Reserve Bank of New Zealand
Te Pūtea Matua

11 March 2026 ref: OIA2526_149

Michael Reddell
By email: mhreddell@gmail.com

Tēnā koe Michael

Information about background papers to Feb and May 2021 MPSs

Thank you for your 11 February 2026 request under the Official Information Act 1982 (OIA), for:

> *I am writing to request copies of all papers submitted to the Monetary Policy Committee relating to and/or informing the forecasts and policy decisions/analysis reported in the February and May 2021 MPSs.*

Response

Please find attached the Documents within the scope of your request.

Information provided to you is subject to following section/sections of the OIA:

- section 9(2)(a), to protect personal privacy; *and*
- section 9(2)(b)(ii), as making available that information would likely unreasonably prejudice the commercial position of the person who supplied or who is the subject of that information; *and*
- section 9(2)(ba)(i), as making available that information would likely prejudice the supply of similar information, or information from the same source, and it is in the public interest that such information should continue to be supplied; *and*
- section 9(2)(g)(i), to maintain the effective conduct of public affairs through the free and frank expression of opinions of officials in the course of their duty.

In making the above decisions, the RBNZ has considered the public interest considerations that may outweigh the reasons for refusal, in accordance with section 9(1) of the OIA.

We would like to take this opportunity to remind you of the Reserve Bank's review of the period 2017 to 2022, available at Review and Assessment of the Formulation and Implementation of Monetary Policy (RAFIMP) - Reserve Bank of New Zealand - Te Pūtea Matua. This was externally reviewed by two international experts, whose feedback is available here Peer reviews - Reserve Bank of New Zealand - Te Pūtea Matua. The RAFIMP identified nine areas for improvement, which

have led into an extensive work programme. A summary of this work can be found here Bulletin: Our response to the 2022 monetary policy review.

This response may be published on the RBNZ website during our regular publication cycle. Typically, information is released monthly, or as otherwise determined. If we publish this response, your name and contact details will be removed before publication.

We encourage you to raise any concerns you have about this response with the RBNZ directly. Alternatively, you have the right to seek an investigation and review of this response from the Office of the Ombudsman. Information about how to make a complaint is publicly available, at www.ombudsman.parliament.nz or freephone 0800 802 602.

Nāku noa, nā

Rebecca Williams
Senior Manager Economics

MEMORANDUM FOR	MPC
FROM	Forecasting Team
DATE	13 May 2021
SUBJECT	**Business meetings summary**
FOR YOUR	Information

Purpose

- This note summarises responses from our round of business meetings in late April/beginning of May 2021.
- These meetings were held virtually and aimed towards businesses and industries that could give the most detail about the ongoing impacts of COVID-19 and the state of the New Zealand economy.

Key points

- Activity and demand for some businesses like large retailers and construction continue to perform better than expected, while, for other sectors it has been mixed.

- Tourism operators are highly optimistic about the travel bubble but the net effect of the bubble remains uncertain.

- Many firms are struggling to find skilled and unskilled workers reflecting the tight labour market. The lack of sufficient labour supply is a substantial constraint on growth for many businesses. Shortages are expected to persist at least until borders restrictions ease more broadly. Many firms expect the labour scarcities will lift salaries and wages.

- The strong rebound in global goods demand together with COVID-19 restrictions caused shortages of containers in the ports they were needed and ships, plus congestion in ports globally. This created massive delays in global supply chains resulting in shortages in many materials and goods in New Zealand and is hampering export capacity.

- Firms are facing rising costs from heightened shipping expenses, wage growth (including the minimum wage increase), electricity prices, and rate hikes which are squeezing their margins.

- Businesses plan to pass on some of their increased costs by raising prices. 9(2)(ba)(i) [redacted]

- Uncertainty remains elevated leaving business investment still below pre-COVID-19 levels. However, some businesses reported that they will resume investment at pre-COVID-19 levels over the near-term.

Activity is mixed across the economy and there is uncertainty about the outcomes of the trans-Tasman bubble.

Domestic activity and demand especially in construction, retail, and other goods producing industries, is strong. Businesses were generally more positive about the outlook for this year. However, labour and material shortages continue to constrain growth in some of these stronger industries.

Construction activity remains red hot

9(2)(ba)(i) trong demand has meant that despite cost pressures, profitability in the industry remains good. Commercial construction is also strong, 9(2)(ba)(i) multi-week delays. Similarly, getting inspections for a Code of Compliance is troublesome.

Retail activity is holding up better than expected

9(2)(ba)(i) here has been solid growth in online sales, especially among older people who became comfortable with online shopping during lockdown. There is some uncertainty over the next quarter; unexpected lockdowns being the main vulnerability for retailers.

Some firms in the manufacturing industry are struggling

Some signs of difficulties in the manufacturing sector are beginning to emerge. 9(2)(ba)(i)

Uncertainty around the trans-Tasman bubble

Tourism operators are optimistic about the bubble's outcome. Bookings are good for June and July and trip lengths are longer than average. 9(2)(ba)(i) Looking ahead, tourism providers also feel New Zealand is in a favourable position since tourists are expected to prefer less busy travel destinations as the world reopens.

9(2)(ba)(i)

9(2)(ba)(i) [redacted]

The labour market is tight

Some businesses reported it as one of the tightest labour markets in years. Even regional areas are experiencing higher demand since firms now have the option to employ people who will work remotely on a permanent basis. Shortages in labour supply is especially acute among skilled workers. Some firms are turning part-time and fixed-term employees into full-time workers to retain staff.

There are labour shortages across many sectors

9(2)(ba)(i) [redacted] Until vaccination programmes domestically and internationally gain traction to allowing freer borders flows this story is likely to persist. IT and tech support have similar shortages in skilled workers. Remote working is putting pressure on tech support and legacy IT systems are struggling. 9(2)(ba)(i) [redacted]

Wage inflation is expected to be higher than usual. Firms noted the severe skill shortages and concerns around staff retention were generating pressure to increase wages, some expecting a 1-2 percentage point higher annual growth. Construction firms said there were a number of large salary increases for more senior staff who were getting poached to join a different firm. The minimum wage increase in April adds to wage pressures in the tight market.

Global supply chains are under pressure

Supply chains are strained domestically through ports and globally through container shortages and shipping delays. International trade resurgence has caused shipping costs to spike, in some instances up to six times the pre-COVID-19 cost.

Sea freight is experiencing substantial delays

Sea freight has a myriad of issues compounding in substantial delays. There is a global shortage of containers, with shortages of containers at key ports and empty containers in the wrong locations. 9(2)(ba)(i) [redacted]
Container costs have tripled for some firms. Many ships had been taken out of the network in 2020 as owners took the opportunity to service them in the “downtime”, leaving fewer vessels having to transport more cargo.

Ports sometimes have week-long delays and are berthing ships as they arrive rather than per a normal schedule. These delays multiply and ships can be 50-60 days late arriving to New Zealand. 9(2)(ba)(i) [redacted] here are reports of ships avoiding New Zealand and Australia entirely, sticking to shorter, quicker routes. The Suez Canal closure has perpetuated the problems and the global bottleneck is not expected to ease until early/mid-2022. Airfreight has picked up some of the slack but at only 5% of global freight it does not have the capacity to cover sea freight’s deficit and its costs have also soared.

Supply chain constraints are creating goods shortages

These supply chain issues are creating shortages of goods and many materials in New Zealand. There are shortages across construction products, especially timber and steel. Some manufacturers are also having difficulty getting raw materials. Retailers are trying to ramp up their inventories where they can to cover the variability in supply.

Cost pressures are growing across the economy

Firms are facing rising costs in multiple areas. Increasing shipping costs and the cost of labour are weighing on many businesses. Materials that are in short supply for construction firms are getting more expensive. Construction costs are rising around 5% year-on-year. Increasing prices of electricity and rates in some areas are adding to the mix. Many of these costs disproportionally impact smaller firms who have less negotiating power. 9(2)(ba)(i) Timber export prices have held up, thanks in part to China's trade tensions with Australia which will help our exporters cover some of their increased costs. In addition, dairy prices have remained elevated from strong demand in Asia.

Growing costs increase pricing intentions

Many businesses have been forced to pass on some of their rising costs with price increases already or intend to do so soon. 9(2)(ba)(i)

Uncertainty continues to moderate investment

Global uncertainty continues to make businesses cautious to invest, as does the potential for future lockdowns. A number of firms are hesitant to take on more debt before their revenue streams are more stable. However, some businesses have started reported that they will resume investment at pre-COVID-19 levels over the near-term.

Explanatory note to the agenda
May 2021 round

This round the agenda is structured slightly differently. The goal of this change is to give the Committee opportunities to deliberate on each set of information while it's still fresh, rather than hold all the deliberations at the end of the process. The change also ensures all of the meetings in the process have clear objectives and protocols to ensure efficient use of time and expertise, in line with the MPC's operational protocols.

The first meetings on Wednesday and Thursday are dedicated spaces for MPC to explore divergences of views and avenues for consensus on their economic assessment and strategy, allowing some early guidance on messages for the Record of Meeting, and providing a clearer starting point for discussions in the formal decision meetings.

In line with the principles of good MPC deliberations

The agenda is designed to uphold the principle of 'inclusion of information' by clearly separating decision meetings from the information and deliberation meetings that come before them (see RBNZ *Bulletin* 2019, vol. 82, no. 1). This round's agenda strengthens this principle by creating dedicated space for deliberation on key matters while still keeping decision meetings separate at the end of the process.

High-level agenda overview

	Mon-Tue	Tue	Wed	Thu	Fri	Mon	Tue	Wed
	Staff present recent developments, issues, and risks	MPC + IMPACT deliberate on economic assessment, risks	MPC discuss economic projections and required stimulus MPC + IMPACT deliberate on strategy and trade-offs	MPC discuss range of views on strategy and trade-offs	MPC + IMPACT deliberate on tool calibration options	MPC discuss range of views on tool calibration	MPC discuss range of views on tool calibration (*Optional*)	MPC decide level and direction of policy instrument *MPS* release
Phase	**Information-pooling**	**MPC deliberations**				**MPC decisions**		
Staff role	Advise	Support				Not present		

EXTERNAL FORECAST COMPARISON

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

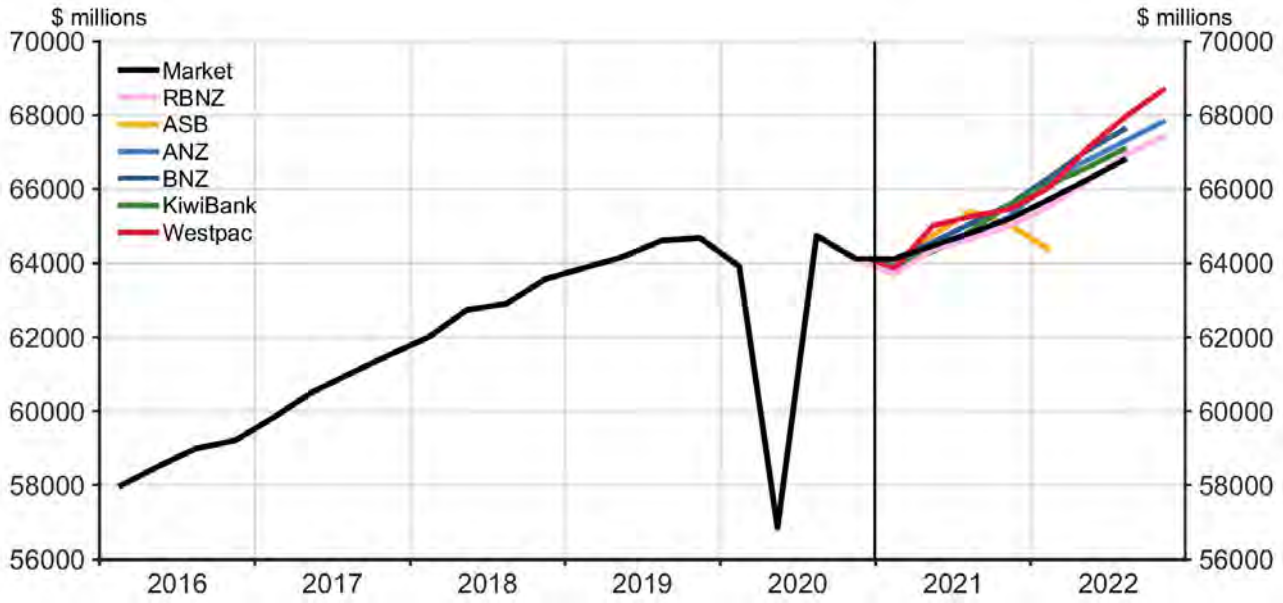
- The banks expect that New Zealand will record a technical recession in the March 2021 quarter, but growth is expected to recovery thereafter, and more rapidly than in the *First Pass* forecast.
- Labour market conditions are expected to improve over the next year, with unemployment expected to have peaked in the September quarter of last year. Over the medium term, unemployment is expected to recover much faster than the RBNZ's current expectations.
- All banks expect house prices to peak in the June 2021 quarter, with only Westpac currently projecting declining house prices.
- The banks all expect a transitory increase in headline CPI over 2021, in line with the *First Pass* forecast.
- Most banks expect a flat OCR track for 2021 before rising over 2022.

[**Note**: Private bank and Bloomberg market forecasts sourced on 12 May 2021 and reflect, by our knowledge, the most recent data available]

Economic outlook

- The private banks forecast a similar technical recession in 2021Q1, before - with the exception of ASB - recovering fairly strongly thereafter (figure 1). Their projections for GDP embed a similar narrative as the *First Pass* forecast, but suggest potential upside risk to RBNZ's expectations.

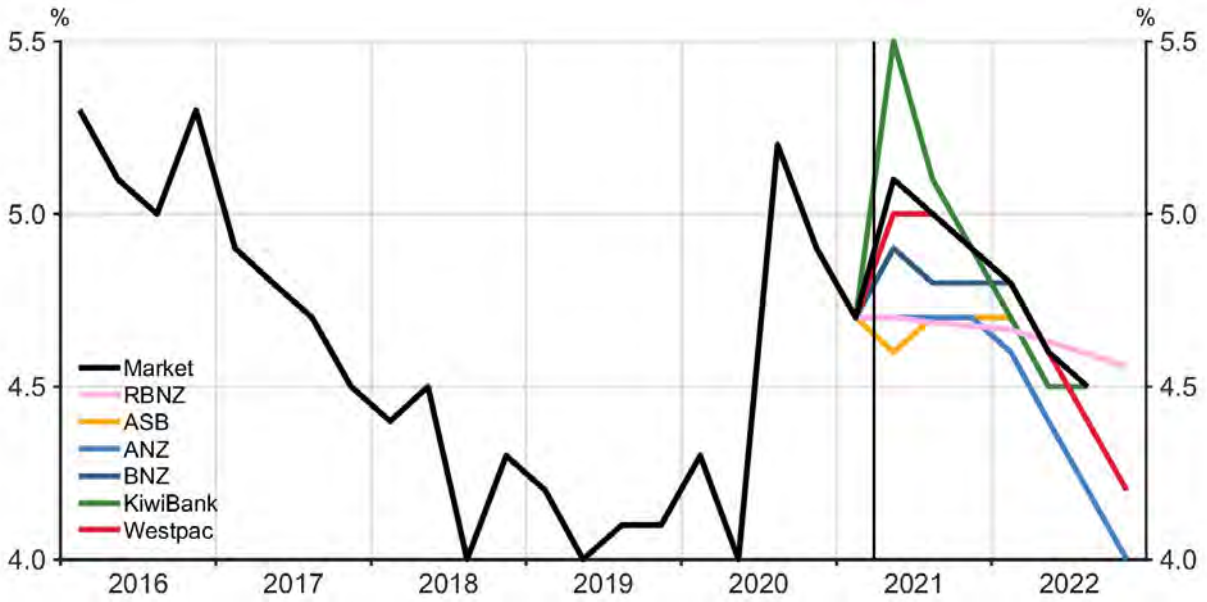
Figure 1: GDP forecasts
(Real $ millions, S.A.)



Labour market outlook

- Most of the private banks have revised down their unemployment forecasts in recent months, with only Kiwi Bank expecting that unemployment rates are yet to peak (figure 2). While the private banks still publish forecasts that suggest a higher unemployment rate than the *First Pass* forecast in the near term, they also predict a faster recovery in the labour market.

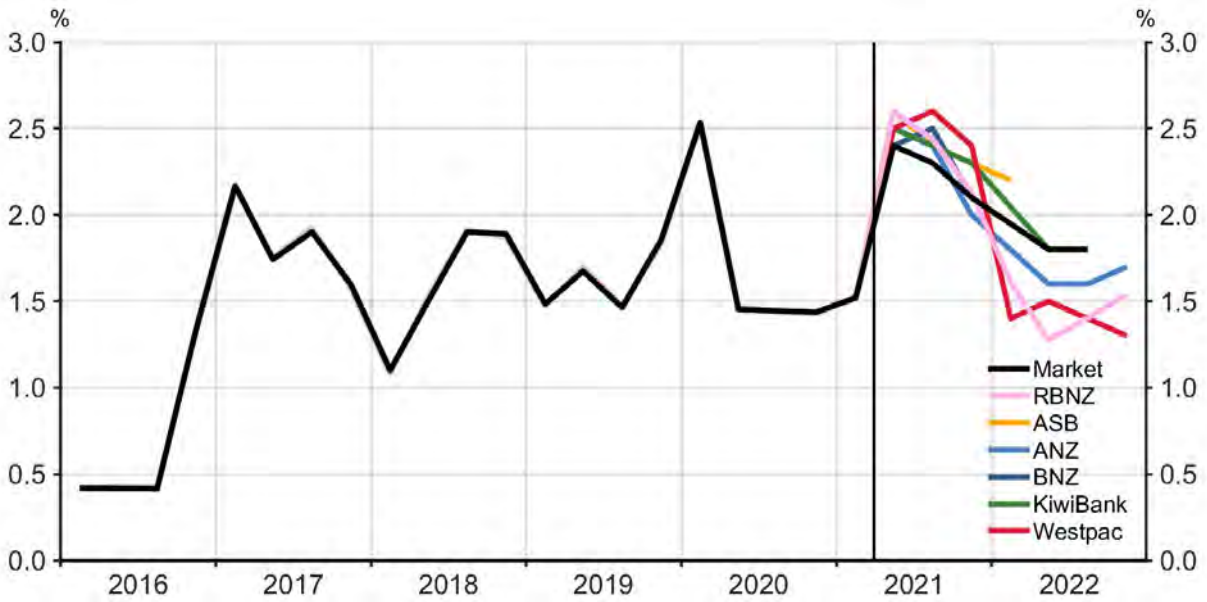
Figure 2: Unemployment rate forecasts
(Percent, S.A.)



Prices

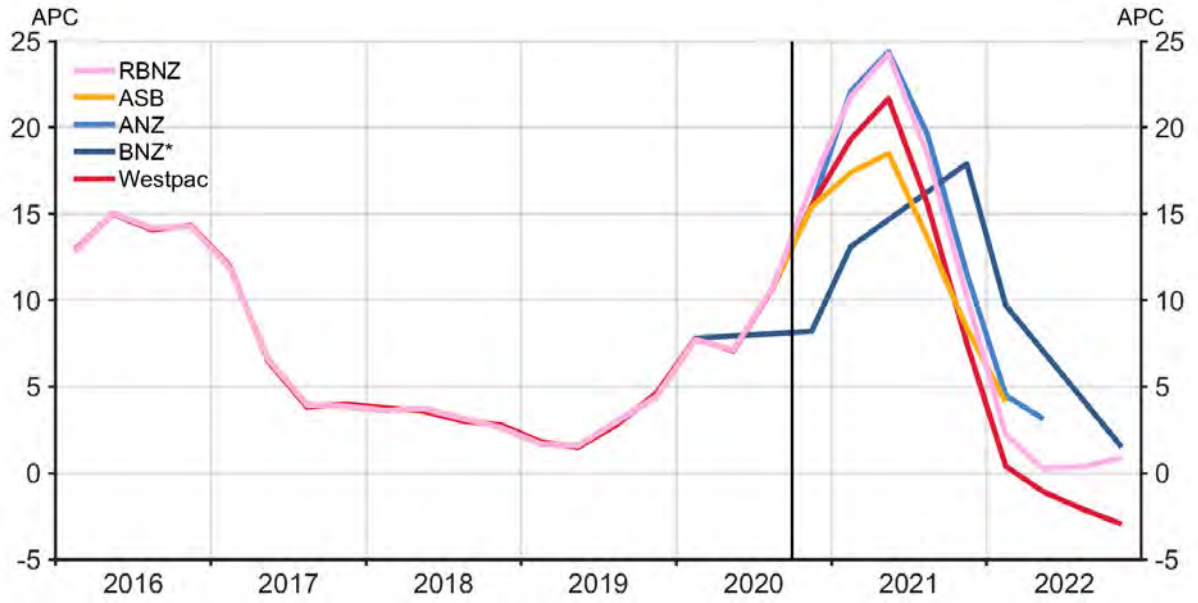
- Private banks expectations of near-term inflation are largely in line with those of the RBNZ (figure 3). In particular, these inflationary pressures are broadly viewed to be more transitory in nature.

Figure 3: CPI inflation forecasts
(Annual percent)



- Most private banks expect house prices to peak in the June 2021 quarter, with only Westpac expecting negative house price growth over 2022 (figure 4).

Figure 4: Annual house price inflation forecasts

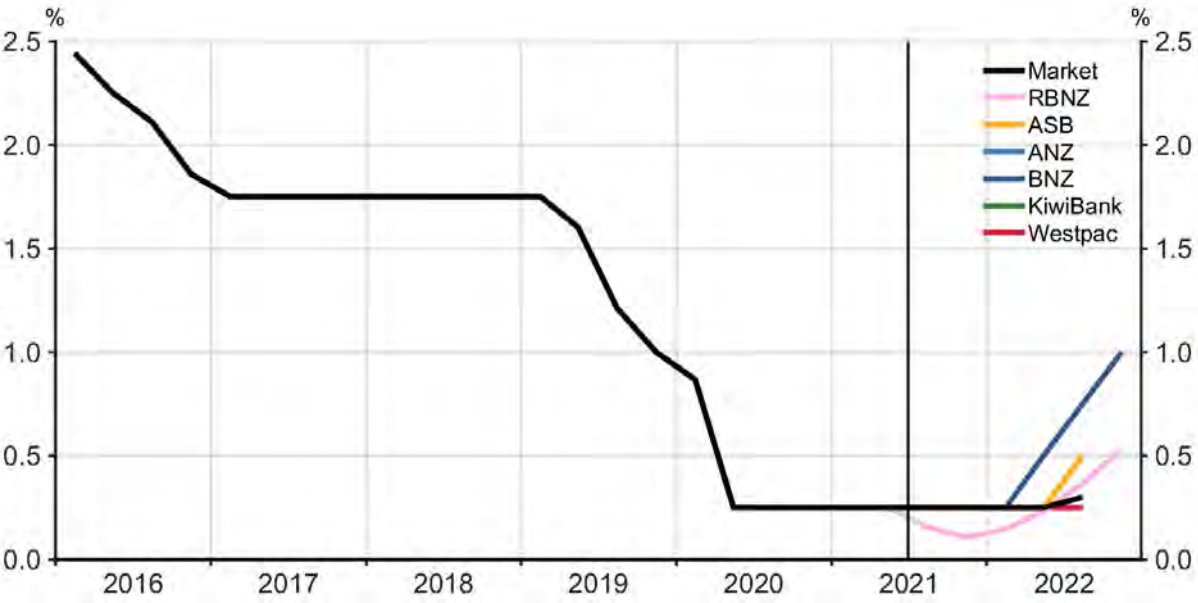


Note: BNZ's forecast appears to be an annual *average* percentage change. It is similar to the First pass projection when expressed in the same terms.

OCR outlook

- Finally, the private banks all expect the RBNZ to keep the OCR unchanged this year, with BNZ projecting the first rate hike in 2022Q1. The other banks' views are broadly in line with the RBNZ's OCR consistent with the *First Pass* forecast.

Figure B.5: OCR projections



RESERVE BANK OF NEW ZEALAND
TE PŪTEA MATUA

MEMORANDUM FOR	MPC
FROM	Julia Ratcliffe and Evelyn Truong
DATE	March 12th 2021 (last updated 12 May 2021)
SUBJECT	MPC beliefs and understandings
FOR YOUR	Approval

Purpose and background

In order to arrive at a monetary policy decision, the MPC must interpret the facts[1] through the lens of their beliefs and understandings. This paper outlines the MPC's current beliefs and understandings and provides a brief description of each (see Appendix 2 for full list).

These beliefs and understandings are evidence-based, and will evolve over time in response to new evidence. However, the nature of the available information means they cannot be conclusively tested. Some beliefs will be shared by all MPC members, others may form the foundation for points of difference. Knowing and being able to articulate those beliefs and understandings which we all share and those in which we differ will help facilitate more effective policy deliberation.

[1] The facts include both the data and things about monetary policy and their role in formulating it that the MPC agree to be indisputably true. A list of the latter can be found in Appendix 1.

1. Understanding the *Remit*

The *Remit* outlines the specific objectives that the MPC must legally pursue when formulating monetary policy. This section explores the beliefs and understanding of the MPC surrounding the *Remit*, as there are some parts which are open to interpretation.

Belief	**1.A) The current *Remit* is fit for the purposes defined in the Reserve Bank Act.**
Description	The *Remit* provides objectives and considerations that are most effective at achieving the legislated objectives of monetary policy (in the Act) and promoting the prosperity and wellbeing of New Zealanders. This includes, for example, agreeing that the Consumers Price Index is the most relevant measure of price inflation for the purposes of monetary policy. The RBNZ must update this belief every five years at each *Remit* review. If there is extreme lack of confidence in the robustness of the *Remit* in the interim, under Schedule 2, Clause 6(3) of the Act, the MPC may ask the Minister to make a recommendation to the Governor-General that the *Remit* be replaced before its expiry.
Additional reading	Sections 4.3-4.5, Chapter 4, MPC Handbook

Belief	**1.B) Maximum sustainable employment can be defined as "the highest utilisation of labour resources that can be maintained without creating a sustained acceleration in inflation".**
Description	This definition is supported by Reserve Bank staff and has been communicated externally. MSE is unobservable. Rather than attempt to estimate MSE directly along any measurable dimension, we judge whether employment is at, above, or below its maximum sustainable level by looking at labour market tightness. MSE is a very similar concept to NAIRU (non-accelerating inflation rate of unemployment). However, we choose not to use this label to avoid conflating MSE with the NAIRU estimate produced by any particular model. Ultimately, inflation outcomes are the best retrospective measure of whether employment was at MSE.
Additional reading	Section 1.2.1, Chapter 1, and Section 5.5, Chapter 5, MPC Handbook.

