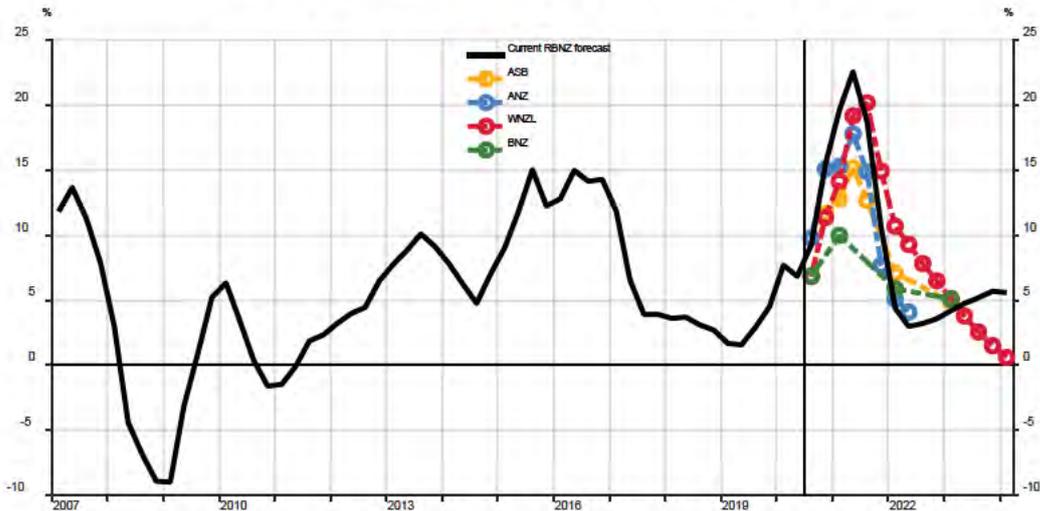
- The big four banks are largely on the same page as the RBNZ regarding the near-term CPI inflation outlook. With one-off factors and excess capacity opening up in the economy, inflation is expected to spike up and then drop to the lower part of the target band (figure 3). Our *First Pass* scenario is largely in line with the private banks.

Figure 3: CPI inflation forecasts
(Annual percent)



- House price inflation was surprisingly strong in 2020, despite most professional forecasters expecting house prices to fall. Most of the private banks are now expecting a more persistent rise in house price inflation but the range is wide, with house price inflation moderating in 2022 (figure 4). Our *First Pass* scenario is similar to other private banks, but we expect slightly stronger near-term growth.

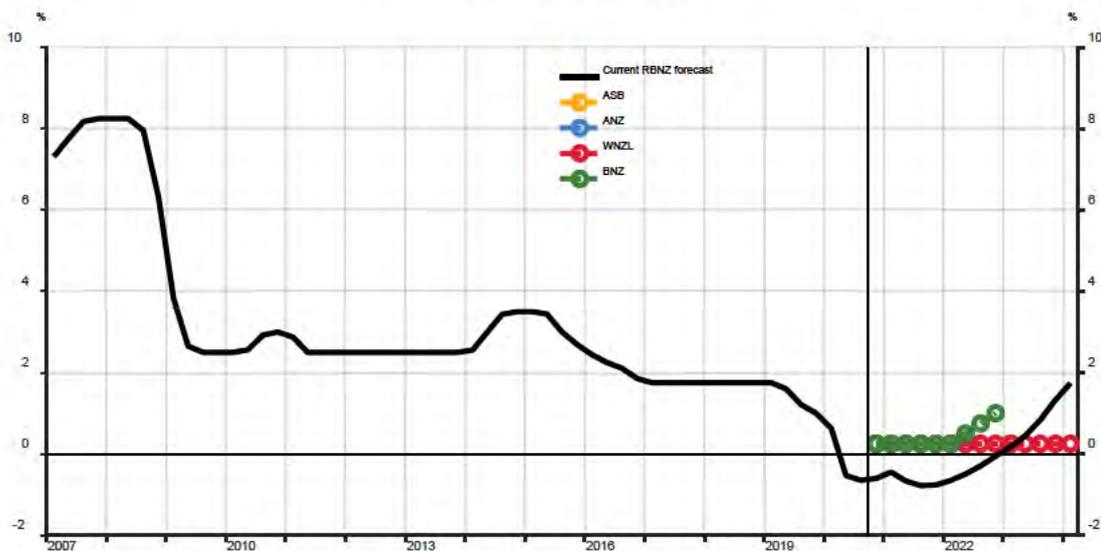
Figure 4: Annual house price inflation forecasts



OCR outlook

- The private banks are all forecasting that the OCR will be flat at 0.25 in 2021 (figure 5). However, there is some disagreement over how far and how fast we will move rates up. BNZ expects rates to tighten from early 2022, while the rest of the private banks expect the OCR to remain flat until the end of the forecast horizon.

Figure B.5: OCR projections
(RBNZ is unconstrained)





Paper 5.1

The calibration of monetary policy tools

IMPACT / Monetary Policy Committee

Authors: S. Bernhard, M. Callaghan, D. Craigie, R. Fujii-Rajani, C. Haworth, J. Knowles, L. Reideman

PURPOSE

The OCR is now a 'live tool' to be adjusted in either direction, and the LSAP programme is facing increasing constraints as government bond issuance declines.

Given this, this paper provides an updated assessment of the LSAP programme relative to the OCR against our AMP principles, discusses how the two tools should be communicated, and weighs the pros and cons of actively recalibrating the tools to provide more of the required stimulus via the OCR.

EXECUTIVE SUMMARY

We recommend the MPC:

- **Note** how our beliefs on the effectiveness of LSAP purchases have been refined:
 - We expect ongoing LSAP purchases to hold bond yields and the exchange rate lower than otherwise. But we believe that marginal purchases today are less effective than in March 2020, when market functioning was impaired and the OCR constrained.
 - We expect OCR changes in the current environment to be more effective and efficient than changes in the LSAP programme size. This assessment may change in times of distressed markets.
- **Note** that a \$100bn LSAP programme is not feasible given NZDM issuance guidance.
 - Market participants are aware that the previous \$100b limit is currently constrained by the indemnity, and our current purchase pace (if maintained) would see us holding \$70bn of assets by the end of the programme.
- **Decide, internally**, on a preferred LSAP size of \$60bn, \$70bn or \$80bn by end-June 2022.
 - This corresponds to average weekly purchases of \$160m, \$350m, or \$540m, respectively.
 - This assessment is contingent on NZ Debt Management updates on 20 May. We will provide a brief update to this note once new issuance projections are released.
- **Decide** on the level of operational decision-making for bank staff to retain on the weekly purchase pace and composition of bonds, subject to reaching MPC's LSAP target size by end-June 2022.
- **Decide** whether to communicate this aim for the *net* stock of LSAP at the May MPS.
 - The MPC's focus on the total purchase size of the LSAP programme provides a clear policy signal (as the literature focuses on the total *stock* as most important), and will further remove the focus from the weekly run-rate as a policy signal.
- **Decide** whether to publish the associated OCR track in the May MPS.
 - The associated OCR track is estimated to be calibrated to the LSAP programme size so that monetary policy settings are the same across the packages.
 - We estimate that a \$10bn reduction in the total LSAP size requires an OCR track that is approximately 7bp lower, but with substantial uncertainty around these estimates.

RE-ASSESSING OUR BELIEFS ABOUT THE LSAP PROGRAMME

This section summarises some of our beliefs about the LSAP programme, and highlights changes. Appendix A provides additional details and references.

How do LSAP purchases work?

- *Channels (unchanged)*: LSAPs still primarily work through the portfolio rebalancing, signalling, and market functioning channels (see appendix). These channels help ease financial conditions and lower funding costs, and transmit to the wider economy.
- *Stock vs flow (updated)*: Central banks and the literature still tend to place most weight of the LSAP impact on the announced stock of assets to be purchased, rather than the flow of purchases over time, in driving the overall effect of LSAPs (in turn, most of the effect is attributed to the initial announcement). However, the flow effect might play a larger role during periods of sharp market dysfunction, when purchases of illiquid assets can increase turnover and support market making activities.¹

How much stimulus do LSAP purchases provide?

- *Overall effectiveness (slightly refined)*: LSAP programmes are still expected to ease financial conditions, and to improve macroeconomic conditions. The impact is larger in periods of market distress or dysfunction, and lower once conditions have normalised. We also expect their impact to have some persistence; even if yields rise for other reasons, we expect them to remain lower than without the LSAP programme.
- *Internal evidence on effectiveness (new)*: Three pieces of internal work overall seem to confirm the prevalent assessment: that initial LSAP announcements had a strong impact, that weekly LSAP announcements and purchases may move yields (but less so recently, where markets are functioning largely normal), and that changes in the yield curve (stemming from unexpected Treasury issuance) seem to lead to some macroeconomic effects.
- *Estimates for effectiveness (slightly updated)*: Results from internal analysis are broadly in line with previously used rules of thumb that suggested an impact of roughly 8-15bp on long-term yields per \$10bn up to the August MPS. As these numbers entail the positive effects from enhanced market functioning, we expect the August MPS extension (and further adjustments) to have had a lower impact. A reduction in the marginal impact of 50 percent may seem reasonable, but so far remains rather speculative.
- *Comparison of LSAP to OCR effects (updated)*: Recent analysis by the RBA broadly reaffirms prior beliefs that the effect of longer-term rates on GDP is lower than that of shorter-term rates, in their case roughly 2/3.² As a result, LSAP programmes require a larger impact on long-term rates to achieve similar macroeconomic stimulus as OCR changes.

Taking above beliefs on the effectiveness at face value, the total impact of the LSAP programme up to August 2020 would have been around 35-65bp in OCR-equivalent terms. For the total programme size of \$100bn, and imposing a reduced marginal effectiveness of 50 percent for the additional \$40bn, this could have risen to roughly 45-80bp. Given that markets

¹ In the short-term, the flow channel may also be important in New Zealand given our relatively small debt capital markets and lack of market makers with the balance sheets to provide liquidity.

² In the RBA model, longer-term rates have a larger impact through the exchange rate, shorter-term rates more through consumption and investment. Some aspects of the response to the ongoing pandemic crisis, such as border restrictions, may warrant additional consideration of these differences.

expectations are below \$100bn, the actual impact of the programme will likely be between the estimates for August MPS and the total programme size of \$100bn. Overall, this is broadly consistent with alternative derivations based on the “unconstrained OCR” monetary policy stimulus suite and our assumptions on the effectiveness of the FLP programme (of 25bps).

WHAT TO EXPECT FROM CHANGES IN THE LSAP PROGRAMME

We believe that a reduction of the expected size of the LSAP programme would result in an increase in the yield curve, and hence lower stimulus, while noting the uncertainty about the scale of the impact. A reduction in anticipated programme size may also occur through participants reading into variations in weekly purchases, if they are perceived to contain a signal about the likely total size of the programme.

The key determinant in assessing the size of the impact were we to announce a change to the LSAP programme is market participants’ current expectations about the future path of LSAP purchases. Market participants currently expect a lower total size than the \$100bn limit announced, in line with the trajectory of lower weekly pace of purchases and lower government bond issuance. If a decrease in the overall programme limit aligns with analysts’ expectations, then we may not expect a sustained substantial market reaction (while there might be some response to “tapering” headlines), and likewise for continued modest decreases in the pace.

The signalling channel of LSAPs (i.e. that OCR will remain on hold for an extended period) is very important. The tapering of LSAP would be easily digested if an OCR cut was made or signalled, or it was clear that the OCR remains on hold for an extended period by strong credible forward guidance and/or continued (but low volume) purchases.

Hence, a key risk around changes to LSAP is calibrating market expectations to shifts in purchases targets. In 2013, US Treasury yields increased sharply after unexpected communication from the Federal Reserve that economy was strong enough to begin tapering monthly purchases. Conversely, an announcement from the Bank of Canada (BoC) in 2021 of tapering to its purchase program was fully expected by the market following earlier remarks from the BoC’s leadership that suggested a shift was forthcoming. As a result, the policy shift was priced into markets, and the formal taper announcement did not lead to a market reaction.

Taking above numbers for the marginal effectiveness at face value, we may expect an offset in the OCR of roughly 5-10bp per \$10bn change (relative to market expectations) to maintain a similar amount of stimulus.

THE ROLE OF THE LSAP PROGRAMME GOING FORWARD

We recommend that MPC formally communicate the role of the LSAP programme in the future. Our communication to markets has been limited since 2020 when the LSAP was the focus of MPC decision making. Without formally communicating our recommended changes in the role of the LSAP programme, such as being ranked second to the OCR for monetary policy purposes, financial markets may be more likely to misinterpret changes in the LSAP programme parameters as a tightening of the overall monetary policy stance, even if we intend to offset any reduction in stimulus with the OCR.

Table 1 summarises our views on the current vs. future role of LSAP.

Table 1: Current vs. future LSAP role

| Current state (2020-2021H1) | Future state (2021H2-2022H1) |
|--|--|
| <ul style="list-style-type: none"> LSAP is the <u>primary</u> monetary policy tool Expected purchase stock <u>maximised</u>, and flows <u>front-loaded</u> and <u>adjustable</u> <u>Maximum</u> purchase limit of \$100bn Market functioning & efficiency maximized by <u>heavy</u> purchases LSAP responds to <u>temporary</u> volatility with weekly purchase schedules | <ul style="list-style-type: none"> LSAP is a <u>secondary</u> monetary policy tool, behind the OCR Expected purchase stock <u>lower</u>, and flows <u>low</u> and <u>stable</u> Conditional <u>target</u> of \$X announced Market functioning & efficiency maximized by <u>moderately low</u> purchases LSAP only responds to <u>significant</u> volatility, and looks through weekly yield moves |

STRATEGY: LSAP AND OCR PACKAGES

This section illustrates how several packages of LSAP and OCR settings compare against the AMP principles. We expect these packages to lead to the same approximate paths of monetary stimulus; however, some paths will be **more effective** than others over the medium term – and they will differ in **efficiency, financial system soundness, and costs to the public balance sheet**.³

First, we present extreme recalibration options which we recommend the MPC rule out. These involve either ‘maxing out’ the LSAP within the space that may be possible within the indemnity – representing a heavy reliance on LSAP for stimulus (requiring a reintroduction of inflation-indexed and LFGA bonds) and a relatively high OCR path – or an immediate cease in LSAP purchases, with a heavy reliance on a lower OCR. Both of these options yield **low effectiveness and low efficiency**.

Table 2: Extreme recalibration options

| Policy settings | Effectiveness | Efficiency | Financial system soundness | Balance sheet risk |
|---|--|---|--|---------------------------------|
| MAXIMUM LSAP: \$89bn (\$730m per week) | No LSAP space remaining; more OCR space; low risk of adverse yield reaction | May strip market of NZGB supply, unnecessarily distorting price discovery | Reduced supply of safe assets | High LSAP holdings and high OCR |
| MINIMUM LSAP: \$52bn (\$0m per week) | Limited OCR space; more LSAP space than needed; risk of adverse yield reaction | Risk bond market functions poorly after sudden stop of LSAP | Lower OCR may marginally lower bank NIMs and profitability | Small LSAP holdings and low OCR |

³ If MPC prefer a higher or lower overall degree of stimulus, this can be achieved by tightening or loosening the calibration of either or both the tools in any of the packages.

Note that the indemnity limit (of 60 percent of nominal NZGBs, 30 percent of inflation-indexed bonds, and 30 percent of LGFA bonds) *currently* limits the LSAP size to \$93bn by end-June 2022, but only \$87bn if nominal NZGBs are the only additional assets purchased from here.⁴

There is a spectrum of feasible LSAP-OCR packages that the MPC could consider – we show three calibrations options of the LSAP programme size and OCR track in figure 1 to achieve the same level of stimulus, and discuss in table 3.

Figure 1: OCR track and net LSAP size from plausible recalibration options

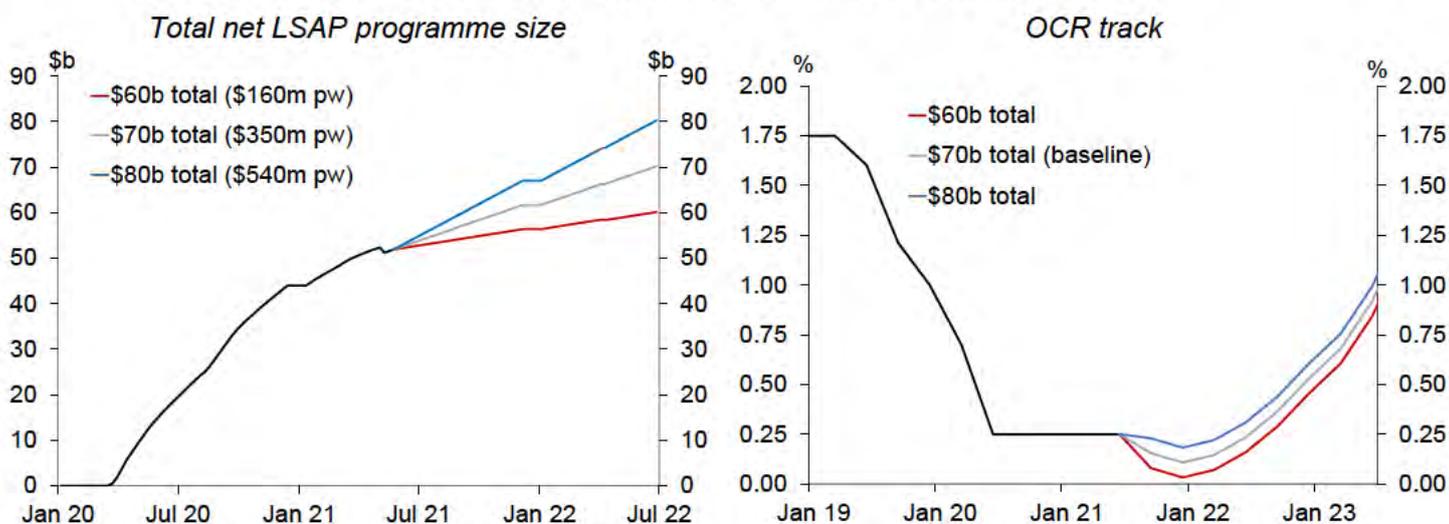


Table 3: Plausible recalibration options

| Policy setting | Effectiveness | Efficiency | Financial system soundness | Balance sheet risk |
|---|--|--|--|--|
| LSAP: \$80bn (\$540m) OCR: 0.31% 2022Q2 | Limited LSAP space left; provides certainty re: yields | May lead to bond scarcity and distortions | Reduced supply of safe assets could disrupt functioning | High LSAP holdings and high OCR |
| LSAP: \$70bn (\$350m) OCR: 0.24% 2022Q2 | Some policy space retained for both tools; certainty over curve maintained | Minimal distortions and low risk of volatility | Ample safe assets; some yield curve steepness; safe bank NIM | Moderate LSAP holdings and OCR |
| LSAP: \$60bn (\$160m) OCR: 0.16% 2022Q2 | Reduction in certainty; policy space down for OCR, up on LSAP | Some risk of NZGB volatility | Ample safe assets; steeper yield curve; lower bank NIM | Relatively small LSAP holdings and low OCR |

STRATEGY: BALANCING THE RISKS WITH DIFFERENT TOOL COMBINATIONS

There are risks to reducing LSAP purchases too low, too soon – as well as leaving them too high, for too long. These are outlined in table 4.

⁴ Subject to update based on new NZDM issuance project once the May Budget is released.

Table 4: Risks to recalibration

| Risks of LSAP falling too low, too soon | Risks of LSAP staying too high, too long |
|--|--|
| <ul style="list-style-type: none"> • Taper tantrum: Increase in volatility and significant, sustained steepening in yields and NZD appreciation. • Stimulus provided by LSAP is underestimated: risk of being forced into negative OCR or ramping up LSAPs again if reaction if the market reaction is strong. | <ul style="list-style-type: none"> • Limited supply left for the market. • Growing dependency on RBNZ, displacing other purchasers. • Fiscal cost from purchases and higher OCR. • Limited policy space to announce fresh LSAP programme in future crisis. • Stimulus provided by LSAP is overestimated: risk that OCR is not low enough. |
| Mitigations | |
| <ul style="list-style-type: none"> • Using the OCR: Unlike the Federal Reserve in 2014, the MPC has room to reduce the OCR. This may be enough to prevent a rise in the expected OCR path – a big cause of the taper tantrum. • Using precise forward guidance: Clear communication from the MPC regarding the desired progression of OCR and LSAP should reduce the risk of misinterpretation and keep a lid on volatility. | <ul style="list-style-type: none"> • Most of these issues are mitigated by reducing purchases and adopting a marginally lower forward OCR track. |

The biggest risk from reducing LSAPs is that we have underestimated the effect of LSAPs – such as by missing nonlinearities from reducing purchases close to \$0, or because the market interprets the reduction as a ‘hawkish’ shift in the MPC’s reaction function – and tighten policy instead of a recalibration. An example of this could be if the slowdown in LSAP resulted in market expectations of a more rapid increase in the OCR. This could decrease stimulus by more than expected if it reduces the estimated LSAP stimulus from the signalling channel sooner than expected.

This biggest risk to maintaining a high LSAP target is that we have overestimated the effect of LSAPs – and we may use our balance sheet space with minimal marginal impact on stimulus, and undershoot our employment and inflation targets.

Overall, the risks seem best managed by selecting a policy package that reduces LSAP purchases to a minimal but positive level that offers some pressure over the curve, while also signalling a lower-than-otherwise OCR track – and the impact of the recalibration can be reassessed at following meetings. This supports the MPC adopting a recalibration with LSAP size of \$60bn or \$70bn in May.

COMMUNICATIONS: MOVING FOCUS FROM LSAP TO OCR

As discussed in recent rounds⁵, we see benefits from moving the focus from LSAPs to the OCR as the primary policy tool. The internal processes outlined below and suggested external communication will help shift the focus towards the OCR and away from the LSAP.

⁵ See February MPS Paper 6.2 ‘[LSAP Advice: Recalibrating purchases and relying on other tools](#)’ and April MPR Paper 4.1 ‘[LSAP Strategy](#)’.

Internal process and delegations

We recommend that MPC decide on the total LSAP programme size for internal use, regardless of whether that is communicated externally.

Bank staff, as operational experts, can retain operational decision-making on the weekly purchase pace and composition of bonds. However, there should be a higher hurdle for changes to the weekly purchase rate – there could be some weekly variation in this pace as needed as long as the planned path of purchases remains consistent with the target LSAP size. Table 5 summarises a staff view of the scenarios under which the weekly purchase pace may change, or would not change. In particular, on point 5, MPC should consider whether:

- Staff continue to have discretion over the path of LSAP purchases, subject to reaching MPC's target LSAP size, or
- MPC direct staff to follow a pre-determined purchase pace path (see Appendix B for possible weekly purchase paths), conditional on issues with failed tenders or market functioning.

We see some benefit in varying weekly purchases somewhat (i.e. slightly frontloading as in Appendix B), relative to maintaining a static average weekly purchase pace. A gradual reduction in our presence in the market will likely help smooth market functioning, relative to an abrupt stop.

Instead of the regular 'LSAP Strategy' paper, the six-weekly 'Policy Options' paper presented to MPC will include an update on the LSAP run-rate and the progress towards the total LSAP size. This will include a projection of the weekly LSAP purchases required to reach MPC's LSAP target size. Any substantive issues with the LSAP programme policy will also be raised at that time – for example, if new NZDM issuance guidance means that the total LSAP programme size can no longer be reached, or if severe illiquidity and scarcity issues in the NZGB market arise that requires a review of the planned LSAP programme size.

Table 5: Reasons for variation in weekly purchase pace and composition

| Scenario | Outcome |
|---|--|
| 1. Bond yields rise on a higher CPI outturn | ➤ Weekly purchase pace does not respond |
| 2. Bond yields rise in line with higher global bond yields | ➤ Weekly purchase pace does not respond |
| 3. Signs of scarcity in a specific bond line, e.g. high Bond Lending Facility usage, yields lower than 'fair value', auction results, market feedback | ➤ Composition of bonds may change, possible minor change in weekly purchase pace to accommodate |
| 4. Extreme, broad signs of market dysfunction, e.g. financial conditions tighten, liquidity metrics deteriorate, numerous markets dysfunctional | <ul style="list-style-type: none"> ➤ Weekly purchase pace may increase to frontload purchases ➤ Guidance from MPC will be sought on LSAP size or other stimulus needs at the next scheduled or special meeting |
| 5. Current purchase pace higher than required to reach MPC target LSAP size | ➤ Weekly purchase pace may change infrequency over time to reflect the varying flow of issuance, or to slightly frontload and slowly reduce purchases |

External communication

MPC should decide whether to communicate the new total LSAP programme size externally in the May MPS, and the associated OCR track alongside that. The MPC's focus on the total

purchase size of the LSAP programme provides a clear policy signal (particularly since the literature focuses on the total *stock* as most important), and will further remove the focus from the weekly run-rate as a policy signal.

To limit any adverse market reaction to the LSAP programme size reduction, it will be important to note that the path for the OCR will be lower than otherwise if the stimulus coming from LSAPs is reduced (depending on market participants' expectations, see Paper 5.2, *Market Intelligence Report and Expectations for Monetary Policy*).

It should also be noted that capacity is retained to respond through an increased LSAP programme size in the future if needed, either for monetary policy stimulus or market dysfunction purposes. The plausible options in this paper provide space to increase the programme under current NZDM projections⁶, and if bond issuance increases further the capacity to purchase more will also increase.

The Record of Meeting could note:

“The Committee agreed to update the LSAP programme with an aim for total net purchases of \$[60, 70, 80] billion to be completed by June 2022. The Committee noted staff advice that capacity remained for the total LSAP programme size to increase above this level if required, for example in response to market conditions. In light of the smaller LSAP programme size, the Committee agreed that the OCR would have to remain lower than otherwise for an extended period in order to maintain a similar level of monetary policy stimulus. The Committee endorsed staff adjusting weekly purchases as appropriate to reach \$[60, 70, 80] billion of asset purchases by June 2022, taking into account market functioning.”

⁶ The indemnity limit of 60% of nominal bonds, 30% of inflation-indexed bonds, and 30% of LGFA bonds *currently* limits the LSAP size to \$89bn, or only \$83bn if nominal NZGBs are the only additional assets purchased from here.

APPENDIX A: DETAILS ON UPDATES TO OUR BELIEFS ABOUT LSAP PROGRAMME

Channels That Matter for Transmission of LSAPs

There are several channels through which the LSAP programme affects financial conditions and economic activity that are emphasised in the literature:

- *A portfolio rebalancing channel:* Investors move into other asset classes as we purchase their NZGB and LGFA holdings; the spreads between corporate bond and NZGB yields have narrowed significantly and the exchange rate is lower than otherwise. This eases financial and funding conditions. The reduction in private holdings of NZGBs reduces the term premium component of long-term rates. This is viewed as the primary channel for LSAP transmission.
- *A signalling channel:* Reduces yields by affecting expectations for a lower future path of OCR, as the asset purchases reinforce that the policymaker will hold rates lower for longer than they otherwise would. This channel works to lower the expected short rate path (or risk-neutral) component of NZGBs.
- *A market functioning channel:* In times of market distress, LSAP purchases help to clear market inventories and improve market-making, supporting the market conditions necessary for monetary stimulus to transmit. LSAPs have provided an ongoing source of demand for NZGBs, which in turn may have allowed banks to take larger positions in those securities and increase market-making activities. This shift in behaviour should reduce the liquidity risk premium in NZGBs, lowering yields. This channel played an important role at the start of LSAPs, but has declined as market functioning has improved.

The channels above help ease financial conditions and lower funding costs, supporting employment, economic growth, and inflationary pressures.

Announcements, Stocks, and Flow of LSAP

Evidence from foreign central bank experience concludes that the larger and more persistent price impact of LSAPs is observed following the initial announcement of an LSAP programme. Academic literature and central bank studies have tended to place most weight of the LSAP impact on the announced stock of assets to be purchased, rather than the flow of purchases over time, in driving the overall effect of LSAPs. Purchase operations (which are often referred to as the “flow effect”) have been found to play a much smaller and less persistent role in driving a decline in yields.⁷ However, the flow effect might play a larger role during periods of sharp market dysfunction, when purchases of illiquid assets can increase turnover and support market making activities.

Are LSAPs effective?

A January 2020 [MPAG paper](#) concluded an LSAP programme would provide stimulus in New Zealand despite a shallow capital market. The direct impact through lending rates might be somewhat lower than abroad, given the structure of our economy, but also that the impact

⁷ [D’Amico and King \(2013\)](#) analysed stock vs flow effects for the first QE round in the US.

through the exchange rate might be comparably higher.⁸ Generally, the evidence of LSAPs is clear on its impact on financial markets, but considerably more uncertain (while expected to be positive) for the wider economy.

Since then, various central banks have engaged in LSAPs in response to the Covid-19 crisis, including the RBNZ. Central banks abroad and the emerging academic literature have noted that these LSAPs were again effective in lowering yields substantially, and that this effect may be amplified by the improvement of market functioning following acute deterioration of conditions in March 2020.

Internal work on the effectiveness of our LSAP programme is ongoing, and still quite preliminary in parts, but overall seems to confirm the international experience: that initial LSAP announcements had a strong impact on yields and the exchange rate, that the weekly LSAP announcements and purchases move yields (but less in more recent parts of the sample), and that changes in the yield curve stemming from unexpected Treasury issuance (as a proxy for the inverse of LSAP purchases) might lead to macroeconomic effects.

- First, work on monetary policy shocks (from Bernhard, Culling and Leong, presented in an [MPAG paper](#) prior to August MPS last year) suggests that the initial LSAP announcements had a substantial impact on yields and the exchange rate. However, subsequent announcements / expansions of the LSAP programme had less of an impact *on the day*, which could be explained by improved anticipation and market functioning (the former is not saying there is no effect, it just takes place prior to the release, and we cannot identify it using this approach).
- Similar results arise from (more preliminary) work (Bernhard) that looked at the impact of weekly LSAP announcements and purchases: higher volumes seem to have led to a larger change in yields, but early results also suggest that this impact decreased over time. Again, this could be due to various factors, better anticipation, market functioning or simply decreasing returns.
- A third piece of work from Richardson and Gillies (also preliminary) aims at extracting unexpected changes in bond issuance – serving as a proxy for (the inverse of) our purchases – and uses the corresponding changes in the yield curve to analyse the impact of such changes on the macroeconomy.

A general consensus amongst bank strategists was that LSAPs were highly effective early on in the crisis, but its effectiveness in providing stimulus is waning in the face of rising global yields and economic recovery.

How effective were LSAPs – some numbers?

Precise estimates for the impact per billion are difficult; factors such as anticipation preclude a clear identification and interpretation. In the [MPAG paper](#) from January 2020, we reported rules of thumb from the international literature that suggest that purchases of 10% of GDP might be

⁸ Key drivers of this assessment were the importance of bank funding for lending rates in New Zealand, the relatively short durations of our mortgage rates, and the fact that banks use swap rates as benchmarks for these rates, which seem less affected by effects on government bond yields at the shorter end (which LSAPs have). Corporate bond issuance is also likely lower than abroad, which reduces the impact of potential spillover effects from long-term government to corporate bond yields. In contrast, we assessed that the limited availability of substitutes in the NZ bond market may lead to larger rebalancing effects through the exchange rate, as investors are “pushed out” of the market.

equivalent to a 25bp OCR cut.⁹ In our case, the initial announcement of \$30bn would have suggested roughly 25bp, and the final \$100bn up to around 80bp of equivalent OCR cuts.

In our August 2020 [MPS](#), based on a [MPAG paper](#), we noted that the total effects on longer-term yields of our programme up to July might have been between 50bp and 100bp. Recent estimates from the RBA suggest that the effect of longer-term rates on GDP is around 2/3 of that of shorter-term rates, suggesting that the total impact of 50-100bp at that time could have been equivalent to OCR cuts of roughly 35-65bp.¹⁰ Prior to the August MPS extension, the total limit of \$60bn thus may suggest an impact per \$10bn of roughly 8-15bp on long-term yields, and 5-10bp on equivalent OCR cuts.

Given that these results contain the (additional) effects of improvement in market functioning and broader signalling from the initial announcement, we might expect that the impact of further adjustments to the LSAP programme – including the extension to \$100bn in August MPS 2020 – will have (had) a lower impact per billion.¹¹ A reduction of the marginal impact of 50 percent may seem reasonable, but so far remains rather speculative. Assuming such a marginal effect, the total impact (in OCR-equivalent terms) could have risen to roughly 45-80bp overall.

In decomposing our unconstrained OCR into OCR, FLP, and LSAP contributions, we also find that the LSAP programme is estimated to provide approximately 7bps of OCR equivalent stimulus per \$10bn.

⁹ These numbers are also not way off from a [recent applied analysis](#) from the Bank of England, which uses market intelligence to extract the anticipation of the LSAP programme (from traders/analysts), and find that surprises of 100bn GBP (roughly 3% of UK GDP) led to changes in longer-term yields of roughly 5-10bp. In contrast, other recent papers from the [Bank of England](#) (building on the literature) or [European Central Bank](#) (new analysis) suggested larger effects.

¹⁰ The [RBA analysed this difference](#) in their core model, MARTIN, simulating the effect of 50bp declines in short-term and long-term rates. The effect on GDP of longer-term rates is roughly 2/3 of that of shorter-term rates, and interestingly, more through the exchange rate than consumption etc. While these results should be read with a grain of salt – the model will be imperfect, linear and estimated pre-Covid – this seems to give us a reasonable indication.

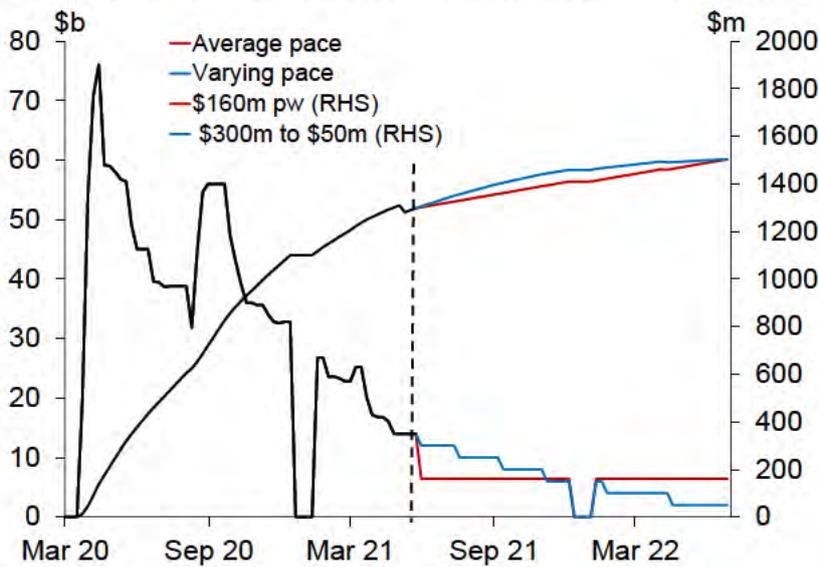
¹¹ This would also be more in line with estimates from the [Federal Reserve](#) that suggest that a decline in the balance sheet by 2% GDP would have required an offset of roughly 20bp in the policy rate (the above rule of thumb implies 3% GDP (10bn LSAP) requiring an offset of 5-10bp in the OCR only.

APPENDIX B: POSSIBLE PRE-DETERMINED PURCHASE PACE PATHS

The figures below show potential pre-determined weekly purchase pace paths which Bank staff could follow (conditional on issues with failed tenders or market functioning). These projection charts will be similar to that shown each round to MPC for information purposes if a target LSAP size is given to Bank staff, regardless of the level of flexibility that staff have in weekly purchase decisions.

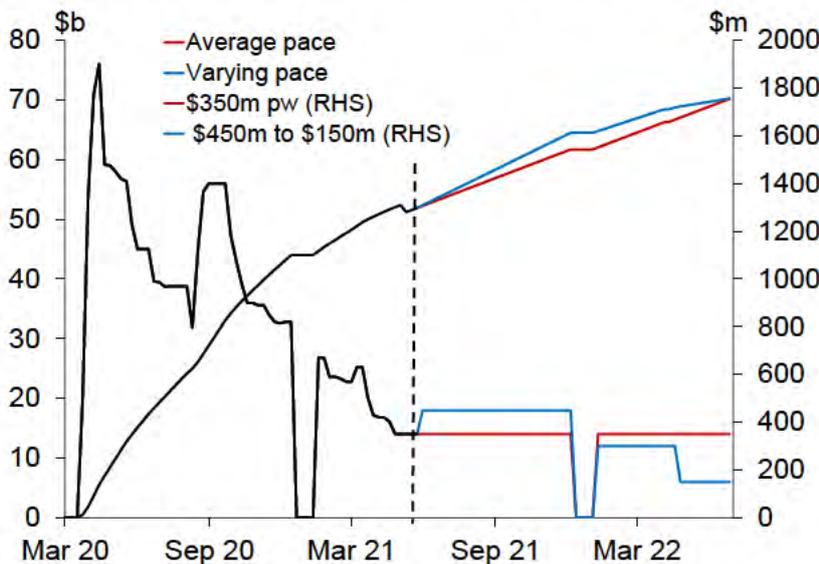
The figures show potential purchase paces for the remaining life of the LSAP programme for total sizes of \$60bn, \$70bn, and \$80bn – at the average weekly purchase pace or varying (slightly front-loaded).

Figure B.1: Purchase pace options for \$60bn LSAP size



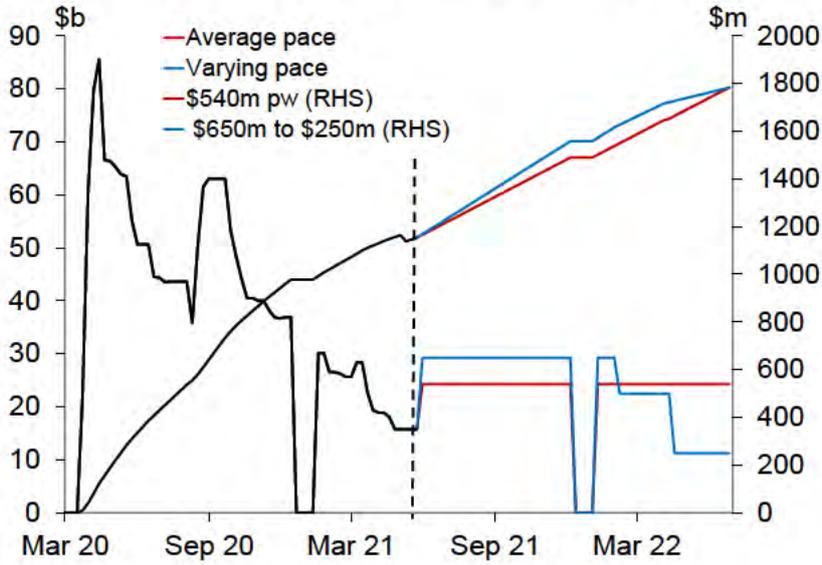
The \$60bn varying option (figure B.1) steps down \$50m about every seven weeks over 2021, and every three months over 2022.

Figure B.2: Purchase pace options for \$70bn LSAP size



Note that the varying, front-loaded \$70bn LSAP option requires a step up from the current weekly purchase pace (of \$350m), as does any option under the \$80bn programme. These options require the higher-than-current purchase pace to be maintained over 2021, with reductions over 2022 for the varying options.

Figure B.3: Purchase pace options for \$80bn LSAP size





Paper 5.2 – Market Intelligence Report and Expectations for Monetary Policy

Authors: Nick Mulligan, Riki Fujii-Rajani, Ranko Berich

KEY POINTS

This paper summarises feedback from our market intelligence calls covering expectations for monetary policy at the May MPS. Key points include:

- All contacts expect monetary policy settings to remain unchanged at the May MPS.
- Contacts expect messaging to be similar to the April MPR.
- Market positioning is fairly neutral going into the meeting, but the market is looking for reasons to increase interest rates.

SECTION 1 – MAY MPS MONETARY POLICY EXPECTATIONS

- All contacts expect the OCR to be held at 0.25 percent
- All contacts expect the Large Scale Asset Purchase (LSAP) Programme to remain unchanged
- All contacts expect the Funding for Lending programme (FLP) to remain unchanged

Policy tools and calibrations

All contacts expect the OCR to be held at 0.25 percent at the May MPS. The market is pricing the OCR at 0.5 percent at the end of 2022 (figure 1). Most economists believe that the OCR will be on hold at 0.25 percent until the second half of 2022 (see Appendix A).

Some contacts (not the majority) expect the return of the traditional OCR track. These contacts generally expect a flat OCR track through 2022. Contacts noted that the track will attract significant attention and would set the stance of monetary policy (discussed more below).

All contacts expect the LSAP programme to remain unchanged.

Contacts expected the recent reductions in weekly purchases and expect future weekly purchases to largely track New Zealand Debt Management (NZDM) issuance. Most contacts understand that, under current conditions, the \$100bn limit will not be reached, but they see little value in communicating that at this stage.

All contacts expect the FLP to continue unchanged. Contacts noted the programme continues to provide banks with a source of cheap funding.

Figure 1: Market pricing of the OCR
(ICAP OIS pricing, as at 12 May 2021)

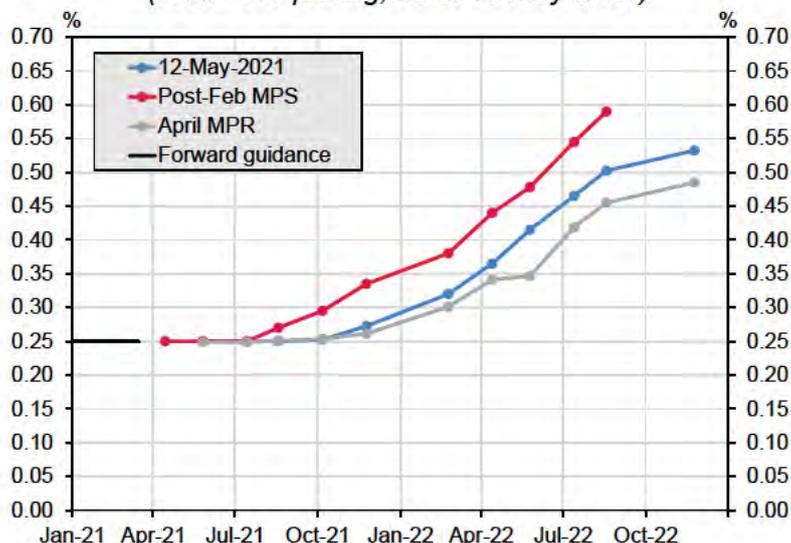


Table 1: Summary of Market Contacts' Expectations for Monetary Policy Settings in May

| OCR | |
|--|---|
| 0.25 percent | All contacts expect the OCR to be held at 0.25 percent at the <i>MPS</i> . Although not expected, any new comments on forward guidance will be closely watched. |
| Large Scale Asset Purchases | |
| <i>LSAP programme expected to remain at a total size of up to \$100bn – a limit not a target</i> | |
| <i>Nominal NZGB (60% limit unchanged)</i> | Contacts do not expect any material change to the nominal NZGB LSAPs. Contacts noted the purchase 'limit' has reduced due to lower expected issuance from NZDM, and weekly purchases are expected to reduce over time to match NZDM issuance. |
| <i>LGFA (30% limit unchanged)</i> | Contacts noted that the halting of LGFA bond purchases had gone smoothly. Broader credit markets are functioning well and credit spreads remain near historical lows. |
| <i>Inflation-indexed (30% limit unchanged)</i> | Contacts noted that the halting of inflation-indexed government bonds (IIBs) purchases had gone smoothly, noting that IIB market conditions have largely returned to normal. |
| Funding for Lending Programme | |
| <i>FLP (unchanged)</i> | No changes to the FLP are expected. |

Expectations for monetary policy over the next six months

We asked contacts about their expectations for monetary policy over the next six months. Overall, assuming no domestic lockdown/widespread community transmission of Covid-19, contacts do not expect any significant policy changes.

The OCR is expected to be on hold at 0.25 percent through until at least mid-2022. Some contacts expect the return of the conventional OCR track over the next six months, if not at the May *MPS*.

Contacts expect the FLP to continue in the background unchanged.

Views on the future of the LSAP programme through 2022 are mixed. **Overall, the programme is expected to continue largely unchanged, although they acknowledge that the \$100 billion limit cannot be reached.** Most expect purchases to continue through to June 2022, varying in line with NZDM issuance and market conditions. Contacts generally believe that the MPC would either complete or halt asset purchases prior to increasing the OCR. We also specifically asked Interest Rate Strategists for their views on the LSAP programme – see Section 3 for a summary of their views. Contacts are expecting details on the normalisation of the balance sheet and future of the LSAP programme over the next six months.

Key factors in focus over the next six months included:

- how the housing market and confidence respond to the tighter loan-to-value lending restrictions and other macroprudential policies, and Government policy changes;
- the net impact of the Trans-Tasman travel arrangement;
- the domestic vaccine rollout and border opening assumption; and
- how other central banks change their language and asset purchase programmes.

SECTION 2 – CALL SUMMARY AND EXPECTED MARKET REACTION

- Contacts expect the MPC to largely repeat the key messages from the April *MPR*.
- The MPC is expected continue to retain an easing bias, noting the ongoing uncertainty and reiterate that monetary policy will need to remain stimulatory for some time.
- **The market reaction is likely to be asymmetric: there is more upside risk to both interest rates and the NZD on a hawkish *Statement* than there is downside risk to a dovish *Statement*.**

Overall, contacts are not expecting any changes in monetary policy stance or messaging at the MPS. Contacts expect the MPC to retain an easing bias, and reiterate that monetary policy stimulus is required for a prolonged period.

The *Statement* is expected to balance recent developments with ongoing uncertainty. The MPC is expected to acknowledge that the labour market data beat expectations and the February *MPS* forecasts. Some contacts questioned what this means for the maximum sustainable employment mandate – *has the MSE target essentially been met? Where is the unemployment rate relative to NAIRU?* Contacts also noted the improvement in business confidence indicators, higher inflation expectations, and business pricing intentions. Regarding inflation, some contacts noted that some core inflation measures are also at 2 percent. Most contacts believe that the MPC will judge inflationary pressures as transitory, in line with previous messaging and other central banks. A few contacts noted the potential for the pricing pressures to become more sustainable if they were to change wage and price-setting behaviour. The focus is on the MPC's judgement of the sustainability of these developments.

Contacts outlined a number of reasons for the MPC to remain cautious as to the sustainability of the recovery. The effects of the tighter macroprudential policy and Government's interest deductibility tax policy on the housing market and consumption remain to be seen. Contacts do not expect to get a good read on the housing market for another six months, but noted it was not showing signs of weakness yet. No contact mentioned the housing reporting requirement of the Remit, and there was no mention of using monetary policy to lean against house price inflation. The net effect of the Trans-Tasman travel arrangement was also questioned, given it has already been paused once and take-up does not appear rapid. Relatedly, contacts are interested to see if the progression of the domestic vaccination programme changes the assumption of the border re-opening at the end of 2021.

Most contacts believe that retail interest rates have troughed. Domestic bank contacts noted that the increase in longer-term mortgage and term deposit rates largely reflect the increases in wholesale interest rates. Contacts also mentioned the increase in the 3-month bank bill rate noting that this would have increased some interest rates for business lending. While the exact reason that the bank bill rate increased was unknown, factors mentioned included more wholesale funding activity by banks 9(2)(b)(ii) and some emerging pressures on short-term liquidity metrics.

A neutral/least market reaction is the most expected outcome (~64% chance, figure 2). Contacts believe that a hawkish *Statement* (~25% chance) is more likely than a dovish *Statement* (~11% chance). Market conditions were generally described as having below average liquidity, with limited risk taking going into the meeting. However, contacts noted that a neutral assessment of the data developments may illicit a mild hawkish response as the market is positioned more for an increase in interest rates over the medium

term (due to better risk-reward, see table 2). The market reaction is likely to be asymmetric: there is more upside risk to both interest rates and the NZD on a hawkish *Statement* than there is downside risk to a dovish *Statement*.

Given recent developments and market pricing, contacts believe the MPC will retain its easing bias – *the comment that the OCR could be lowered if required*.

For a more *optimistic* or *hawkish* tone, contacts noted the MPC may note:

- the stronger labour market and characterise the MSE target as being met;
- the pick-up in inflation expectations and core inflation, noting it could be sustainable; and/or
- robust commodity prices.

An *optimistic* or *hawkish* policy setting was described as:

- No change to policy settings (OCR or LSAP or FLP), and a softening of language around further stimulus; or
- Note that the LSAP programme could be reduced materially or stopped prior to June 2022 (more hawkish); or
- Reintroducing an OCR track with rate increases (particularly if earlier than late 2022).

Overall, contacts thought it would be hard to be credibly more dovish than at the April *MPR* given recent developments. For a more *pessimistic* or *dovish* tone, contacts noted the MPC may note that:

- 2020Q4 GDP was weaker-than-expected;
- increases in headline inflation are expected to be transitory;
- a weaker housing market will weigh on consumption and confidence;
- the Trans-Tasman travel arrangement may not provide as much benefit as expected; and/or
- the outlook remains uncertain and highlight the risk of a premature removal of stimulus.

A *pessimistic* or *dovish* policy setting was described as:

- issuing new and extended guidance on how long the OCR is expected to be on hold;
- directing higher LSAP purchases; or
- noting that a lower OCR or negative interest rates remain a live option if required.

Figure 2: Probability of the tone of the *Statement* (Subjective probability)

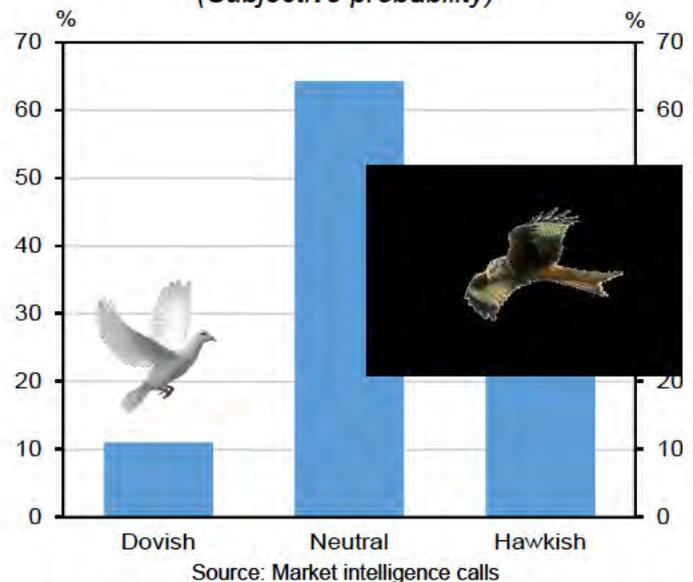


Table 2: Estimated market reactions

| | Dovish | Hawkish |
|--------------------|--------|---------|
| OIS (1-year ahead) | -4bps | +11bps |
| 2-year swap | -6bps | +11bps |
| 10-year NZGB | -5bps | +10bps |
| NZD | -0.7% | +1.4% |

Source: Market intelligence calls

Short-term interest rates and the OCR

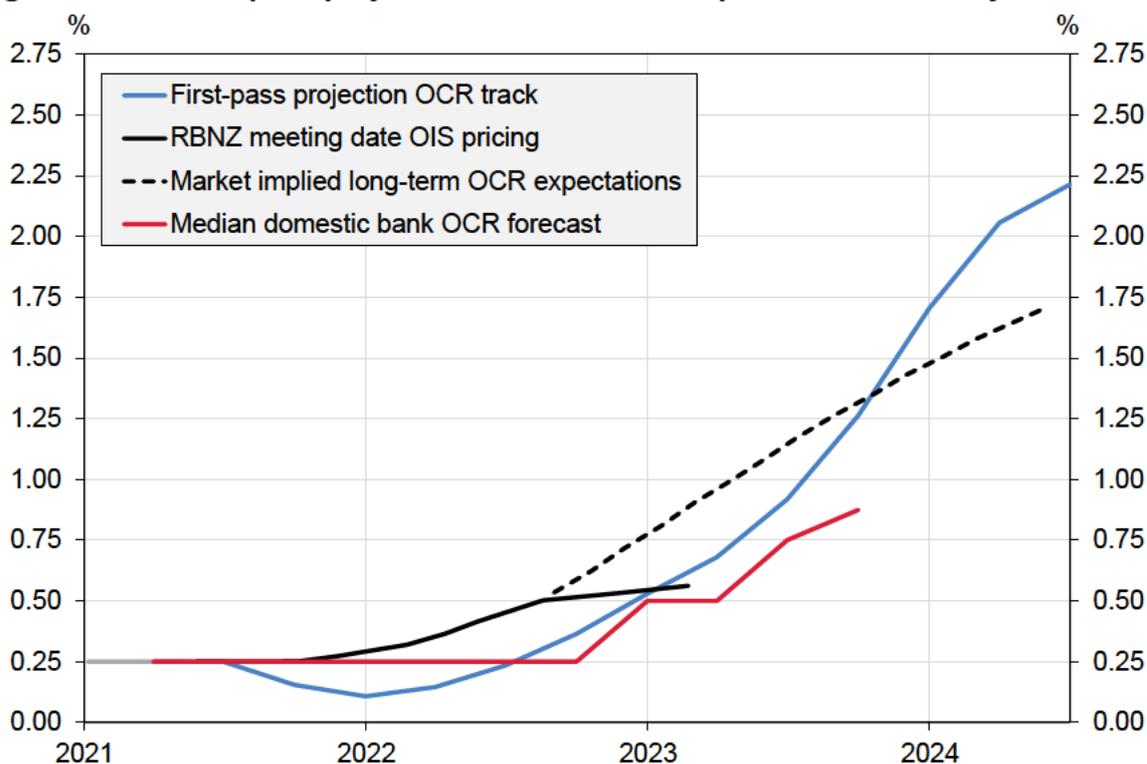
Most market participants expect that the OCR will be held at 0.25 percent until at least 2022H2. Contacts generally expect the OCR to be on hold as long as purchases are being made under the LSAP programme – hence, at least June 2022. The median domestic bank forecast (out of the five banks) has the OCR being increased 25 basis points in 2022Q4 (figure 3).

Financial market participants are pricing in a chance that the OCR is increased earlier than economic forecasters. This was described as reflecting the relative risk and reward for the trade. Traders believe the next move in the OCR will be up, and believe there is more upside to be gained and less risk by positioning for higher rates than positioning for lower interest rates.

Overall, expectations for the OCR at the end of 2022 are broadly in line with the first-pass projection of the OCR. A noticeable difference in expectations appears in the latter half of the forecast horizon. NZSIM pulls the OCR slightly above our estimate of the neutral interest rate (2 percent). Market-implied OCR expectations derived from the swap curve (dashed black line) show expectations of a more gradual rate hike cycle, albeit starting earlier. **With the 10-year NZGB trading around 1.88 percent (10-year swap around 2 percent), the first-pass OCR track could see longer-term yields rise towards the value of the terminal OCR.**

Contacts noted that the unconstrained OCR track has served its purpose and a traditional OCR track would enable better communication of forward guidance. The contacts that do expect the OCR track generally expect a flat track through 2022, with some chance of an uptick into 2023. Overall contacts noted that a track showing rate hikes could generate a hawkish reaction as market participants generally believe the ‘low for long’ narrative. Even if the OCR track is largely in line with our measures of expectations, confirming these expectations would likely see pricing of OCR hikes come forward. **Given the focus, it will be important to re-emphasise the conditional nature of the projected OCR.**

Figure 3: OCR first-pass projection versus market implied OCR and analyst forecasts



Note: RBNZ meeting date OIS = more liquid OCR expectations, Market implied long-term OCR expectations derived from the interest rate swap curve, Bloomberg analyst forecast OCR as of 22 April 2021. Source: Bloomberg, RBNZ.

Long-term interest rates and the LSAP programme

Contacts believe the LSAP programme has been adjusted well in line with market conditions and reduced issuance from NZDM. **A formal 'tapering' of LSAP purchases or indication that the programme may be halted early is not expected.** Such a change could see interest rates rise around 15-20 basis points, particularly if this was interpreted as meaning the OCR could be raised earlier than expected. **No contacts expect the \$100 billion limit to be reached, but also do not necessarily see value in changing the limit.** A summary of interest rate strategists' views on LSAP of is presented in Section 3.

New Zealand Dollar

Contacts reported the NZD trading has been orderly. The reaction in the NZD that contacts described for a hawkish Statement does risk the NZD breaking a technical long-term trading range (figure 4). This occurred just following the February MPS, but subsequently the NZD retreated following the Government's housing policy announcements. **The NZD could restart its appreciation trend if the Statement indicates the MPC is considering the removal of stimulus.**

Figure 4: NZDUSD trading range
(shaded range 0.6250 – 0.7350)



Source: Bloomberg.

SECTION 3 – INTEREST RATE STRATEGISTS' VIEWS ON THE LARGE SCALE ASSET PURCHASE PROGRAMME

We contacted interest rate strategists 9(2)(ba)(i) seeking their views on the LSAP programme. Key points noted included:

- Weekly LSAP purchases are expected to continue to decline and track NZDM issuance
- Strategists do not expect the total size of LSAP purchases to reach \$100 billion, but they do not have strong views of the overall size (more focus on the 60% limit). **That said, the strategists noted the risk that communicating a figure below \$100 billion (i.e. 'walking away from the \$100b figure') could be perceived as a tightening if there is a de-announcement effect and that OCR hikes are deemed likely sooner than expected.**
- The effectiveness of LSAPs at keeping yields low has waned as purchases have reduced and global yields have increased due to the improved macroeconomic outlook
- The OCR is the most powerful monetary policy tool in the toolkit
- There is a growing interest in the role of the Reserve Bank's balance sheet

LSAP purchase pace and total programme size

The recent gradual reductions in weekly LSAP purchase pace have been perceived by some strategists as a quiet 'tapering'. The changes didn't result in a material market reaction due to the:

- reiteration that weekly changes do not represent a change in monetary policy stance;
- reduction in NZGB issuance; and
- continuous flexibility in LSAP purchase pace (i.e. if the pace had stayed constant for a long time and suddenly reduced, it could have been perceived as 'tapering').

Purchases of shorter-dated bonds were also perceived as facilitating an exit from LSAPs, as longer-dated bonds were more 'permanent' on the Reserve Bank's balance sheet.

The market is expecting LSAP purchases to continue to slow over the remainder of this year. The main driver for this expectation is the trajectory of reduced NZGB issuance, with all strategists expecting a reduction in issuance to be announced in Budget 2021. Strategists noted that lower bond supply reduces the capacity of the LSAP programme, as the indemnity limits purchases to 60 percent of NZGBs in the market.

Strategists generally supported the removal of LGFA and IIB bonds from the LSAP programme. One strategist (from a large market-maker in these bonds) noted that the removal may distort the breakeven inflation rate, given nominal bonds are still being purchased.

Strategists thought the NZGB market focused on the flow effect (buying bonds each week) more than stock effect (the total volume of bonds purchased). One strategist commented that the stock effect is priced upon announcement. The flow effect helps the market digest new supply and clear balance sheet risk on an ongoing basis, supporting liquidity and market functioning.

The strategists do not expect the total size of LSAP purchases to reach \$100 billion. This is due to the reduction in pace of purchases, past communications that the \$100 billion figure was a limit not a target, and the improved functioning of the bond market against a stronger macroeconomic backdrop. **That said, the strategists noted the risk that communicating a figure below \$100 billion (i.e. 'walking away from the**

\$100b figure') could be perceived as a tightening if there is a de-announcement effect and that OCR hikes are likely sooner than expected. Some strategists would prefer more clarity on the future of the LSAP programme, including the programme size, purchase window, and approach to balance sheet normalisation. However, others note that the option value created by not committing to any set path for the programme could enable purchases to gradually drop off to zero with little market reaction (orchestrating an 'Irish exit').

Most strategists did not have an expectation for the total LSAP programme size, as they thought the purchase rate was related to the NZDM issuance rate – a lower issuance rate would mean that the market would be able to better accommodate a lower purchase pace – and for those that did, the pace was based on extrapolating the current purchase pace.

A few strategists noted that an early end to the LSAP programme (i.e. before June 2022) would not be surprising, whilst keeping a caveat that the LSAP stood ready to be deployed if needed. **All strategists agreed that an early end to the LSAP programme in May 2021 would be a shock to the market and would likely fuel expectations of an OCR hike.**

Effectiveness of LSAPs and the monetary policy toolkit

A general consensus amongst strategists was that LSAPs were highly effective early on in the crisis, but their effectiveness in providing stimulus is waning in the face of the economic recovery and global flows. The increase in global yields makes it more difficult for LSAP purchases of longer-dated bonds to affect long-term interest rates, particularly at lower weekly purchase amounts. That said, LSAPs have been effective at keeping rates lower than otherwise (the stock effect).

In the current environment, given the bond market is functioning normally, strategists do not think that marginal LSAP purchases are having much of an impact on bond yields. In fact, they no longer believe the purpose of the programme is to lower yields, but rather to reinforce expectations that the OCR will remain on hold (the signalling channel is more important) and underpin confidence in the bond market. The rise in global bond yields on the back of global economic recovery also adds to the view that the Reserve Bank is unlikely to increase purchases to fight rising longer-term yields.

The LSAPs appear to be more effective in restoring and facilitating market functioning. The bond market is functioning, but with below average liquidity; however, this alone would not justify launching an LSAP programme if it did not already exist – as there are other tools the Bank has to provide support if needed (e.g. Bond Market Liquidity Support and FX swaps). If market dysfunction were to occur, the purchase pace would need to increase to several multiples of its current level to have a meaningful impact.

Strategists view the OCR as the more effective monetary policy tool. Forward guidance on the OCR and changes in the OCR would have a greater impact – whether tightening or loosening – on interest rates, especially in an environment of falling government bond issuance. **As a result, all strategists seemed to expect the MPC to use the OCR as the primary monetary policy tool, if needed.**

Interest in the RBNZ Balance Sheet and Settlement Cash Level

There is a growing interest in the role of the Reserve Bank's balance sheet. In particular, strategists are looking at the settlement cash system and how levels and flows affect monetary conditions. This area has come into focus due to the very large balance of the Crown Settlement Account, created due to more debt

issuance than government spending. How cash is distributed around the banks' settlement accounts and the Crown is viewed to influence future monetary stimulus and will be affected by policy normalisation.

Some market research notes have focused on the future size of the Bank's balance sheet as the LSAP programme ends, with one commentator noting that a reduction in the Bank's balance sheet size in and of itself would not necessarily equate to a monetary policy tightening.

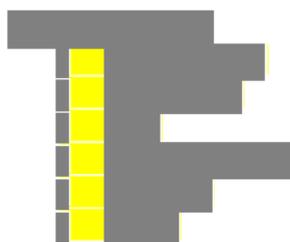
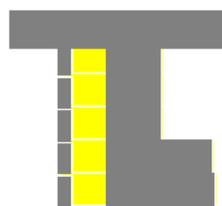
General feedback on the reinvestment statement in the April *MPR* suggested it was a good clarification, although the size of the maturity is not of particular concern. While the market tended to focus more on the flow than the stock effect, one strategist observed that they have started thinking about reinvestment and the stock effect.

APPENDIX A – OTHER INFORMATION

Table A1: Analyst OCR expectations (Bloomberg Survey 22 April 2021, research notes)

| Institution | OCR at: | | | | | | | |
|---|---------|--------|--------|--------|--------|-----------|-----------|-----------|
| | May-21 | Aug-21 | Nov-21 | Feb-22 | May-22 | Aug-22 | Nov-22 | Feb-23 |
| ANZ | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| ASB | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.50 | 0.50 | 0.75 |
| BNZ | 0.25 | 0.25 | 0.25 | 0.25 | 0.50 | 0.75 | 1.00 | 1.25 |
| Westpac | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| Kiwibank | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.50 | 0.50 |
| Goldman Sachs | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| TD Securities | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| Capital Economics | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.50 | 0.75 |
| Macquarie | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.50 |
| J.P.Morgan | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.00 | 0.00 |
| UBS | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| HSBC | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| Average: | 0.25 | 0.25 | 0.25 | 0.25 | 0.27 | 0.31 | 0.35 | 0.50 |
| Median: | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.50 |
| Range | - | - | - | - | - | 0.25-0.50 | 0.00-1.00 | 0.00-1.25 |
| Market pricing (OIS pricing, 12/05/2021) | 0.25 | 0.25 | 0.27 | 0.32 | 0.42 | 0.50 | 0.53 | 0.56 |

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Paper 6.1: Expanding the toolkit: Negative OCR

Primary authors: Evelyn Truong

SUMMARY

- With current forward guidance expiring in March, and operational preparations almost complete, **we are ready to deploy a negative OCR if and when required.**
- We have updated our assessment of a negative OCR against the [principles governing the use of our monetary policy tools](#), and judge that a negative OCR will be a valuable addition to our monetary policy toolkit, should the Committee decide that further stimulus is required now or at any point in the future. A lower OCR could also be considered as part of a ‘recalibration’ between tools.
- The effectiveness of a negative OCR could be improved when it is combined with an exemption tiering scheme, to support lending rate pass-through when retail deposit rates are bound at zero percent.
- Whether or not the MPC judges that additional stimulus is required in the near-term, we recommend that the MPC use the February MPS to announce a negative OCR as a ‘live’ tool for monetary policy, and to explain how a negative OCR could be used to support inflation and employment.
- The key benefits of communicating the tool in advance are:
 - Being clear about why we think a negative OCR would be effective in supporting the economy could help limit any negative signalling effect if and when the MPC decides to implement NIRP.
 - Reiterating our preparedness to use a negative interest rate policy (NIRP) if necessary will help markets assess the probable distribution of future interest rates appropriately, leading to more efficient market functioning and clearer market signals.
- Table 6.1.1 summarises our assessment of NIRP against the principles. The remainder of the paper explores key issues in relation to this assessment.

Table 6.1.1: Summary assessment of NIRP against our principles

| Principle | Updates since Nov. MPS | Assessment |
|----------------------------|--|---|
| Effectiveness | <p>Recent academic papers have been broadly negative, focusing on profitability impacts</p> <p>Central bank assessments are broadly positive</p> | <ul style="list-style-type: none"> Transmission of NIRP is similar to transmission of OCR cuts in normal times, except that transmission through the banking sector is partially constrained Transmission is supported by FLP and could be further supported by exemption tiering Transmission will depend on the economic conditions at the time. Last round, a “transmission channel health check” provided an update on factors influencing transmission in the current environment Effectiveness is likely to reduce the lower the OCR gets, as a higher proportion of retail deposit rates bunch around zero |
| Efficiency | Local banks reinforcing expectations of ZLB on retail deposit rates, but internationally this boundary is softening | <ul style="list-style-type: none"> As with cuts to the OCR above zero, a negative OCR is a very blunt tool, and therefore has a minimal impact on the efficient allocation of resources in the economy, relative to other monetary policy tools Constraints on retail deposits will likely reduce banking system efficiency with a negative OCR |
| Financial system soundness | Bank profitability has been stronger than expected | <ul style="list-style-type: none"> NIRP is likely to reduce bank profitability, as opposed to other AMP tools, which generally support bank profits. However, an exemption tiering strategy can help offset this risk. |
| Public balance sheet risk | Exemption tiering regime developed | <ul style="list-style-type: none"> Lower OCR lowers govt. borrowing costs Exemption tiering and interest reimbursement schemes are expected to cost within the range of \$150m-\$400m per year. Costs will be higher the lower the OCR, and the larger the exemption tier. However, the RBNZ has control over these variables Even after accounting for these costs, a negative OCR has a small balance sheet impact relative to other monetary policy tools. |
| Operational readiness | RBNZ and key banks now operationally ready. | <ul style="list-style-type: none"> Our internal systems are operationally ready to implement a negative OCR. Banks also report that they are ready. Preparations for an exemption tiering regime, and separate scheme for deposit takers who are not ESAS members, will be complete by the time of the MPS. |

| LEGEND | | | | |
|--------------------|------------------------------------|------------------|---------------------------|------------------|
| Effectiveness | Efficiency | FS soundness | Operational readiness | Public b/s risk |
| Effective | Efficient / neutral | No / Low risk | Available now / very soon | No / Low risk |
| Fairly effective | Fairly efficient / neutral | Fairly low risk | Under 3 month | Fairly low risk |
| Fairly ineffective | Fairly inefficient / distortionary | Fairly high risk | Under 6 months | Fairly high risk |
| Ineffective | Inefficient / distortionary | High risk | Over 6 months | High risk |

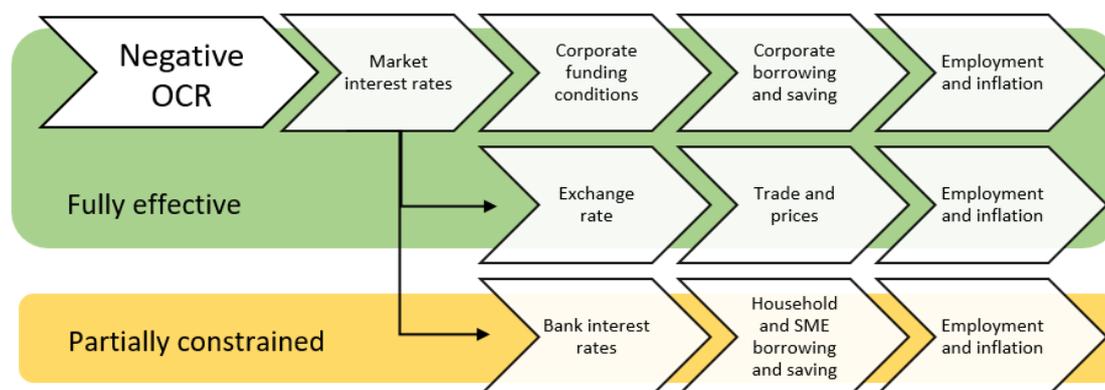
EFFECTIVENESS OF NIRP

A negative interest rate policy (NIRP) could be an **effective** means of supporting employment and inflation if the MPC judges that further monetary stimulus is required now or in the future. Under NIRP, we expect that:

- **financial market** transmission of monetary policy will be **at least as effective** as during conventional times; but
- **banking sector** transmission will be **less effective** due to the lower bound on retail deposit rates

Therefore, we expect NIRP to work more through the exchange rate and portfolio rebalancing channels, and less through the cash flow, credit supply, and house price channels, relative to OCR cuts above zero.

Figure 6.1.1: Transmission channel effectiveness summary¹



1. Financial market channels

Financial market channels will be at least as effective, and may be stronger

In countries where NIRP has been implemented, the financial markets channels of monetary policy are just as effective as when interest rates are positive, and may be even more effective under some circumstances.

When the OCR is reduced, lower wholesale market interest rates:

- reduce yields on government bonds, lowering government borrowing costs;
- reduce yields on corporate bonds, supporting private debt issuance and investment;
- depreciate the exchange rate, supporting export incomes, domestic activity, and traded inflation; and
- support asset prices, leading to a wealth effect.

These channels are not constrained when the OCR falls below zero. In fact, NIRP can have a larger impact on long term yields than OCR cuts in regular times, for two

¹ See Appendix 1 for a more detailed summary of the transmission of NIRP

reasons. First, taking the OCR negative signals the possibility of negative rates in the future, shifting the perceived lower bound and market expectations of future rates. Secondly, negative rates strengthen the incentives for investors to move into longer maturities, compressing the term premium.

International experience has been consistent with the expectations and portfolio rebalancing channels being amplified with NIRP. For example, the ECB found that taking interest rates negative reduced interest rates across the curve, with a peak impact around the 5-year maturity.² In Japan, it is estimated that lowering the policy rate from 0.00 to -0.10 resulted in a 40bp reduction in the 10-year government bond yield.³ Similarly, a number of studies suggest that the responses of asset prices and the exchange rate respond more strongly to reductions in negative interest rates than positive interest rates.⁴

While the RBNZ does not have explicit estimates of the relative importance of the financial markets and bank lending channels, the Bank of England's models suggests that financial market channels account for 1/3 – 2/3 of the impact on output, and 1/2 – 3/4 of the impact on inflation.⁵ An important corollary of this finding is that even if transmission via the banking system were reduced to zero at very low levels of the OCR, we would still expect considerable pass-through via other channels.

2. Bank lending channels

On call deposit rates are already constrained

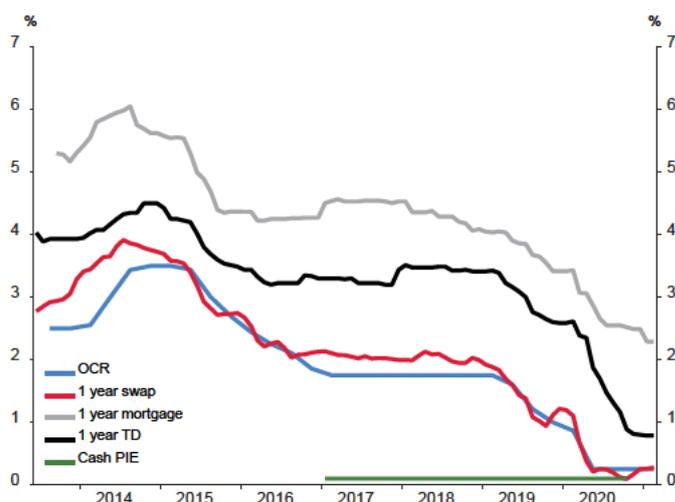
International experience suggests that with mildly negative rates, some deposit rates, particularly retail deposit rates, are bounded at zero, and this acts as an impediment to monetary policy pass-through. On-call deposit rates and rates on savings accounts have been close to zero in New Zealand for some time (Figure 6.1.2), and have not fallen in line with reductions in the OCR. Therefore, with mildly negative rates, it is unlikely that we would see any further pass-through to household on-call or savings deposit rates.

² See this [speech](#) by Isabel Schnabel, Member of the Executive Board of the ECB

³ Honda and Inoue (2019).

⁴ Bräuning and Wu (2017), results of Gräß and Mehl (2015) cited in Eisenschmidt and Smets (2019).

⁵ See this [speech](#) by external MPC member Silvana Tenrevo

Figure 6.1.2: OCR and selected interest rates

Term deposit rates are also approaching a constraint

Term deposit (TD) rates, on the other hand, have some scope to fall from their current levels. Despite rapid declines through 2019 and 2020, TD rates in New Zealand currently sit at around 0.8%,⁶ higher than in any country with a negative policy rate. In Australia, TD rates are currently around 0.4% with a policy rate of 0.1%, and in a number of economies, including Switzerland and the U.S., household term deposit rates have fallen almost to zero. While we can't know for certain how term deposit rates will evolve in New Zealand, we believe there is scope for term deposit rates to fall from their current levels. For the purposes of modelling the impacts of LSAP, FLP and NIRP on the banking sector, we currently use the following pass-through assumptions:

Table 6.1.2: Expected NIRP pass-through to TD rates and mortgage rates

| OCR (%) | TD rate (%) | TD pass through | Average lending rate | Lending rate pass-through |
|---------|-------------|-----------------|----------------------|---------------------------|
| 0.25 | 0.75 | n/a | 2.71% | n/a |
| 0 | 0.50 | 100% | 2.58% | 80% |
| -0.25 | 0.30 | 80% | 2.44% | 73% |
| -0.50 | 0.20 | 40% | 2.36% | 65% |
| -0.75 | 0.15 | 20% | 2.31% | 56% |

Mortgage rate pass-through is likely to be inhibited going forward

We expect to see weaker pass-through to mortgage rates under NIRP. We've yet to see strong evidence of weakening pass-through to date. Since January 2020, mortgage rates⁷ have fallen 98 basis points, compared to reduction in the one year swap rate of 96 basis points for the same period. However, the further the OCR falls,

⁶ Average advertised rate for big 4 banks, \$10,000 deposited for 1 year

⁷ Average advertised rate for big 4 banks, 1 year special rate

the more binding constraints on deposit rates will become, and the greater the extent to which pass-through to mortgage rates is constrained.

Corporate and SME lending are also affected

Transmission through to corporate lending rates may be constrained for the same reasons, and recent changes in the corporate loan market reflect this expectation. Over the last year, there has been a significant increase in the prevalence of zero interest rate floors on benchmark rates in corporate lending. Despite our communication to banks that we have a preference that these floors be removed where practical, they have become standard for new and renewing corporate facilities across much of the industry.⁸

In effect, these floors prevent negative rates from being immediately passed-through to customers on floating rates. This does not mean there will be no pass-through for corporate loans where floors are in place. While the direct mechanism for existing borrowers is closed off, banks' costs of funds will still fall, and this should translate to lower spreads for new and revolving borrowers, just as monetary policy eventually passes through to customers on fixed rates.