Belief(s)	**1.C) The MPC should aim for policy settings that maximise welfare across primary objectives and secondary considerations, subject to meeting *Remit* requirements.**
Description	The operational objectives identified in the *Remit* are the MPC's primary objectives, and they must pursue them at all times. However, Section 8 of the Reserve Bank Act directs the MPC to "have regard to the efficiency and soundness of the financial system" and to "seek to avoid unnecessary instability in output, interest rates, and the exchange rate" in pursuing the operational objectives. The primary objectives are intentionally defined flexibly in recognition of the inherent trade-offs between primary objectives and secondary considerations, particularly in the short-term and when operating under uncertainty. Specifically, MPC has flexibility with regard to small deviations in employment from MSE ('near' MSE) and inflation from the target midpoint ('between' 1-3 with a 'focus' on 2%), and with the time it takes to achieve its objectives ('on average over the medium term'). The MPC should aim to make welfare-enhancing trade-offs between inflation, employment, and the secondary considerations within this flexible framework. For example, the MPC will generally prefer interest rate settings that generate a gradual return of inflation to the midpoint following a shock, rather than a more aggressive policy stance that could see inflation back at the midpoint sooner at the expense of considerable economic volatility. This preference is built-in to the forecasting process via the interest-rate smoothing mechanism in NZSIM. Other such trade-offs may be reflected in model judgement, or tactical and strategic decisions taken by the MPC outside of the forecasting framework. The secondary considerations should be addressed alongside the primary objectives throughout the policy-making process. However, the MPC should never pursue secondary outcomes at the expense of achieving the operational objectives as flexibly defined in the *Remit.*
Additional reading	Section 7.3.3, Chapter 7, MPC Handbook. Paper 2.4: Having regard to financial stability (Nov 2020)

2. Monetary policy effectiveness

Core to the operations of the MPC is the belief that the policies they are setting are effective in achieving the objectives they are tasked with. This section sets out the MPC's beliefs on the bounds of monetary policy effectiveness and how it may change in different circumstances.

Belief	**2.A) The credibility of policy targets and communications underpins policy effectiveness.**

Description	Public belief that the MPC has the ability and willingness to achieve their policy targets underpins its ability to operate a flexible inflation targeting framework effectively. If the public do not perceive policy targets as credible, they will set prices such that the targets are harder to achieve. Communication can be also a form of policy in of itself, as central bank communication can influence consumer and investor expectations.Clear communication that is consistent with the MPCs objectives, actions, and abilities reinforces the MPC's credibility and helps maintain its social license.
Additional reading	Section 7.3.1, Chapter 7, MPC Handbook Maybe reference the MPAG paper on forward guidance.

Belief	**2.B) Inflation expectations are an important measure of our credibility. They have a direct impact on and are influenced by actual inflation outcomes.**
Description	Inflation can be described by a New Keynesian Phillips curve, where inflation expectations have a direct impact on price setting and inflation outcomes. Therefore, an unanchoring of inflation expectations will make it more difficult to achieve our policy targets. Large shocks may change the inflation-generating process and may cause a temporary deviation in the way inflation outcomes and expectations influence each other.
Additional reading	Section 4.3.1, Chapter 4, Section 5.7.2, Chapter 5, and Section 6.3.5, Chapter 6, MPC Handbook

Belief	**2.C) Monetary policy is effective because the term structure of interest rates influences real economic activity and inflation.**
Description	The MPC have a suite of effective monetary policy tools at their disposal. In the short-to-medium term, monetary policy tools can influence fluctuations in the real economy due to sticky prices. Over the long-term, the best contribution monetary policy can make is helping to stabilise the business cycle. Unnecessary business cycle volatility can have lasting damaging effects, for example via labour market hysteresis. Therefore we support long-term economic prosperity by seeking to reduce medium-term business cycle fluctuations. Monetary policy tools influence interest rates across various parts of the yield curve. These rates transmit to the real economy by changing saving, investing, and consumption behaviour.
Additional reading	Sections 6.2-6.3, Chapter 6, MPC Handbook. The effectiveness of each tool is assessed in a series of papers provided in Appendix 2

Belief	**2.D) The appropriate mix of monetary policy instruments will vary through time as economic circumstances change. Some tools may be more appropriate in some situations than others.**
Description	We believe that our monetary policy tools are effective but we recognise that the magnitudes of impact on the real economy may be differ depending on which tools are employed. Each tool also has its own specific externalities for a given level of stimulus provided in terms of size of the externality, and which parts of the economy it impacts most. We are guided by the Principles governing our monetary tools when selecting which tool or combination of tools to employ at each policy decision. The principles cover efficiency, effectiveness, financial system soundness, operational readiness, and Government balance sheet impact.
Additional reading	Sections 6.2-6.3, Chapter 6, MPC Handbook. The effectiveness of each tool is assessed in a series of papers provided in Appendix 2

Belief	**2.E) An "effective lower bound" on interest rates exists and the cost-benefit balance of adding stimulus changes as we approach the ELB.**
Description	Recent analysis by the Reserve Bank shows that the impact of monetary policy shocks on real activity and employment did not materially change when the OCR was reduced to 0.75. However, limitations on the scale of LSAPs, FLP, and PFA, and the optionality of holding cash at zero interest mean that monetary policy may become less effective at some very low level of interest rates. International evidence on the existence of a policy "reversal rate" is inconclusive, but whether there is a reversal rate or not, it's possible that at very low interest rates, very little additional stimulus can be achieved through our current set of tools. We have insufficient evidence to determine where this very low rate lies.
Additional reading	MPAG Paper - The effect of RBNZ announcements on the exchange rate and government bonds MPAG Paper - Monetary policy appears to be as effective as ever See Appendix 2

Belief	**2.F) In most circumstances, aiming for the mid-point of our inflation target over an effective policy horizon maximises our chance of meeting the *Remit*. However, there may be times when aiming for slightly above or below the mid-point of the inflation target is more effective in achieving the *Remit* outcomes sustainably.**
Description	When inflation is above the target midpoint, and employment is above its maximum sustainable level (or vice versa), it is usually optimal to set policy such that inflation is expected to return to 2 percent after 1-3 years. However, if inflation and employment are deviating from their targets in opposite directions, or if inflation expectations become unanchored, it may be appropriate to allow inflation to under- or overshoot 2 percent at the end of the projection period. The MPC are guided by their monetary policy strategy when making these decisions.
Additional reading	Chapter 7, MPC Handbook Monetary Policy Strategy, pp. ii-iii, *Monetary Policy Statement*

Belief	**2.G) Monetary policy is not the best instrument through which financial stability can be achieved. Other instruments are more effective at achieving financial stability.**
Description	Monetary policy affects financial stability through different channels. Sound monetary policy supports financial stability by facilitating clear and predictable price signals, and by preventing extreme business cycle fluctuations which may trigger financial disruption. Monetary easing can also contribute to financial vulnerabilities by increasing debt and leverage in the economy, increasing asset prices and encouraging investors to seek higher returns by taking on greater risk. This has led some to call for tighter monetary policy to reduce the build-up of these risks. However, the welfare costs of using monetary policy to lean against financial vulnerabilities can be large. Macroprudential tools such as loan-to-value ratio restrictions are more effective instruments for decreasing the financial risk created by lower interest rates. The RBNZ seek to ensure that changes in prudential policy are taken into account when setting monetary policy and vice versa.
Additional reading	Section 7.3.1, Chapter 7, MPC Handbook. Arguments for and against this view are outlined in Dunstan 2014, p21

Appendix 1: Summary of monetary policy facts

- We are legally required to pursue our *Remit* objectives at all times.
- The *Remit* is consistent with the fact that interest rates will vary to achieve a stable level of general prices. Interest rates could also vary to achieve a stable level of the exchange rate, but not both.
- Our monetary policy decisions impact on our inflation and employment goals with long and variable lags. We must takes the lags and uncertainty into our policy consideration so as to avoid unnecessary instability in output, interest rates and the exchange rate.
- At the time of monetary policy decision-making, the Government's published fiscal policy settings are taken as given. Official fiscal policy updates are an input into our monetary policy decision making.

Appendix 2: Summary of key beliefs

Section 1: Understanding the *Remit*

A. The current *Remit* is fit for the purposes defined in the Reserve Bank Act.
B. Maximum sustainable employment can be defined as "the highest utilisation of labour resources that can be maintained without creating a sustained acceleration in inflation".
C. The MPC should aim for policy settings that maximise welfare across primary objectives and secondary considerations, subject to meeting *Remit* requirements.

Section 2: Monetary Policy Effectiveness

A. The credibility of policy targets and communications underpins policy effectiveness.
B. Inflation expectations are an important measure of our credibility. They have a direct impact on and are influenced by actual inflation outcomes.
C. Monetary policy is effective because the term structure of interest rates influences real economic activity and inflation.
D. The appropriate mix of monetary policy instruments will vary through time as economic circumstances change. Some tools may be more appropriate in some situations than others.
E. An "effective lower bound" on interest rates exists and the cost-benefit balance of adding stimulus changes as we approach the ELB.
F. In most circumstances, aiming for the mid-point of our inflation target over an effective policy horizon maximises our chance of meeting the *Remit*. However, there may be times when aiming for slightly above or below the mid-point of the inflation target is more effective in achieving the *Remit* outcomes sustainably.
G. Monetary policy is not the best instrument through which financial stability can be achieved. Other instruments are more effective at achieving financial stability.

Appendix 3: Selected AMP material

Principles for unconventional monetary policy (MPC 6-11-19)
http://docs/webtop/drl/objectId/090000c380745041

Transmission of AMP through financial markets.docx
http://docs/webtop/drl/objectId/090000c3807c06d8

MPAG Paper - Negative OCR - 2020 update
http://docs/webtop/drl/objectId/090000c3807c06b7

MPAG paper - Assessment of extending LSAP against principles, April 2020
http://docs/webtop/drl/objectId/090000c38078c1fa

MPAG Paper - Large-Scale Asset Purchases (government bonds)
http://docs/webtop/drl/objectId/090000c380761c61

Paper 3.3 FLP Design (Nov 2020 Forecast Week)
http://docs/webtop/drl/objectId/090000c3807ed6b6

MPAG Paper - Foreign Exchange Interventions
http://docs/webtop/drl/objectId/090000c380761197

MPAG Paper - Forward Guidance in New Zealand
http://docs/webtop/drl/objectId/090000c38074c4ec

MPAG Paper - The effect of RBNZ announcements on the exchange rate and government bonds
http://docs/webtop/drl/objectId/090000c3807bfefb

MPAG Paper - Monetary policy appears to be as effective as ever
http://docs/webtop/drl/objectId/090000c3806d193d

Paper 2.3 Transmission channel health check (Nov 2020)
http://docs/webtop/drl/objectId/090000c3807ed234

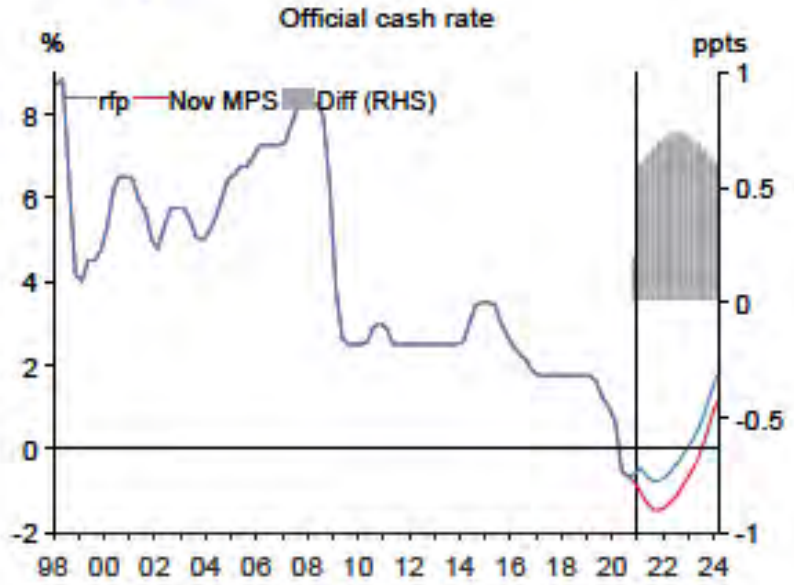
Paper 2.4 Monetary policy transmission summary (Aug 2020)
http://docs/webtop/drl/objectId/090000c3807ce2ac

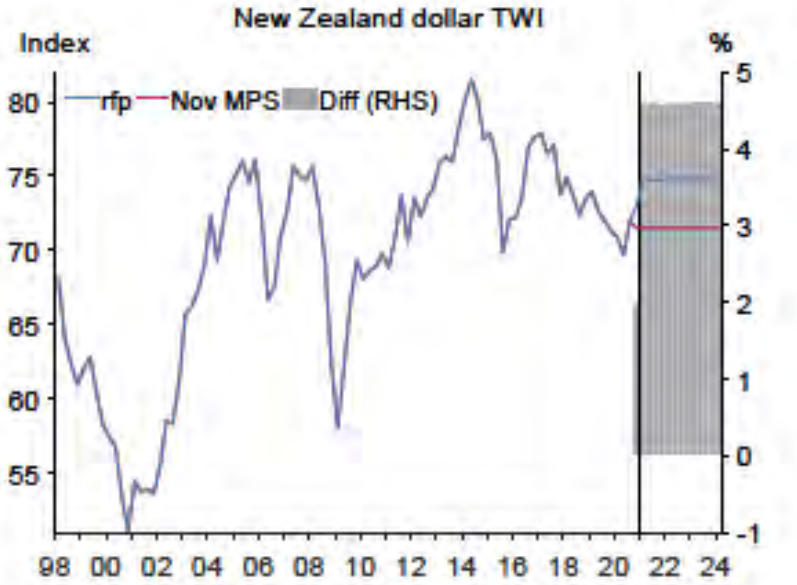
Forecast Chartpack

rfp versus Nov MPS

February 4, 2021

Summary


Official cash rate
%
ppts
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24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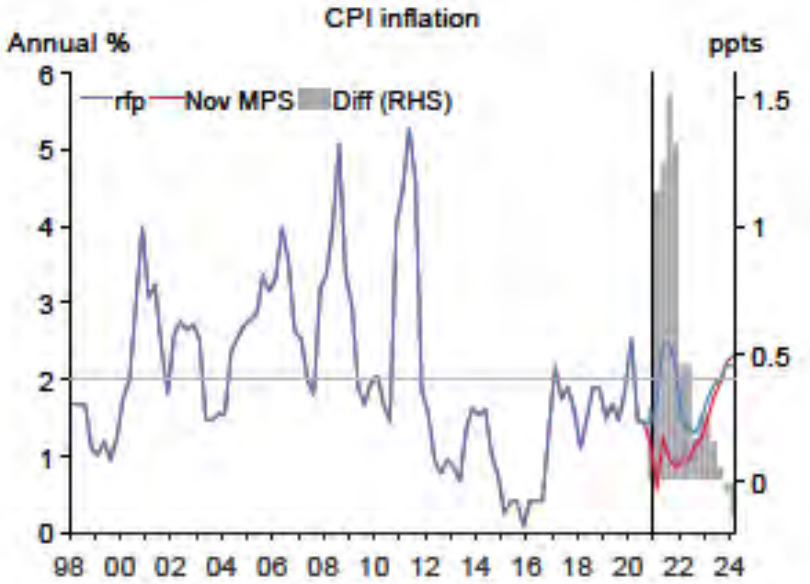
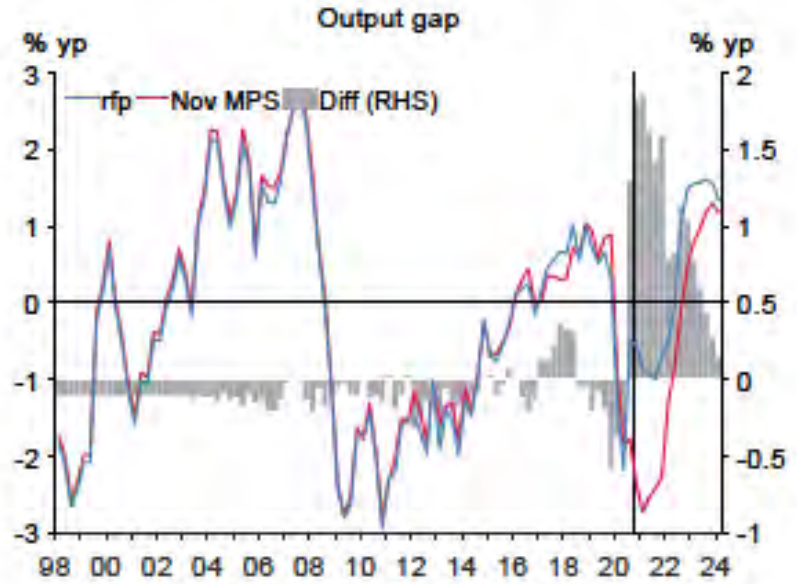
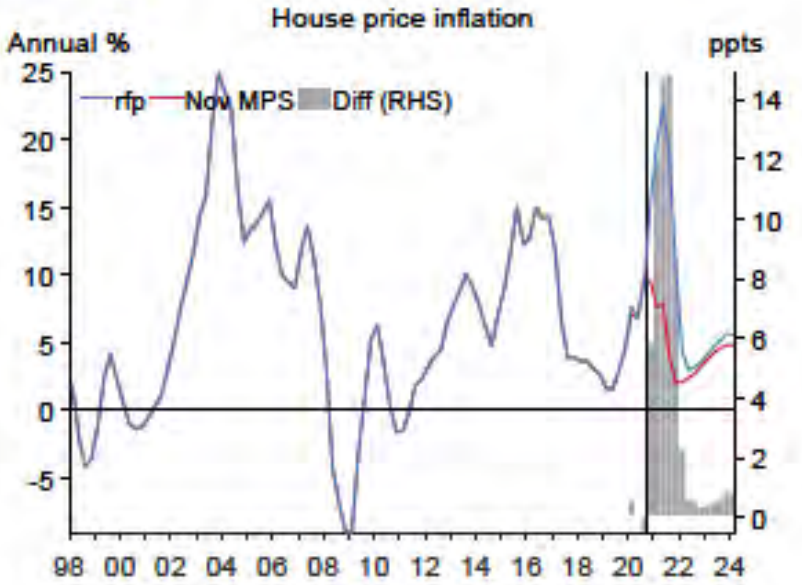
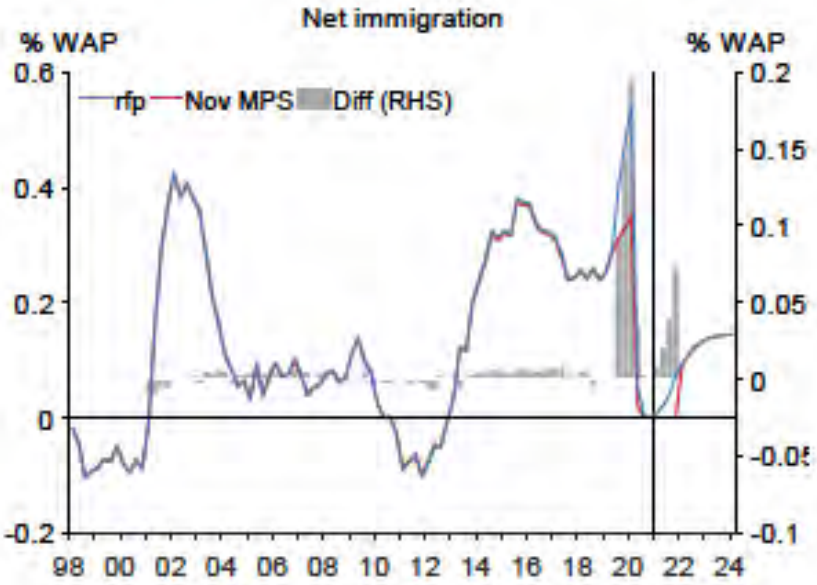
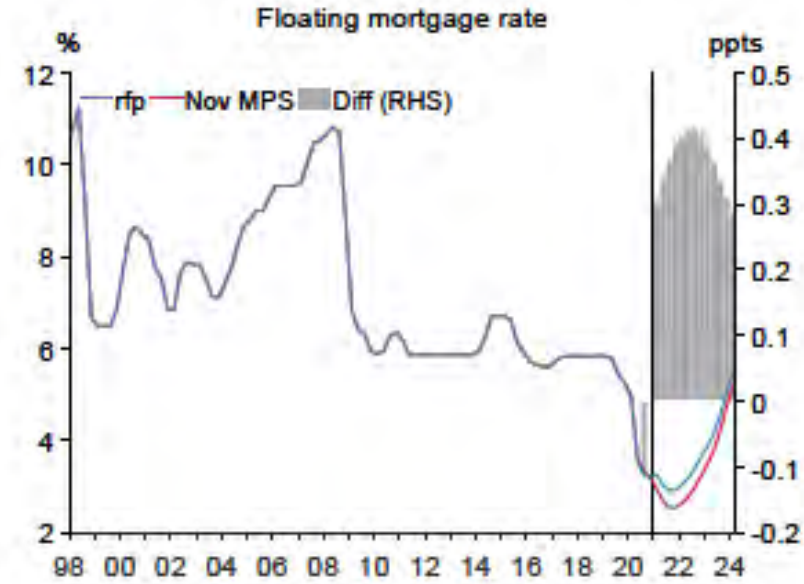

CPI inflation
Annual %
ppts
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

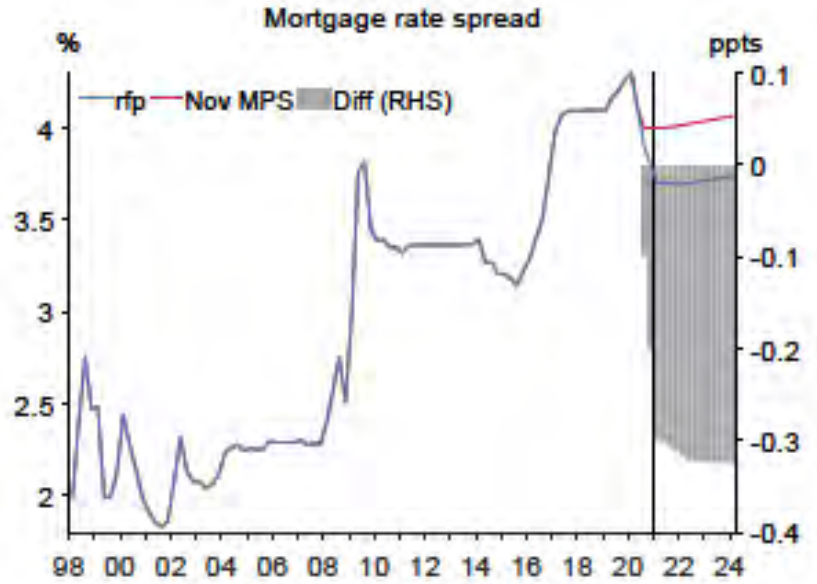

Output gap
% yp
% yp
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Housing

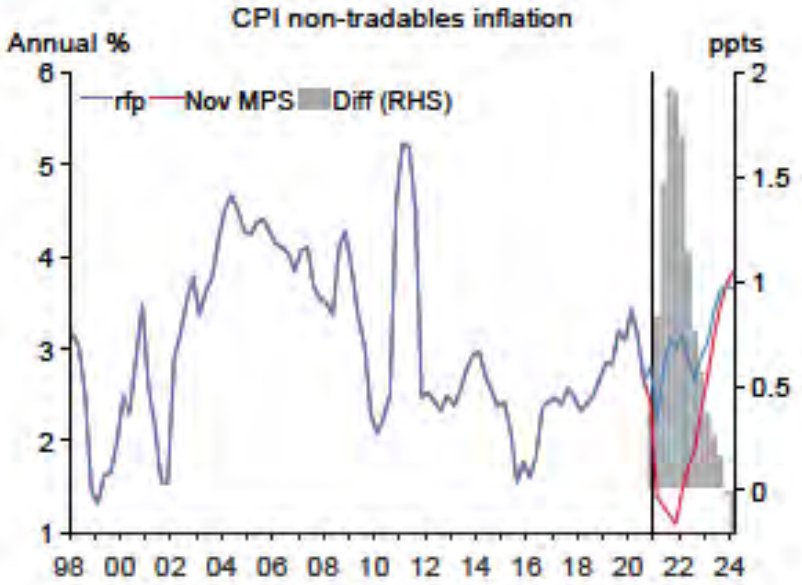

House price inflation
Annual %
ppts
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

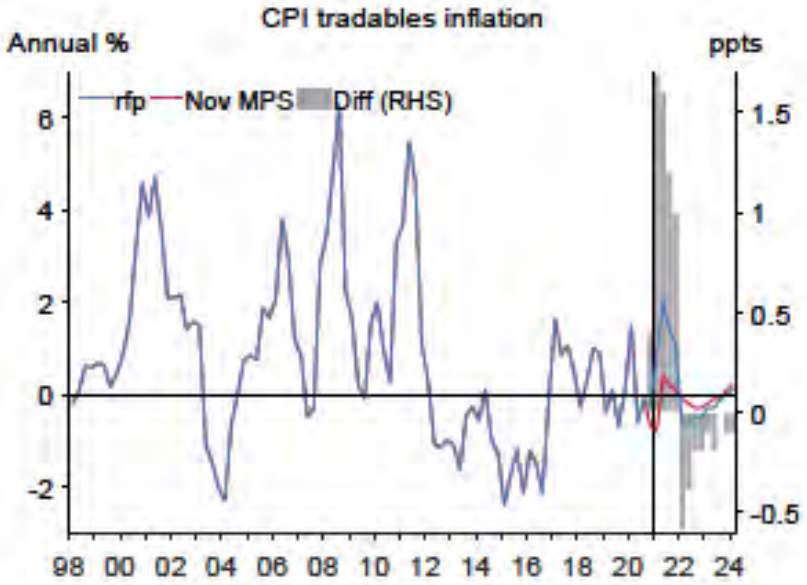

Net immigration
% WAP
% WAP
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

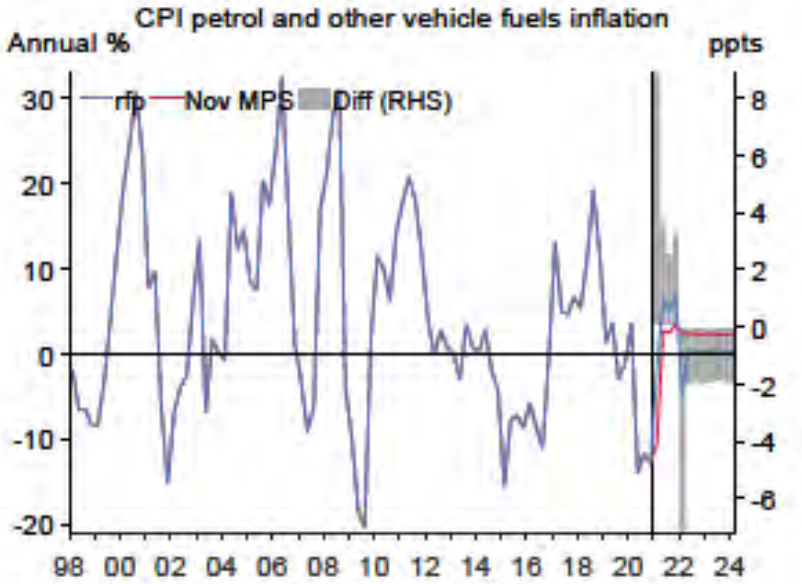

Floating mortgage rate
%
ppts
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

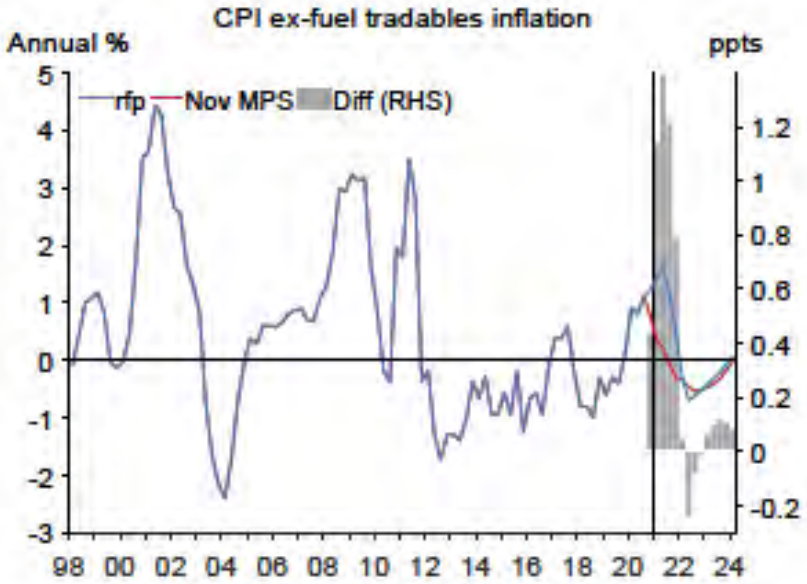

Mortgage rate spread
%
ppts
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Inflation

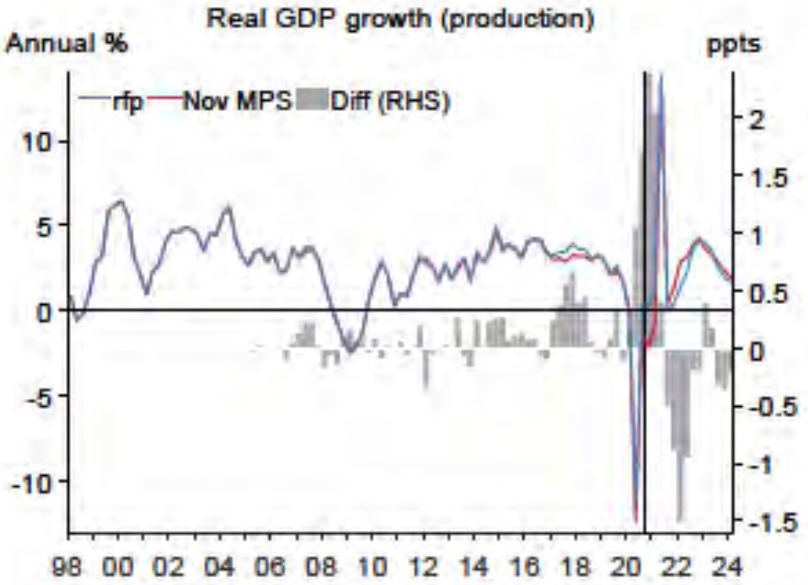

CPI non-tradables inflation
Annual %
ppts
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

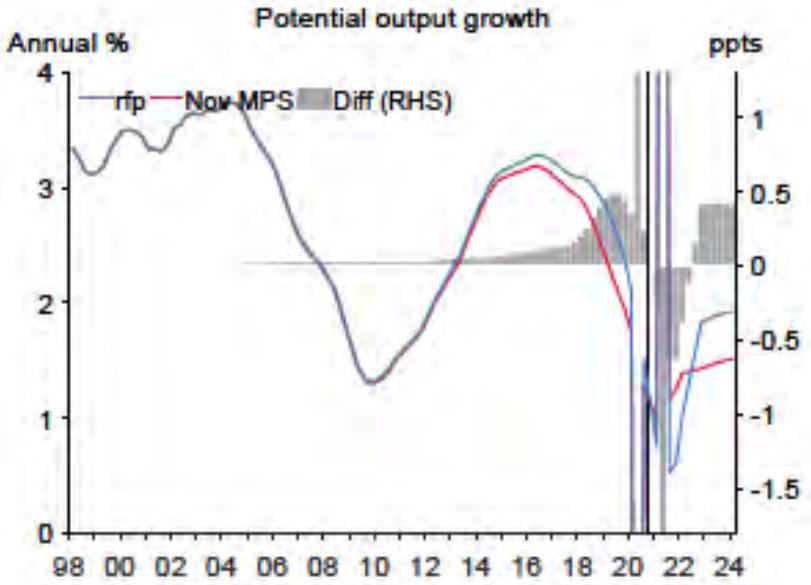

CPI tradables inflation
Annual %
ppts
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

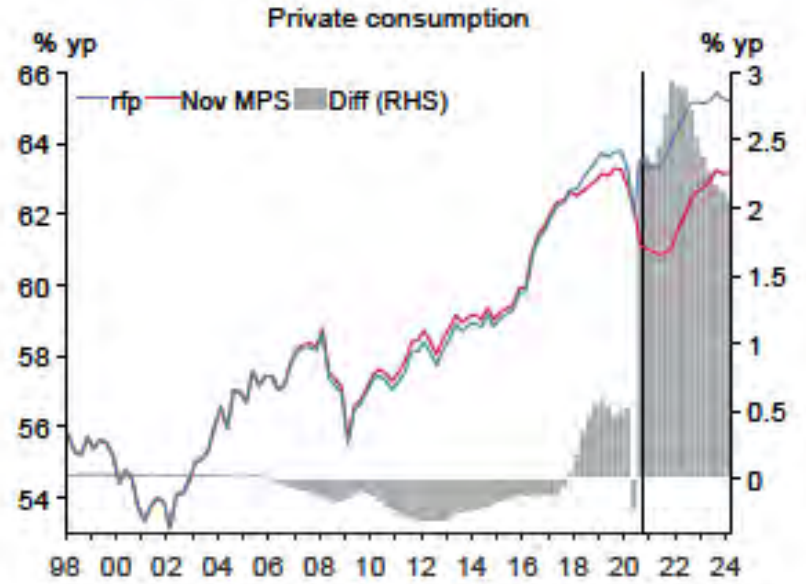

CPI petrol and other vehicle fuels inflation
Annual %
ppts
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

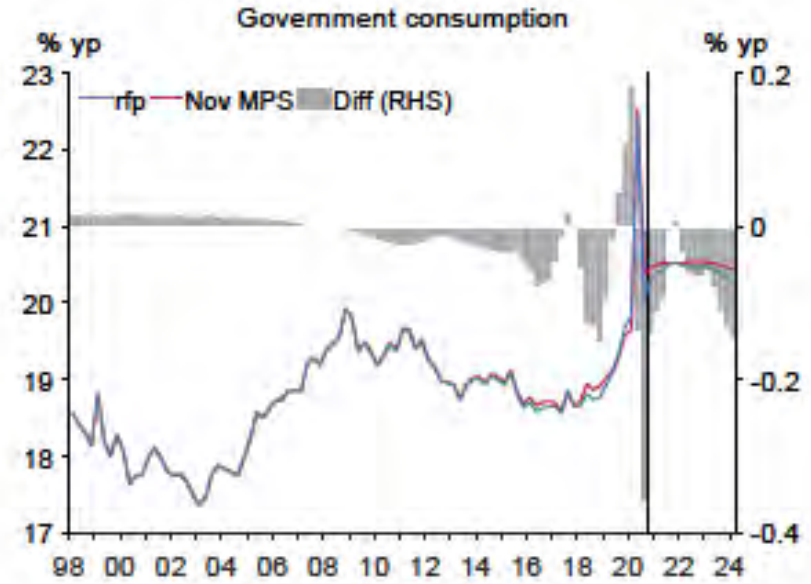

CPI ex-fuel tradables inflation
Annual %
ppts
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

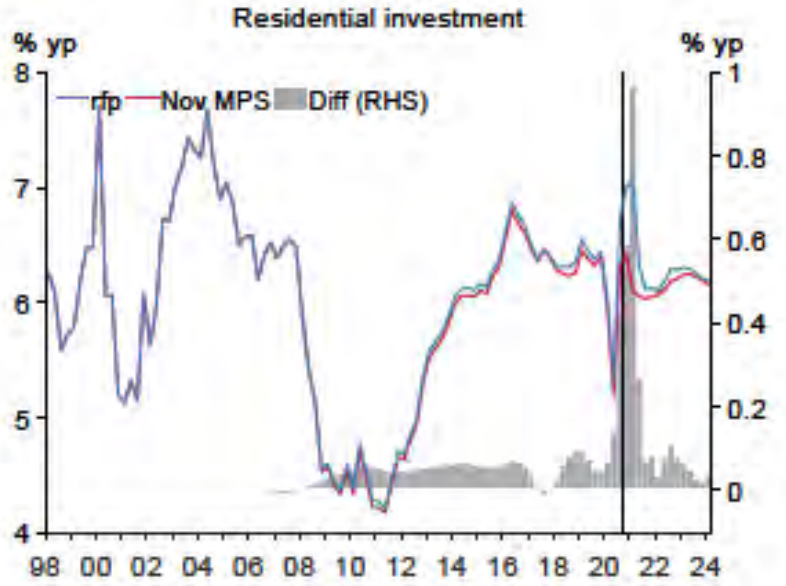

Real GDP growth (production)
Annual %
ppts
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

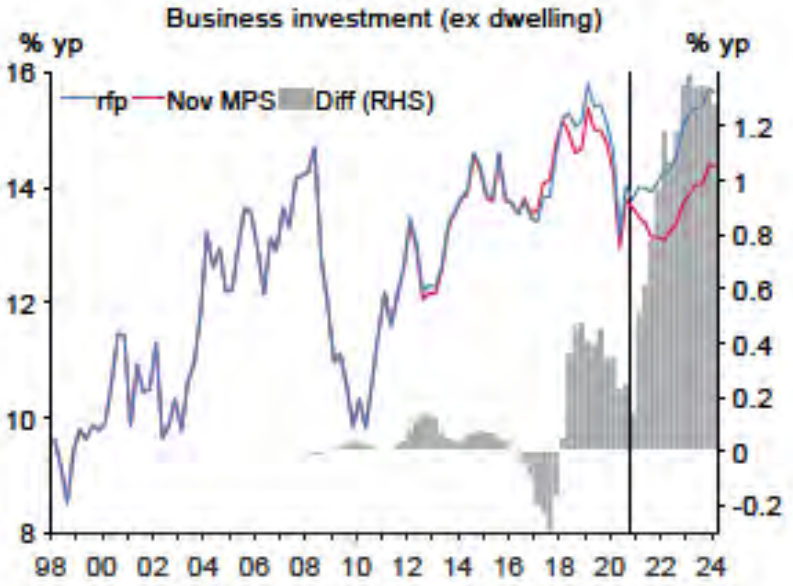

Potential output growth
Annual %
ppts
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

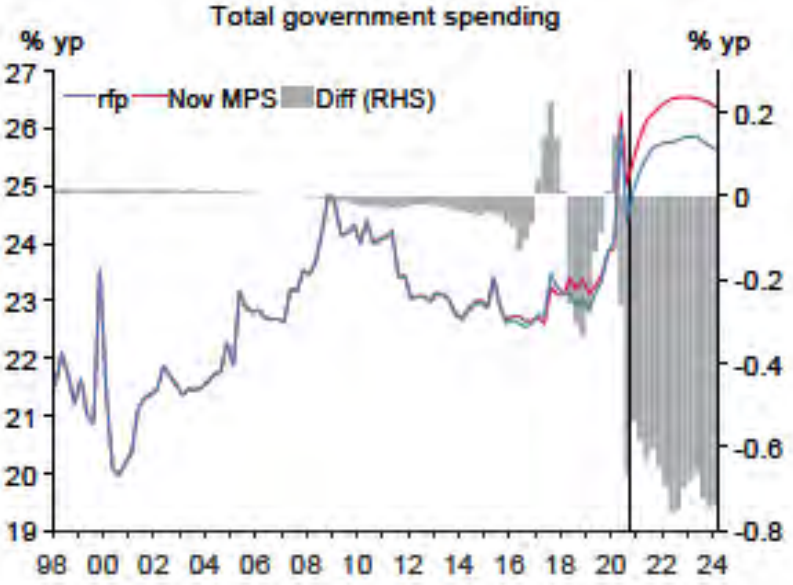

Private consumption
% yp
% yp
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

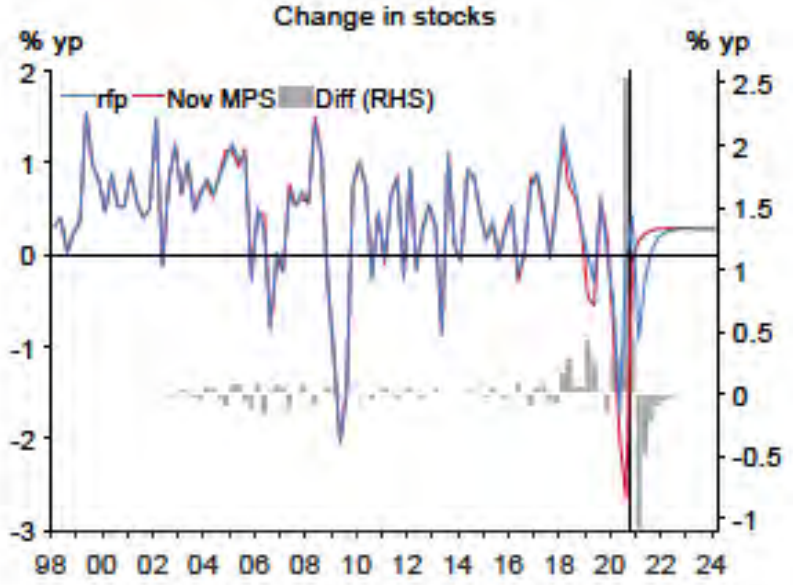

Government consumption
% yp
% yp
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

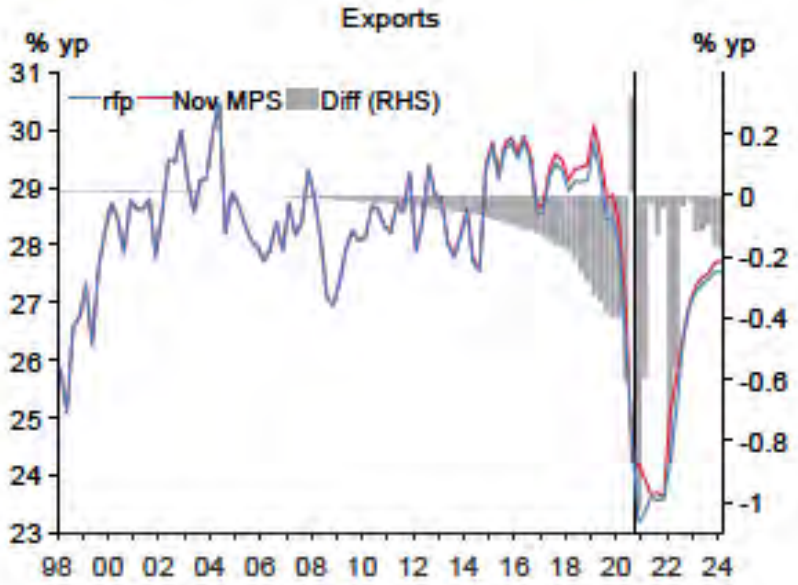

Residential investment
% yp
% yp
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

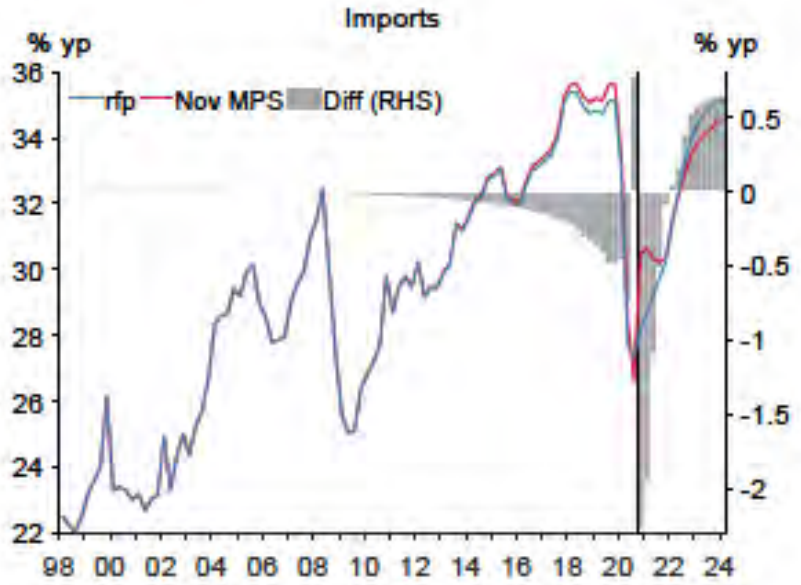

Business investment (ex dwelling)
% yp
% yp
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

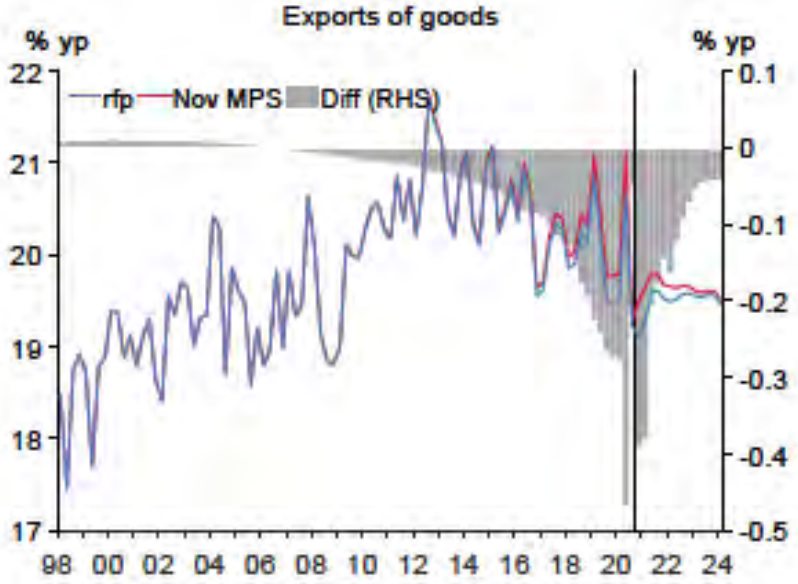

Total government spending
% yp
% yp
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

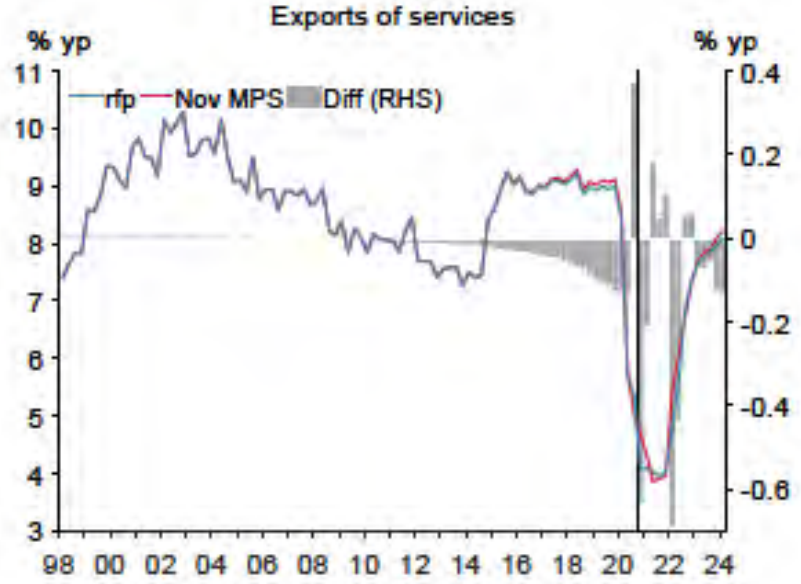

Change in stocks
% yp
% yp
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

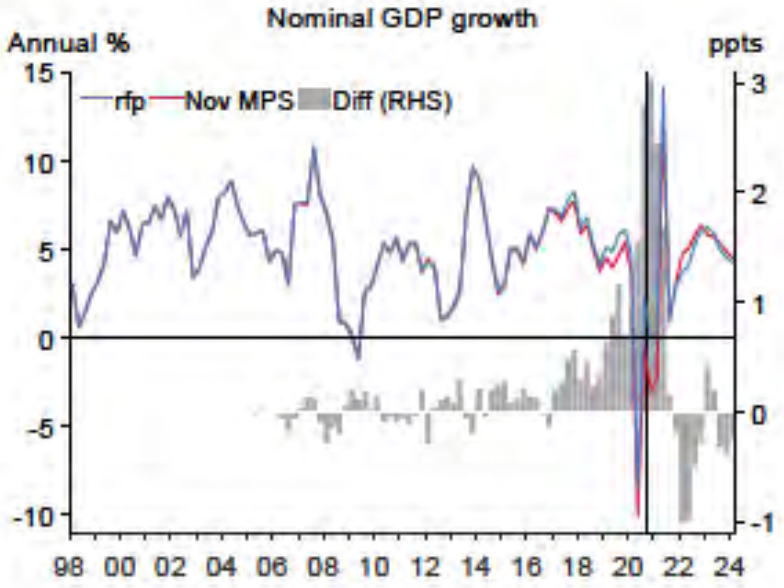

Exports
% yp
% yp
rfp
Nov MPS
Diff (RHS)
31
30
29
28
27
26
25
24
23
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

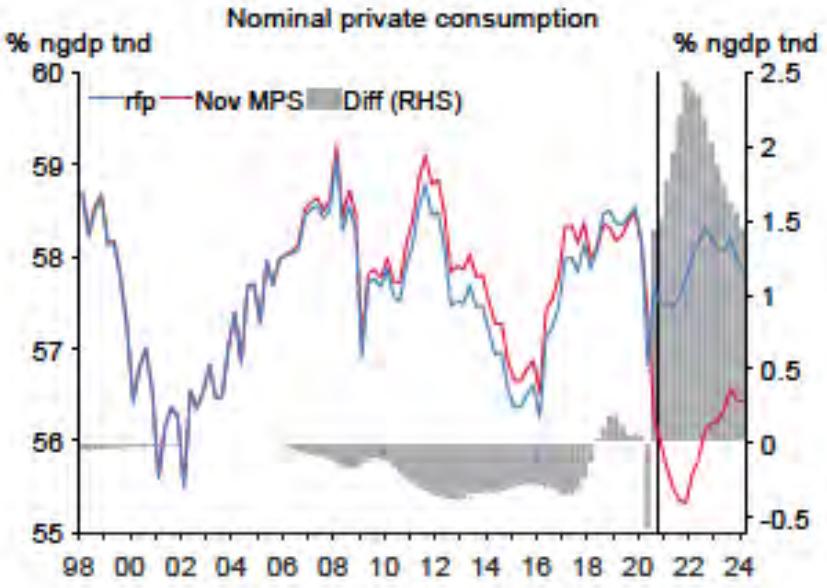

Imports
% yp
% yp
rfp
Nov MPS
Diff (RHS)
36
34
32
30
28
26
24
22
0.5
0
-0.5
-1
-1.5
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

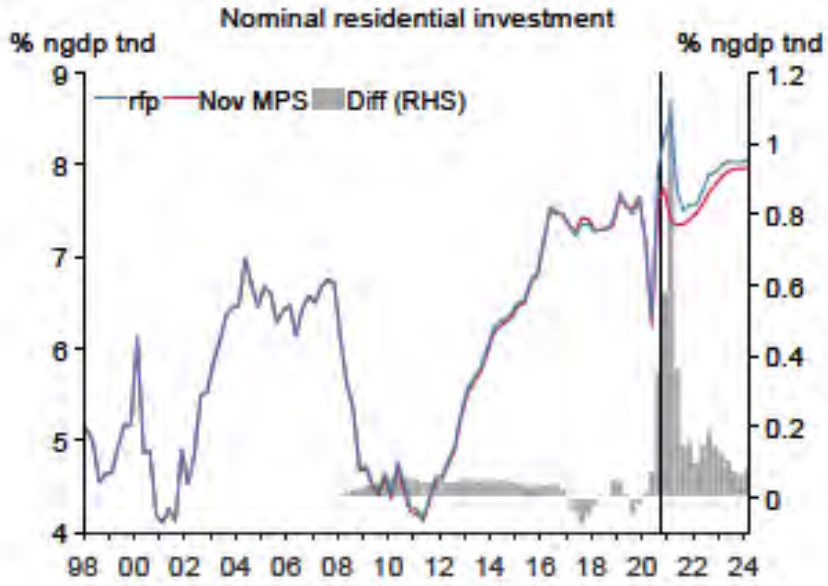

Exports of goods
% yp
% yp
rfp
Nov MPS
Diff (RHS)
22
21
20
19
18
17
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

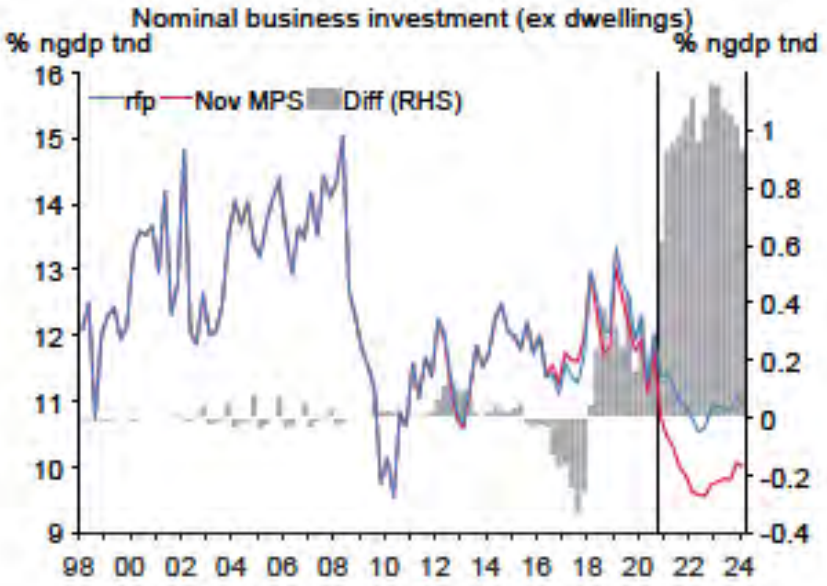

Exports of services
% yp
% yp
rfp
Nov MPS
Diff (RHS)
11
10
9
8
7
6
5
4
3
0.4
0.2
0
-0.2
-0.4
-0.6
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

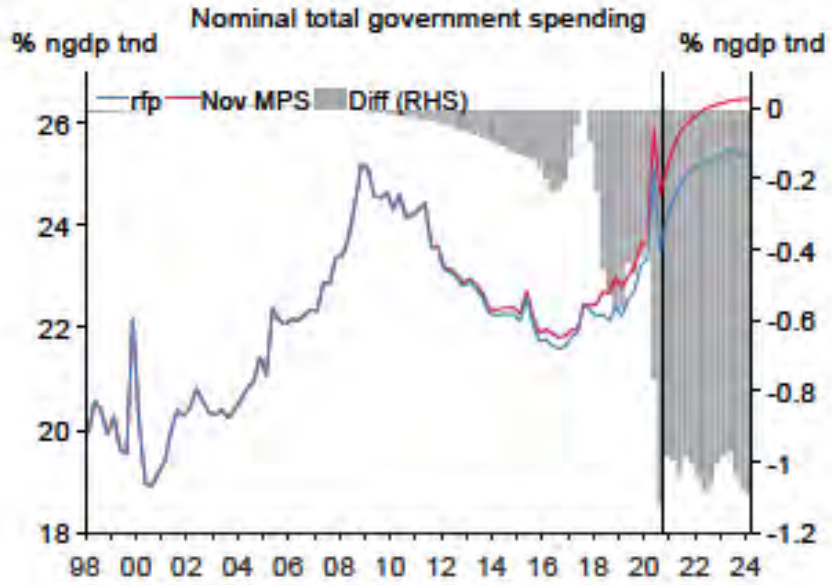

Nominal GDP growth
Annual %
ppts
rfp
Nov MPS
Diff (RHS)
15
10
5
0
-5
-10
3
2
1
0
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