Longer-term, greater pass-through on deposit rates may be possible

While most economies which have implemented mildly negative policy rates have experienced a zero lower bound on deposit rates, Denmark is a notable exception.⁹ Initially, when interest rates turned negative in Denmark, the conventional zero lower bound on retail deposit rates appeared to hold. More recently, most banks in Denmark have imposed negative interest rates on larger retail deposits (>€13,000), without a notable increase in cash withdrawals. Similarly, a small proportion retail deposits are charged a negative interest rate across the Euro Area, but this currently only applies to very large deposits.

FINANCIAL SYSTEM SOUNDNESS AND EFFICIENCY

Providing economic stimulus as and when needed supports financial system soundness and efficiency by strengthening employment, supporting incomes, lowering the costs of servicing existing debt, and supporting market functioning. However, our monetary policy tools also have consequences for bank profitability, asset prices, and credit risk.

Asset prices

To the extent that monetary policy is effective in lowering market interest rates it will also support asset prices and encourage riskier lending. These effects were explored last round in Paper 2.4: Having regard to financial stability. A lower OCR is similar to

⁸ As at late 2020 ASB was the only bank removing zero-floors from their corporate lending agreements. BNZ and Kiwibank are actively migrating most corporate customers to lending with zero floors, while ANZ and Westpac already have a majority of their corporate customers either on floored lending rates or cost-of-funds-based lending rates which have a similar effect.

⁹ <https://voxeu.org/article/negative-interest-rates-danish-experience>

other tools in this regard. At the margin, NIRP is likely to have less impact on house prices than other AMP tools *for a given level of stimulus*, due to weaker pass-through via the bank lending channel, and a relatively larger expected effect via the exchange rate and corporate financing conditions.

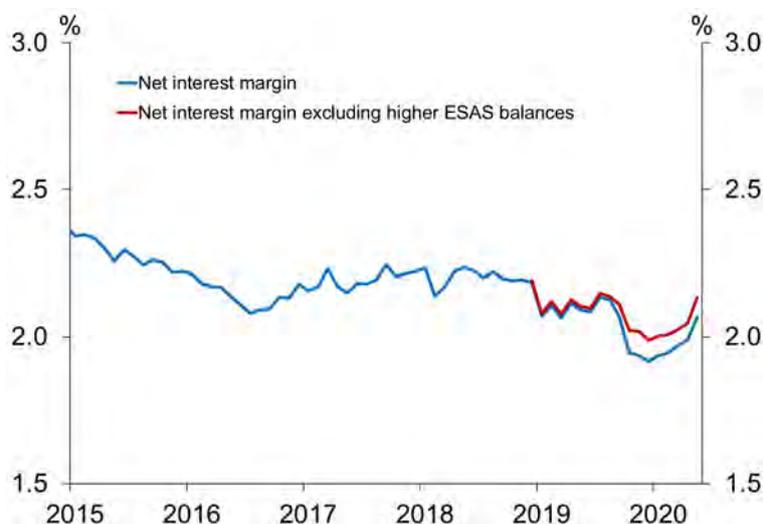
Bank Profitability

NIRP is likely to have a negative impact on bank profitability in New Zealand. While international evidence on whether NIRP has reduced bank profitability is mixed, more recent research is increasingly finding evidence of a negative impact.

Furthermore, the New Zealand banking system has several features which make it more likely that the impact on bank profitability will be negative, such as a large share of bank funding coming from deposits, a smaller proportion of banks' balance sheets likely to benefit from higher asset prices, and cultural and regulatory factors that limit the use of fees.

While NIRP is likely to have a negative impact on bank profits, starting-point profitability is stronger than expected. After a significant dip in early 2020, bank profitability has recovered, supported by strong liquidity and strong mortgage demand, and has proven more resilient throughout the AMP period than previously anticipated (Figure 6.1.3). After adjusting for higher settlement balances, net interest margins are broadly similar to levels seen in early 2019, despite 150bps in OCR cuts through this period.

Figure 6.1.3: Average net interest margin for 4 largest banks in New Zealand



Last year we presented a model exploring how various alternative monetary policy tools might impact bank profitability in New Zealand, given the composition of bank balance sheets. In general, this model finds that while LSAP and FLP increase banks' net interest income, negative interest rates weaken bank profitability across all measures, assuming that retail deposit rates are constrained. Table 6.1.3 updates this work to test how bank profitability might change at different levels for the OCR.

Table 6.1.3: Impact of a negative OCR on bank profitability.

| OCR | Net interest margin | Net interest income |
|------------|----------------------------|----------------------------|
| 0.25% | 1.70% | \$10,537 |
| 0% | 1.69% | \$10,454 |
| -0.25% | 1.65% | \$10,216 |
| -0.50% | 1.61% | \$9,978 |
| -0.75% | 1.59% | \$9,800 |

Note: Model assumes settlement cash balance of \$100bn and no exemption tiering

Under this calibration, cutting the OCR to -0.75% is estimated to reduce net interest margins by 0.11% on average across the banking system, a modest impact relative to historical variability. The estimates are highly sensitive to model calibration, particularly our assumptions about monetary policy pass through. If pass-through to lending rates is weaker than expected, banks maintain stronger profitability, if pass-through is stronger, bank profitability suffers more for a given OCR reduction, but we will also be able to achieve a greater degree of stimulus.

Banks could respond to lower profits in three ways: they can reduce dividend payments, allow capital ratios to decline, slow lending growth, or some combination of the three. A number of studies argue that the negative impact of negative rates on bank profitability could cause banks to raise lending rates and contract credit availability in order to preserve margins and maintain capital buffers – the so-called reversal rate theory.

If the reversal rate theory holds, then at some point, lower interest rates become counter-productive in supporting economic activity, employment and inflation. At this stage, we have not formally estimated where the effective lower bound may be in New Zealand, but a recent MPAG paper¹⁰ argues that NZ is unlikely to encounter a reversal rate down to -50bps.

EXEMPTION TIERING

Exemption tiering could offset some of the negative profitability impacts of NIRP, thereby lowering the reversal rate and increasing the likelihood of effective monetary policy pass-through. Exemption tiering involves exempting a portion of settlement cash from being remunerated at the negative OCR, with those balances instead remunerated at zero percent. This would reduce banks overall interest costs, while ensuring that the OCR remains the short-term market interest rate.

The purpose of exemption tiering is to offset some of the negative profitability impacts of NIRP, with a view to improving the efficiency, effectiveness, and financial stability outcomes associated with a negative policy rate. Exemption tiering provides

¹⁰ Haworth (October 13, 2020), How to lower the OCR to its Effective Lower Bound (ELB)

a direct subsidy to banks which may lower bank lending rates and support credit growth, or improve bank profits and support financial stability, or some combination of the two. Competitive dynamics will determine the degree to which the subsidy is retained, supporting bank profitability and financial stability, or passed on, supporting credit growth, employment and inflation.

Most central banks that have implemented NIRP have opted to exempt a portion of settlement balances from the negative interest rate – Danmarks Nationalbank, the Bank of Japan, the ECB, and the Swiss National Bank (SNB). Sweden is the exception; they did not use exemption tiering with NIRP. However, the Riksbank noted they are reconsidering the use of exemption tiering if they reintroduce NIRP, given they have deployed larger and more rapid asset purchases in response to the Covid-19 crisis. In addition, the Bank of England MPC recently requested that Bank staff commence internal technical preparations to be ready to be implement exemption tiering, should it be judged appropriate, alongside a negative Bank Rate.

At the RBNZ, internal work has progressed on exemption tiering methodologies, process and governance, a strategy for implementation, financial arrangements with Treasury, and a rebate scheme for banks and NBDTs that are not ESAS members. The exemption tiering scheme will be available broadly across banks and NBDTs, and will be ready to launch at any point following the MPS.

Table 6.1.4 shows how ESAS tiering might impact bank profitability within the New Zealand system, holding other factors such as lending rates constant. We show that, assuming an OCR of -50bps, exempting 50% of settlement balances (similar to the ECB) could raise net interest margins across the system by 4bps at an annual cost of \$250m to the Reserve Bank. Alternatively, banks could maintain the same level of profitability while passing through an additional 8bps of stimulus to mortgage rates. Exempting up to 80% of settlement balances (similar to the SNB, but less than the Bank of Japan) could raise net interest margins by 7bps, or allow an additional 9bp of mortgage rate pass-through, at an annual cost of \$400m.

Table 6.1.4: Impact of ESAS exemption tiering

| ESAS tiering exemption | Net interest margin* | Net interest income* | Lending rate equivalent** | Annual RBNZ interest foregone |
|-------------------------------|-----------------------------|-----------------------------|----------------------------------|--------------------------------------|
| 0% | 1.61% | \$9,978 | 0 | \$0 |
| 30% | 1.64% | \$10,128 | 4bps | \$150m |
| 50% | 1.65% | \$10,228 | 6bps | \$250m |
| 80% | 1.68% | \$10,378 | 9bps | \$400m |

Note: Model assumes \$100bn of settlement cash, and an OCR of -0.50%

*NIM and NII calculations assumes normal pass through after accounting for lower bound on negative rates

**Measures the lending rate reduction that would keep NII constant, relative to no exemption tiering

WHY COMMUNICATE NOW?

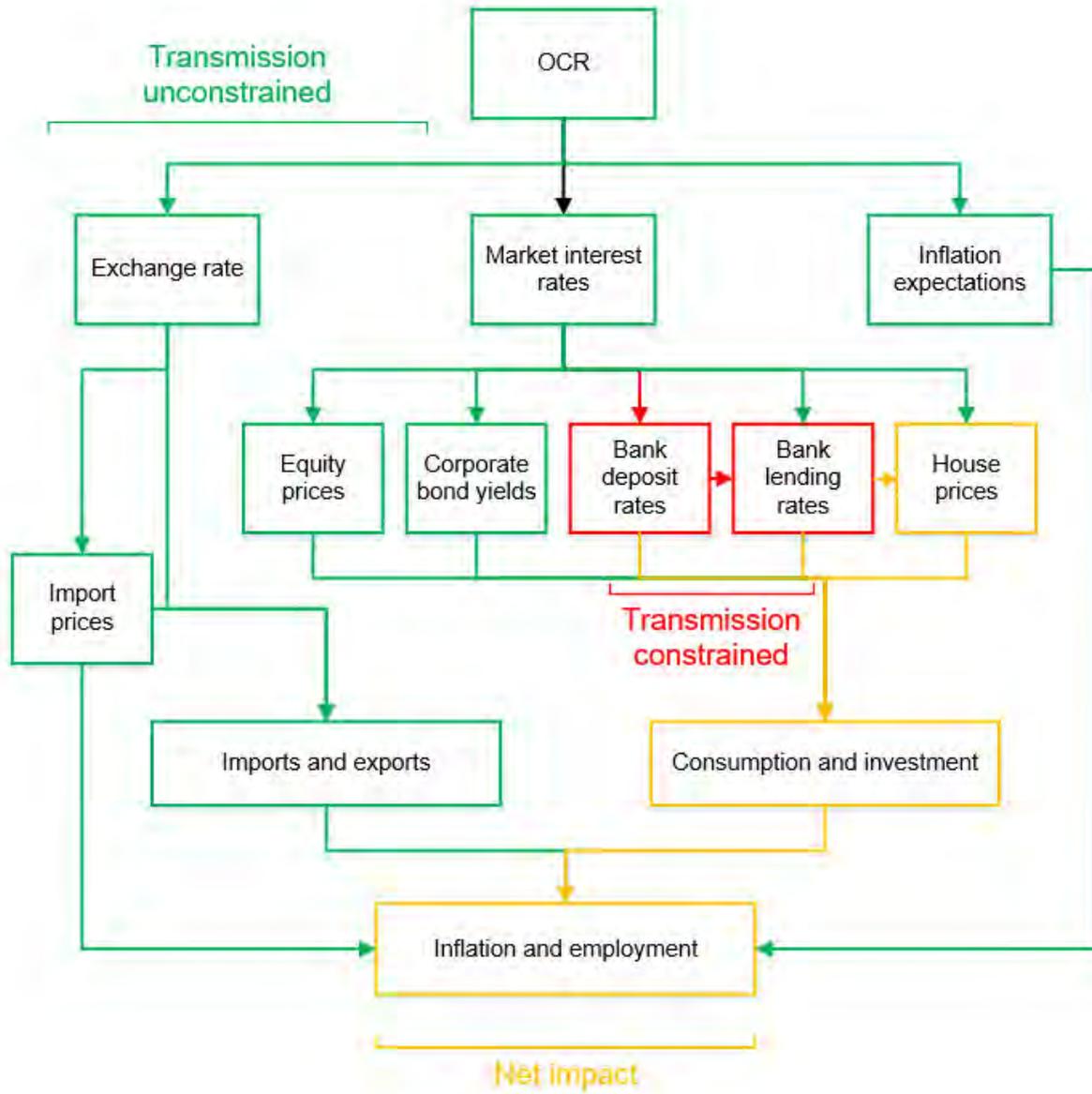
With current forward guidance expiring in March, and operational preparations almost complete, markets will be keen to hear how our thinking on negative rates has continued to develop.

The February MPS presents an opportunity to endorse a negative OCR as a 'live' tool for monetary policy, and to explain how a negative OCR could be used to support inflation and employment, separate to any announcement of the use of the tool. Whether or not the MPC expects that further stimulus will be required in the near term, there are benefits to communicating our stance on NIRP well in advance, should the economy face another negative shock and we find that additional stimulus is needed in the future.

We see two key benefits to communicating our endorsement of a negative OCR. Firstly, signalling early that we view NIRP as a valuable and effective policy option could help strengthen the expectations channel of monetary policy, and mitigate any negative signalling effects that might emerge in an unprepared market. We may receive more measured and balanced responses from bank economists and the media by publishing this information at a time where the need for more monetary policy stimulus has reduced.

Secondly, reiterating our preparedness to use NIRP if necessary will help markets assess the probable distribution of future interest rates appropriately, leading to more efficient market functioning and clearer market signals. If markets believe that we are hesitant to take interest rates negative, market pricing will be upwardly biased, and financial markets will be less-likely to front-load monetary stimulus in response to a future negative macroeconomic shock.

Appendix 1: NIRP transmission summary





Paper 6.2

LSAP Advice: Recalibrating purchases & relying on other tools

IMPACT / Monetary Policy Committee

Authors: Cameron Haworth and Sandeep Parekh

PURPOSE

This paper outlines advice for adjustments to the LSAP Programme. This advice is based on changes in market conditions and government bond issuance and does not comment on the appropriate level of overall stimulus the MPC should deliver.

SUMMARY

- Global yield curves are steepening on good news and recovering inflation expectations.
- Future LSAP purchases may be less effective and less efficient.
- We have purchased close to 60% of bonds in the 7-13 year section of the NZGB curve, which we think best maximises effectiveness.
- Overall NZGB issuance is now likely to be much lower than we anticipated when the LSAP programme size was set at up to 100 billion.
- Maintaining purchases near the current rate is likely to entail either:
 - Reduced effectiveness (if we purchase more short-term bonds);
 - Reduced efficiency (if we increase holdings of 7-13 year bonds to or above 60 percent and impair market functioning); or
 - Reduced effectiveness and increased crown interest rate risk, with a more difficult LSAP unwind (If we purchase more very long-term bonds).

RECOMMENDATIONS

We **recommend** the MPC endorse the recent slow-down in LSAP purchases. We anticipate purchases in the range of \$450-\$550m per week, matching issuance. This will still be subject to market conditions.

We **recommend** that *if the MPC desires to strategically recalibrate stimulus away from the LSAP and rely on other tools*, that the LSAP purchases are then reduced by ~\$50m every three weeks, market conditions permitting, on top of this reduction, reaching \$200-300m by the May MPS. This could then be flat-lined, or lowered to reach zero by August *if this is desired*.

We **recommend** the MPC also endorse that purchases of LGFA and IIB bonds will go on standby after two weeks of final auctions in February and March.

RECAP: LSAP IN 2020

The LSAP programme was established to provide monetary stimulus in lieu of further OCR cuts, and to address dysfunction in the government and local government bond markets. Stimulus was provided through a number of channels:

- Signalling a lower OCR in the future
- Lowering government bond yields along the curve
- Portfolio rebalancing (sellers buy other assets, reducing their yields)
- Increasing liquidity in the banking system
- Contributing to a depreciation of the NZD

LFGA and IIB bonds were purchased in small quantities to correct dysfunction and expand the total size of the programme, increasing liquidity and portfolio rebalancing.

LSAP was effective in achieving stimulus through all of these channels – though the exact magnitudes are uncertain. Lower yields enabled the government, LGFA, and some corporates to issue debt at historically low rates; with lower LGFA yields lowering corporate benchmarks. The banking system is highly liquid; the NZD TWI is estimated to have depreciated by roughly 4%, and housing and equity markets may have benefited from portfolio rebalancing.

Overall, the programme has been effective at achieving its initial goals.

2021: RISING YIELDS

Global yields have risen since November. This has been led by rising inflation expectations in the United States and larger-than-expected fiscal stimulus. New Zealand yields have followed the US up, with NZ-US yield correlations rising from 0.15 to 0.50 in 2021 so far.

A steepening yield curve does not necessarily reflect tightening monetary conditions. The March 2020 steepening was brought on by market illiquidity, as well as fears of low-for-long rates and large government bond issuance. But the market forces driving yields up today represent reactions to improving economic fundamentals and rising inflation expectations.

While we are able to keep the yield curve lower than otherwise with our purchases (in a counterfactual sense), we are fighting against a much stronger and opposing market conditions. In this environment, it is difficult for LSAP purchases to keep long-term NZ yields low, as this requires fighting against a well-functioning global market with data developments on its side.

FALLING GOVT. BOND ISSUANCE & DWINDLING LSAP AMMUNITION

Expected government bond issuance through to 2024 has fallen from \$185 billion to \$135 billion since May 2020. This is expected to fall further at the May 2021 budget. This reflects a stronger economy, ongoing improvements in the government's tax take, and a reduction in the chance of further lockdowns in the future. The government is now sitting on \$39 billion of unspent cash. Estimated bonds outstanding by June 2022 are roughly \$148 billion, plus \$12 billion of LGFA.

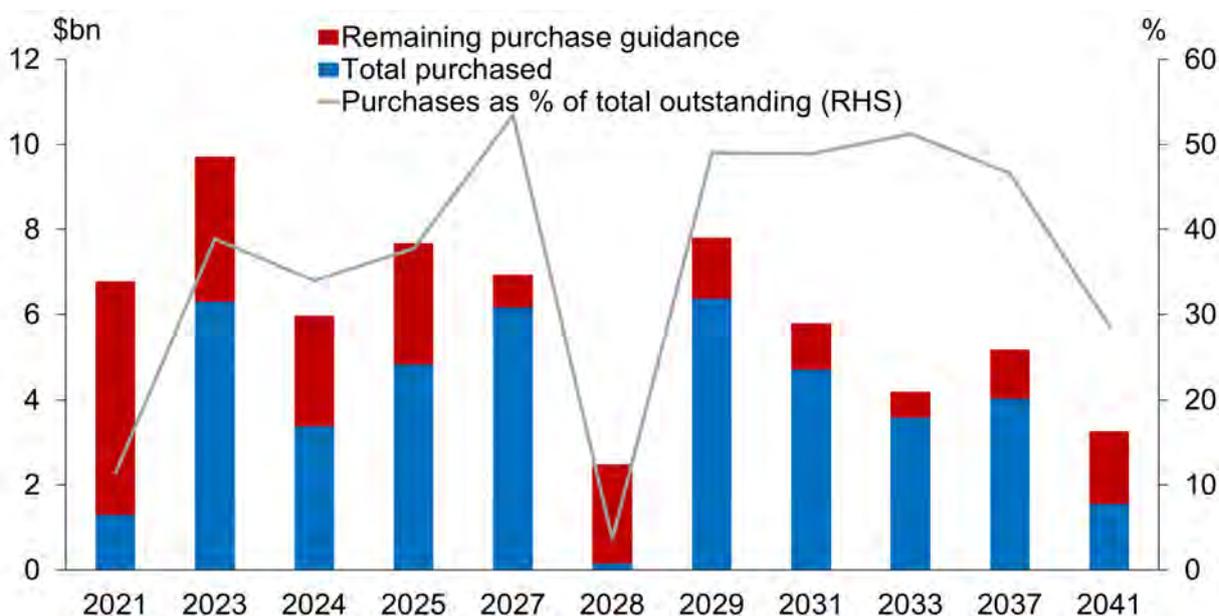
As a result, we now estimate a maximum LSAP programme size of \$92.5 billion, with \$82.5 billion of nominal NZGBs, based on the indemnity constraint of buying up to 60%. The risk to this limit is to the downside, with 2022 issuance expected to fall further. This could take the limits to \$86.5 billion, with \$72 billion of nominal NZGBs.

This means that we must necessarily reduce our weekly purchase rate and overall volume.

Due to market conditions, the Bank saw a larger proportion of its purchases under the LSAP occur around the middle of the government bond curve. This is where we are able to maximise our market impact and have a meaningful effect on market conditions and affect important benchmarks. As a result of this (and reduced government issuance), we are now approaching the limits of available bonds to purchase in this part of the curve (Figure 2). Additionally, we are receiving increasing demand from the market to borrow back some of these bonds through the Bond Lending Facility (BLF). While this is an early signal, it does support the fact that we should respect the 60% limit on a bond-by-bond basis to avoid disrupting the market.

We had also removed the April 2025 bonds from our schedule for a number of weeks as a result of market feedback that these bonds were becoming increasingly scarce. The NZDM has since resumed issuance for these bonds, and functioning in this line has improved.

Figure 2: NZGB purchases and remaining capacity



If we were to maintain purchases at the current rate, there are two alternative purchasing options along the curve. First, we can buy more long-term bonds. This would focus on the 2041 line and any new syndications – such as the issuance of a new 2043 or 2045 line. We would struggle to affect the yields on these bonds given their correlation to global benchmarks. These purchases may also have less impact on the NZ economy, as they would be new benchmarks at the time they are issued. We could alternatively focus efforts on the short-end of the curve. However, it is questionable whether LSAP is the best tool for controlling the short-end of the curve when the OCR, forward guidance, and FLP influence these yields and other financial market rates more directly.

Finally, note that all major issuers, such as the government, LGFA, and some corporates, have already issued a substantial amount of debt to tide them over for some time, and no longer expect to issue much debt through to 2022. There is now less of a direct benefit from keeping yields low, as funding activity is drying up (though corporate borrowing may grow again based on improved confidence and outlook).

Box 1: Assessment of LSAP against principles, Feb 2021

| Effectiveness | Efficiency | Financial system soundness | Operational Readiness | Fiscal cost |
|--|---|----------------------------|-----------------------------|---|
| Limited additional stimulus from maintaining current purchase pace | Market functioning could be somewhat impaired if we maintain current purchase pace for a prolonged period | No material implications | Tool is operationally ready | Purchases open the Crown Balance sheet to interest rate risk; especially on 2033+ bonds |

Overall, it is feasible for the Bank to maintain a lower weekly purchase rate without negatively impacting functioning and rates in the market. We also believe there is scope for a strategic slowdown in LSAP purchases, if the MPC believes it can achieve its desired level of stimulus by leaning more on other tools. This may be desired due to falling effectiveness and efficiency of LSAP in the current environment (Box 1).

LSAP REDUCTION OPTIONS: NECESSARY VS. STRATEGIC SLOWDOWNS

We propose two possible options for a slowdown in LSAP purchases.

- Necessary slowdown: reducing LSAP purchases to **meet** the pace of NZGB issuance.
- Strategic slowdown: reducing LSAP purchases **below** the pace of issuance.

The first option is unlikely to result in a substantial change in yields. The market is largely expecting a purchase programme at this rate. This is a neutral option that may provide a similar level of overall stimulus to the current settings.

The second option would test the market's ability to absorb NZGB issuance, and would likely result in higher yields. However, this need not lead to a Taper Tantrum. See Box 2.

The benefits of a strategic slowdown of LSAP purchases are as follows.

Firstly, we increase our ammunition and the ability to enter the market again after 2022. As we continue to buy up to 60% of the market by 2022, we become less and less of a credible buyer of future bonds, and yields may rise. The ongoing inclusion of LSAP as a live monetary policy tool is dependent on the Bank's ability to enter as a credible buyer with large appetite.

Secondly, we avoid the risks of over-purchasing individual bond lines and causing disruption. The 60% limit in the indemnity comes from an educated guess – the true limits of where we start causing disruption have yet to be tested and can be time-varying.

Thirdly, the exact stimulus provided by the LSAP programme remains hard to measure. It may be preferable for the MPC to reduce its reliance on LSAP in the long run and lean more on the OCR, where it is easier for the MPC to control the level of stimulus directly.

Box 2: The 2013 U.S. Taper Tantrum vs. 2021 NZ market

After Federal Reserve Chairman, Ben Bernanke, said the Fed would begin tapering asset purchases in May 2013, U.S. yields rose by around 100 basis points and remained elevated for around two years.

The rise in yields was partly led by expectations of fewer purchases. But it was mainly caused by expectations of imminent hikes in the Federal Funds Rate, as the market believed tapering would have to end before a hike was possible. The Fed struggled to dispel the expectations of higher rates, and the market continued to believe that the Fed desired a higher policy rate for some time.

For the NZ market in 2021, we believe tapering may affect expected bond purchases, but have a limited effect on OCR expectations. This is because, unlike the Fed in 2013, the MPC now have policy space to cut the OCR. The MPC can credibly communicate a desire to keep the OCR low, or threaten to cut to zero, or a negative level if they see undesired tightening in conditions. Appropriate MPC communication should therefore limit the potential for a Taper Tantrum. In general, market participants do believe that LSAP purchases will cease prior to any increase in the OCR. See the Communication section below for more.

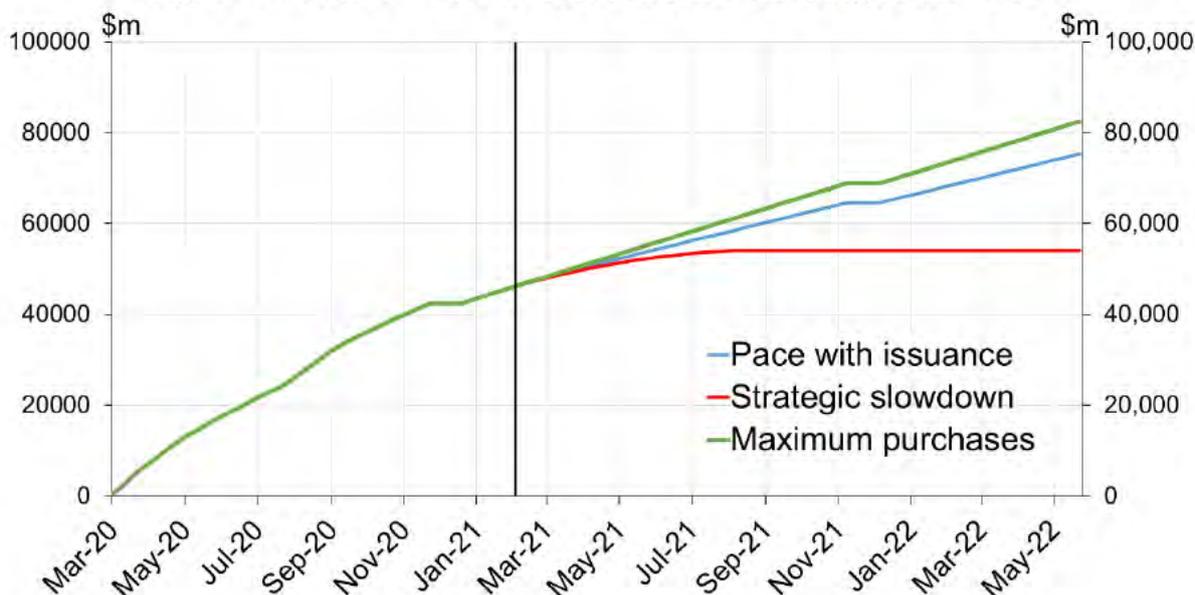
If the MPC chooses the strategic slowdown, the Bank could begin a gradual reduction in weekly purchases and continue to reduce this to very low levels, or even pause all purchases. Stopping additional purchases would not prevent us from reinvesting proceeds from maturing bonds. Nor would it prevent us from re-entering with purchases.

The current purchase rate is \$570m per week (Figure 3). This is down from \$650m in January, and \$800m in November 2020. The market has not moved materially on these changes.

We believe it is feasible to slow purchase rates down to between approximately \$450-550m in the short-term, matching NZDM issuance at its lowest, before proceeding to track them down.

We believe it is possible to reduce purchases below net issuance, though we do not know the lower limit. A gradual slowdown of \$50m every three weeks from \$500m in February would take us to \$300m by the May MPS. This could be reasonable level for flat-lining purchases, or provide a base for further reduction, reaching zero a week before the August MPS. That said, this would need to be complemented by firm guidance and a recalibration away to other tools to maintain stimulus.

Figure 3: Potential LSAP weekly run-rates and programme sizes



ENDING LGFA AND IIB PURCHASES

We initially purchased LGFA and IIB bonds for market functioning reasons, to increase overall LSAP volumes, and because LGFA yields provided a benchmark for corporate bonds.

Both markets are now functional and we are purchasing bonds in token quantities at present. We organise separate tenders for LGFA bonds, but are only purchasing \$20m per week – almost all coming from the book runner for LGFA. IIB purchases are also low at \$20m weekly.

There is no need to continue the purchase of either bonds for market functioning reasons. The IIB market has always been a relatively illiquid market, and the market is beginning to lean on us the longer we stay in.

We plan on cancelling the independent tenders for LGFA bonds. We also believe we can provide notice that we will no longer purchase any LGFA or IIB bonds after a two-week notice period. We can still buy LGFA bonds in the Bond Market Liquidity Support (BLMS) programme, and can include IIBs in this in the future if we think it is necessary.

MARKET EXPECTATIONS AND ANTICIPATED RESPONSES

The market is expecting LSAP purchases to slow. There are mounting expectations of a significant slowdown later in the year – but only a smaller slowdown in February. Some participants wonder if our presence is needed at all, while others expect us to remain present with minimal, non-zero purchases. All participants expect a slowdown of LSAP to come before OCR hikes. The market is not expecting other OCR cuts – and there are mixed views over whether we would hike before stopping LSAP completely, with many thinking we might.

It is notable that almost all market participants believe the MPC will prefer to use LSAP rather than the OCR to influence monetary conditions once further OCR cuts become available. If this is not the case, the MPC must be clear on this position, as it will affect how the market will form expectations and respond to policy adjustments.

Analysts have noted that the FLP reduces the need for short-end LSAP purchases, and some have recognised the potential for the Bank to intervene in the IRS market. Using negative rates at the current time would be a surprise, as this is not priced in. Markets may understand a lower OCR if coupled with a slowdown of LSAP, but they believe we would rather just use LSAP.

There is little market appetite for continued LGFA purchases in LSAP. 9(2)(g)(i)

There may be a case where staff seek approval to increase overall purchases. This would likely occur following evidence of the market struggling to absorb NZGB issuance – which could cause yields to rise unnecessarily high.

COMMUNICATIONS AND GUIDANCE

Should the MPC choose to signal a necessary, but not strategic slowdown in the LSAP purchases, we recommend the following wording as a baseline:

The Committee will continue with the Large Scale Asset Purchase (LSAP) Programme with a \$100 billion limit and up to 60% of NZGB's outstanding. The Committee continues to delegate the weekly purchase decision to Reserve Bank staff, and endorses Bank staff advice to maintain recent purchase trajectories.

Should the MPC choose to signal a strategic slowdown, below the necessary rate, we recommend the following wording as a baseline:

The Committee will continue with the Large Scale Asset Purchase (LSAP) Programme with a \$100 billion limit, and the Funding for Lending Programme (FLP). The Committee also retains the Official Cash Rate (OCR) at 0.25 percent in accordance with the guidance issued on 16 March 2020.

The Committee is considering a recalibration of how it provides stimulus in light of the operational readiness for a negative OCR and the end of its commitment to hold the OCR unchanged until March 16 2021. The Committee's preference in the future is to use the OCR as the primary instrument of monetary policy, with less reliance on the LSAP Programme.

The Committee will therefore consider reducing the OCR in the future alongside a reduction in the rate of LSAP purchases. They will review these settings at the April Monetary Policy Review. In the meantime, the Committee continues to delegate LSAP purchase decisions to Reserve Bank staff.

Although not recommended, it is also possible for the MPC to consider raising the weekly LSAP purchase rate back up to the average rate required to reach the maximum possible size:

The Committee will continue with the Large Scale Asset Purchase (LSAP) Programme with a \$100 billion limit. The Committee has asked Reserve Bank staff to increase the weekly purchase rate to align with the average purchase rate required to purchase 60% of New Zealand Government Bonds by the end of the programme in 2022.

RECOMMENDATIONS

We **recommend** the MPC endorse the recent slow-down in LSAP purchases. We anticipate purchases in the range of \$450-\$550m per week, matching issuance. This will still be subject to market conditions.

We **recommend** that *if the MPC desires to strategically recalibrate stimulus away from the LSAP and rely on other tools*, that the LSAP purchases are then reduced by ~\$50m every three weeks, market conditions permitting, on top of this reduction, reaching \$200-300m by the May MPS. This could then be flat-lined, or lowered to reach zero by August *if this is desired*.

We **recommend** the MPC also endorse that purchases of LGFA and IIB bonds will go on standby after two weeks of final auctions in February and March.



Paper 7.1

Secondary considerations

Author: Chris McDonald

The MPC must have regard to the soundness and efficiency of the financial system when formulating monetary policy, and may choose to factor these considerations into its decision-making, provided the inflation and employment objectives are expected to be met. This paper outlines financial stability developments for this purpose. The other secondary considerations in the MPC remit are not addressed here but are touched on in other papers.

Since the November *MPS*, near-term risks have continued to diminish on the back of significant policy support and positive health outcomes domestically. Economic activity and the labour market have continued to recover. Asset prices have increased, including house prices. The risk of widespread defaults has diminished, with the number of households remaining on mortgage deferrals continuing to decline. Deferrals are now less than 1 percent of mortgages, down from a peak of around 8 percent.

For businesses, the impacts of the past year have been less widespread than initially feared. Business confidence continues to rise and employment and investment intentions have generally increased. However, there remain some concerns for financial stability as the sectors most affected by the border closures continue to face subdued demand.

While near-term risks have subsided for now, another COVID-19 outbreak remains a key financial stability risk. In addition, and importantly for monetary policy, we are monitoring several risks that could develop if an extended period of low interest rates is needed. These risks include:

- **Increased search for yield** – there have been some indications that investors are looking to riskier assets to get better returns. Returns on riskier assets have declined more than low risk assets. For example, corporate bond spreads are below their pre COVID-19 levels despite ongoing economic uncertainty. In this environment, a concern is that investors may not be accurately assessing risk and asset prices do not reflect their underlying value.
- **More volatile asset prices** – in the past year house prices in New Zealand have increased by 18 percent and equity prices have increased by 12 percent. As such, asset prices are at record high levels relative to rent or earnings. While current low interest rates support this, interest rates are low relative to history and relative to estimates of neutral. A risk is that higher interest rates, perhaps like the recent rise in long-term government bond yields, could cause a correction in asset prices.
- **Higher household debt** – housing makes up the majority of the assets that New Zealand households own. With the recent rise in house prices, this has spurred an acceleration in mortgage credit growth. While more debt in itself is not a problem, we have seen particularly strong growth in high LVR and high DTI lending. Future increases in interest rates would increase the debt-servicing cost for such borrowers.

In response to the recent rise in house prices and increase in high LVR lending, the Bank has reinstated LVR restrictions. From May, only 5 percent of a bank's lending to investors can be above a 60 percent LVR and only 20 percent of a bank's lending to owner-occupiers can be above an 80 percent LVR. This is expected to soften investor demand for housing in the near term. It will also address some of the risk of rising mortgage defaults and feedback effects if house prices fall. Nevertheless, the sustainability of house prices remains a concern. A correction would have wider impacts on household balance sheets and spending behaviour.

Another important buffer for the financial system is the capital held by banks. Bank profitability has improved over recent months as banks have not needed to raise additional loan impairments, and net interest income has stabilised. As a result, their capital positions are stronger than they were before COVID-19. Improved profitability also means that if negative interest rates are needed, the starting point for bank profitability would be higher – see Paper 6.1 Expanding the toolkit: Negative OCR.

Overall, near-term financial stability risks have eased due to the stronger economy. Stimulatory monetary policy is contributing to this strength. However, with interest rates likely to remain low for some time and given the recent rise in house prices, medium-term risks are increasing. We will continue to monitor and assess these risks.



Paper 7.3 – Market Intelligence Report and Expectations for Monetary Policy

Primary author: Nick Mulligan

KEY POINTS

This paper summarises feedback from our market intelligence calls covering expectations for monetary policy at the February *MPS* and monetary policy transmission. Key points include:

- All contacts expect monetary policy settings to remain unchanged at the February *MPS*
- The market is focused on the MPC's guidance on how policy may change going forward
- Contacts report that monetary policy has transmitted well through financial markets

SECTION 1 – MONETARY POLICY EXPECTATIONS

- *All* contacts expect the OCR to be held at 0.25 percent.
- *All* contacts expect the LSAP programme to remain unchanged, with contacts expecting continued weekly reductions in purchases in line with market conditions and issuance.
- *All* contacts expect the Funding for Lending programme to remain unchanged.

Policy tools and calibrations

All contacts expect the OCR to be held at 0.25 percent at the February *MPS*. No major banks are expecting the OCR to be lowered. Instead attention has shifted to when the OCR may increase. Market pricing suggests a 50 percent chance the OCR is increased from mid-2022 (Figure 1). BNZ is forecasting a hiking cycle starting from mid-2022 to return the OCR to pre-Covid levels (see Appendix A).

All contacts expect the LSAP programme to remain largely unchanged. Contacts generally understand the \$100bn is a *limit* not a *target*. Most contacts expected the recent reductions in weekly purchases given the

reduced issuance expectations from New Zealand Debt Management (NZDM). Contacts expect weekly purchase volumes to fall further over time to match weekly issuance from NZDM. However, a couple of contacts couldn't reconcile the lower weekly purchases in an environment with upward pressure on wholesale interest rates. One contact noted that the LGFA LSAP could be ceased given high grade credit markets are functioning very well.

All contacts expect the Funding for Lending Programme to continue unchanged. Low drawdowns to date were expected given bank funding positions. Contacts noted the programme had been effective at holding retail interest rates lower than otherwise, given the increase in wholesale interest rates.

Figure 1: Market pricing of the OCR
(ICAP OIS pricing, as at 10 Feb 2021)

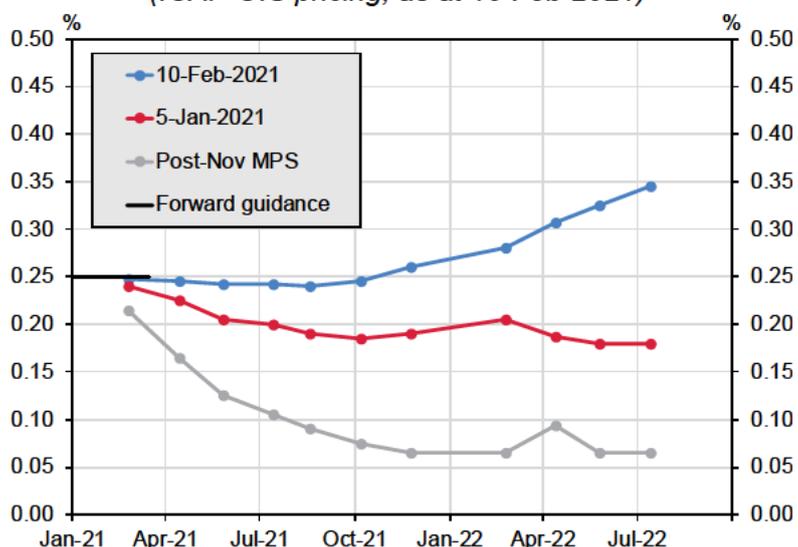


Table 1: Market Contacts' Expectations for Monetary Policy Settings in February

| OCR | |
|--|---|
| 0.25 percent | All contacts expect the OCR to be held at 0.25 percent at the MPC. The OCR track, and any new comments on forward guidance will be closely watched by the market – this is a key area of focus. |
| Large Scale Asset Purchases | |
| <i>LSAP programme expected to remain at a total size of \$100bn – a limit not a target</i> | |
| <i>Nominal NZGB (60% limit unchanged)</i> | Contacts do not expect any material change to the nominal NZGB LSAPs. Contacts noted the purchase 'limit' has reduced due to lower expected issuance from NZDM. Hence, contacts expect the weekly purchases to reduce slightly to match NZDM issuance. Alternatively, contacts noted the MPC could increase the programme length. |
| <i>LGFA (30% limit unchanged)</i> | One contact noted that LGFA purchases were no longer required, as the high grade credit market is functioning very well. Other contacts also noted that the credit markets are functioning well, with credit spreads near historical lows. |
| <i>Inflation-indexed (30% limit unchanged)</i> | Contacts do not expect any change to inflation-indexed government bonds (IIBs) purchases, noting there are still more sellers than buyers. |
| <i>Other assets</i> | No contacts expect any other assets to be added to the LSAP programme. |
| Funding for Lending Programme | |
| <i>FLP (unchanged)</i> | All contacts expect the Funding for Lending programme to remain unchanged. |

Expectations for monetary policy over the next six months

We also asked contacts about their expectations for monetary policy over the next six months. Overall, assuming no domestic lockdown/widespread community transmission of Covid-19, contacts do not expect any significant policy changes. However, recall the market operates a binary mindset – *'if the MPC are not cutting/easing policy, then they must be considering hiking/removing stimulus'*.

The OCR is expected to be on hold at 0.25 percent through until at least mid-2022. The market does not seem to think there is any real chance of the OCR being reduced. **The key focus for the market is how the MPC communicates the future path of the OCR (i.e. publishing a traditional projected OCR track) and how this interacts with the other monetary policy tools.** Views on the future of the LSAP programme are mixed, but most expect the programme to be completed, taking into account the lower issuance from NZDM. For example, some contacts believe that the MPC would either complete or halt asset purchases prior to increasing the OCR. **Communications on the interactions of monetary policy tools will particularly affect the volatility and slope of yields curves beyond the two year horizon (discussed below).**

Contacts expect the FLP to continue in the background for the full three year duration.

Key factors in focus over the next six months included how the housing market responds to the tightened loan-to-value lending restrictions; whether the border remains closed for the rest of the year; the vaccine rollout domestically and internationally; how much the economy has slowed over summer; and whether the rebound in domestic activity is sustained or temporary.

SECTION 2 – COMMUNICATIONS AND EXPECTED MARKET REACTION

- Contacts expect the MPC to strike a careful balance between acknowledging the improved economic conditions and noting they remain cautious – monetary policy will remain stimulatory for the foreseeable future.
- **The market reaction is likely to be asymmetric: there is more upside risk to both interest rates and the NZD on a hawkish *Statement* than there is downside risk to a dovish *Statement*.**
- Short-term interest rates will be sensitive to comments around the OCR and forward guidance, while long-term interest rates will be more sensitive to comments about the LSAP programme.

The market is **not** expecting any material change in policy stance at the MPS. The *Statement* is expected to acknowledge the recent run of strong data (inflation, inflation expectations, labour market, GDP, business confidence, housing market, commodity prices/terms of trade). In part, contacts attributed both the strength and speed of the recovery to the monetary policy actions taken last year. The MPC is expected to acknowledge the rebound is an expected outcome, but better and sooner than projected. Contacts believe downside risks have reduced and the outlook is more certain. Vaccine programmes are established in the US and Europe, and the global backdrop is judged to have improved.

However, the market is acutely aware that the MPC will not want to accidentally tighten monetary conditions by encouraging the market to get ahead of itself regarding the removal of stimulus. While financial markets are generally efficient, they do have a tendency to overreact to news. We saw this last year when the market had fully priced in a reduction of the OCR to -0.25 percent more than six months in advance of the expected cut. Since the November MPS, the subtle change in tone from the MPC, along with stronger than expected data, has seen a material repricing of yield curves and monetary policy expectations. Given the magnitude of the change in the direction of market positioning (during a period with below average liquidity in markets due to holidays), an overly positive *Statement* from the MPC could see this trend sustain.

For this reason, the MPC's messaging is expected to acknowledge the improvement, but be clear that continued strong data is required to change the stance of monetary policy to one where the removal of stimulus would be considered – this fits within the *least regrets* approached employed last year. Some contacts noted that even a 'neutral' *Statement* may be interpreted as endorsing the recent steepening of the yield curves and higher NZD, and there is a risk that this could see further increases in yields and the NZD. In addition, contacts noted the risk that the MPC may be wary of being the first central bank to rollback stimulus and the potential impact that this would have on the NZD.

Temporary inflation pressure would support maintaining stimulus for an extended period. Some contacts believe that inflation will be back near target in the near term (already is on core measures) and the labour market could be around its maximum sustainable level, questioning whether emergency policy settings were still required. However, other contacts note that the uptick in inflation may not be sustainable as wage inflation remains weak. Hence, they believe it would be prudent to *watch, worry and wait* a bit longer to be sure that underlying inflation pressures are sustainable. A couple of contacts picked up comments from the November MPS, that the MPC may be willing to tolerate a period of inflation above target, given years of below target inflation and difficulty generating inflation pressure pre-Covid.

MPC comments on the housing market will also garner attention, given the exchange of letters with the Minister of Finance. The re-imposition of the LVR restrictions would have been more important in an environment when further monetary policy stimulus was expected (as LVRs would have been interpreted as opening the door to further rate cuts without fear of financial stability risks). Contacts don't expect monetary policy to *'lean against the wind'*, but do believe the case for more stimulus is now hard to justify.

The market is looking for guidance on the OCR path and any interaction between the OCR and the LSAP programme. The unconstrained OCR track is expected to be revised upwards. Most contacts also expect the return of the projected actual OCR track, given the expiry of the forward guidance. Contacts still struggle to interpret the unconstrained OCR track and its implications for individual monetary policy tools. While the majority of contacts expect the actual OCR track will be flat for two years, some contacts note that it may have a tick up at the end. However, any upward slope would send a hawkish signal and reinforce the recent steepening of yield curves. **Messaging around the forward OCR track will be key to delivering the desired market reaction and interpretation of the *Statement*.**

Given recent developments and market pricing, contacts believe that it's more likely the MPC will err on the side of a more dovish *Statement* than a hawkish *Statement*. They also believe that yields and the NZD would *rise* by proportionately *more* under a hawkish *Statement* than they would *fall* under a dovish *Statement*.

For a more *optimistic* or *hawkish* tone, contacts noted the MPC may:

- Endorse the recent strength in the data and market pricing (inflation, inflation expectations, labour market, GDP, business confidence, housing market, commodity prices/terms of trade etc); and
- Note monetary stimulus has been effective at lowering retail interest rates.

An *optimistic* or *hawkish* policy setting was described as:

- No change to policy settings (OCR or LSAP or FLP), and a softening of language around further stimulus (i.e. if required or dependent on conditions); or
 - Note that the LSAP programme could be reduced materially or stopped (more hawkish); or
 - Publishing an OCR track with a tick up after two years, or an unconstrained OCR track that is revised much higher (more so than it was in November).
- ➔ *Hawkish market reaction:* OCR hikes priced into 2022H2, 2-year swap rate increase 10-20bps, NZD increase 1-1.5 percent (with sustainable appreciation pressure)

For a more *pessimistic* or *dovish* tone, contacts noted the MPC may note:

- They believe some of the recent data strength will be temporary and continued monetary stimulus is required;
- The outlook remains uncertain and risks remain; and
- Ongoing weakness in wage inflation data casts doubt on the sustainability of inflation pressures.

A *pessimistic* or *dovish* policy setting was described as:

- Increasing LSAP purchases;
 - Noting that negative interest rates are a live option if required;
 - Publishing an unconstrained OCR track that is unchanged from November or an actual OCR track that is flat the forecast horizon.
- ➔ *Dovish market reaction:* OIS rates mostly unchanged, 2-year swap rate to decrease <10bps, NZD down 0.5-1 percent (not expected to be sustained)

Short-term interest rates and the OCR track

Most market participants expect that the OCR will be held at 0.25 percent until at least 2022H2. Expectations of the OCR being on hold and the FLP pricing are helping to keep short-term interest rates anchored around 0.25 percent.

Long-term interest rates and the LSAP programme

Contacts believe the LSAP programme has helped hold the yield curve lower and flatter than it would otherwise be, while continuing to support market functioning. **Contacts expect a comment from the Committee regarding the recent adjustments to weekly purchase volumes given the increase in yields.** A material ‘tapering’ of LSAP purchases or indication that the programme may be halted early could lead to dysfunction in the bond market as it is not expected. Such a change would generate significant selling of NZGBs and yields could rise materially (likely greater than 20 basis points).

New Zealand Dollar

Contacts reported the appreciation of NZD since November has been orderly and largely justified and sustainable. While noting that the MPC won’t want a stronger NZD, contacts don’t believe the MPC could successfully jaw-bone the currency lower. **The NZD could restart its appreciation trend if the Statement indicates the MPC are considering the removal of stimulus.**

SECTION 3 – VIEWS ON MONETARY POLICY TRANSMISSION

We asked contacts for their views on monetary policy transmission. Key points noted were:

- Monetary policy transmission through to the household sector has been strong;
- LSAP purchases will have to adjust to reduced issuance; and
- Corporate interest rate hedging activity re-emerging

Monetary policy transmission through to the household sector has been strong

Overall, contacts noted the strength and speed of the rebound in activity is indicative of the loose monetary policy settings transmitting well. The strong performance of the household sector was a key topic of discussion. Although easing slightly over the holiday period, credit demand from households has remained particularly strong. One contact noted tentative signs that household equity withdrawal is occurring (households’ borrowing against their houses for consumption).

The OCR guidance and FLP was credited for the reduction in mortgage rates since November. Contacts noted without these policy settings, the mortgage interest rate curve would likely have steepened, given the increase in wholesale rates. Contacts expect monetary policy to continue place some downward pressure on mortgage and deposit rates in the short term (potentially offsetting upward pressure and holding rates flat) provided the MPC don’t indicate the removal of stimulus is on the horizon. However, mortgages rates are unlikely to fall by much if at all, given that activity in the housing market is so strong that some banks are struggling to process mortgage applications. The average interest rate faced by household continues to fall as mortgage re-fixing has occurred mostly in the cheap one-year fixed rate.

LSAP purchases will have to adjust to reduced issuance

Contacts noted the lower expected issuance from the NZDM means a necessary reduction in the LSAP purchases. Offshore contacts in particular noted that clients are asking about the fiscal position and government spending intentions. There is a risk the government bond programme is reduced further at the Budget in May, which could see the LSAP programme hit the 60 percent ownership limit earlier than expected.

Corporate interest rate hedging activity re-emerging

In the corporate space, last year we heard that corporates were not hedging interest rate risk as the MPC had successfully sold the ‘low for long’ interest rate story. Corporates were also concerned about the performance of hedges if the OCR were to go negative. However, some banks reported that they have noticed a pick-up in enquiries regarding hedging products.

APPENDIX A – OTHER INFORMATION

Table A1: Analyst OCR expectations (most recent forecasts)

| Institution | OCR at: | | | | | | | |
|---|---------|--------|--------|--------|--------|-----------|-----------|-----------|
| | Feb-21 | May-21 | Aug-21 | Nov-21 | Feb-22 | May-22 | Aug-22 | Nov-22 |
| ANZ | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| ASB | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| BNZ | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.50 | 0.75 | 1.00 |
| Westpac | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | | |
| Kiwibank | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.50 |
| Goldman Sachs | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| TD Securities | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| Capital Economics | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.50 |
| Macquarie | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| UBS | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| Average: | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.28 | 0.31 | 0.41 |
| Median: | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| Range | - | - | - | - | - | 0.25-0.50 | 0.25-0.75 | 0.25-1.00 |
| Market pricing (OIS pricing, 10/02/2021) | 0.25 | 0.25 | 0.24 | 0.26 | 0.28 | 0.33 | | |

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Paper 7.2

IMPACT policy recommendations

IMPACT members

Author: Chris Bloor

SUMMARY

This paper outlines various monetary policy options for the February *MPS* decision.

The starting point for the economy has improved significantly since the November *MPS*. Uncertainty, while still elevated, has alleviated somewhat and risks are no longer as skewed to the downside as they once were.

Significant monetary policy easing over the last 12 months has provided significant monetary stimulus, with our central estimate of the unconstrained OCR currently at -0.45 percent. This is close to the level of stimulus we believe is required for the MPC to achieve its remit objectives.

Relative to previous rounds where significant further stimulus was required, this leaves the MPC with a narrower, more nuanced, set of policy options to consider this round. Primarily these relate to:

- Whether to provide a little more stimulus now, to achieve remit objectives more rapidly, or in response to their perception of the balance of risks.
- Whether to adjust how stimulus is provided, now that the guidance period for the OCR is reaching an end, and banks are operationally ready to implement a zero or negative OCR.
- How to communicate future policy stance.

Range of options

The options discussed in this paper are:

- **Option A** (*'Hold a steady course'*) – Do not deliver any material policy changes this time, but signal a desire to rebalance tools in the future
- **Option B** (*'Rebalance tools now'*) – Maintain current stimulus, but do this by pre-announcing an OCR cut to zero, and a strategic slowdown in LSAP purchases
- **Option C** (*'Deliver more stimulus now'*) – Preannounce an OCR cut to zero, while maintaining purchases for now.

IMPACT recommendation:

Most IMPACT members recommend option A. There is assessed to be little impetus to change policy settings now, and there is currently more option value in waiting for more evidence of how FLP passes through to lending rates, and how enduring recent economic strength is. Waiting to rebalance policy also provides greater opportunity to warm market participants to this change in strategy, and reduces the risk of adverse market moves.

One IMPACT member recommends option B. This member believes the relative efficacy of OCR cuts over LSAP purchases justifies an immediate switch in strategy.

Should the level of monetary stimulus be increased?

We currently estimate that policy measures to date have provided monetary stimulus equivalent to between 0 and -1.96bps in unconstrained OCR terms, with our preferred measures pointing towards the less-negative end of this range.¹ Our first pass forecasts suggest that that we are currently very close to, but just shy of, the level of stimulus required. We are uncertain, but we think some of this stimulus may be delivered through continued pass through from the FLP programme. This may bridge the small amount of additional monetary stimulus incorporated into the first pass projections.

Given this starting point, the committee has the choice as to whether, and when, any further stimulus should be provided to the economy. This decision largely comes down to an assessment of the balance of risks and how the committee evaluates the least regrets policy option in the current environment.

In the view of the majority of IMPACT members, the risks around the forecasts are now roughly evenly balanced. A further outbreak of COVID-19 in New Zealand remains an ever present risk, and there is still significant uncertainty around the timing and process of border reopening. Further downside risks stem from weakness in the global economy and a reduction in fiscal stimulus.

On the other hand, continued strength in the housing market, and the feedthrough of this to domestic spending and inflation is a significant upside risk. Added to this, we have been surprised by the resilience of households and businesses to the significant shock caused by COVID. While our forecasts largely reflect this surprise, there is still scope for the economy to remain more robust than expected.

The relative regrets around over or under stimulating the economy are also starting to become more balanced. Inflation has been surprisingly strong, and is forecast to exceed the midpoint of the target band for a period of around 12 months from the middle of this year. While inflation is expected to drop away after that, and monetary policy as usual needs to look through temporary movements in inflation, there is now less risk that inflation will become unanchored from the 2 percent midpoint. Recent surprises in the labour market have also reduced the risk of large and persistent deviations from maximum sustainable employment.

The balance of financial stability risks has also shifted. Near-term risks to financial stability stemming from rising loan impairments have alleviated materially. At the same time, recent rapid rises in house prices present a medium-term risk to financial stability. In response to this rising risk, the Reserve Bank has announced tougher loan to value ratio restrictions. Nevertheless, providing more monetary stimulus than is necessary would accentuate housing-related risks.

¹ The suite of unconstrained OCR models has a range of 0 to -1.96bps when including shadow-short rate (SSR) models, and 0 to -78bps when SSR models are excluded.

In combination, these factors suggest the relative risks of over and under stimulating the economy are more evenly balanced than previously. This suggests putting more weight on the central forecasts for the economy in setting monetary policy than previously.

IMPACT recommendation: Impact members recommend maintaining monetary stimulus at the current level for now.

Should there be a rebalancing of tools?

As noted in paper 6.2, the LSAP programme may be starting to reach the limits of its effectiveness. When assessed against our principles of AMP tools, we now assess that maintaining LSAP purchases at current rates may have limited further effectiveness, have larger market efficiency consequences and expose the crown to greater balance sheet risk, than we assessed prior to the introduction of the programme.

At the same time, the forward guidance period for the OCR will end on 16 March, and banks are now operationally ready to implement a zero or negative OCR. Paper 6.1 outlines how we assess a negative OCR against the AMP principles.

As summarised in table 1, we now see a negative OCR as being more effective, more efficient and with lower public balance sheet risks than undertaking further LSAP purchases. If any further stimulus is required, IMPACT recommends that this should be done through cuts to the OCR.

Table 1: Assessment of negative interest rates and continued LSAP purchases against AMP principles

| | Negative OCR | Continuing LSAP purchases at current rate |
|----------------------------|--------------|---|
| Effectiveness | Yellow | Orange |
| Efficiency | Yellow | Orange |
| Financial stability | Yellow | Green |
| Operational readiness | Green | Green |
| Public balance sheet risks | Green | Orange |

The committee could chose to rebalance tools now, by strategically reducing the rate of LSAP purchases, and balancing this out through cuts to the OCR.

OCR cuts to zero or negative territory can lower the front end of the yield curve and, based on current market expectations, will affect the New Zealand dollar. This is likely to be more effective than the LSAP in the current environment. Any OCR cut may be short-lived (less than a year) should conditions continue to improve. If this is true, then OCR cuts in as early as March or April may provide four long-term benefits:

1. Illustrating operational readiness for a zero/negative OCR in the future
2. Signalling MPC's willingness to use a zero/negative OCR in the future
3. Reducing public fears relating to the permanency of a negative OCR

4. Improving public belief in the efficacy of a negative OCR, if they see its use is correlated with an economic recovery.

These four factors will all improve the available ammunition available to the MPC to effectively and confidently deploy a negative OCR in the future. It may also improve automatic stabilisers, with markets more likely to price in larger OCR cuts in the future in the face of bad news.

On balance, most IMPACT members do not believe that the MPC should implement this rebalancing of tools now. A rebalancing of policy now would catch the market by surprise, and there is a risk of generating an inadvertent tightening in monetary conditions if the market perceives that the slowing LSAP purchase rate is a signal that monetary stimulus will be less enduring. However, if the MPC signals that it is considering rebalancing tools once the forward guidance period has ended in the record of meeting, this would provide greater opportunity to warm the market up to this change in strategy.

IMPACT recommendation: Signal that any further stimulus will be provided through reductions to the OCR, and the MPC will consider rebalancing its use of tools at the next meeting.

Communication

Recent economic data has been substantially stronger than expected, and many market participants are starting to question when monetary policy stimulus will be removed. Our own first pass forecasts are consistent with a gradual withdrawal of stimulus from 2022 onwards.

However, the outlook is still highly uncertain, and economic weakness is expected to persist for some time. There is a risk that the market could prematurely price a withdrawal of monetary stimulus, undermining the economic recovery. This could be accentuated if we slow the pace of LSAP purchases, and the market interprets this as a precursor to OCR increases. A perception in the market that the RBNZ is considering tightening monetary policy could lead to a substantial appreciation of the New Zealand dollar exchange rate given signalling from other central banks that they will maintain stimulus for a number of years.

To guard against this, we recommend adopting a relatively dovish tone in the MPS. As noted in paper 7.3 market participants are expected to pay close attention to any forecast tightening in the OCR forecast track. Market participants are also likely to be sensitive to any suggestion that stimulus could be removed.

To manage these risks, we suggest flattening the unconstrained OCR track, so that no increase in the OCR is signalled until 2023 at the earliest. We also recommend providing similar forward guidance to the November OCR:

"The Committee agreed that monetary policy will need to remain stimulatory for a long time to meet the consumer price inflation and employment remit, and that it must remain prepared to provide additional support if necessary."

Overall policy recommendation

Option A – Hold a steady course

Most IMPACT members recommend maintaining the current level of monetary policy stimulus, and, aside from a necessary adjustment to the pace of LSAP purchases, not to adjust any of our monetary policy tools at this stage.

However, we believe there is merit in signalling that the committee is considering strategically slowing the pace of LSAP purchases and reducing the OCR once the forward guidance period for the OCR has completed. In order to prevent any unwarranted steepening in the yield curve, forward guidance should emphasise that monetary policy will need to remain stimulatory for a long time and downplay the prospect of future removal of stimulus.

Option B – Rebalance tools now

Given our current assessment of the relative efficacy of LSAPs and the OCR, there is a case to be made to make an immediate adjustment by pre-announcing an OCR cut to 0 percent to take effect on 16 March, and strategically slowing the rate of LSAP purchases.

This option would essentially provide the same level of stimulus to the economy, but would do so with less risk to financial market functioning and reduced crown balance sheet risk. However, this policy move would catch the market by surprise, and there is a risk of generating an inadvertent tightening in monetary conditions if the market perceives that the slowing LSAP purchase rate is a signal that monetary stimulus will be less enduring.

On balance, most IMPACT members see more value in waiting until next round to implement a change in strategy, providing greater opportunity to warm the market up to this change in approach. However one member recommends this option, on the basis that the relative difference in efficacy of tools warrants and immediate change in strategy.

Option C – Deliver more stimulus now

Our first pass projections suggest modest further stimulus is required in the near term, and there is uncertainty whether this will be delivered through lagged impacts of the FLP programme.

Delivering more stimulus now would provide greater certainty of durably returning inflation to the mid-point of the inflation band, and maintaining maximum sustainable employment. If the committee wished to provide more stimulus, we recommend pre-announcing an OCR cut to 0 percent. We would recommend holding off on any rebalancing of tools at this point, given the mixed messages it would send. However under this option, it would still be worth signalling a future rebalancing.

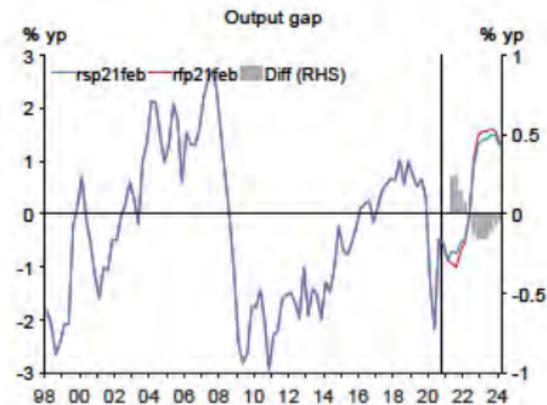
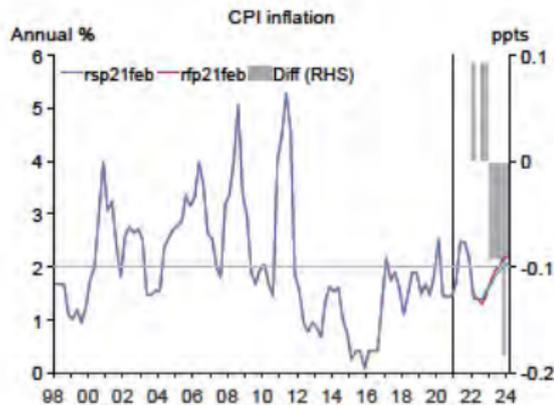
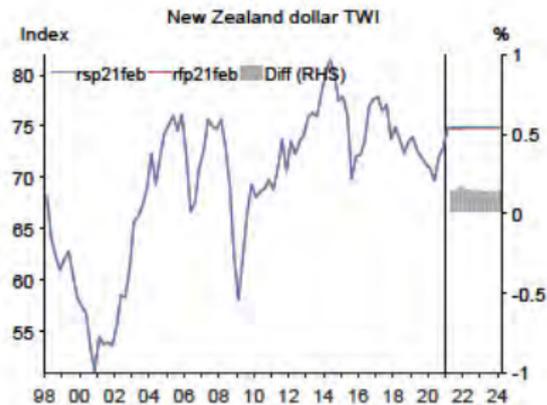
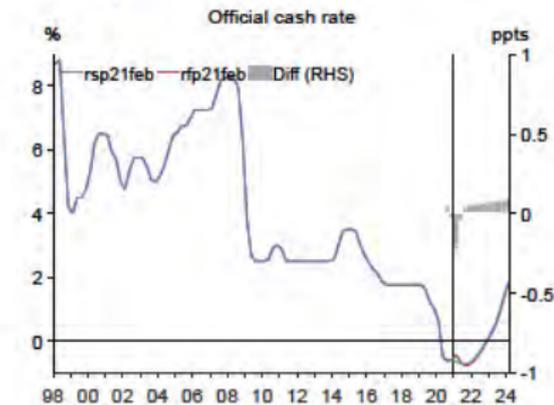
On balance, IMPACT members do not support this option. There has been a significant improvement in the economic outlook over the past three months, and monetary stimulus is well within the range of what is required to achieve our objectives. Given we would have to take the unusual step of pre-announcing an OCR cut, we believe there is greater option value in waiting to assess how past policy actions transmit through the economy, and whether further upside surprises ameliorate the need to provide additional stimulus.