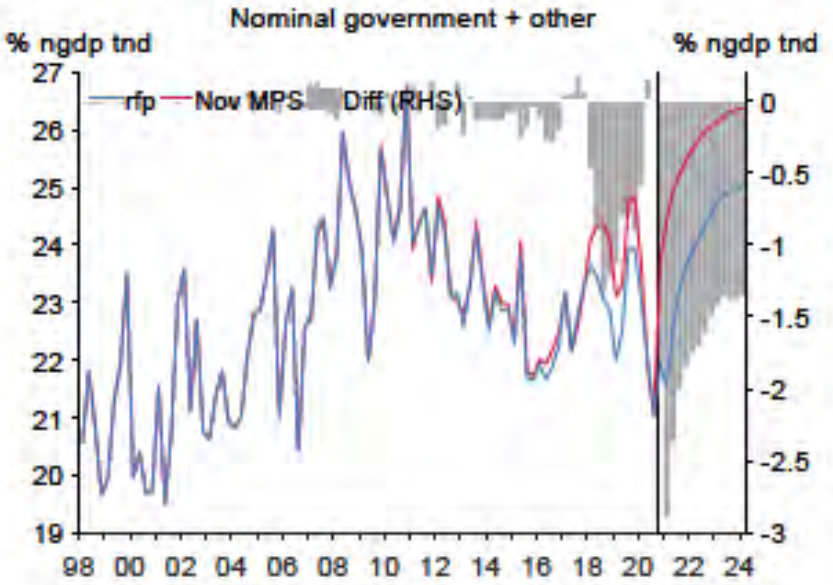

Nominal private consumption
% ngdp tnd
% ngdp tnd
rfp
Nov MPS
Diff (RHS)
60
59
58
57
56
55
2.5
2
1.5
1
0.5
0
-0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

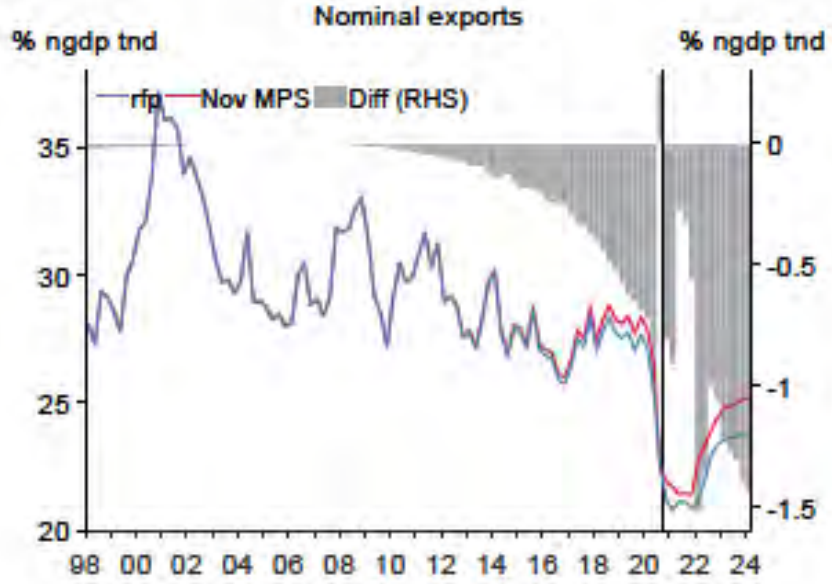

Nominal residential investment
% ngdp tnd
% ngdp tnd
rfp
Nov MPS
Diff (RHS)
9
8
7
6
5
4
1.2
1
0.8
0.6
0.4
0.2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

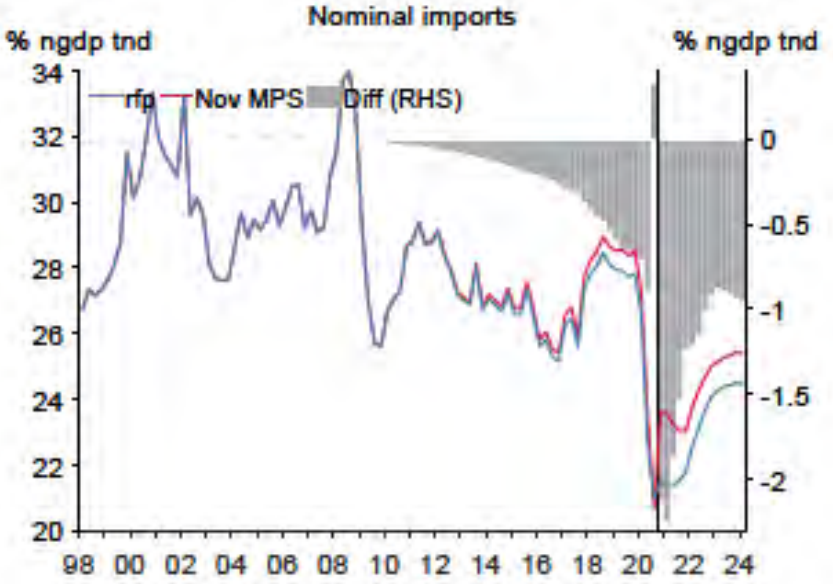

Nominal business investment (ex dwellings)
% ngdp tnd
% ngdp tnd
rfp
Nov MPS
Diff (RHS)
16
15
14
13
12
11
10
9
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

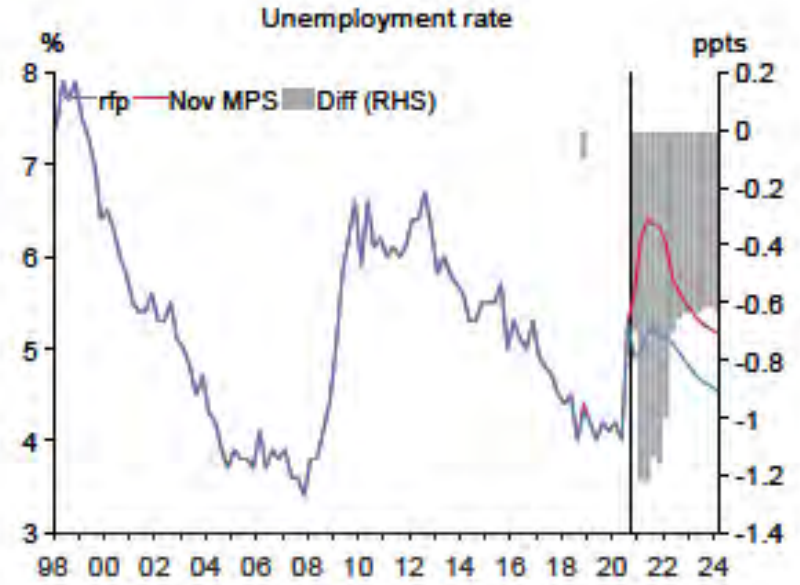

Nominal total government spending
% ngdp tnd
% ngdp tnd
rfp
Nov MPS
Diff (RHS)
26
24
22
20
18
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

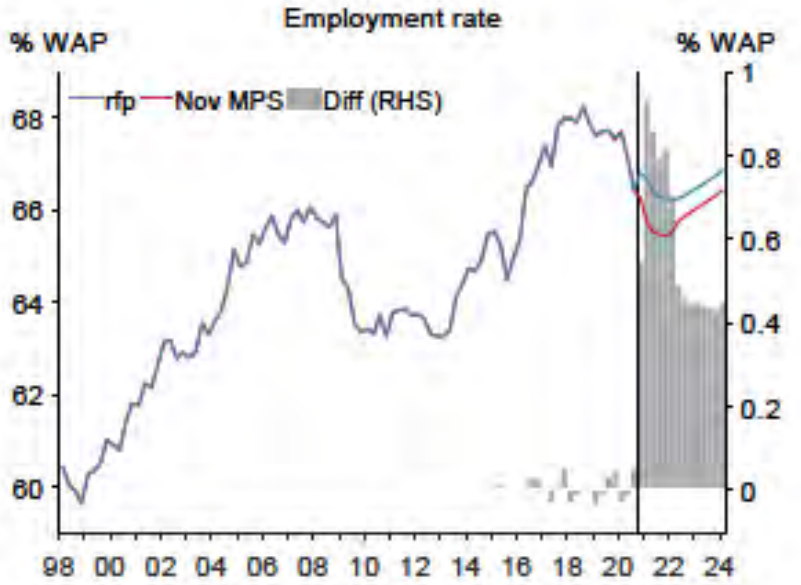

Nominal government + other
% ngdp tnd
% ngdp tnd
rfp
Nov MPS
Diff (RHS)
27
26
25
24
23
22
21
20
19
0
-0.5
-1
-1.5
-2
-2.5
-3
98 00 02 04 06 08 10 12 14 16 18 20 22 24

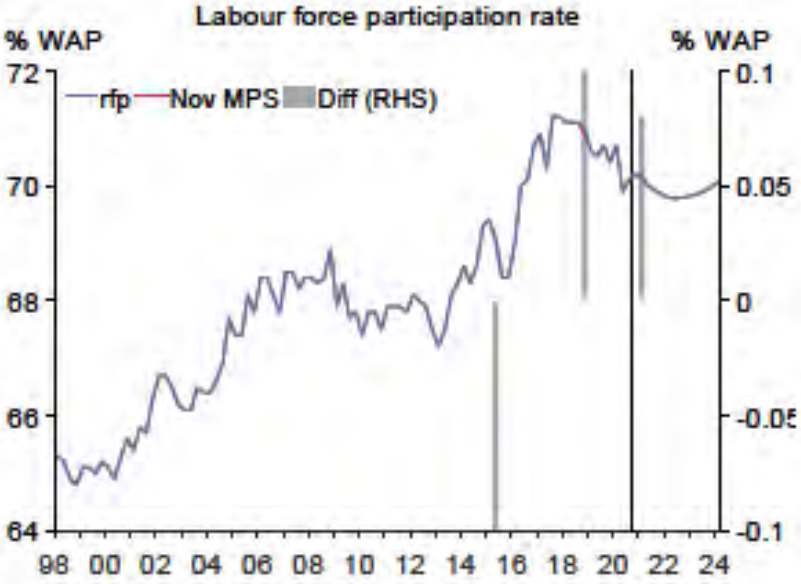

Nominal exports
% ngdp tnd
% ngdp tnd
rfp
Nov MPS
Diff (RHS)
35
30
25
20
0
-0.5
-1
-1.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

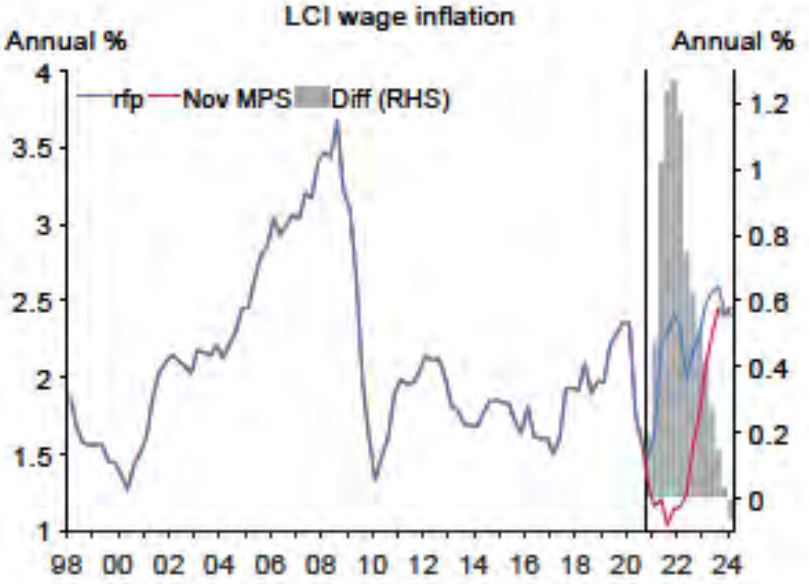

Nominal imports
% ngdp tnd
% ngdp tnd
rfp
Nov MPS
Diff (RHS)
34
32
30
28
26
24
22
20
0
-0.5
-1
-1.5
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Labour

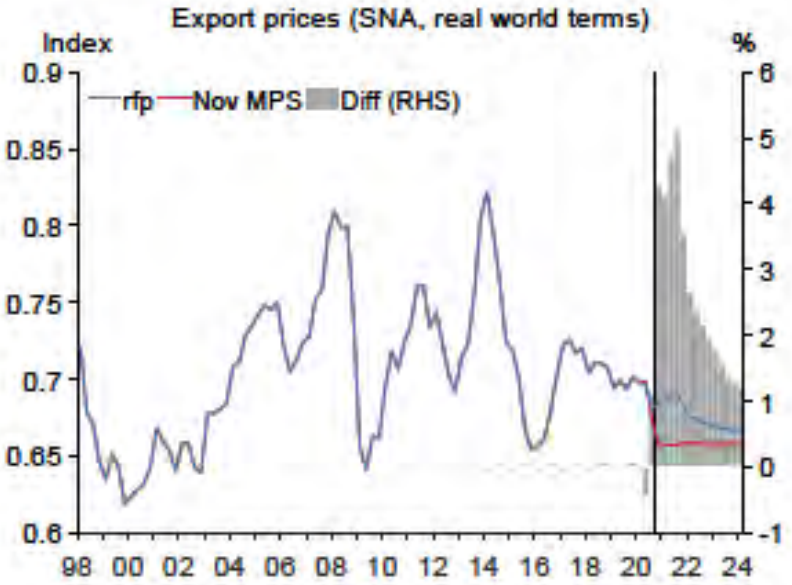

Unemployment rate
%
ppts
rfp
Nov MPS
Diff (RHS)
8
7
6
5
4
3
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
-1.4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

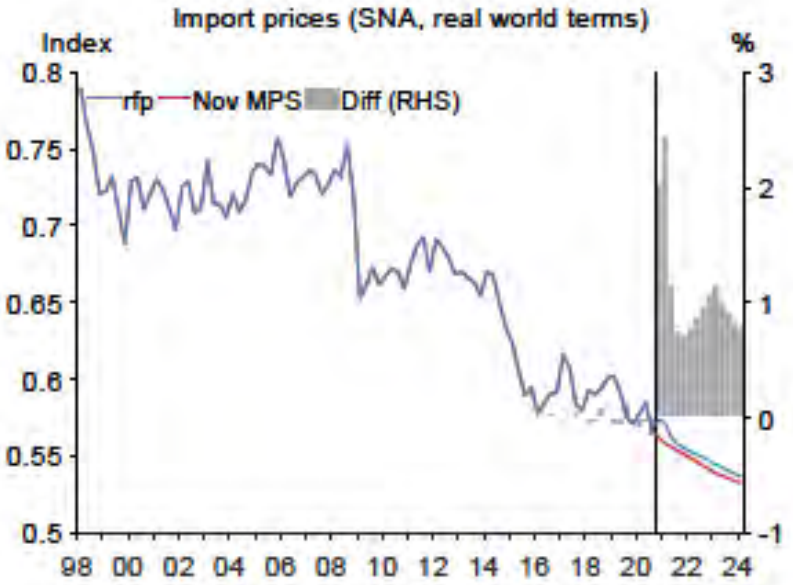

Employment rate
% WAP
% WAP
rfp
Nov MPS
Diff (RHS)
68
66
64
62
60
1
0.8
0.6
0.4
0.2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

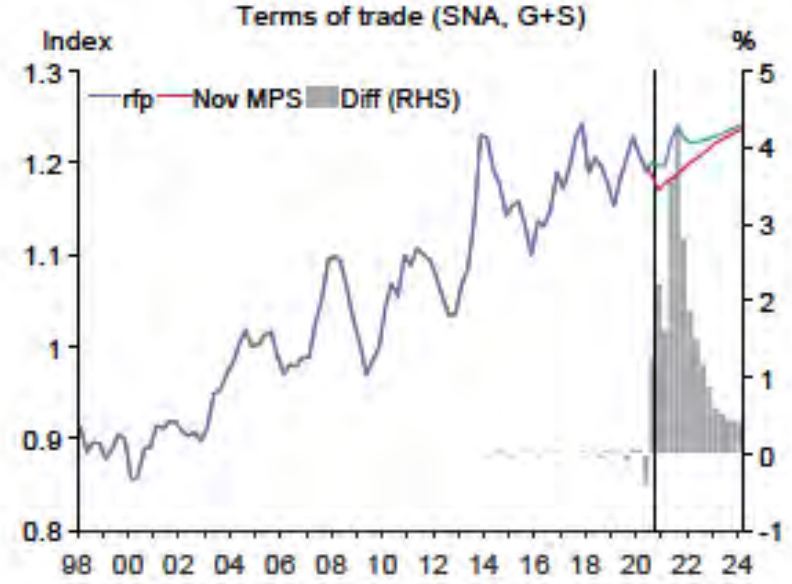

Labour force participation rate
% WAP
% WAP
rfp
Nov MPS
Diff (RHS)
72
70
68
66
64
0.1
0.05
0
-0.05
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

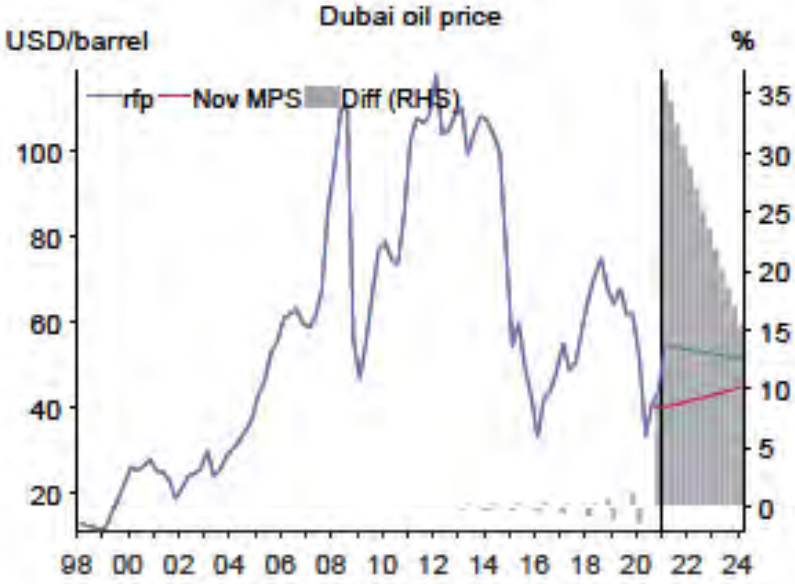

LCI wage inflation
Annual %
Annual %
rfp
Nov MPS
Diff (RHS)
4
3.5
3
2.5
2
1.5
1
1.2
1
0.8
0.6
0.4
0.2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

External

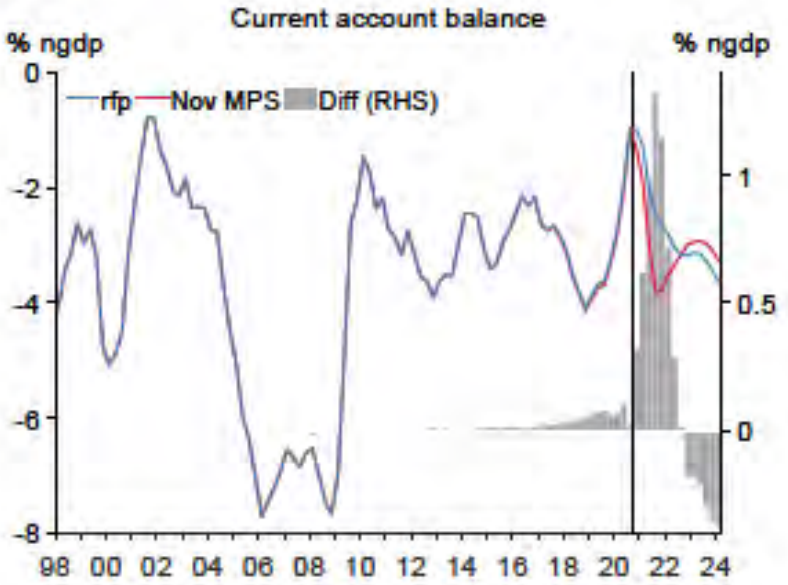

Export prices (SNA, real world terms)
Index
%
rfp
Nov MPS
Diff (RHS)
0.9
0.85
0.8
0.75
0.7
0.65
0.6
6
5
4
3
2
1
0
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

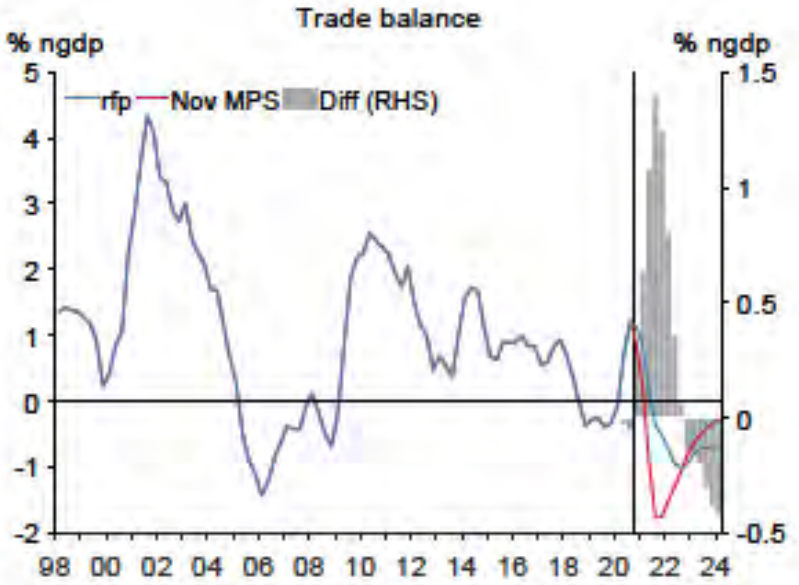

Import prices (SNA, real world terms)
Index
%
rfp
Nov MPS
Diff (RHS)
0.8
0.75
0.7
0.65
0.6
0.55
0.5
3
2
1
0
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

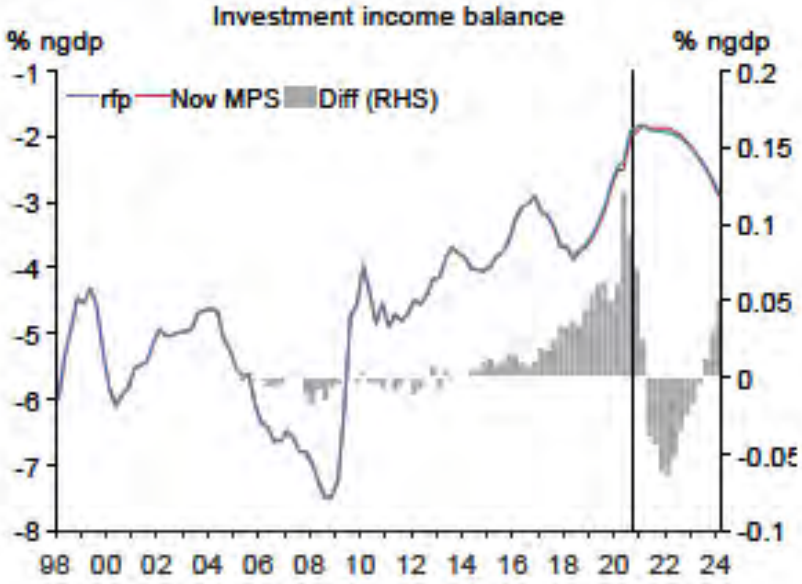

Terms of trade (SNA, G+S)
Index
%
rfp
Nov MPS
Diff (RHS)
1.3
1.2
1.1
1
0.9
0.8
5
4
3
2
1
0
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

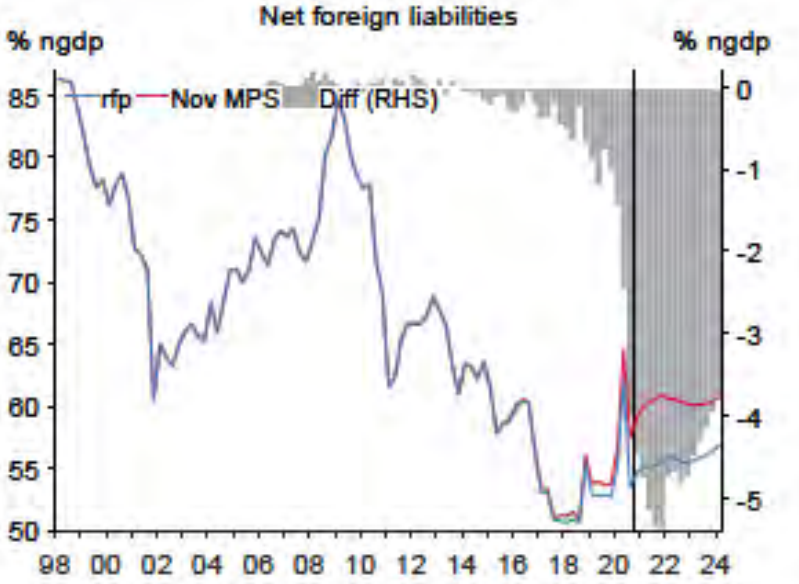

Dubai oil price
USD/barrel
%
rfp
Nov MPS
Diff (RHS)
100
80
60
40
20
35
30
25
20
15
10
5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

External

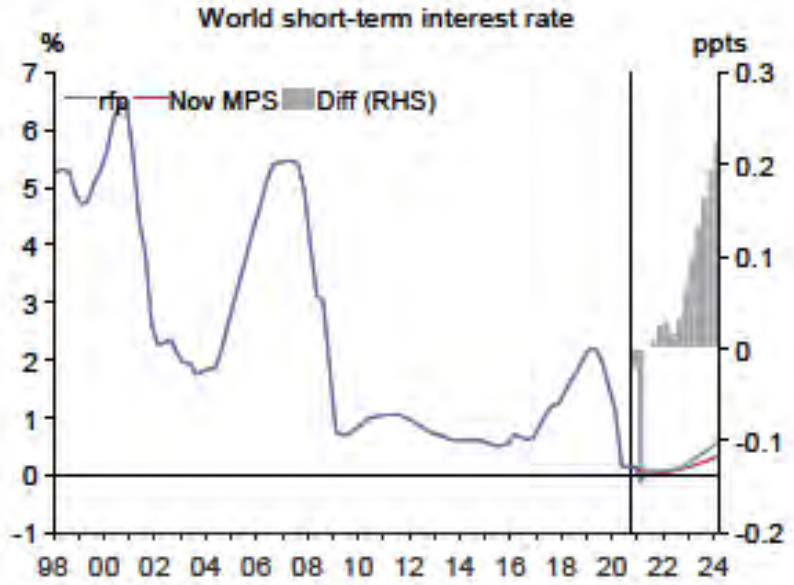

Current account balance
% ngdp
% ngdp
rfp
Nov MPS
Diff (RHS)
0
-2
-4
-6
-8
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

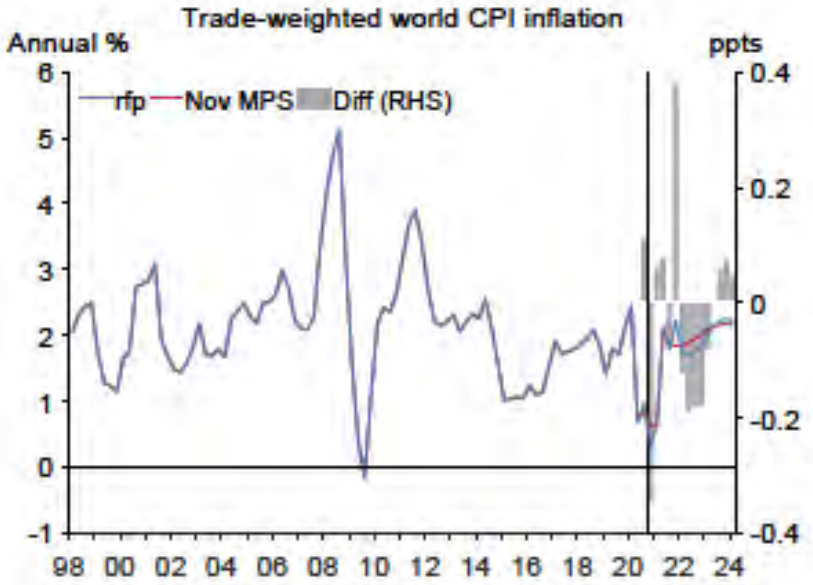

Trade balance
% ngdp
% ngdp
rfp
Nov MPS
Diff (RHS)
5
4
3
2
1
0
-1
-2
1.5
1
0.5
0
-0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

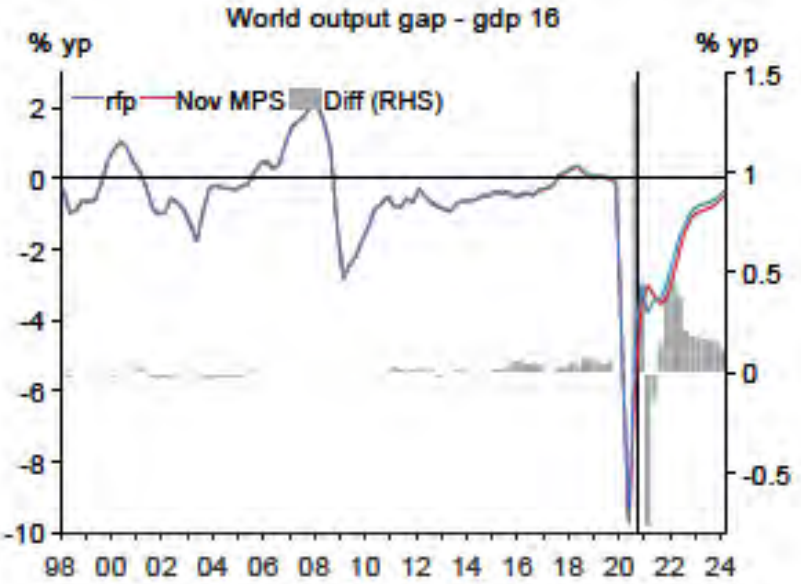

Investment income balance
% ngdp
% ngdp
rfp
Nov MPS
Diff (RHS)
-1
-2
-3
-4
-5
-6
-7
-8
0.2
0.15
0.1
0.05
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

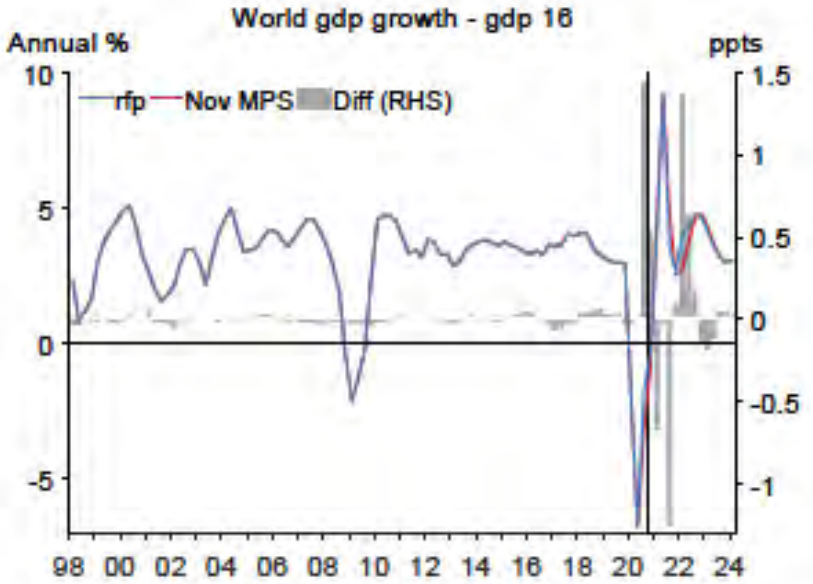

Net foreign liabilities
% ngdp
% ngdp
rfp
Nov MPS
Diff (RHS)
85
80
75
70
65
60
55
50
0
-1
-2
-3
-4
-5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

World

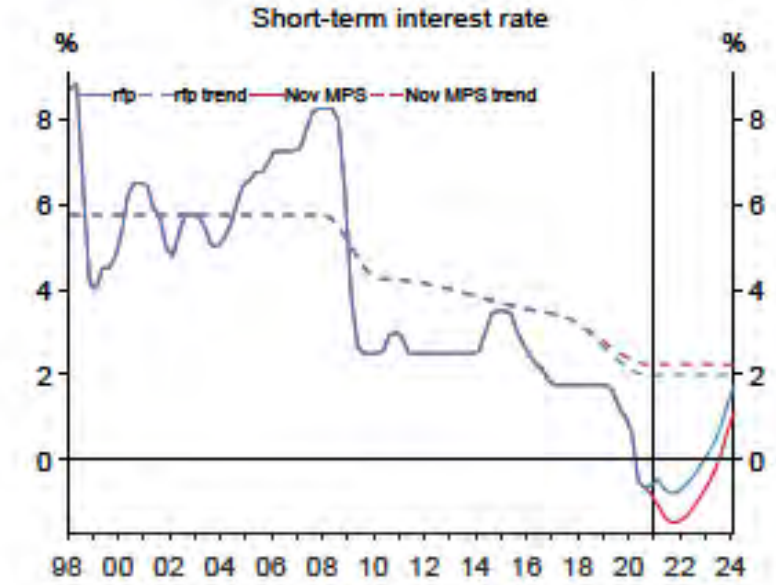

World short-term interest rate
%
ppts
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

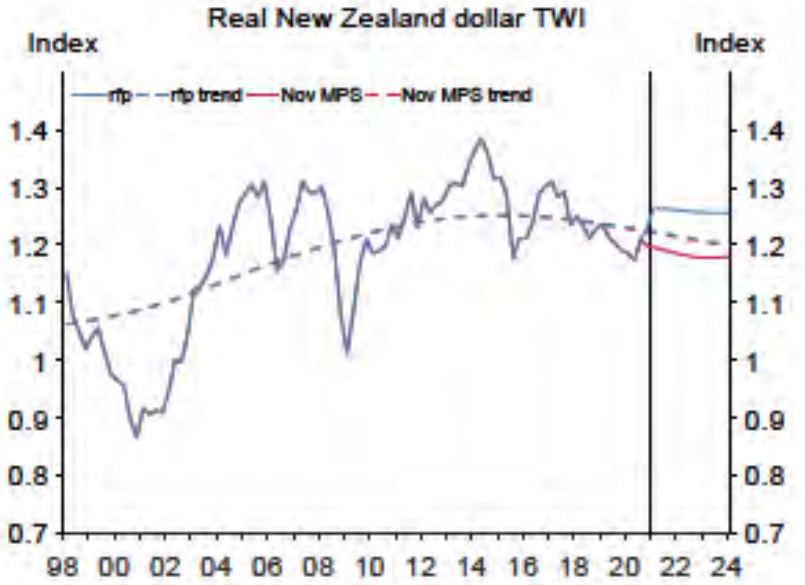

Trade-weighted world CPI inflation
Annual %
ppts
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

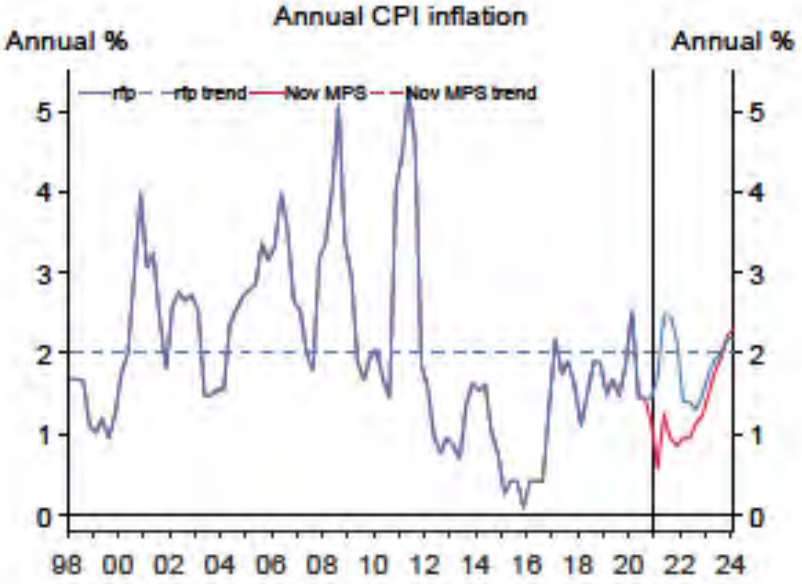

World output gap - gdp 16
% yp
% yp
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24


World gdp growth - gdp 16
Annual %
ppts
rfp
Nov MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

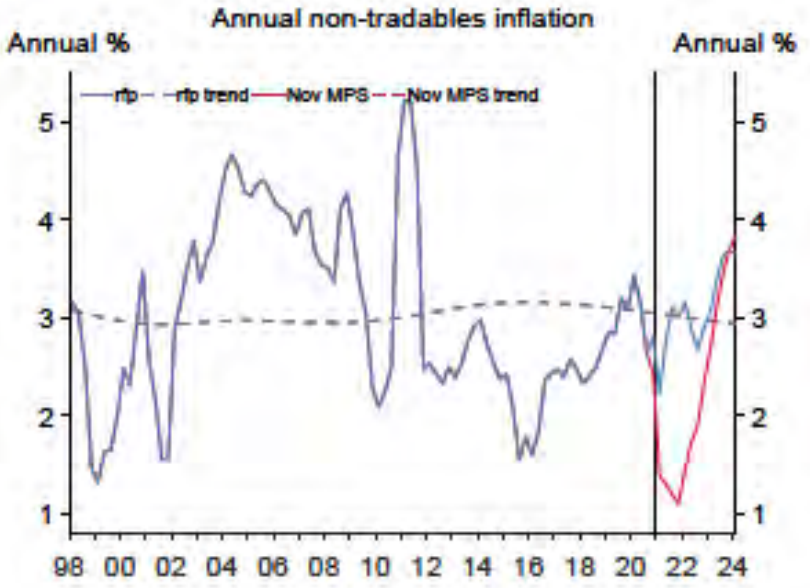

Short-term interest rate
%
%
rfp
rfp trend
Nov MPS
Nov MPS trend
98 00 02 04 06 08 10 12 14 16 18 20 22 24

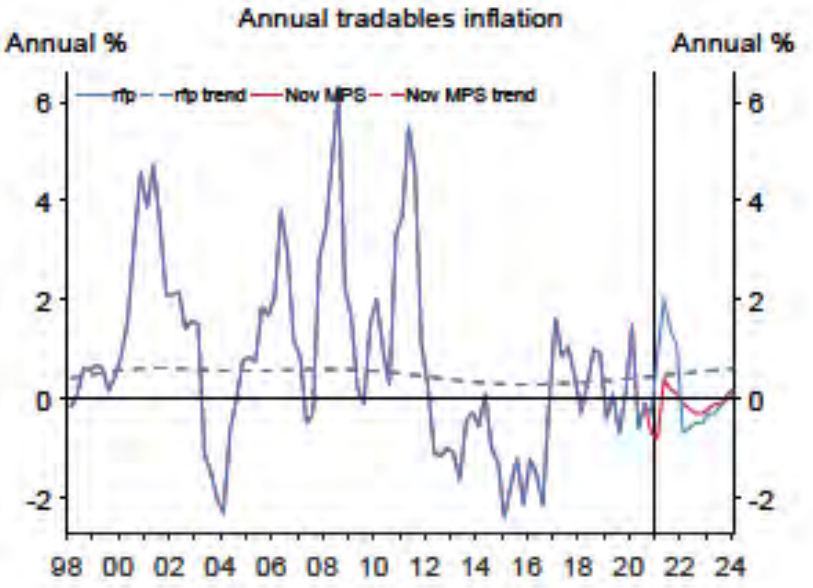

Real New Zealand dollar TWI
Index
Index
rfp
rfp trend
Nov MPS
Nov MPS trend
98 00 02 04 06 08 10 12 14 16 18 20 22 24


Annual CPI inflation
Annual %
Annual %
rfp
rfp trend
Nov MPS
Nov MPS trend
98 00 02 04 06 08 10 12 14 16 18 20 22 24

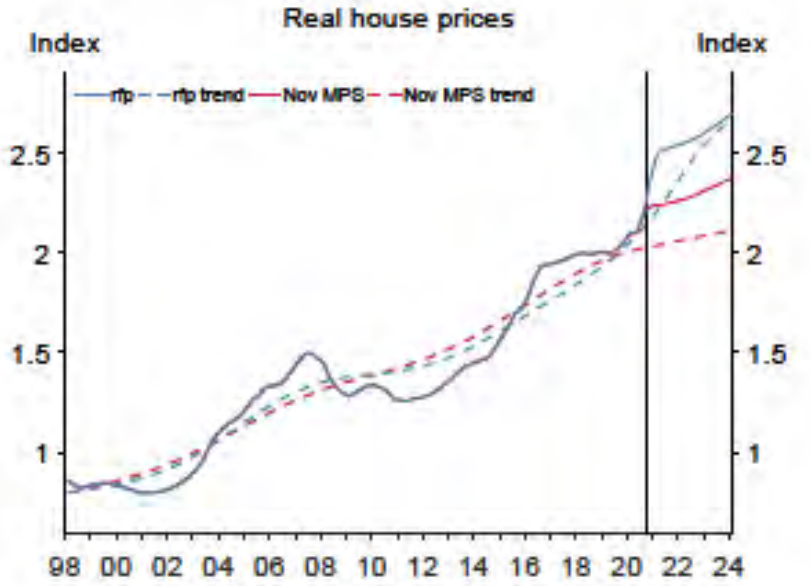

Real GDP growth
Annual %
Annual %
rfp
rfp trend
Nov MPS
Nov MPS trend
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

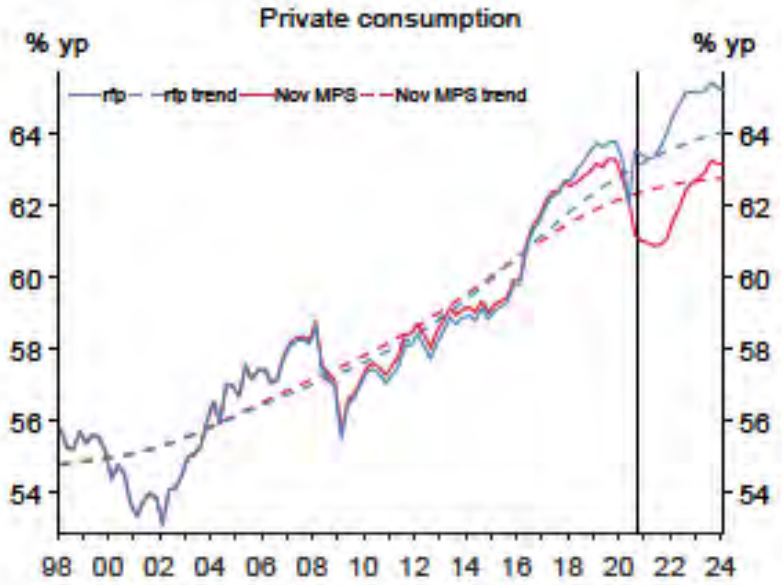

Annual non-tradables inflation
Annual %
Annual %
rfp
rfp trend
Nov MPS
Nov MPS trend
98 00 02 04 06 08 10 12 14 16 18 20 22 24

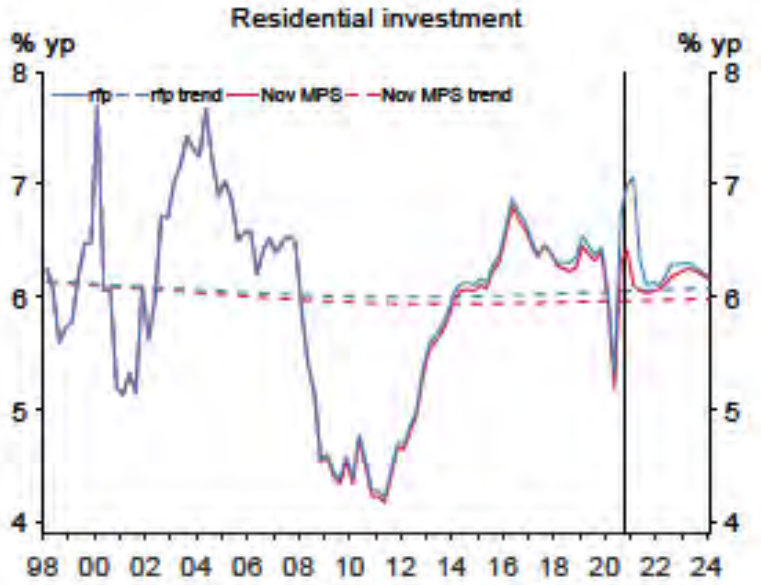

Annual tradables inflation
Annual %
Annual %
rfp
rfp trend
Nov MPS
Nov MPS trend
98 00 02 04 06 08 10 12 14 16 18 20 22 24

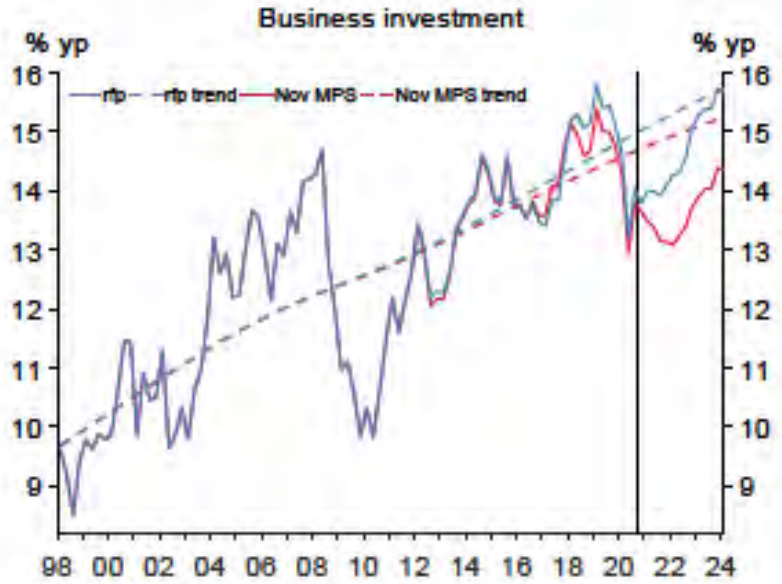

Real wage (LCI private sector)
Index
Index
rfp
rfp trend
Nov MPS
Nov MPS trend
98 00 02 04 06 08 10 12 14 16 18 20 22 24

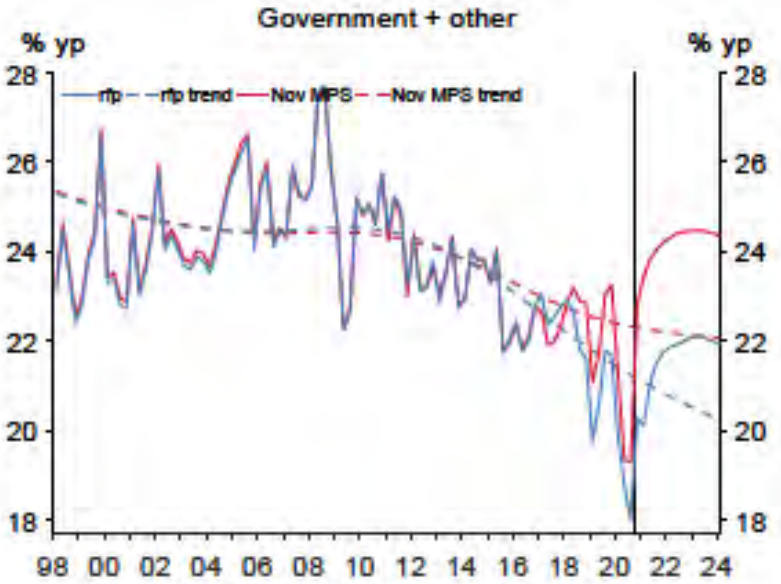

Real house prices
Index
Index
rfp
rfp trend
Nov MPS
Nov MPS trend
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

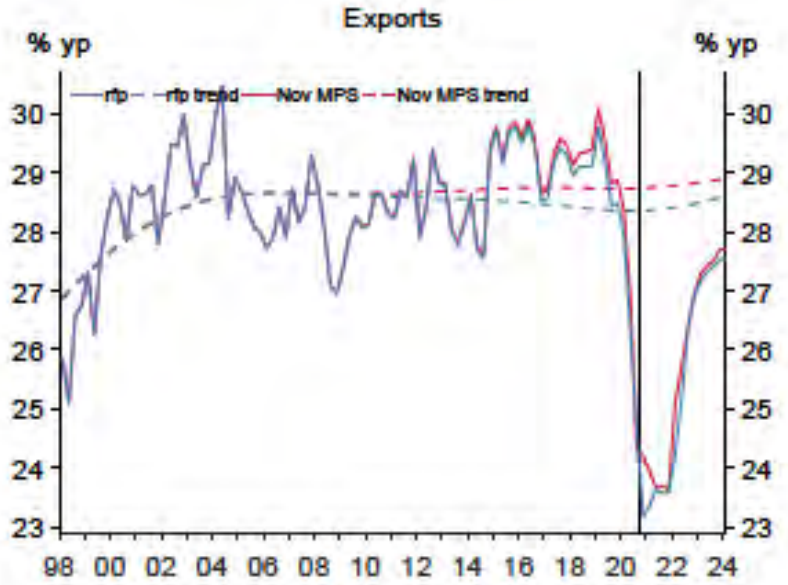

Private consumption
% yp
% yp
rfp
rfp trend
Nov MPS
Nov MPS trend
64
62
60
58
56
54
98 00 02 04 06 08 10 12 14 16 18 20 22 24

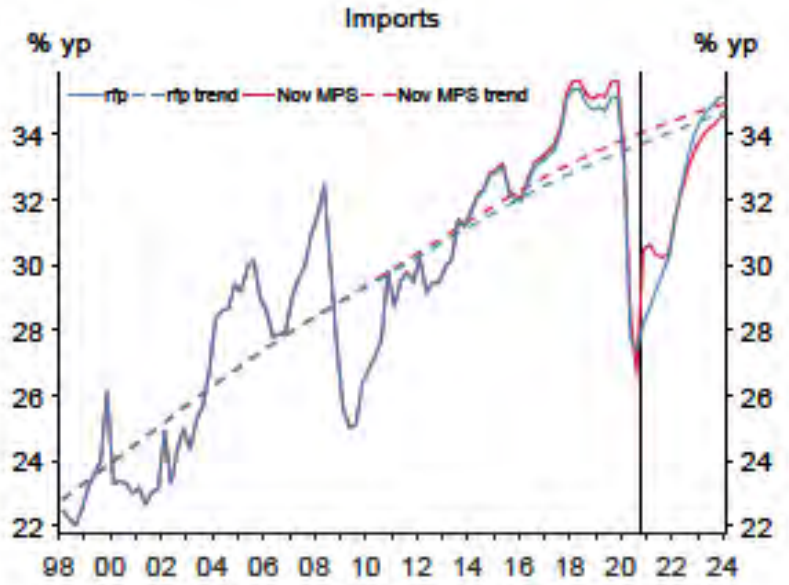

Residential investment
% yp
% yp
rfp
rfp trend
Nov MPS
Nov MPS trend
8
7
6
5
4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

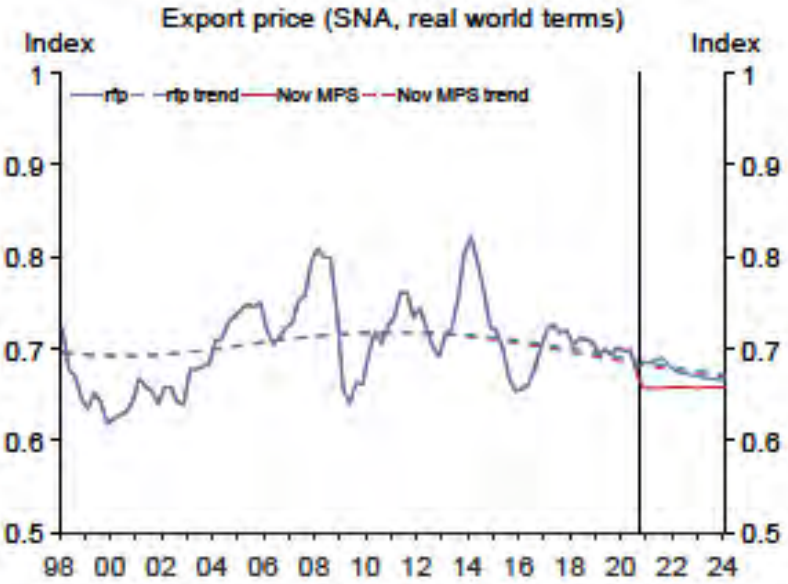

Business investment
% yp
% yp
rfp
rfp trend
Nov MPS
Nov MPS trend
16
15
14
13
12
11
10
9
98 00 02 04 06 08 10 12 14 16 18 20 22 24

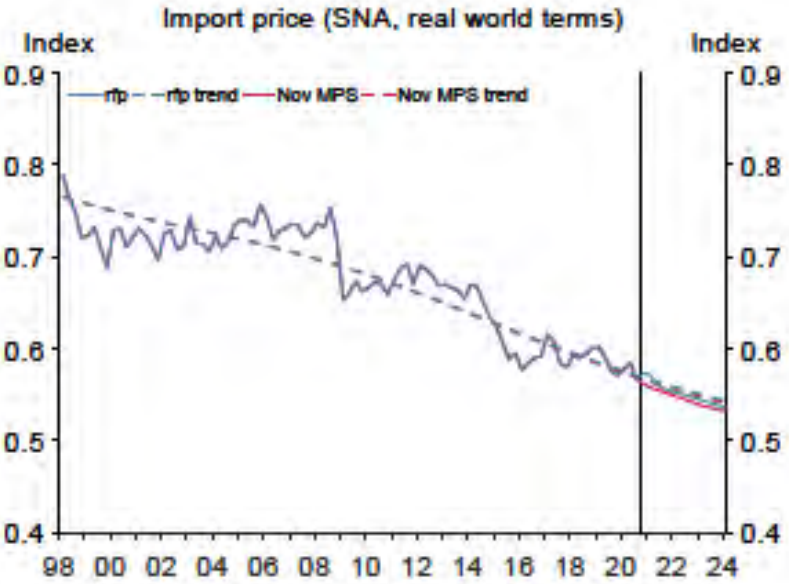

Government + other
% yp
% yp
rfp
rfp trend
Nov MPS
Nov MPS trend
28
26
24
22
20
18
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