Forecast Chartpack

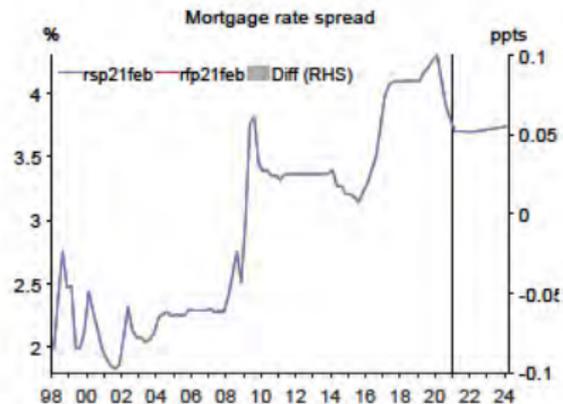
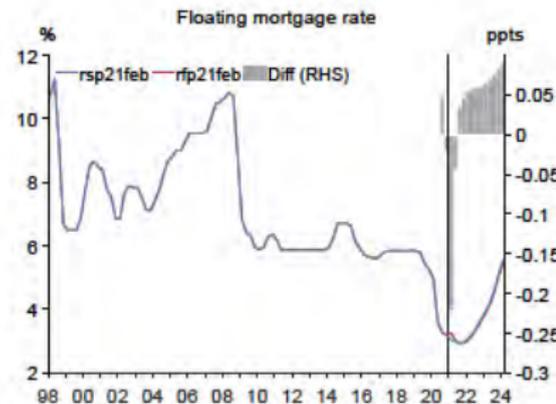
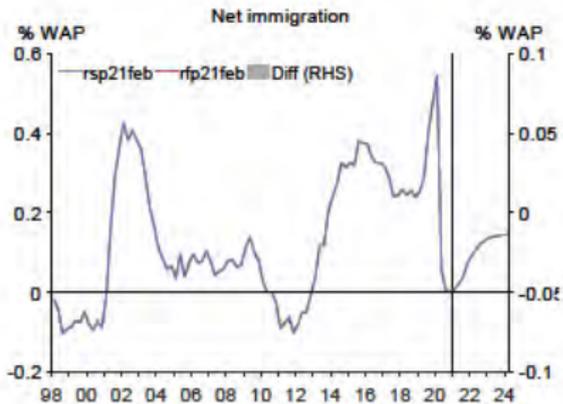
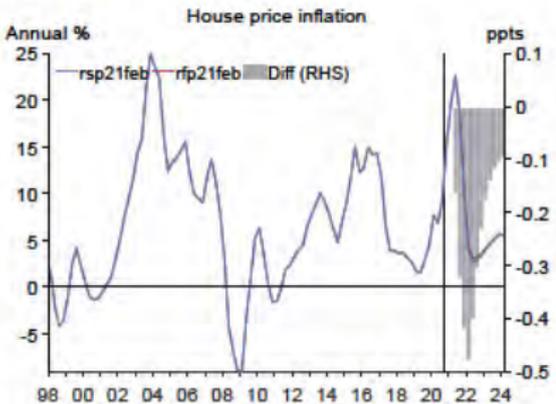
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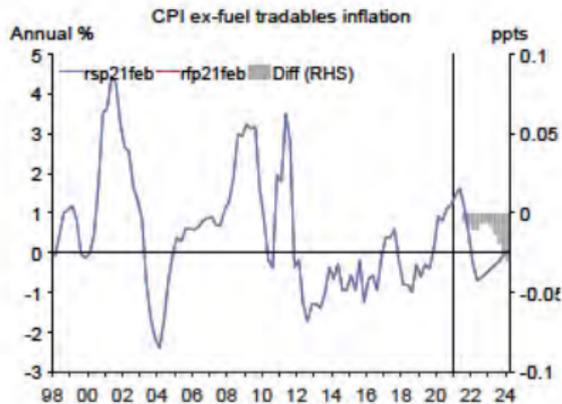
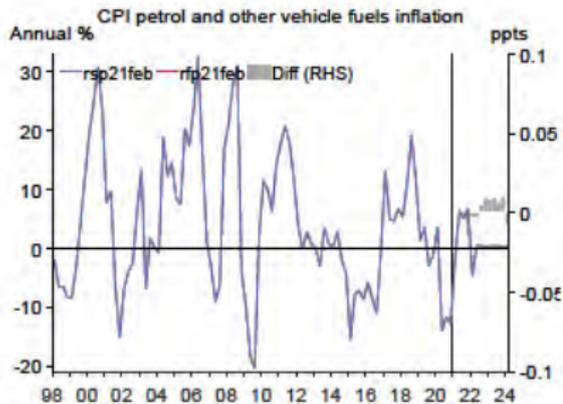
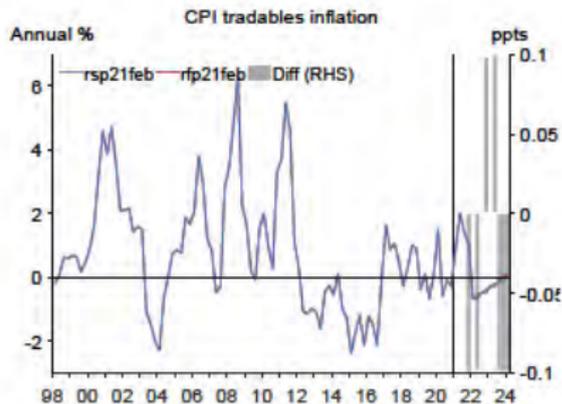
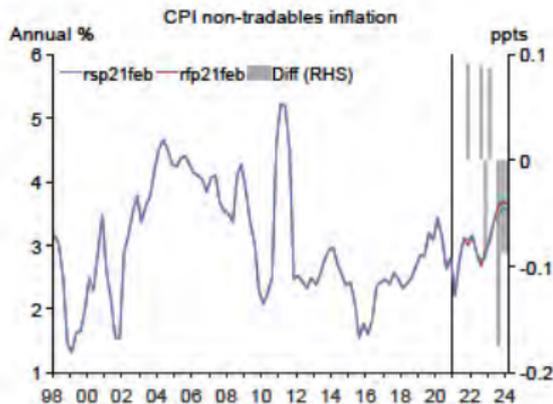
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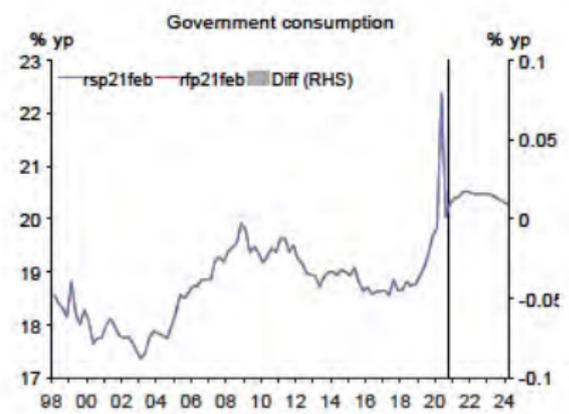
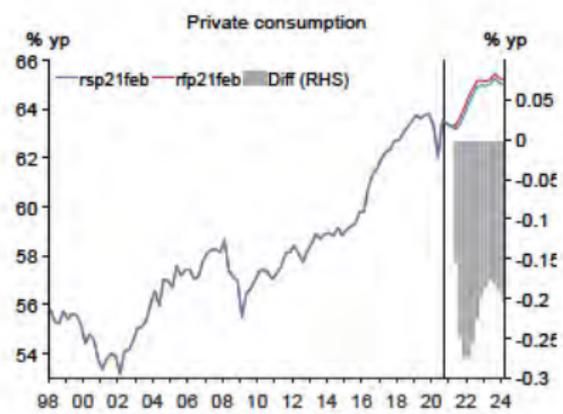
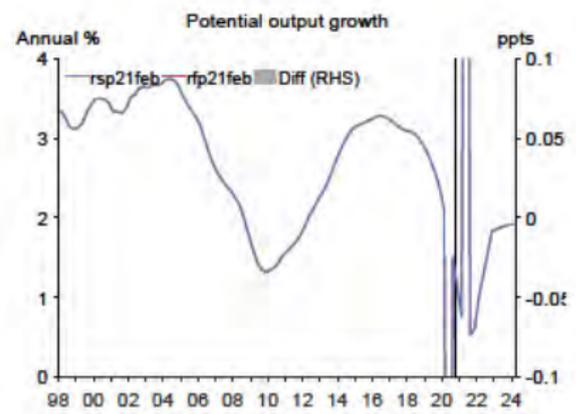
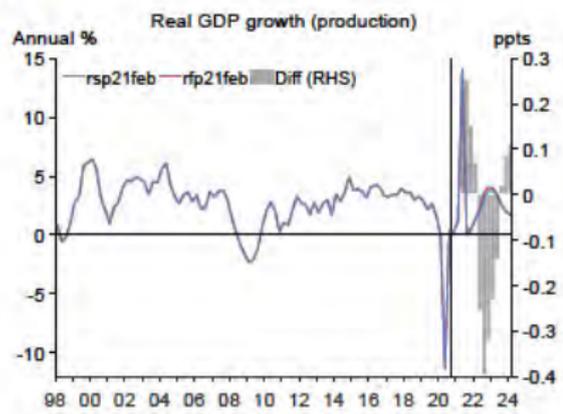
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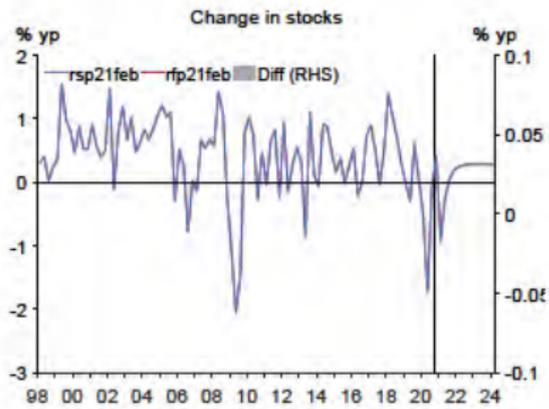
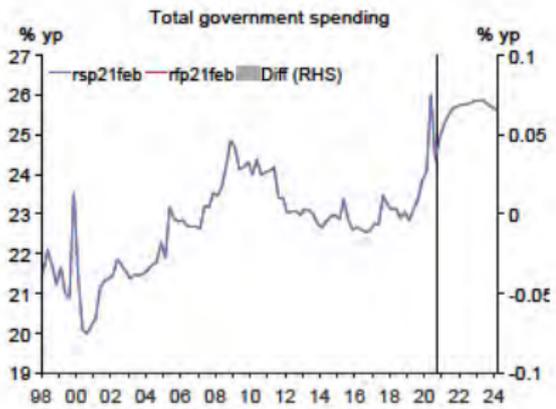
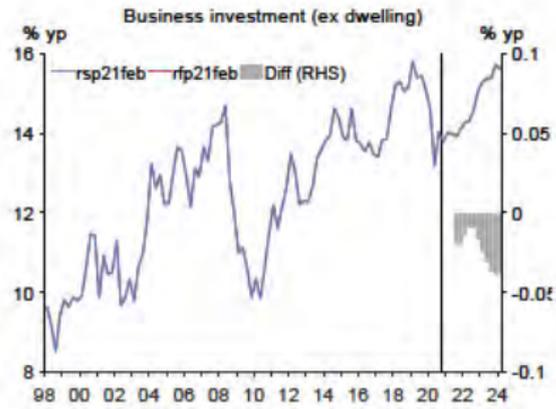
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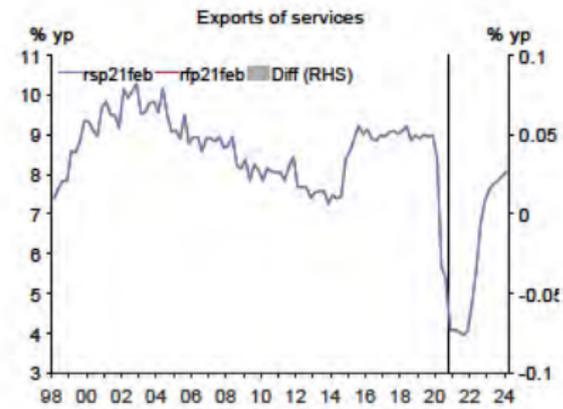
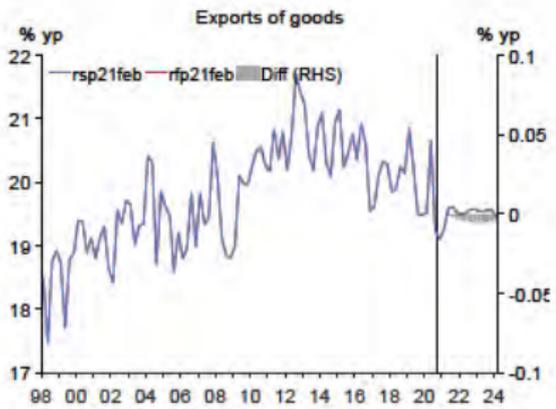
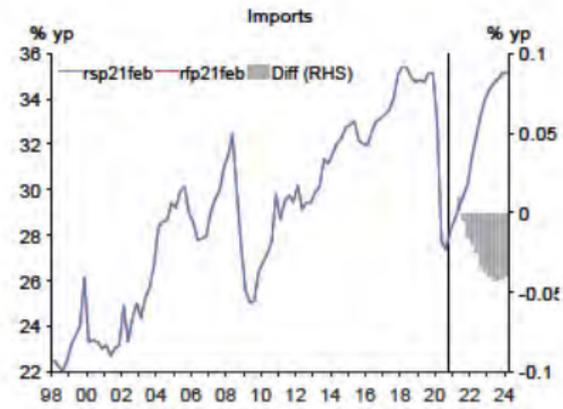
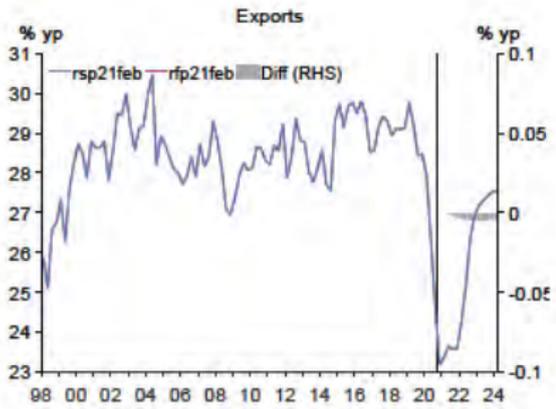
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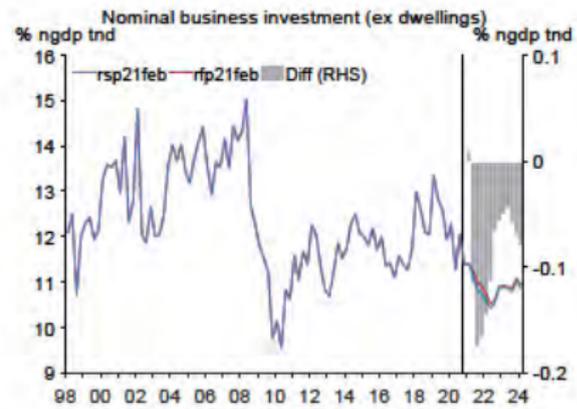
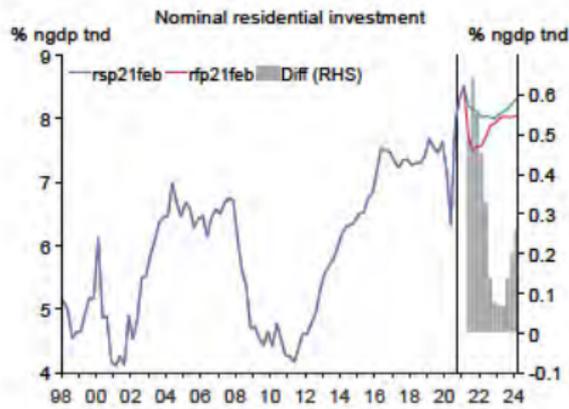
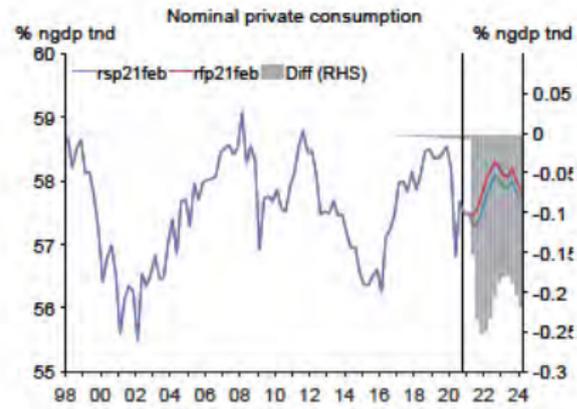
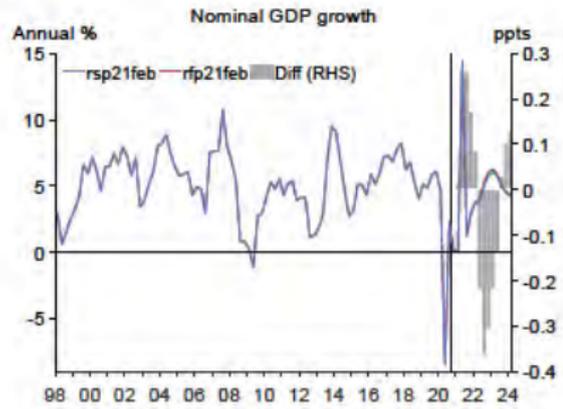
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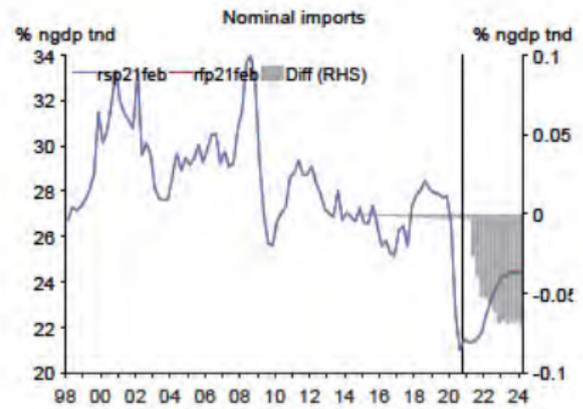
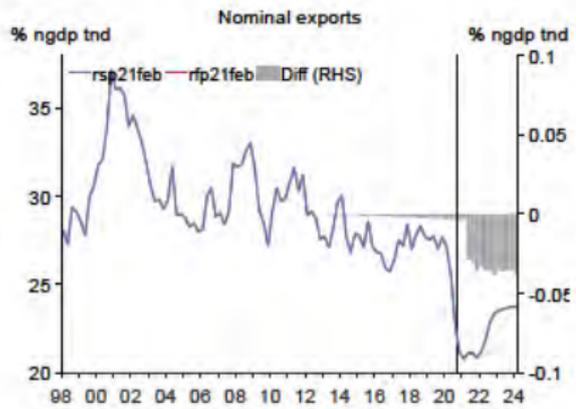
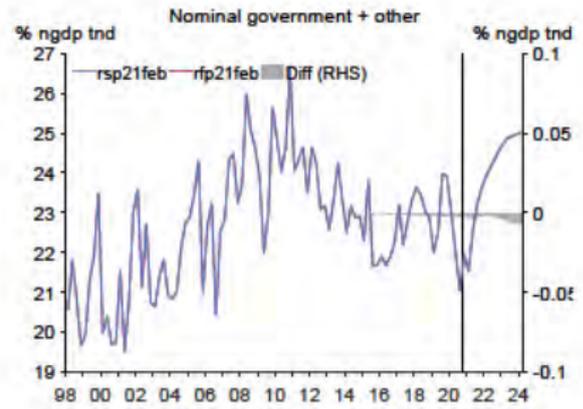
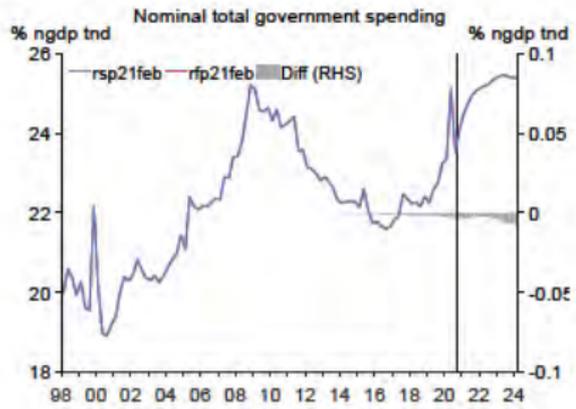
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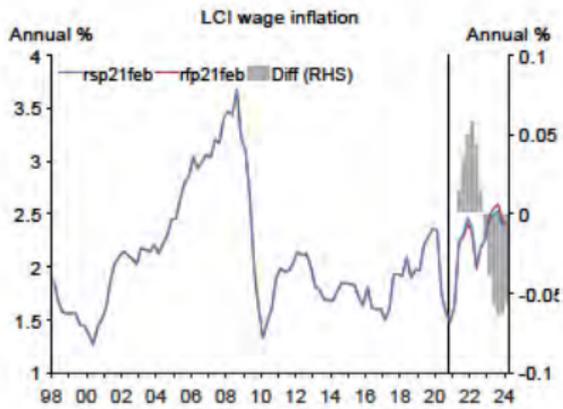
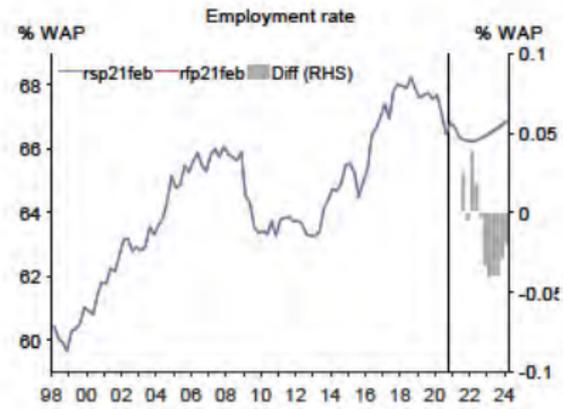
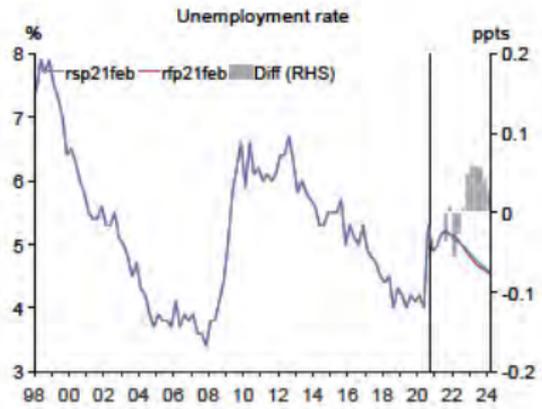
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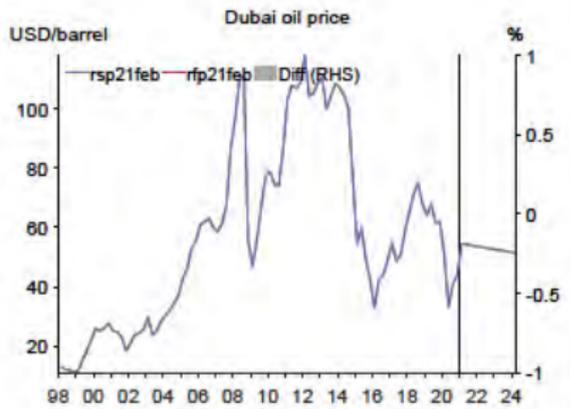
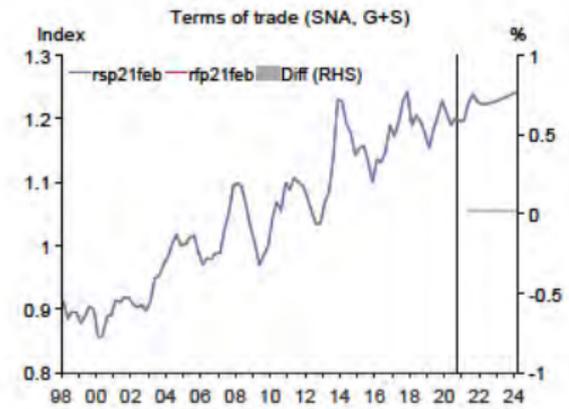
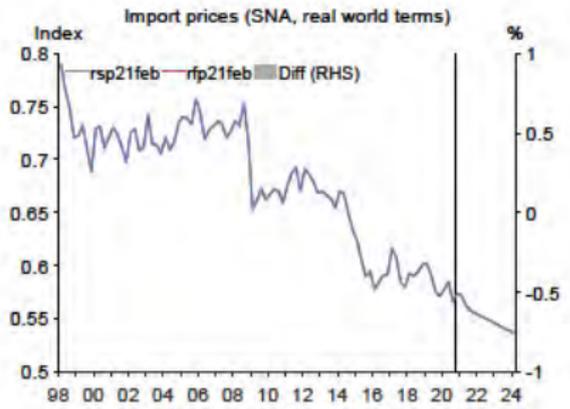
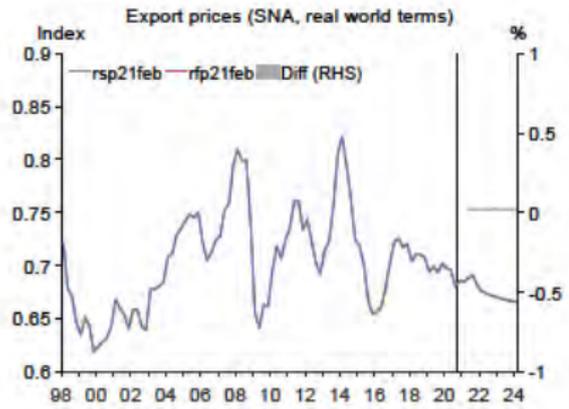
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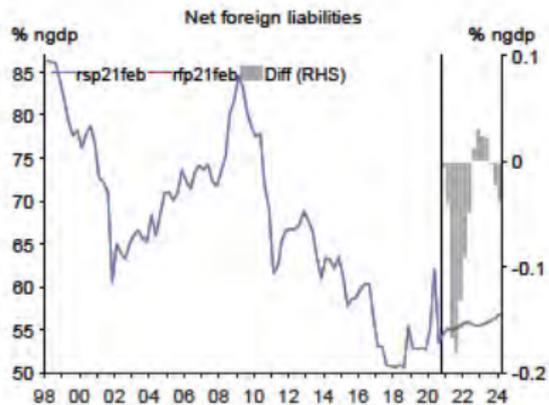
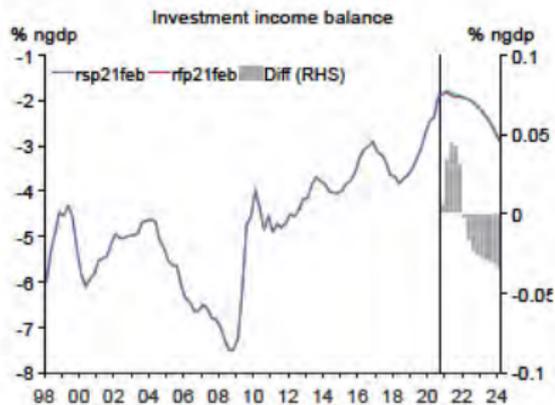
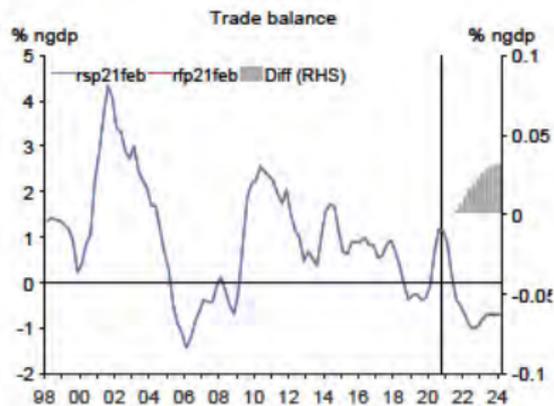
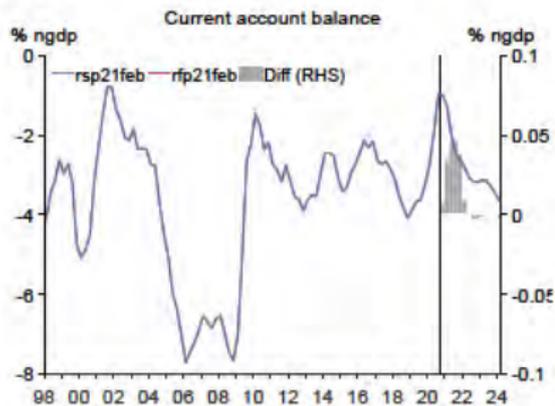


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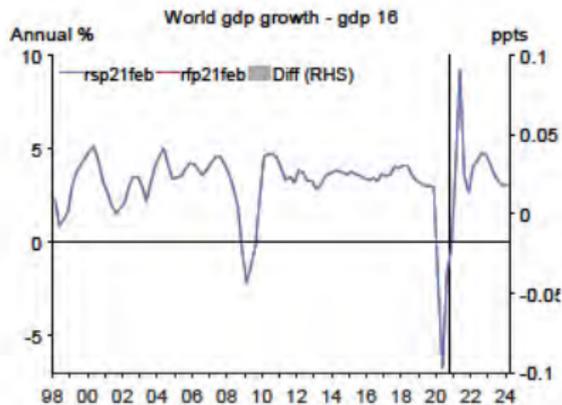
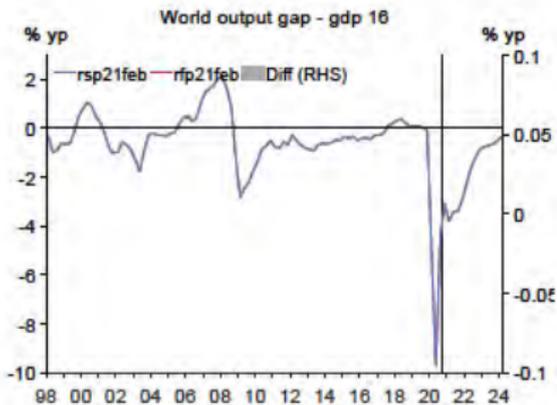
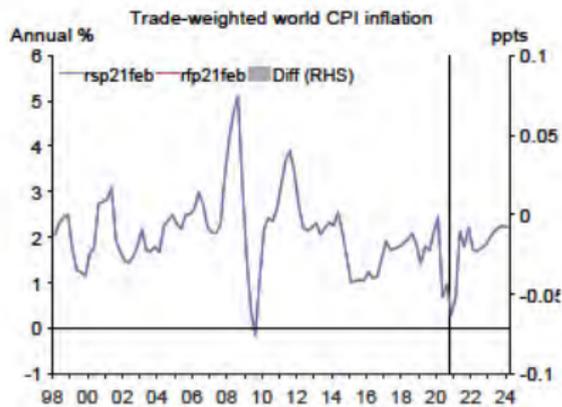
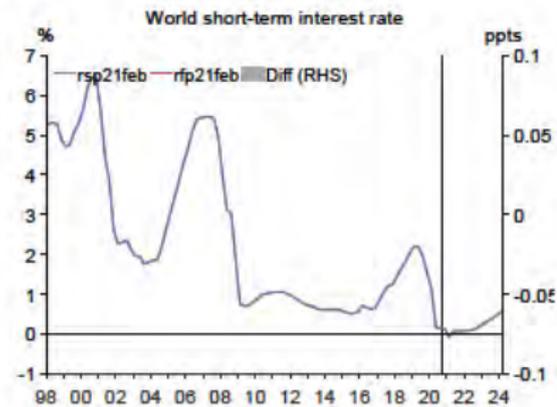




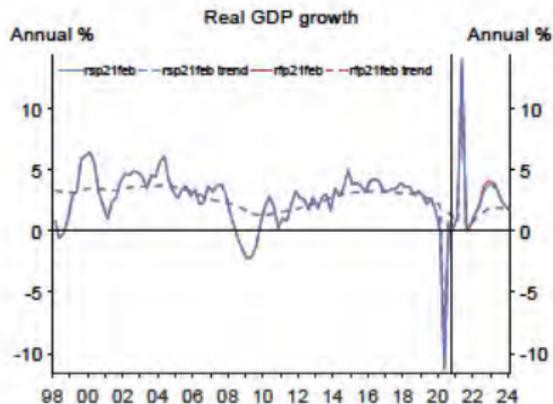
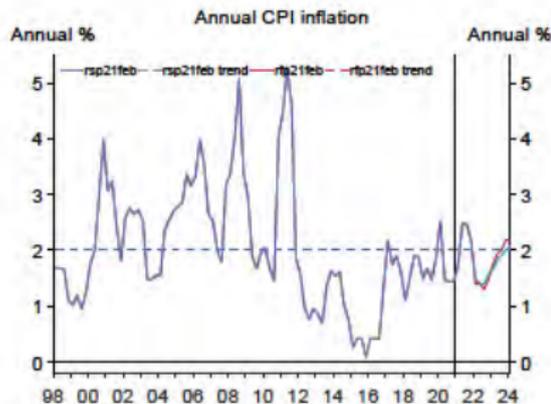
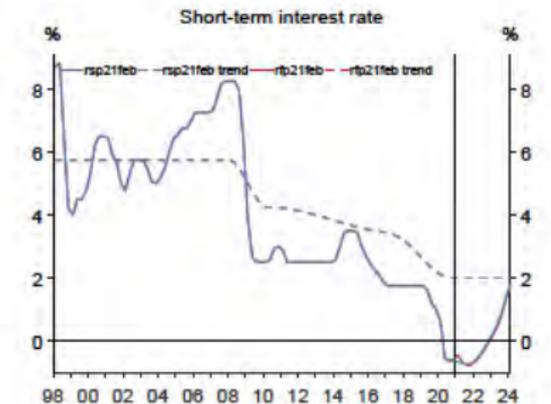
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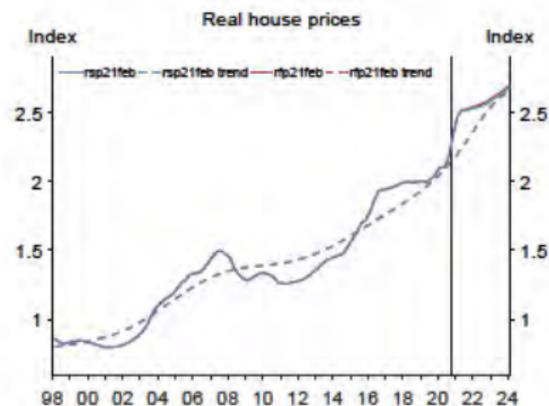
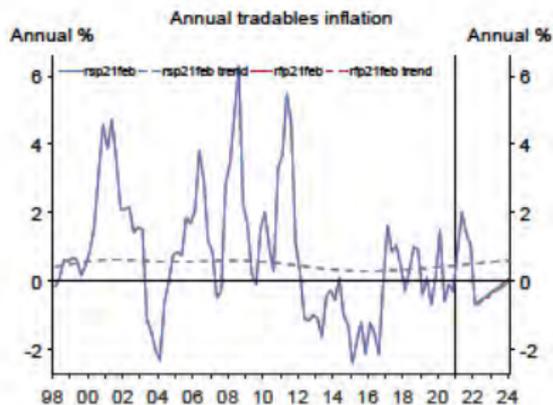
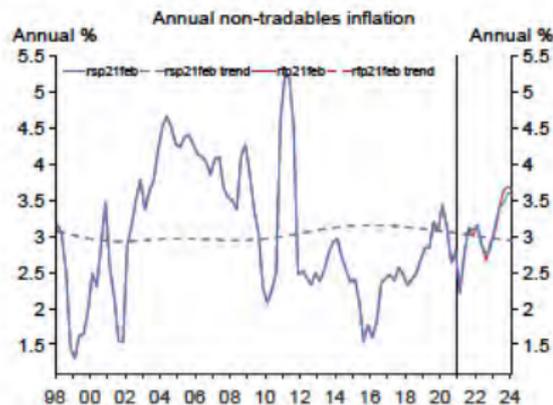


Trends



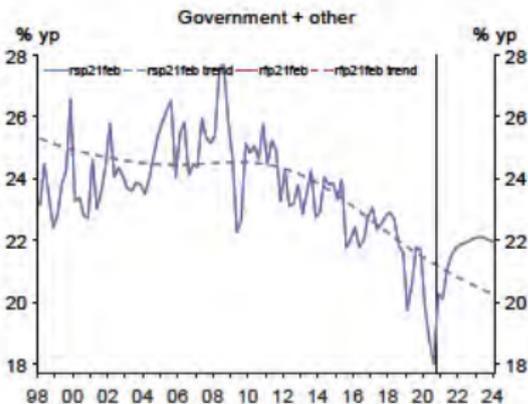
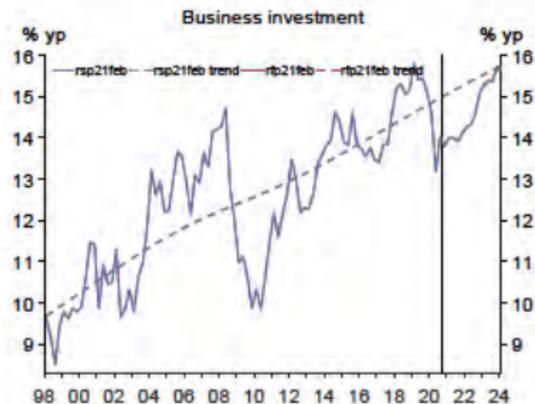
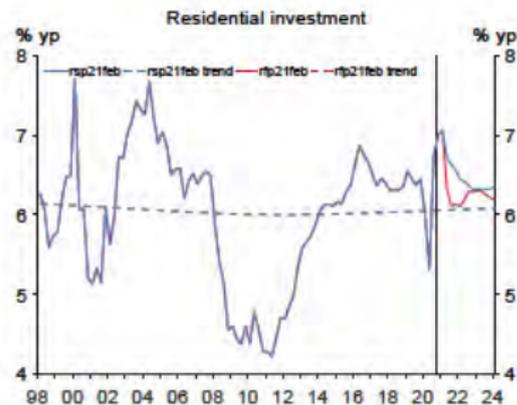
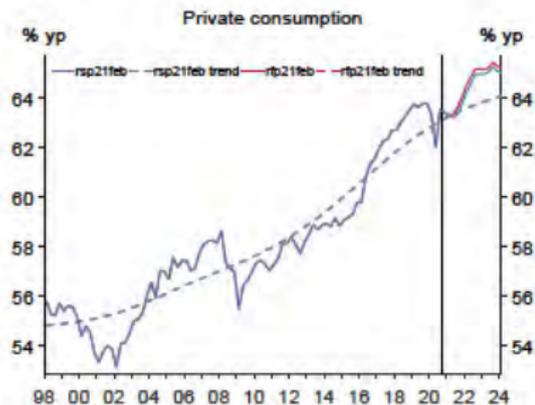


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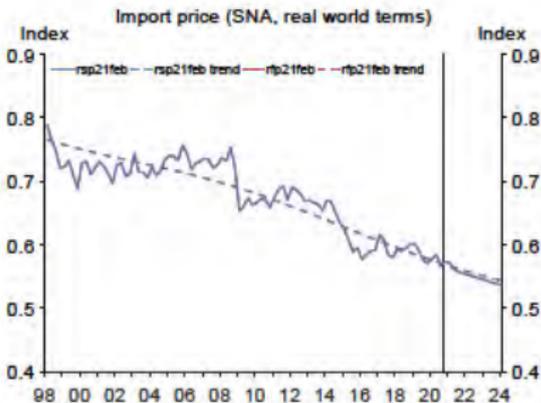
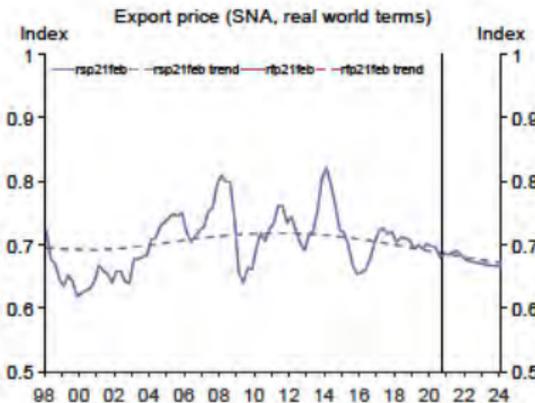
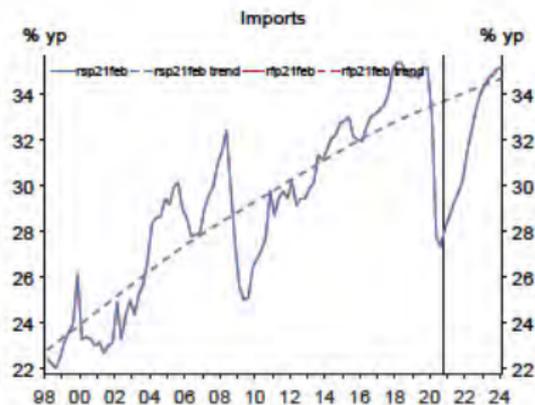
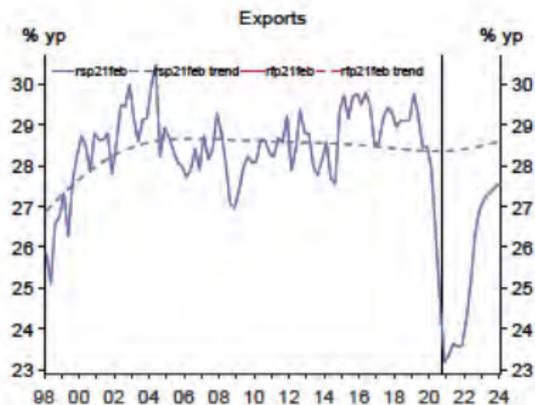




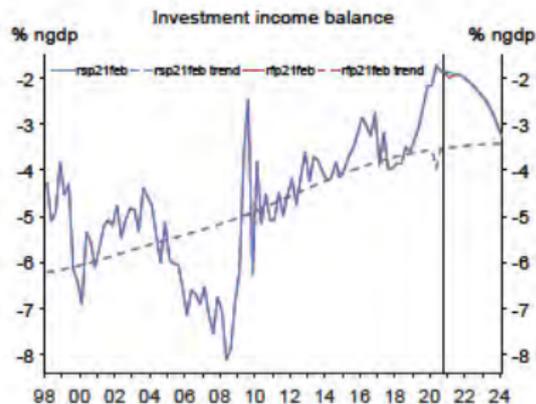
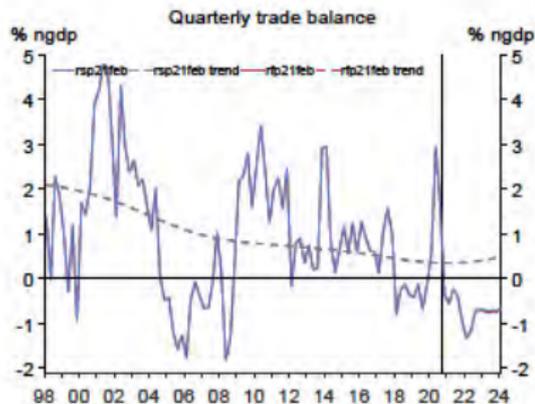
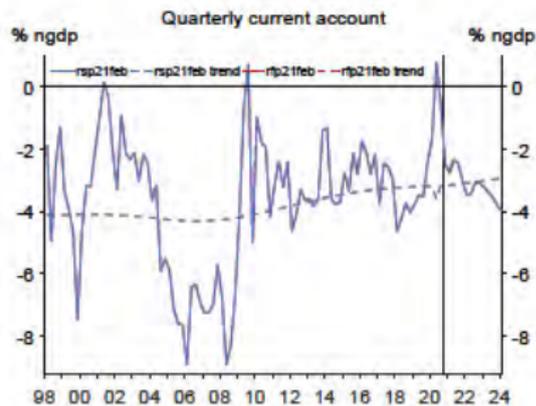
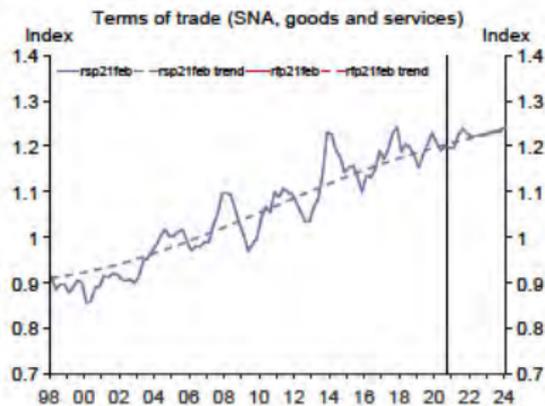
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Trends

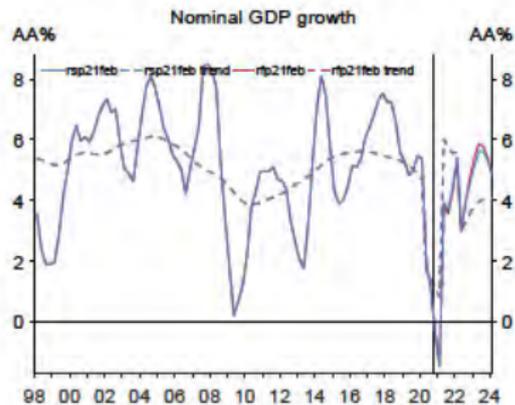
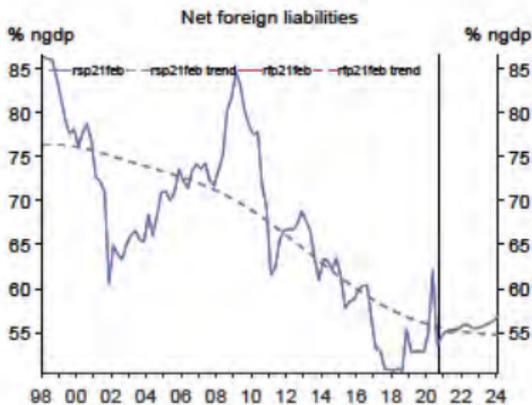
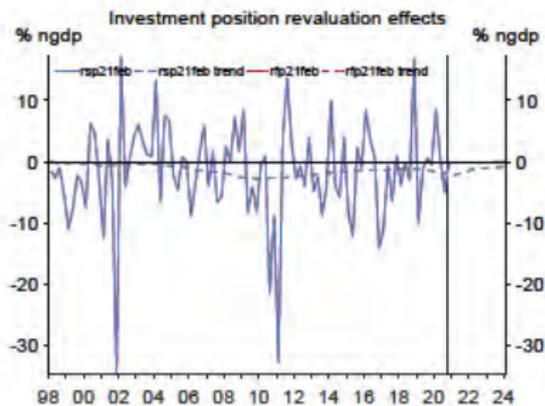
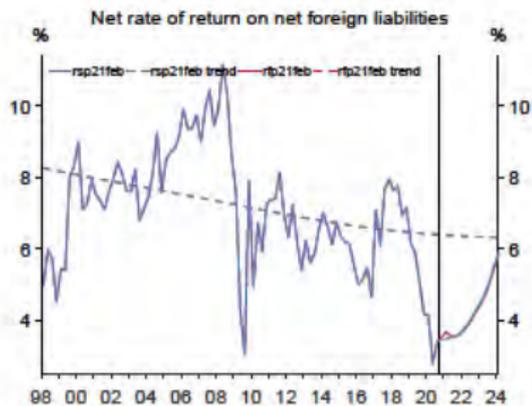


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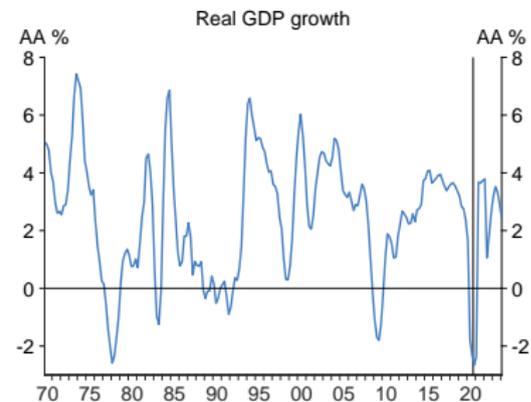
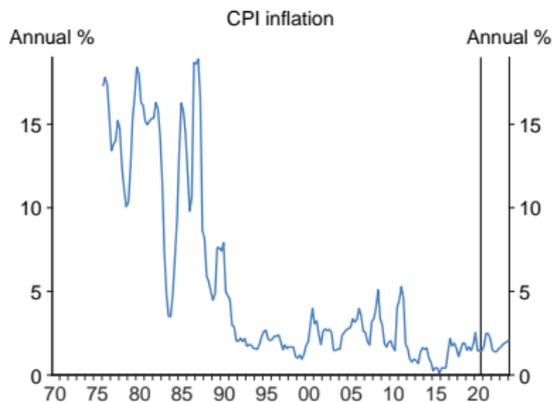
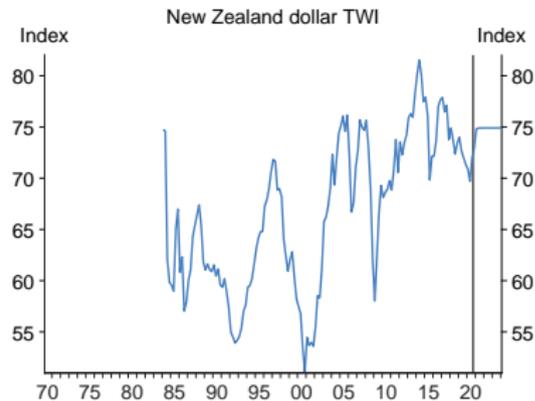
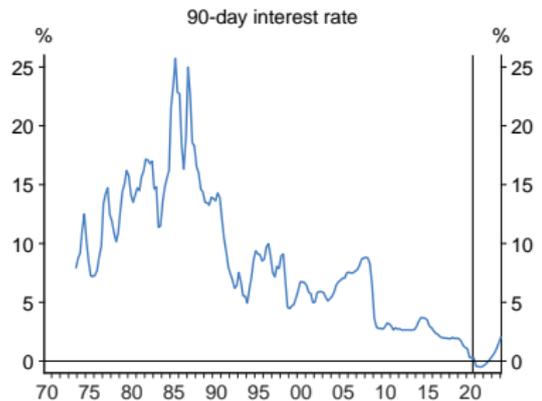




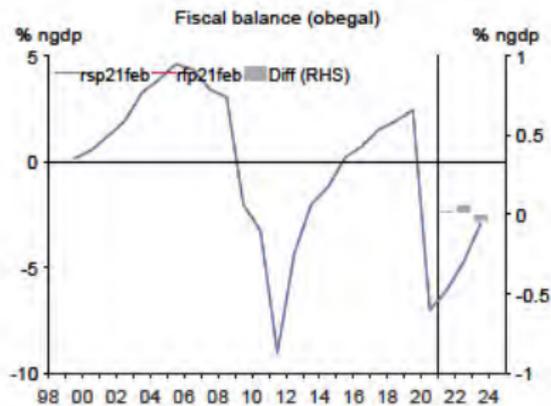
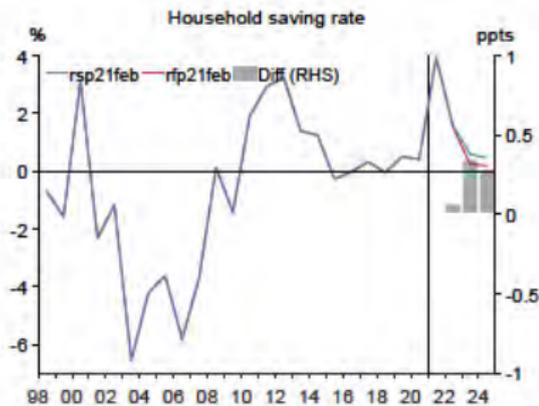
Trends



Long Term



Other

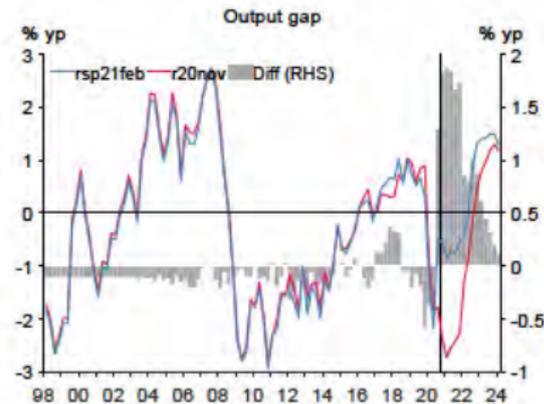
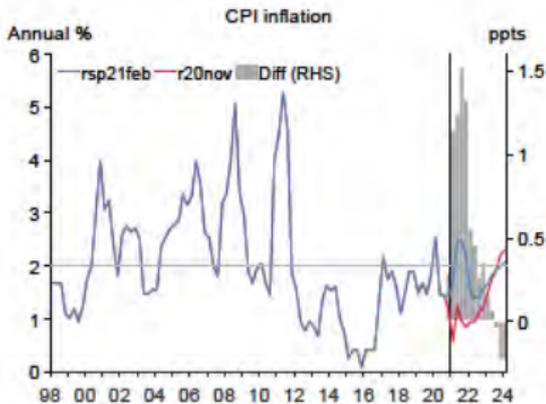
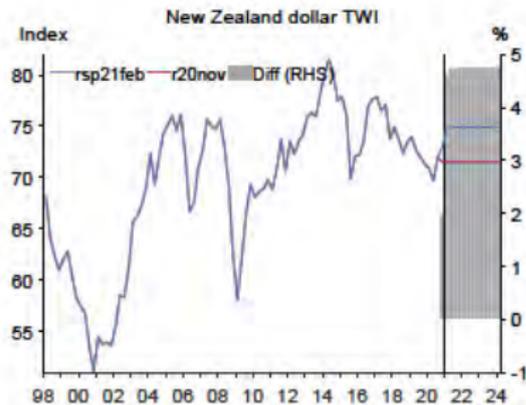
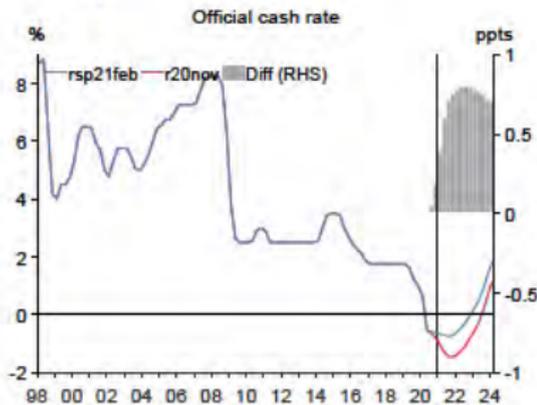


Forecast Chartpack

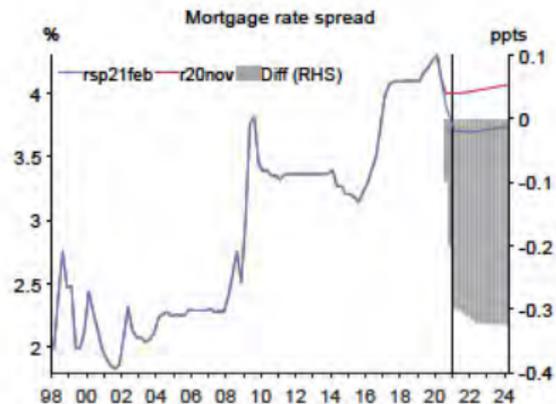
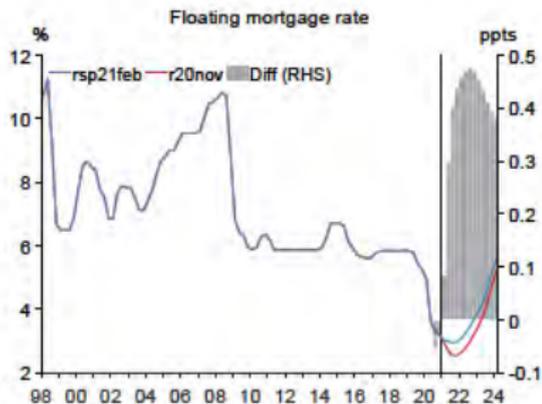
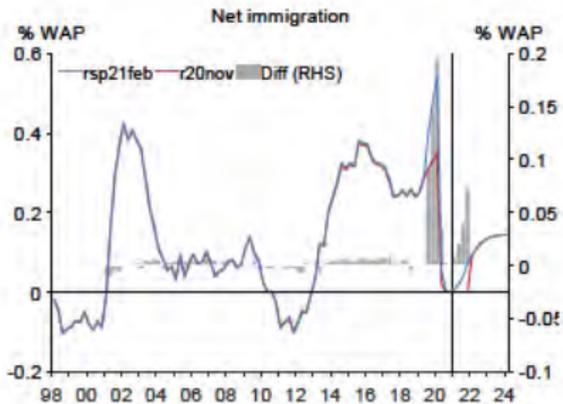
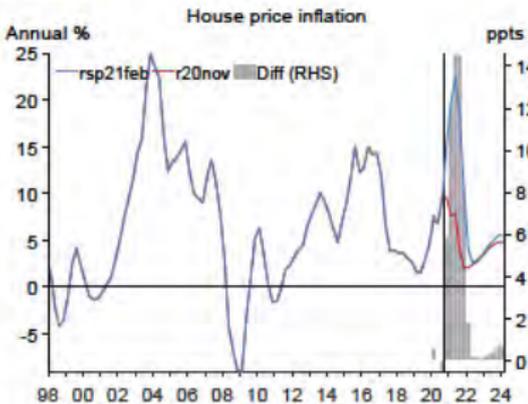
rsp21feb versus r20nov

February 17, 2021

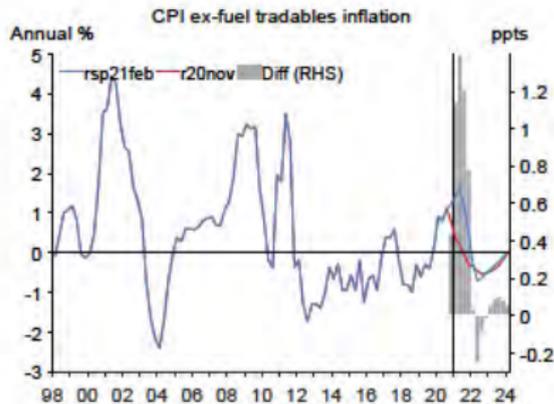
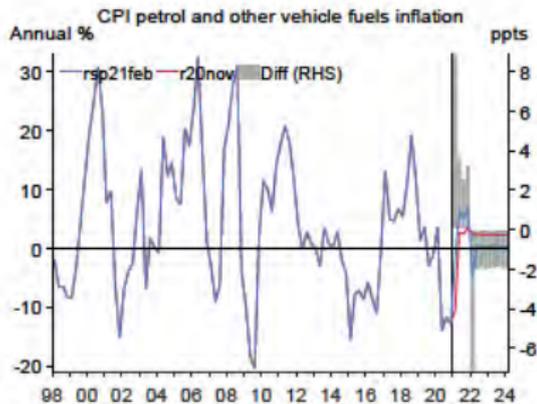
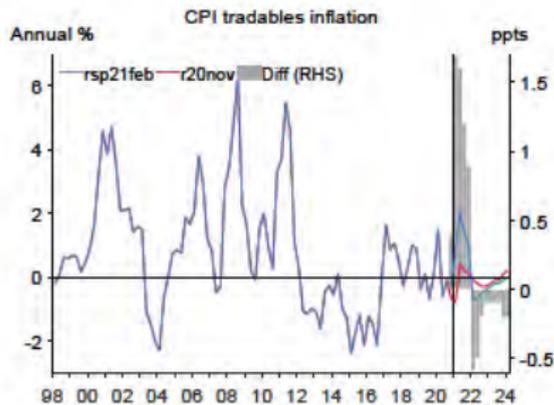
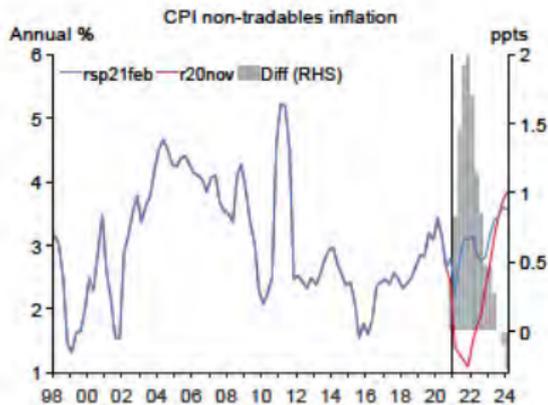
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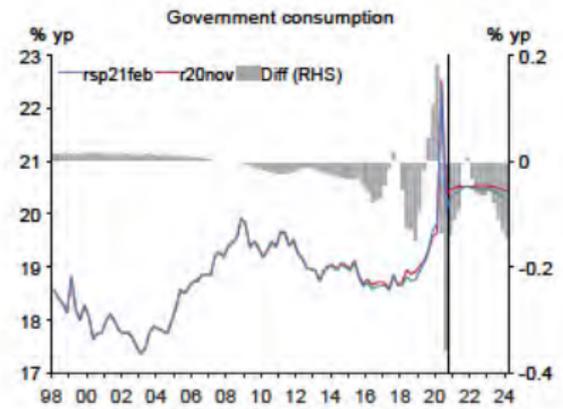
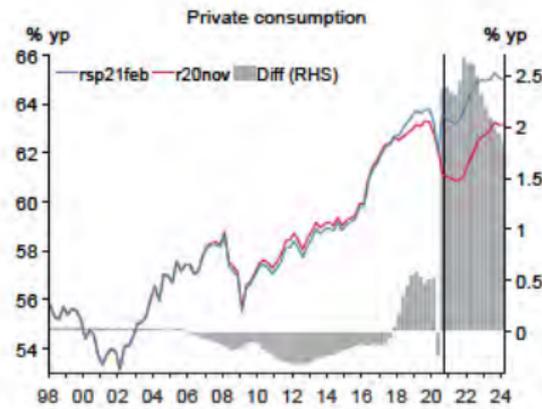
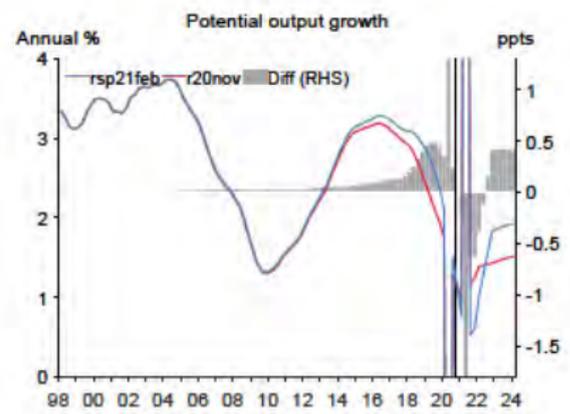
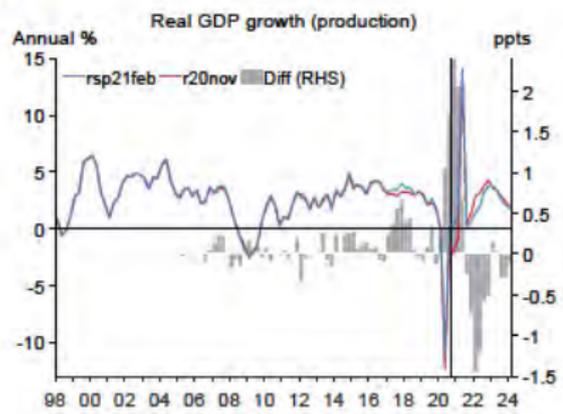
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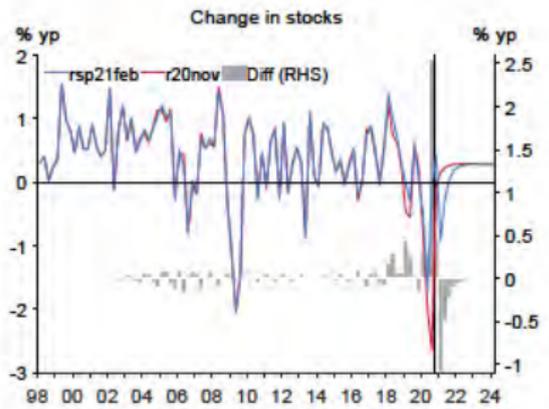
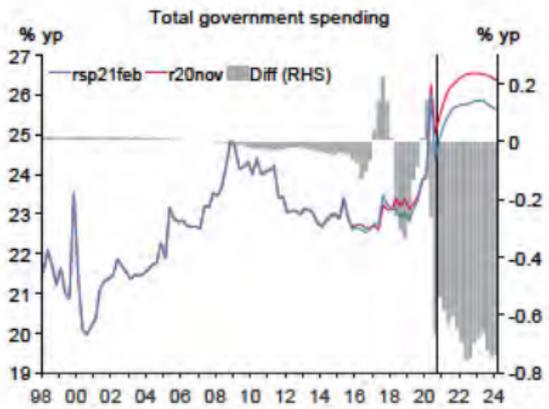
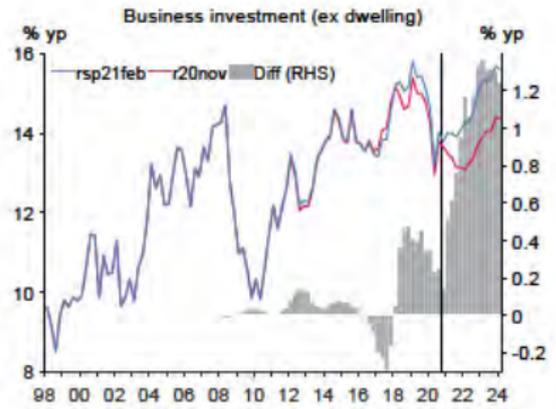
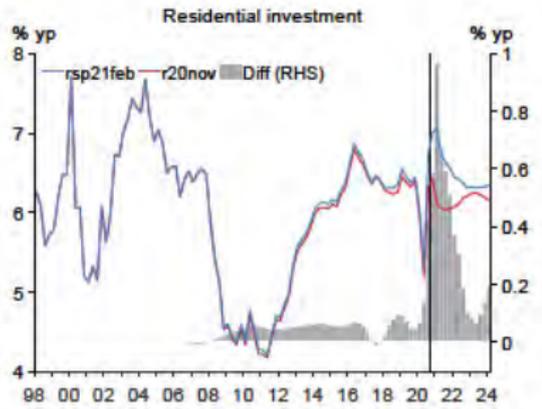
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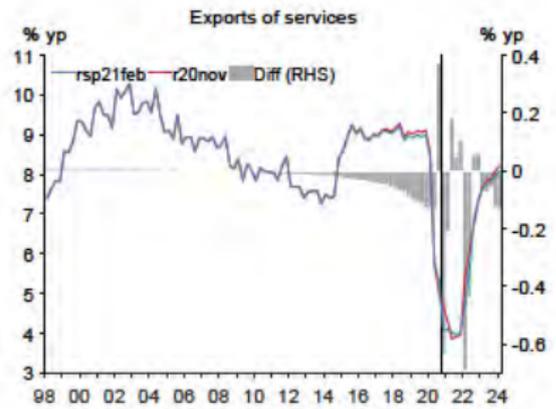
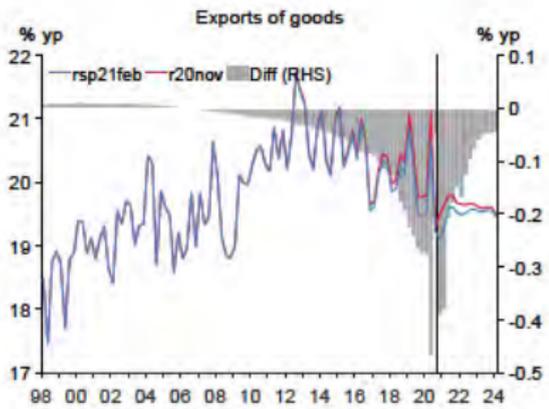
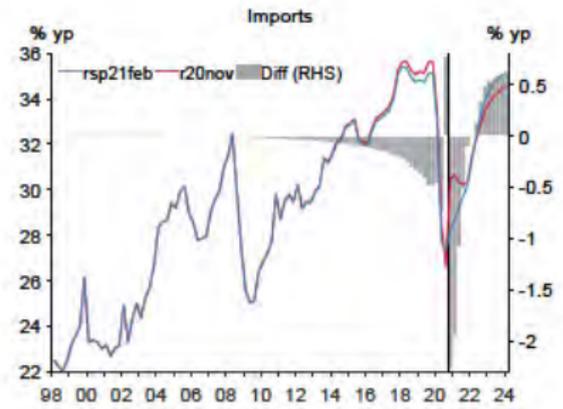
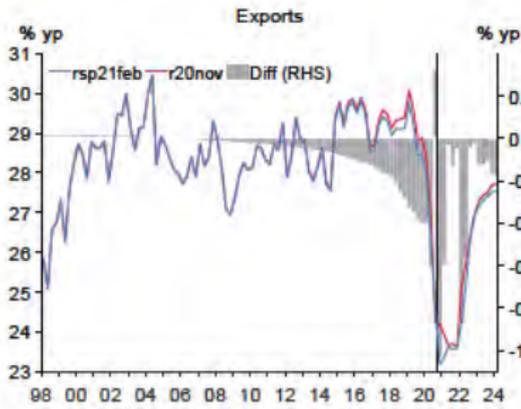
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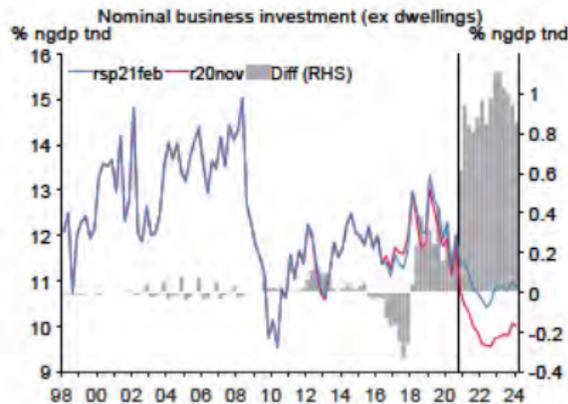
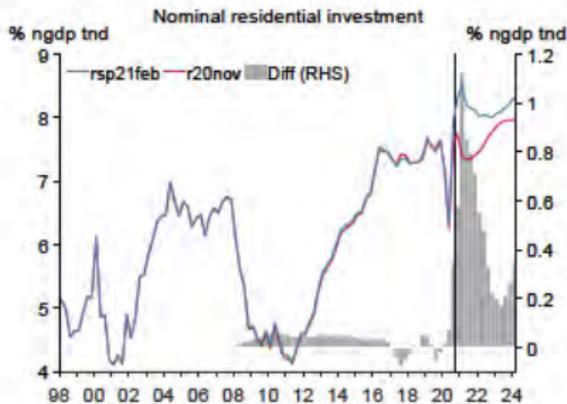
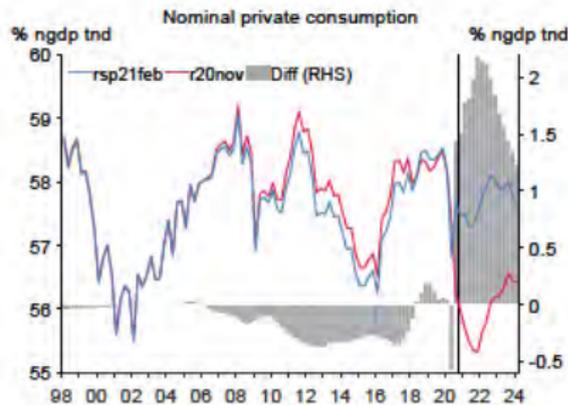
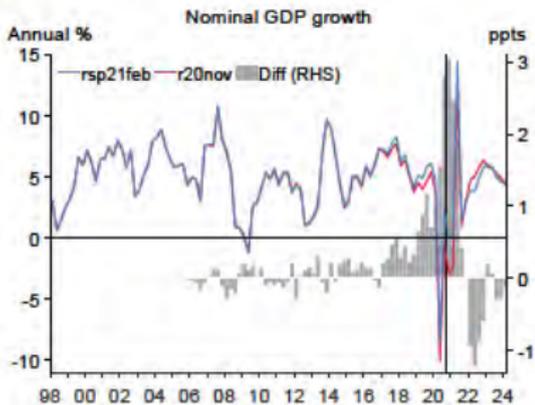
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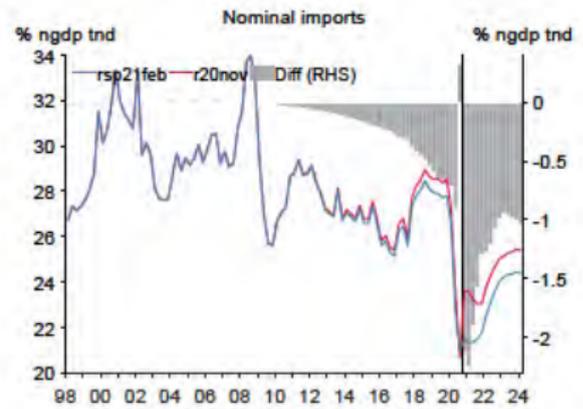
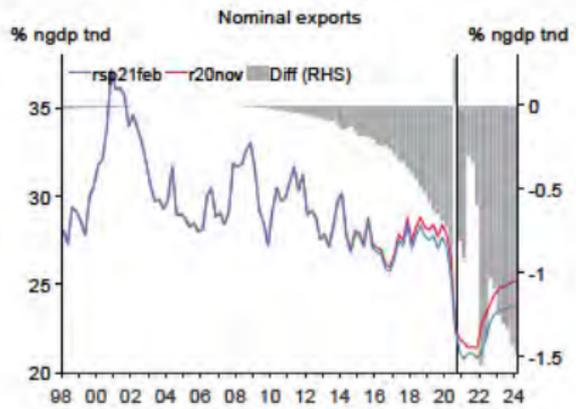
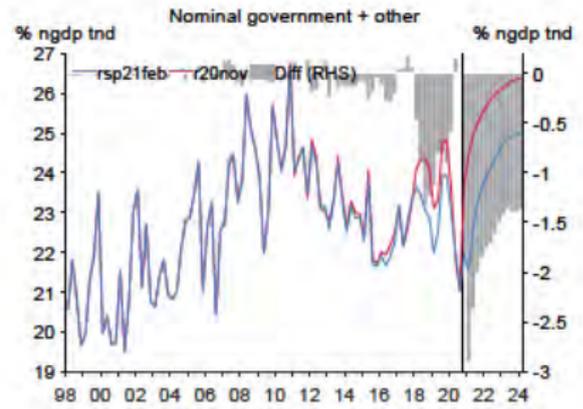
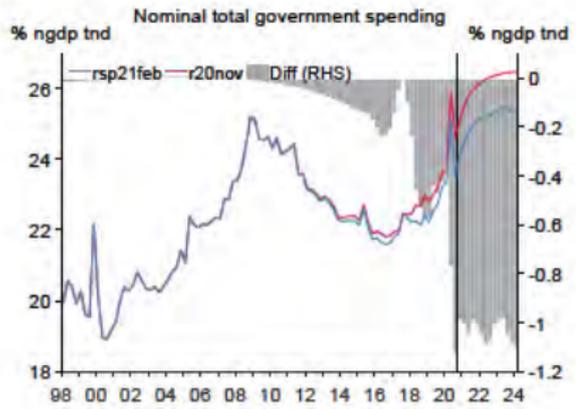
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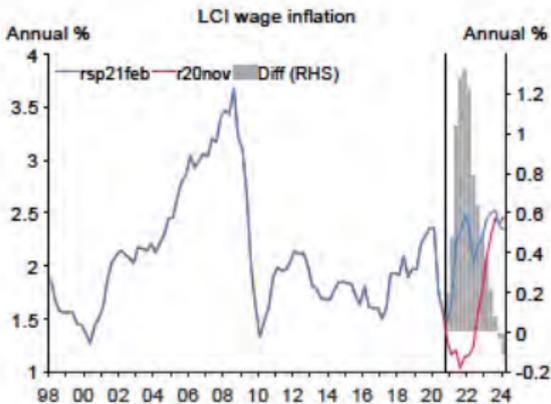
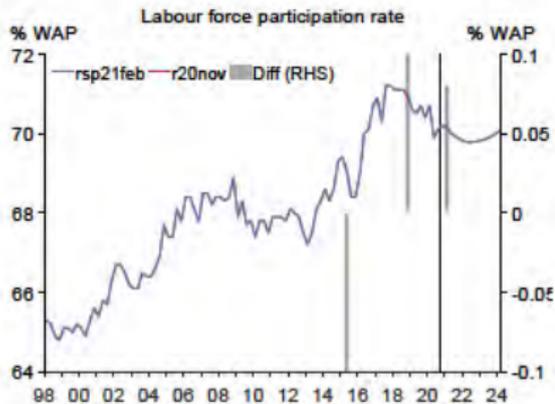
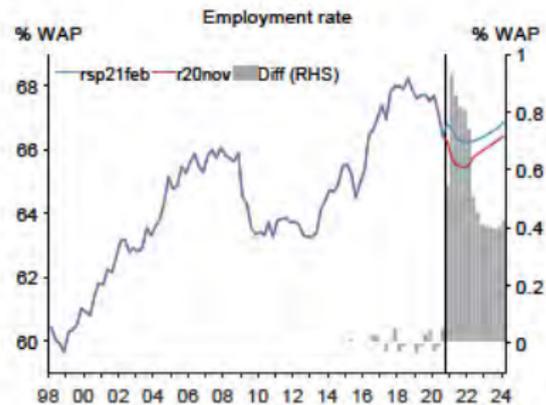
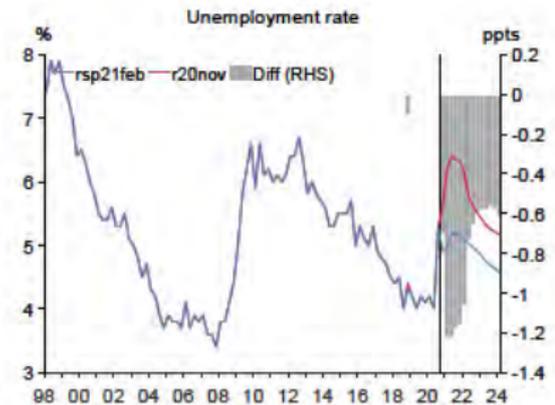


GDP

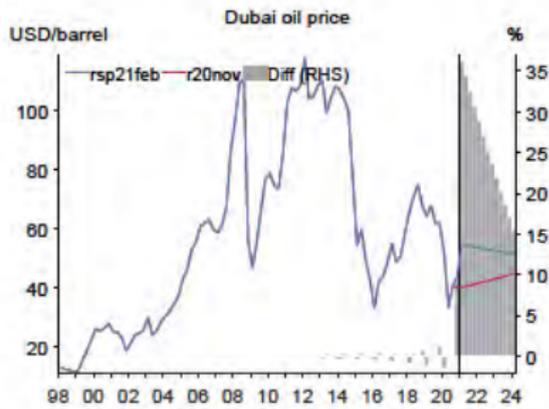
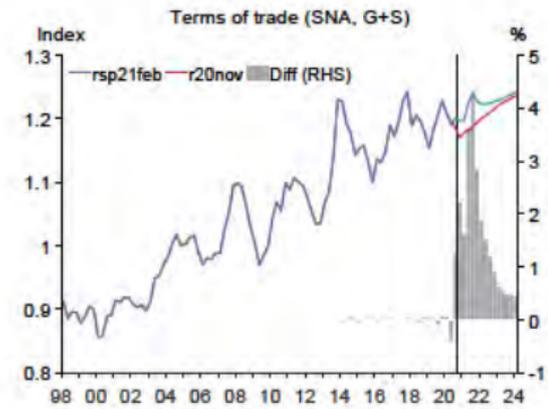
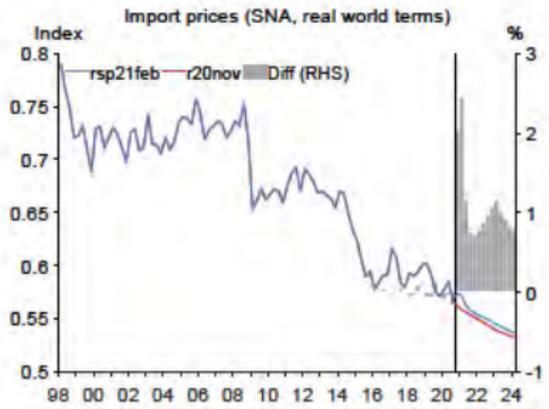
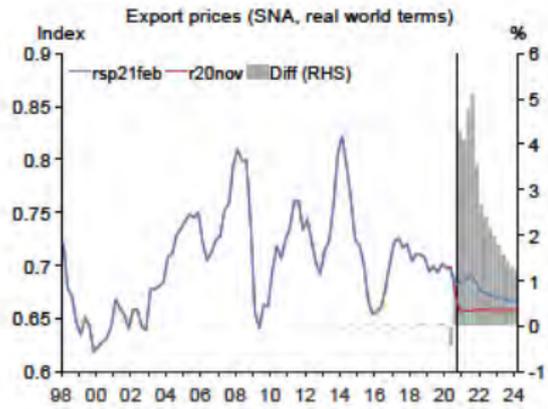




Labour

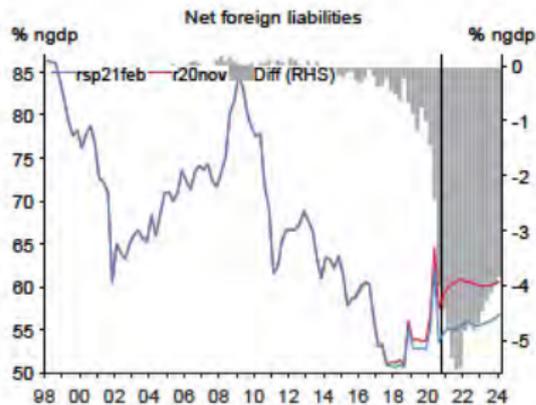
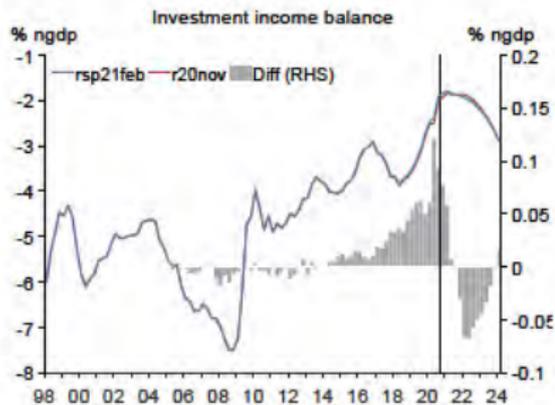
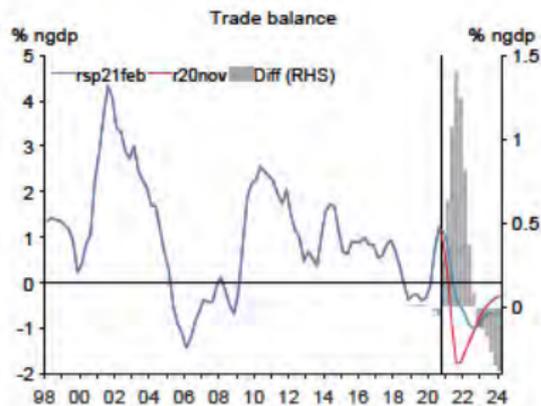
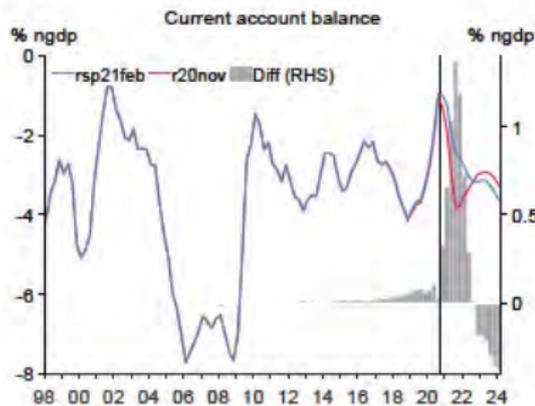


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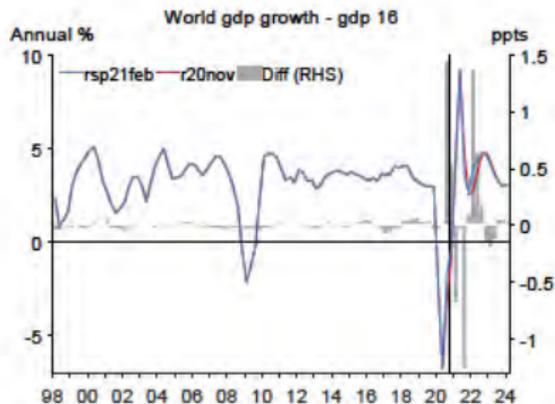
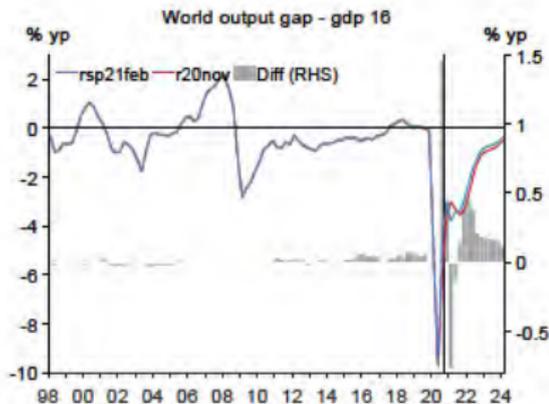
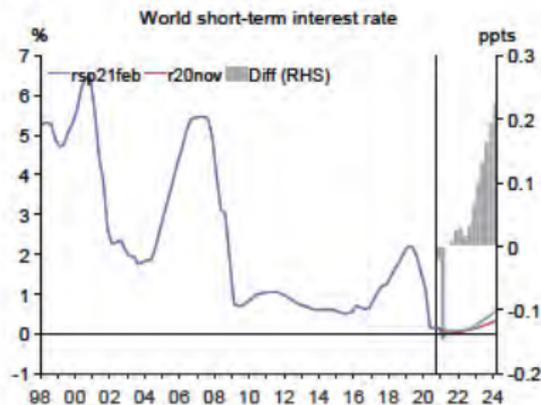