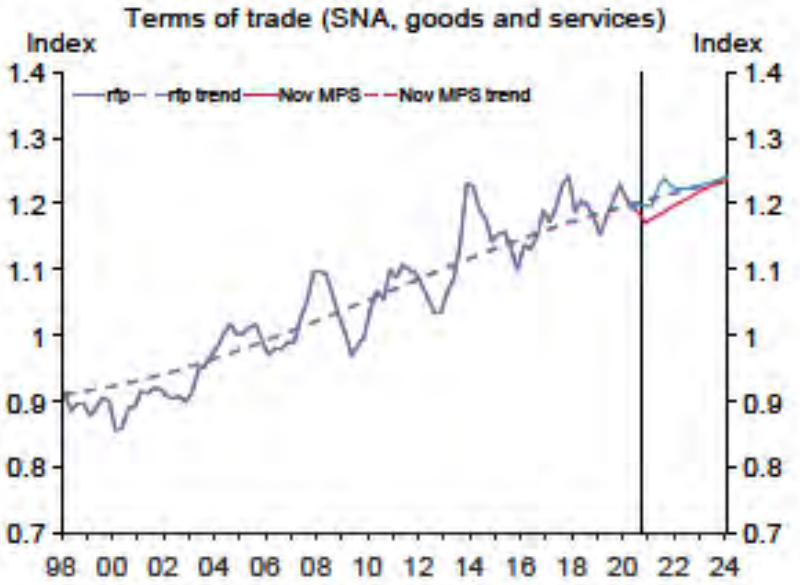

Exports
% yp
% yp
rfp
rfp trend
Nov MPS
Nov MPS trend
30
29
28
27
26
25
24
23
98 00 02 04 06 08 10 12 14 16 18 20 22 24

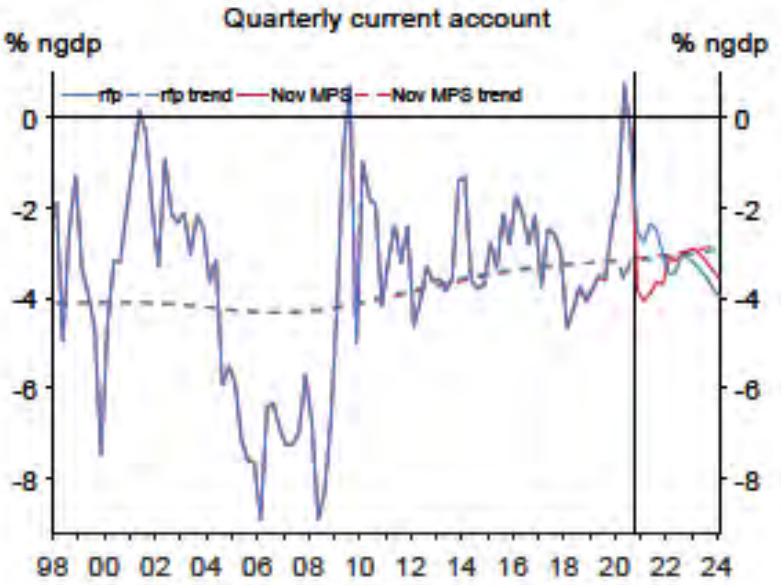

Imports
% yp
% yp
rfp
rfp trend
Nov MPS
Nov MPS trend
34
32
30
28
26
24
22
98 00 02 04 06 08 10 12 14 16 18 20 22 24

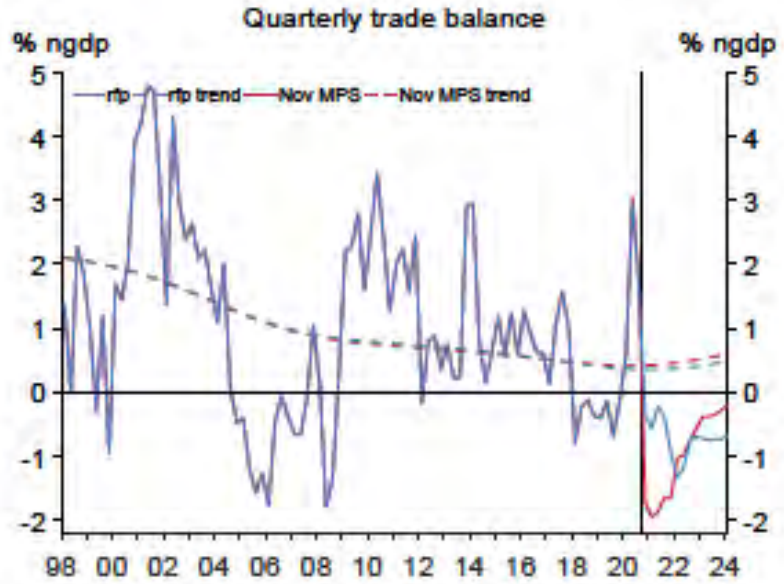

Export price (SNA, real world terms)
Index
Index
rfp
rfp trend
Nov MPS
Nov MPS trend
1
0.9
0.8
0.7
0.6
0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

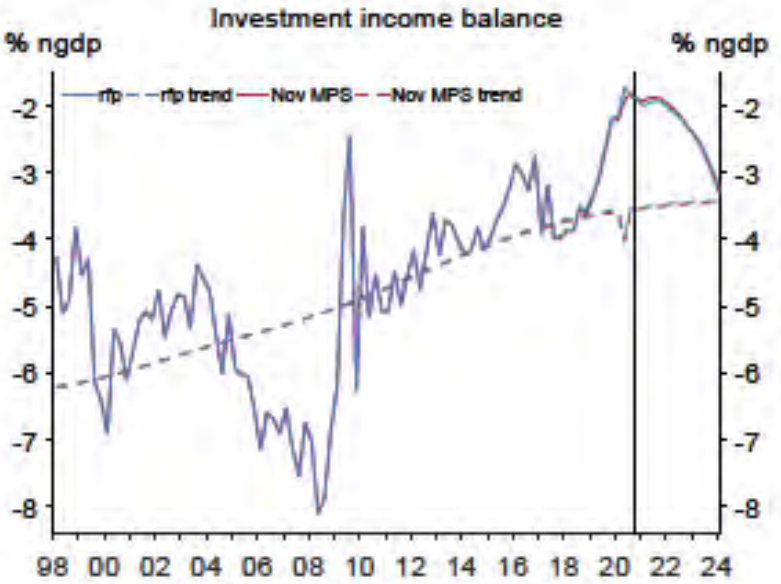

Import price (SNA, real world terms)
Index
Index
rfp
rfp trend
Nov MPS
Nov MPS trend
0.9
0.8
0.7
0.6
0.5
0.4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

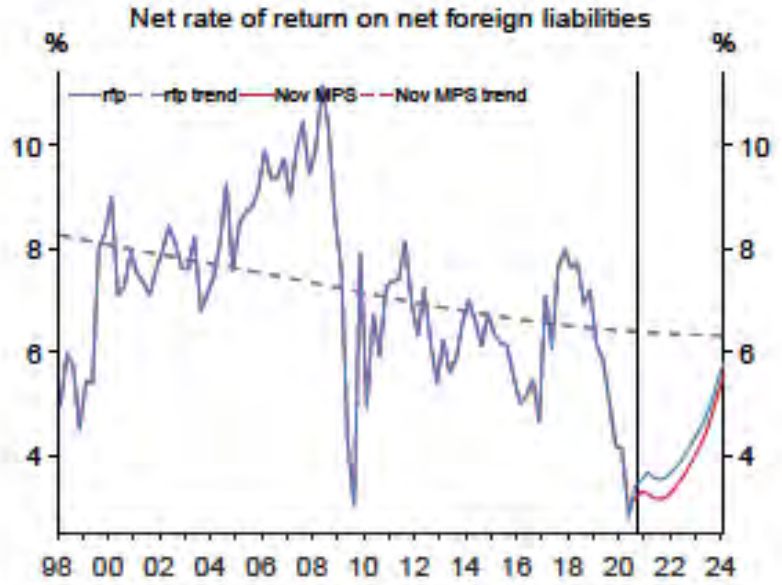

Terms of trade (SNA, goods and services)
Index
Index
rfp
rfp trend
Nov MPS
Nov MPS trend
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
98 00 02 04 06 08 10 12 14 16 18 20 22 24

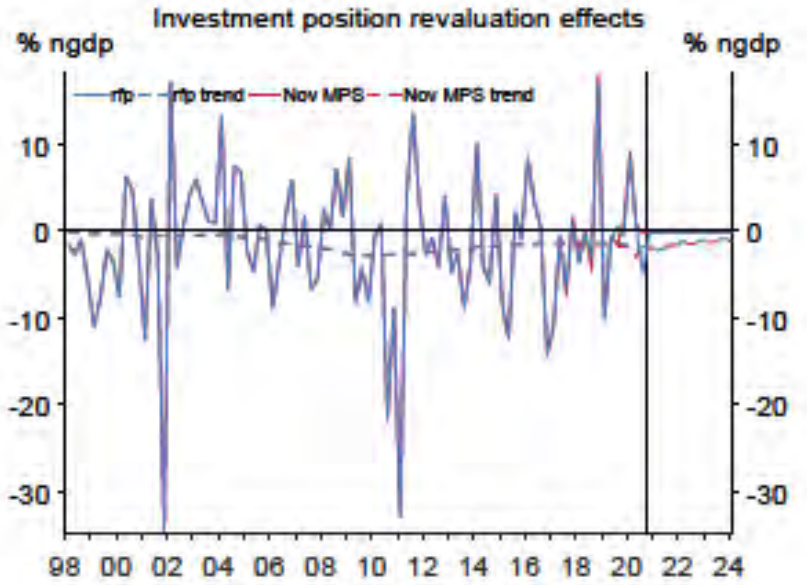

Quarterly current account
% ngdp
% ngdp
rfp
rfp trend
Nov MPS
Nov MPS trend
0
-2
-4
-6
-8
98 00 02 04 06 08 10 12 14 16 18 20 22 24

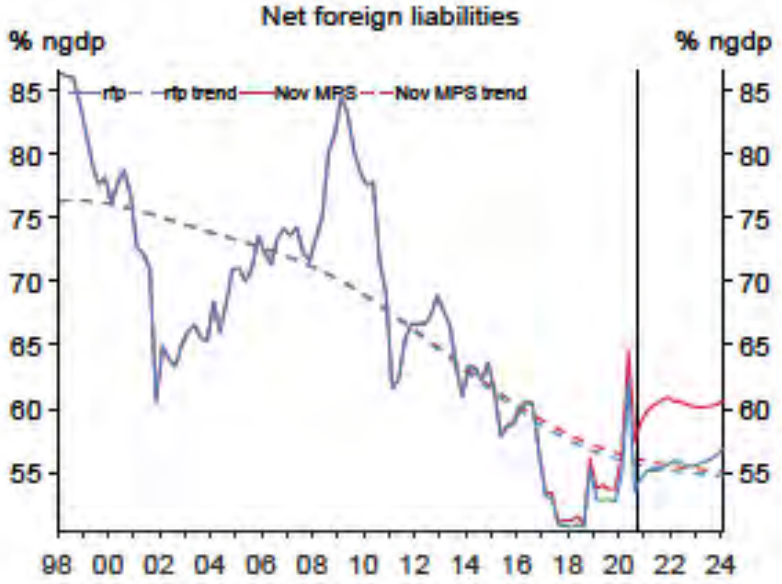

Quarterly trade balance
% ngdp
% ngdp
rfp
rfp trend
Nov MPS
Nov MPS trend
5
4
3
2
1
0
-1
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

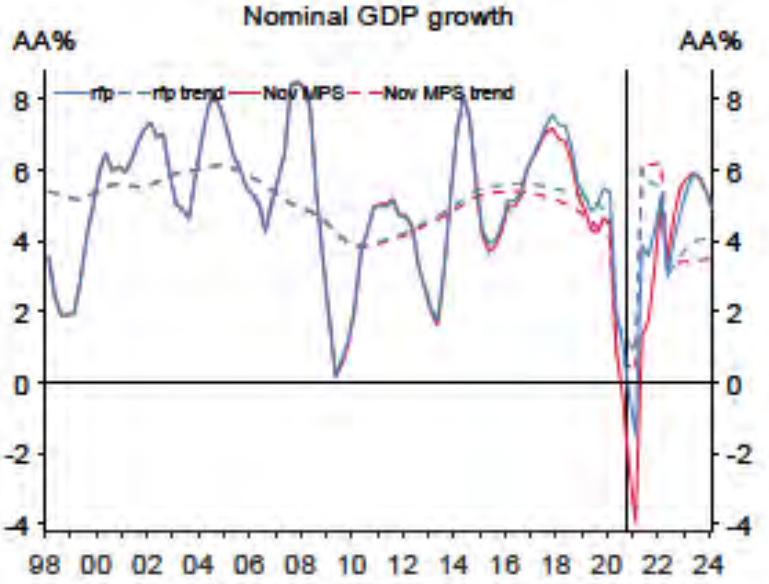

Investment income balance
% ngdp
% ngdp
rfp
rfp trend
Nov MPS
Nov MPS trend
-2
-3
-4
-5
-6
-7
-8
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

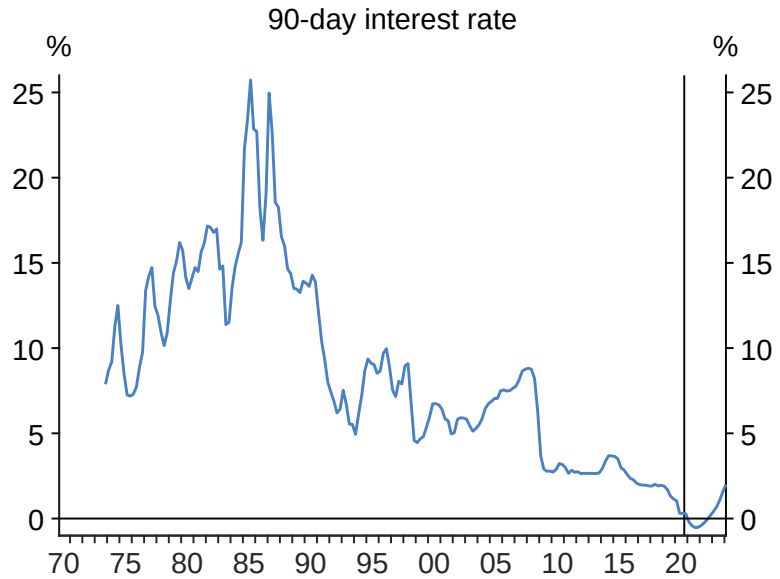

Net rate of return on net foreign liabilities
%
%
rfp
rfp trend
Nov MPS
Nov MPS trend
10
8
6
4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

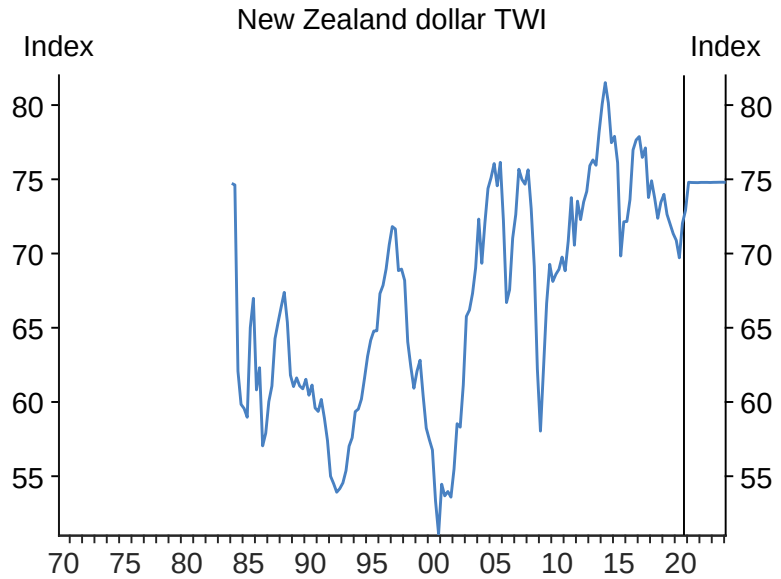

Investment position revaluation effects
% ngdp
% ngdp
rfp
rfp trend
Nov MPS
Nov MPS trend
10
0
-10
-20
-30
98 00 02 04 06 08 10 12 14 16 18 20 22 24

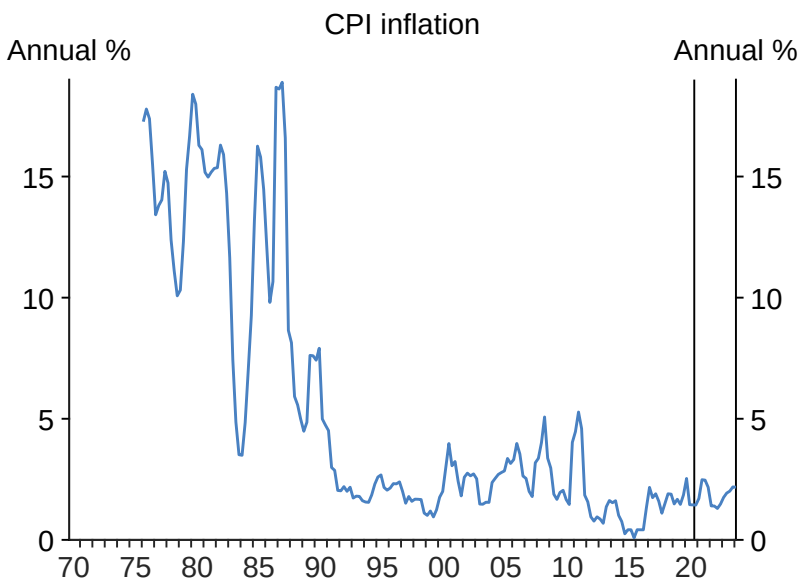

Net foreign liabilities
% ngdp
% ngdp
rfp
rfp trend
Nov MPS
Nov MPS trend
85
80
75
70
65
60
55
98 00 02 04 06 08 10 12 14 16 18 20 22 24

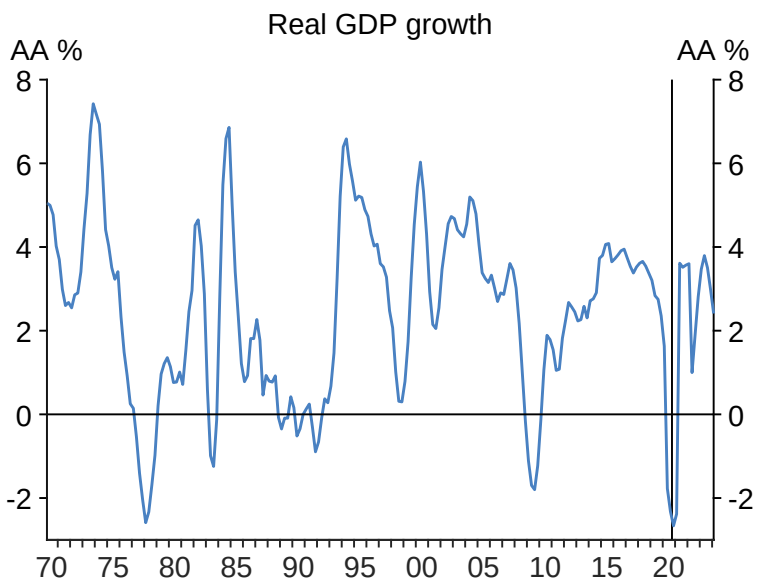

Nominal GDP growth
AA%
AA%
rfp
rfp trend
Nov MPS
Nov MPS trend
8
6
4
2
0
-2
-4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Long Term

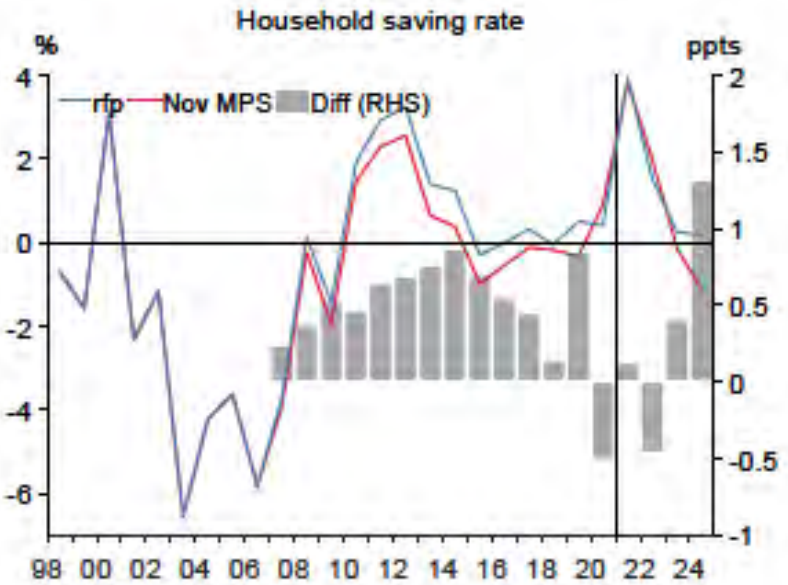

90-day interest rate
%
%
25
20
15
10
5
0
70 75 80 85 90 95 00 05 10 15 20

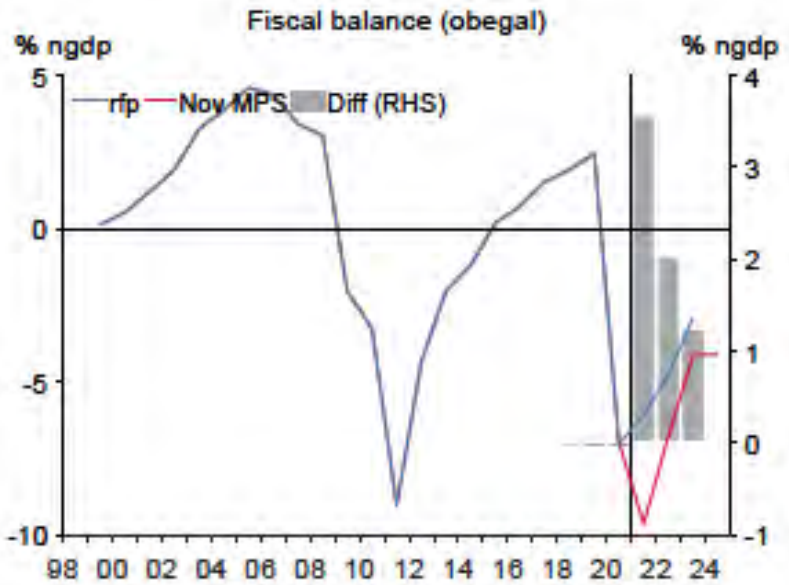

New Zealand dollar TWI
Index
Index
80
75
70
65
60
55
70 75 80 85 90 95 00 05 10 15 20


CPI inflation
Annual %
Annual %
15
10
5
0
70 75 80 85 90 95 00 05 10 15 20


Real GDP growth
AA %
AA %
8
6
4
2
0
-2
70 75 80 85 90 95 00 05 10 15 20

Other


Household saving rate
%
ppts
rfp
Nov MPS
Diff (RHS)
4
2
0
-2
-4
-6
2
1.5
1
0.5
0
-0.5
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24


Fiscal balance (obegal)
% ngdp
% ngdp
rfp
Nov MPS
Diff (RHS)
5
0
-5
-10
4
3
2
1
0
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Forecast Tables

Feb FP

February 11, 2021

Contents

Table A Summary of economic projections (*MPS* table 6.5)

(Annual percentage change, unless specified otherwise)

	Actuals			Projections		
March year	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Price measures						
CPI	1.5	2.5	1.7	1.4	1.8	2.2
Labour costs (LCI private sector)	2.0	2.4	1.6	2.3	2.5	2.4
Import prices ($NZ, SNA, goods and services)	4.3	2.5	-5.5	-1.6	0.5	0.6
Export prices ($NZ, SNA, goods and services)	1.3	7.4	-6.4	0.5	1.0	1.7
Monetary conditions						
Official cash rate (year average)	1.8	1.1	-0.6	-0.7	-0.2	1.1
New Zealand dollar TWI (year average)	73.4	71.7	72.4	74.8	74.8	74.8
Output						
GDP (production, annual average % change)	3.2	1.6	-2.4	3.6	3.5	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	-0.8	1.0	1.5
Labour market						
Total employment	1.4	2.6	-0.3	0.2	1.6	1.8
Unemployment rate (March qtr, s.a.)	4.2	4.2	5.0	5.1	4.8	4.5
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	-1.3	-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	1.5	0.2	0.2
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)

							Not published in MPS *table 6.1*				
		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 %			
	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
2019	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
	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
2020	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
	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
2021	Mar	-0.3	1.0	1.7	74.8	-0.4	0.9	2.2	3.3	2.0	4.9
	Jun	0.1	0.3	2.5	74.8	-0.7	2.0	2.8	3.0	2.0	4.9
	Sep	0.1	0.7	2.5	74.8	-0.8	1.4	3.1	2.9	2.0	4.9
	Dec	0.5	0.2	2.2	74.8	-0.8	1.1	3.0	2.9	2.0	4.9
2022	Mar	0.6	0.3	1.4	74.8	-0.7	-0.7	3.2	3.0	2.0	4.9
	Jun	0.9	0.3	1.4	74.8	-0.5	-0.6	2.9	3.2	2.0	4.9
	Sep	1.5	0.6	1.3	74.8	-0.3	-0.5	2.7	3.4	2.0	4.9
	Dec	0.9	0.4	1.5	74.8	-0.1	-0.5	2.9	3.7	2.0	4.8
2023	Mar	0.5	0.5	1.8	74.8	0.2	-0.3	3.1	3.9	2.0	4.8
	Jun	0.5	0.5	1.9	74.8	0.4	-0.3	3.4	4.2	2.0	4.8
	Sep	0.5	0.6	2.0	74.8	0.8	-0.1	3.6	4.6	2.0	4.8
	Dec	0.4	0.5	2.2	74.8	1.3	0.0	3.7	5.1	2.0	4.8
2024	Mar	0.2	0.5	2.2	74.8	1.7	0.1	3.6	5.5	2.0	4.8

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

(Annual average percentage change, unless specified otherwise)

	Actuals						Projections			
March year	**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	4.7	3.5	2.2
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	4.0	3.1	2.0
Gross fixed capital formation										
Residential	8.3	7.1	8.8	-1.8	3.0	1.5	2.5	-2.9	3.3	1.4
Other	7.9	2.8	0.3	10.7	6.6	1.1	-7.1	9.7	6.5	5.7
Total	8.0	3.9	2.5	7.3	5.7	1.2	-4.7	6.3	5.7	4.7
Final domestic expenditure	4.4	3.8	4.8	5.2	4.6	3.0	-1.5	4.6	3.7	2.6
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	5.4	3.9	2.7
Exports of goods and services	4.7	6.6	1.7	3.6	3.2	-0.2	-15.9	1.1	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	13.0	6.3
Expenditure on GDP	3.7	4.4	3.8	4.4	4.1	2.1	-0.1	2.8	3.3	2.3
GDP (production)	3.8	3.7	3.7	3.6	3.2	1.6	-2.4	3.6	3.5	2.4
GDP (production, March qtr to March qtr)	3.8	4.1	3.2	3.6	2.9	0.0	1.2	1.3	4.0	1.7