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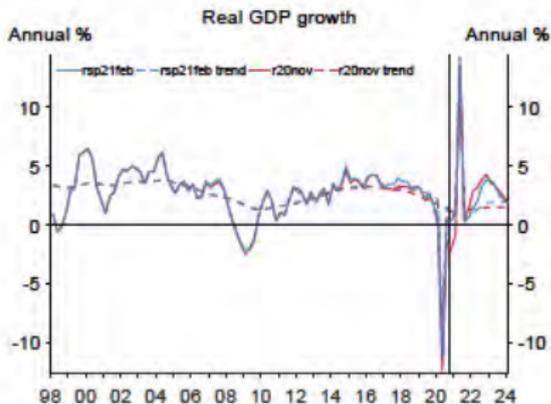
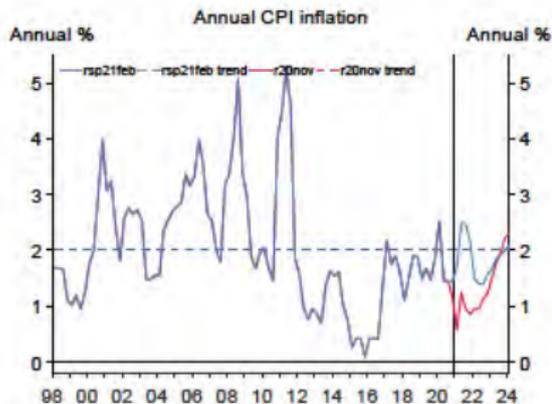
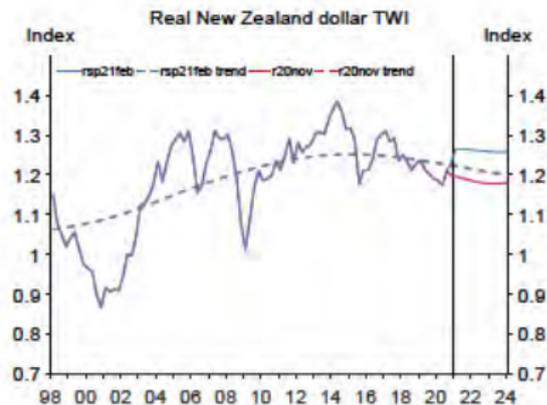
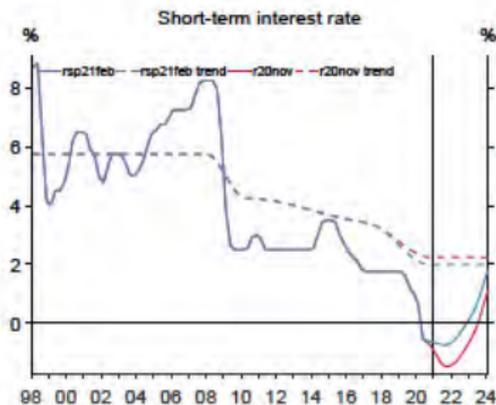


World



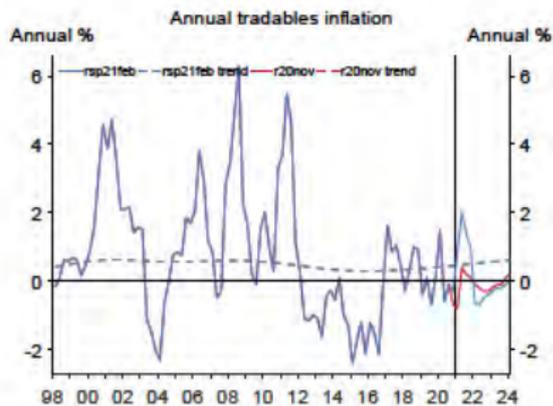
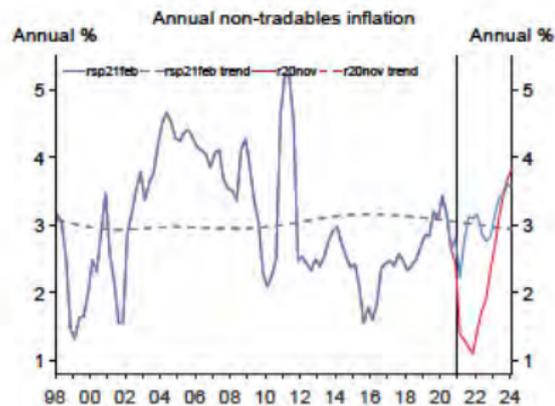


Trends

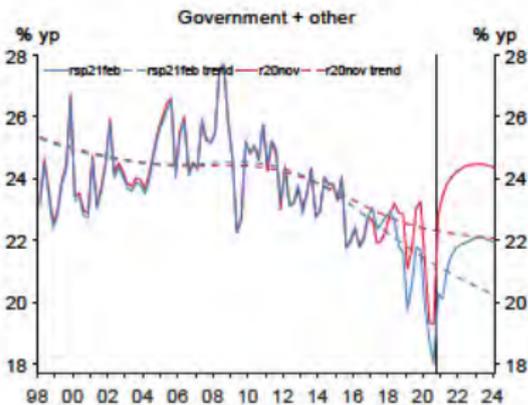
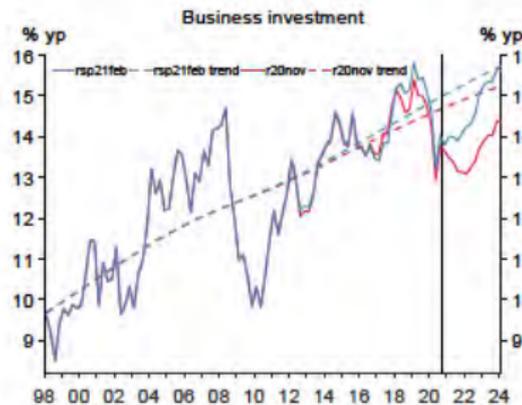
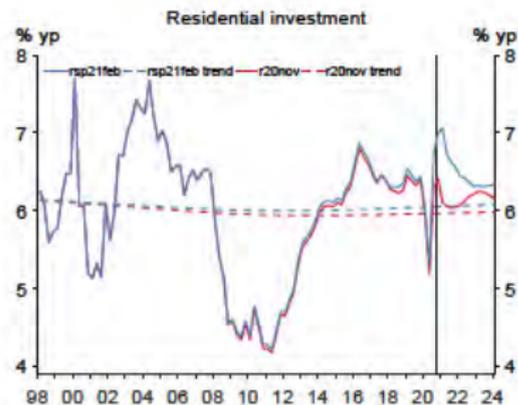
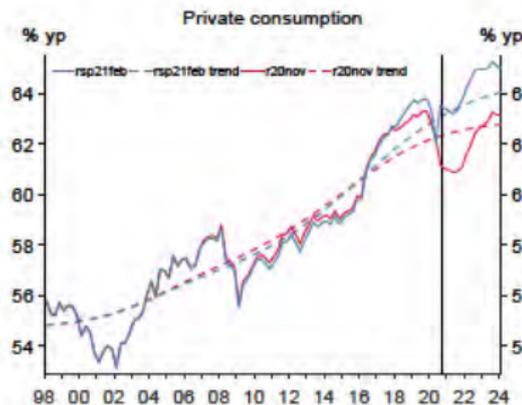




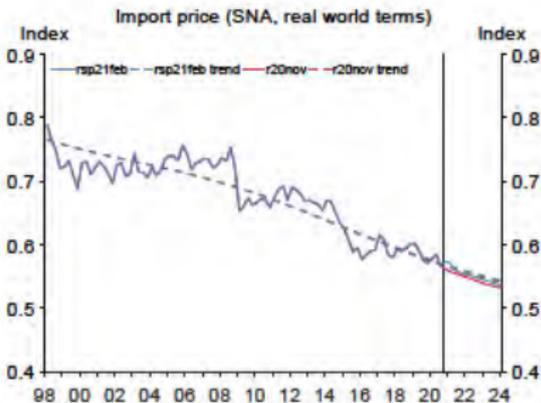
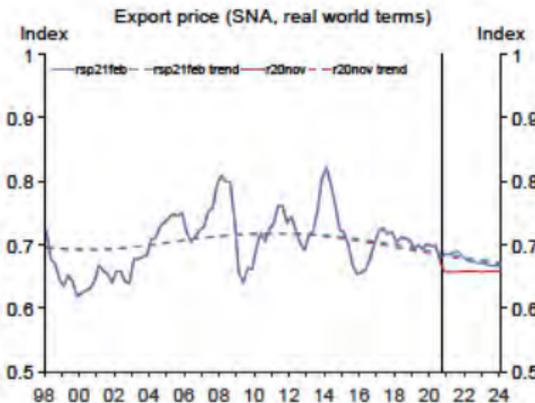
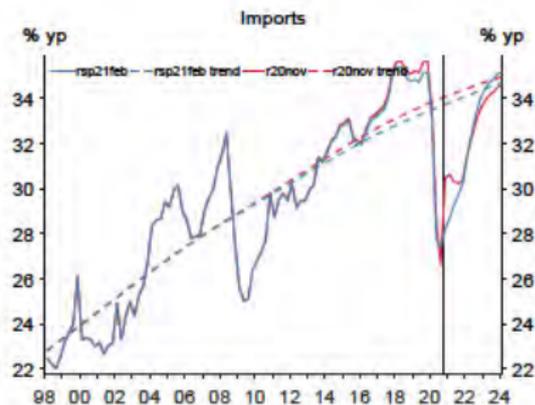
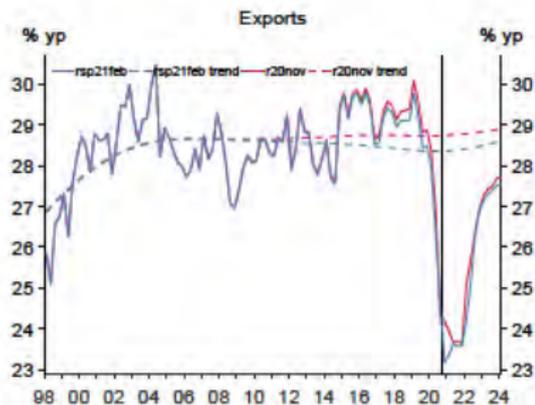
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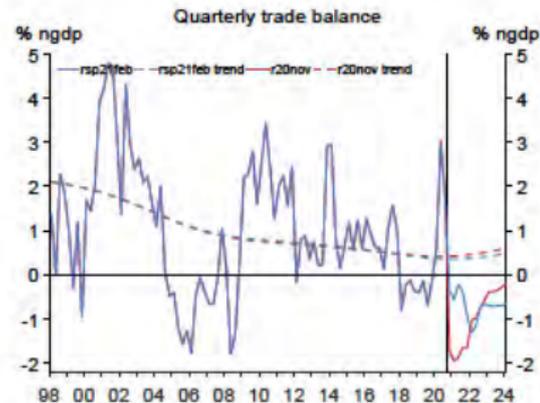
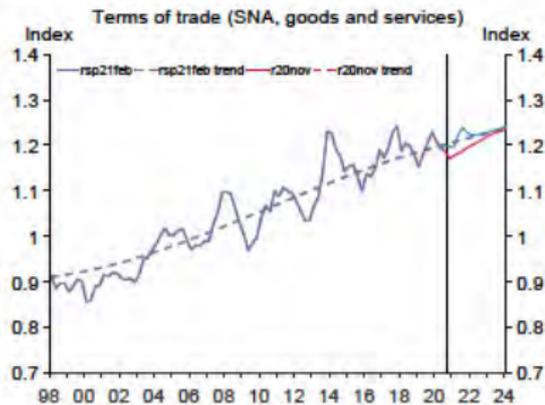
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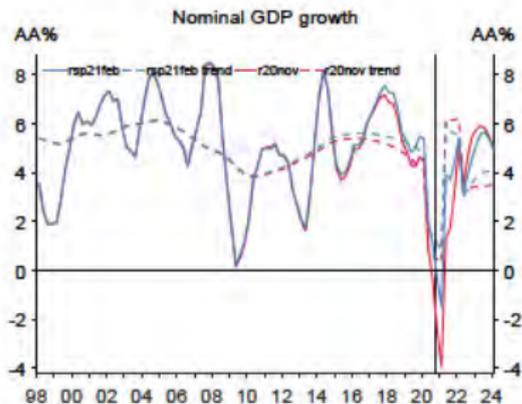
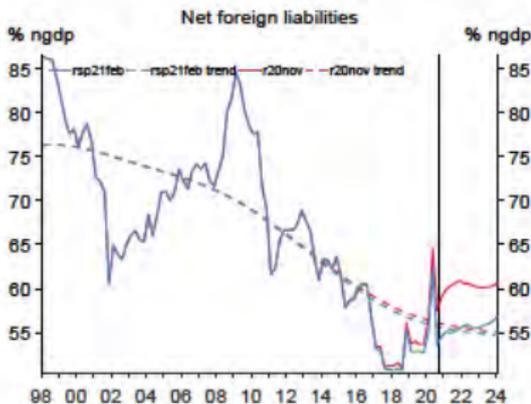
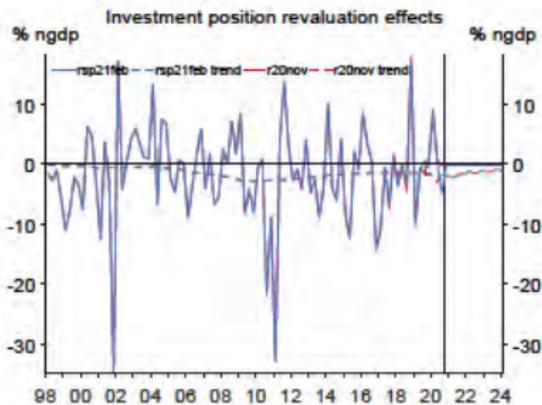
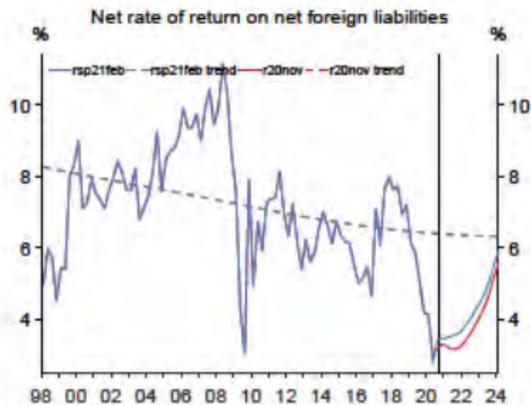
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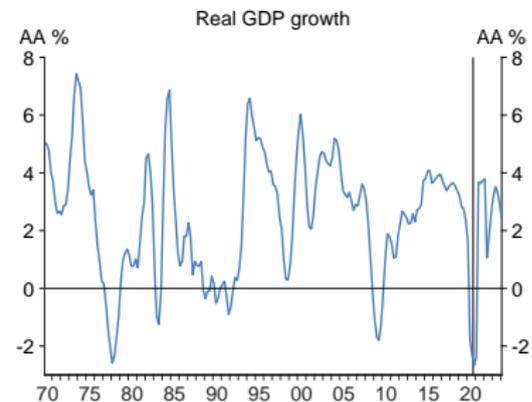
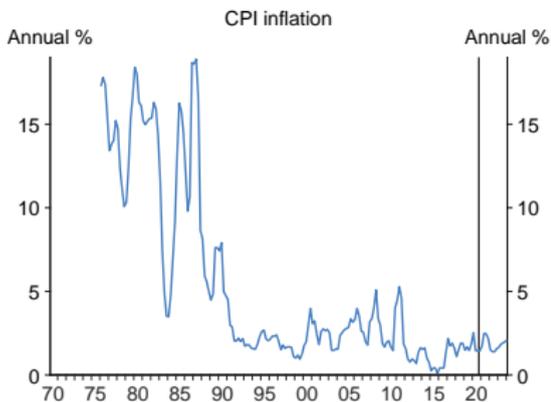
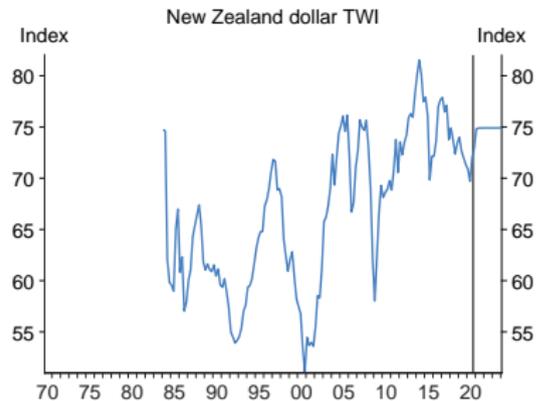
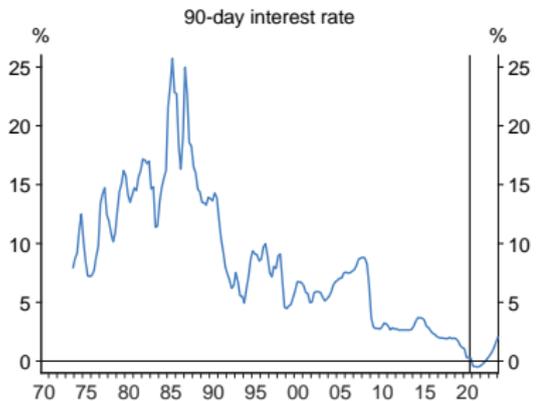
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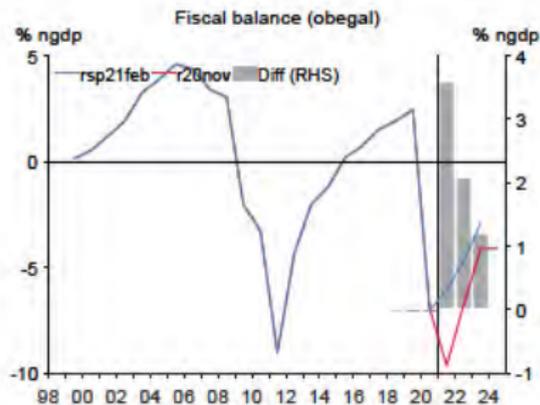
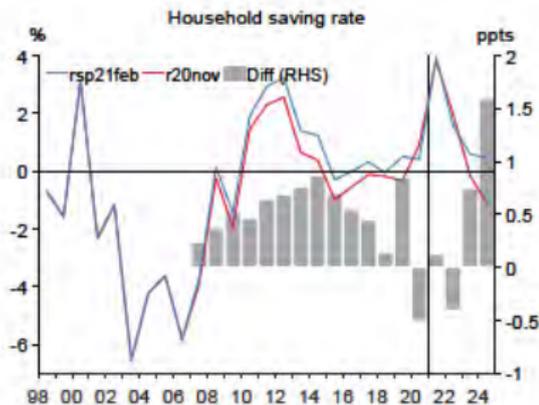
Trends



Long Term



Other



Forecast Tables

Run 64

February 17, 2021

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Table A Summary of economic projections (MPS table 6.5)

(Annual percentage change, unless specified otherwise)

| March year | Actuals | | | Projections | | |
|--|---------|------|------|-------------|------|------|
| | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Price measures | | | | | | |
| CPI | 1.5 | 2.5 | 1.7 | 1.5 | 1.7 | 2.1 |
| Labour costs (LCI private sector) | 2.0 | 2.4 | 1.6 | 2.4 | 2.4 | 2.3 |
| Import prices (\$NZ, SNA, goods and services) | 4.3 | 2.5 | -5.5 | -1.8 | 0.5 | 0.6 |
| Export prices (\$NZ, SNA, goods and services) | 1.3 | 7.4 | -6.4 | 0.3 | 1.0 | 1.7 |
| Monetary conditions | | | | | | |
| Official cash rate (year average) | 1.8 | 1.1 | -0.6 | -0.7 | -0.1 | 1.2 |
| New Zealand dollar TWI (year average) | 73.4 | 71.7 | 72.4 | 74.9 | 74.9 | 74.9 |
| Output | | | | | | |
| GDP (production, annual average % change) | 3.2 | 1.6 | -2.4 | 3.8 | 3.2 | 2.4 |
| Potential output (annual average % change) | 3.0 | 2.4 | -1.4 | 3.4 | 1.6 | 1.9 |
| Output gap (% of potential GDP, year average) | 0.8 | 0.0 | -1.0 | -0.6 | 0.9 | 1.4 |
| Labour market | | | | | | |
| Total employment | 1.4 | 2.6 | -0.3 | 0.3 | 1.5 | 1.9 |
| Unemployment rate (March qtr, s.a.) | 4.2 | 4.2 | 5.0 | 5.1 | 4.8 | 4.6 |
| Trend labour productivity | 0.2 | 0.3 | 0.5 | 0.8 | 0.8 | 0.7 |
| Key balances | | | | | | |
| Government operating balance (June yr, % of GDP) | 2.4 | -7.2 | -5.9 | -4.7 | -2.9 | NaN |
| Current account balance (% of GDP, year average) | -3.9 | -2.8 | -1.2 | -2.8 | -3.2 | -3.7 |
| Terms of trade (annual average % change) | -2.5 | 2.0 | -0.8 | 2.7 | -0.2 | 0.9 |
| Household saving rate (% of disposable income) | 0.5 | 0.4 | 3.9 | 1.6 | 0.6 | 0.5 |
| World economy | | | | | | |
| World GDP (annual average % change) | 3.5 | 1.7 | -1.3 | 4.8 | 4.5 | 3.2 |
| World CPI inflation | 1.4 | 2.4 | 0.7 | 1.7 | 2.0 | 2.2 |

Table B Key forecast variables (MPS table 6.1)

| | | | | | | <i>Not published in MPS table 6.1</i> | | | | | |
|------|-----|------------|---------------|----------|---------|---------------------------------------|---------------------|-------------------------|------------------------|-------------|-------------------|
| | | GDP growth | CPI inflation | | NZD TWI | Official cash rate | Tradables inflation | Non-tradables inflation | Floating mortgage rate | Neutral OCR | Trend unemp. rate |
| | | Qtrly % | Qtrly % | Annual % | | | Annual % | Annual % | | | |
| 2019 | Sep | 0.2 | 0.9 | 1.9 | 72.4 | 1.8 | 1.0 | 2.5 | 5.8 | 2.9 | 4.4 |
| | Dec | 1.1 | 0.1 | 1.9 | 73.4 | 1.8 | 0.9 | 2.7 | 5.8 | 2.7 | 4.4 |
| | Mar | 0.4 | 0.1 | 1.5 | 74.0 | 1.8 | -0.4 | 2.8 | 5.8 | 2.6 | 4.3 |
| | Jun | 0.4 | 0.6 | 1.7 | 72.6 | 1.6 | 0.1 | 2.8 | 5.8 | 2.5 | 4.3 |
| 2020 | Sep | 0.7 | 0.7 | 1.5 | 72.0 | 1.2 | -0.7 | 3.2 | 5.4 | 2.3 | 4.3 |
| | Dec | 0.1 | 0.5 | 1.9 | 71.3 | 1.0 | 0.1 | 3.1 | 5.3 | 2.2 | 4.3 |
| | Mar | -1.2 | 0.8 | 2.5 | 70.9 | 0.6 | 1.5 | 3.4 | 4.9 | 2.1 | 4.2 |
| | Jun | -11.0 | -0.5 | 1.5 | 69.7 | -0.5 | -0.6 | 3.1 | 3.6 | 2.0 | 4.2 |
| 2021 | Sep | 14.0 | 0.7 | 1.4 | 72.0 | -0.6 | -0.1 | 2.6 | 3.3 | 2.0 | 4.4 |
| | Dec | 0.0 | 0.5 | 1.4 | 72.9 | -0.6 | -0.3 | 2.8 | 3.2 | 2.0 | 4.6 |
| | Mar | -0.3 | 1.0 | 1.7 | 74.8 | -0.7 | 0.9 | 2.2 | 3.0 | 2.0 | 4.9 |
| | Jun | 0.3 | 0.3 | 2.5 | 74.9 | -0.7 | 2.0 | 2.8 | 3.0 | 2.0 | 4.9 |
| 2022 | Sep | 0.1 | 0.7 | 2.5 | 74.9 | -0.7 | 1.4 | 3.1 | 3.0 | 2.0 | 4.9 |
| | Dec | 0.4 | 0.2 | 2.2 | 74.9 | -0.7 | 1.0 | 3.1 | 3.0 | 2.0 | 4.9 |
| | Mar | 0.5 | 0.4 | 1.5 | 74.9 | -0.6 | -0.7 | 3.2 | 3.1 | 2.0 | 4.9 |
| | Jun | 0.9 | 0.2 | 1.4 | 74.9 | -0.4 | -0.7 | 2.9 | 3.3 | 2.0 | 4.9 |
| 2023 | Sep | 1.4 | 0.6 | 1.4 | 74.9 | -0.2 | -0.5 | 2.8 | 3.5 | 2.0 | 4.9 |
| | Dec | 0.9 | 0.4 | 1.6 | 74.9 | 0.0 | -0.4 | 2.8 | 3.7 | 2.0 | 4.8 |
| | Mar | 0.5 | 0.5 | 1.7 | 74.9 | 0.2 | -0.3 | 3.1 | 4.0 | 2.0 | 4.8 |
| | Jun | 0.5 | 0.4 | 1.8 | 74.9 | 0.5 | -0.2 | 3.4 | 4.2 | 2.0 | 4.8 |
| 2024 | Sep | 0.6 | 0.7 | 1.9 | 74.9 | 0.9 | -0.2 | 3.5 | 4.6 | 2.0 | 4.8 |
| | Dec | 0.5 | 0.4 | 2.0 | 74.9 | 1.4 | -0.1 | 3.6 | 5.1 | 2.0 | 4.8 |
| | Mar | 0.3 | 0.5 | 2.1 | 74.9 | 1.8 | 0.0 | 3.6 | 5.6 | 2.0 | 4.8 |

Table C Composition of real GDP growth (MPS table 6.4)

(Annual average percentage change, unless specified otherwise)

| March year | Actuals | | | | | | Projections | | | |
|---|---------|------|------|------|------|------|-------------|------|------|------|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Final consumption expenditure | | | | | | | | | | |
| Private | 3.3 | 4.2 | 6.5 | 4.9 | 4.4 | 2.8 | -2.2 | 4.3 | 3.6 | 2.3 |
| Public | 3.4 | 2.3 | 2.2 | 3.4 | 3.7 | 6.1 | 5.0 | 2.1 | 1.6 | 1.3 |
| Total | 3.3 | 3.7 | 5.5 | 4.6 | 4.2 | 3.6 | -0.5 | 3.7 | 3.1 | 2.0 |
| Gross fixed capital formation | | | | | | | | | | |
| Residential | 8.3 | 7.1 | 8.8 | -1.8 | 3.0 | 1.5 | 2.5 | 3.7 | -1.9 | 1.4 |
| Other | 7.9 | 2.8 | 0.3 | 10.7 | 6.6 | 1.1 | -7.1 | 9.6 | 6.5 | 5.6 |
| Total | 8.0 | 3.9 | 2.5 | 7.3 | 5.7 | 1.2 | -4.7 | 8.0 | 4.3 | 4.6 |
| Final domestic expenditure | 4.4 | 3.8 | 4.8 | 5.2 | 4.6 | 3.0 | -1.5 | 4.7 | 3.4 | 2.7 |
| Stockbuilding (percentage point contribution) | 0.5 | -0.3 | 0.1 | 0.2 | -0.1 | -0.5 | -0.5 | 0.6 | 0.2 | 0.0 |
| Gross national expenditure | 4.6 | 3.3 | 5.0 | 5.7 | 4.5 | 2.3 | -2.2 | 5.6 | 3.6 | 2.7 |
| Exports of goods and services | 4.7 | 6.6 | 1.7 | 3.6 | 3.2 | -0.2 | -15.9 | 1.0 | 12.9 | 5.9 |
| Imports of goods and services | 7.7 | 2.6 | 5.6 | 7.8 | 4.4 | 1.0 | -20.0 | 11.4 | 12.9 | 6.3 |
| Expenditure on GDP | 3.7 | 4.4 | 3.8 | 4.4 | 4.1 | 2.1 | -0.1 | 3.0 | 3.1 | 2.3 |
| GDP (production) | 3.8 | 3.7 | 3.7 | 3.6 | 3.2 | 1.6 | -2.4 | 3.8 | 3.2 | 2.4 |
| GDP (production, March qtr to March qtr) | 3.8 | 4.1 | 3.2 | 3.6 | 2.9 | 0.0 | 1.2 | 1.4 | 3.8 | 1.8 |

Table D World outlook

(Annual average percentage change, unless specified otherwise)

| March year | Actuals | | | | Projections | | | | |
|------------------------------------|---------|------|------|------|-------------|------|------|------|------|
| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| World policy rate (level, %) | 0.7 | 1.2 | 1.9 | 1.7 | 0.1 | 0.1 | 0.2 | 0.4 | 0.8 |
| World GDP | 3.5 | 3.9 | 3.5 | 1.7 | -1.3 | 4.8 | 4.5 | 3.2 | 3.3 |
| World CPI inflation | 1.4 | 1.8 | 1.8 | 2.0 | 0.7 | 2.0 | 1.8 | 2.2 | 2.2 |
| Domestic (SNA, goods and services) | | | | | | | | | |
| Export prices | 4.7 | 5.6 | 0.2 | 0.9 | -1.0 | 1.6 | -0.0 | 1.5 | 1.6 |
| Import prices | 2.1 | 1.0 | 2.8 | -1.0 | -0.2 | -1.1 | 0.2 | 0.6 | 0.8 |
| Terms of trade | 2.6 | 4.5 | -2.5 | 2.0 | -0.8 | 2.7 | -0.2 | 0.9 | 0.8 |

Table E Percentage point contributions to real GDP growth

(Annual average percentage change)

| March year | Actuals | | | | Projections | | | | |
|---|---------|------|------|------|-------------|------|------|------|------|
| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Final consumption expenditure | | | | | | | | | |
| Private | 3.9 | 3.0 | 2.7 | 1.8 | -1.4 | 2.7 | 2.3 | 1.5 | 0.5 |
| Public | 0.4 | 0.6 | 0.7 | 1.1 | 1.0 | 0.4 | 0.3 | 0.3 | 0.3 |
| Total | 4.3 | 3.7 | 3.4 | 2.9 | -0.4 | 3.2 | 2.6 | 1.7 | 0.8 |
| Gross fixed capital formation | | | | | | | | | |
| Residential | 0.6 | -0.1 | 0.2 | 0.1 | 0.2 | 0.2 | -0.1 | 0.1 | 0.1 |
| Other | 0.1 | 1.9 | 1.2 | 0.2 | -1.4 | 1.8 | 1.3 | 1.1 | NaN |
| Total | 0.6 | 1.8 | 1.4 | 0.3 | -1.2 | 2.0 | 1.1 | 1.2 | NaN |
| Stockbuilding | 0.1 | 0.2 | -0.1 | -0.5 | -0.5 | 0.6 | 0.2 | 0.0 | 0.0 |
| Exports of goods and services | 0.5 | 1.0 | 0.9 | -0.1 | -4.5 | 0.3 | 3.1 | 1.6 | 1.0 |
| Imports of goods and services | -1.8 | -2.6 | -1.5 | -0.4 | 6.9 | -3.2 | -3.9 | -2.1 | -0.8 |
| Residual (expenditure/production and chain link) | 0.0 | -0.5 | -1.0 | -0.6 | -2.6 | 1.0 | 0.0 | 0.0 | 0.0 |
| GDP (production) | 3.7 | 3.6 | 3.2 | 1.6 | -2.4 | 3.8 | 3.2 | 2.4 | 1.1 |

Table F Household income and consumption

(Annual average percentage change, unless specified otherwise)

| March year | Actuals | | | | Projections | | | | |
|--|---------|------|------|------|-------------|-------|------|-------|------|
| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Compensation of employees | 5.2 | 6.1 | 6.1 | 6.0 | 2.6 | 4.2 | 4.4 | 5.7 | NaN |
| Non-farm entrepreneurial income | 10.1 | 3.5 | 9.1 | 7.7 | 3.9 | 5.1 | 4.9 | -1.6 | NaN |
| Farm entrepreneurial income | 143.4 | 20.4 | -4.4 | -1.3 | -9.9 | -33.7 | -5.9 | -26.3 | NaN |
| Other income | 5.6 | 6.2 | 7.5 | 2.3 | 4.3 | 4.2 | 2.3 | 3.1 | NaN |
| Total income | 7.7 | 6.2 | 6.5 | 5.1 | 2.8 | 3.4 | 3.8 | 3.7 | NaN |
| Less income tax | 7.0 | 7.5 | 5.7 | 7.2 | 3.4 | 3.8 | 4.1 | 4.0 | NaN |
| Nominal disposable income | 7.9 | 6.0 | 6.6 | 4.6 | 2.6 | 3.2 | 3.7 | 3.6 | NaN |
| Consumption deflator | 1.0 | 1.6 | 2.6 | 2.3 | 1.3 | 1.4 | 1.1 | 1.5 | NaN |
| Real disposable income | 6.8 | 4.3 | 3.9 | 2.3 | 1.3 | 1.8 | 2.6 | 2.1 | NaN |
| Real household consumption | 6.5 | 4.9 | 4.4 | 2.8 | -2.2 | 4.3 | 3.6 | 2.3 | 0.8 |
| Household saving rate (% of disposable income) | 0.3 | -0.1 | 0.5 | 0.4 | 3.9 | 1.6 | 0.6 | 0.5 | NaN |

Table G Fiscal accounts

(\$ billions, unless specified otherwise)

| June year | Actuals | | | | | Projections | | | |
|--|---------|-------|-------|-------|-------|-------------|-------|-------|------|
| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Direct taxation | 48.8 | 51.8 | 56.4 | 55.5 | 58.0 | 57.4 | 63.6 | NaN | NaN |
| Indirect taxation | 26.2 | 27.8 | 29.3 | 29.4 | 32.1 | 31.8 | 32.7 | 33.7 | 34.3 |
| Non-tax revenue | 29.3 | 30.4 | 33.4 | 31.5 | 28.7 | 30.8 | 32.9 | 34.4 | 35.3 |
| Total revenue | 104.2 | 110.0 | 119.1 | 116.4 | 118.8 | 120.1 | 129.2 | NaN | NaN |
| Social welfare | 30.6 | 30.2 | 33.9 | 49.9 | 44.3 | 43.9 | 45.3 | 47.5 | 49.2 |
| Debt servicing | 4.2 | 4.2 | 4.3 | 3.7 | 2.6 | 1.8 | 1.8 | 2.2 | NaN |
| Other | 65.1 | 69.7 | 73.2 | 85.3 | 91.1 | 89.9 | 92.1 | 94.2 | 96.1 |
| Total expenses | 99.8 | 104.0 | 111.4 | 138.9 | 138.0 | 135.5 | 139.2 | 143.8 | NaN |
| Operating balance (OBEGAL) | 4.1 | 5.5 | 7.4 | -22.7 | -19.3 | -15.8 | -10.5 | NaN | NaN |
| (% of nominal production GDP) | 1.5 | 1.9 | 2.4 | -7.2 | -5.9 | -4.7 | -2.9 | NaN | NaN |
| Net core crown debt excluding NZ super fund assets (% of nominal production GDP) | 21.5 | 19.4 | 18.6 | 26.2 | 38.3 | 48.1 | 52.0 | NaN | NaN |

Table H External

| March year | Actuals | | | | Projections | | | | |
|---|---------|-------|-------|------|-------------|------|-------|-------|-------|
| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Trade volumes (annual average % change) | | | | | | | | | |
| Exports | | | | | | | | | |
| Goods | 1.8 | 3.0 | 3.7 | -0.7 | -2.1 | 3.5 | 1.6 | 1.8 | 2.1 |
| Services | 1.5 | 4.9 | 2.0 | 0.7 | -46.7 | -9.1 | 65.5 | 17.9 | 7.2 |
| Total | 1.7 | 3.6 | 3.2 | -0.2 | -15.9 | 1.0 | 12.9 | 5.9 | 3.5 |
| Imports | | | | | | | | | |
| Oil | 0.5 | 8.2 | 4.6 | -2.9 | -24.7 | -4.1 | 39.6 | 3.2 | 5.5 |
| Non-oil | 6.0 | 7.7 | 4.3 | 1.4 | -19.6 | 12.6 | 11.2 | 6.5 | 1.9 |
| Total | 5.6 | 7.8 | 4.4 | 1.0 | -20.0 | 11.4 | 12.9 | 6.3 | 2.2 |
| Current account (\$ billion) | | | | | | | | | |
| Goods and services balance | 1.5 | 2.1 | -0.9 | -0.3 | 2.8 | -2.4 | -2.9 | -2.6 | -0.7 |
| Investment income balance | -8.8 | -10.9 | -10.9 | -8.1 | -5.8 | -6.6 | -8.1 | -10.9 | -14.2 |
| Transfers balance | -0.2 | -0.4 | -0.3 | -0.6 | -0.9 | -0.5 | -0.3 | -0.3 | -0.2 |
| Current account | -7.4 | -9.2 | -12.1 | -9.0 | -4.1 | -9.5 | -11.3 | -13.7 | -15.1 |
| (% of nominal production GDP) | -2.7 | -3.2 | -3.9 | -2.8 | -1.2 | -2.8 | -3.2 | -3.7 | NaN |

Table I Labour market

| March year | Actuals | | | | Projections | | | | |
|--|---------|-------|-------|-------|-------------|-------|-------|-------|-------|
| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Change in labour force: | | | | | | | | | |
| Natural increase (000's) | 34.7 | 27.4 | 27.6 | 20.6 | 31.7 | 20.5 | 20.0 | 19.8 | 19.6 |
| Net migration (000's) | 34.7 | 28.1 | 27.5 | 48.7 | 1.8 | 6.5 | 14.4 | 16.8 | 17.5 |
| Increase in participation (000's) | 70.3 | 7.6 | -19.4 | 4.0 | -21.1 | -15.7 | 1.3 | 9.8 | 6.3 |
| Total change in labour force (000's) | 139.8 | 63.1 | 35.7 | 73.2 | 12.4 | 11.3 | 35.8 | 46.4 | 43.4 |
| Population of working age (000's) | 3798 | 3876 | 3954 | 4052 | 4100 | 4138 | 4188 | 4240 | 4293 |
| Labour force participation rate (%WAP) | 70.9 | 71.1 | 70.6 | 70.7 | 70.2 | 69.8 | 69.8 | 70.1 | 70.2 |
| Total labour force (000's) | 2693 | 2756 | 2792 | 2865 | 2877 | 2889 | 2924 | 2971 | 3014 |
| Total employment (000's) | 2560 | 2635 | 2673 | 2743 | 2734 | 2742 | 2783 | 2835 | 2877 |
| Annual growth (%) | 5.9 | 2.9 | 1.4 | 2.6 | -0.3 | 0.3 | 1.5 | 1.9 | 1.5 |
| Unemployment (000's) | 132.8 | 120.8 | 118.5 | 121.8 | 143.0 | 146.5 | 141.3 | 135.6 | 137.7 |
| Unemployment rate (s.a., %LF) | 4.9 | 4.4 | 4.2 | 4.2 | 5.0 | 5.1 | 4.8 | 4.6 | 4.6 |
| Total hours worked | | | | | | | | | |
| Annual growth (%) | 4.3 | 4.7 | 3.4 | 1.0 | 1.3 | -1.5 | 1.3 | 1.8 | 1.4 |
| Labour productivity (aa%) | 1.0 | -0.0 | -0.4 | 0.4 | -1.3 | 2.2 | 2.2 | 0.8 | -0.5 |
| Trend (aa%) | 0.5 | 0.3 | 0.2 | 0.3 | 0.4 | 0.7 | 0.8 | 0.7 | 0.6 |
| LCl private sector wages | | | | | | | | | |
| Annual growth (%) | 1.5 | 1.9 | 2.0 | 2.4 | 1.6 | 2.4 | 2.4 | 2.3 | 1.6 |

Table J Real GDP and components - short-term projections

(Quarterly percentage change, unless specified otherwise)

| | GDP share | Actuals | | | Projections | | | | | | | |
|---------------------------------|-----------|---------|-------|-------|-------------|-------|-------|-------|-------|-------|-------|--|
| | | Jun20 | Sep20 | Dec20 | Mar21 | Jun21 | Sep21 | Dec21 | Mar22 | Jun22 | Sep22 | |
| Final consumption expenditure | | | | | | | | | | | | |
| Private | 50 | -12.1 | 14.8 | -0.1 | -0.1 | -0.0 | 0.5 | 0.8 | 1.2 | 1.0 | 1.0 | |
| Public | 16 | 1.4 | 0.3 | 1.5 | 0.4 | 0.3 | 0.6 | 0.3 | 0.3 | 0.4 | 0.5 | |
| Total | 67 | -8.9 | 11.0 | 0.3 | 0.0 | 0.1 | 0.5 | 0.7 | 1.0 | 0.8 | 0.9 | |
| Gross fixed capital formation | | | | | | | | | | | | |
| Residential | 5 | -20.6 | 42.0 | 4.0 | 1.0 | -4.7 | -1.2 | -0.8 | -1.3 | 0.1 | -0.3 | |
| Other | 11 | -19.0 | 19.3 | -1.6 | 1.6 | 0.1 | -0.5 | 1.5 | 1.6 | 0.8 | 2.3 | |
| Total | 16 | -19.5 | 25.8 | 0.2 | 1.4 | -1.5 | -0.7 | 0.8 | 0.7 | 0.6 | 1.5 | |
| Change in stocks (contribution) | | | | | | | | | | | | |
| \$millions | | -1.2 | 1.5 | 0.5 | -1.4 | 0.7 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | |
| | | -1005 | -60 | 267 | -607 | -169 | 29 | 117 | 157 | 175 | 183 | |
| Exports | | | | | | | | | | | | |
| Goods | 16 | -5.0 | 4.4 | -0.5 | 0.8 | 1.9 | 0.3 | -0.3 | 0.3 | 0.6 | 0.7 | |
| Services | 5 | -39.7 | 6.7 | -24.4 | 0.7 | -1.2 | -2.0 | 2.9 | 17.6 | 18.7 | 21.1 | |
| Total | 20 | -15.5 | 4.9 | -5.7 | 0.8 | 1.4 | -0.1 | 0.3 | 3.2 | 4.1 | 5.3 | |
| Imports | | | | | | | | | | | | |
| Oil | 2 | -39.8 | 25.3 | 15.0 | -15.0 | -12.4 | 1.0 | 1.0 | 34.0 | 6.6 | 6.2 | |
| Non-oil | 21 | -23.3 | 9.6 | 2.1 | 3.3 | 3.2 | 1.8 | 2.0 | 2.7 | 3.1 | 3.0 | |
| Total | 23 | -24.6 | 10.6 | 3.1 | 1.8 | 2.1 | 1.8 | 1.9 | 4.5 | 3.4 | 3.3 | |
| GDP (expenditure) | | -9.5 | 15.7 | -1.1 | -1.0 | 0.3 | 0.1 | 0.4 | 0.5 | 0.8 | 1.3 | |
| GDP (production) | | -11.0 | 14.0 | 0.0 | -0.3 | 0.3 | 0.1 | 0.4 | 0.5 | 0.9 | 1.4 | |



Sectoral Overviews

| <i>Forecasting team</i> | | | | | | | | | |
|-------------------------|-------------------|-------------|-----------------|------------|------------|-------------|--------------|------------------|--------------|
| Rebecca Williams | Waran Bhahirethan | Thomas Bohm | Hamish Fitchett | Lewis Kerr | Marea Sing | Tyler Smith | Tom Stannard | Gregorius Steven | Daniel Wills |

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Note: Push ctrl + click on the section you wish to jump to



SUMMARY

Prices

- **Key export commodity prices have held up.** Goods export prices are expected to remain flat in the near term. This is supported by strong global dairy and fruit demand but hampered by COVID-19 restrictions in trading partners impacting some higher value products, particularly meat products. Over the medium term, the global recession will impact demand for New Zealand exported commodities keeping prices muted, but not weaken considerably. Much of our goods exports have not been significantly impacted by global COVID-19 related restrictions.
- **Import prices are stronger than expected but will likely ease in the medium term.** Import prices have been stronger than expected, reflecting significant global supply chain disruptions and oil price rising back to around \$50/barrel. The supply chain disruptions are expected to alleviate only gradually, and lead to elevated prices through the first half of 2021 before beginning to ease. Over the medium term, import prices are expected to remain muted with the weak outlook for trading partner inflation and growth, and a long-run downwards trend in the price of manufactured goods, which is expected to persist over the medium term.
- **The terms of trade is expected to fall slightly in the near term but hold up better than expected in the November MPS before recovering** over the projection horizon. Temporary import price strength is expected to dissipate while export prices hold up.

Volumes

- **Exports of services continue to be hampered by the closed border, but goods export volumes have been resilient.** We expect weaker exports of services as tourists and students that stayed have to leave or become migrants, before gradually recovering when the border opens (our current assumption has this in 2022 Q1). As a whole, New Zealand's goods exports appear to have been less impacted by the supply chain disruptions than importers. Some larger exporters have preferential shipping arrangements, or greater control over their supply chains.
- **Import volumes bounced back stronger than expected but have remained weak despite high domestic spending.** Import volumes, like prices, are expected to be impacted by the ongoing supply chain disruptions. This is expected to hold imports to a muted level through to the middle of 2021 before they gradually recover as firms rebuild stocks.
- **Net export volumes are expected to support domestic growth in the near term but weigh on growth through 2021** as import volumes recover faster than export volumes, pulling down the currently high current account balance. The border opening and exports of services recovering will support growth.

PRICES

Figure 1: Aggregate export prices (real world terms)

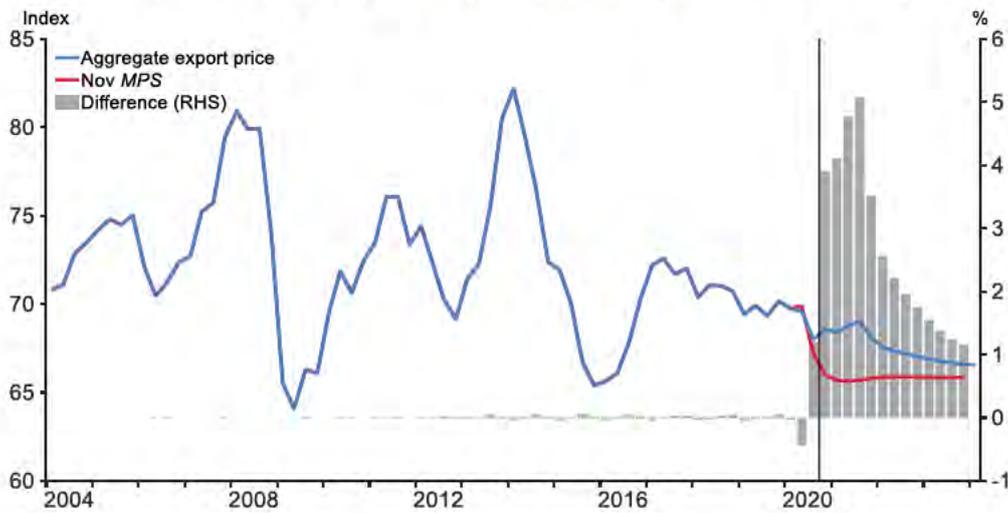


Figure 2: SNA dairy export price (USD terms)

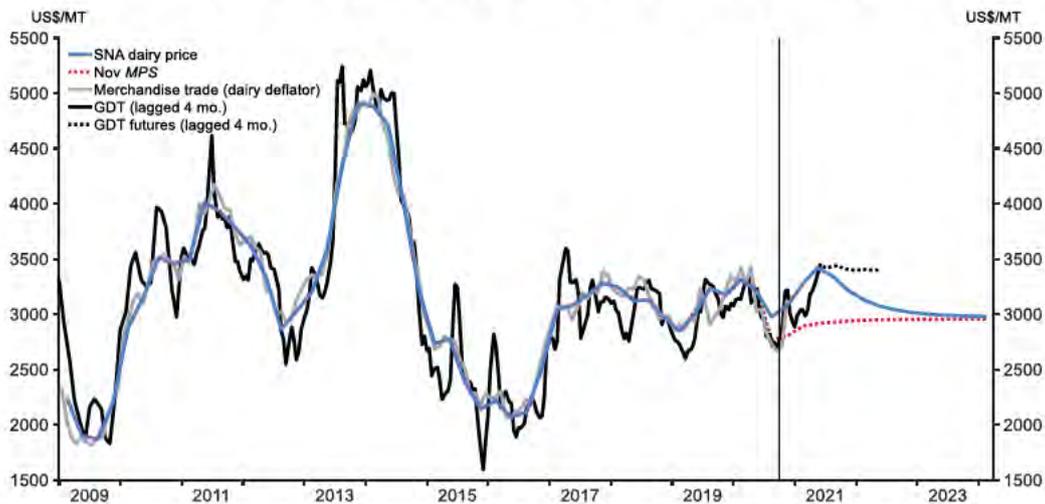


Figure 3: Global dairy production growth for selected exporting countries

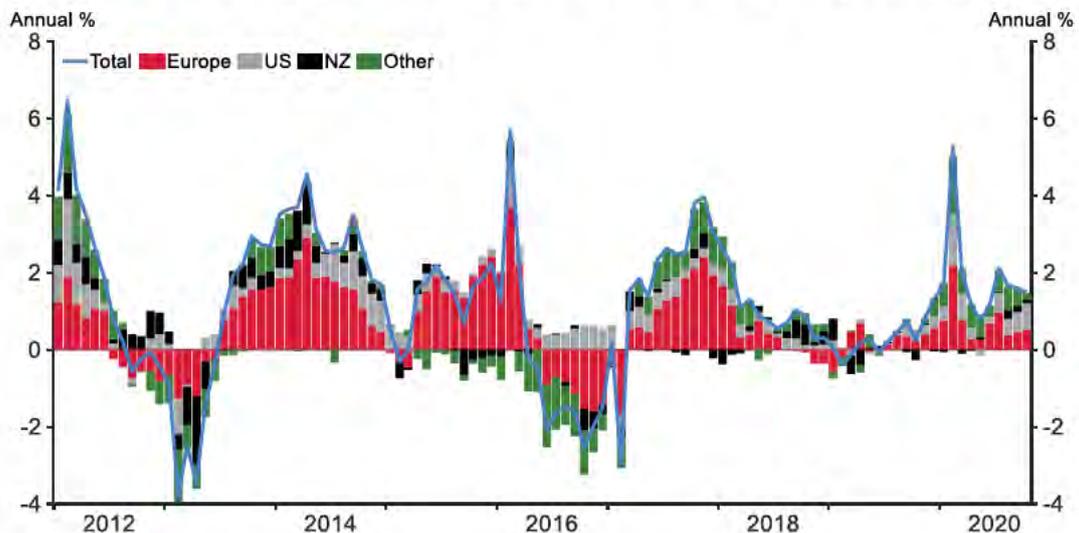


Figure 4: SNA meat price (real world terms)

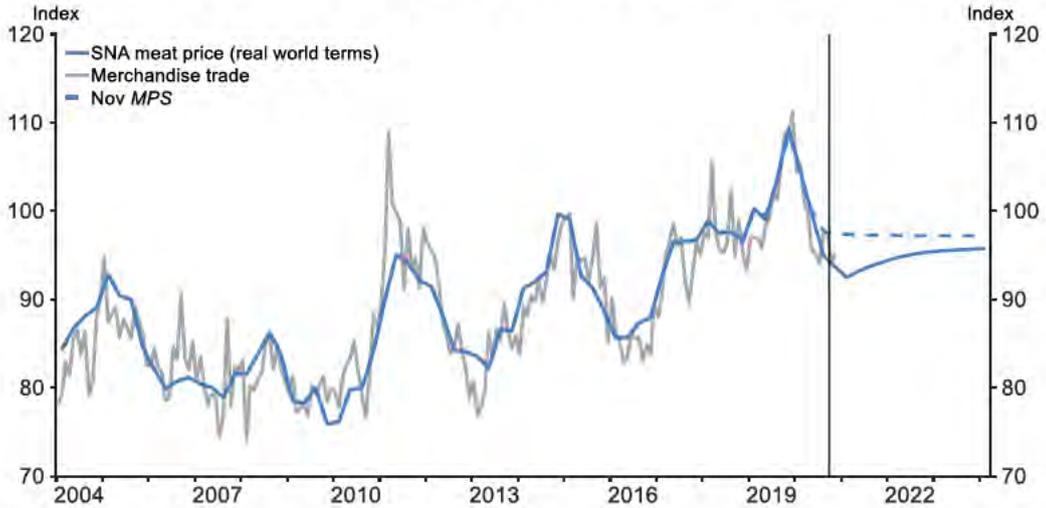


Figure 5: Goods export prices excluding dairy and meat (real world terms)

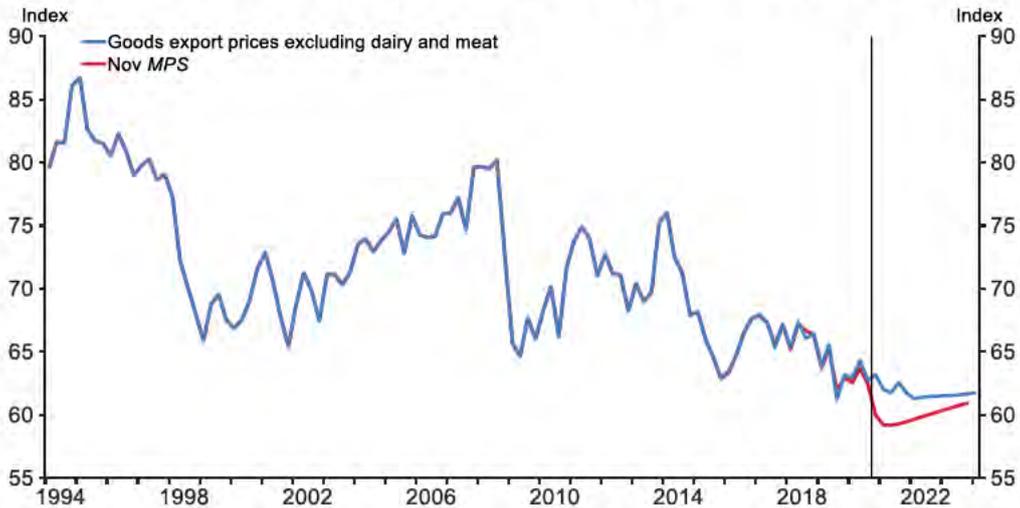


Figure 6: Aggregate import price index (real world terms)

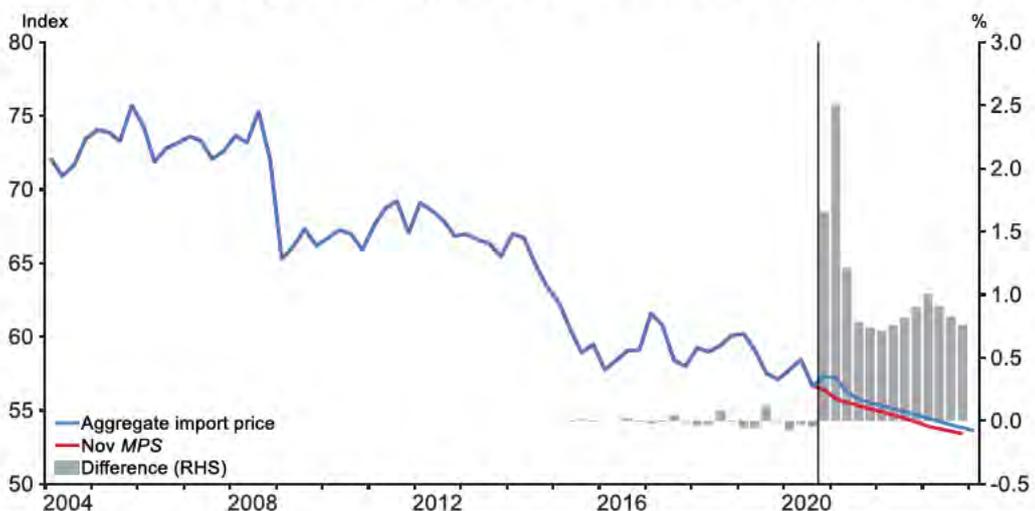


Figure 7: Dubai oil spot and futures pricing

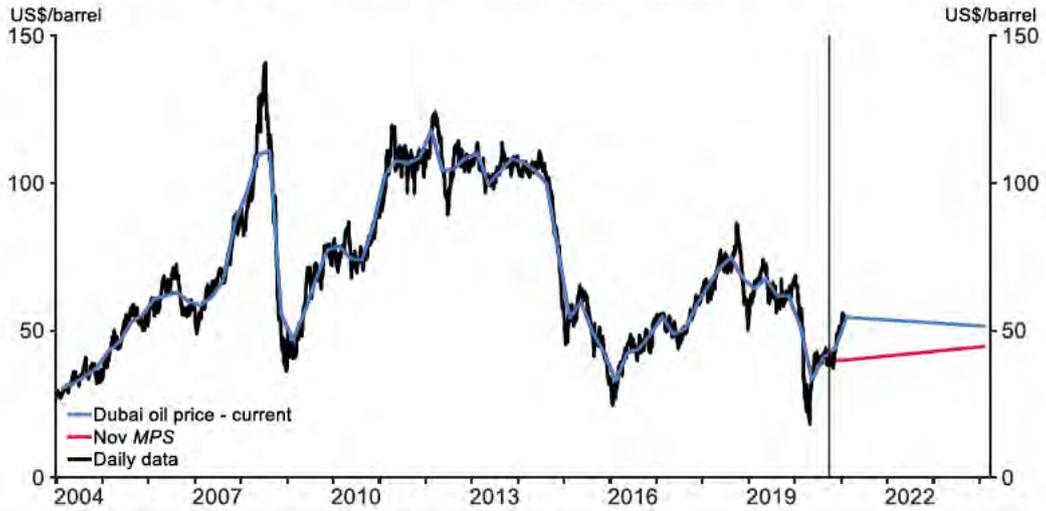


Figure 8: Terms of trade

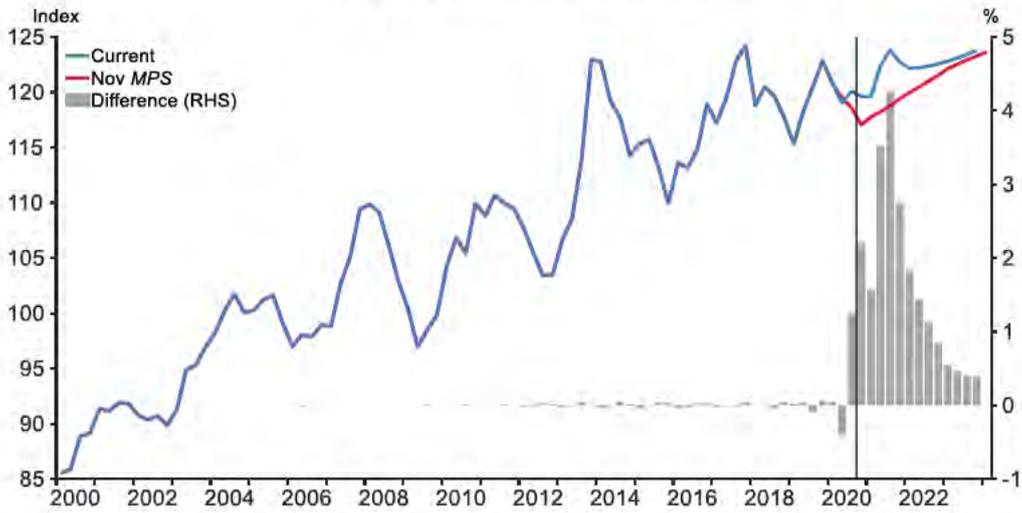


Figure 9: Contributions to growth in the terms of trade

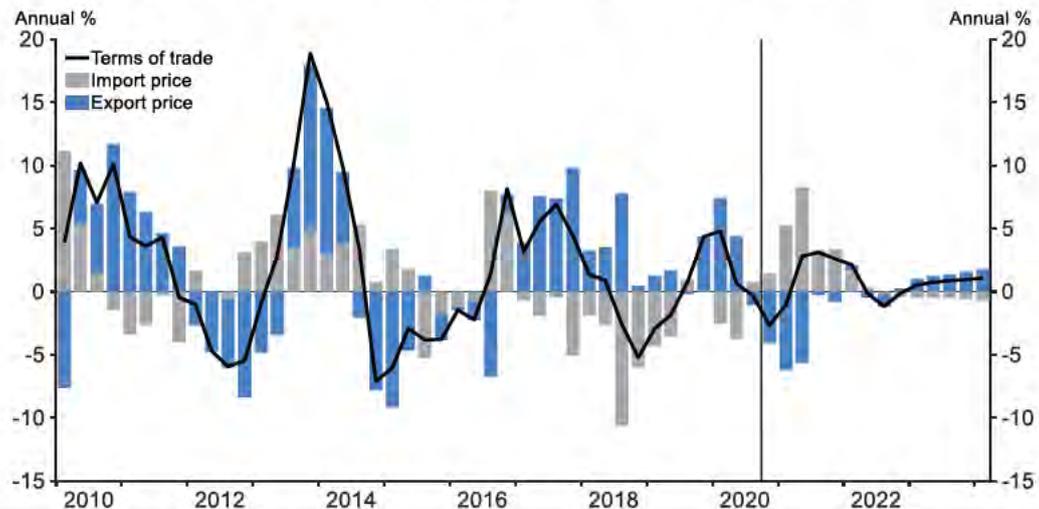


Figure 10: Commodity price global factor (real, foreign currency terms)



VOLUMES

Figure 11: Export volumes as a share of potential output

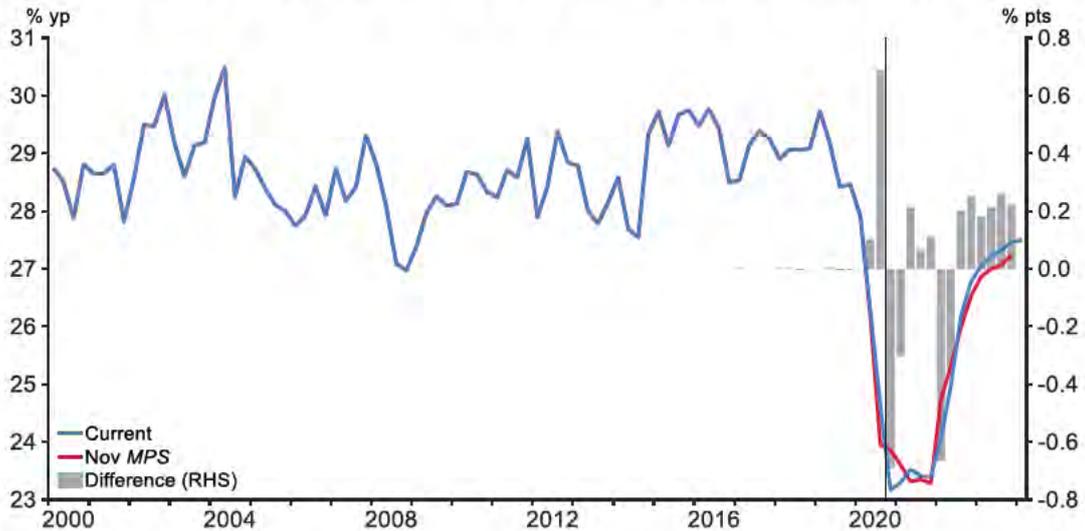


Figure 12: Contribution to export volumes growth

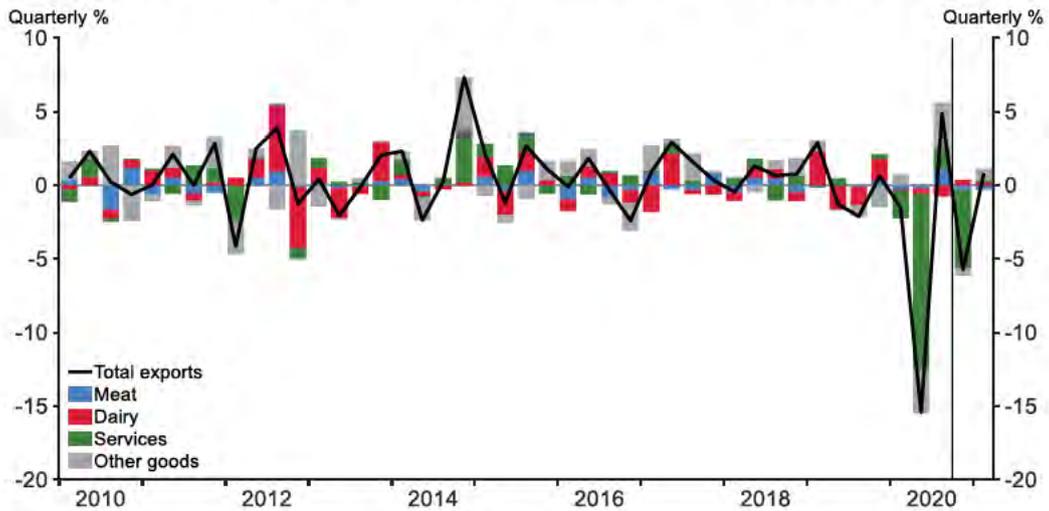


Figure 13 Production of milk solids

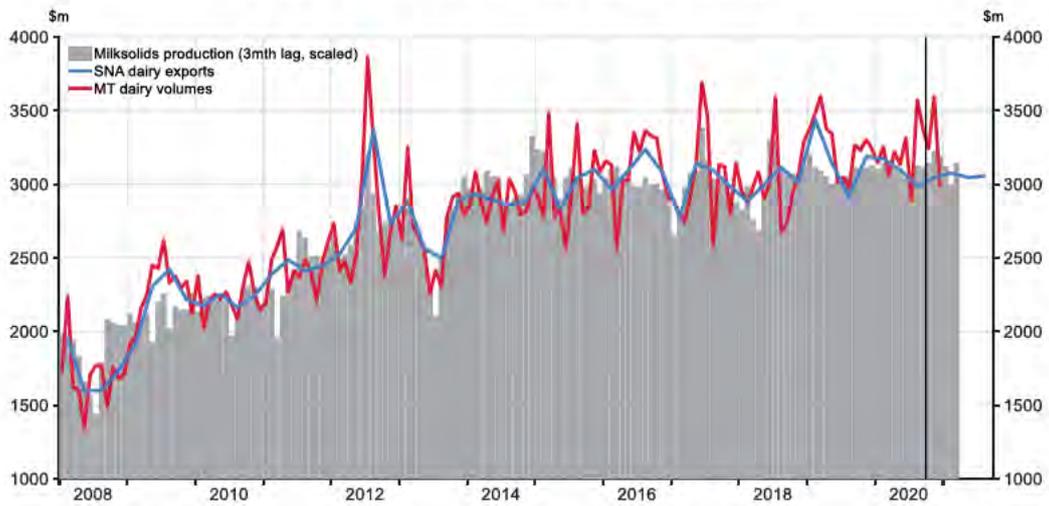
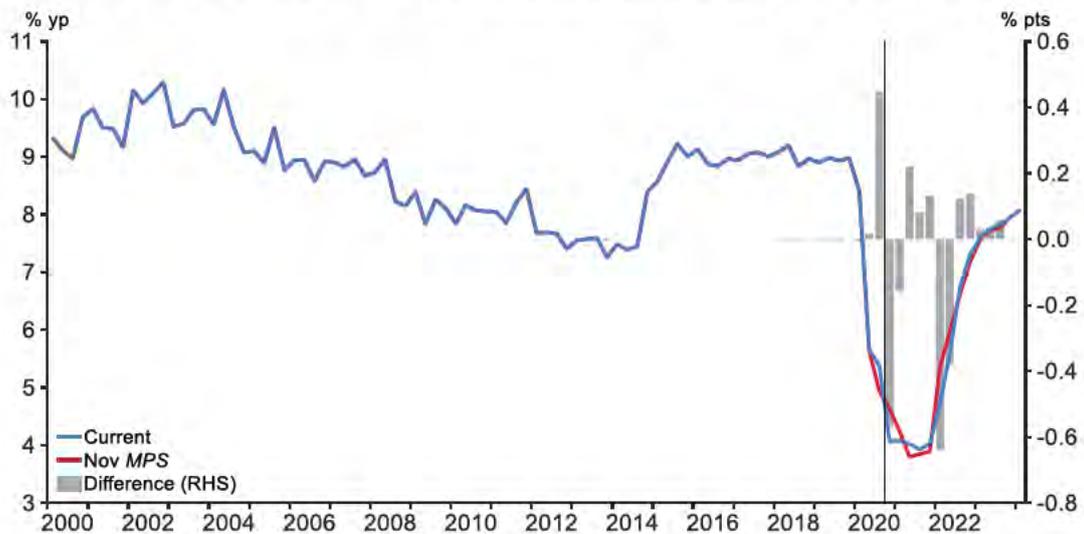


Figure 14: Exports of services volumes as a share of potential output



Note: There is a structural break in 2014 based on a change in calculation methodology.

Figure 15: Growth in short-term visitor arrivals (3mma)

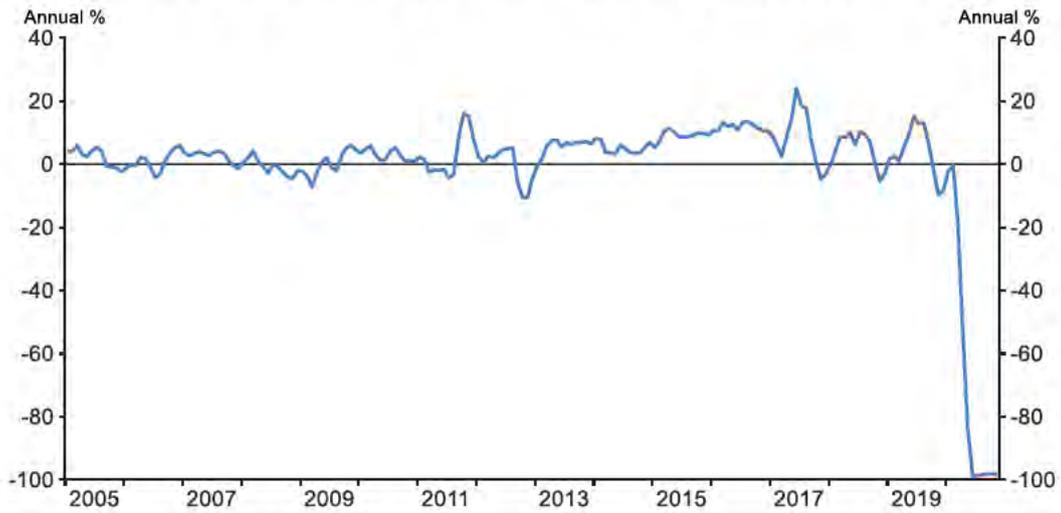


Figure 16: Import volumes (share of potential)

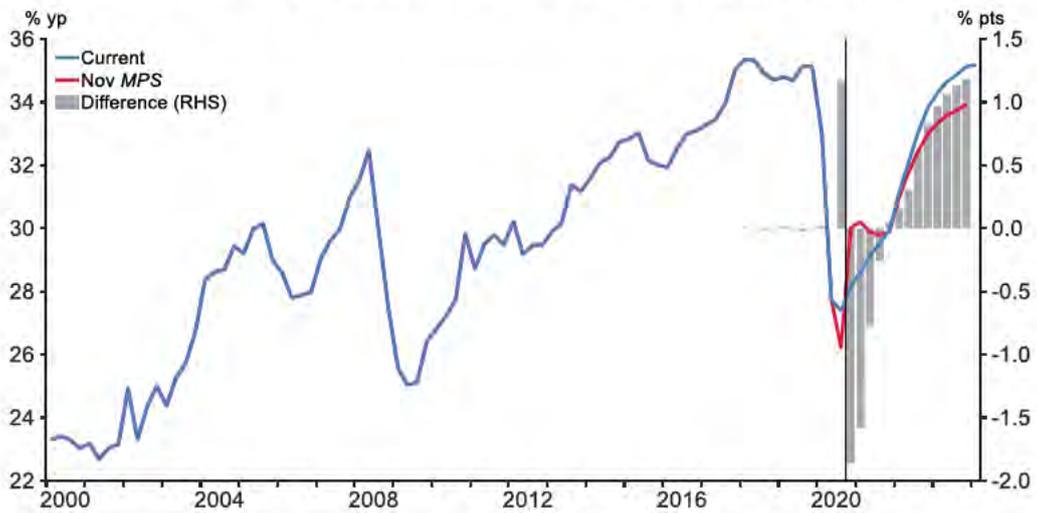
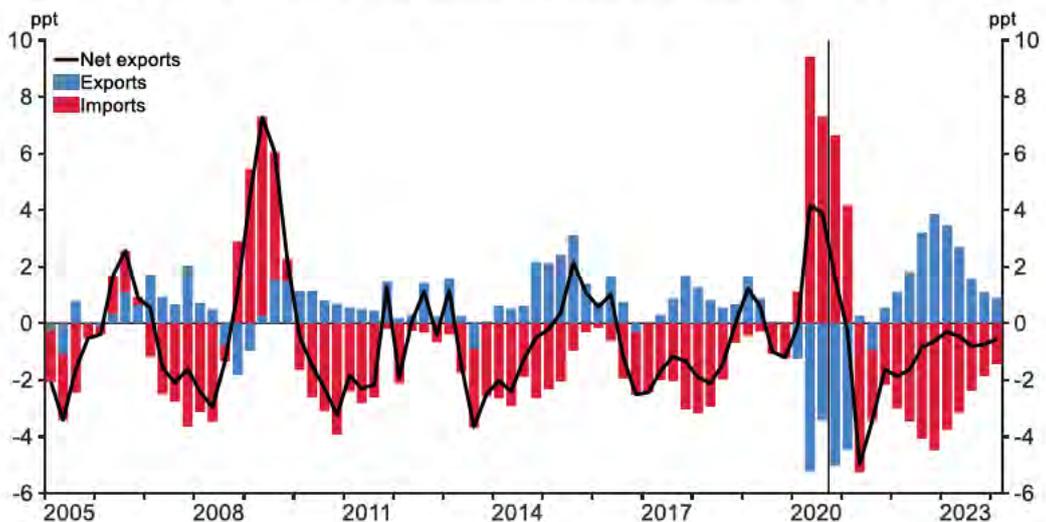


Figure 17: Net exports contribution to annual GDP growth



EXTERNAL BALANCES

Figure 18: Trade balance (share of GDP)

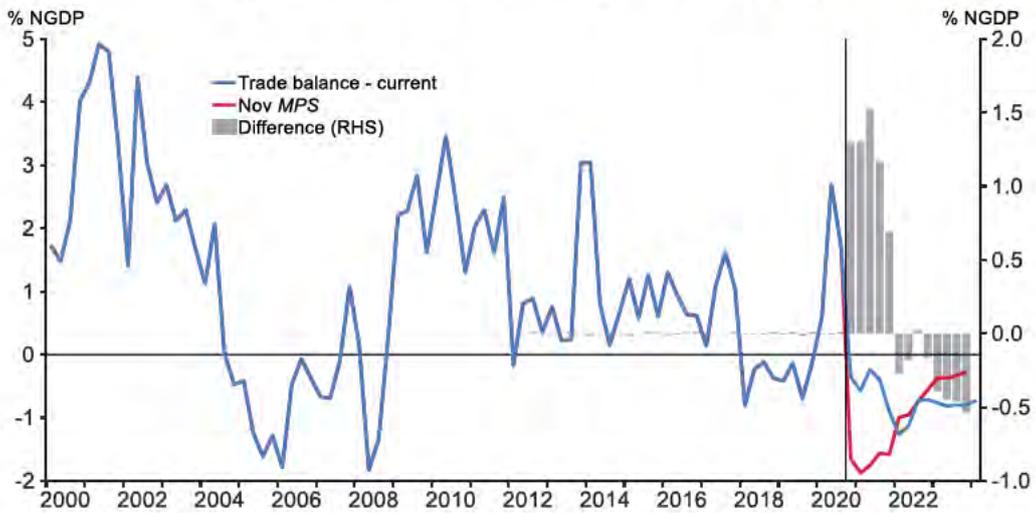


Figure 19: Contributions to the trade balance

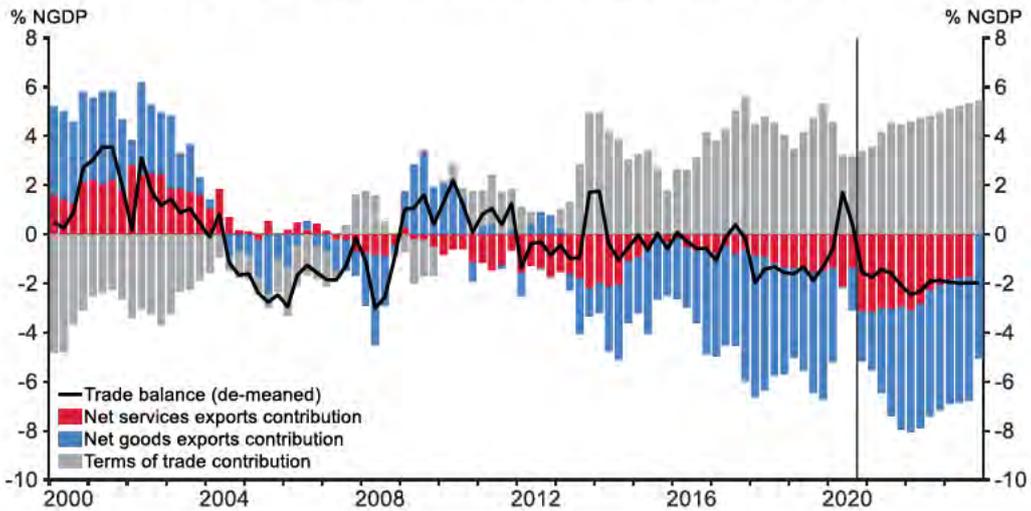
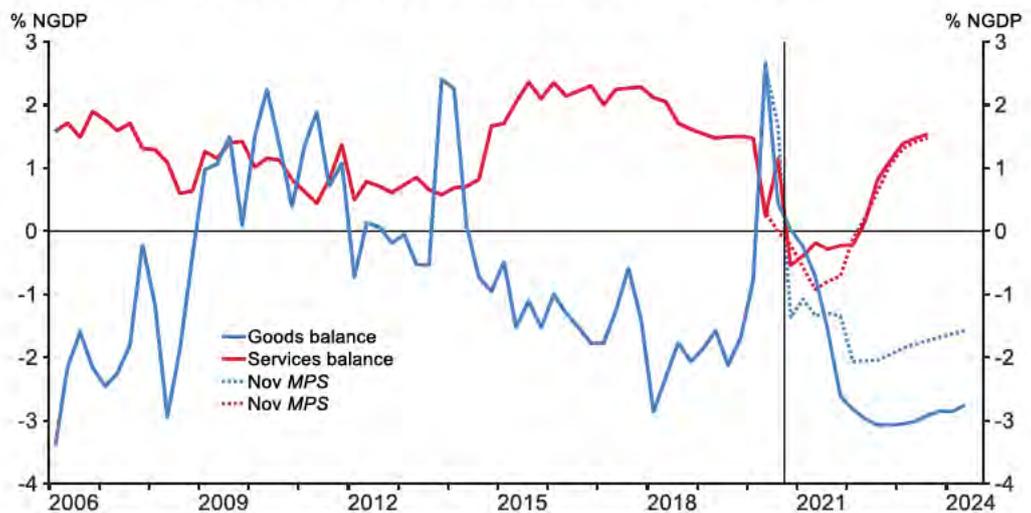
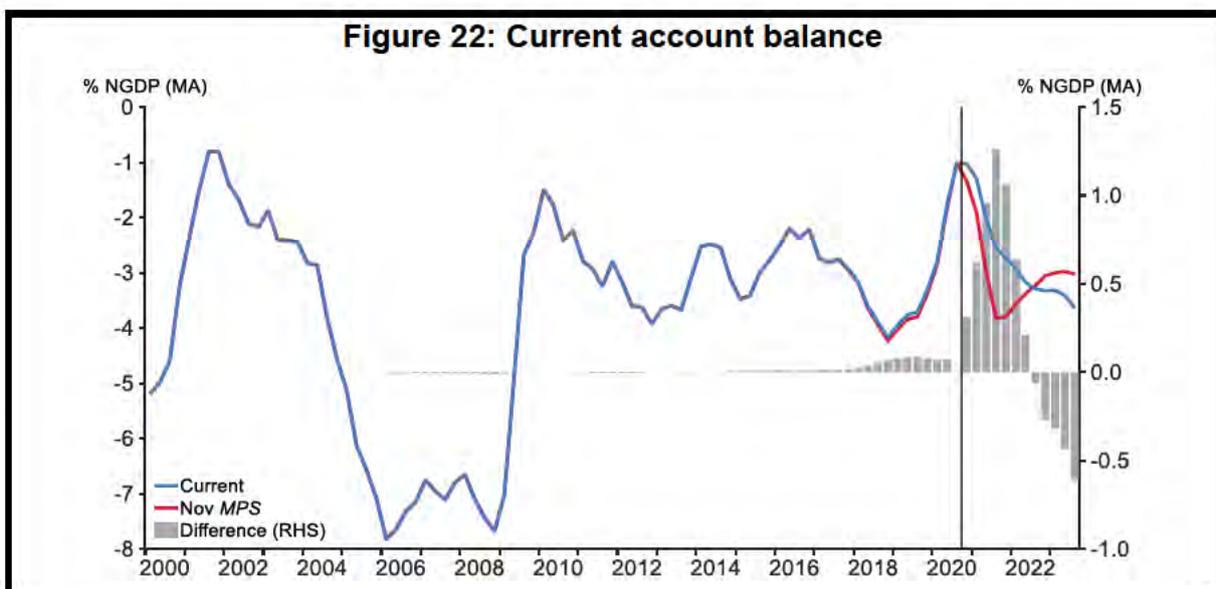
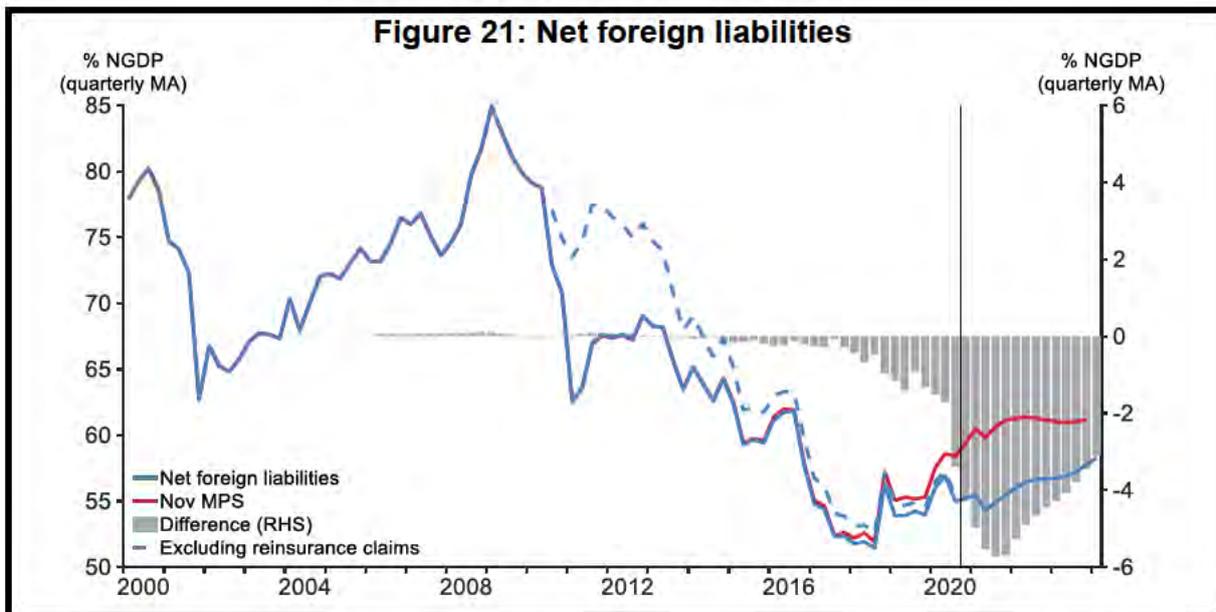


Figure 20: Goods and services balances







SUMMARY

House prices

- **House prices have risen sharply in recent months.** In December, house prices continued their sharp gains, bringing quarterly growth to 9.3 percent and annual growth to 18.3 percent at the end of 2020. The price gains were broad-based across regions.
- **A revised view of migration prior to and in the early stages of the COVID-19 pandemic explains a significant proportion of the house price increase experienced in the latter part of 2020.** Mortgage rate reductions were also a driver of higher house prices.
- **After peaking in the fourth quarter of 2020, the baseline scenario assumes house price momentum to continue over the first quarter of 2021.** Recent sales data, low inventory levels, and house price expectations support this projection.
- **House price gains are expected to moderate from Q2 2021.** The reintroduction of LVR restrictions, a government housing package, softer labour markets, and mortgage rate declines all indicate a slowing in housing market momentum. At the end of the scenario horizon, house price gains are expected to average around 5% in annual terms.