Table D World outlook

(Annual average percentage change, unless specified otherwise)

	Actuals				Projections				
March year	**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)

	Actuals				Projections				
March year	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Final consumption expenditure									
Private	3.9	3.0	2.7	1.8	-1.4	3.0	2.3	1.4	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	3.4	2.6	1.7	0.8
Gross fixed capital formation									
Residential	0.6	-0.1	0.2	0.1	0.2	-0.2	0.2	0.1	-0.0
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	1.6	1.5	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	-0.7
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	3.6	3.5	2.4	1.0

Table F Household income and consumption

(Annual average percentage change, unless specified otherwise)

	Actuals				Projections				
March year	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Compensation of employees	5.2	6.1	6.1	6.0	2.6	4.1	4.4	5.8	NaN
Non-farm entrepreneurial income	10.1	3.5	9.1	7.7	3.9	6.7	3.5	-1.6	NaN
Farm entrepreneurial income	143.4	20.4	-4.4	-1.3	-9.9	-33.9	-5.7	-26.2	NaN
Other income	5.6	6.2	7.5	2.3	4.3	4.9	1.6	3.1	NaN
Total income	7.7	6.2	6.5	5.1	2.8	3.7	3.4	3.8	NaN
Less income tax	7.0	7.5	5.7	7.2	3.4	4.1	3.8	4.1	NaN
Nominal disposable income	7.9	6.0	6.6	4.6	2.6	3.6	3.3	3.7	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	2.1	2.2	2.1	NaN
Real household consumption	6.5	4.9	4.4	2.8	-2.2	4.7	3.5	2.2	0.8
Household saving rate (% of disposable income)	0.3	-0.1	0.5	0.4	3.9	1.5	0.2	0.2	NaN

Table G Fiscal accounts

($ billions, unless specified otherwise)

	Actuals					Projections			
June year	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Direct taxation	48.8	51.8	56.4	55.5	58.0	57.4	63.7	NaN	NaN
Indirect taxation	26.2	27.8	29.3	29.4	32.0	31.7	32.8	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	118.7	119.9	129.3	NaN	NaN
Social welfare	30.6	30.2	33.9	49.9	44.3	43.9	45.3	47.5	49.3
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	-19.4	-16.0	-10.3	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	38.4	48.2	52.0	NaN	NaN

Table H External

	Actuals				Projections				
March year	**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	1.1	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	6.6	1.9
Total	5.6	7.8	4.4	1.0	-20.0	11.4	13.0	6.3	2.2
Current account									
($ billion)									
Goods and services balance	1.5	2.1	-0.9	-0.3	2.8	-2.4	-3.0	-2.7	-0.8
Investment income balance	-8.8	-10.9	-10.9	-8.1	-6.0	-6.6	-8.0	-10.8	-14.0
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	-4.2	-9.5	-11.3	-13.7	-15.0
(% of nominal production GDP)	-2.7	-3.2	-3.9	-2.8	-1.3	-2.8	-3.2	-3.7	NaN

Table I Labour market

	Actuals				Projections				
March year	**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	2740	2785	2836	2876
Annual growth (%)	5.9	2.9	1.4	2.6	-0.3	0.2	1.6	1.8	1.4
Unemployment (000's)	132.8	120.8	118.5	121.8	143.0	148.1	139.6	134.8	138.0
Unemployment rate (s.a., %LF)	4.9	4.4	4.2	4.2	5.0	5.1	4.8	4.5	4.6
Total hours worked									
Annual growth (%)	4.3	4.7	3.4	1.0	1.3	-1.6	1.4	1.7	1.4
Labour productivity (aa%)	1.0	-0.0	-0.4	0.4	-1.3	2.0	2.4	0.7	-0.6
Trend (aa%)	0.5	0.3	0.2	0.2	0.4	0.7	0.8	0.7	0.6
LCI private sector wages									
Annual growth (%)	1.5	1.9	2.0	2.4	1.6	2.3	2.5	2.4	1.6

Table J Real GDP and components - short-term projections

(Quarterly percentage change, unless specified otherwise)

		Actuals		Projections							
	GDP share	**Jun20**	**Sep20**	**Dec20**	**Mar21**	**Jun21**	**Sep21**	**Dec21**	**Mar22**	**Jun22**	**Sep22**
Final consumption expenditure											
Private	50	-12.1	14.8	-0.1	-0.1	0.2	0.6	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	0.3	0.6	0.7	1.0	0.8	0.8
Gross fixed capital formation											
Residential	5	-20.6	42.0	4.0	1.0	-10.4	-3.2	0.5	0.0	1.8	2.2
Other	11	-19.0	19.3	-1.6	1.6	0.1	-0.3	1.5	1.6	0.8	2.3
Total	16	-19.5	25.8	0.2	1.4	-3.4	-1.2	1.2	1.1	1.1	2.3
Change in stocks (contribution)		-1.2	1.5	0.5	-1.4	0.7	0.3	0.1	0.1	0.0	0.0
$millions		-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	-0.2	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	4.2	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	1.9	2.0	2.7	3.1	3.0
Total	23	-24.6	10.6	3.1	1.8	2.1	1.8	2.0	4.5	3.4	3.3
GDP (expenditure)		-9.5	15.7	-1.1	-1.0	0.1	0.1	0.5	0.6	0.9	1.5
GDP (production)		-11.0	14.0	0.0	-0.3	0.1	0.1	0.5	0.6	0.9	1.5

Forecast Week material
February 2021 round

Overview and recent developments

- Overview
  (Rebecca Williams)

- Paper 1: Where are we relative to our economic objectives?
  (Daniel Wills, Waran Bhahirethan, Tyler Smith, Gregorius Steven)

- Paper 2: How much stimulus are we providing?
  (John Knowles, David Craigie)

Issues

- Paper 3.1: International economic and financial markets developments
  (Liza Reiderman, Tom Barker, Niall Healey, Jibran Siddiqi)

- Paper 3.2: Border restrictions: Implications
  (Tom Stannard)

- Paper 4.1: Household developments
  (Waran Bhahirethan)

- Paper 4.2: Business developments
  (Thomas Bohm)

Projections and policy tools

- Paper 5: How much stimulus is needed? (with chartpack and tables)
  (Hamish Fitchett, Marea Sing)

- Paper 6.1: Expanding the toolkit: Negative OCR
  (Evelyn Truong)

- Paper 6.2: LSAP advice
  (Cameron Haworth, Sandeep Parekh)

Policy recommendation

- Paper 7.1: Secondary considerations
  (Chris McDonald)

- Paper 7.2: IMPACT policy recommendation
  (Chris Bloor)

- Paper 7.3: Market intelligence report and expectations for monetary policy
  (Nick Mulligan)

Supporting material

- International chartpack
  (MIA)

- Summary of recent business visits: February 2021
  (Gregorius Steven)

- Sectoral overviews
  - External (Tom Stannard)
  - Household (Waran Bhahirethan)
  - Business investment (Thomas Bohm)
  - Labour market (Gregorius Steven)
  - GDP and capacity pressure (Tyler Smith)
  - Inflation (Daniel Wills)
  - Fiscal (Lewis Kerr)

- Summary of central bank views on operationalising NIRP

Forecast Week meeting agenda
February 2021 round

Day One: Monday, 15 February

11.00am – 12.30pm
Overview and recent developments

1. Overview (Rebecca Williams)

2. Where are we relative to our economic objectives? (Paper 1, *Daniel Wills*)

3. How much stimulus are we providing? (Paper 2, *John Knowles*)

1.30pm – 4.30pm
Issues

4. International economic and financial market developments (Paper 3.1, *Liza Reiderman*)

5. Border restrictions: Implications (Paper 3.2, *Tom Stannard*)

   (Break)

6. Household developments (Paper 4.1, *Waran Bhahirethan*)

7. Business developments (Paper 4.2, *Thomas Bohm*)

Day Two: Tuesday 16 February

9.30am – 11.30am
Projections and policy tools

8. How much stimulus is needed? (Paper 5, Hamish Fitchett)

   (Break)

9. Expanding the toolkit: Negative OCR (Paper 6.1, *Evelyn Truong*)

10. LSAP advice (Paper 6.2, *Cameron Haworth*)

1.30pm – 3.30pm
Policy recommendation

11. Secondary considerations (Paper 7.1, *Chris McDonald*)

12. IMPACT policy recommendation (Paper 7.2, *Chris Bloor*)

13. Market intelligence report and expectations for monetary policy (Paper 7.3, *Nick Mulligan*)

Day Three: Wednesday 17 February

1.00pm – 2.00pm
Second pass
Purpose: Review updated central scenario for incorporation into the MPS

2:00pm – 4.00pm
MPAG deliberation: Risks

Day Four: Thursday 18 February

10.00am – 11.30am
MPAG deliberation: Policy strategy
Purpose: Optional time for deliberation before preparing written advice

***** Written advice due to Gulnara Nolan (MPAG secretary) by 3pm *****

Day Five: Friday 19th February

10.00am – 12noon
MPC decision meeting: Key messages
Purpose: discuss summary of written advice and key messages

Day Six: Monday 22 February

11.30am – 1.00pm
MPC communications: Statement and Record of Meeting
Purpose: agree key messages for press statement, summary record of meeting, and MPS content for publication

Day Seven: Tuesday 23 February

10.00am – 12noon
MPC: Policy deliberations
Purpose: optional time for deliberation

Day Eight (MPS Release day): Wednesday 24 February

9.00am – 11.00am
MPC decision meeting
Purpose: agree current policy settings; agree press statement and summary record of meeting

Monetary policy announcement and MPS release 2:00pm
Media conference 3:00pm

STRICTLY CONFIDENTIAL TO RECIPIENTS
11 FEBRUARY 2021

Forecast Week Overview
February 2021

Forecasting Team
Primary author: Rebecca Williams

The New Zealand economy is starting from a stronger position than expected

The New Zealand economy has rebounded to a much stronger position than feared at the onset of the Covid-19 pandemic. Unprecedented fiscal and monetary support, in addition to resilient export demand, pent-up household spending and high house price inflation have pushed economic activity rapidly back to pre-Covid-19 levels.

Timely data suggest that this higher level of activity will be maintained in the near term. However, the domestic rebound has been uneven. Strength is the construction and retail sectors has offset ongoing weakness in tourism-related sectors.

Employment remains below its maximum sustainable level, but to a lesser extent than anticipated

Paper 1 '*Where are we relative to our economic objectives?*' details that the recovery in economic activity has been reflected in a more resilient labour market and higher inflation than expected at the time of the November 2020 *Statement*. The unemployment rate fell to 4.9 percent in the December quarter, in contrast to widespread expectations that it would climb higher. While employment remains below its maximum sustainable level, many aspects of the labour market – such as the rate of underemployment, hours worked, and the reported difficulty in finding labour – point to less spare capacity than anticipated in November.

Headline and core inflation have increased

Annual inflation now looks set to hold within our 1-3 percent target range, against previous expectations for a drop below 1 percent. Annual headline CPI inflation was 1.4 percent in the December quarter, and appears to have passed its trough with recent data pointing to further increases in the near term. Non-tradables inflation was boosted by housing-related components, such as construction costs and housing services, and is expected to be underpinned by these components and stronger wage inflation going forward. The recent increase in oil prices and supply chain bottlenecks are expected to result in a near-term spike in tradables inflation in early 2021, although a stronger TWI partially offsets this. Measures of core inflation and inflation expectations have also increased, with longer-term expectations sitting near 2 percent.

Financial conditions remain highly accommodative

The continuation of the Reserve Bank's large scale asset purchase (LSAP) programme and introduction of the Funding for Lending Programme (FLP) in November 2020 have contributed to highly accommodative financial conditions at the start of 2021. Mortgage and deposit rates remain at historically low levels. Aggregate funding conditions are very favourable at present. As discussed in **Paper 2 '*How much stimulus are we currently providing?*'**, the degree of stimulus is estimated to have lessened (conditions have tightened) slightly since the end of last year, but the potential for additional FLP pass-through remains.

Global economic outlook conditioned on path of vaccine rollouts

As discussed in **Paper 3.1 *'International economic and financial market developments'***, the commencement of vaccination programmes across several large economies, notably the USA and the UK, is welcome news for the global outlook and has reduced financial market uncertainty. China's economy has also recovered strongly, supporting demand for New Zealand's export commodities. That said, global monetary and fiscal policies remain highly expansionary. These conditions and the apparent resilience of the New Zealand economy have underpinned an appreciation in the New Zealand dollar exchange rate, and placed downward pressure on tradables inflation in the second half of 2020.

Trans-Tasman bubble no panacea

An upside risk that has been identified for the past six months is the potential for an easing in border restrictions within Australasia and the Pacific. **Paper 3.2 '*Border restrictions: Implications*'** considers the magnitude such changes could have, particularly with respect to trans-Tasman tourism. It concludes that while a quarantine-free travel agreement with Australia would provide welcome relief for local tourism operators, logistical difficulties and the uncertainty stemming from the outbreak-dependent nature of any agreement suggest the overall impact may not be as positive as it appears.

Household sector strength to stabilise

A key contributor to the unanticipated strength in the New Zealand economy has been the household sector. **Paper 4.1 '*Household developments*'** notes that the resilience of the labour market and household incomes (in part due to fiscal support packages), pent-up demand from lockdown, and substantial growth in house prices have seen household consumption surpass its pre-COVID-19 level.

Strong house price inflation reflects a myriad of demand-side factors – including higher than previously assumed inward migration prior the closure of borders, low mortgage rates, and the removal of LVR restrictions – combined with insufficiently responsive housing supply. House price inflation is expected to moderate from mid-2021, due to the reintroduction of LVR restrictions, a stabilisation in mortgage rates, and the flow-on effects of closed borders.

Recent spending data indicate that household spending has flattened off. Household consumption is expected to remain muted over 2021 as house price growth wanes and COVID-19 uncertainties linger.

Uncertainty to continue to weigh on the business sector

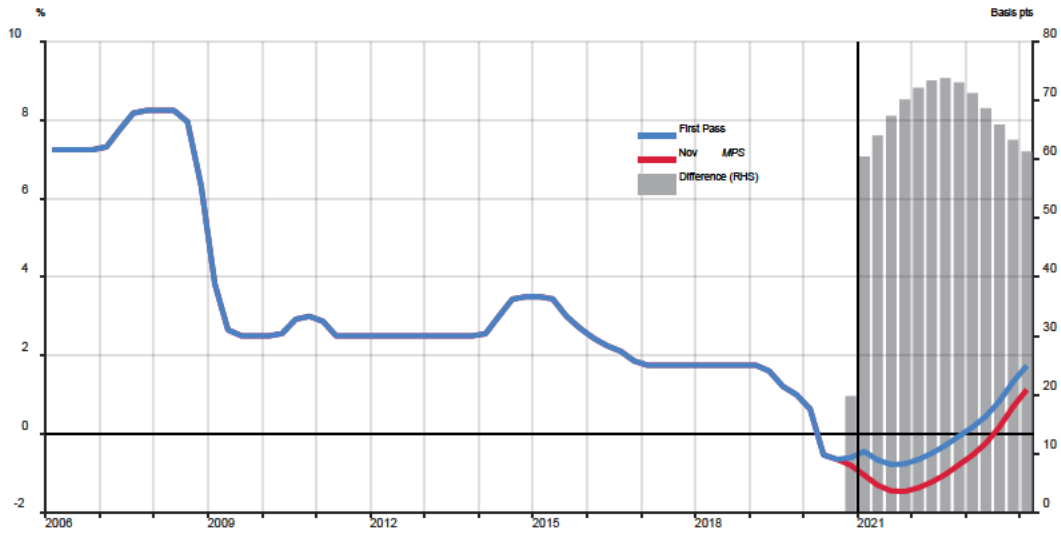
Businesses have to date fared better than anticipated at the start of the pandemic. As discussed in **Paper 4.2 '*Business developments*'**, many businesses that we have spoken to recently confirmed that demand had been stronger than they had feared, but said they are concerned about how sustainable this will prove to be. Despite favourable financing conditions and an apparent tightening in capacity pressure within the business sector – most notably with regard to finding labour – this lingering uncertainty is weighing on firms' willingness to invest. Business investment is not expected to return to its pre-COVID-19 level until late 2022.

First pass scenario implies monetary stimulus should be maintained at its current level in order to meet our Remit objectives

The stronger starting point and outlook for the economy implies that the amount of monetary policy stimulus required is less over the next few years than projected at the time of the November *Statement*. However, monetary policy is assumed to need to remain at its currently stimulatory level for some time (figure 1). **Paper 5 '*How much stimulus is needed?*'** presents

the first pass scenario and outlines the key economic judgements and assumptions that underpin the medium-term outlook. The scenario explicitly allows for a moderate overshoot in inflation and employment in line with the MPC's stance of 'least regrets'.

Figure 1: Unconstrained OCR outlook



The monetary policy toolkit is well-stocked

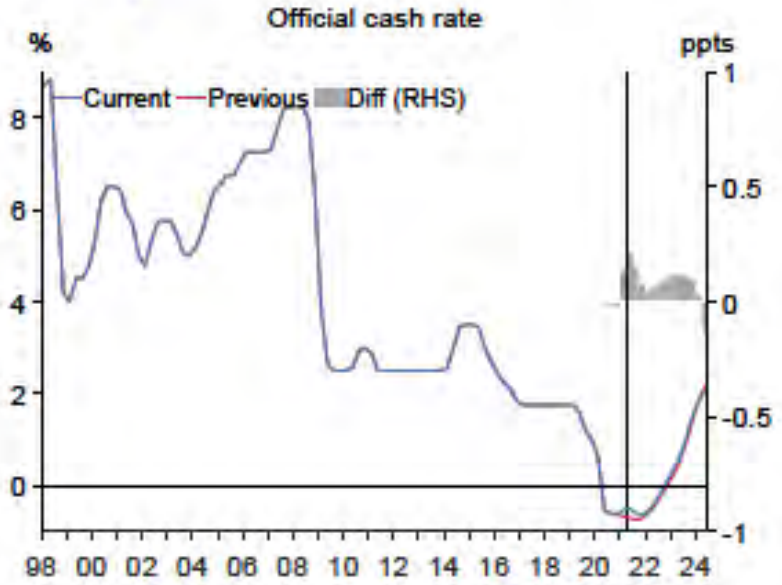
Paper 6.1 '*Expanding the toolkit: Negative OCR*' and **Paper 6.2 '*LSAP advice*'** provide an update on two of the monetary policy tools available for the MPC, and their relative merits when assessed against the MPC's principles (effectiveness, efficiency and financial stability implications). **Papers 7.1 and 7.2 provide the MPC with IMPACT's advice on the secondary considerations in the *Remit* and policy decision respectively. Paper 7.3 '*Market intelligence report and expectations for monetary policy*'** contains a summary of recent discussions with market participants.

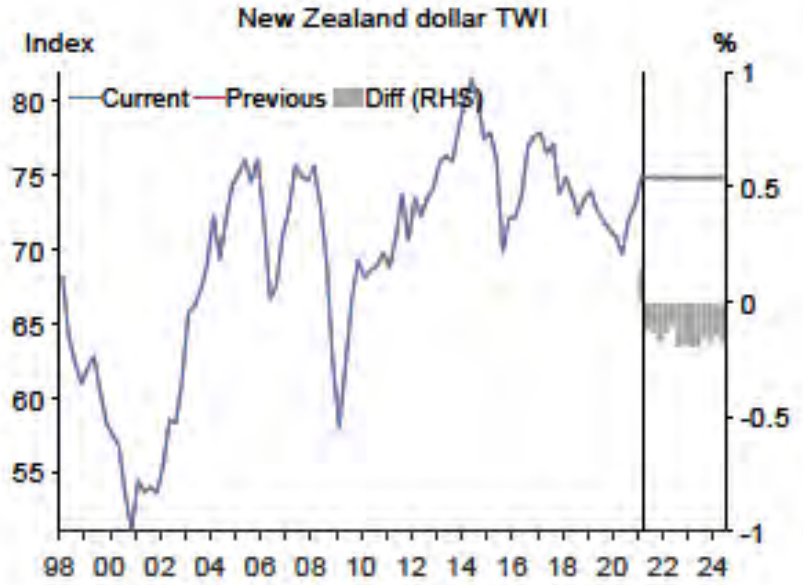
Forecast Chartpack

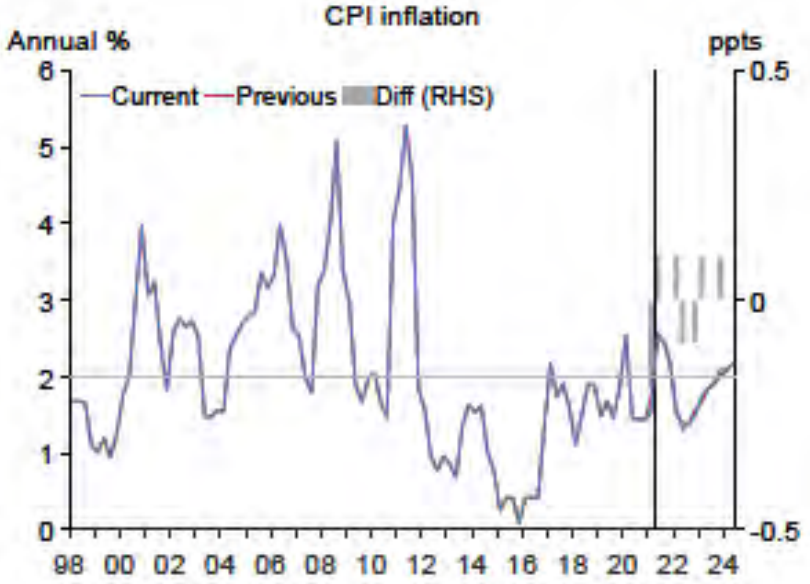
Current versus Previous

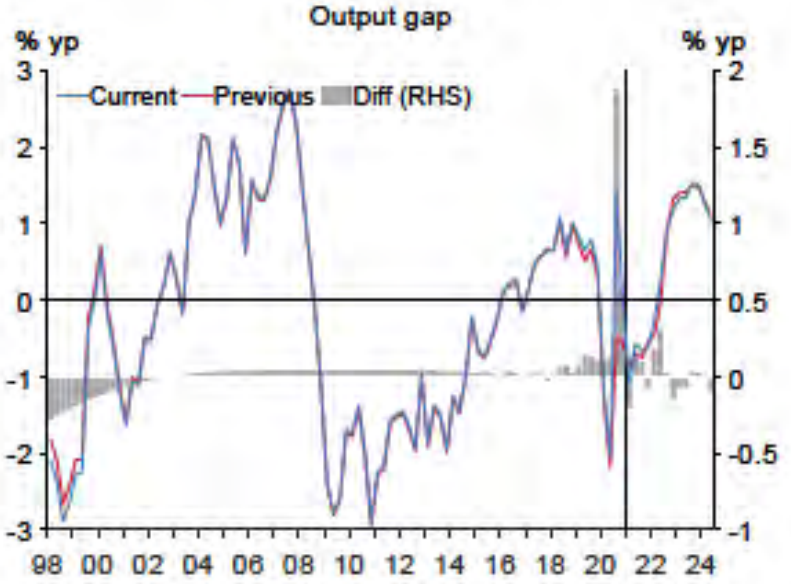
May 12, 2021

Summary

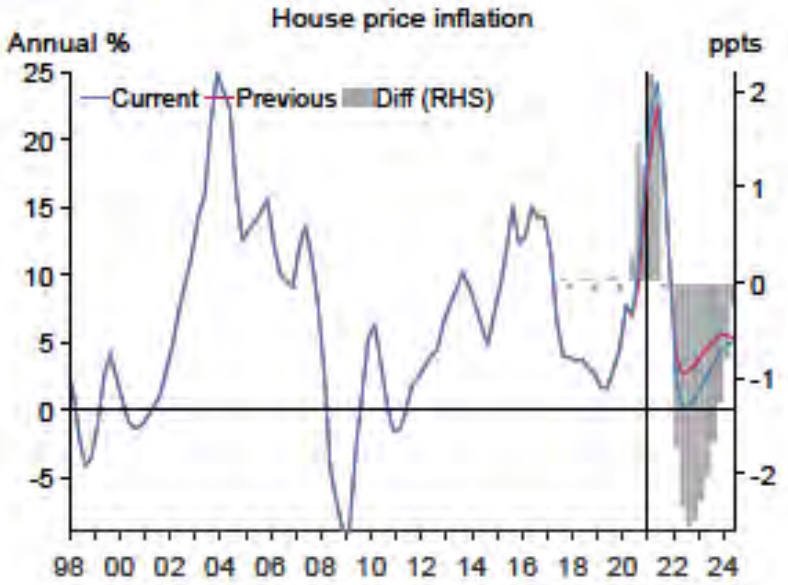

Official cash rate
%
ppts
Current
Previous
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

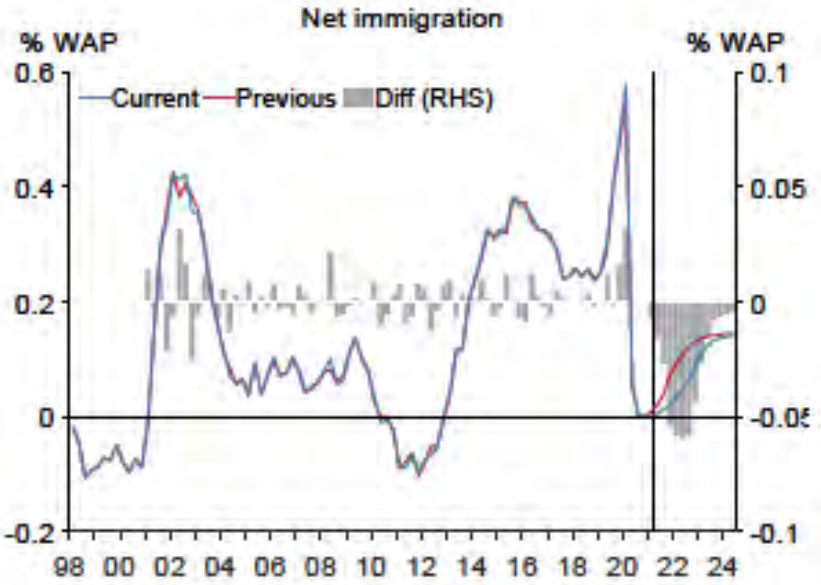

New Zealand dollar TWI
Index
%
Current
Previous
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