Household consumption

- **Consumption is projected to be flat in the near term after the robust gain posted in 2020 Q3.** Labour markets have been more robust than anticipated and earnings have held up. Domestic tourism has been running at over 100 percent of its usual activity levels. However, without international tourism and moderating house prices additional growth in consumption is unlikely.
- **Consumption is expected to recover when borders reopen in early 2022.** The return of international tourism, accelerating business investment leading to economic growth, and a strengthening labour market all support strengthening consumption over the medium term.

Residential investment

- **On the back of the strong consent issuance and robust price gains, residential investment has been revised up sharply in the near term compared to the November MPS.**
- **The baseline scenario assumes the medium-term drivers of residential investment are largely unchanged since the November MPS.** A capacity constrained construction sector and moderating house prices serve to cool residential investment, although the level remains elevated relative to previous expectations over much of the scenario horizon.

HOUSE PRICES

Figure 1: National house price inflation
(s.a.)

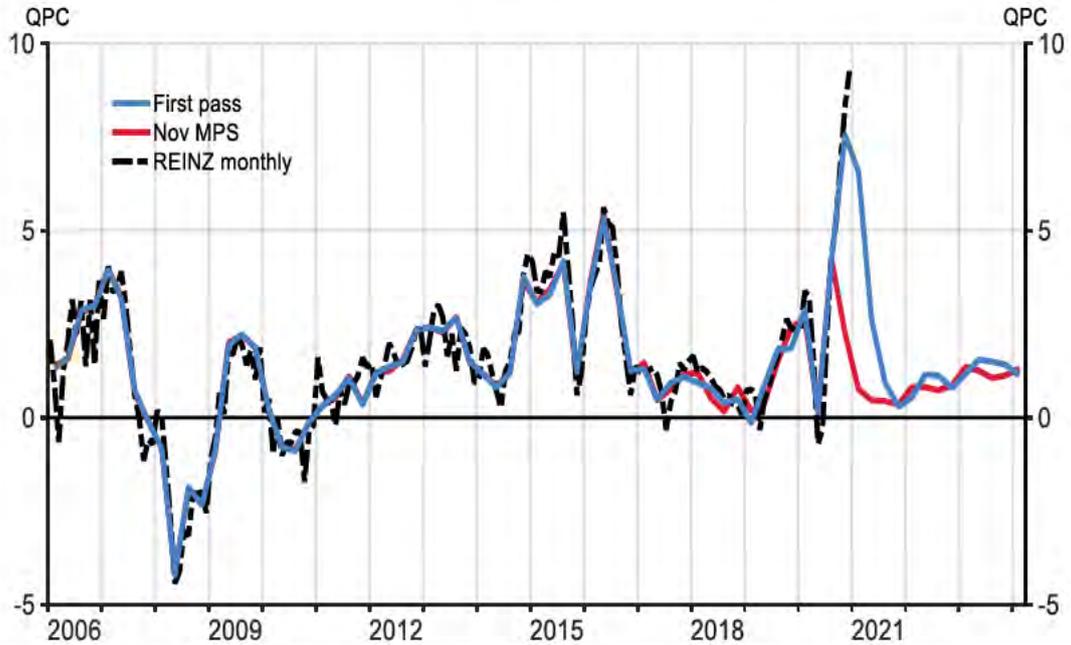


Figure 2: REINZ regional house price inflation

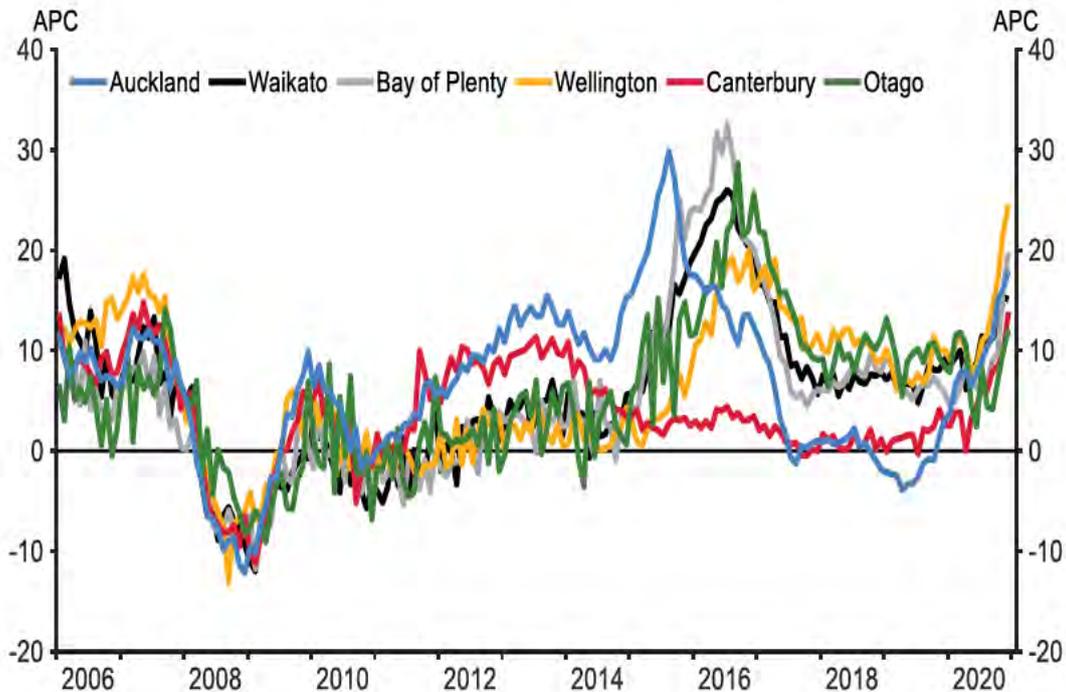


Figure 3: House sale inventories, days to sell, and house prices (s.a.)



Figure 4: House price expectations and house prices



Figure 5: Housing lending and house prices

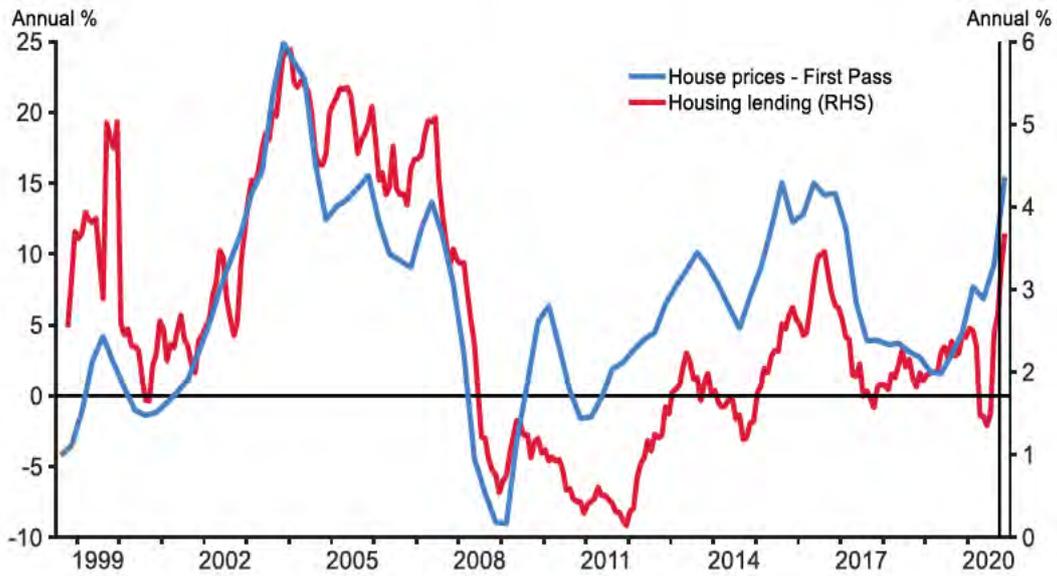
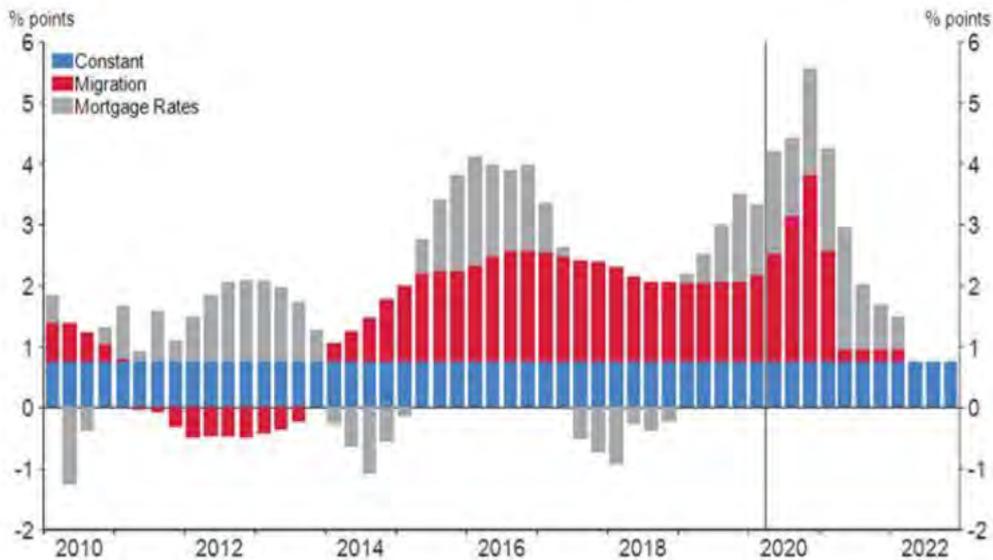
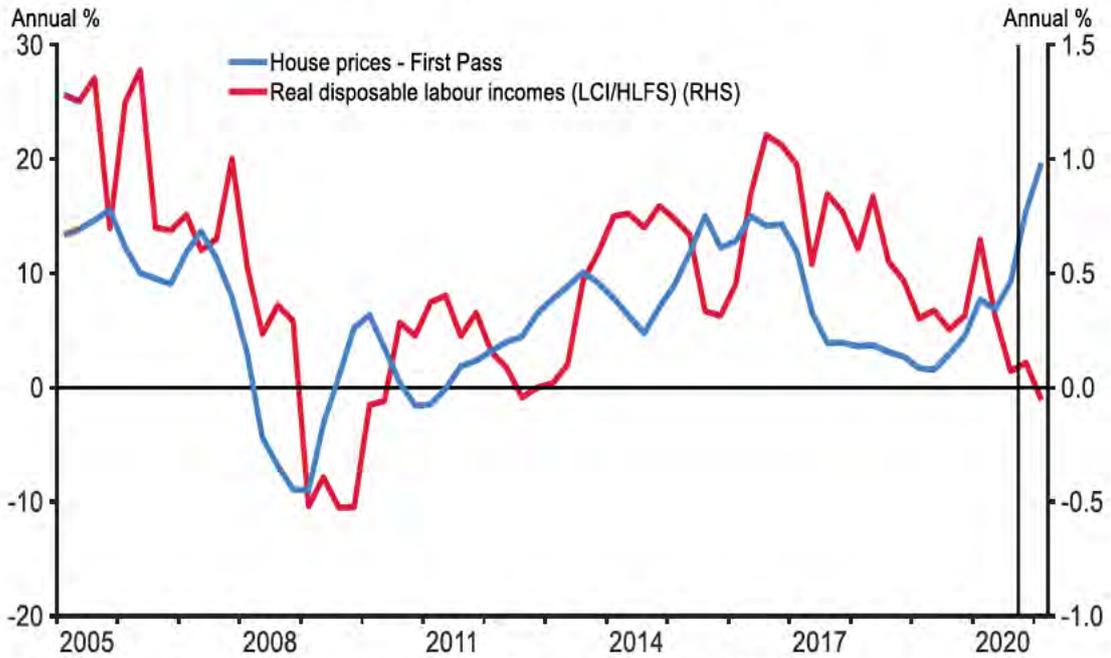


Figure 6: Decomposition of house prices



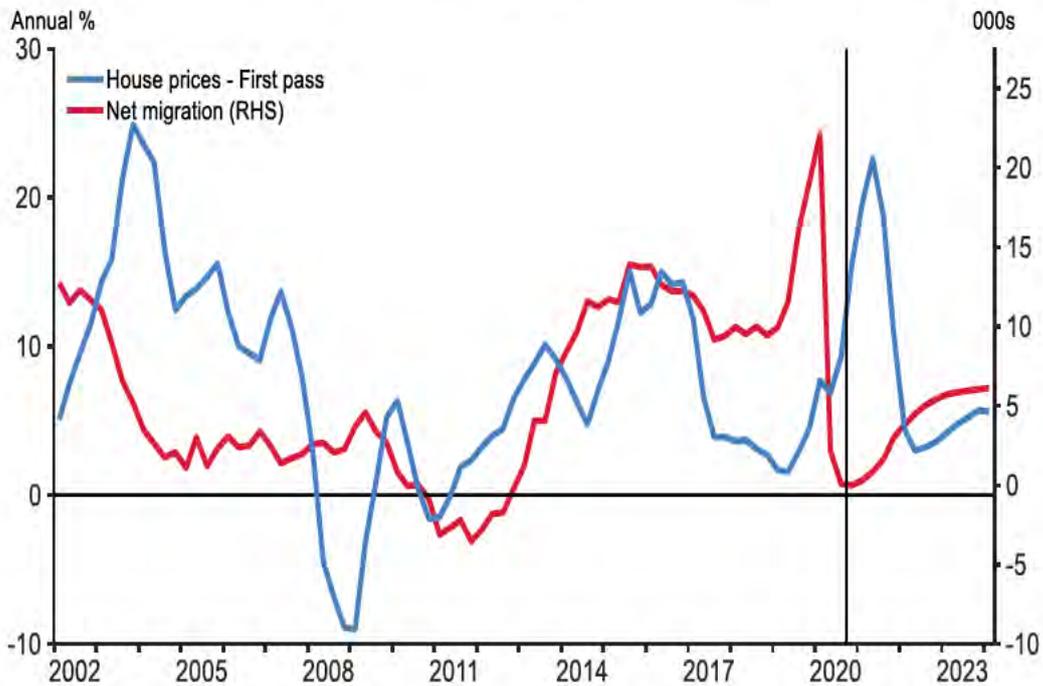
Mortgage rates have had a historically lower impact on house prices compared to other factors, such as migration and housing supply. Housing supply was cited as the primary cause of house price increases by the CEO of the Property Council.

Figure 7: Labour income and house prices



Note: Real disposable calculated as HLFS employment*LCI wages (private sector), adjusted for inflation and average tax rates.

Figure 8: Net migration and house prices (s.a.)



HOUSEHOLD CONSUMPTION

Figure 9: Real household consumption
(s.a.)

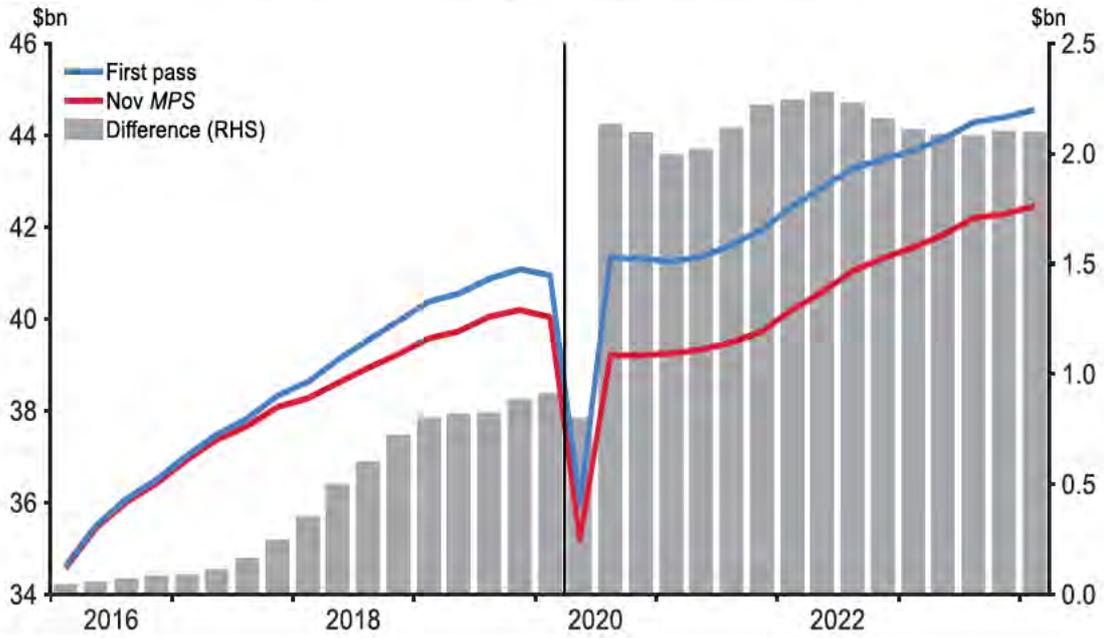


Figure 10: Consumption growth
(s.a., quarterly)

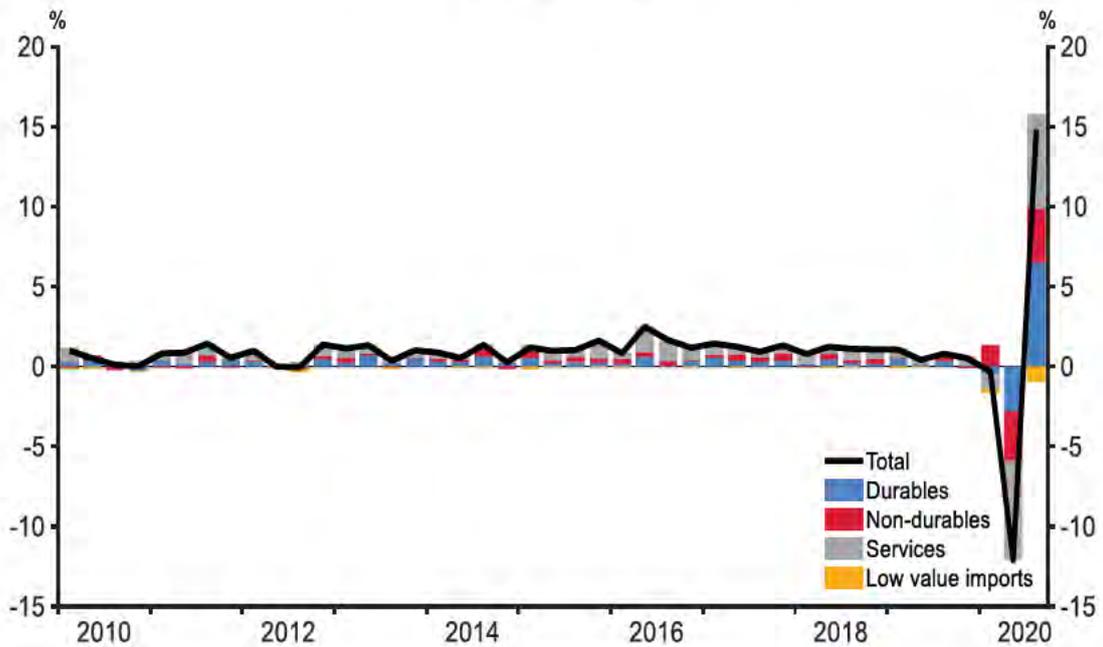
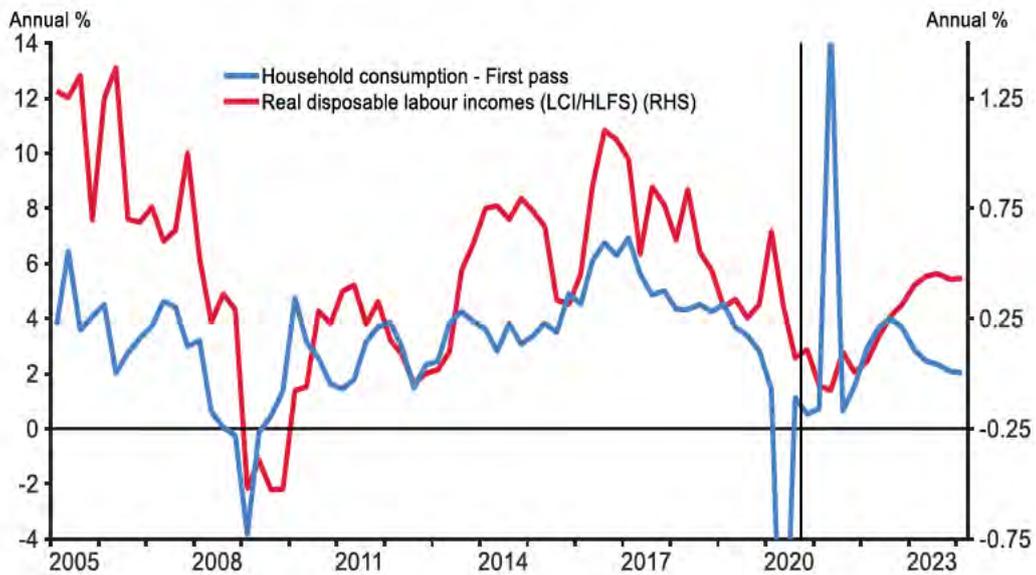
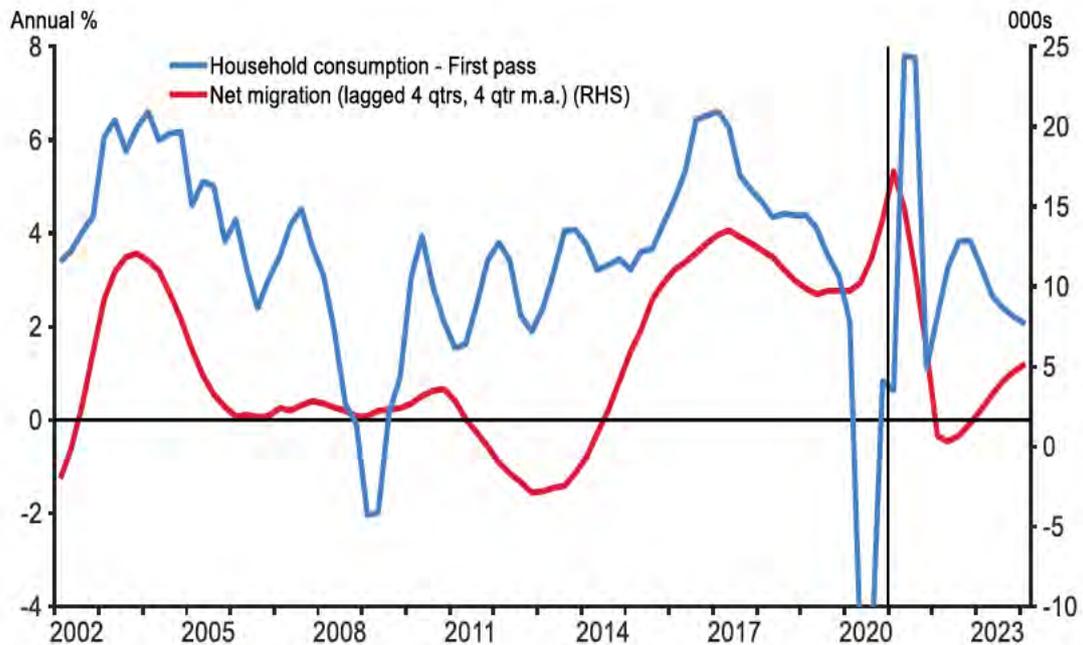


Figure 11: Labour incomes and consumption



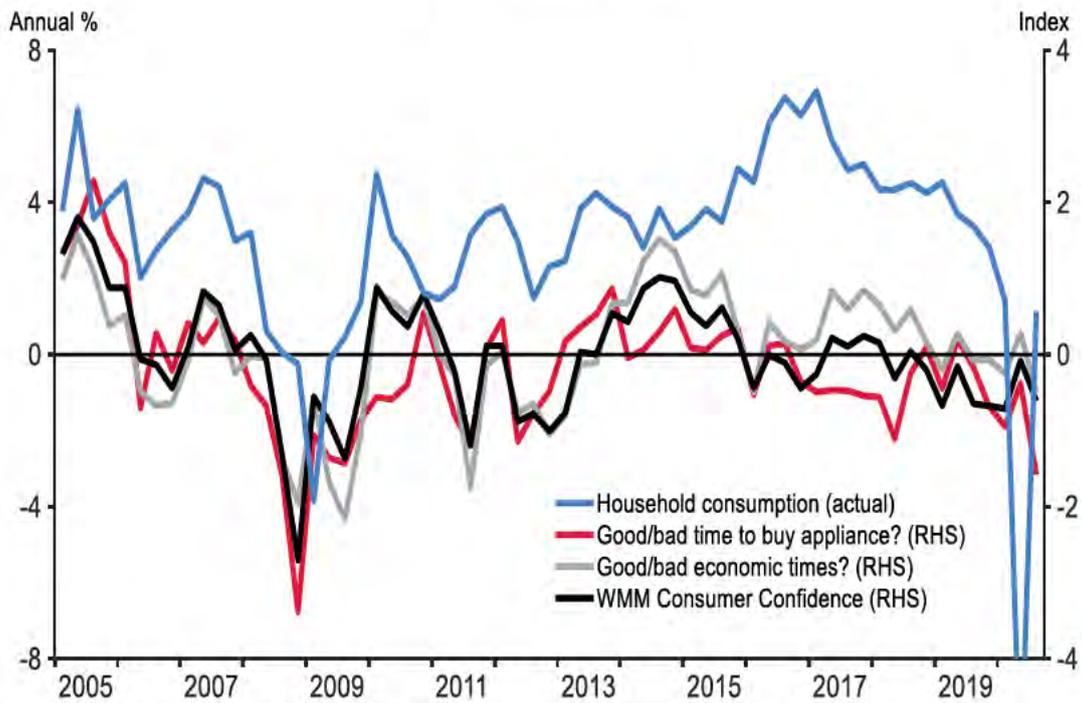
Lower household incomes are a key constraint on consumption growth over the coming year.

Figure 12: Migration and consumption
(s.a.)



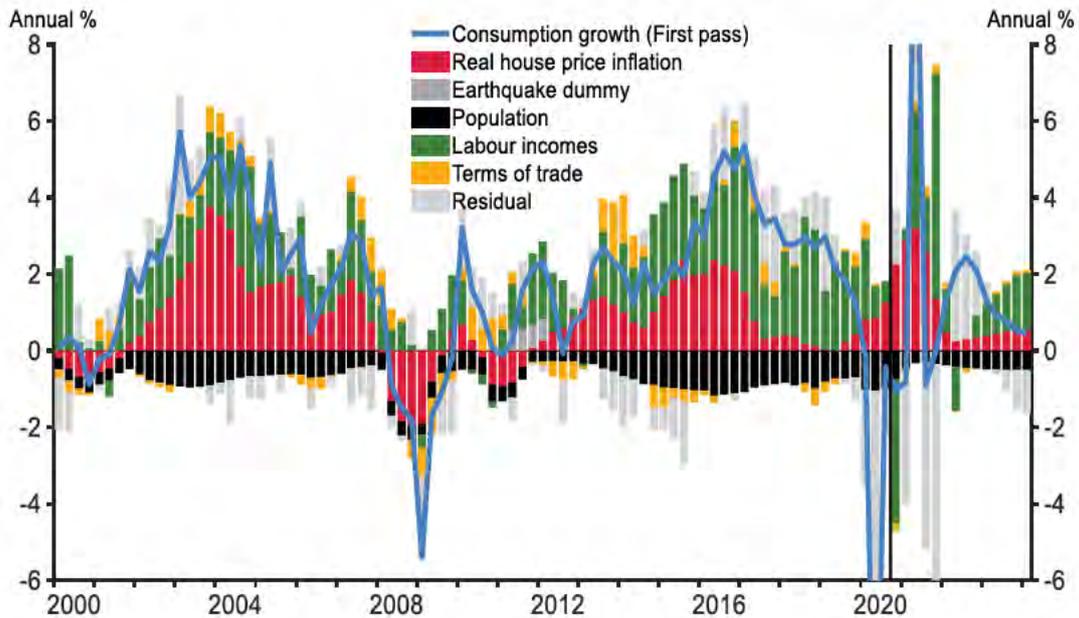
Migration has tended to have a gradual, sustained impact on the average level of household consumption. The eventual opening of New Zealand borders in early 2022 is assumed to help underpin consumption growth.

Figure 13: Consumer confidence (Westpac McDermott Miller) and consumption



Note: all confidence series are lagged two quarters.

Figure 14: Medium-term drivers of consumption



RESIDENTIAL INVESTMENT

Figure 15: Residential investment
(s.a.)

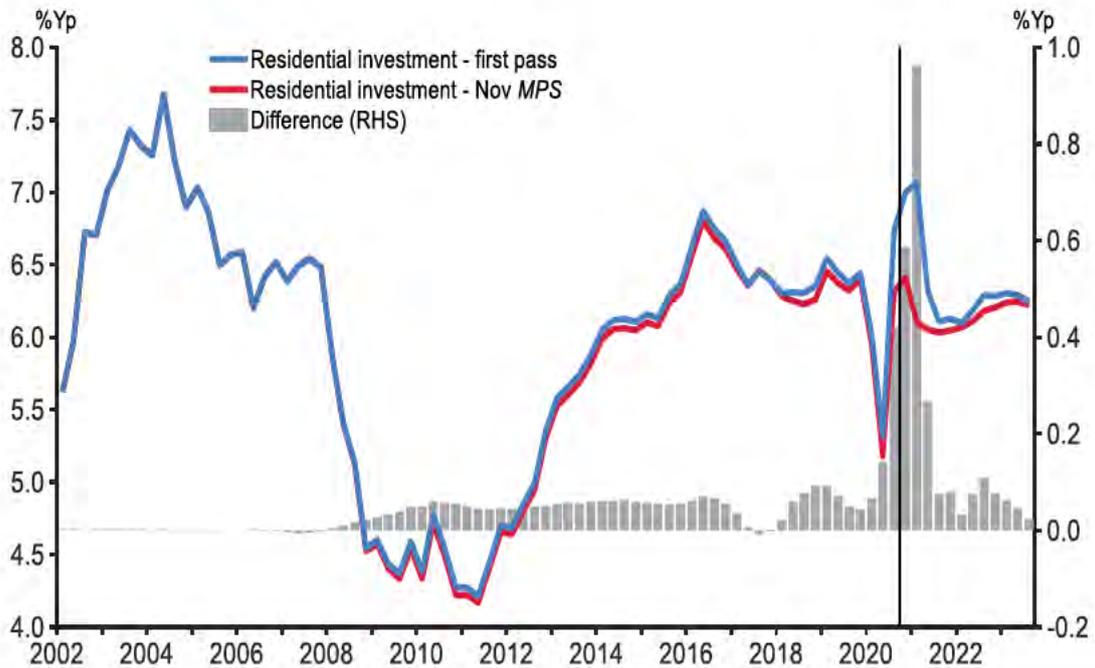
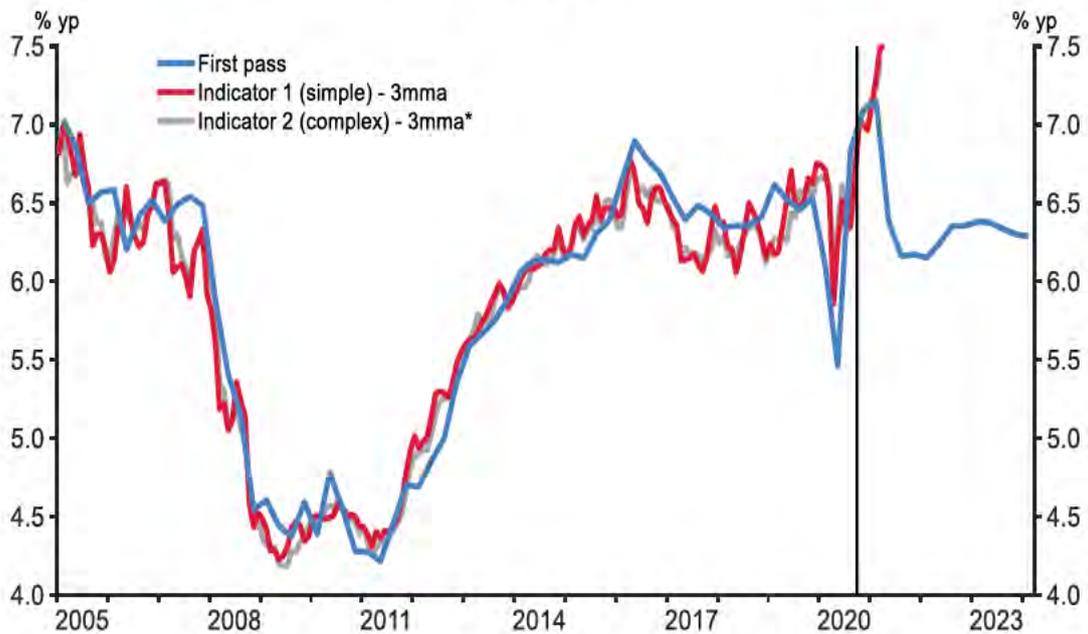


Figure 16: Residential investment and consents
(s.a.)



* Simple indicator based on residential consents. Complex indicator based on residential consent type.

Figure 17: Regional dwelling consent issuance

(s.a.)

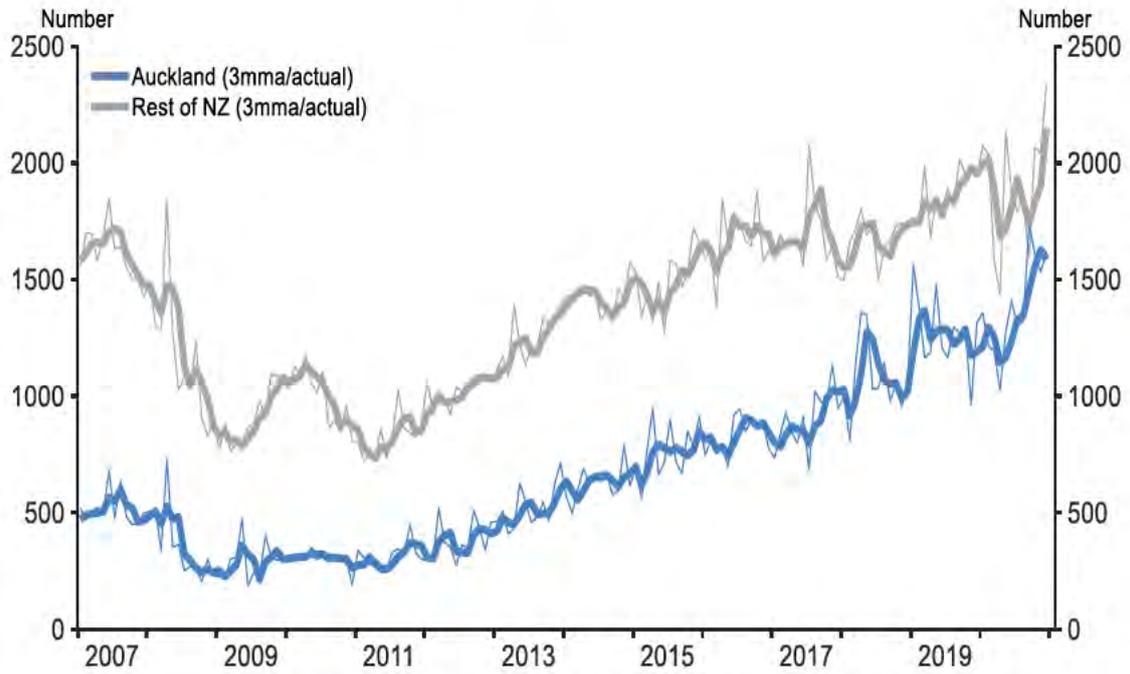


Figure 18: Consents by type

(s.a., 3mma)

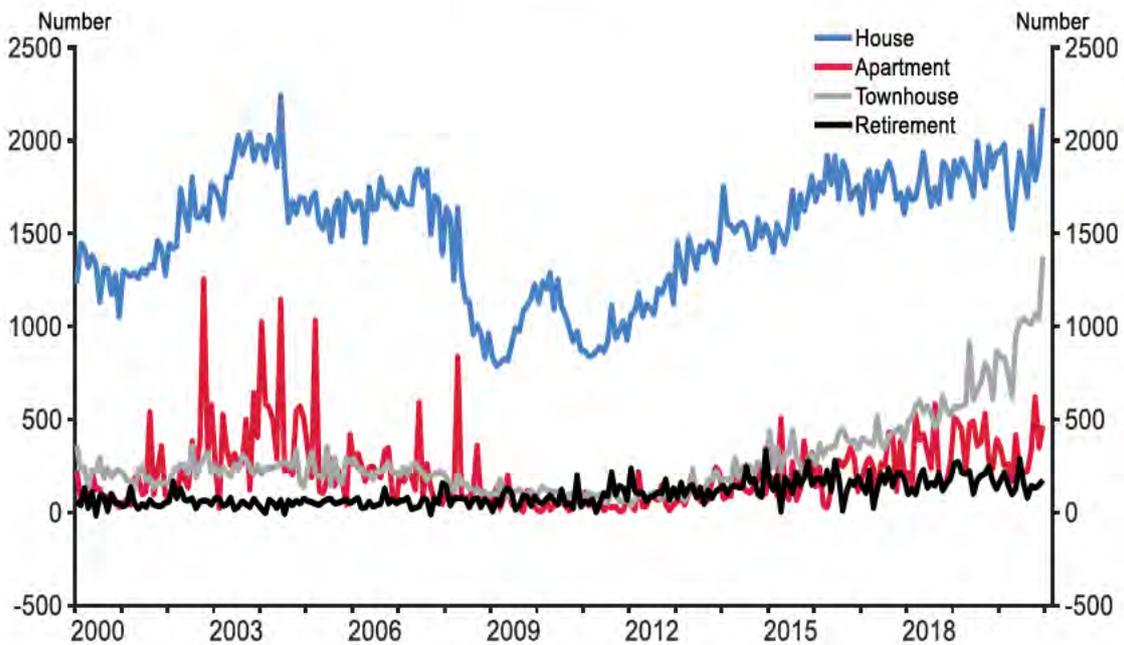


Figure 19: Residential construction and housing sales
(s.a.)

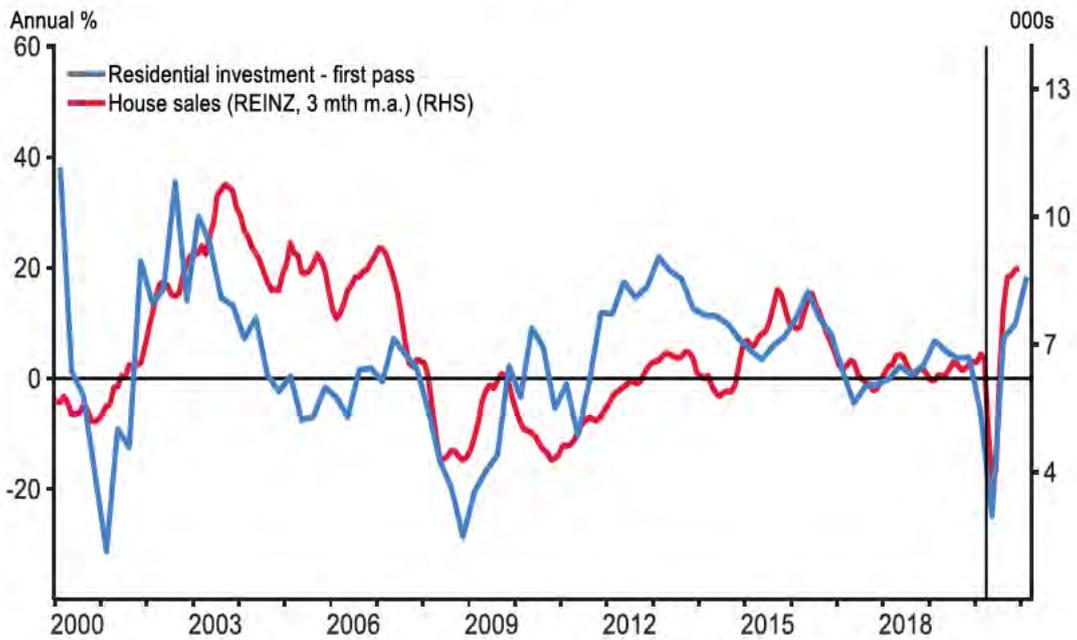


Figure 20: Builder confidence and construction

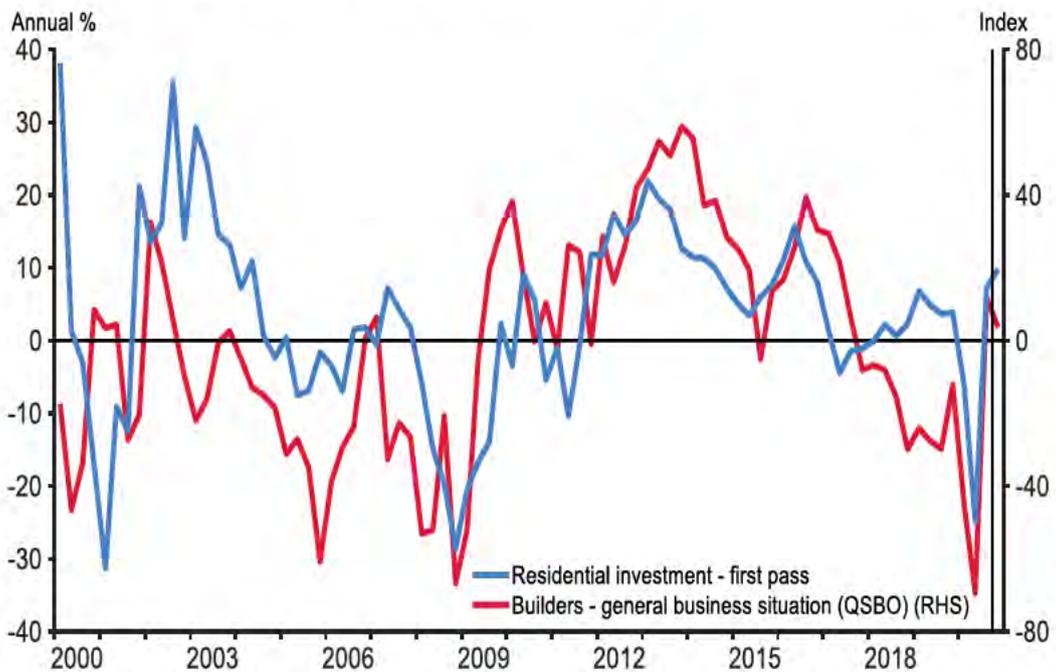


Figure 21: QSBO builders most limiting factor
(s.a.)

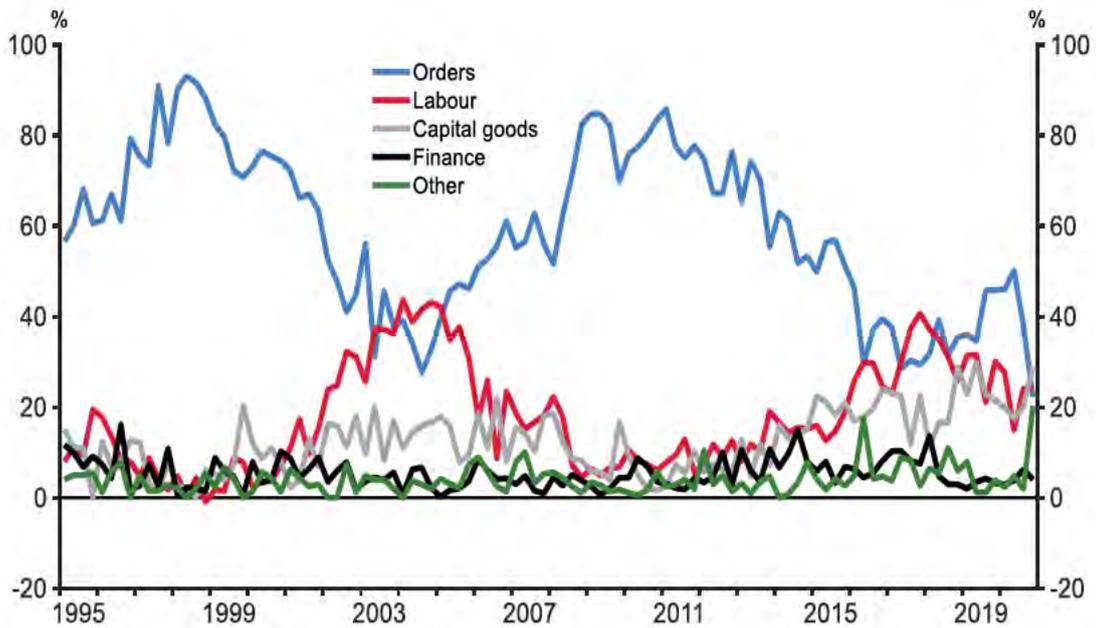
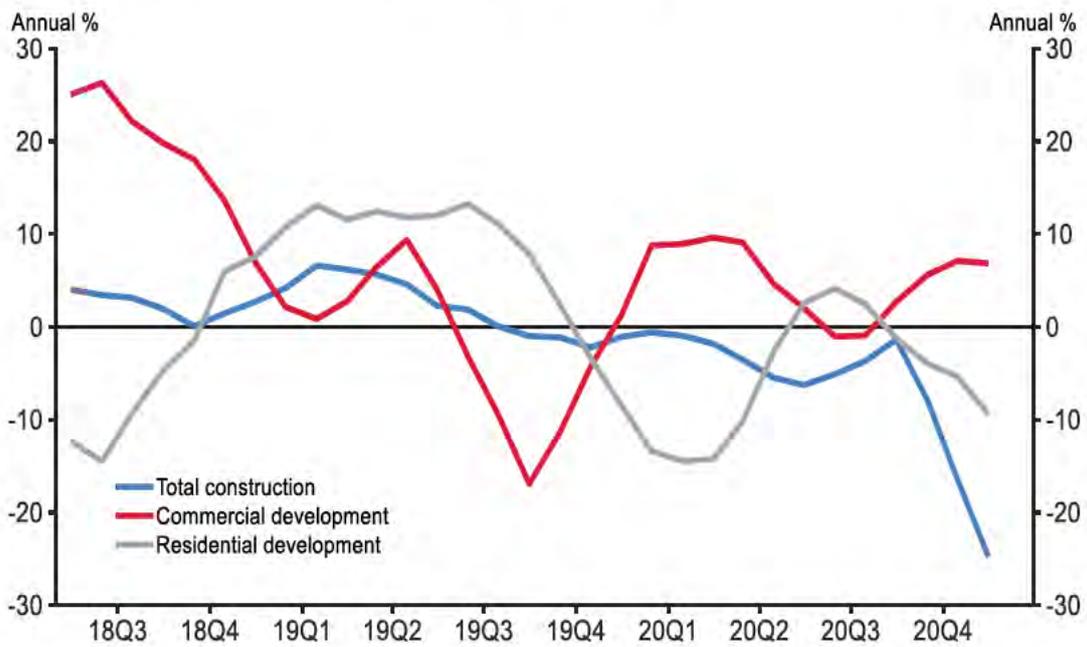


Figure 22: Bank lending to construction sectors
(4qtr-moving average)





SUMMARY

Business investment lagging behind

- After a 19 percent drop in the June quarter 2020, business investment bounced back by 19.3 percent in the September quarter 2020. In terms of distance to pre-COVID-19 levels, this recovery was weaker than for other expenditure GDP components (like private consumption and residential investment). This reflects the fact that businesses are not yet confident enough to invest more.
- Non-residential investment, plant, machinery, and equipment (PME), and transport equipment recovered much less than other business investment components from the second quarter drop. Investment in computers was exceptionally strong, as the COVID-19 lockdowns required many employees to work from home. Similarly, intangible investment (which includes software) did not fall back as much.

Not borrowing costs but uncertainty and real economic factors are holding back business investment

- We expect business investment to remain relatively flat in the near term. Business investment is forecast to drop slightly by 1.6 percent in the December quarter 2020 and to grow by 1.6 percent in the March quarter 2021.
- This is despite favourable borrowing costs and fiscal support measures. The yield on business loans has dropped by about 80 basis points since the beginning of the COVID-19 pandemic. Non-performing business loans have continued to fall, with profitability for many firms back to around pre-COVID-levels. Government measures (wage subsidies, Small Business Cashflow (loan) Scheme, Debt Hibernation Scheme, 'Safe Harbour' insolvency law changes) have helped many firms to stay in business. Insolvencies have remained very low.
- Instead businesses are taking a 'wait and see' approach. Uncertainty is still elevated, and businesses expect that pent-up demand and monetary/fiscal stimulus will ebb away.
- On top, global supply-chains for many imported investment goods currently face substantial disruptions and delays.

Sustained recovery needed before business investment grows more strongly

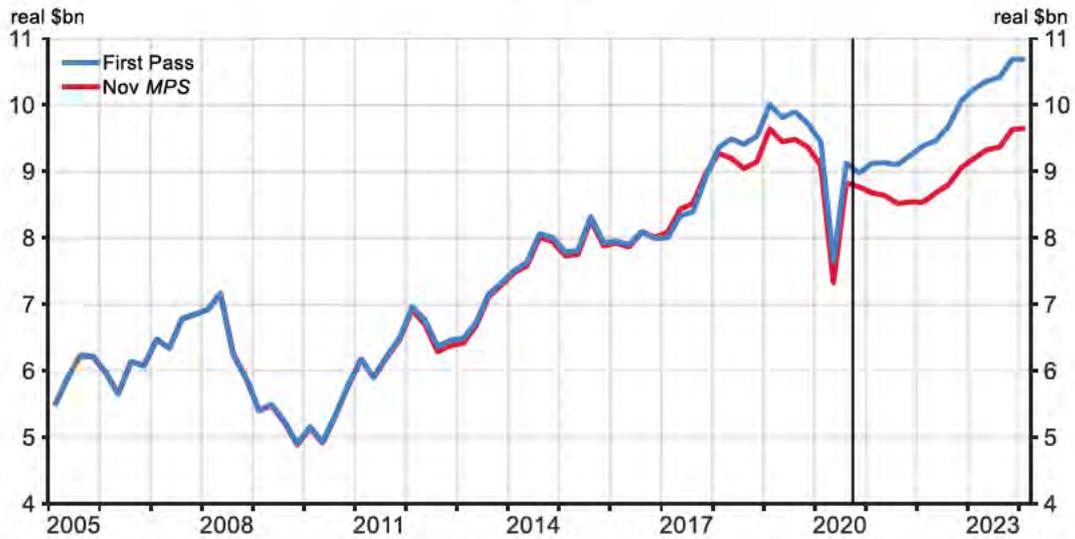
- We forecast business investment growth to be more sustained as the vaccine is rolled out, and borders reopen at the end of 2021. This will lead into a more pronounced GDP recovery. Aggregate demand and capacity pressures are expected to increase markedly, reducing uncertainty and prompting businesses to invest more.

Lasting hit from COVID-19 on non-residential investment

- However, even with a stronger recovery in sight, it is likely that non-residential investment will remain subdued. Many businesses have changed how they operate. More employees are working from home and more customers are buying online than visiting stores. This change is already reflected in rising office and retail space vacancy rates since the beginning of 2020, especially in central city locations.
- Still, non-residential consents are holding up at elevated levels. It remains to be seen how many of these projects, in particular in the retail and office space, will be completed. In our business talks firms confirmed that they are adjusting to changed retail and office space requirements.

BUSINESS INVESTMENT OUTLOOK

**Figure 1: Business investment outlook (levels)
(s.a.)**



TOP DOWN INDICATORS

**Figure 2: Output gap and business investment
(s.a.)**

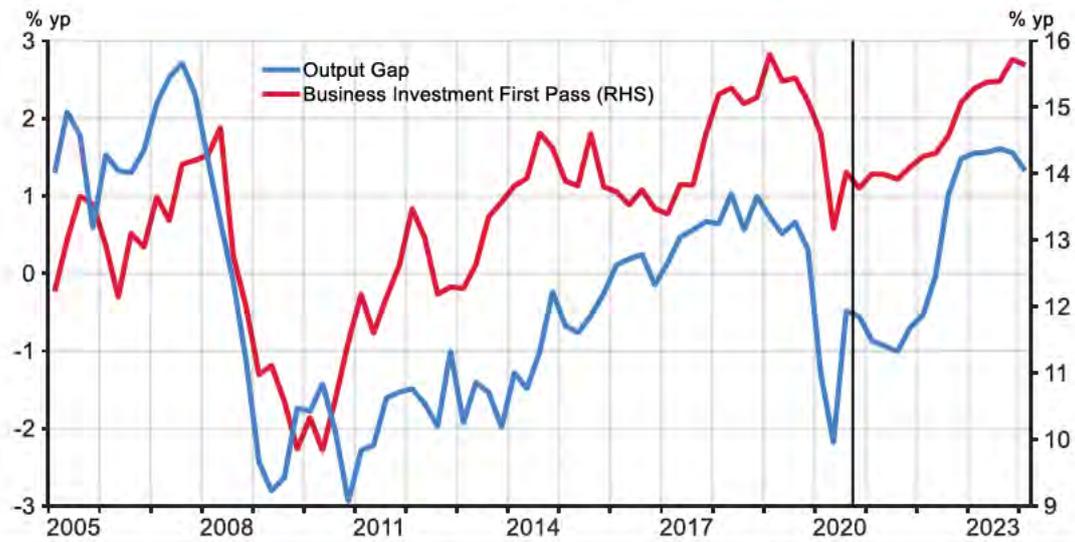


Figure 3: Business investment decomposition

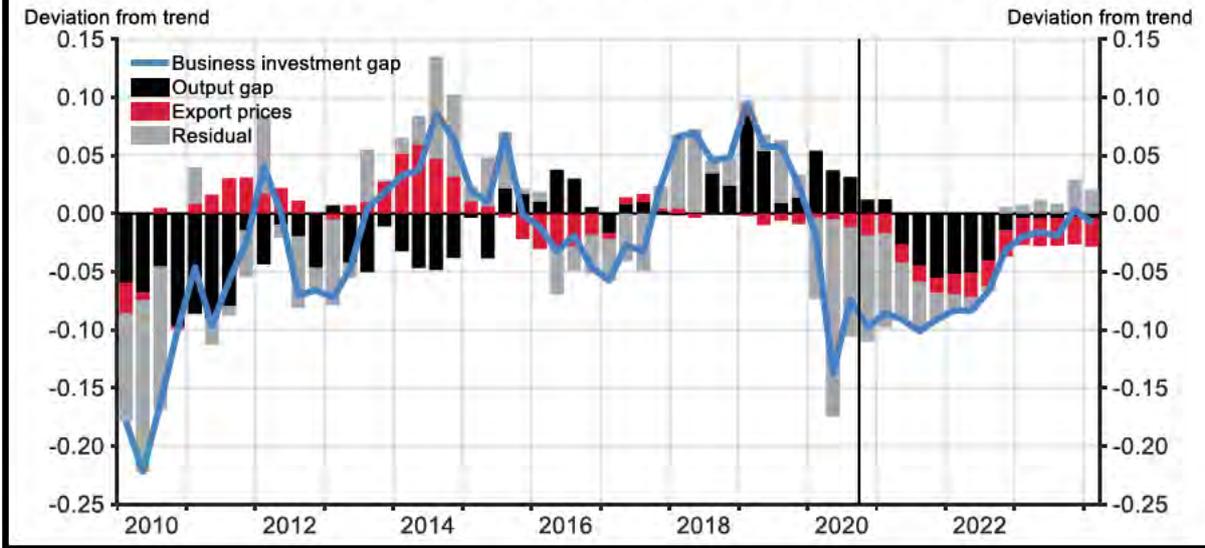
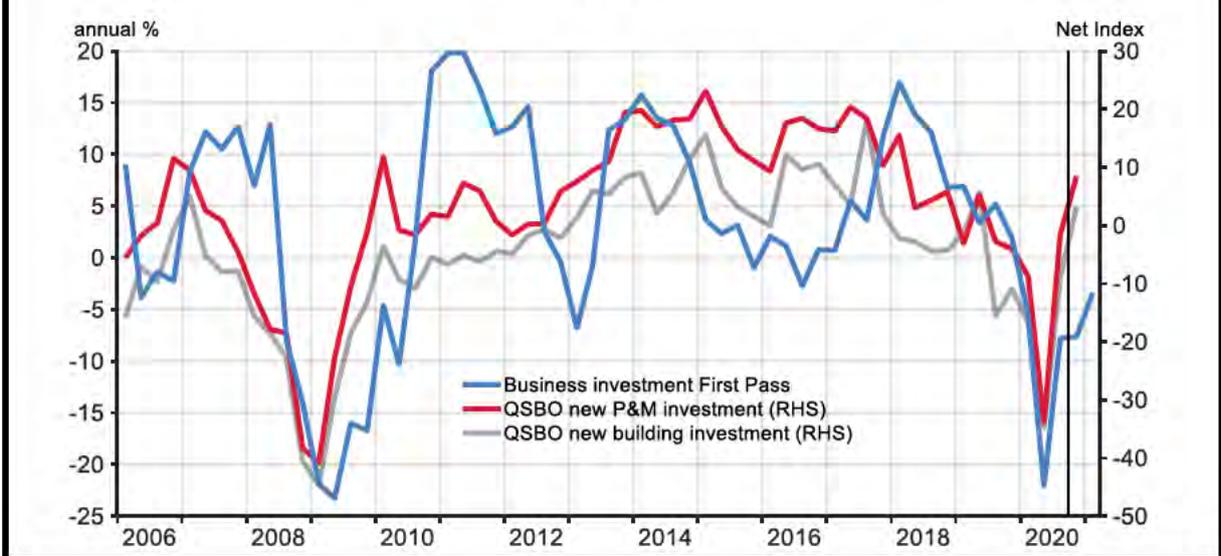


Figure 4: QSBO investment intentions (s.a.)



**Figure 5: ANZBO Investment intentions
(s.a.)**

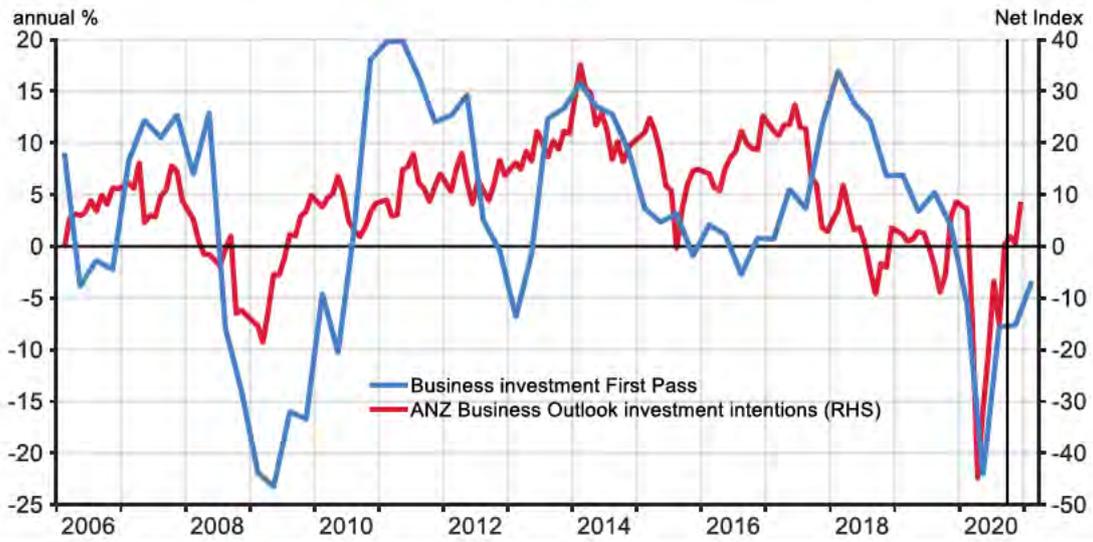


Figure 6: Uncertainty Indices

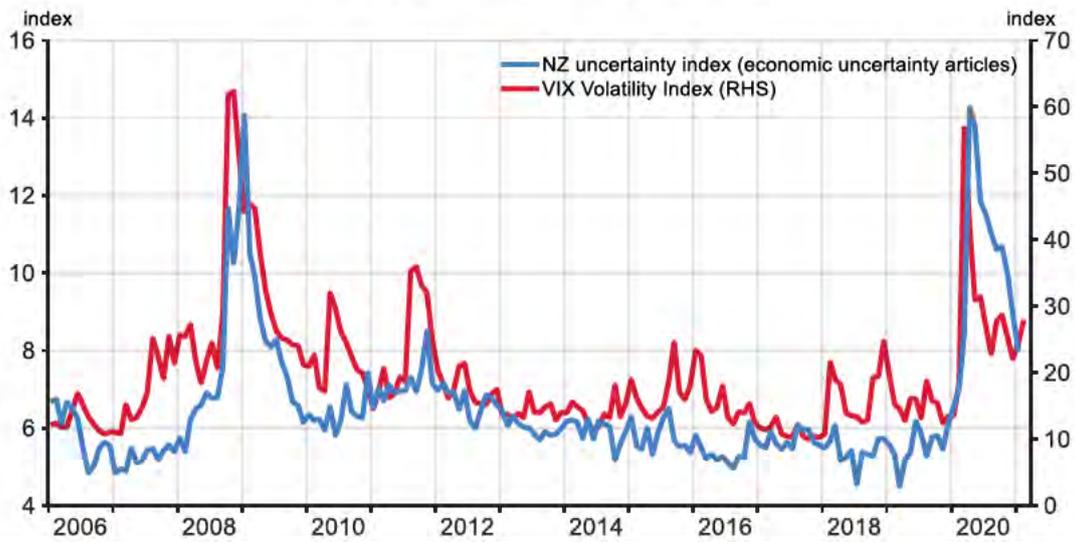
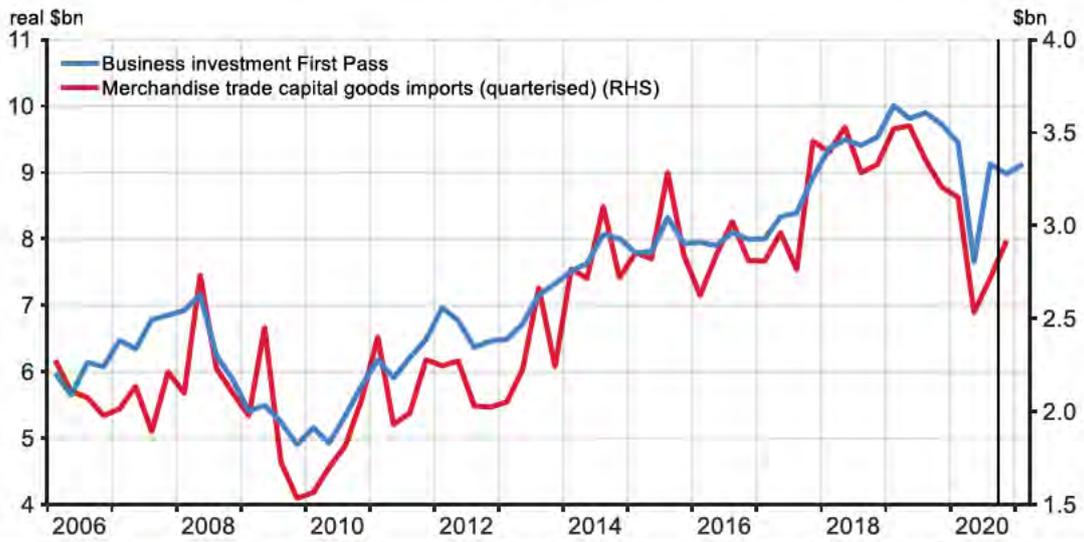


Figure 7: Business investment and Merchandise Trade capital imports (s.a.)



FINANCIAL INDICATORS

Figure 8: Lending to businesses

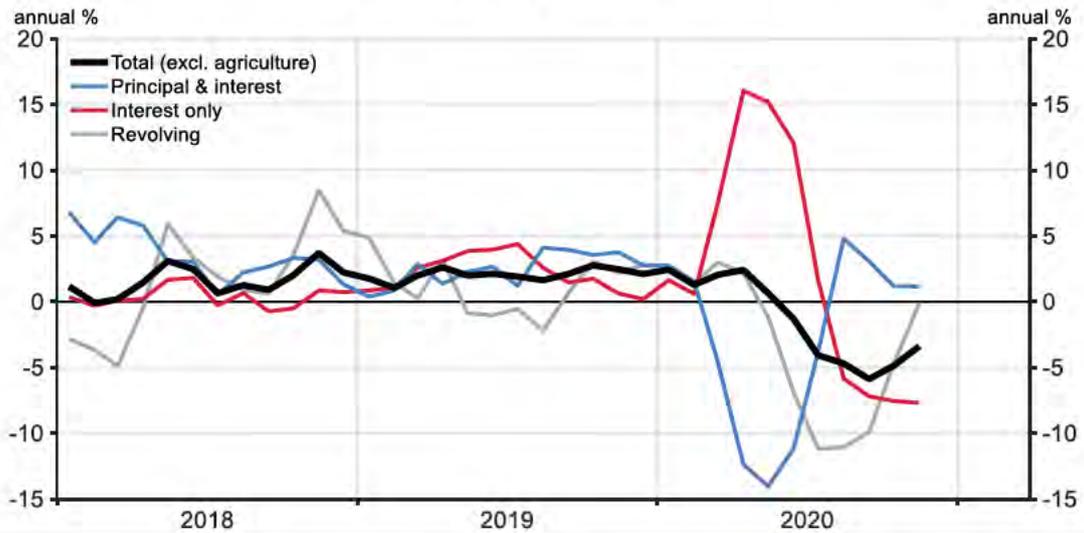


Figure 9: Non-performing business loans

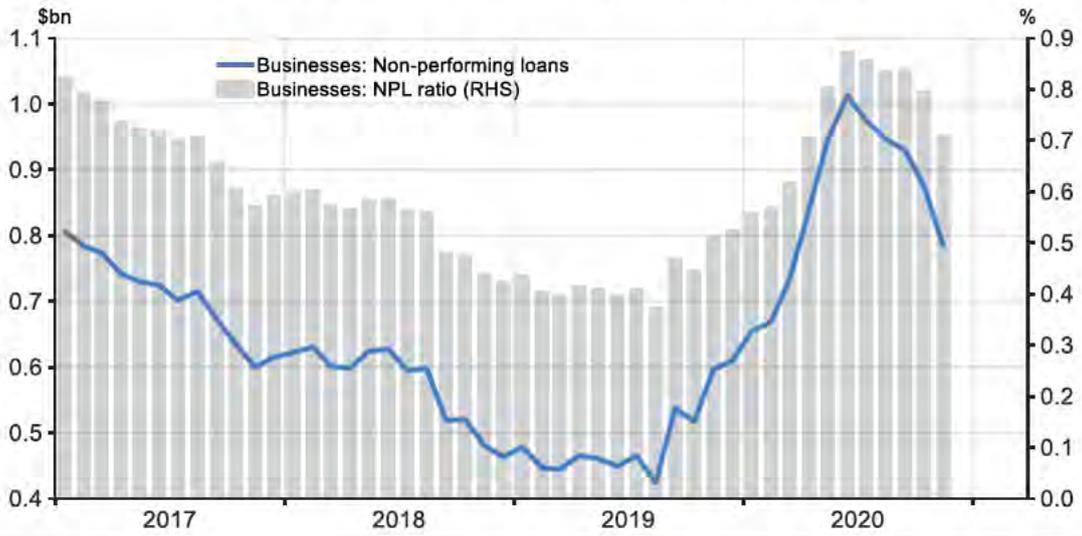
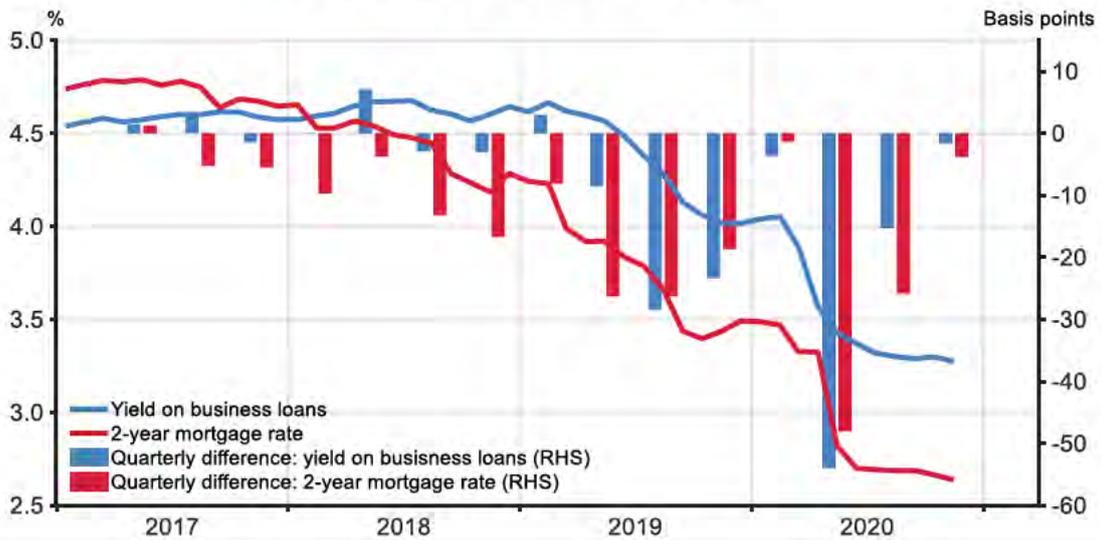
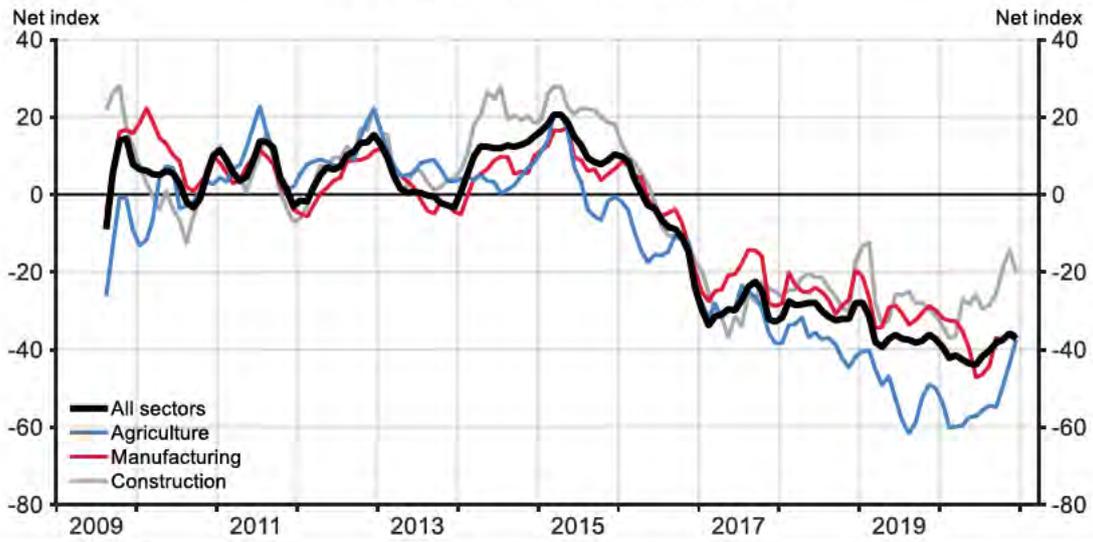


Figure 10: Yield on business loans



**Figure 11: ANZ Business Outlook ease of credit
(s.a., 3-month moving average)**



**Figure 12: Firm profitability
(s.a.)**

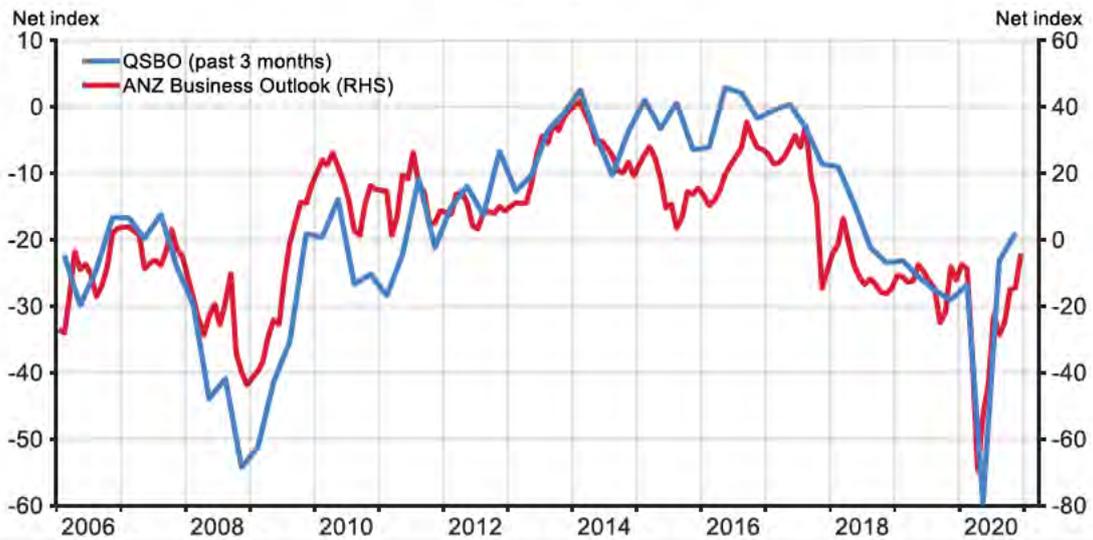
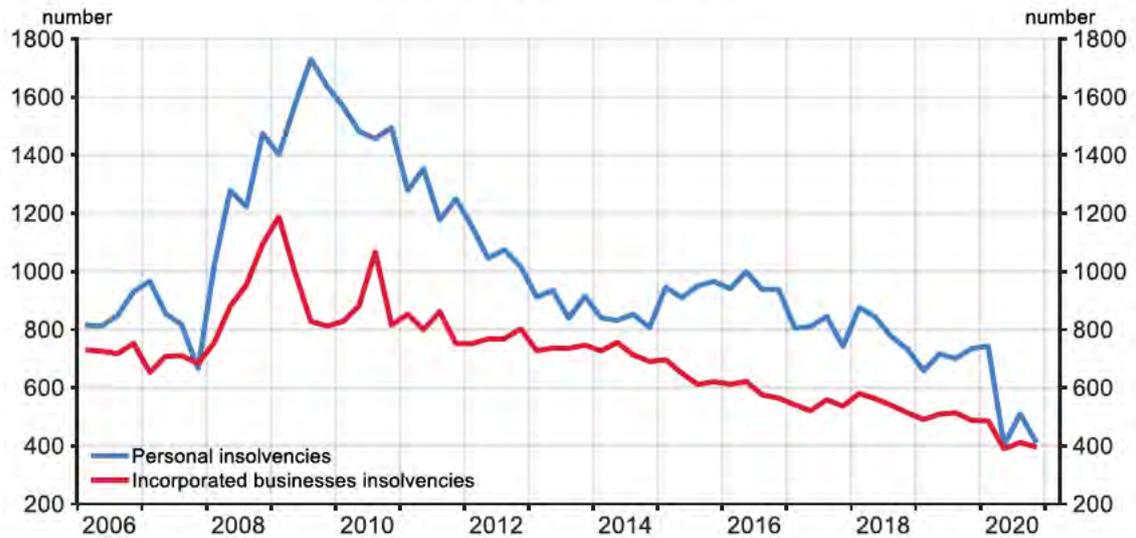
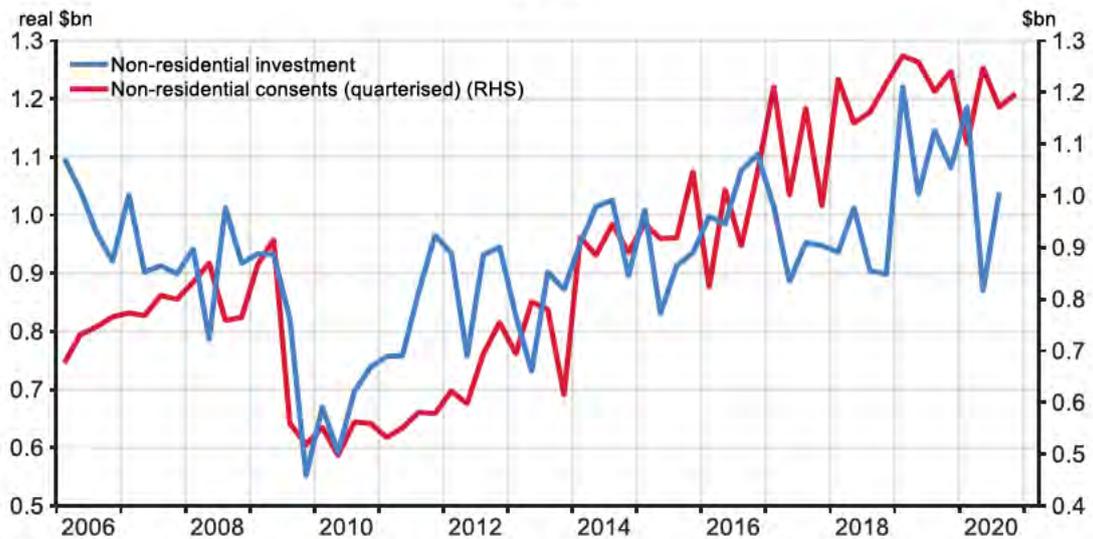


Figure 13: Insolvencies



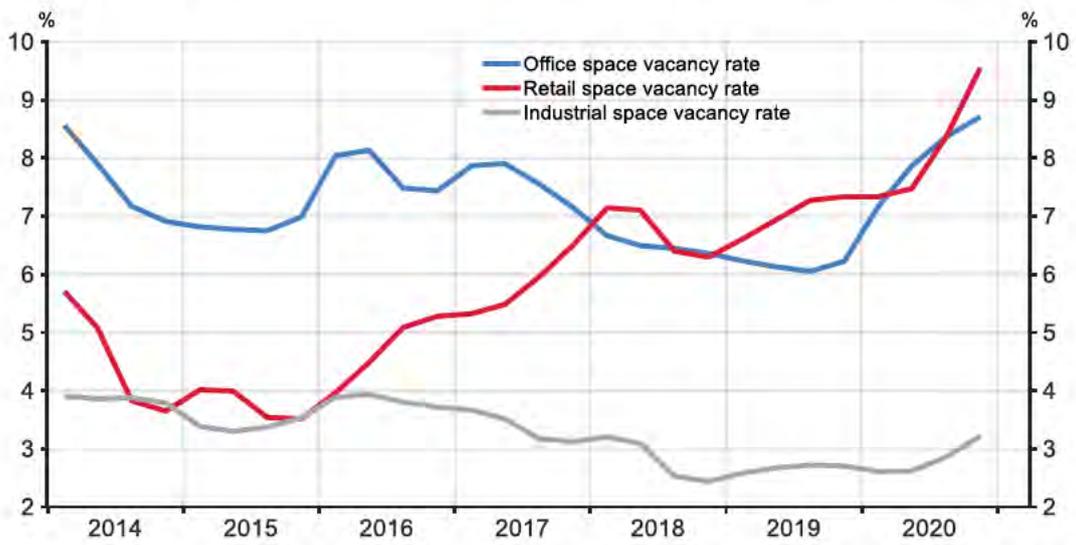
BUSINESS INVESTMENT COMPONENTS

Figure 14: Non-residential consents (s.a.)



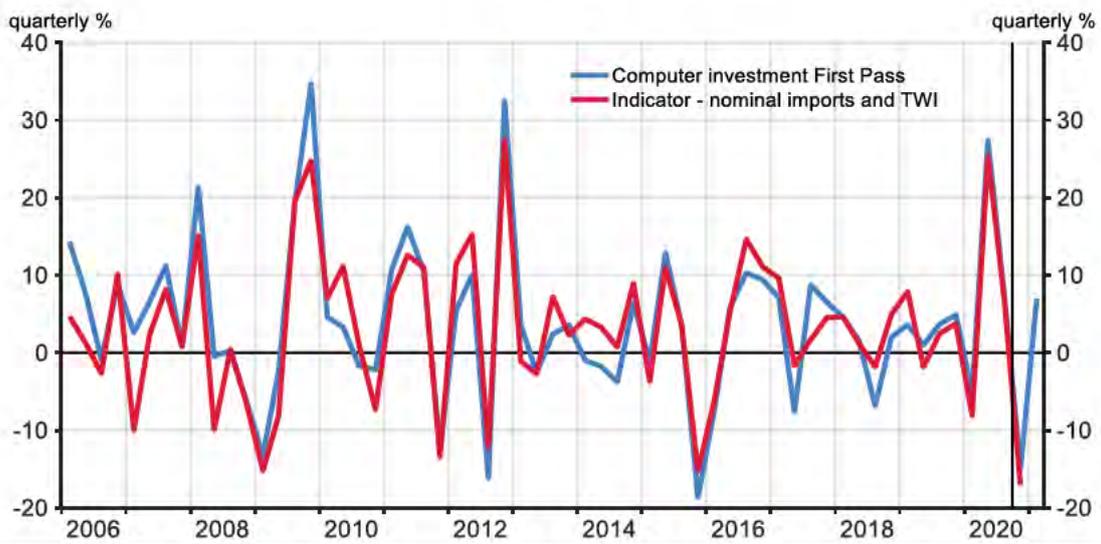
Non-residential consents exclude consents for hospitals, educational and cultural buildings.

Figure 15: Office, retail, and industrial space vacancy rates

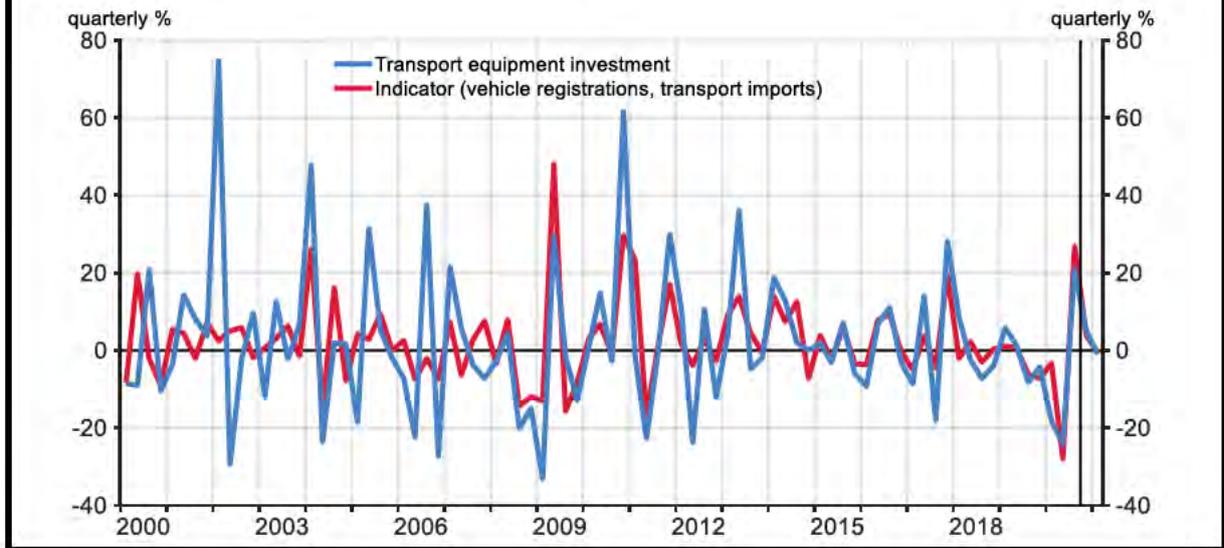


Vacancy rates cover Auckland, Wellington, and Christchurch.

Figure 16: Computer investment (s.a.)



**Figure 17: Transport Equipment
(s.a.)**





SUMMARY

Labour Market Stronger Than Anticipated and Tightening

- The release of the 2020Q4 labour market statistics highlighted that the labour market is significantly stronger than what we anticipated in the November *MPS*. This is due to much stronger than anticipated aggregate demand but also because of labour supply constraints. The unemployment rate decreased to 4.9% and the underlying data showed broad-based strength.
- A theme that has continued from previous BICs is that closed borders has meant that firms are not able to hire overseas workers with specialist skills. As a result, this has inhibited firms from operating at a higher capacity. New Zealand has typically relied on skilled workers from overseas to fill these roles. Even as borders remain closed, the current labour force is not able to work in these roles as they often require multiple years of specialised training.
- Strong economic activity post-COVID lockdown has meant that many firms have been looking for new staff. One exception is tourism-related industries. Still, the labour market is expected to remain tight at around current levels as firms struggle to find both skilled and unskilled workers. With the border reopening we expect the unemployment rate to fall more significantly.

Wage Inflation Yet To Be Seen but Expected to Be Strong

- Despite strong economic data and tightening labour market, wage inflation slowed to a 10 year low of 1.5% yoy in the latest labour market release. However QES average hourly earnings increased by 4.4% yoy, the fastest pace since 2019Q2. The divergence is due to a compositional shift in the QES as there were fewer lower paid filled jobs and the number of higher paid jobs remained stable.
- The strong number of HLFS total hours worked (also reflected by much stronger gross earnings from the QES) illustrates that firms have been increasing hours in order to meet strong demand given that hiring has been difficult. As a result, hours worked per person jumped up to 35 hours per week which is considerably higher than the long run pre-COVID trend. This is consistent with Culling and Robinson (2020)¹ which finds firms adjust through hours worked first.
- However, the current methods of increasing hours worked per employee and hiring casual staff is not sustainable. If firms are looking to keep up with demand it is likely that they will need to increase wages to attract staff or retain them. As a result we expect wage inflation to pick up in the near term.

On The Way to Maximum Sustainable Employment (MSE)

- The labour market has been recovering and is on its way back to MSE. Although some indicators have returned to pre-COVID levels many indicators are still well below that.

¹ <https://www.rbnz.govt.nz/-/media/ReserveBank/Files/Publications/Analytical%20notes/2020/AN2020-03.pdf?revision=7cb0832d-01df-4f46-b291-7ecd5d59760>

- Filled jobs as a percentage of the labour force has remained steady at its long-term trend despite much weaker employment in the tourism industry. This could partially highlight strong sectors such as construction increasing employment against other sectors.
- Based on the Beveridge Curve it seems that job matching has deteriorated slightly compared to pre-COVID. This is unsurprising given that the recovery is not across all industries. Labour demand in tourism-related industries is low whereas in construction high. Most employees do not have the skillset to move from one to another industry easily. In addition, there are not enough immigrants to fill the gap due to border restrictions. Overall, this points at possibly higher structural unemployment.

EMPLOYMENT

Figure 1: Unemployment Rate
(quarterly, s.a.)

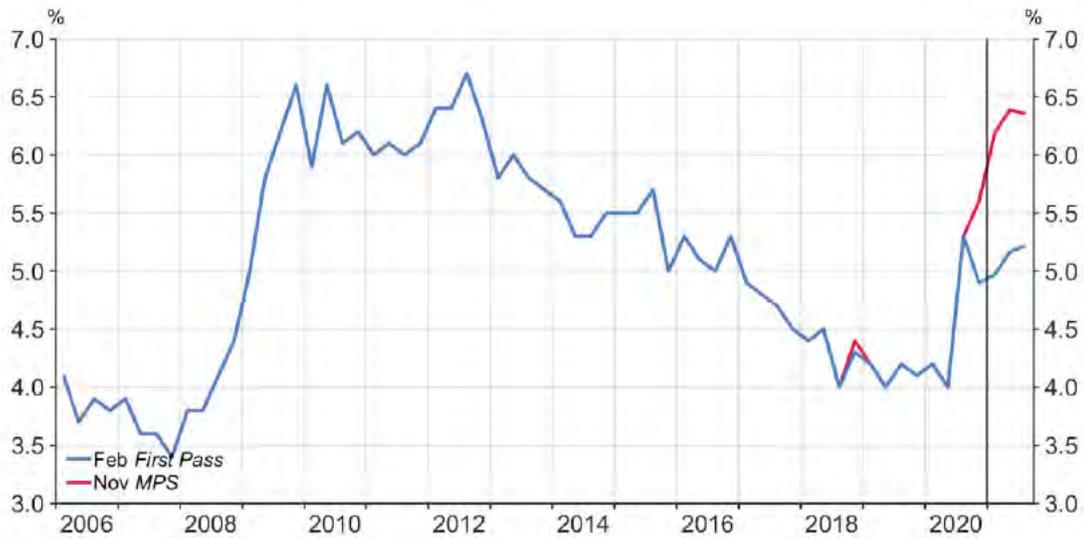


Figure 2: Underutilisation Rate
(quarterly, s.a.)

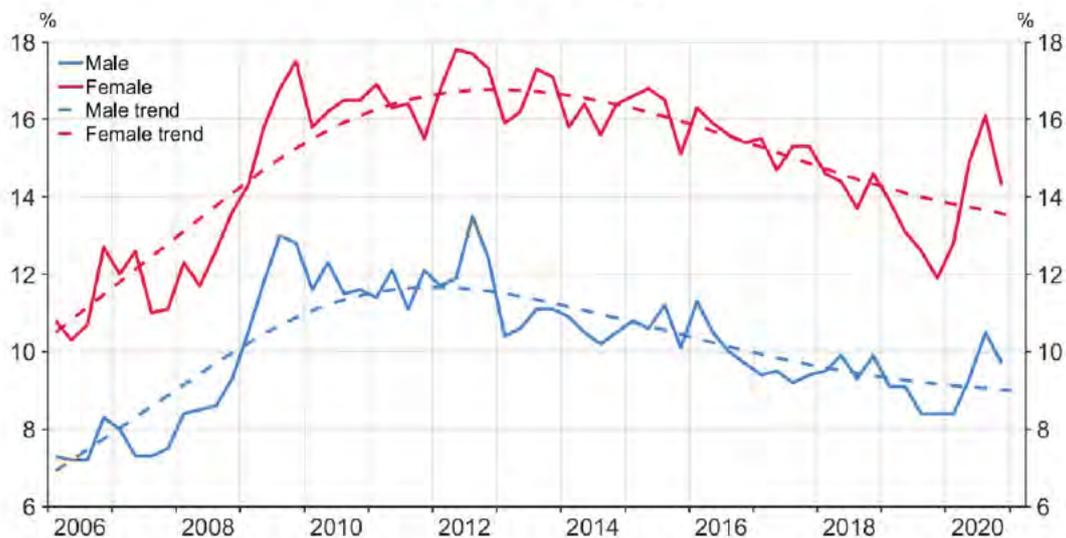
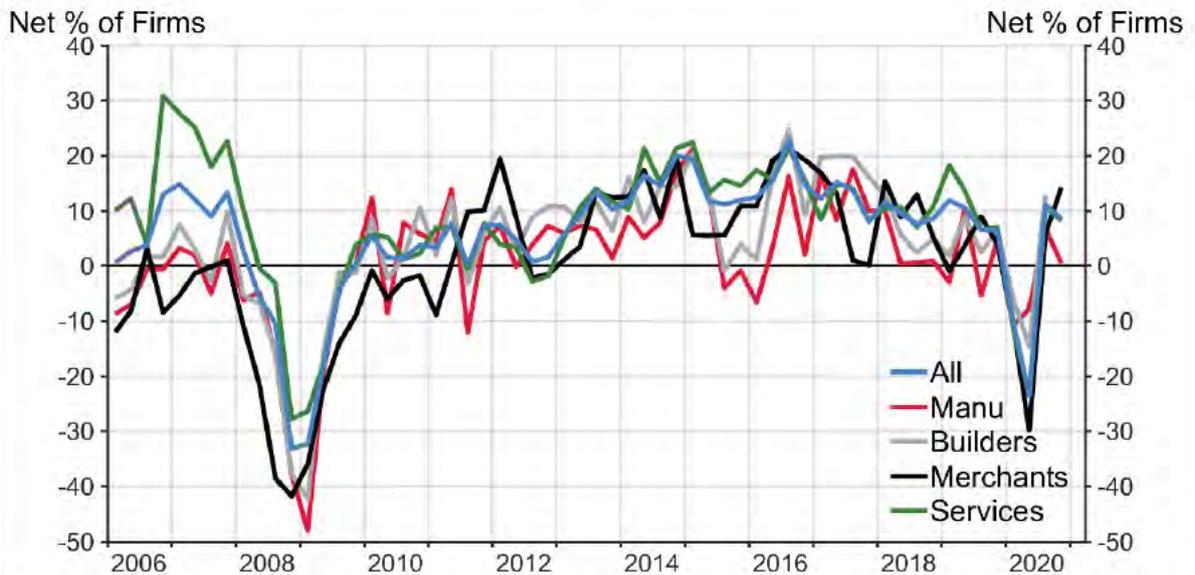


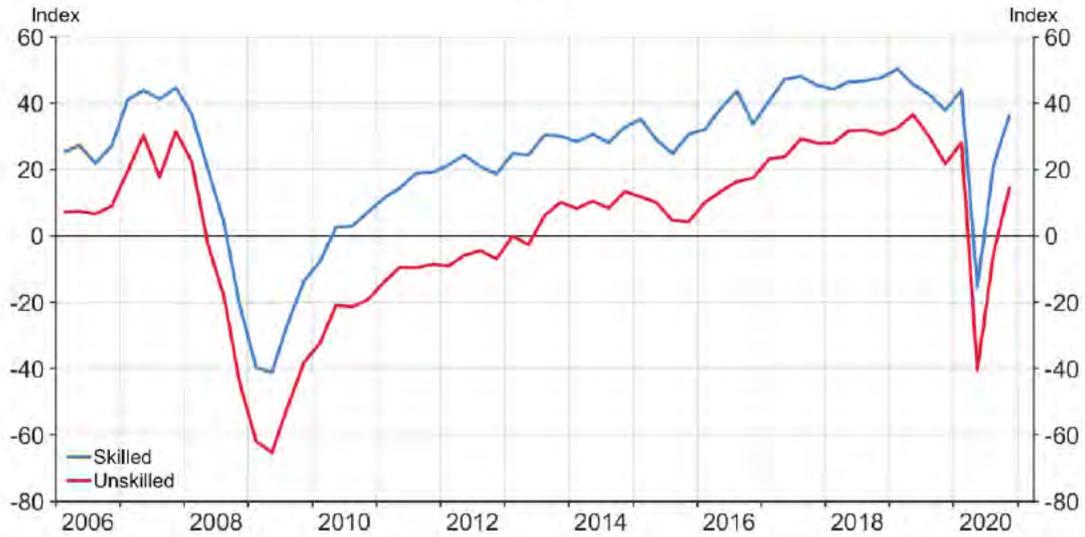
Figure 3: Vacancy Rate & Unemployment Rate
(quarterly, s.a.)



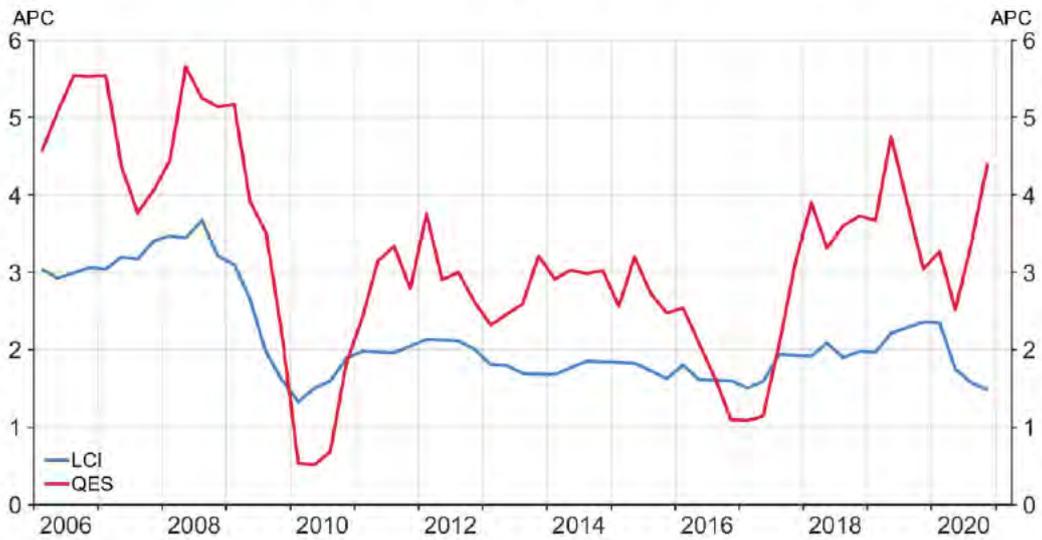
Figure 4: QSBO Intentions To Hire Next 3 Months
(s.a.)



**Figure 5: QSBO Difficulty Finding Labour
(s.a.)**



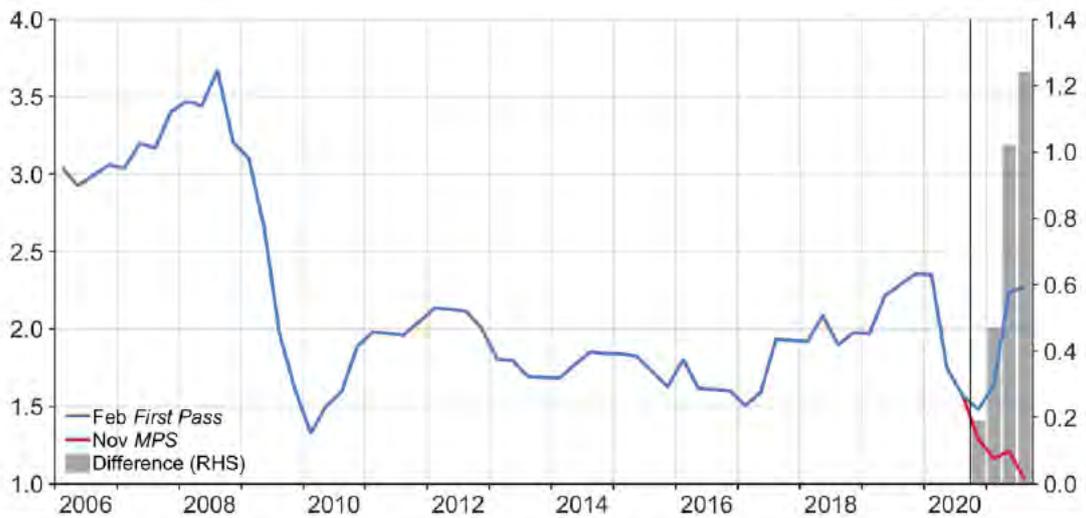
**Figure 6: LCI Private Sector vs QES Private Sector Average Hourly Earnings
(s.a.)**

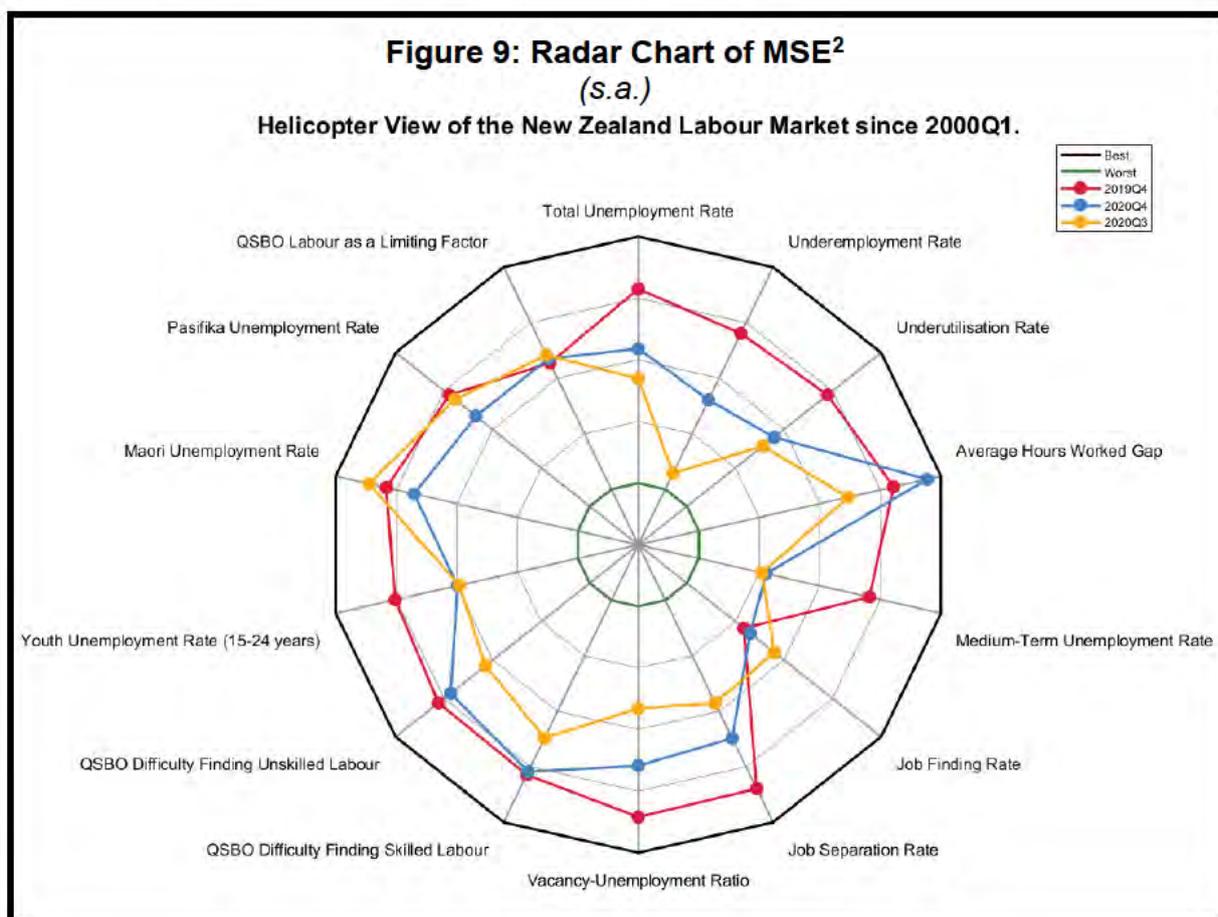


**Figure 7: Hours worked per person
(s.a.)**



**Figure 8: LCI Wage Inflation Projection
(s.a.)**





² This radar chart summarises labour market conditions and replaces the usual table. The black ring indicates the highest level of utilisation of labour while the green ring shows the lowest level. MSE would not mean that the current levels (blue ring) is on the black ring as that would most likely indicate an overheating labour market. MSE is judged on where the current levels are against a period in time (red ring) which is judged as when MSE was achieved (2019Q4). The yellow ring shows the previous labour market release. If the blue ring is near the red ring this would indicate a result close to MSE.

Figure 10: Filled Jobs As A Percentage Of The Labour Force
(s.a.)

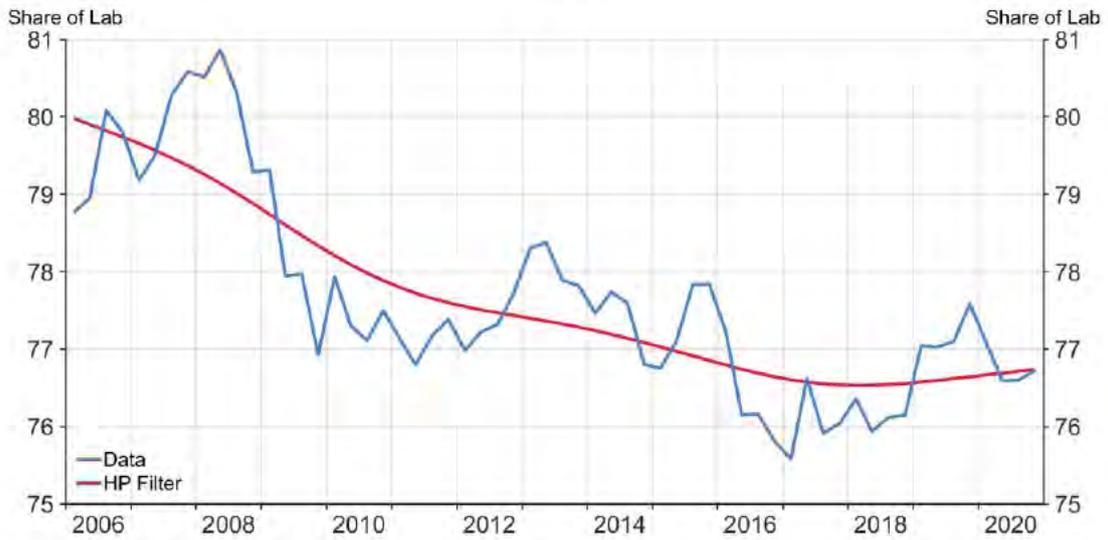
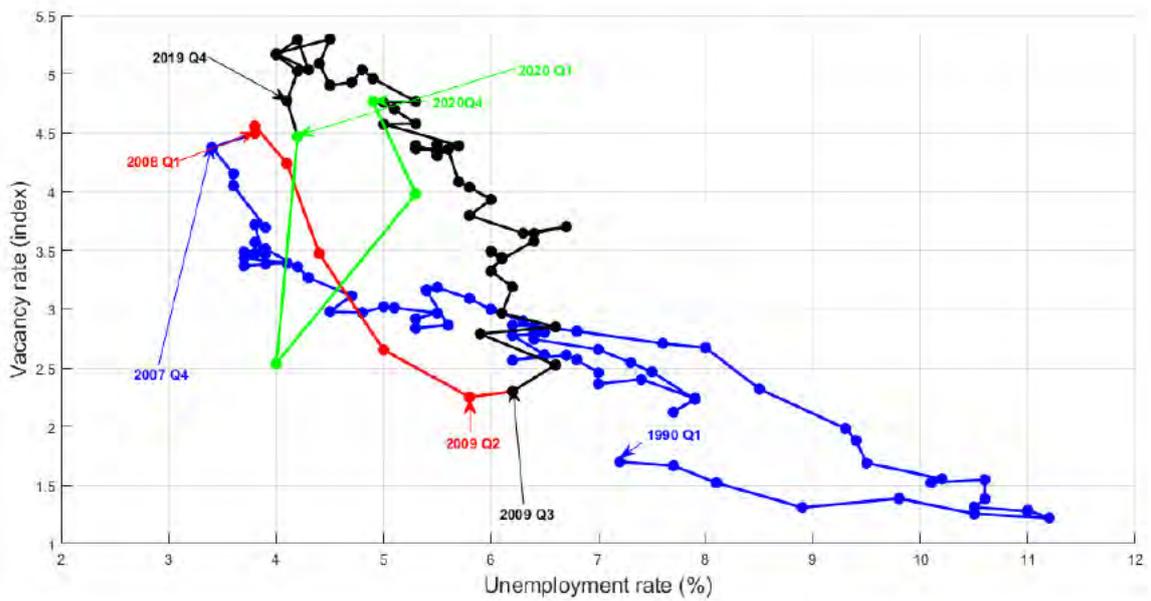


Figure 11: Beveridge Curve





SUMMARY

Q3 GDP

- The economy ended Q3 2020 stronger than pre-COVID-19. The Q3 outturn (14% qpc) was the largest recorded quarterly increase in production GDP since records began in 1987. The economy is now 0.2% larger than in Q4 2019.
- The main contributors to the 14% increase were the construction and services sectors. Specifically, construction rebounded 52.4% (qpc) through Q3 2020. The strong economic rebound reflects the removal of the social distancing restrictions and the release of subsequent pent-up demand. In addition, the booming housing market continues to support activity into Q4 reinforced by strong consenting levels. The greater than usual number of people in the country was also a significant driving force in this outturn.
- Those sectors more heavily exposed to international tourism are still feeling the blues. Transport, postal and warehousing have stayed subdued reflecting the absence of Air NZ flights and international tourists in NZ. These sectors will continue to struggle with fewer people in the country through summer.
- Our recovery from the economic impacts of COVID-19 is rivalled globally by only China. With many nations re-entering lockdowns towards the end of 2020 it is likely that this outperformance will continue in the near term posing a downside risk to goods export.

Economic activity will likely take a breather

- Activity in Q4 2020 has continued to escalate. Consumption spending and the New Zealand Activity Index came in slightly stronger across the final quarter of 2020 as the economy continues to recover from the dark days of Lockdown.
 - China's economy opening, and staying open over the past year, has been a key supportive factor for our exports. Dairy has seen prices remain strong, despite significant economic pain in many of our other trading partners.
- Profitability for all sectors has bounced back in the latest release of the QSBO, matching the rally in optimism businesses have expressed in recent surveys. This has also been echoed in our recent round of BICs.
- Strong consents issuance over the course of 2020 has highlighted a surging housing market. The consequent rebound in the construction sector provides some near-term strength to our GDP estimates.
- However, uncertainty about the long-run remains elevated and manufactures and service firms are reporting a softening in their outlook.

Capacity pressure

- Capacity pressures have increased off the back of a positive Q4 2020. The updated indicator suite suggests that the output gap has risen, with the mean back into positive territory.
 - QSBO measures of access to labour (both skilled and unskilled) have tightened, whilst all sectors are now looking to hire again.

- Supply chain disruptions are now beginning to make themselves felt with many firms reporting difficulty in obtaining imported intermediate goods.

BOUNCE BACK – GDP IN Q3

Figure 1: Q3 Production GDP

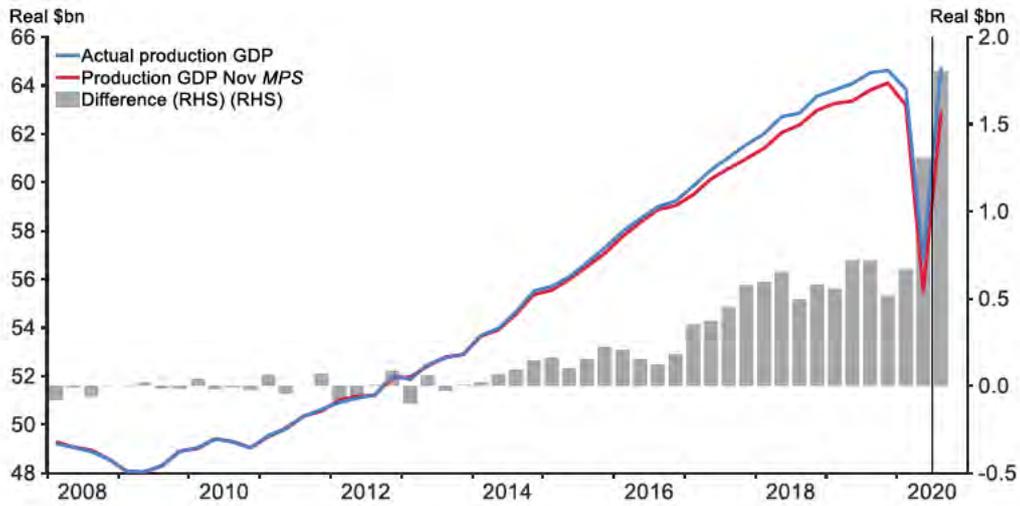
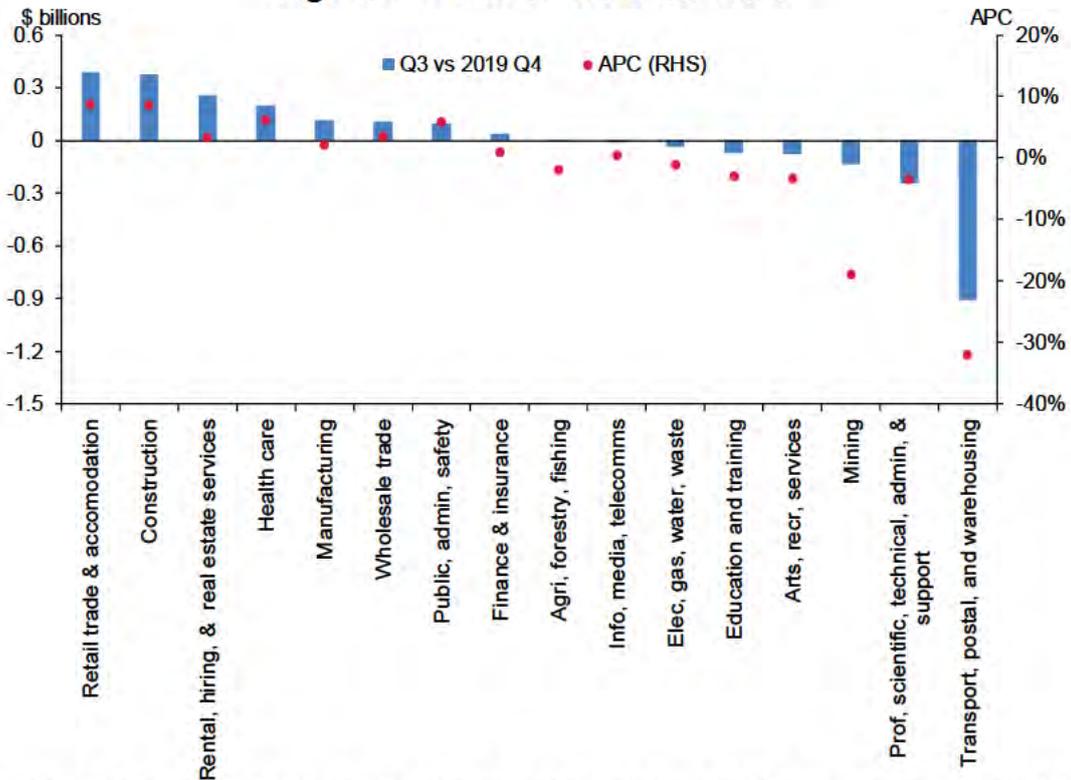
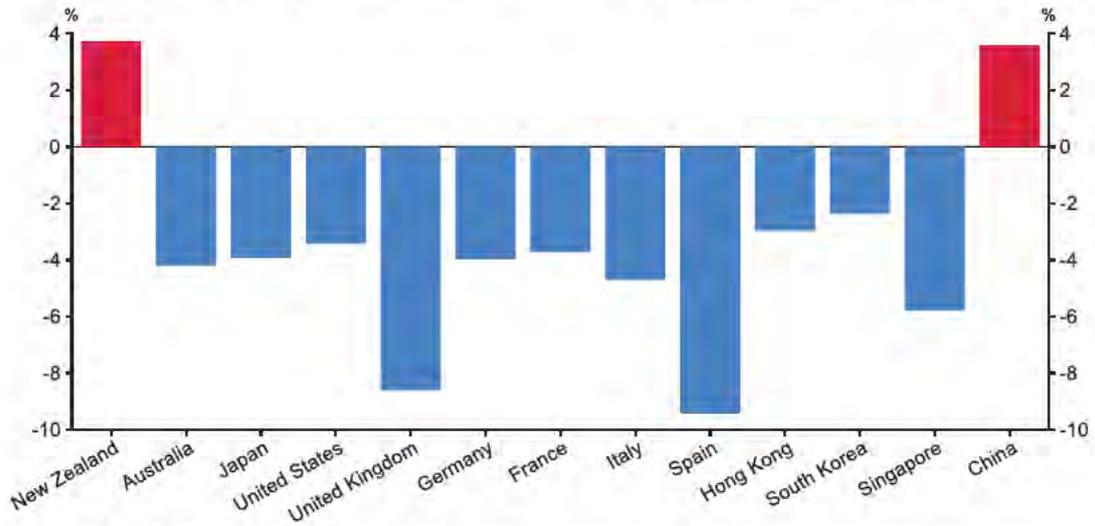


Figure 2: A tale of two economies



- This table shows which industries performed well in Q3 compared to pre-COVID (levels terms) and APCs.

Figure 3: Trading partner GDP - % change pre-COVID – post-COVID



Note: Q4 2019-Q3 2020

POST-COVID ECONOMIC DEVELOPMENTS

Figure 4: ECT

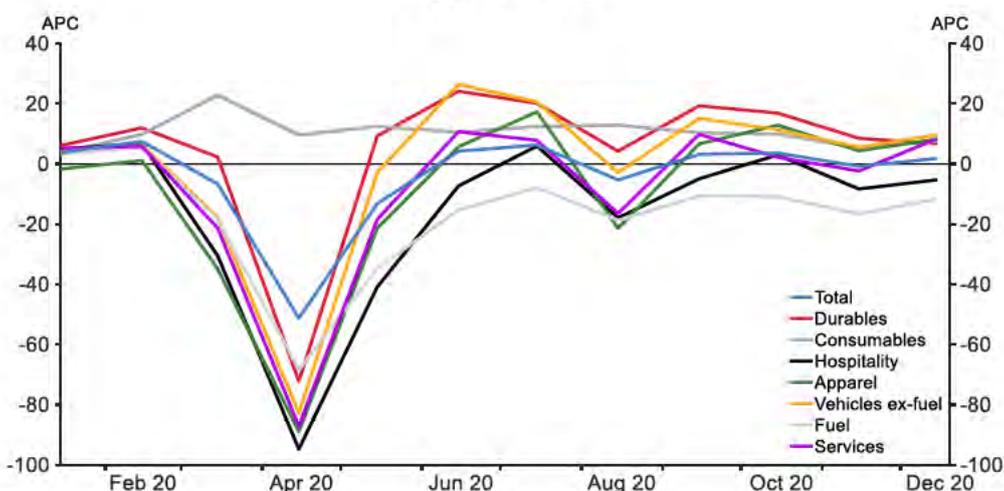


Figure 5: NZ activity index and GDP

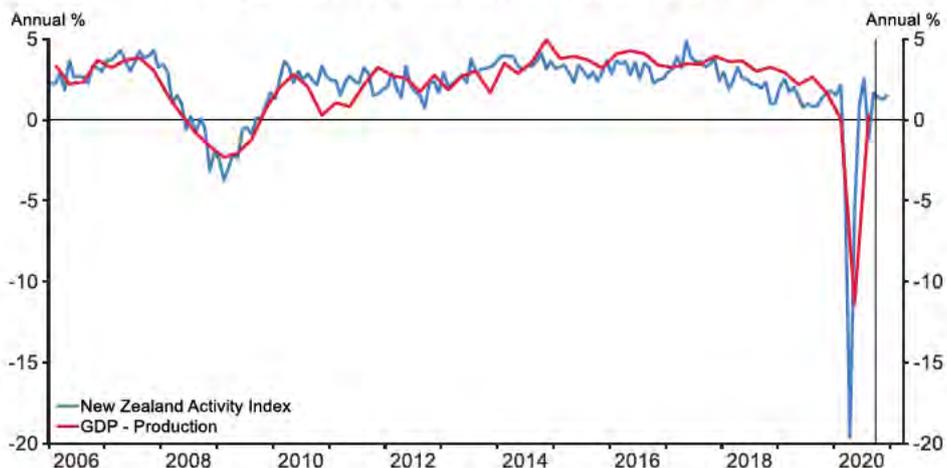


Figure 6: QSBO domestic trading

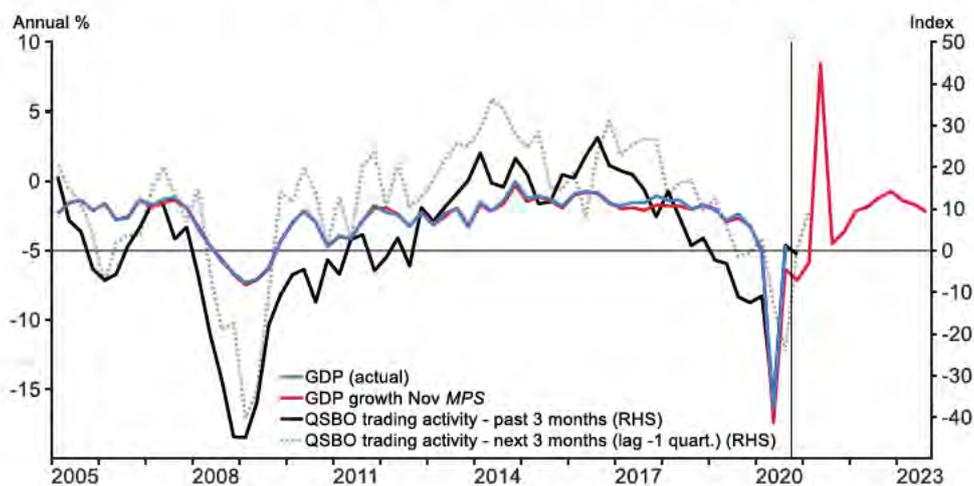


Figure 7: QSBO profitability: returning to the black

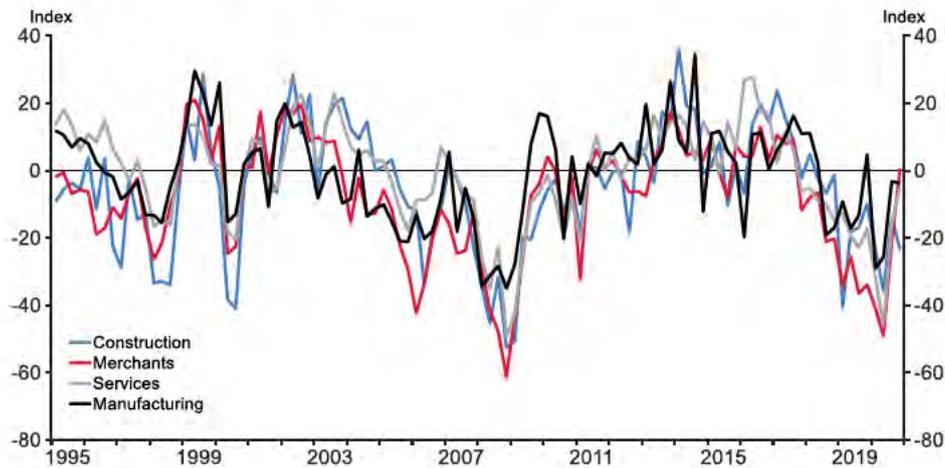


Figure 8: Confidence has risen from the ashes: ANZBO by sector

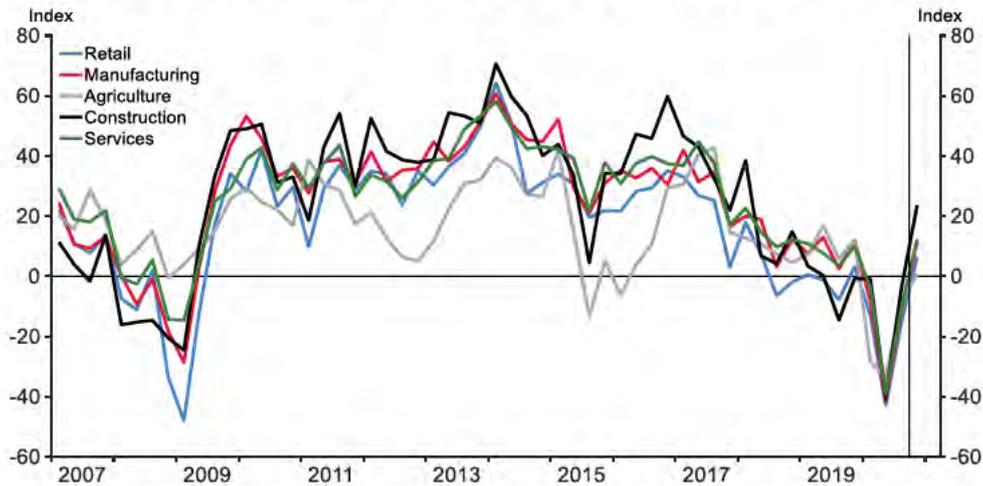


Figure 9: Residential consents

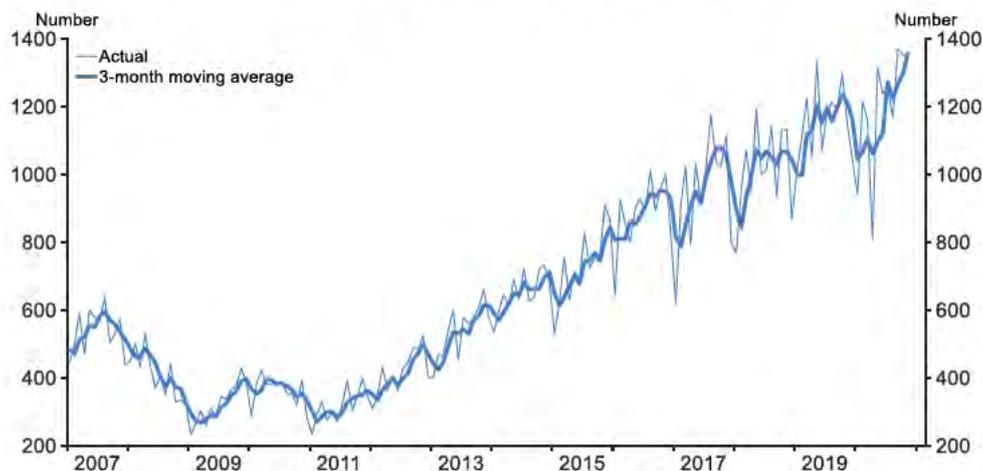
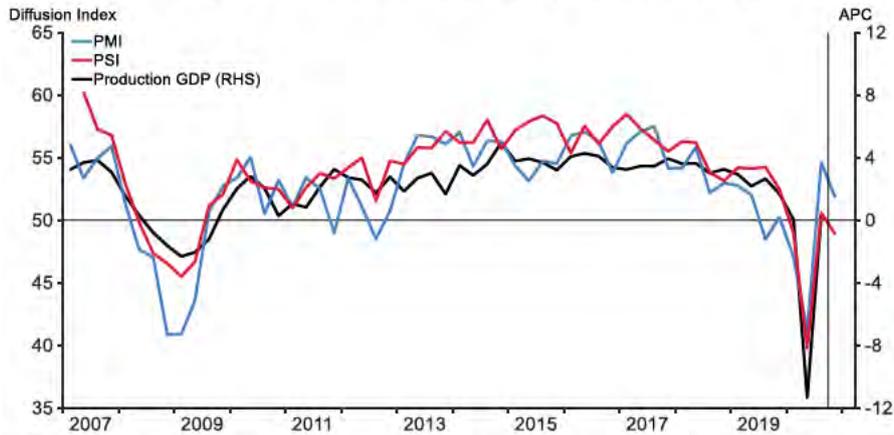
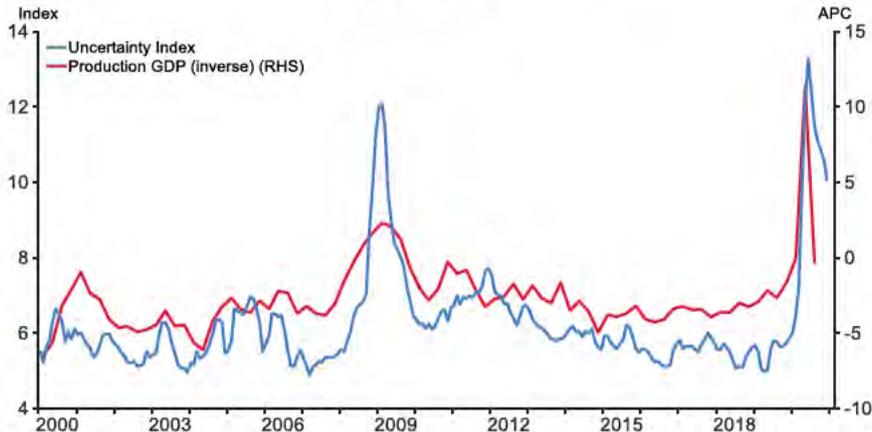


Figure 10: NZ PMI & PSI (Quarterised)



- Reading for PMI and PSI above 50 are expansionary and below are contractionary

Figure 11: Economic uncertainty has been coming down in NZ but is still evaluated



Source: Sense Partners

Note: This index measures uncertainty by web-scraping to assess the number of times particular words linked with terms associated with uncertainty are mentioned in NZ media. They then normalize the index by dividing the number of articles with economic uncertainty terms by the total number of articles published, and available.

GDP COMPONENTS

Figure 12: Milk production



Figure 13: Meat production

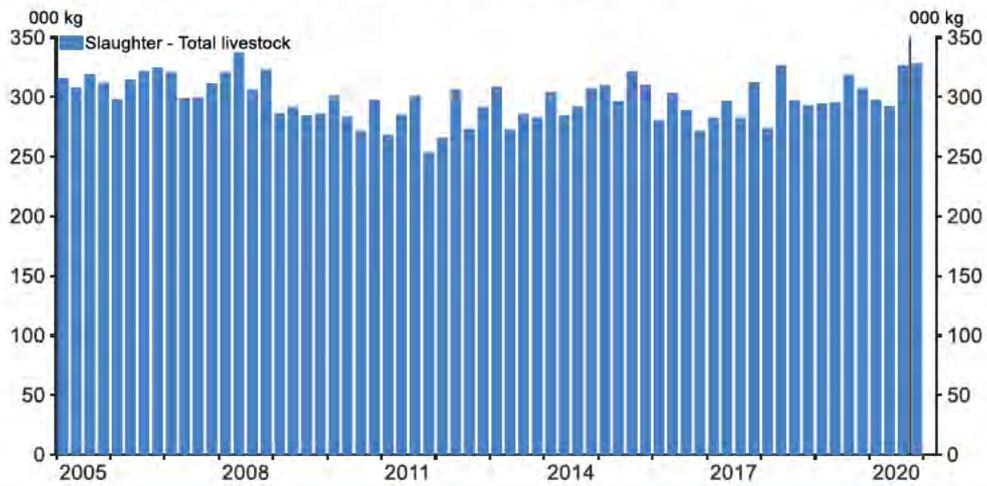
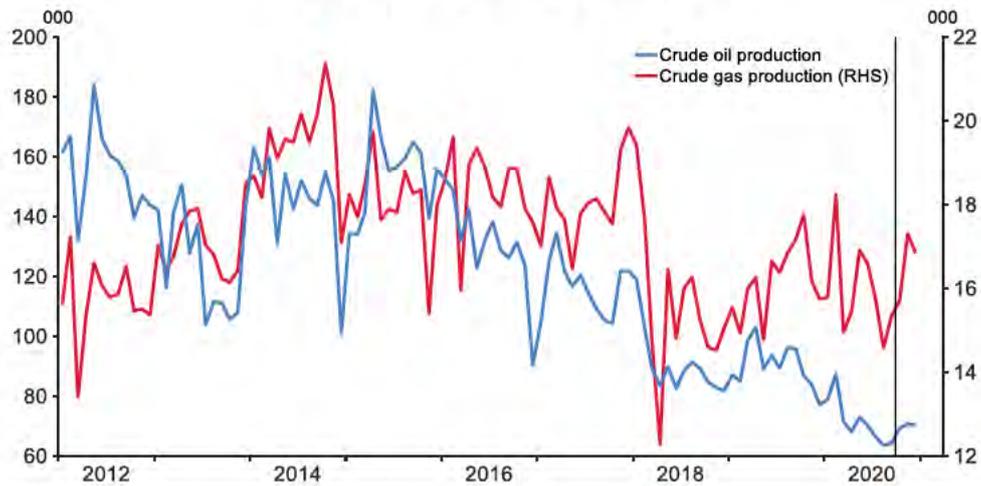
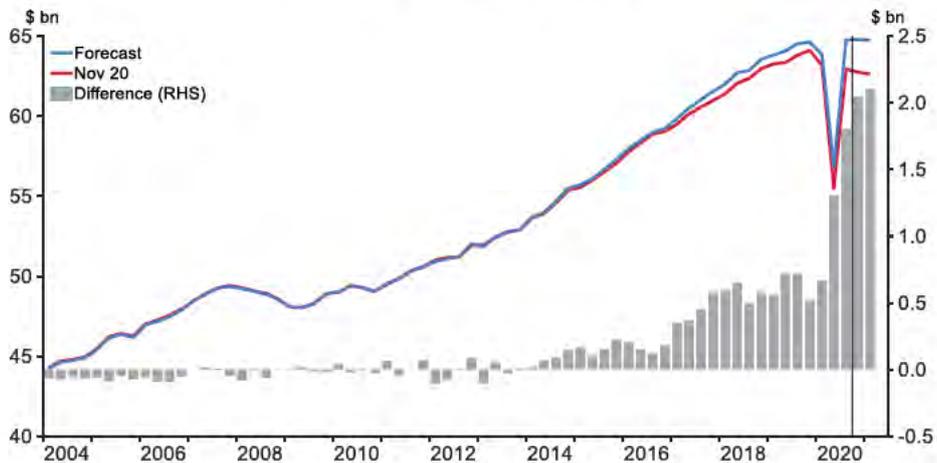


Figure 14: Mining activity



GDP FORECAST

Figure 15: GDP levels



CAPACITY PRESSURES

Figure 16: Capacity pressures spike

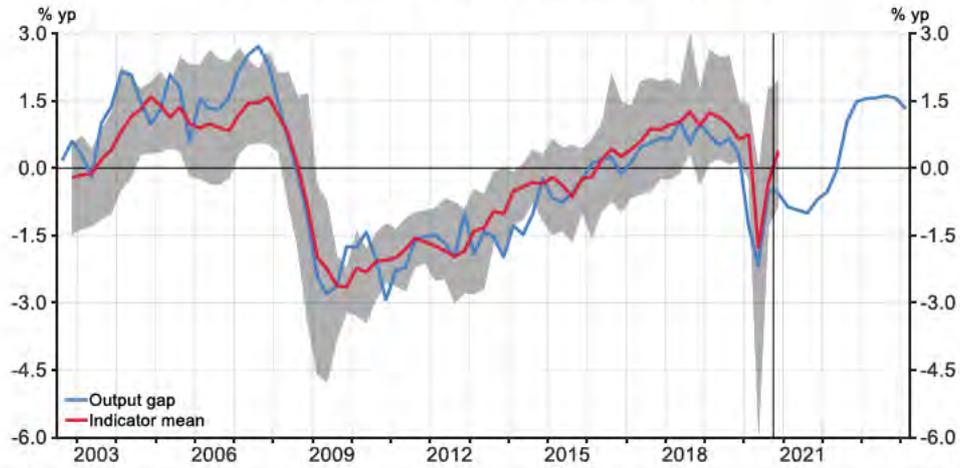
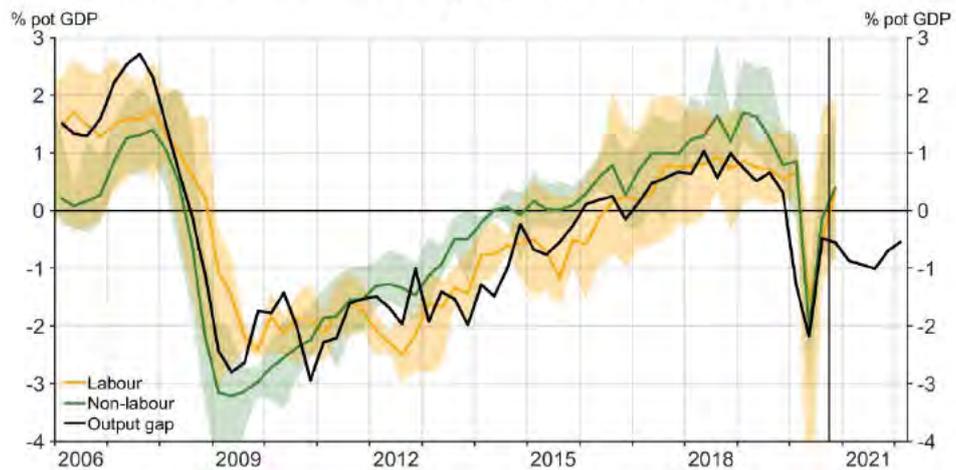


Figure 17: Non-labour pressures coming through





SUMMARY

- **December 2020 CPI outturn**
 - **Headline inflation steadies**
 - **Inflation has been more resilient than expected.** Annual CPI inflation held steady at 1.4 percent in the December quarter of 2020. This was higher than we expected in the November MPS (1.1 percent).
 - **Higher-than-expected quarterly CPI inflation reflected both higher tradables and non-tradables.** Tradables increased on higher import prices on supply bottlenecks amidst high domestic demand. Non-tradables increased on a broad-based rise in housing prices, and an accommodation price recovery.
 - **Annual inflation now looks set to remain within the inflation band** (sub-1% in 2021/22 previously). Measures of core inflation are rising to around 2 percent. This reflects an earlier and shallower trough in non-tradables as domestic activity has rebounded sharply. Stronger tradables on higher oil prices near term adds extra temporary impetus.
 - **A steadying near-term inflation picture has been associated with a partial recovery in near-term inflation expectations.** Longer-term expectations remain anchored near 2%.
 - **Tradables inflation expected to temporarily spike**
 - **Tradables prices are expected to provide a temporary boost to inflation in 2021 on fuel.** Global oil prices have regained ground on growing market optimism for a post-COVID-19 global recovery on vaccine news in late 2020.
 - **Global supply chain bottlenecks are adding a further layer to import price growth near term.** These bottlenecks have been exacerbated by a rapid and strong recovery in domestic demand, particularly durables. Minimum wage rate rises are also expected to provide a near term boost to (largely tradable) food prices in mid-2021.
 - **The speed and effectiveness of the global vaccine rollout in 2021 will also influence the degree and persistence of inflation support from tradables inflation.** This roll-out will influence the sustainability of recent rises in global oil prices and the persistence of global supply chain bottlenecks. Global supply chain bottlenecks are assumed to ease by mid-2021 as backlogs clear.
 - **Non-tradables inflation passing its trough**
 - **Non-tradables price growth is stabilising** as buoyant domestic demand stems the COVID-19-related rise in spare capacity. Housing-related prices continue to be a key driver. 'On-shoring' of spending has also helped some tourism-related prices partially recover, especially accommodation.
 - **Ongoing domestic growth momentum will be required to ensure that remaining slack in the economy continues to be worked off.** The domestic recovery will also be partially dependant on ongoing COVID-19 containment in New Zealand and abroad. We assume no further COVID-19 outbreaks and that New Zealand's borders remain closed until the end of 2021.

INFLATION SNAPSHOT

- Table 1: Quarterly percent change for inflation

| | Dec-2020 | Mar-21 | Jun-21 |
|--------------|----------|--------|--------|
| CPI | 0.47 | 1.04 | 0.28 |
| PTR (39.92%) | 0.20 | 1.29 | -0.1 |
| PNT (60.08%) | 0.73 | 0.82 | 0.54 |

- Table 2: Annual percent change for inflation

| | Dec-2020 | Mar-21 | Jun-21 |
|--------------|----------|--------|--------|
| CPI | 1.44 | 1.71 | 2.48 |
| PTR (39.92%) | -0.30 | 0.89 | 2.00 |
| PNT (60.08%) | 2.80 | 2.21 | 2.76 |

KEY CHARTS

Figure 1: Annual medium-term inflation forecasts (MPS)

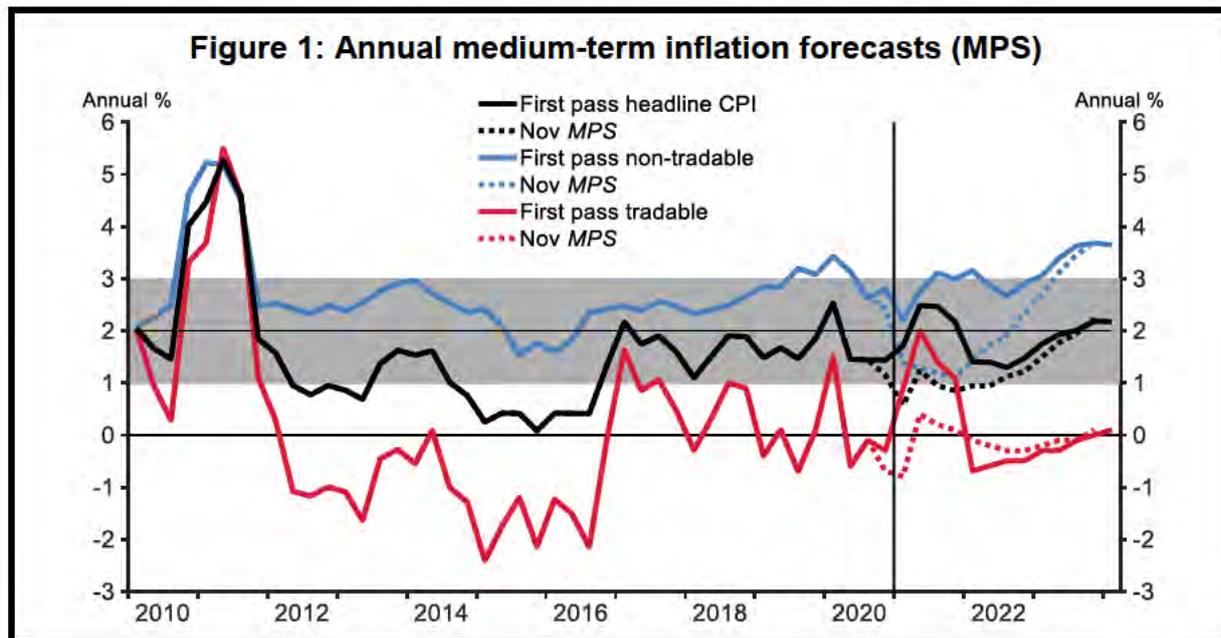
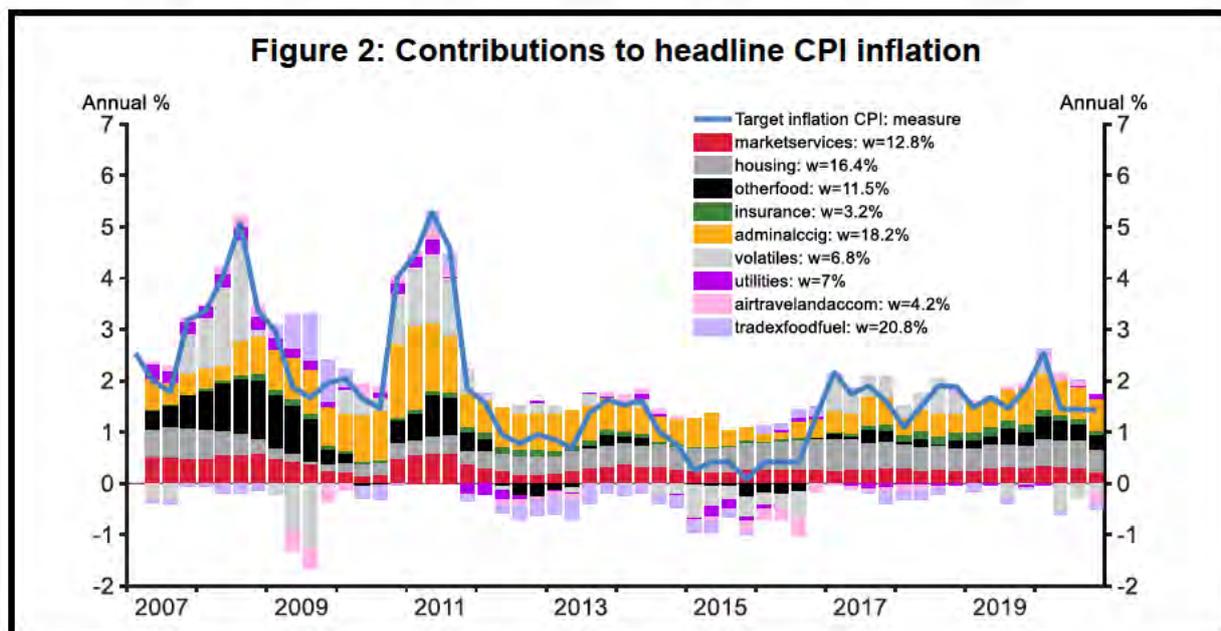


Figure 2: Contributions to headline CPI inflation



CORE INFLATION AND INFLATION EXPECTATIONS

Figure 3: Core inflation

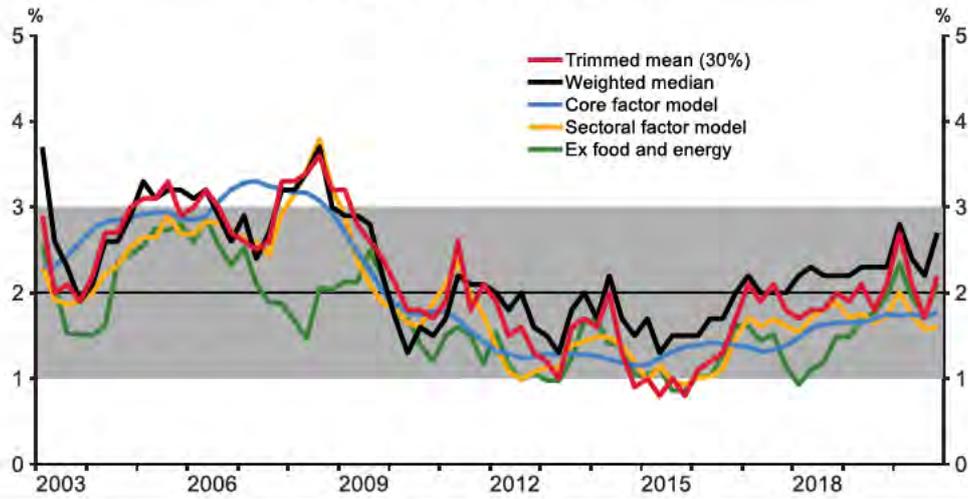


Figure 4: Cyclical inflation

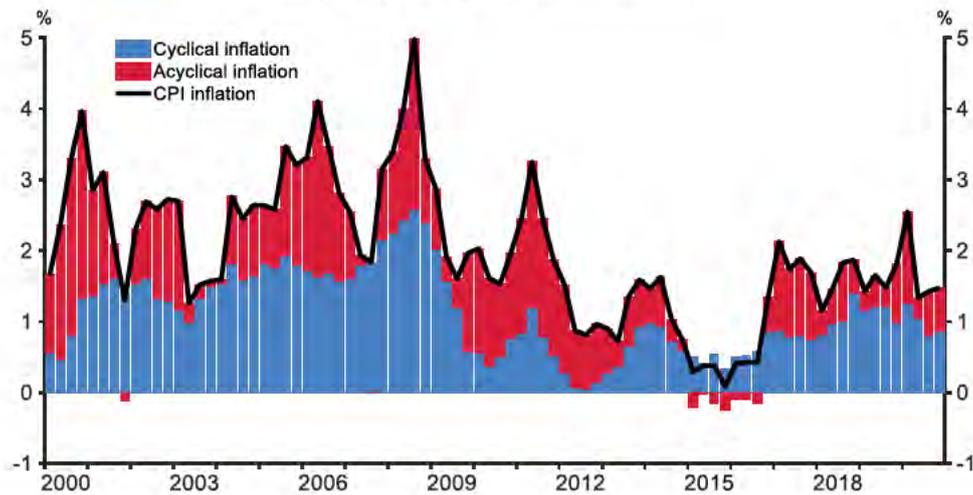
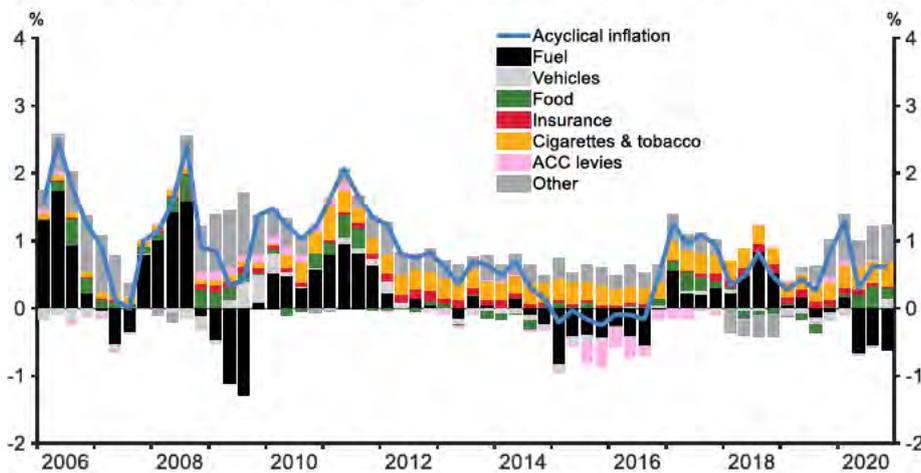
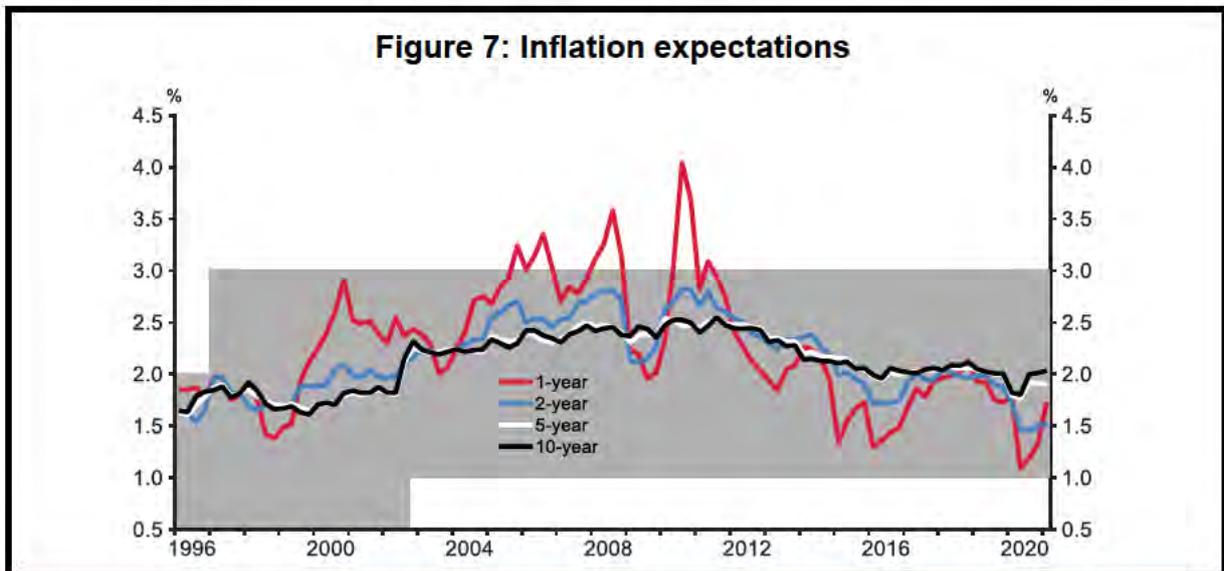
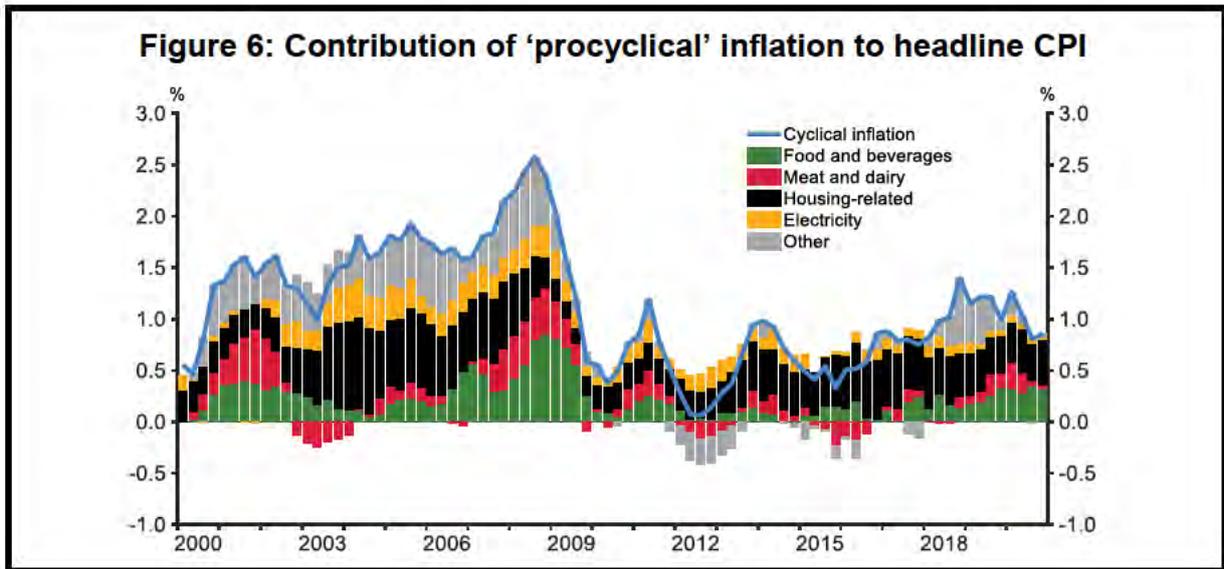


Figure 5: Contribution of 'acyclical' inflation to headline CPI





TRADABLES INFLATION

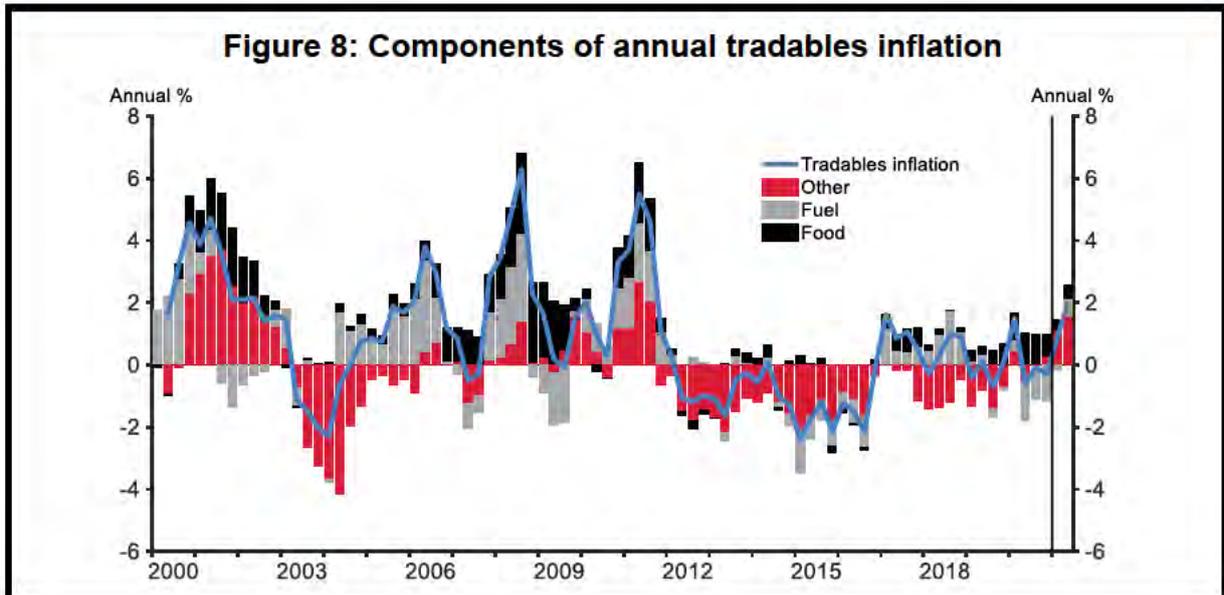


Figure 9: Tradables inflation ex-food and ex-fuel

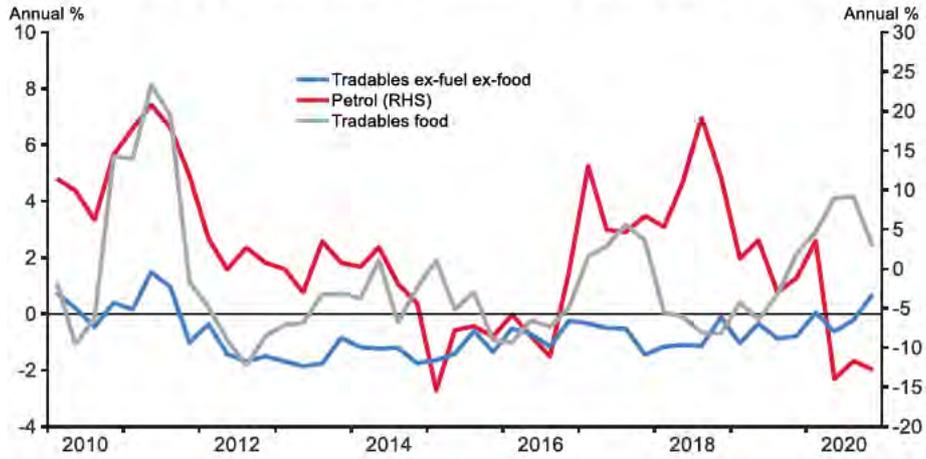


Figure 10: Annual tradables (ex-fuel) inflation and indicator

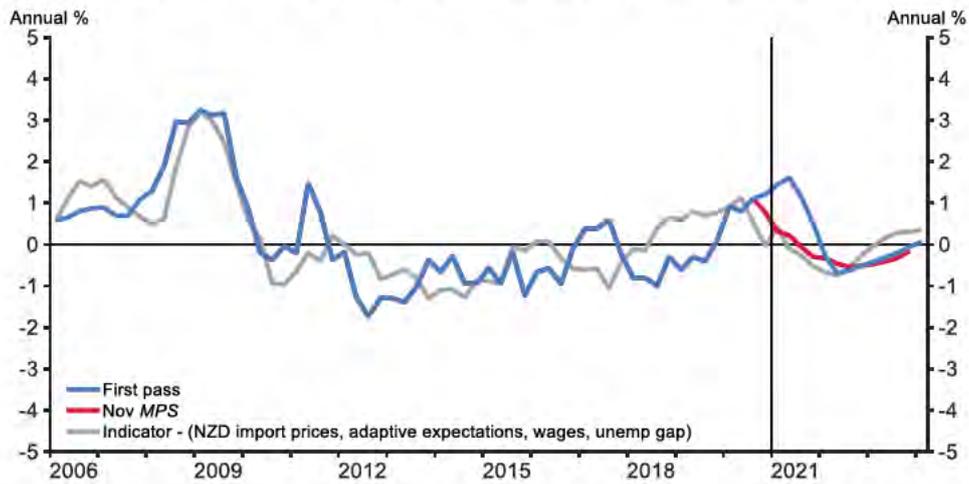
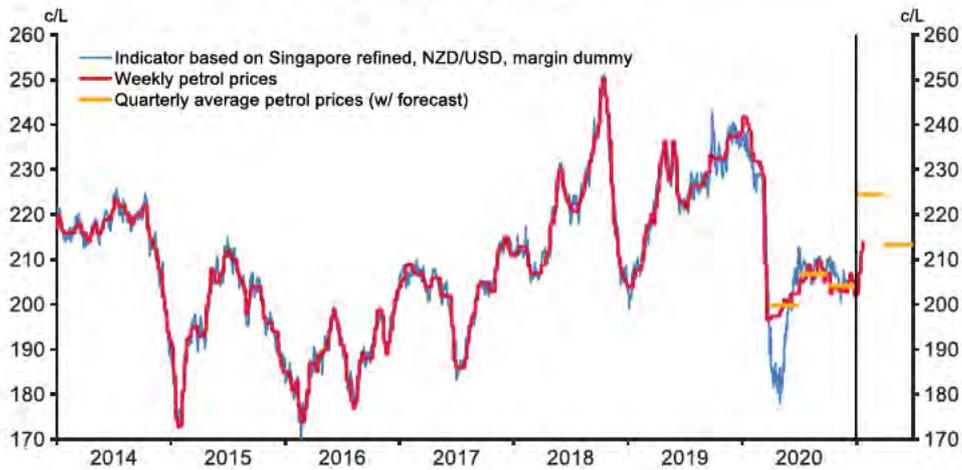


Figure 11: Petrol prices



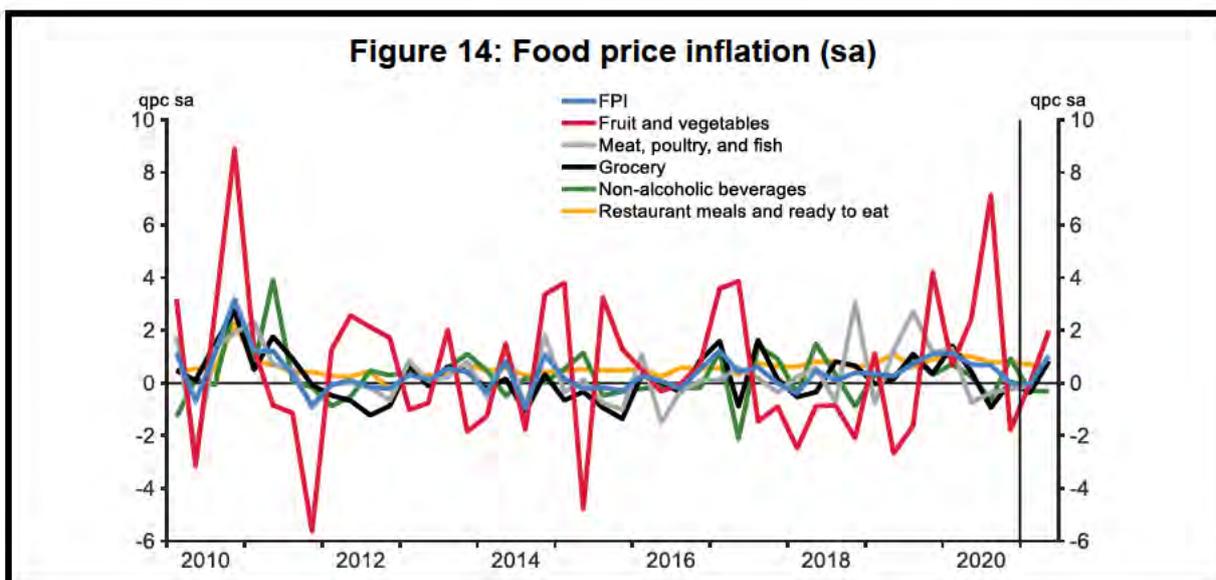
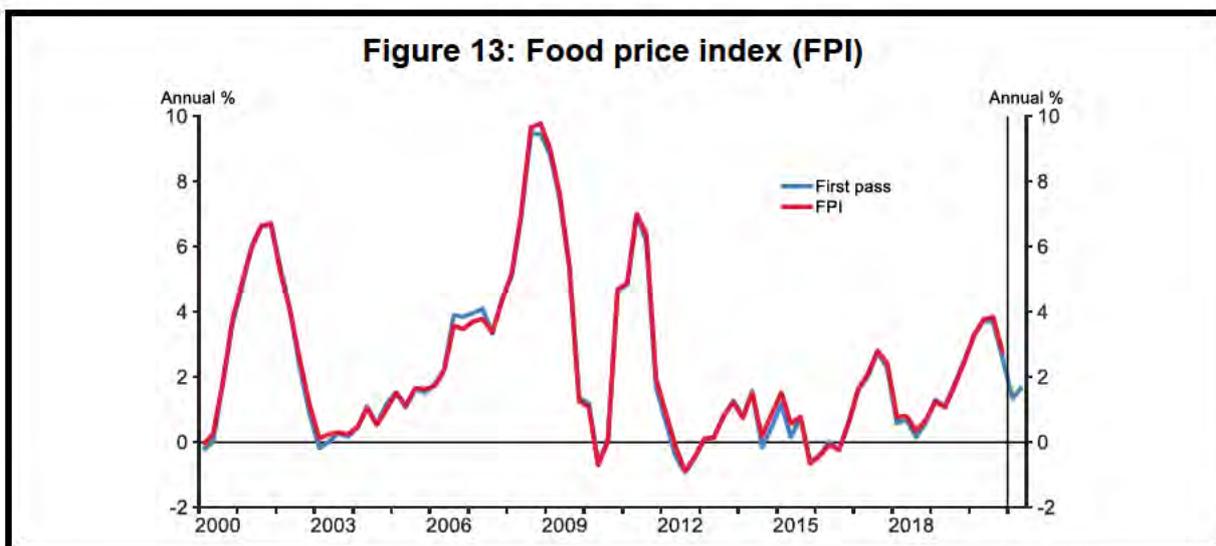
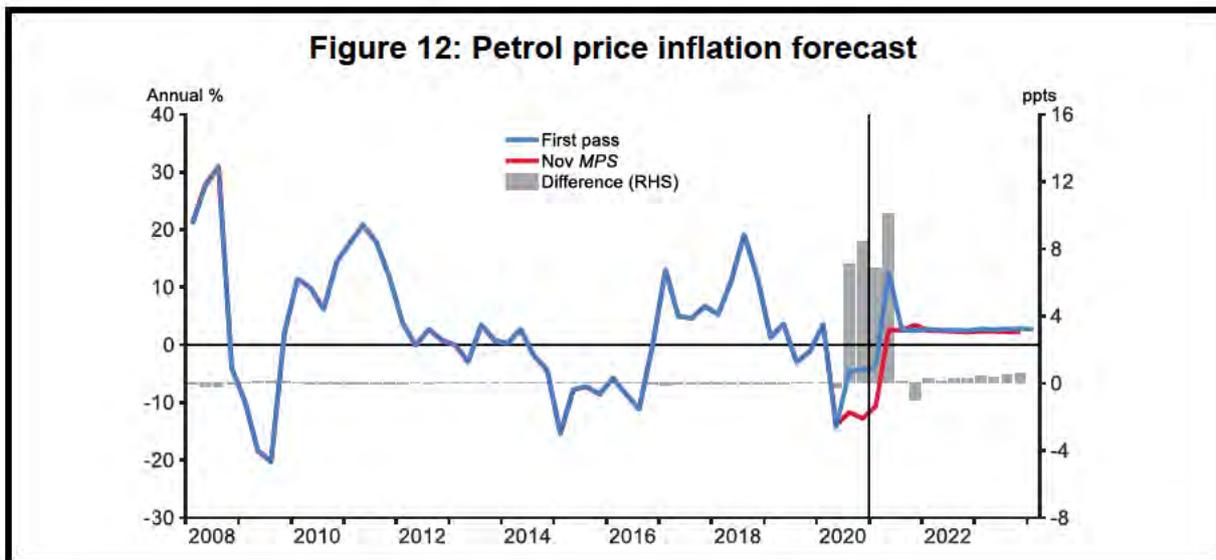
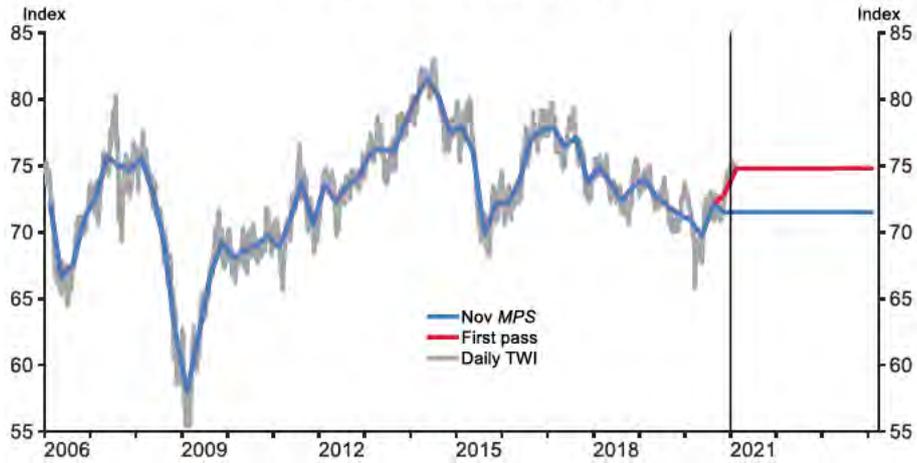


Figure 15: NZD TWI



NON-TRADABLES

Figure 16: Non-tradables and average



Figure 17: Cost pressures



Figure 18: Annual construction cost inflation

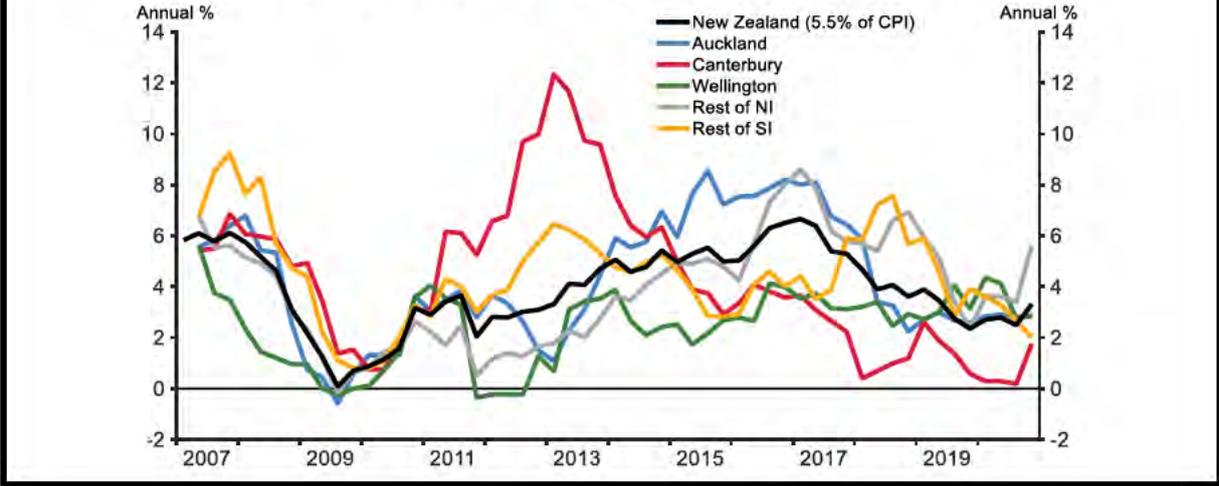


Figure 19: Construction cost inflation and indicator

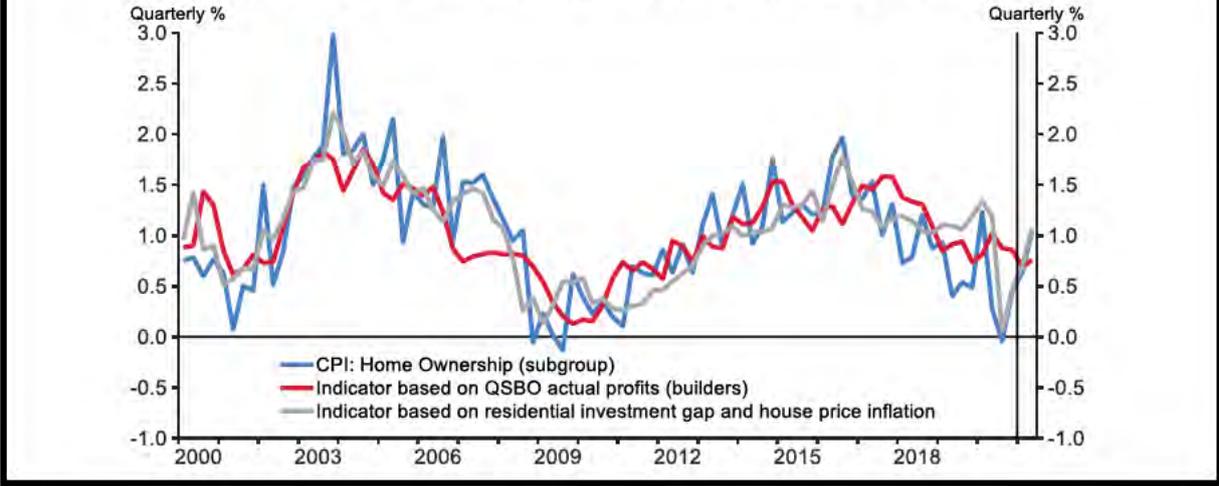
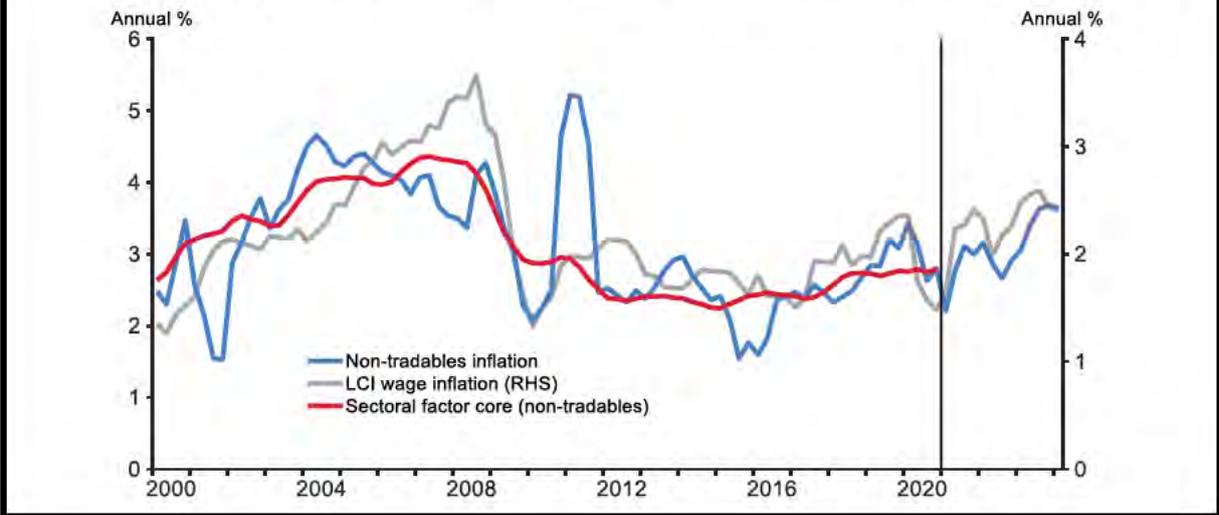
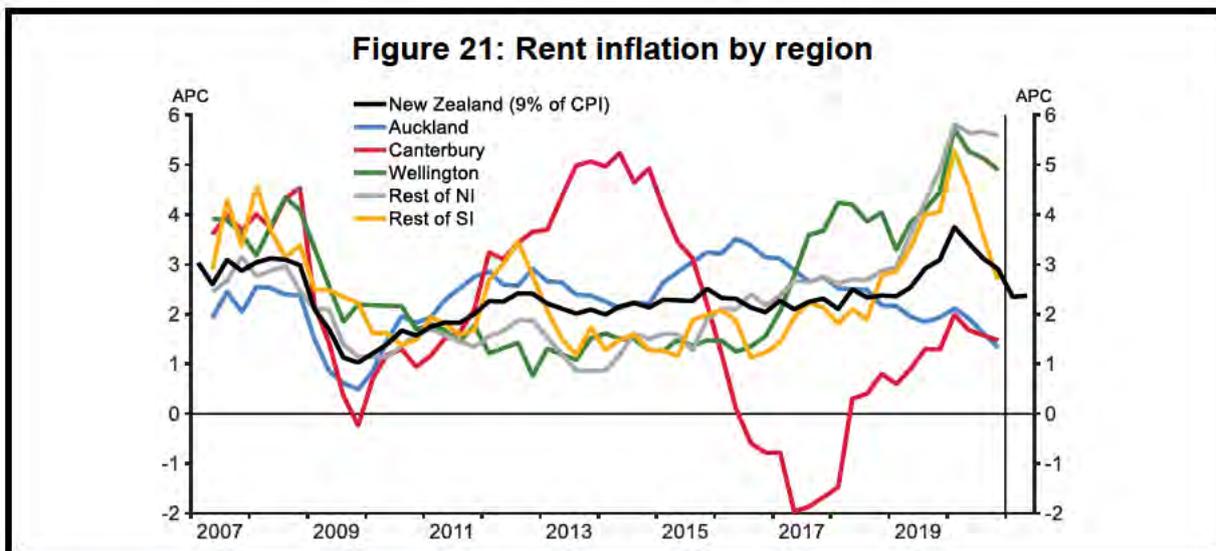


Figure 20: Non-tradables inflation and labour costs





MEDIUM-TERM INFLATION

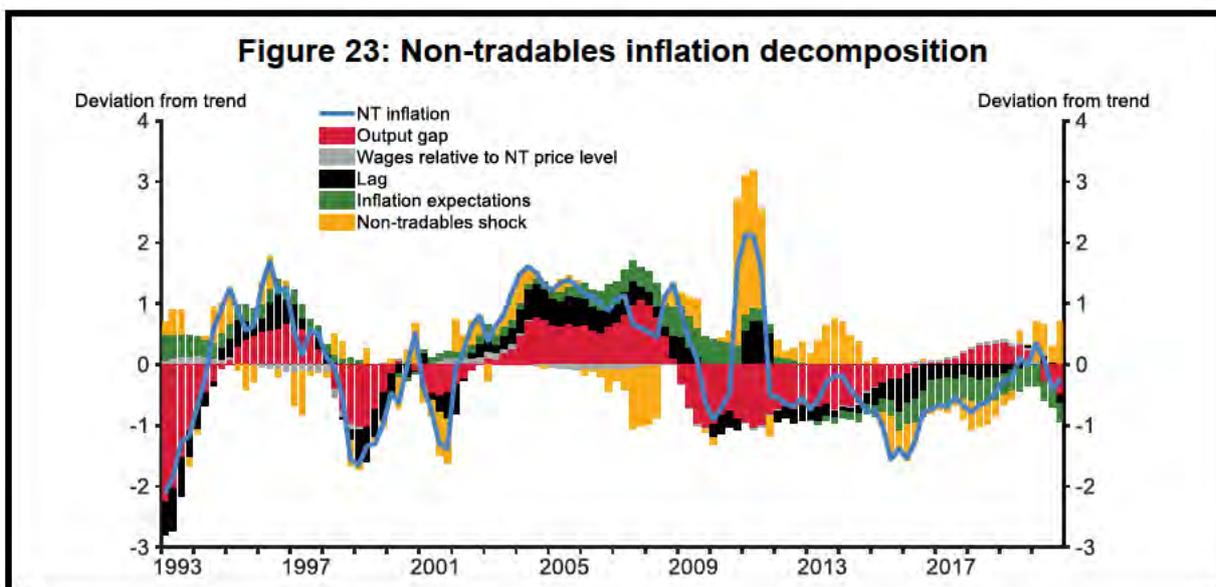
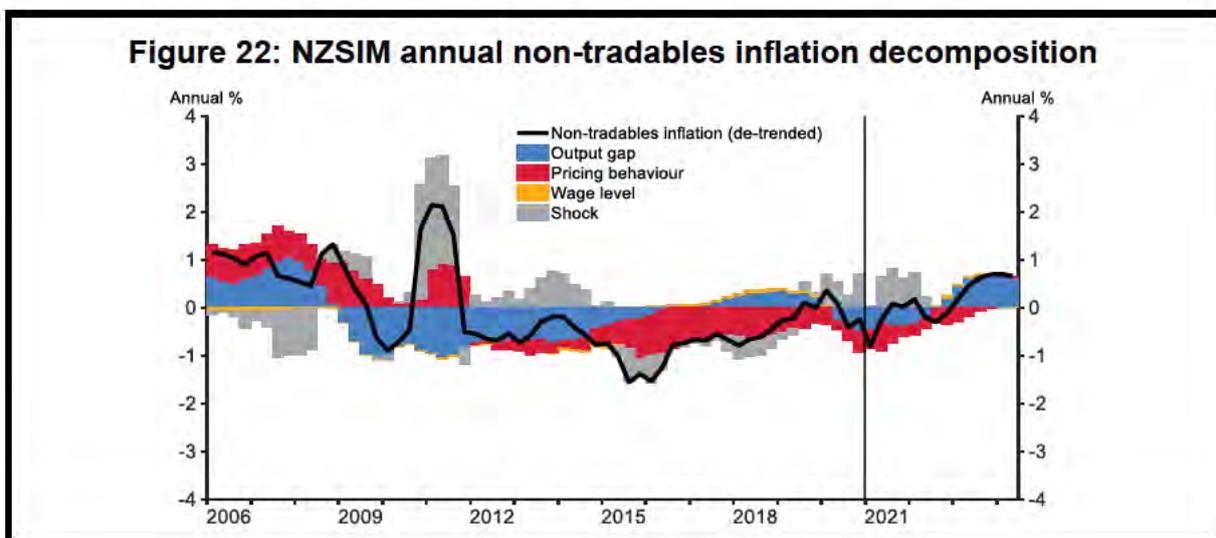
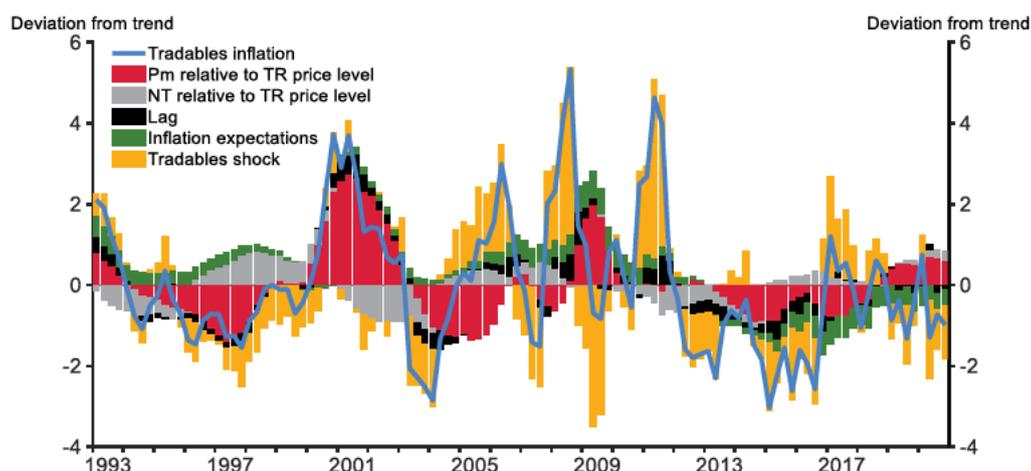


Figure 24: Tradables inflation decomposition



CPI COVID-19 DATA COLLECTION

CPI data collection has largely returned to normal...

In the December quarter there were no impacts on CPI data collection from COVID-19 lockdowns, with the entire country dropping to alert level 1 in early October. This compares to June and September quarters where some in-field collected prices were substituted by store website, phone calls and other sources.

...with the exception of some international travel-related prices

However, there are still a small number of items that are missing, largely relating to international travel (overseas accommodation and international flights). This reflects the impact of ongoing international border restrictions. For these items, StatsNZ assumes that prices grow in line with aggregate CPI. This means that they have a neutral impact on CPI.

Remaining missing items are gradually being re-measured

Some measurement of missing items is gradually being re-introduced. Items are being re-measured as they reach/maintain at least a 20% threshold of previous expenditure. In December StatsNZ reintroduced Auckland to Sydney flight prices. This comprises 1 of 19 routes used for this category (about 10% of expenditure on international flights). The remainder of routes will continue to be imputed as above.

These re-measured prices will be re-introduced at a lower weighting. Weights on international airfares and overseas accommodation were reduced in the 3-yearly CPI re-weight in the previous (September) quarter. This reflects the enduring impact of international border restrictions on consumer expenditure patterns. StatsNZ intends to re-weight these specific items annually, in addition to the regular 3 year re-weight.

**SUMMARY****The Government has provided wide-ranging support to households and businesses**

In early 2020, the Government announced discretionary spending envelopes totalling \$62.1bn for the COVID-19 response and economic recovery (figure 1). As at the [Half-year Economic and Fiscal Update](#) (HYEFU), around \$53bn of the combined envelope had been (or was about to be) allocated, with another \$10bn available to be allocated in the future.³

A significant portion of announced spending is financial support to households and businesses, including subsidies, transfers, loans and tax relief. A key scheme has been the Wage Subsidy, under which \$14bn has been paid to employers. Income support has also been increased, including through the COVID-19 Income Relief Payment (CIRP) for people who have lost their job due to COVID-19, higher jobseeker payments, and a larger winter energy payment. Schemes for businesses [are many](#), and include the wage subsidy, loans, tax relief, and support to adapt to changes in the economy (figure 9).

Other schemes will support direct government consumption and investment spending, including those related to the COVID-19 public health response and the impacts on government services. The Government has allocated a further \$3bn for infrastructure spending, which adds to the \$12bn [New Zealand Upgrade Programme](#) that was announced pre-COVID-19.

In addition to discretionary COVID-19 relief spending, net government spending will be higher as a result of automatic stabilisers (such as income support payments) (figure 4). In its *HYEFU*, the Treasury forecast net core crown debt to increase from 26% of GDP in 2019/20 to 53% in 2022/23, adjusted for our FLP programme (figure 7). The ratio was 19% for the 2018/19 year.

Key developments

Treasury's baseline assumption in the *HYEFU* was that only \$50bn out of the \$62bn would be spent, implying a \$12bn underspend. In part this underspend reflects that New Zealand's economy has performed better than previously expected, so people and firms have required less support. There is also considerably less net spending coming through automatic stabilisers (\$6.9bn less over the 2021 and 2022 fiscal years than in *PREFU*).

Our fiscal assumptions are largely aligned with the *HYEFU* assumptions, albeit with some changes to reflect GDP data released post-*HYEFU*. Another significant change is that we have reduced the government investment track (infrastructure etc.). The previous track seemed ambitious in light of the fairly moderate outturn for government investment in Q3. The lower track also reflects higher capacity pressures in the construction sector, and a generally slower assumed pace of delivering infrastructure (including the pre-COVID-19 package).

³ See note to figure 1.

Some significant measures, such as the Wage Subsidy and the higher Winter Energy Payment have ended. In addition, the CIRP has ended for new applications. The Small Business Cash Flow Scheme has been expanded and extended to the end of 2023, with around 111,000 firms having drawn down a loan (\$1.7bn) as at 20 January.

KEY CHARTS

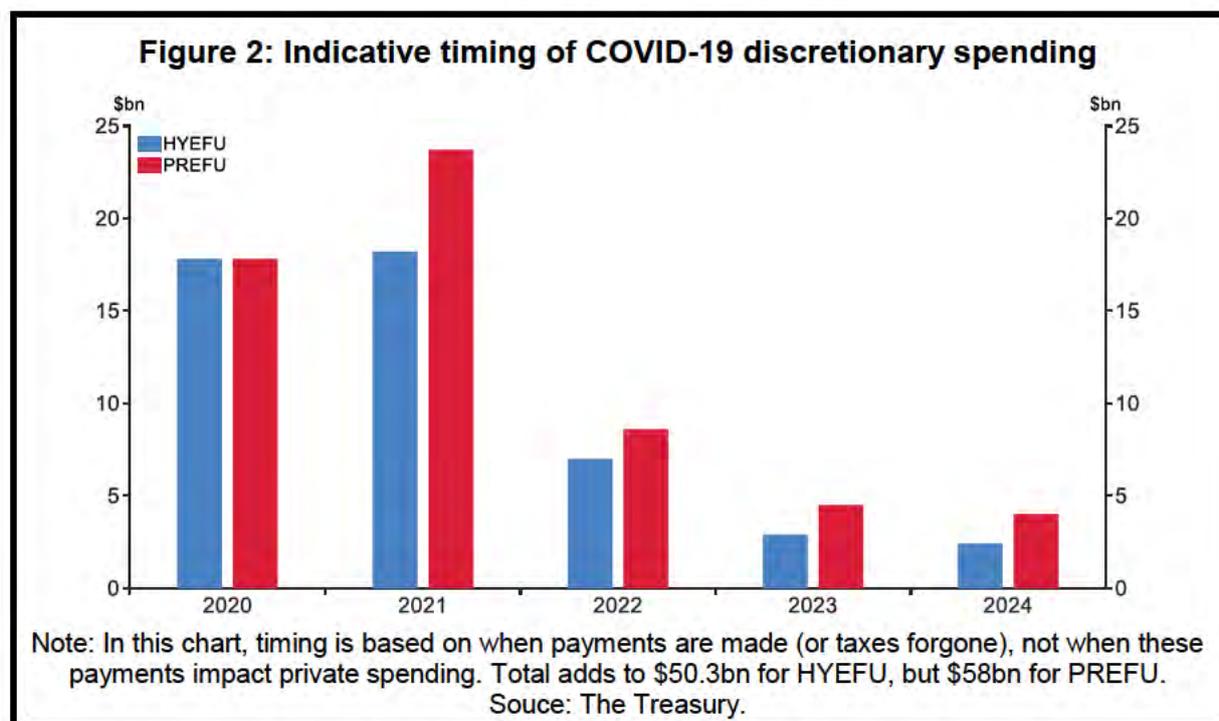
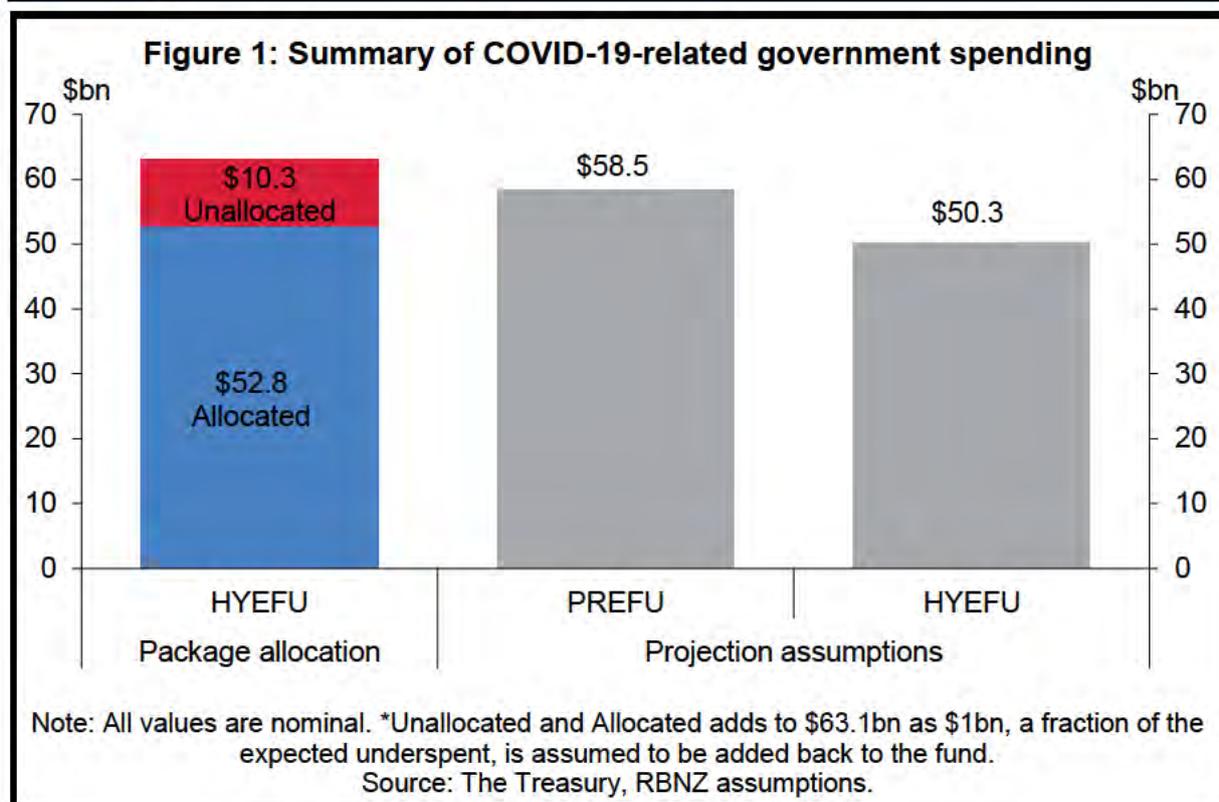
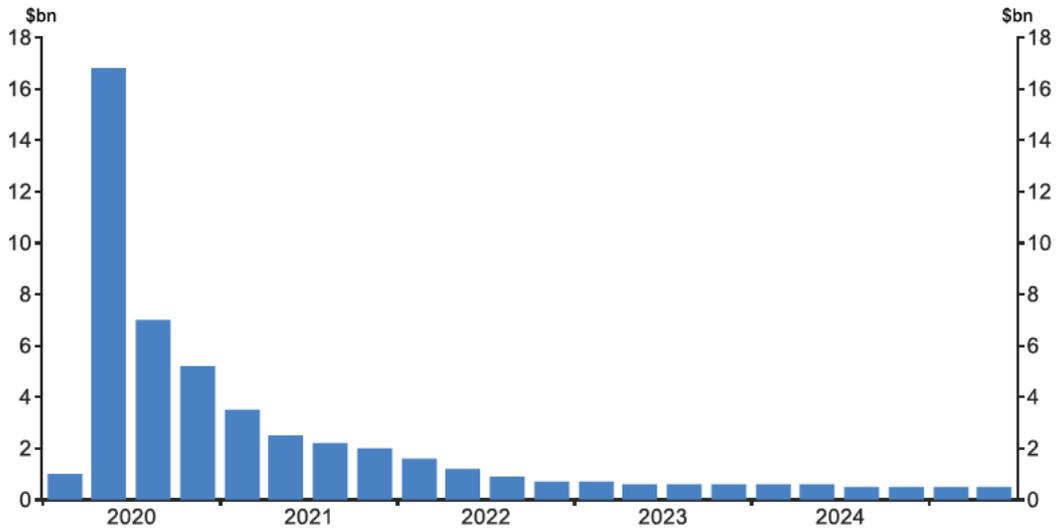
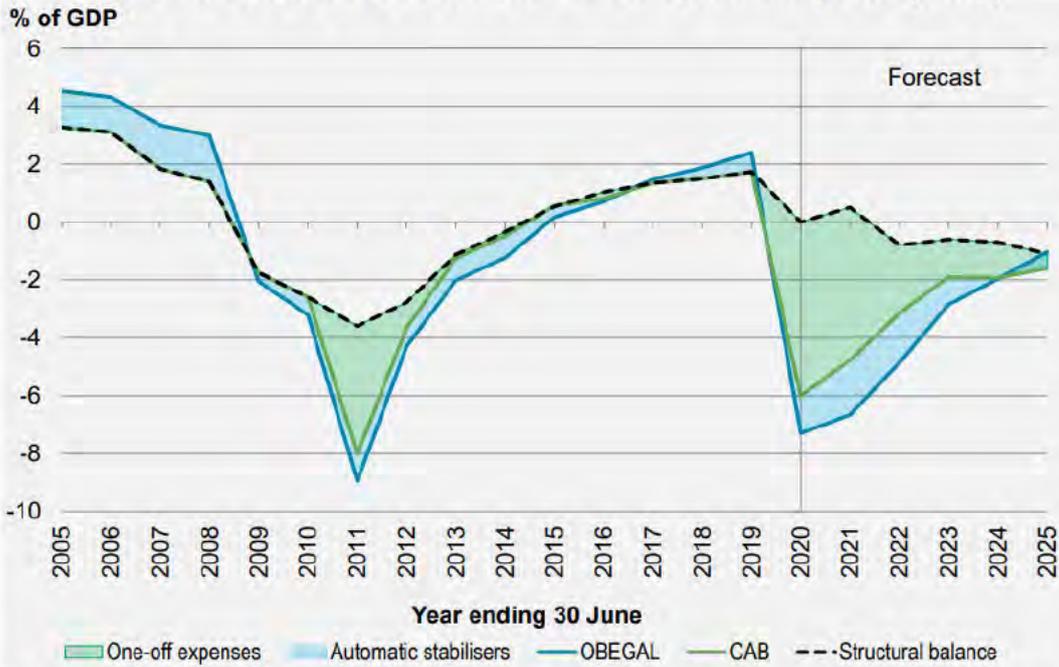


Figure 3: Timing of COVID-19 fiscal stimulus in baseline scenario



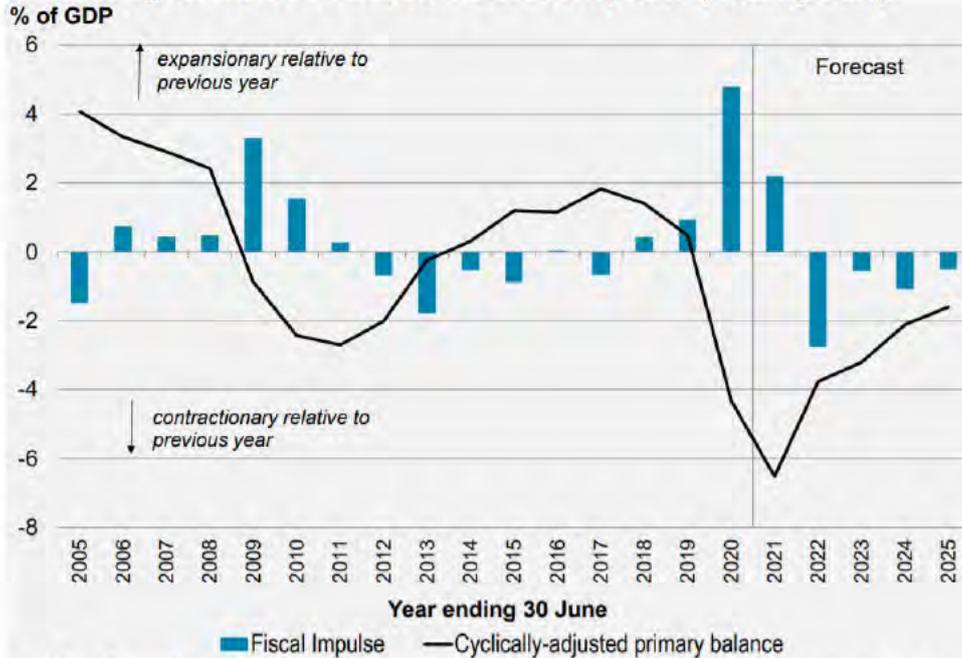
Note: In this chart, timing is based on when payments are made (or taxes forgone), not when these payments impact private spending. Total adds to \$50.3bn. This is based on Treasury assumptions underlying the HYEPU.
Source: The Treasury.

Figure 4: HYEFU 2020 OBEGAL decomposition (June years)



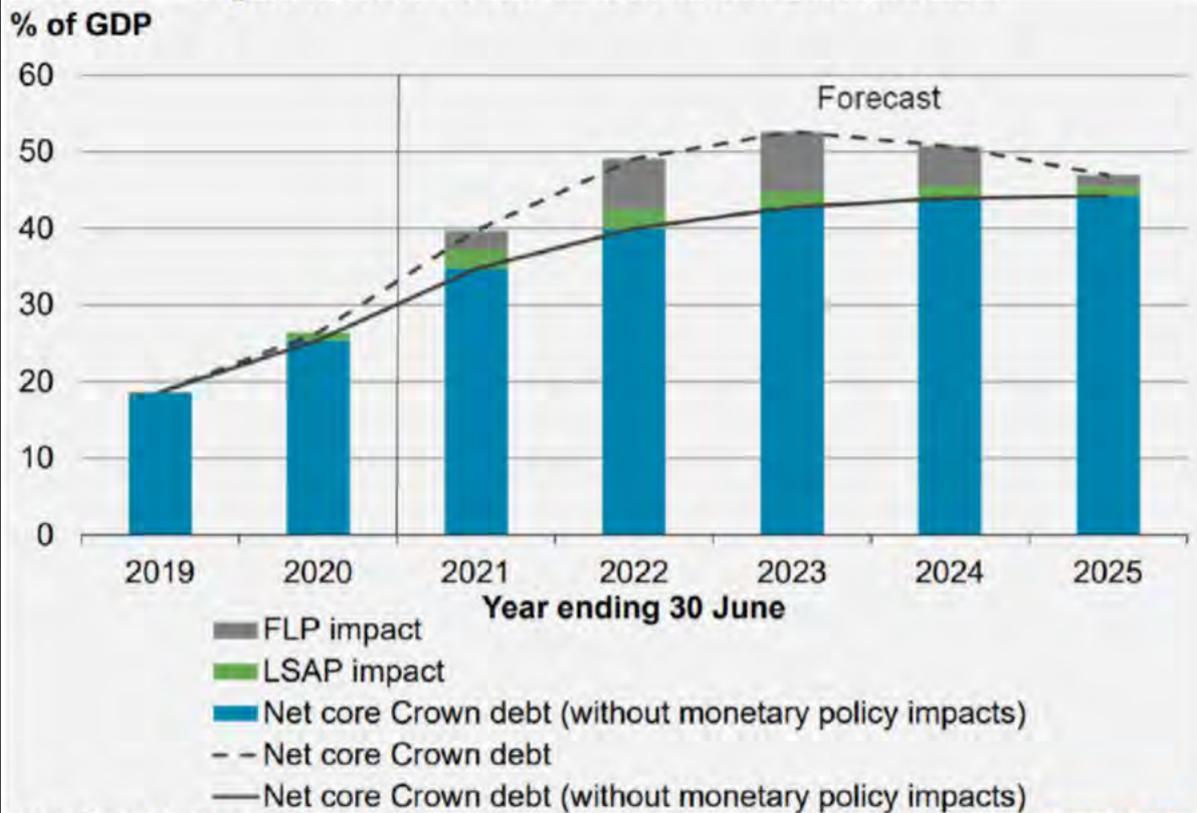
Note: CAB refers to the Cyclically-adjusted balance which excludes the impact of changes in spending/revenue through automatic stabilisers. It is used to indicate discretionary-changes in government spending.
Source: The Treasury.

Figure 5: HYEFU 2020 Fiscal impulse (June years)



Note: The fiscal impulse is an indicator of the first round effects on aggregate demand of discretionary fiscal policy. The idea is that a decrease in a the operating cash surplus generates a positive impulse to demand and vice versa. The impact of spending on capital and student loans is also taken into account. The fiscal impulse is a measure in the *change* in these factors year-on-year, which his why it is strongest in the 2020 Fiscal year.
Source: The Treasury.

Figure 6: HYEFU 2020 net core crown debt forecasts

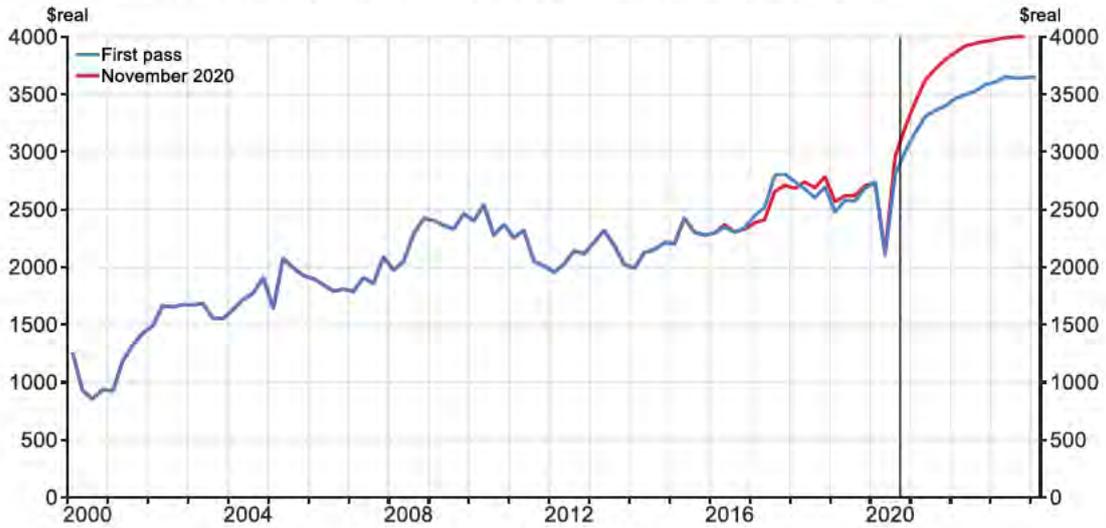


Note: The LSAP and FLP interactions with these measures are outlined on page 40 of [HYEFU 2020](#). Both are form-over-substance issues.

- For FLP the usual net core crown debt measure doesn't net off the FLP assets (our loans to the banks), but treats the higher settlement cash as debt.
- For LSAPs, when the bonds are purchased by RBNZ the bonds are 'eliminated' through consolidation or RBNZ w/ the rest of government. The reduction in reported debt is 'matched' by the increase settlement account balances 'owed' to banks. Ideally these should offset. However, the 'eliminated' bonds are usually recorded on a 'historical cost' basis, lower than the current market value the RBNZ pays for them. Had they been recorded at fair value, this issue wouldn't arise. This issue also impacts the interest revenue/expenses reported by Treasury.

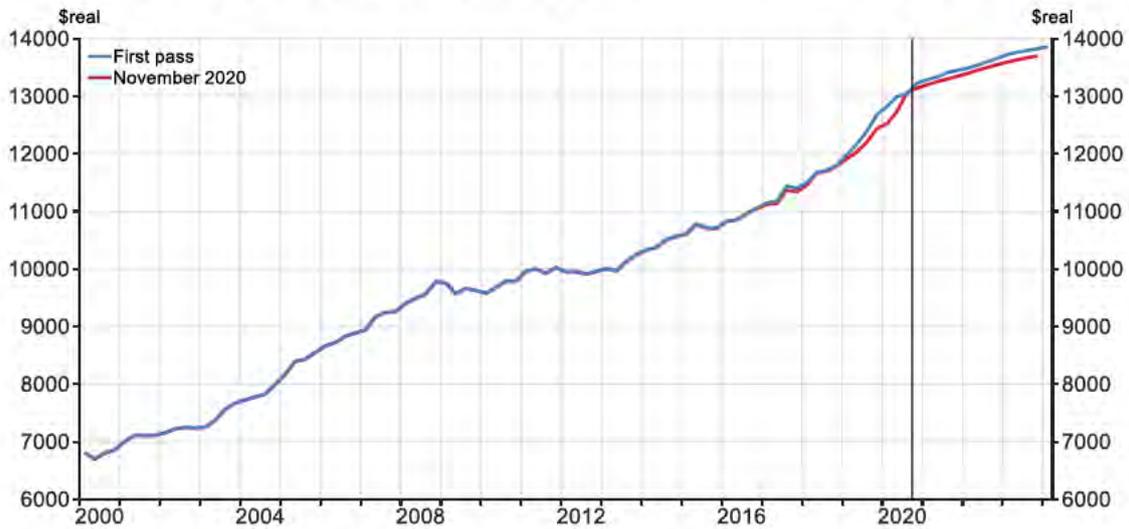
Source: The Treasury

Figure 7: Real government investment (\$ million, real)



Source: Stats NZ, RBNZ estimates.

Figure 8: Real government consumption (\$ million, real)



Source: Stats NZ, RBNZ estimates.

Figure 9: Government support for businesses recovering from COVID-19



Diagram taken from [Government support for businesses recovering from COVID-19](#), which provides further information.



MEMORANDUM FOR MPC

FROM NIRP Working Group (Nick Mulligan)

DATE 11 February 2021

SUBJECT Summary of central bank views on operationalising NIRP

FOR Information

Background and purpose

The AMPed Steering Committee requested staff canvas other central banks' views on lessons from operationalising negative interest rate policy (NIRP). We surveyed the central banks that have implemented NIRP: Bank of Japan (BoJ), Danmarks Nationalbank (DN), Sweden's Riksbank, the Swiss National Bank (SNB), and the ECB. 9(2)(ba)(i)

This paper provides a summary of the results of the survey and our discussions.

We recommend the Steering Committee:

NOTE the material provided by other central banks is confidential and should not be shared externally.

NOTE the experiences and lessons from other central banks that have implemented negative interest rate policy.

NOTE that the RBNZ has given the financial system more time to prepare for negative interest rates than other countries.

NOTE that we consider the RBNZ and New Zealand's financial system well placed for negative interest rates.

NOTE that other central banks did not raise any issues regarding negative interest rates that we have not already considered, but unanticipated issues may still arise.

NOTE the Executive Summary provides the main points of the paper. More detail can be found in the sections below.

Executive Summary

1. Access to central bank settlement accounts, facilities, and exemption tiering:

- Most central banks that have implemented NIRP use exemption tiering to protect a portion of settlement balances from the negative interest rate.
- The primary purpose of exemption tiering is to support the bank-based transmission of monetary policy, by reducing the profitability drag of NIRP. There is a concern that reduced profitability may limit monetary policy pass through, constrain credit availability, or create financial stability risks.
- Exemption tiering methodologies were tailored to the type of monetary policy regime, implementation strategy, financial system structure, and historical convenience.
- Most central banks did not report broadening access to settlement accounts to more financial institutions.

2. Financial market behaviours, debt issuance, and instrument design:

- Contacts reported that money markets and term funding markets function the same with NIRP compared to a situation in which money market rates are positive.
- Whilst corporate debt issuance (and duration) has increased in Europe, it's unlikely to be due to NIRP alone, but rather symptomatic of the package of monetary policy tools.
- Portfolio rebalancing has been observed and is viewed as a desirable effect of NIRP.
- One commonality across Europe was a reduction in interest rate hedging activity.

3. Interest rate floors (IRFs) and hedging behaviour:

- NIRP has faced some pass through frictions due to negative interest rates not being envisaged when debt/loan documentation was written.
- Differences in IRFs in lending/debt documentation and derivative contracts complicates hedging.
- The prevalence of and experience with IRFs differs across countries.
- Central banks' stance on IRFs has differed, but outcomes have been market driven i.e. central banks have let the market decide how to proceed.

4. Pass through of NIRP:

- NIRP transmits successfully through the financial-market channel of monetary policy.
- However, transmission of NIRP through the bank-lending channel may be weaker due to frictions.

5. NIRP's interactions with other monetary policy tools:

- NIRP is seen as complementary to other monetary policy instruments.
- Monetary policy tools that increase the amount of settlement balances may have an associated cost to the banking system if marginal settlement balances face a negative interest rate.
- Central banks have moderated the cost associated with excess settlement balances through exemption tiering or the pricing of term lending facilities.

6. The effect of NIRP on financial market participants:

- The effect of NIRP on financial institutions depends mostly on their funding structure rather than size of the financial institution.
- Contacts reported evidence of increased risk taking by non-bank financial institutions, including insurance companies and pension companies, as they adapt to the low yield environment.

7. Systems issues, tax, and other comments:

- Contacts reported that there were a range of systems issues regarding the ability to operate negative interest rates, but that these had been resolved. Other central banks did not give the banking system as much time to prepare as we have.
- 9(2)(ba)(i) [REDACTED]
- Tax authorities generally issued guidance to clarify the treatment of negative interest rates.
- DN noted that negative interest rates have been publicly normalised.

1. Access to central bank settlement accounts, facilities, and exemption tiering

We asked contacts about any changes made to settlement accounts and facilities due to NIRP.

It is common for central banks that have implemented NIRP to exempt a portion of settlement balances from the negative interest rate (Denmark, Japan, ECB, and Switzerland). Sweden is the exception; they did not use exemption tiering with NIRP. 9(2)(ba)(i)

The primary purpose of exemption tiering is to support the bank-based transmission of monetary policy, by reducing the profitability drag of NIRP while still ensuring that market interest rates trade at the desired negative policy rate (and in some cases maintain a fixed exchange rate). There is a concern that reduced profitability may limit monetary policy pass through, constrain credit availability, or create financial stability risks. Whilst profitability concerns are potentially greater for smaller institutions, other central banks had not faced issues with access for smaller financial institutions (primarily banks), as they already had broad access to settlement accounts.

Exemption tiering methodologies were tailored to the type of monetary policy regime, implementation strategy, financial system structure, and historical convenience. The calibration of the exemptions tiers is based on one or more of the following factors: the proportion of settlement balances used for payments; the excess settlement balances created by other monetary policy instruments (such as large scale asset purchases); historical convenience (multiples of regulatory reserve requirements); and the share of funding from non-financial deposits (a rough proxy for liabilities subject to a zero lower bound restriction).

Some central banks undertook reviews of their monetary policy implementation and system cash management methods. For example, Sweden have narrowed their interest rate corridor to equal their key policy rate +/- 10bps. The ECB also made some minor changes to its accounts and facilities to streamline its daily operations.

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2. Financial market behaviours, debt issuance, and instrument design

We asked contacts about any changes in financial market behaviours, debt issuance and debt instrument design, and risk taking, primarily due to NIRP. Some of the main structural changes were possibly influenced by negative interest rates, but are likely mainly driven by post-GFC regulations and other policy measures including asset purchases and rising excess liquidity.

Overall, contacts reported that money markets function the same with NIRP compared to a situation in which money market rates are positive. In Switzerland, overnight repo activity increased due to the tiered system. ECB analysis shows that negative interest rates supported activity in the overnight unsecured market at least in the early stages of the negative rate period. The euro money market trades with steady and sizeable volumes and a large number of transactions. The ECB also reported an increase in the usage of FX swaps with idle cash being redeployed to earn the highest possible return. One ECB market contact reported “The swap market has been extremely smooth in its reaction to the introduction of negative interest rates.” 9(2)(ba)(i)

Similarly, anecdotal evidence suggests that term funding markets function largely the same with negative rates. The largest impact is reportedly when the official rate is near zero and therefore lenders are reluctant to lend below zero. At this point, a delay in pass-through may emerge and the SNB noted that spreads for an issuer can become tighter (as investors prefer bonds with a slightly positive yield). The effect was pronounced after the introduction of negative interest rates, but has become weaker over time. Investors seem to get more used to buying bonds at negative yields.

It has been highly uncommon among non-financials to issue fixed-rate bonds with negative coupons. If bonds are issued at a negative yield, a price above 100 is applied to account for a zero or positive coupon. The ECB and SNB noted that floating-rate note (FRN) issuance has declined or ceased, partly due to complications with negative coupons. In contrast, FRN issuance in Sweden has increased among non-financial companies.

The ECB noted that bank treasurers mention they sometimes lengthen the maturity of planned bank bond issuance as securities with positive yields still attract larger order books (as some investors had no mandate or willingness to buy at negative yields). Such behaviour seems to become less prevalent the longer NIRP is in place (negative rates gradually gain more acceptance and avoiding negative yields became more difficult without taking unacceptable credit or interest-rate risks).

Whilst corporate debt issuance has increased in Europe, it’s unlikely to be due to NIRP alone. The ECB and Riksbank reported significant growth in corporate debt issuance since the introduction of NIRP. The Riksbank believe that low interest rates have contributed to low financing costs across the market, as well as increased demand from investors in their search for yield. The ECB also noted their purchases of corporate bonds under the Corporate Sector Purchase Programme (CSPP) will likely have supported issuance. In contrast, the small corporate debt market in Denmark (DN have not undertaken asset purchases), has not grown

materially. The DN and SNB haven't seen evidence of disintermediation away from the banks to wholesale funding markets for larger corporates. Overall, non-interest rate factors may be driving corporates' preferences for market debt more than whether the interest rate is negative.

Portfolio rebalancing has been observed and is viewed as a desirable effect of NIRP. For example, the Riksbank have heard that asset managers have sold negative-yielding Swedish government bonds (SGBs) to the Riksbank (via banks) and instead purchased higher yielding corporate debt securities, thus stimulating the growth of that market. Foreigners' holdings of SGBs have also declined. This trend may have been exacerbated by certain foreign investors being prohibited from investing in securities with negative nominal yields. The Riksbank noted these buyers may or may not return when or if sovereign yields become positive again.

There has also been increased risk taking by banks via mortgage lending in Denmark and Switzerland. In response, there have been regulatory and self-regulatory measures introduced to limit banks' risk taking. For example, restricting interest-only lending in Denmark.

9(2)(ba)(i)

3. Interest rate floors and hedging behaviour

NIRP has faced some pass-through frictions due to negative interest rates not being envisaged when debt/loan documentation was written. An interest rate floor (IRF) represents a minimum interest rate on a floating interest rate product. For example, a lending rate may be 'floored at zero' meaning the lender always recovers at least the principal of a loan. IRFs generally take two forms:

- (1) the 'all-in' interest rate is floored (the interest rate that the borrower pays does not fall below some level, e.g. zero); or
- (2) the benchmark interest rate is floored at zero. For these loans the borrower pays a constant spread above the benchmark interest rate. For example, if the LIBOR rate was -0.50 percent, but the lending rate formula was $LIBOR + 50bps$, the borrower would pay 0.50 percent.

Differences in IRFs in lending/debt documentation and derivative contracts complicate hedging. The majority of interest rate swap derivatives (used to hedge interest rate risk) don't have IRFs. If an un-floored interest rate swap is used to hedge an asset or liability that does have an IRF, the hedge will not operate as desired when the interest rate falls below the IRF.

To avoid new mismatches from arising, and the non-linearities associated with IRFs, some wholesale financial markets products are now issued at increased spreads to benchmark rates, with a corresponding above-par issuance price or reduced principal repayment (for cases where a reversal of coupon payments is considered undesirable). Some banks are willing to trade interest rate swaps with zero IRFs. There are other financial products, such as options or swaptions (an interest rate swap + and interest rate option), that can be used to hedge interest rate risk if the financial market is sufficiently developed.

One commonality across Europe was a reduction in interest rate hedging activity. The ECB noted that hedging behaviour of corporates and businesses has changed with lower rates. The trend has been increased fixed rate lending and less hedging activity. Contacts thought this was more likely due to the widespread acceptance that interest rates would

remain low/stable for an extended period, and not necessarily directly related to NIRP. However, IRFs may have played a role.

The prevalence of and experience with IRFs differs across countries. Most NIRP jurisdictions reported some issues with IRFs – Japan being the exception. It is common for FRNs to have zero IRFs on the all-in interest rate (and issuance of FRNs has declined in some countries).

Documentation in Denmark and Europe required updating to function with NIRP. As a result, today most loans in Denmark do not have an implicit or explicit floor. The ECB's contacts suggest that IRFs in loan documentation exist (mostly on all-in interest rates), but they have little data on the scale of this practice.

In Europe, there have been a number of legal challenges related to IRFs and NIRP. The court cases related to product mis-selling (where FRNs were sold with interest rate swaps) and resulted in the derivatives being considered void. Consequently, the threat of similar law suits provided some negotiating power to update documentation. There have also been challenges to the legality of applying a negative interest rate in some ECB member states.

The SNB have not observed a change over time in the prevalence of IRF in Switzerland. Zero IRFs are a feature of variable-rate loan products (e.g. mortgages). This can make asset-liability management challenging for banks since traditional interest rate hedging instruments (such as interest rate swaps) do not use a floor. In most cases, benchmark interest rates are floored. For some types of loan contracts the issue was unclear and these have resulted in court cases.

Central banks' stance on zero interest rate floors has differed, but outcomes have been market driven. The Riksbank expressed a preference for market participants and the financial infrastructure to adopt to negative rates, including removing various technical and legal obstacles to be able to manage negative interest rates. The SNB's working group on benchmark reforms discussed how to floor contracts and concluded was that market participants should be free to decide on the level of the floor. This approach aligned with the DN's official message that different institutions could choose the solutions that fitted them best. Likewise, the ECB has not expressed a preference for the removal of IRF.

9(2)(ba)(i)



4. Pass through of NIRP

Contacts report that NIRP transmits through financial markets the same as positive interest rates. In Sweden, NIRP seems to have had a strong and immediate pass-through to yields on securities traded in the markets. Banks have generally passed negative interest rates through to wholesale clients, which affects and reflects conditions in wholesale funding markets. Banks' wholesale funding costs developed in line with the policy rate and short-term rates have traded close to the repo rate even when it was negative. The ECB noted that NIRP transmitted effectively to wholesale funding rates. Money market rates crossed the zero bound with slight delay and the pass through of all deposit facility rate cuts has been full. They

mentioned that there may be some discontinuities in pass through as interest rates approach zero. Anecdotal evidence suggests that the pace of pass through and participants' ability to adapt faces more resistance at this point.

In general, NIRP passes through to large corporate and institutional clients. Negative interest rates have passed through to corporate clients in Denmark, Sweden, Switzerland, and ECB member countries. In Denmark, around 80 percent of corporate deposits are exposed to a negative rate. Around half of the responding companies to the Riksbank Business Survey reported facing negative interest rates and/or fees on their bank deposits. Some of these institutions have also reported benefiting from negative policy rates on short-term loans. In Sweden and Switzerland there are exemptions for deposits under a certain size. The Riksbank also noted that businesses have attempted to minimise cash holdings by investing in other assets. Occasionally, some cash accounts previously held by companies in Sweden were transferred to the parent group overseas to avoid a zero or negative rate on deposits. The ECB said that a small but rising portion of bank deposits held by non-financial corporations are remunerated negatively.

There are some frictions that have inhibited the speed and magnitude of pass through to household interest rates. Sweden and Switzerland report that financial institutions have not applied negative interest rates to retail customers. The SNB noted that retail deposits are floored at 0 percent in most cases and the term premium has compressed. In Switzerland, there is a concern that retail clients might exchange their account balances for physical cash quickly once negative interest rates are applied. This is less an option for institutional clients and high net worth individuals, enabling banks to apply negative interest rates to them.

In Europe, the pass through of NIRP to retail deposits has been negligible thus far and some euro area banks have explicitly vowed to never charge negative rates on depositors holding sums less than €100,000 (which coincides with the upper limit of guarantees under deposit insurance schemes in the EU).

The ECB report reputational, commercial, regulatory and legal reasons as the key reasons that banks don't apply negative rates to their depositors. Banks in some member states face legal impediments to charge negative rates on certain deposits, but generally reputational reasons dominate their decision not to charge negative rate to small retail depositors. Commercially, the first mover disadvantage plays a role within jurisdictions. For the regulatory reasons, retail deposits are also considered very favourable for the Liquidity Coverage Ratio. When legally feasible in the respective member states, many banks have increased fees on accounts or payment services instead. Others pass on negative rates to deposit amounts above a threshold. In some countries, such as Belgium, there are legal impediments to charge negative rates to retail deposits. Account management fees has been introduced in some cases to somewhat mitigate the costs.

Denmark appears to have had the greatest pass through of NIRP to deposit interest rates. In Denmark, lending rates from deposit-taking institutions hadn't seen negative interest rates to date due to deposit rates holding up. However, more recently, deposit-taking banks are faced with surplus funding and are competing aggressively to trying and offload (expensive) deposits. Negative rates on non-corporate deposits were introduced about a year ago on deposits above a certain value threshold. This limit was initially very high (€1m) but has been falling and is now about €13,000 for many banks, less than the average retail deposit value. Banks are trying to further differentiate between different customer types, and are actively discouraging deposit-only customers (e.g. by offering them lower (negative) deposit

rates). Some banks are starting to take a spread so deposit rates are lower than policy rates. The DN are not planning on intervening on how banks set lending and deposit rates.

Interest rate floors (as discussed above) also present a friction to pass through of NIRP. The Riksbank noted that when NIRP was first introduced, some companies witnessed banks adding a floor for the lending rate, but banks still passed through the NIRP on corporate deposit rates. The ECB's market contacts noted that the presence of IRFs will restrict pass through of future ECB policy rate cuts.

The SNB do not believe that zero IRFs have impeded pass-through of NIRP 9(2)(ba)(i) Given that money market rates are trading close to the SNB policy rate (which currently equals the negative interest rate applied to sight deposits), this has been achieved. 9(2)(ba)(i)

NIRP transmits successfully through the financial-market channel of monetary policy. Therefore, NIRP has been successful at addressing the exchange rate pressures faced by Denmark and Switzerland.

However, transmission of NIRP through the bank-lending channel may be weaker due to frictions. The Riksbank noted the bank lending channel might have been slightly muted for households due to the floor on deposit rates. Overall, they conclude that mildly negative interest rates have successfully contributed to more expansionary monetary policy.

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5. NIRPs interactions with other monetary policy tools

Overall, NIRP is seen as complementary to other monetary policy instruments. Contacts noted there are a number of important interactions between the monetary policy tools – most are reinforcing of the policy stance, but some offset. 9(2)(ba)(i) he BoJ also noted that NIRP is a core part of the Yield Curve Control framework.

Monetary policy tools that increase the amount of settlement balances may have an associated cost to the banking system if marginal settlement balances face a negative interest rate. Asset purchase programmes, term lending facilities, and/or foreign exchange interventions all create additional liquidity in the form of settlement balances. The negative interest rate applied to these balances creates a drag on bank profitability, to the extent that a portion of these balances may be funded by bank liabilities (such as deposits) which are floored at zero.

Central banks have moderated the cost associated with excess settlement balances through exemption tiering or the pricing of term lending facilities. Tiered remuneration frameworks shield a portion of settlement balances from NIRP (discussed in more detail in section 1 above). Term lending facilities that are priced at the policy rate or below will not create any net cost. The ECB also introduced a 'dual rate' system with its third series of Targeted Long-Term Refinancing Operations (TLTROs). The TLTROs are now priced below

the key policy rate to compensate “for part of the costs that banks accrue by not being able to pass on negative rates to some of their customer base.”¹

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NIRP also supports term lending facilities and programmes as it enable financial institutions to borrow from central banks at negative interest rates, meaning they can on-lend at low interest rates.

6. The effect of NIRP on broader financial market participants

The effect of NIRP on financial institutions depends mostly on their funding structure rather than size of the financial institution. Sweden and Japan noted they haven’t seen any evidence that NIRP affected smaller financial institutions in a materially different way than larger financial institutions. In Denmark, some of the smaller banks are trying to increase market share in some of the larger cities. The largest bank has been expanding abroad, in search of better margins.

The ECB noted there is evidence that non-bank financial institutions added to their risk exposure following NIRP, but similar behaviour is observed in a low but still positive rate environment. In addition, the ECB noted that money market funds have fared surprisingly well in the presence of negative rates. 9(2)(ba)(i)

The Riksbank also noted increased risk taking among Swedish insurance companies. These companies have increased allocations to equities and alternative assets in search of yield.

Denmark noted that their pension companies are still adapting to the low yield environment, moving away from defined benefit schemes. Investment portfolios are tilting toward infrastructure projects, commercial real estate, and other alternative asset classes in search for yield.

9(2)(ba)(i)

7. Systems issues, tax, and other comments:

Contacts reported that there were a range of systems issues regarding the ability to operate negative interest rates. In all cases, participants were able to find solutions or apply grace periods until changes were implemented. Denmark and the ECB provided approximately 3-4 months for participants to prepare for NIRP.

9(2)(ba)(i)

¹ [Schnabel \(2020\)](#)

9(2)(ba)(i)



Tax authorities generally issued guidance to clarify the treatment of negative interest rates. The Riksbank and the ECB both reported some tax arbitrage behaviour where individuals could exploit the positive interest rates applied to prepaid tax accounts.

DN noted that negative interest rates have been publicly normalised. Most households are able to see that their interest payments on their mortgage are also declining, so there has been only a mild and short-lived negative response to negative rates. Banks have worked hard with customers to look for alternative solutions for investments other than negative rate deposits. In Denmark, they don't have any evidence of a 'reversal rate' of interest to date.

9(2)(ba)(i)



Summary of recent business visits – February 2021

The Bank regularly engages with a range of businesses to improve our industry knowledge and understanding of current economic conditions. In January the Bank spoke with a number of business from different industries.

We spoke with businesses to find out more about their activity, margins, supply chain disruptions and labour market conditions. This document summarises the key themes of the discussions.

A key theme that emerged from these discussions were firms are facing cost push inflation from international supply chains. As a result margins are expected to erode as firms are not able to pass this on through higher prices.

Activity

Businesses reported that activity continued to be strong towards the end of 2020 and expect this to continue until the first quarter of 2021. They are concerned that the end of the first quarter will be the final months of the pent up demand and “sugar rush” from the COVID-19 lockdowns. Firms have reflected this through their investment intentions as they continue to be cautious despite recording strong sales in the end of 2020.

Margins and Supply Chains

Despite strong sales it was implied that margins were eroding. Firms have faced large increases in costs from disrupted global supply chains as shipping costs have risen 30% ~ 40%. They have not been able to pass this on through higher prices despite strong demand. Instead firms have chosen to reduce the usual discounts in order to retain some margin for now. However it was mentioned that if costs continue to rise firms will be looking to pass these on.

Disruptions in global supply chains has caused large issues with the “just in time inventory” method being used across different industries. There was no single driver of the disruptions but rather a combination of reasons. These included the surprise rebound of China which global ports were unprepared for and the increased health measures taken at ports. As a result domestic firms have had to order much further in advance and have also purchased domestic goods in order to secure inventory. This has increased costs especially when compared to the old “just in time inventory” method.

Labour

Even though firms have not reported increases in domestic costs, they are likely to face wage pressures as labour is becoming increasingly difficult to find. Despite struggling to find workers firms have not cited wage inflation as a current issue. Businesses have been able to temporarily alleviate labour shortages, but current methods are not sustainable. Many of them have resorted to working additional hours and hiring casual labour to meet the extra demand. Despite these measures firms are still operating below full capacity as they are still short staffed. If this continues it is likely that firms in the near future will need to hire more workers and may need to start raising wages to attract and retain staff. While the minimum wage increase is not a big factor for most firms it will likely exacerbate the current issue of making it harder to find workers if wage inflation does not pick up.

Similar to the August *MPS* closed borders continue to prevent firms from acquiring workers with specialist skills from overseas. Pre COVID-19 firms heavily relied on skilled overseas workers to fill these roles. These jobs have not been taken up by the existing labour force as many of these jobs require extensive specialist training. The skills shortage has been exacerbated as some of the migrant workers with specialist skills have left to return to their families in their home country.

Industries and key themes

| Industry | Firms | Key Themes |
|-----------------------|------------------------|------------|
| Construction | 9 (2) (b a) (i) | |
| Manufacturing | | |
| Primary Industries | | |
| Professional Services | | |
| Retail | | |
| Tourism | | |
| Transportation | | |
| | | |

EDITS TO Statement of the MPC's monetary policy strategy

The Monetary Policy Committee's (MPC) monetary policy strategy is its overarching plan for how it will formulate monetary policy under different circumstances to achieve its objectives.¹ It outlines a consistent approach to how the MPC intends to achieve its objectives across time, accounting for trade-offs and uncertainty. Agreeing on and publishing a strategy promotes transparency, public understanding, and accountability.

Monetary policy framework and objectives

Under the *Reserve Bank of New Zealand Act 1989* (the Act), the MPC is responsible for formulating monetary policy to maintain a stable general level of prices over the medium term and to support maximum sustainable employment.² Operational objectives for monetary policy are set out in the **Remit**. The current *Remit* under which the MPC must set policy to:

- keep future annual inflation between 1 and 3 percent over the medium term, with a focus on keeping future inflation near the 2 percent mid-point; and;
- support maximum sustainable employment, considering a broad range of labour market indicators and taking into account that maximum sustainable employment is largely determined by non-monetary factors.

In pursuing these objectives, the *Remit* requires the MPC to have regard to the efficiency and soundness of the financial system, seek to avoid unnecessary instability in the economy and financial markets, and discount events that have only transitory effects on inflation. **The MPC must also assess the effect of its monetary policy decisions on the Government's policy to support more sustainable house prices.**

OR

In line with the Remit, the MPC also seeks to report on the effect of its monetary policy on the Government's policy of supporting more sustainable house prices.

OR

Something else the MPC are comfortable with.

The Reserve Bank's flexible inflation targeting framework and the MPC's monetary policy strategy reflect the fact that:

¹ For a more in-depth discussion of monetary policy strategy in New Zealand, see J. Ratcliffe and R. Kendall (2019), 'Monetary policy strategy in New Zealand', Reserve Bank of New Zealand, *Bulletin*, Vol. 82, No. 3, April.

² These economic objectives contribute to the overall purpose of the Act, which is to promote the prosperity and well-being of New Zealanders, and contribute to a sustainable and productive economy. See monetary policy framework for more information on New Zealand's monetary policy framework, including the full text of the *Remit*.

- low and stable inflation is monetary policy's best long-run contribution to the well-being of New Zealanders;
- in the short to medium term, monetary policy can influence real variables such as employment, and hence policy trade-offs can arise; and
- monetary policy is more effective if the Bank's policy targets are credible, so policy should be formulated in a way that ensures credibility is maintained.

Key aspects of monetary policy strategy

The MPC practises **forecast targeting**, which means that it sets monetary policy such that it expects to achieve its inflation and employment goals in the medium term. In most instances the MPC aims to return inflation to the target mid-point within a one to three year horizon. The appropriate horizon at each policy decision will vary based on how different policy paths will contribute to maximum sustainable employment, whether price-setters' expectations are consistent with the inflation target, and other considerations such as the balance of risks to the MPC's central economic outlook.

The MPC does not attempt to return inflation and employment to target immediately, because monetary policy actions take time to transmit through the economy. Attempting to return inflation to **the target mid-point** too quickly would result in unnecessary instability in the economy and financial markets. The 1 to 3 percent target range for inflation provides the MPC with flexibility to ensure that managing inflation variability does not come at the cost of excessive variability in the real economy. For similar reasons, the MPC does not attempt to offset events that are expected to have only transitory effects on inflation.

The MPC **takes into account both its inflation and employment objectives** when setting policy. In the long run, no trade-off exists between the MPC's objectives. In the short to medium term, there may be situations where monetary policy can move one objective closer to target only at the cost of the other, resulting in a trade-off. When a trade-off does arise, the MPC will consider outcomes for both objectives in setting policy. In general, if employment is projected to be below its long-run sustainable level, the MPC would let inflation overshoot the target mid-point for a time, and vice versa (**while staying within the 1-3 percent target range**).

The MPC **responds to both deviations above target and deviations below target**. The MPC sets policy to stabilise employment near its maximum sustainable level, and to return inflation **near** to the **2-percent** target mid-point, regardless of whether inflation is currently below or above **target 2 percent**. This approach helps to anchor inflation expectations at the target midpoint and promotes sustainable growth and employment by dampening fluctuations in the business cycle.

The MPC **considers the balance of risks to its objectives** that arise from uncertainty about the economic outlook and the transmission of its policy decisions. In general, the MPC will incorporate likely future developments into its central economic projections and set monetary policy in response. However, the MPC will also take into account risks to its central projections when setting policy. **Under**

extreme uncertainty, the MPC may choose to publish scenarios instead of central projections to illustrate the range of possible situations and economic outcomes that could occur when circumstances are highly unpredictable.

The MPC **has regard to the efficiency and soundness of the financial system**, while recognising that in most instances prudential policy is better suited to leaning against risks to financial stability. ~~Monetary policy and prudential policy are coordinated to ensure that changes in one policy are taken into account when setting the other.~~ The RBNZ takes prudential policy settings into account when setting monetary policy, and vice versa.

Implementation of strategy

The MPC applies the following process when formulating a policy decision:

1. Firstly, it considers the outlook for the economy and its policy objectives. It then discusses risks to achieving its policy objectives.
2. Next, it deliberates about which stance of monetary policy is most consistent with its monetary policy strategy given the current economic outlook, risks, and trade-offs.
3. Finally, the MPC decides how it will achieve the desired stance of monetary policy, including whether or not to adjust its policy settings at the current meeting and how it will communicate the policy outlook. **The MPC has a suite of monetary tools (hyperlink) to achieve its goals, and it uses its Principles for Monetary Tools (hyperlink) to make decisions on which tools to deploy.**

BUDGET SENSITIVE

Date: 14 May 2021

To: Rebecca Williams (RBNZ)

Cc: Struan Little (Treasury)
Bryan Chapple (Treasury)
Angus Hawkins (Treasury)
Marea Sing (RBNZ)
Thomas Bohm (RBNZ)
Tom Stannard (RBNZ)
Lewis Kerr (RBNZ)

From: Suzie Harrison (Treasury)

This memo to the Reserve Bank of New Zealand (RBNZ) provides information relating to the Government's 2021 Budget.

We are sharing this in advance of Budget Day on 20 May due to the proximity of the Monetary Policy Statement on 26 May. This: (1) gives RBNZ staff advance notice of anything that could affect their forecast judgements; (2) supports more effective decision making by the MPC and better coordination of monetary and fiscal policy; and (3) supports alignment between the policies communicated in the Budget and in the MPS the following week.

The Budget information shared is:

1. **Fiscal assumptions and judgements**
 - a) the profile of changes to operating and capital expenditure
 - b) major spending initiatives that could have an impact at the macroeconomic level i.e. the welfare package, housing acceleration fund and CRRF, and
 - c) a quarterly track government consumption, transfers, investment and the COVID-19 Response and Recovery Fund (CRRF).
2. **Fiscal impulse** – this section provides an aggregate summary of the final fiscal forecasts for Budget 2021 and their first-round economic impacts.
3. **Other items requested** including house price forecasts and government consumption.

This information is classified as BUDGET SENSITIVE and should be treated as such. Only RBNZ staff named in this memo should access this information and all staff must sign and return the confidentiality undertaking in the annex of this memo.

BUDGET SENSITIVE

1. FISCAL ASSUMPTIONS AND JUDGEMENTS

Table 1 below provides the change in the profile of government spending since the Half Year Economic Update (HYEFU) as per our final Budget 2021 fiscal forecasts. This differs to the fiscal inputs used in our economic forecasts since these were finalised at an earlier date. However, we do not expect the differences between these inputs to have a material impact on the economic outlook.

Table 1: Profile of change in Government spending since HYEFU

| \$millions | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 5-year total |
|---|---------|---------|---------|---------|---------|--------------|
| Changes to budget allowances | | | | | | |
| Change to operating allowances | 263 | 1,378 | 1,406 | 1,208 | 832 | 5,087 |
| Change to capital allowances | 17 | 1,225 | 383 | 930 | 874 | 3,428 |
| Other policies | | | | | | |
| Unallocated CRRF | (493) | 2,407 | 731 | 399 | 303 | 3,347 |
| Net change | (214) | 5,010 | 2,520 | 2,537 | 2,009 | 11,861 |
| Included as part of the CRRF allocation: | | | | | | |
| Housing acceleration fund | - | 1,075 | 954 | 920 | 851 | 3,800 |
| Included within operating allowances: | | | | | | |
| Welfare package (net) | - | 639 | 1,026 | 1,021 | 989 | 3,675 |

- Operating Allowances** – The final fiscal forecasts include higher than previously forecast operating allowances of \$3.8 billion for Budget 2021 and \$2.7 billion for Budget 2022 through to Budget 2024 (previously \$2.625 billion for all four years).¹ Our economic forecasts assume that the budget operating allowances impact government consumption (with the exception of the welfare package discussed below).
- Welfare Package** – a portion of the increase in operating allowances will be spent on the Welfare Package. Our economic forecasts assume the welfare package impacts the economy through its impact on household incomes, which supports private consumption. We have therefore removed the funds allocated to the Welfare Package from government consumption and treated them as transfers to households with spending ultimately showing up in private consumption.

¹ Note, this differs to the operating allowance assumptions used in the economic forecasts. The economic forecasts used slightly total spending across the forecast period.

BUDGET SENSITIVE

- **Capital allowances** – The multi-year capital allowance for Budget 2021 to Budget 2024 is now \$12.0 billion (previously \$7.8 billion). The phasing of this top up in the fiscal forecasts is determined by when the capital expenditure is expected to occur. In general, the impact of new capital expenditure is phased over a number of years rather than being front loaded. This means that only \$3.4 billion of the \$4.2 billion increase in capital allowances is spent in the forecast period.² Our economic forecasts assume this spending boosts business investment (non-housing investment) and that part of the spending is crowded out, reducing the full impact of the higher capital allowances on business investment.
- **Housing Acceleration Fund (HAF)** – a portion of the CRRF has been reallocated to the HAF. The funding for the HAF can be broadly split into two categories:
 1. \$2.3 billion for Large Scale Projects. This provides funding for Kāinga Ora to lead the delivery of several large-scale projects in Auckland (Roskill, Māngere, Tāmaki, Northcote and Oranga) and Eastern Porirua. The funding would be used to invest in roading, water infrastructure and land remediation works.
 2. \$1.5 billion for Infrastructure on Crown owned and non-Crown owned land. This is contestable funding available to be sought to provide infrastructure to unlock land for housing developments, and directly overcome funding and financing constraints faced by councils and other infrastructure providers. Our economic forecasts assume this spending will be used for business (non-housing) investment.
- **Remaining CRRF funds** – the \$5.1 billion unallocated CRRF has been included in both the economic and fiscal forecasts. It is assumed this will be used either in the event of a COVID-19 resurgence or for recovery purposes. The fiscal forecasts assume the CRRF is spent in full by the end of the forecast period with no top down adjustments. This differs slightly to the CRRF profile used in the economic forecasts – see Table 2 in the attached spreadsheet for more information.³

These policy changes flow through to the fiscal inputs into our economic forecasts as per Table 3 of the attached spreadsheet. Note, these quarterly profile as based on slightly different spending as per the caveats above.

² Note, this phasing differs slightly to the phasing used in the economic forecasts, which assumes that only \$2.3 billion of the increased capital was spent in the forecast period. This difference is because we had further information on likely capital expenditure when the fiscals were finalised.

³ The economic forecasts include a small top-down adjustment to CRRF spending. The change in judgement regarding top-down adjustments reflects that we had further information on the use of the CRRF when fiscal forecasts were finalised.

BUDGET SENSITIVE

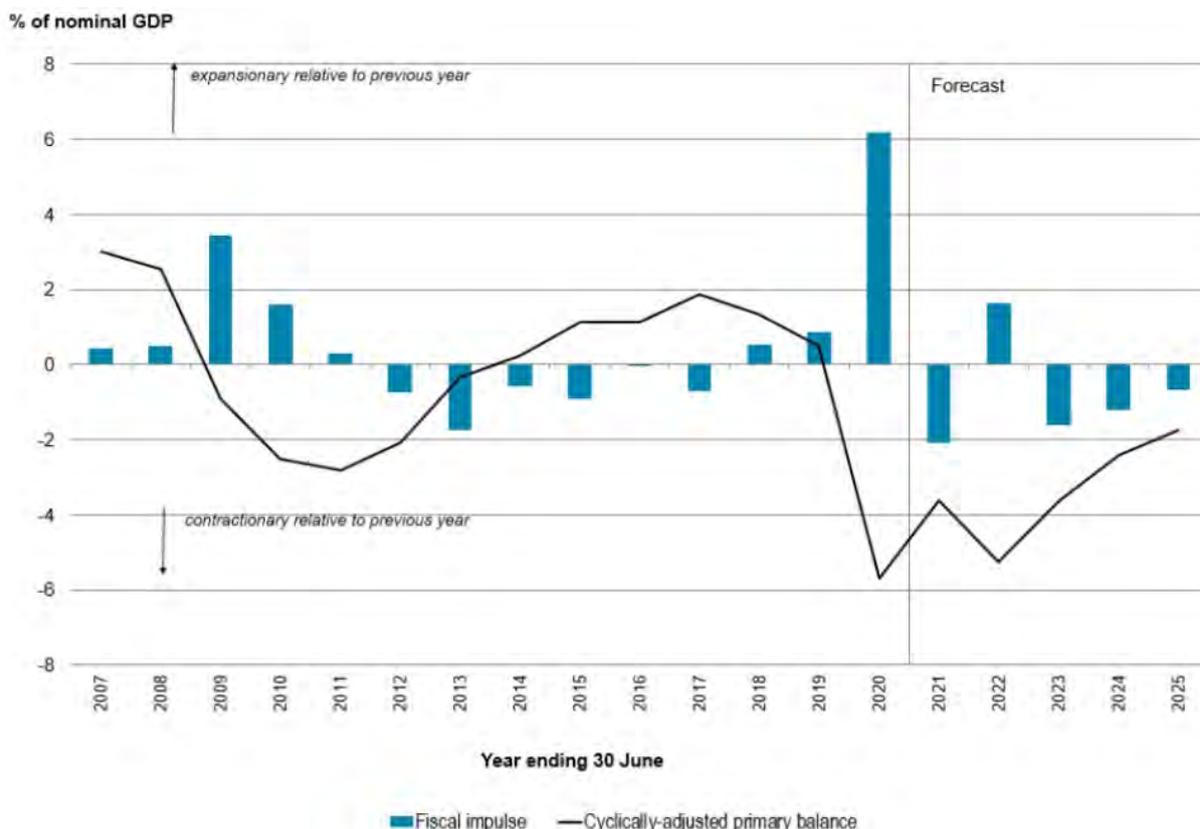
2. FISCAL IMPULSE

The fiscal impulse provides an estimate of how much discretionary fiscal policy decisions in that year are adding to, or subtracting from, aggregate demand in the economy. It illustrates the change in magnitude of fiscal support from the previous year.⁴ It does not estimate the economic impact of that support – which will vary depending on factors including the composition of spending.

Overall, compared to HYEPU, the economic forecasts reflect higher fiscal spending, which leads to a stronger fiscal impulse. The fiscal impulse shown above becomes negative in 2020/21 and remains negative over most of the forecast period. A negative fiscal impulse indicates that fiscal support is estimated to have a contractionary impact on aggregate demand relative to the previous year, reflecting the gradual withdrawal of COVID-19 fiscal support measures. A large amount of expenditure (both operating and capital) which has shifted from the 2021 fiscal year into 2022 drives the positive fiscal impulse estimate in 2022.

The fiscal impulse is principally driven by changes in COVID-19 support expenditure and should be considered alongside the overall level of fiscal spending for a more complete view of the magnitude of fiscal support.

Figure 1: Fiscal impulse and cyclically-adjusted primary balance



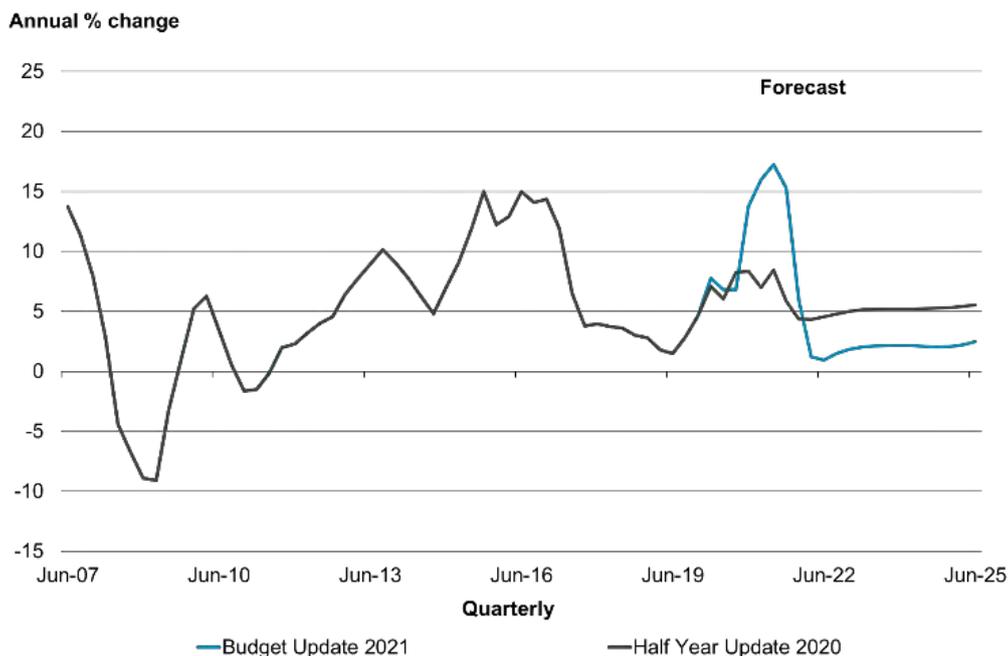
⁴ The fiscal impulse is the change in the government’s cash balance, adjusted for the position of the economy and some expenditure items that do not directly affect domestic demand. This is referred to as the cyclically-adjusted primary balance. As this is a cash measure, it differs from OBEAL.

BUDGET SENSITIVE

3. OTHER ITEMS

- **Real and nominal government consumption** – see Table 5 of the attached spreadsheet.
- **House prices** – Table 6 of the attached spreadsheet and Figure 2 below provide our house price forecasts. The Government announced three housing-related policy changes on 23 March. The overall impact of this announcement on the housing market is uncertain and depends on various factors, including the final design of the policies. We forecast that house price growth will continue, but at a significantly reduced rate compared to a scenario without the policy change.

Figure 2: House Price Forecasts



- **CRRF profile** – It is difficult to provide an accurate profile of the expenditure included in the fiscal forecasts that has already been funded from the CRRF, as a large number of these decisions provided top-ups to existing appropriations that already had significant levels of baseline funding (e.g. appropriations that fund core government services in health or education). This means the funding source of specific amounts is not easily identifiable.
- **NZ Upgrade programme** – Around \$900 million per annum is expected to be spent on projects funded from the NZ Upgrade programme over the next 4 years. It is expected that a portion of the funding for some of the NZUP programme projects will fall outside of our forecast period

CONFIDENTIALITY UNDERTAKING**Budget 2021: Reserve Bank of New Zealand Budget Information shared on 14 May****Background**

This attestation applies to the Budget information shared with the Reserve Bank of New Zealand (RBNZ) on 14 May. This has been shared in advance of Budget day on 20 May due to the proximity of the Monetary Policy Statement on 26 May. This (1) gives RBNZ staff advance notice of anything that could affect their forecast judgements; (2) supports more effective decision making by the Monetary Policy Committee and better coordination of monetary and fiscal policy; and (3) supports alignment between the policies communicated in Budget and in the MPS the following week.

Undertaking

By signing below, I:

- a) acknowledge the information I will be provided access to by the Treasury is classified **BUDGET-SENSITIVE**⁵ and would ordinarily not be shared outside of the Treasury; and
- b) undertake not to share the Information with my home organisation or company (other than individuals involved in this process who have signed this undertaking) or with any person who is not Treasury staff (unless I have the express written consent of the Treasury, or required by law); and
- c) undertake to keep secure and confidential any information that the Treasury allows me to access, in line with my company or home organisation's information security policies; and
- d) acknowledge that a breach of this undertaking may result in the Treasury making a formal complaint to my home organisation, and/or me and/or my home organisation not receiving Budget information in the future.

Signed:

Name: _____

RESERVE BANK OF NEW ZEALAND

Date: _____

⁵ The information shared is classified as BUDGET-SENSITIVE and should be protected because disclosure could seriously damage the economy by prematurely disclosing decisions to change or continue Government economic or financial policies, and/or impede a Minister and/or department in carrying out negotiations. See Protective Security Requirements for more information. <https://protectivesecurity.govt.nz/information-security/classification-system-and-handling-requirements/classification-system/overview/>

STRICTLY CONFIDENTIAL TO RECIPIENTS
13 MAY 2021

Paper 4

How much stimulus is needed?

Forecasting team

Authors: Tom Stannard and Marea Sing

SUMMARY

Relative to the baseline scenario in the February MPS, New Zealand's economic outlook is slightly improved over the forecast horizon. This largely reflects improved expectations for global growth and interest rates, and continued strong demand for New Zealand's goods exports, particularly from China. The increasing export prices relative to import prices result in significantly higher terms of trade.

However, domestic conditions are mixed. On the upside, the business outlook has improved through robust global demand for goods, strong housing activity, and higher labour incomes than expected. As businesses feel more confident about the demand outlook, they are expected to increase investment more than previously anticipated. On the downside, house price inflation is expected to moderate following the Government's housing policy changes. This, along with an easing of pent-up demand from COVID-19 lockdowns, weighs on domestic consumption. Finally, we assume less stimulus from Government investment spending, adjusting assumptions made in previous projections.

Regarding our employment and inflation objectives, the labour market again surprised to the upside. The unemployment rate fell to 4.7 percent in the first quarter of 2021 against expectations of slight rise. In line with this, we now do not expect any further deterioration in the labour market. Supply chain disruptions and pressure from the housing market continue to lift inflation in the near term, but these are assumed to dissipate over the medium term.

Overall, we forecast an unconstrained OCR track similar to the baseline scenario in the February MPS, reaching a trough of -0.64 percent in Q4 2021. This suggests that continued accommodative monetary policy will be needed to support New Zealand's economic recovery and to meet our medium-term inflation and employment objectives.

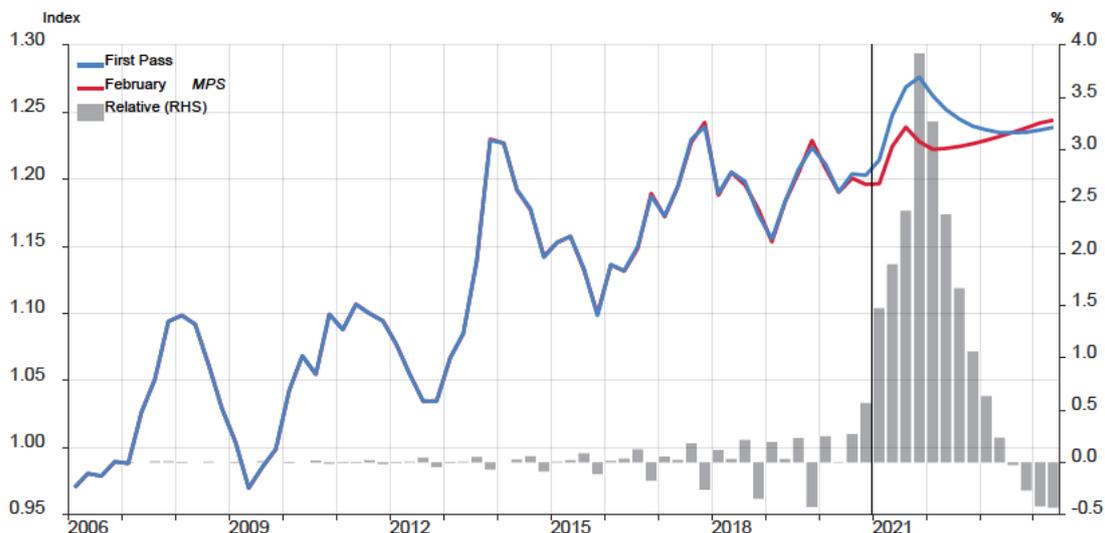
In addition, we have formed a view on an implied constrained OCR track. If we leave our current forward view on the level of stimulus gained from the LSAPs and FLP unchanged, the required constrained OCR would fall from its current rate of 0.25 percent to 0.11 percent by the end of 2021 before rising to 2.2 percent by the end of the forecast horizon.

KEY DEVELOPMENTS

World outlook is improved, with higher commodity prices, global growth, and interest rate expectations

- **Expectations for global growth have improved significantly since the February MPS.** Key trading partners have enacted and are largely on track with vaccination programmes, raising the outlook for global growth and interest rates (see *paper 3.1: International economic and financial markets developments*). There is potential upside risk to global growth if countries continue to increase fiscal stimulus programmes as seen in the US in March.
- **Global commodity prices have increased strongly** since the February MPS, supporting New Zealand's export prices. Whole milk powder prices rose 21 percent early in March and have remained elevated.
- **Import prices have ticked up with an increase in oil prices.** Near-term supply-chain disruptions have also temporarily increased freight costs and reduced availability of imported goods (see *paper 3.2: Supply focus: supply chains and labour market risks*). Medium-term imported inflation pressures in our key trading partners are expected to be contained as global spare capacity lingers. Supply chains are also assumed to catch-up with back-orders over 2022.
- **Higher export prices relative to import prices sees a higher terms of trade** (figure 1), although an elevated TWI provides a partial offset.

Figure 1: Terms of Trade



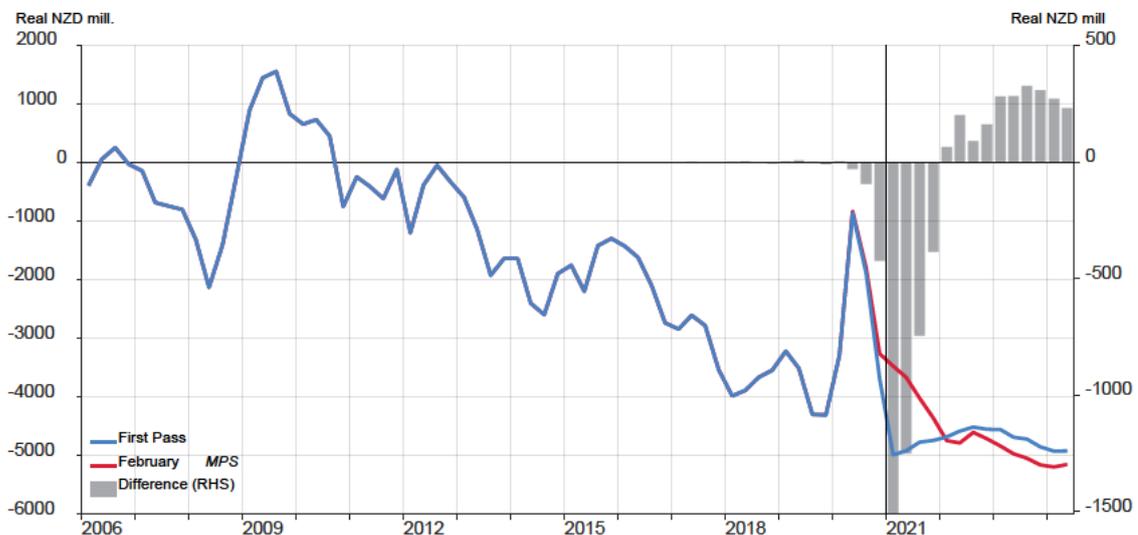
Domestic conditions are mixed, easing in the near term but remaining resilient

- **Import volumes have bounced back significantly more than expected despite global supply chain disruptions.** In Q4 2020 imports rebounded more than expected in the February MPS. This follows significantly subdued import volumes in recent quarters also reflecting a limited appetite of businesses to invest. High global demand for goods has also constrained the ability of some importers to replenish stocks, particularly for consumable and

durable goods. The strong rebound in import volumes has been particularly pronounced for capital goods. This strength is expected to continue through 2021 before normalising into 2022.

- **Export volumes have been stronger than expected.** Commodity goods exports have continued to be supported by global demand. Recent trade tensions between China and other nations may benefit other goods exports such as forestry products.
- In addition, the quarantine-free travel agreement ('travel bubble', operational on 19 April) between Australia and New Zealand is expected to be a net positive for New Zealand's GDP. While we expect both exports and imports of travel services to increase, we expect exports to outweigh imports. Early indications from timely data are consistent with this current expectation (see paper 3.1: International economic and financial markets developments).
- Our outlook, when considering the impact of the travel bubble, for both exports and imports of services remains conservative. We assume that the "flyer beware" policy, recent disruptions in some Australian states caused by outbreaks, together with an only gradual increase in the availability of international air transport, will result in a slow uptake of travel opportunities.
- **Overall, net exports weighs on expenditure GDP through 2021** reflecting an increase in the imported component of spending in the near term (figure 2).

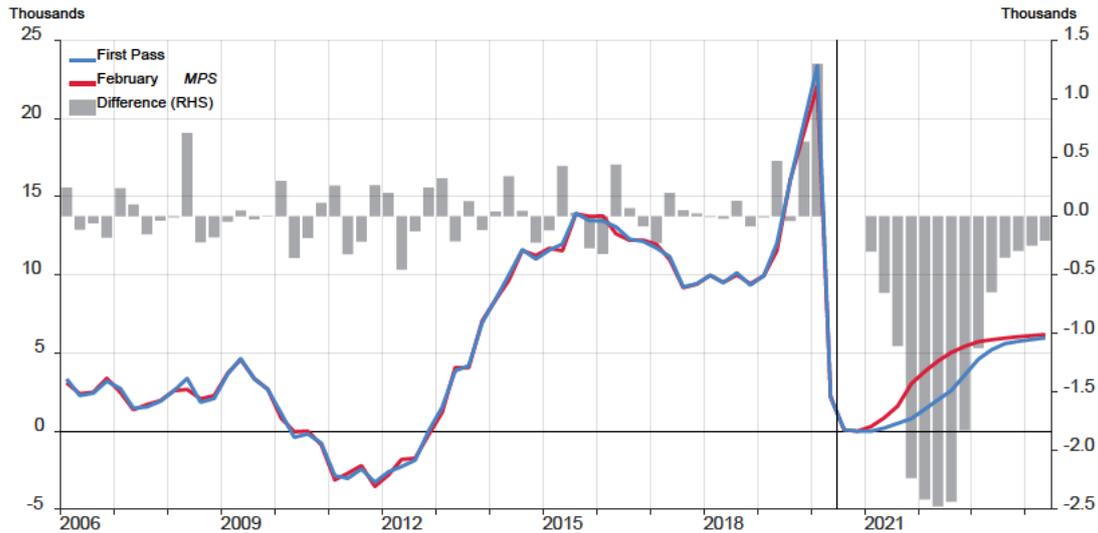
Figure 2: Net exports weigh on GDP



- **Our outlook for migration is lower**, partially reflecting an updated view on the border reopening profile (figure 3). In the near term, we expect a lower level of net migration to New Zealand, close to zero. On the downside, the travel bubble may result in downward pressure as large projects in Australia (particularly in construction) attract workers from New Zealand, consistent with historical trends. On the upside, labour markets are tight in both countries and there is still demand for workers and students domestically which could provide offsetting upward pressure.

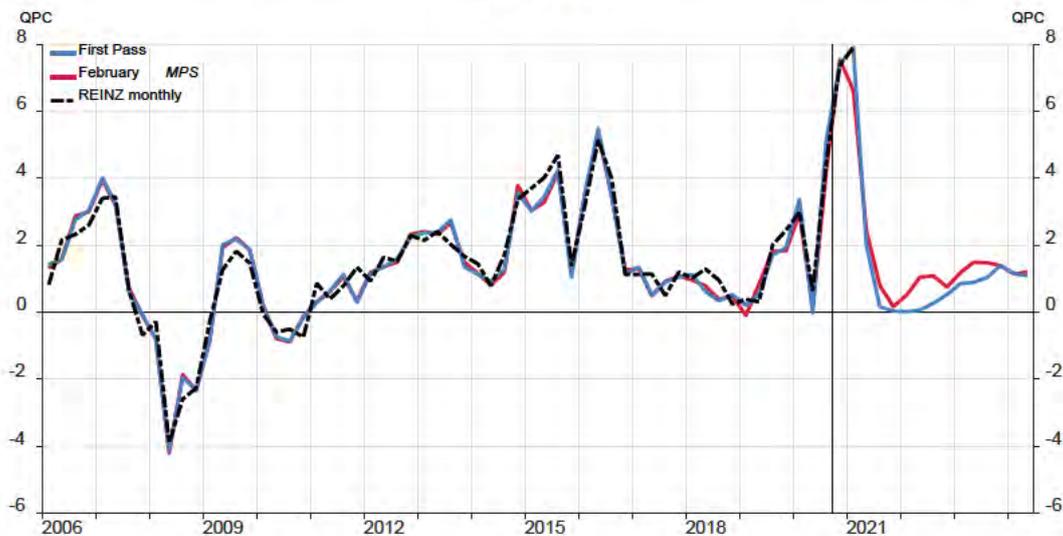
- **We have factored in a more sequential border opening** as it relates to migration over the medium term. This is in line with an updated view of the global vaccination campaign and health outcomes. We now think New Zealand is more likely to open up to developed countries faster than emerging countries as COVID-19 health outcomes and vaccination rates diverge (see *paper 1: Where are we relative to our economic objectives?*). We retain our assumption that border restrictions will ease for many developed countries at the start of 2022, followed by more general easing beginning at the end of 2022.

Figure 3: Migration recovery more gradual, on sequential border opening



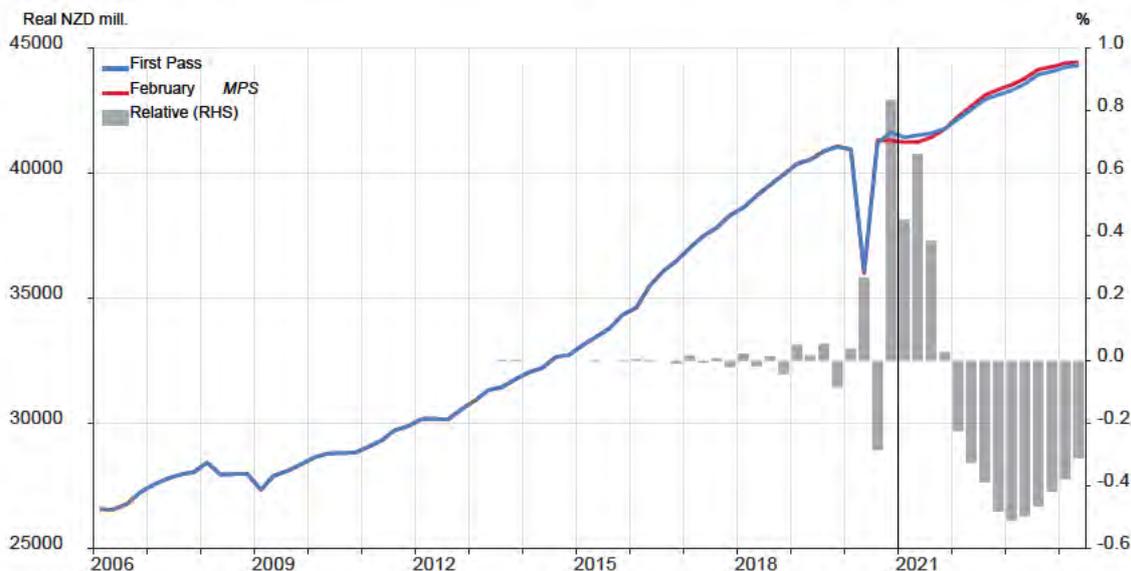
- **The Government's announced housing policy will weigh on house price growth.** This is especially the case for tax changes for investors in the housing market (see [box A: Housing announcement](#)). In light of these developments, we expect a significant cooling off in the housing market as participation in the market by property investors declines. We expect no house price growth from the middle of 2021 through to the middle of 2022 before a gradual recovery. This recovery remains moderate by historical standards, reflecting the structural nature of the recent changes, as well as lower population growth and continued strong levels of building (figure 4).

Figure 4: Previous strong house price growth eases on Government policy changes



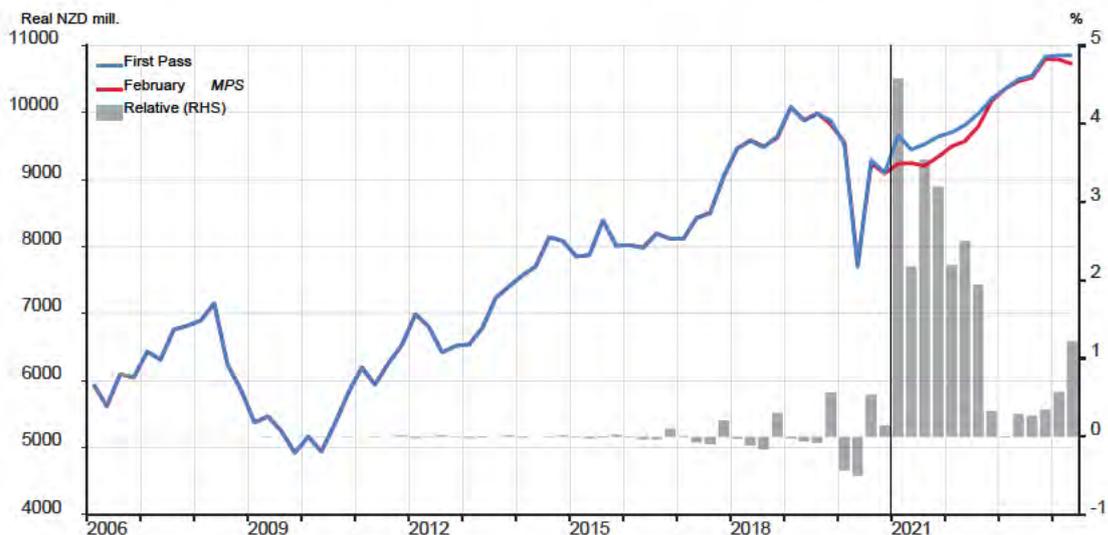
- **Residential investment is set to remain elevated as a large number of consented projects are completed.** The construction sector has remained significantly resource constrained, with building consent levels implying a significant backlog and pipeline (see *BIC summary paper*). Demand is expected to remain high for the residential housing construction sector. This demand is supported by accommodative monetary policy, demand for new builds from property investors (via the expected tax change exemption) and the Government's land use and infrastructure supply measures.
- **Consumption spending** has been resilient, rising to above pre-COVID-19 levels late in 2020. This resilience has reflected pent-up demand and more people in the country due to closed borders through the middle to late of last year. In the near term, domestic consumption expenditure is expected to soften as some pent-up demand comes to an end (figure 5). Over the medium term, it will be supported by higher expected labour incomes reflecting the much more resilient labour market. However, higher household incomes will be outweighed by flat house price growth, and consumption spending substituting back towards tourism imports as the border is reopened.

Figure 5: Consumption slightly weaker but from a higher base



- The near-term **outlook for business investment is stronger than expected in the February MPS**. This outlook is supported by an elevated terms of trade and improving business sentiment (see *paper 3.4: Business developments*). In the near term, this in line with upwardly revised import volumes, such as capital goods (figure 6). Over the medium term, the increased terms of trade and some reduced crowding-out by government investment further supports business investment levels. However, since uncertainty will continue to weigh on investment more generally, we only expect business investment to reach pre-COVID-19 levels until late in 2022.

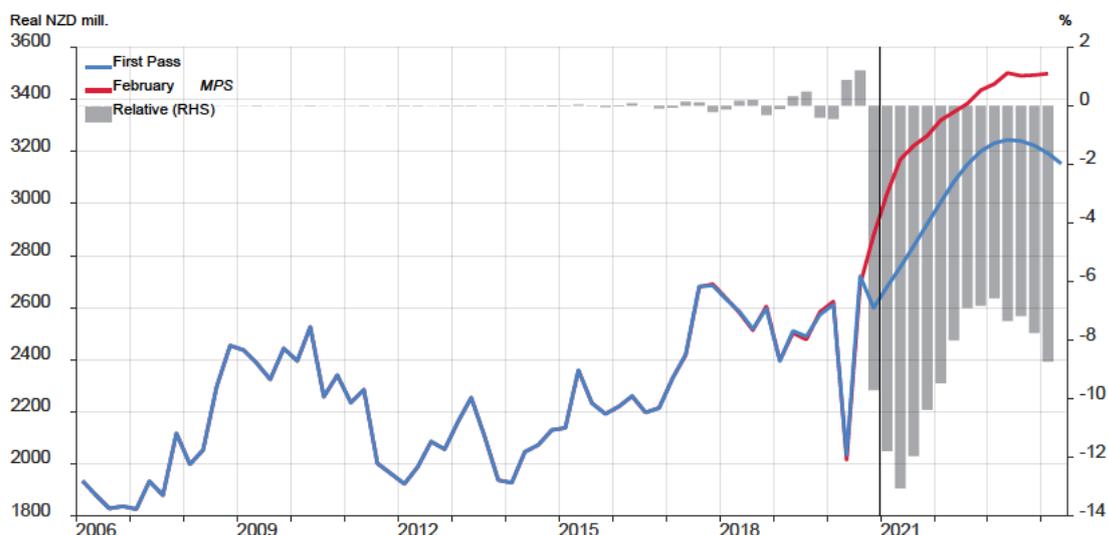
Figure 6: Business investment stronger over the forecast



- **Government investment has been revised down significantly**. It has become evident that Government investment is unlikely to pick up as much as we had anticipated on the back of significant infrastructure spending

announcements in 2019 and 2020. In part this appears to reflect that some of the planned projects are not strictly additional spending, and are instead able to be accommodated within ‘normal’ levels of capital spending as other projects tail off. In addition, some Government investment projects – earmarked as shovel-ready – have been delayed. When taking into account historical forecast errors in the Budget forecasts since mid-2000s compared to data outturns (see *paper 4.3G: Fiscal overview*), we have revised down our outlook for government investment (figure 7). The revision does not fundamentally deviate from the Government’s intention to ramp up investment. However, it does imply less ongoing stimulus from public investment over the projection.

Figure 7: Government investment assumed lower



GDP and potential growth modest in the near term, recover in the medium term

- **The level of GDP is expected to fall in Q1 2021**, reflecting some near-term moderation after the recent strong recovery. GDP is expected to recover back to previously-assumed levels by 2022. This reflects the strong demand for New Zealand’s goods exports and the travel bubble.
- **Potential growth has been revised down** while borders are closed. Potential output growth is expected to be low but positive (see [box B: Potential output – a cut but no significant scar](#)).

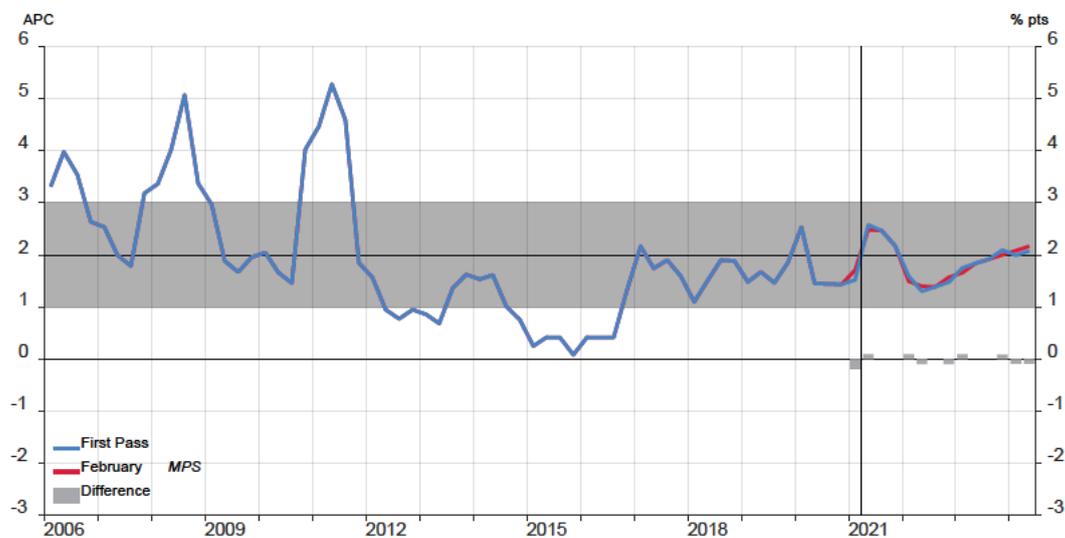
IMPACT ON OUR TARGET VARIABLES

- **Inflation increases towards 3 percent in the near term, and settles just above the midpoint over the medium term.** Inflation is expected to reach 2.6 percent in 2021 (figure 8). Tradables inflation is strong over the next few months due to rebounding oil prices and supply-chain disruptions. Non-tradables inflation is boosted by high price and cost momentum in the housing market, including construction cost growth. Price growth subsides into 2022 as goods supply-chain constraints unwind, oil prices moderate slightly, and slackening growth sees capacity pressures ease.
- **Risks are skewed to the upside for inflation over 2021 and 2022.** Emerging tradable and non-tradable cost pressure may spill over to higher headline

inflation than forecast. Pressures are building in non-tradables areas such as council rates, electricity and wages. Tradables pressure from imported input and transport costs may also persist longer than expected (see paper 3.2: Supply focus: supply chains and labour market risks).

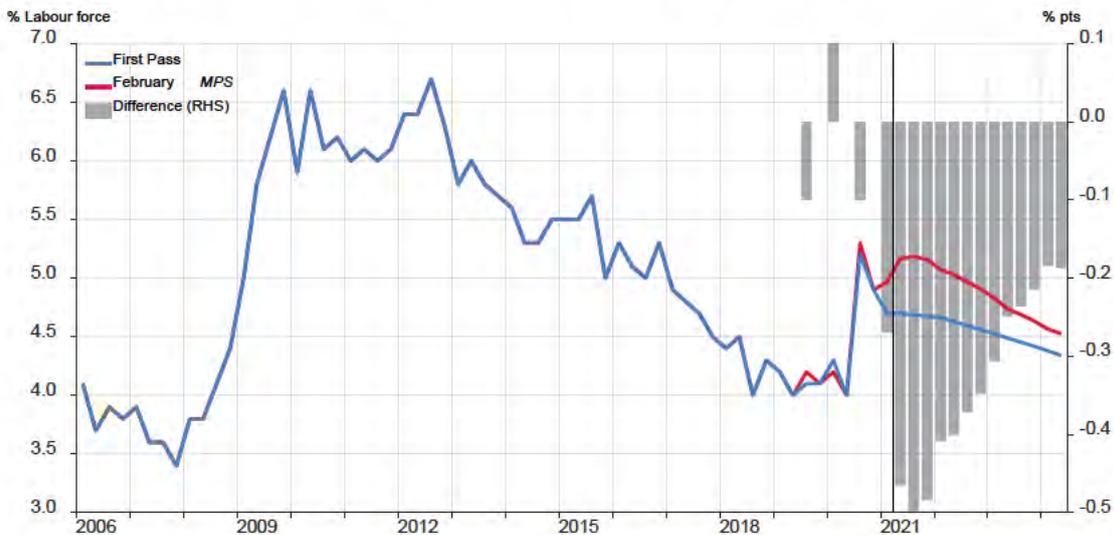
- **Inflation recovers over the second half of the projection horizon** as the output gap turns positive, driving non-tradables inflation higher. Borders open and exports of services recover. Higher inflation expectations help embed higher inflation. The unconstrained OCR remains low to allow for a slight overshoot in inflation above the midpoint of the target band at the end of the forecast horizon.

Figure 8: CPI inflation forecast



- **The labour market has been far more robust than anticipated.** Unemployment fell to 4.7 percent at the start of 2021 despite participation rising (see *paper 1: Where are we relative to our economic objectives?*). This reflects significant monetary stimulus and fiscal spending, as well as businesses prioritising holding on to labour through economic fluctuations. We have revised our view and do not expect any further increases in unemployment given the resilience we have seen in the market since the second half of 2020.
- **We assume some further improvement in the labour market.** Unemployment remains around 4.7 percent until restrictions start to ease and sectors of the economy more impacted by the COVID-19 related restrictions recover (figure 9). The unemployment rate trends towards 4.3 percent by the end of the forecast horizon. We have also revised down our estimate of the NAIRU, as the recent declines in unemployment have suggested that structural rigidities and redeployment in the labour market, while still a headwind, may be less binding than we previously expected. This is in line with data releases and business engagement conversations. Unemployment dips below the NAIRU towards the end of the forecast horizon, consistent with the MPC's 'least regrets' strategy.

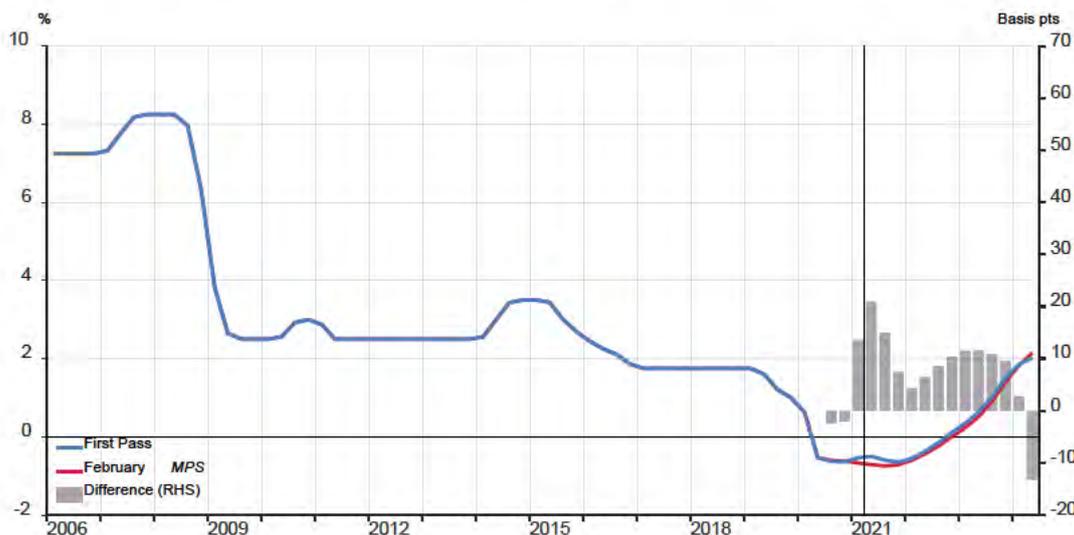
Figure 9: Further unemployment rate declines limited



POLICY OUTLOOK

- **The OCR track has been revised slightly up, but remains largely similar to the February MPS**, and now reaches a trough of -0.64 percent in Q4 2021 (figure 10). The upward revision to the OCR mainly reflects the more positive expectations for global interest rates as well as strong global demand and prices for our export commodities. This is almost fully offset, mainly by the weaker house price track and less government investment. Altogether, this has reduced the total monetary stimulus required.

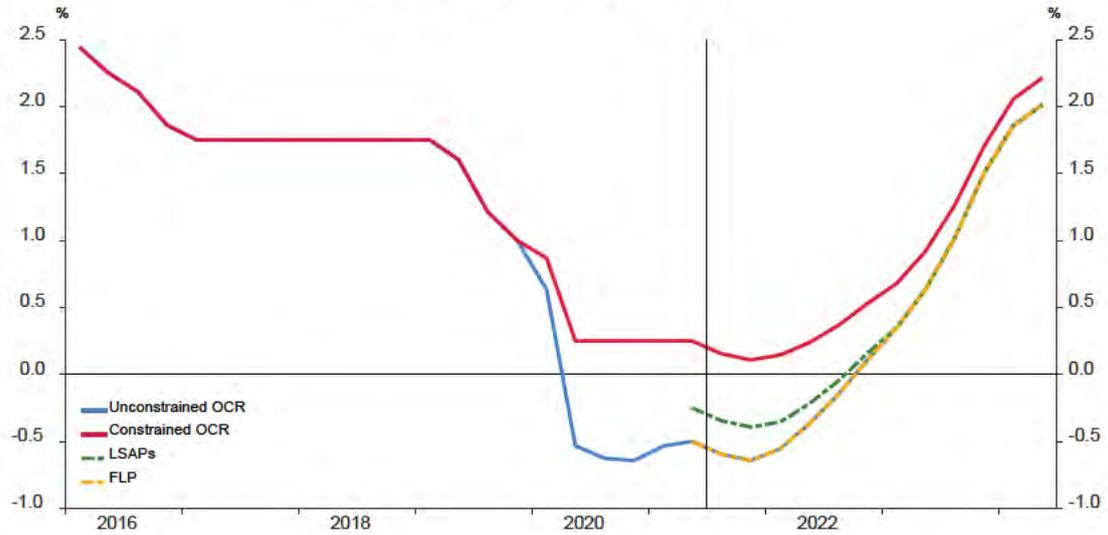
Figure 10: Unconstrained OCR tack, slightly upwardly revised



- We have also formed a view on what the unconstrained OCR track would imply for a constrained OCR over the forecast horizon (figure 11). This track is underpinned by assumptions relating to the amount of stimulus currently being provided by LSAPs and the FLP.

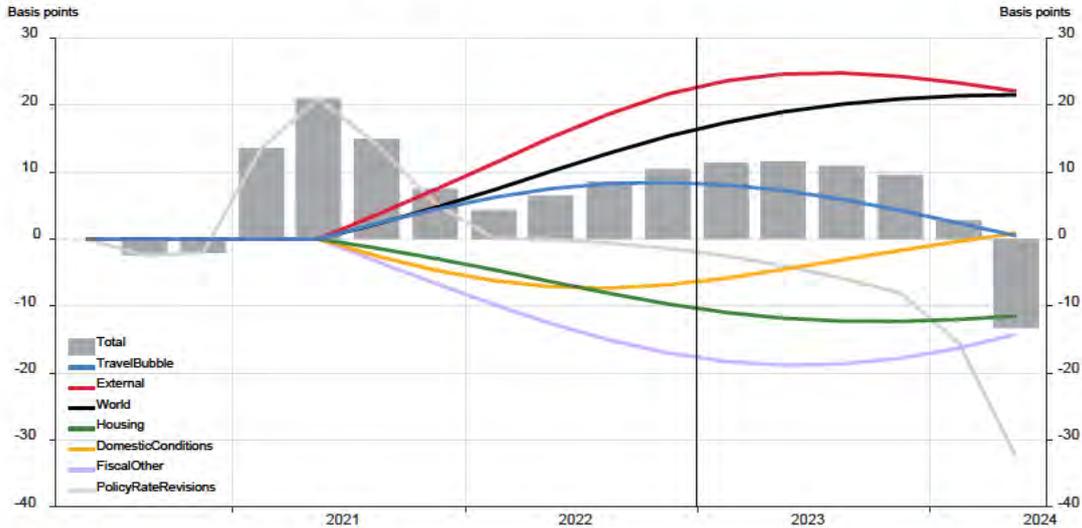
- The level of the unconstrained track implies a decline in the constrained OCR to 11 basis points in Q4 2021, when holding constant our forward view of the stimulus provided by LSAPs and the FLP. The estimated constrained OCR is projected to increase from Q4 2021, reaching 2.2 percent by the end of the forecast horizon.

Figure 11: Constrained OCR



APPENDIX

Figure 12: Reconciliation chart



Note: **'TravelBubble'** presents the assumed impact of the trans-Tasman travel bubble. **'External'** reflects the impact of significantly stronger dairy prices, lifting the terms of trade especially in the near term. **'World'** shows the impact of upwardly revised global growth and significantly higher future interest rates. **'Housing'** shows the downward revision made to the house price track following the introduction of the Government's new housing policy and the revisions made to the residential investment track. **'DomesticConditions'** captures the impact of weaker domestic economy outturns. **'FiscalOther'** shows an amendment to the government investment outlook, the impact of the change in the TWI not explained by other revisions to the outlook, a revision to potential output and a revised GDP deflator. **'PolicyRateRevisions'** captures the impact of an update to the starting point of the unconstrained OCR and an adjustment to the end of the forecast horizon, keeping inflation at target outside the forecast horizon.

BOX A: HOUSING ANNOUNCEMENT

On 23 March, the Government [announced](#) a suite of measures affecting the housing market. These have renewed attention on the outlook for house prices. We have made specific adjustments to our forecast to reflect the main demand-side measures: the removal of interest deductibility for investors¹ and the extension of the bright line test from 5 to 10 years.

The economic impacts of these measures are uncertain. Important details (such as possible exemptions for new builds) are yet to be confirmed and it is unclear how different participants in the housing market – which we consider to be heavily sentiment-driven – will react. What is clear is that the policies imposes a large new ‘cost’ on many investors. For an investor deducting interest based on a 70% LVR, full removal of the deduction would amount to an annual cost of 0.7% of the property value at current interest rates. This is significant in the context of gross rental yields in the range of 2 to 5 percent.²

The demand-side policies are expected to result in some combination of higher rents, lower house prices and lower expected returns for investors. However, the role of each of these adjustments is uncertain. Models capturing only investors’ perspective imply that their willingness to pay for a house could fall well in excess of 20% if rents and expected returns don’t change. More complete models that include owner-occupier demand and account for these other possible adjustments point to much lower impacts on house prices but upward pressure on rents.³ None of these approaches specifically account for the impact on sentiment or investors who are cash-constrained.

Given the high degree of uncertainty, we will tweak our house price forecasts as the impacts of the changes unfold. For now, we have slightly lowered our house price forecasts to account for likely weaker house price inflation. We assume that house prices will be about 3.5 percent lower than otherwise by late-2023 as a result of the policy. While our current forecasts don’t incorporate a fall in house prices, quarterly house price inflation is expected to be close to zero over the next year, and to recover gradually towards the rate of household income growth thereafter.

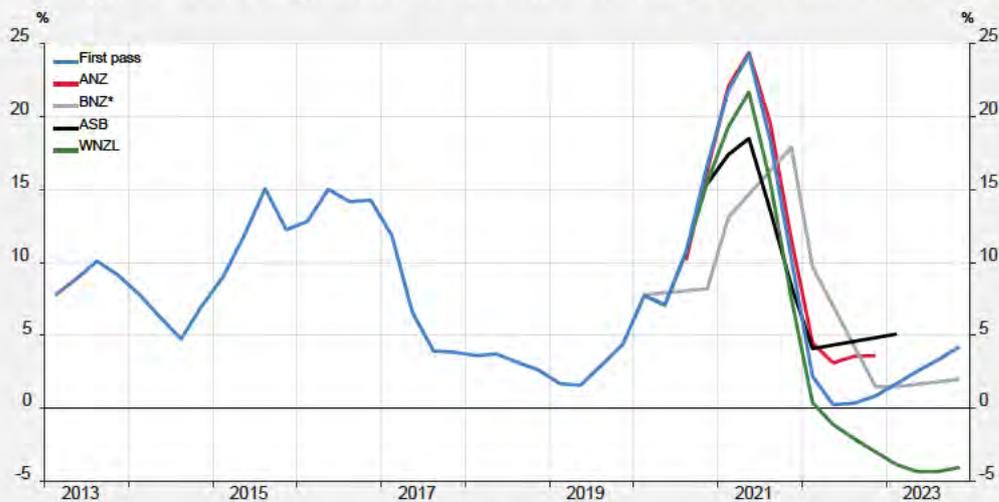
The 3.5 percent impact is at the conservative end of estimates (see table A1). However, our house price forecasts are ‘in the pack’ with those of other bank economists (figure A1). Our house price forecast already incorporated significant weakness from the tightening of LVRs, high levels of building, and low immigration. While there are some upside risks to our forecast, in particular more persistent momentum, there remains a material downside risk that the impact of the policy is larger than accounted for.

¹ For purchases after 27 March 2021, this will have effect from 1 October 2021. For earlier purchases, the policy will be phased in gradually over four years.

² Another perspective is that it is the equivalent of increasing interest rates for investors by 50% (e.g. 3% to 4.5%). Fully implemented, the cost could account for over 0.5% of aggregate household disposable income.

³ [Coleman and Scobie \(2009\)](#) estimate that removal 10% of the tax concession for landlords would reduce house prices by 0.6% and increase rents by 0.3% in the short term. The recent changes are plausibly equivalent to removing 100% of the tax concession.

Figure A1: Comparison of annual house price inflation forecasts



Note: BNZ's forecast appears to be an annual *average* percentage change. It is similar to the First pass projection when expressed in the same terms.

Table A1: Housing comments by bank

| | |
|----------------|---|
| ANZ | House price inflation to peak ~2% lower than previously. House prices 4-5% lower than previous forecasts by mid-2022. |
| ASB | House prices to be flat through the middle half of 2021. Their forecast revision implies house price would be around 8% lower than previously forecast by March 2022. |
| BNZ | House price inflation will all to near zero, at best, in the not too distant future |
| Westpac | Expect house prices to be 10% lower over the medium term. Forecasts have house prices gradually declining, by 13% by late-2028. |

The housing package will have broader impacts on our forecasts. Lower house price may dampen residential investment this may be offset by the exemptions to the policy, which distort investor demand towards new builds. In addition, the \$3.8 billion Housing Acceleration Fund may support government and residential investment towards the end of the forecast horizon and further subdue house price growth. The demand side policies are likely to lead to a lift in rent inflation too. No specific judgement has been made in our forecasts to account for these influences. However, they form part of the broader narrative that drives our forecasts.

BOX B: POTENTIAL OUTPUT – A CUT BUT NO SIGNIFICANT SCAR

In addition to impacting demand, the COVID-19 pandemic has affected the productive capacity and potential output of New Zealand's economy. Understanding these impacts can help us assess the degree to which economic activity will translate into inflationary pressures in the economy. This box outlines the expected supply-side implications of the pandemic and related restrictions on New Zealand's potential output over the forecast horizon. In our baseline forecast we assume that potential output has temporarily dropped due to lockdowns and border restrictions, but will return to pre-COVID-19 levels as borders are reopened.

Potential output is a concept used to represent the sustainable level of activity in the economy, in particular with unemployment at its natural rate. This is closely associated with non-accelerating inflation level of economic output in a country. It is influenced by a range of factors, including the economy's supply of labour and capital, as well as its total factor productivity.

Some of the impacts on potential output reflect that COVID-19 has meant New Zealand's total factor productivity has declined, as stocks of human and physical capital have become less well-matched to demand. COVID-19 has also disrupted accumulation of capital and firms' access to labour from abroad. Over the medium to longer term, there are concerns about economic scarring due to the impact of the pandemic on the factors of production, such as through changes to migration, labour market participation, the level of structural unemployment, and capital stock and investment.

Labour market impacts

There are pockets of labour with skills that are not well-suited to redeployment in other sectors. This pattern is expected to lift structural unemployment and the NAIRU over the near term and persist until border restrictions soften and international tourism returns. A higher NAIRU and ongoing labour shortages risk embedding wage growth at higher levels as firms bid for scarcer labour (see *paper 3.2: Supply focus: supply chains and labour market risks*). For example, employment in the tourism sector, which normally directly employs around 8.0% of the New Zealand labour force⁴, has fallen and stayed below pre-COVID-19 levels⁵. The proportion of workers moving to other sectors is not significantly larger than in pre-COVID-19 periods. Hence, the proportion of unemployed former tourism workers is still larger than in recent history.

The more stringent border restrictions and immigration policy are expected to lower growth of labour supply over the near to medium term. While the initial COVID-19-related decline in the participation rate has appeared to reverse over the near term, the more stringent border restrictions and immigration policy are expected to lower growth in the labour supply over the near to medium term.

⁴ Stats NZ (2020). *Tourism satellite account: Year ended March 2020*. Retrieved from www.stats.govt.nz.

⁵ Zheng (work-in-progress).

Adjustments to the capital stock and the rate of accumulation

COVID-19 has also meant some of New Zealand's capital stock cannot be as productively deployed as it once could (e.g. aircraft, hotels). This has reduced New Zealand's potential output given current demand patterns. Similarly to the labour market, this capital will eventually resume full productive use as border restrictions ease and international travel returns.

However, heightened uncertainty has caused New Zealand businesses to reduce their investment. The investment outlook has somewhat improved (see *paper 3.4: Business developments*), but investment is expected to remain subdued until late 2022 as the demand outlook for some parts of the economy remains highly uncertain. We do not assume any longer run impacts on the level or productive use of capital stock, beyond the impacts of subdued investment in the near to medium term.

What does this imply for potential and the output gap over the forecast?

We have lowered the starting point for potential and have it slowly returning to pre-COVID-19 levels as border restrictions relax (see figure B1). This is largely represented as a fall in total factor productivity (see figure B2), which assumes that while labour and capital availability have not declined, they cannot be fully utilised. Both capital and labour contributions to potential output decline over the near term. However, while capital contributions return to around pre-COVID-19 levels, labour remains slightly weaker mainly due to a lower migration assumption.

Figure B1: A new view on potential output

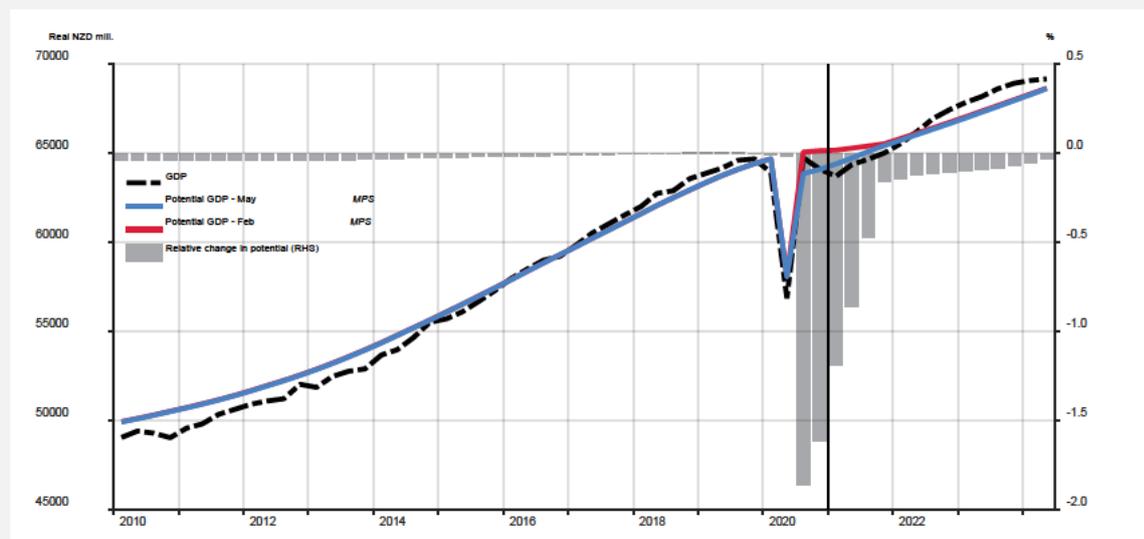
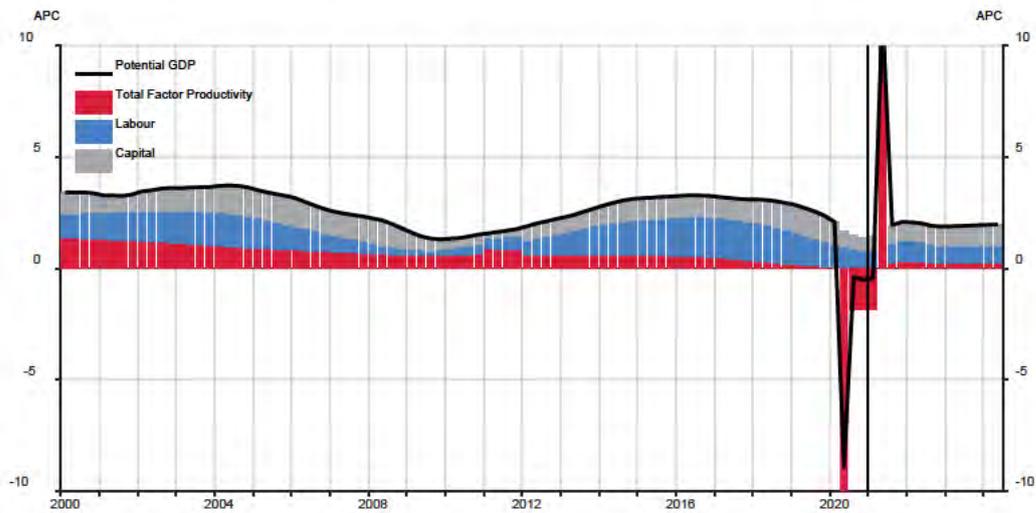


Figure B2: The evolution of potential output



To calibrate the level of potential output, we rely on the output gap indicator suite (OGIS). The change to our potential output view causes a larger deviation from the OGIS suite in the September 2020 quarter, but more accurately represents our understanding of the supply-side shocks that have recently been impacting the economy. In the most recent period, we discount the non-labour indicator slightly more to account for the impact of temporary supply chain disruptions on QSBO indicators. Nevertheless, the most recent OGIS outcomes may suggest a slower recovery in potential output, and therefore a marginally smaller output gap over the near term (see figure B3).

Figure B3: The output gap and OGIS indicators