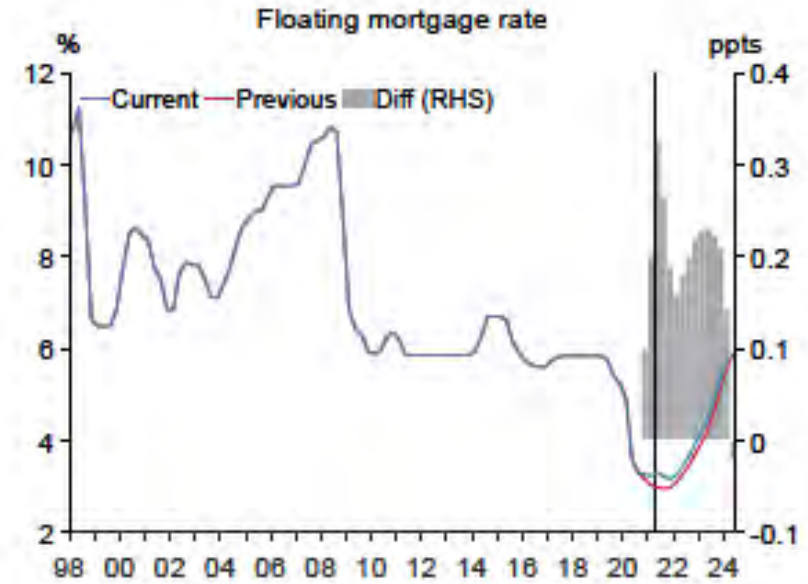

CPI inflation
Annual %
ppts
Current
Previous
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

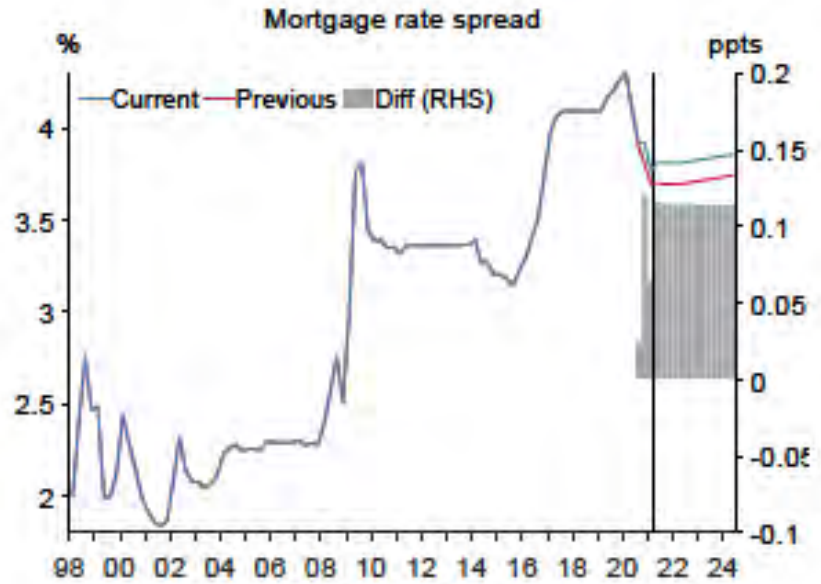

Output gap
% yp
% yp
Current
Previous
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Housing

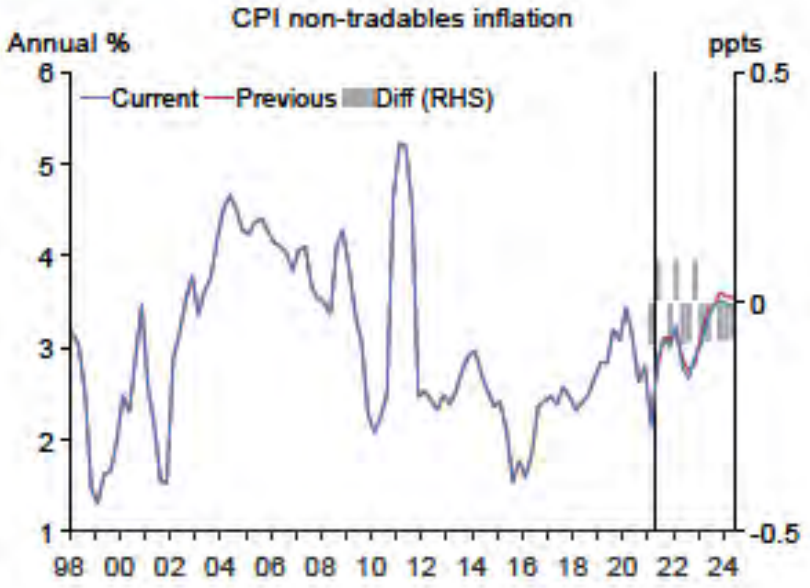

House price inflation
Annual %
ppts
Current
Previous
Diff (RHS)
25
20
15
10
5
0
-5
2
1
0
-1
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

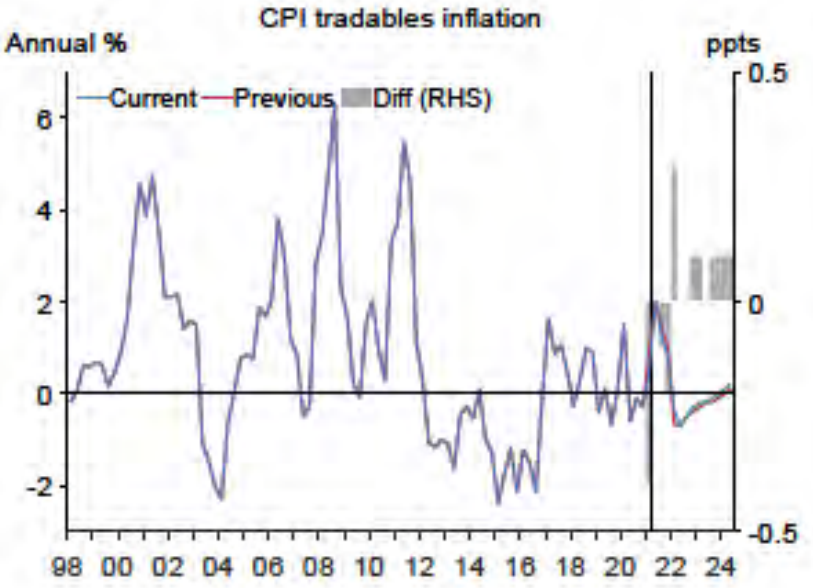

Net immigration
% WAP
% WAP
Current
Previous
Diff (RHS)
0.6
0.4
0.2
0
-0.2
0.1
0.05
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

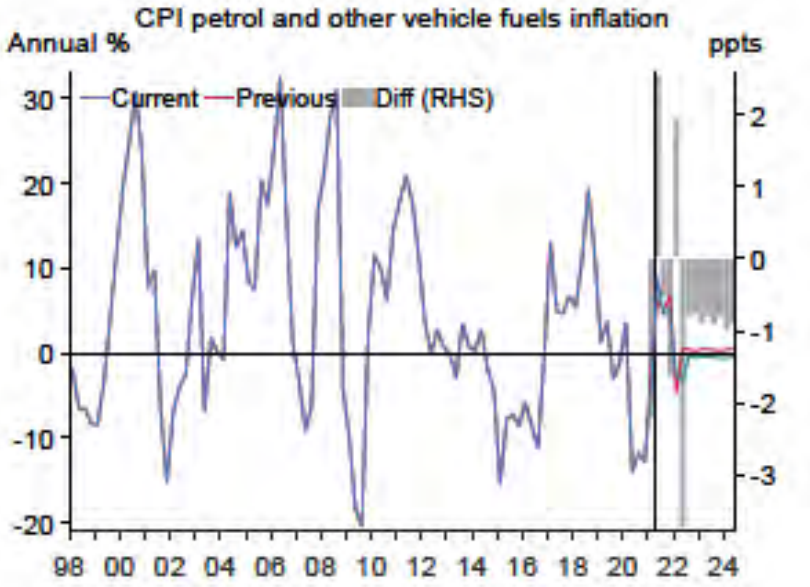

Floating mortgage rate
%
ppts
Current
Previous
Diff (RHS)
12
10
8
6
4
2
0.4
0.3
0.2
0.1
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

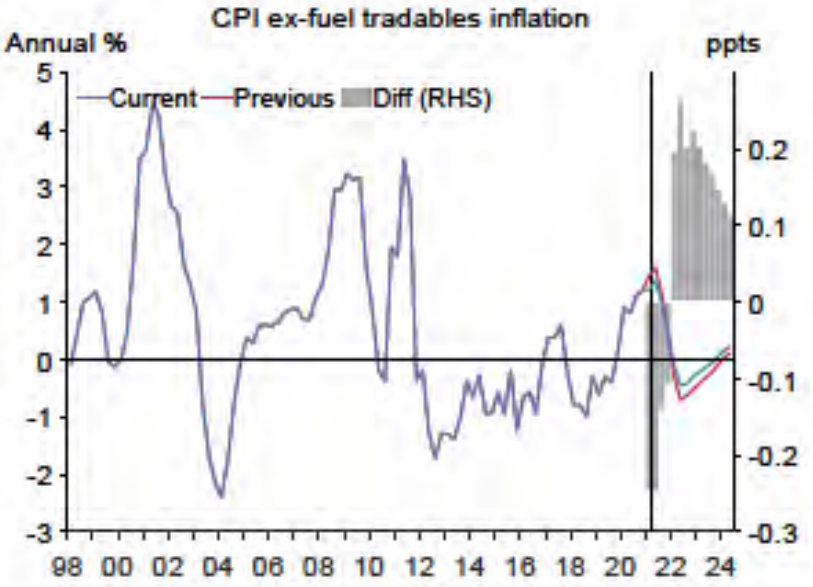

Mortgage rate spread
%
ppts
Current
Previous
Diff (RHS)
4
3.5
3
2.5
2
0.2
0.15
0.1
0.05
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Inflation

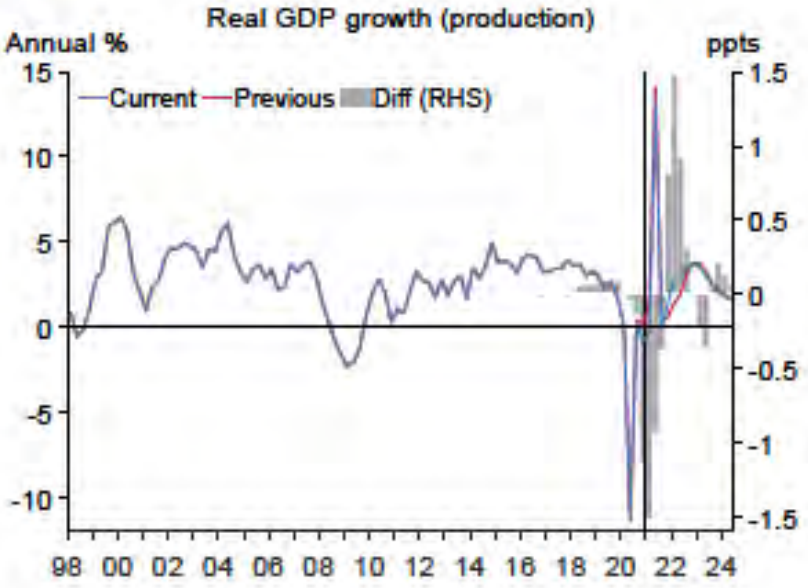

CPI non-tradables inflation
Annual %
ppts
Current
Previous
Diff (RHS)
6
5
4
3
2
1
0.5
0
-0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

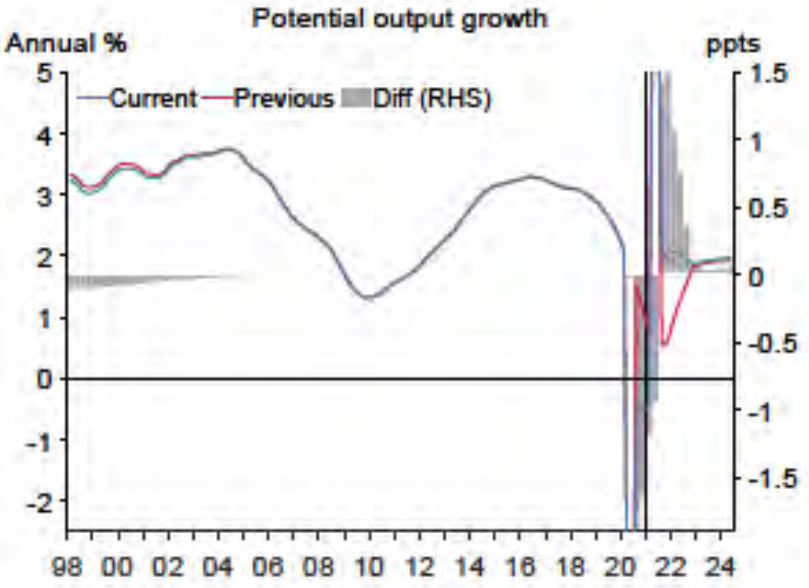

CPI tradables inflation
Annual %
ppts
Current
Previous
Diff (RHS)
6
4
2
0
-2
0.5
0
-0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

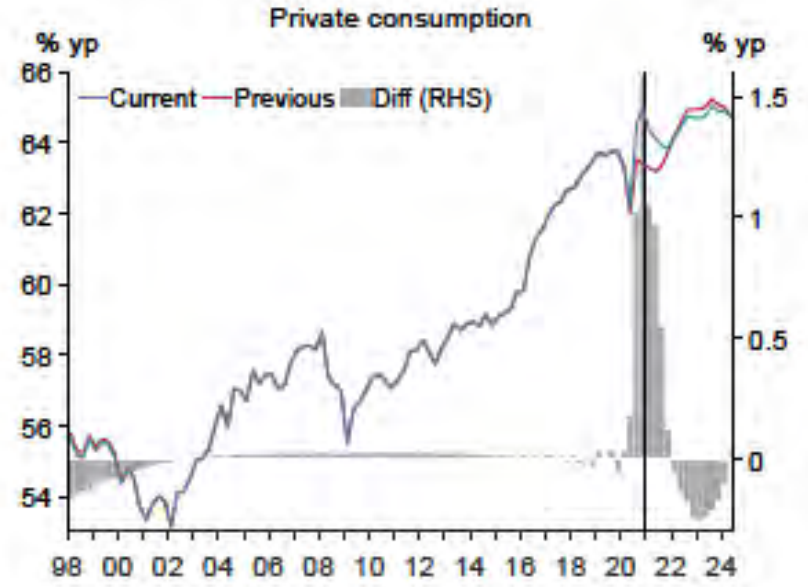

CPI petrol and other vehicle fuels inflation
Annual %
ppts
Current
Previous
Diff (RHS)
30
20
10
0
-10
-20
2
1
0
-1
-2
-3
98 00 02 04 06 08 10 12 14 16 18 20 22 24

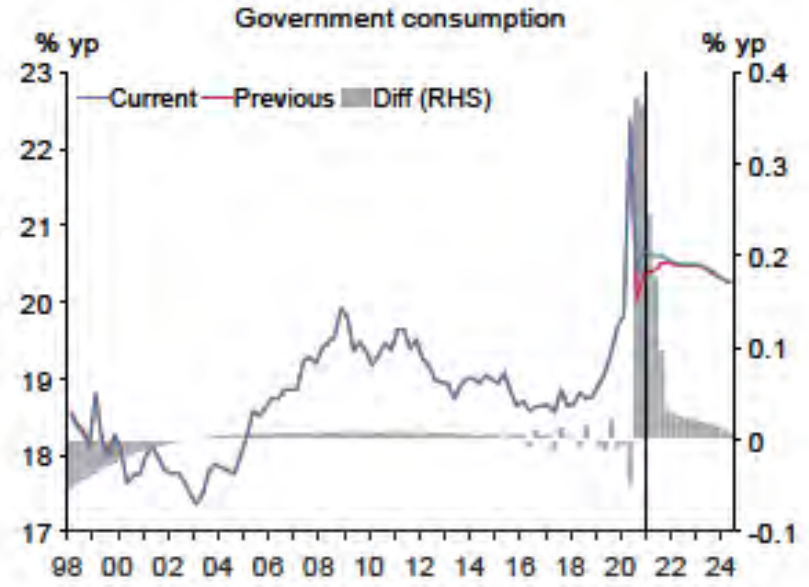

CPI ex-fuel tradables inflation
Annual %
ppts
Current
Previous
Diff (RHS)
5
4
3
2
1
0
-1
-2
-3
0.2
0.1
0
-0.1
-0.2
-0.3
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

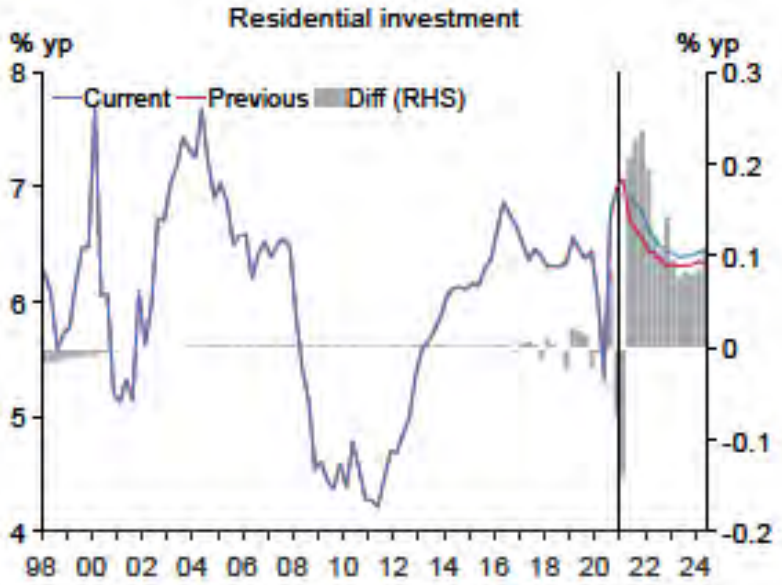

Real GDP growth (production)
Annual %
ppts
Current
Previous
Diff (RHS)
15
10
5
0
-5
-10
1.5
1
0.5
0
-0.5
-1
-1.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

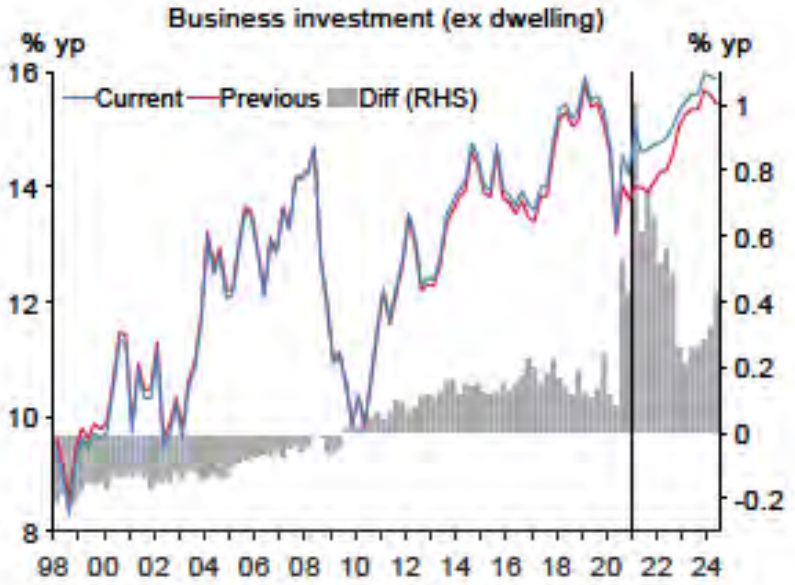

Potential output growth
Annual %
ppts
Current
Previous
Diff (RHS)
5
4
3
2
1
0
-1
-2
1.5
1
0.5
0
-0.5
-1
-1.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

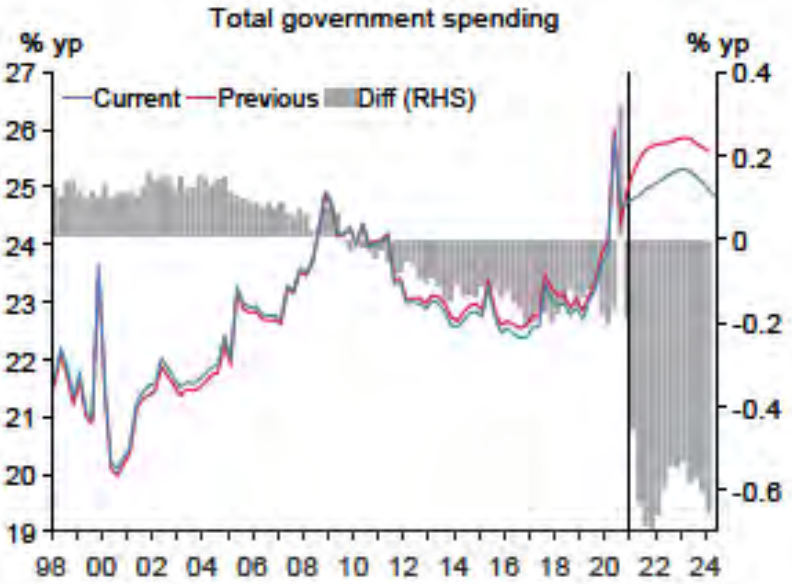

Private consumption
% yp
% yp
Current
Previous
Diff (RHS)
66
64
62
60
58
56
54
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

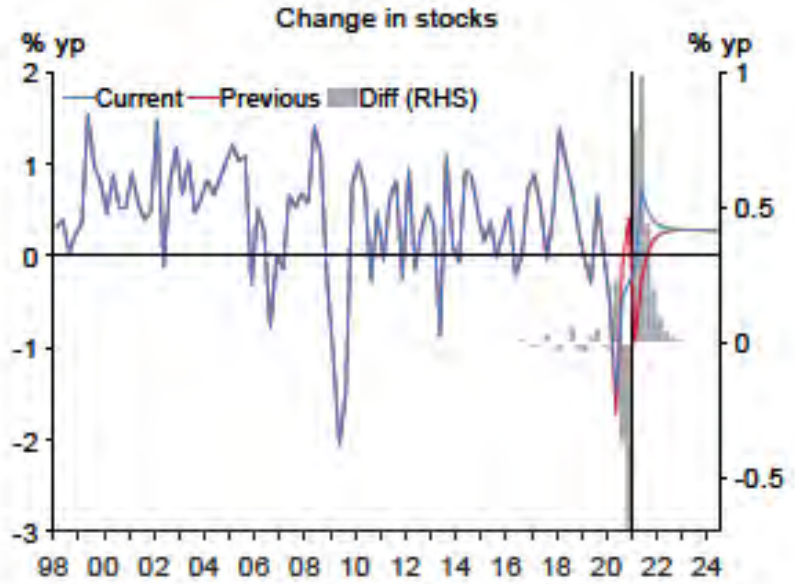

Government consumption
% yp
% yp
Current
Previous
Diff (RHS)
23
22
21
20
19
18
17
0.4
0.3
0.2
0.1
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

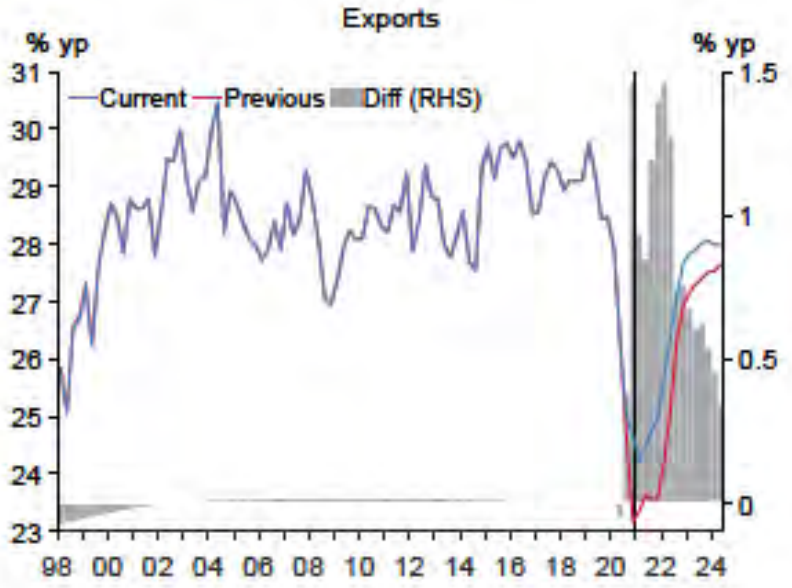

Residential investment
% yp
% yp
Current
Previous
Diff (RHS)
8
7
6
5
4
0.3
0.2
0.1
0
-0.1
-0.2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

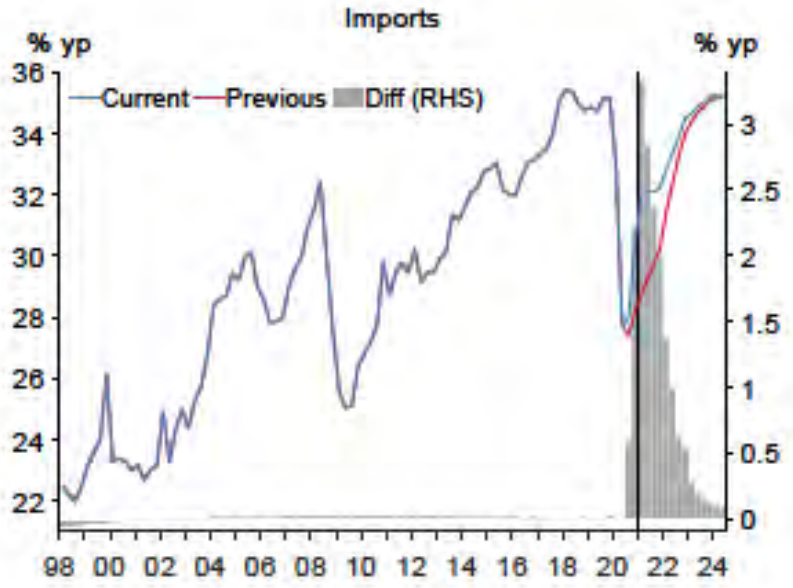

Business investment (ex dwelling)
% yp
% yp
Current
Previous
Diff (RHS)
16
14
12
10
8
1
0.8
0.6
0.4
0.2
0
-0.2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

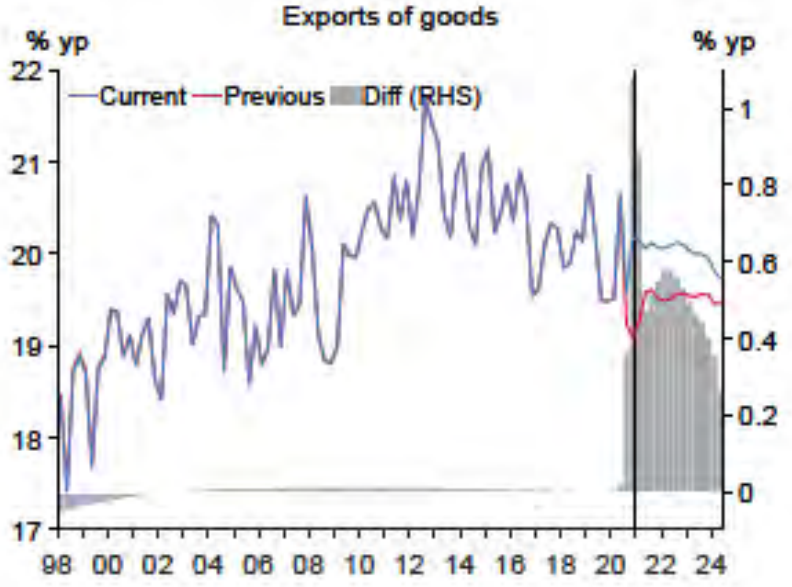

Total government spending
% yp
% yp
Current
Previous
Diff (RHS)
27
26
25
24
23
22
21
20
19
0.4
0.2
0
-0.2
-0.4
-0.6
98 00 02 04 06 08 10 12 14 16 18 20 22 24

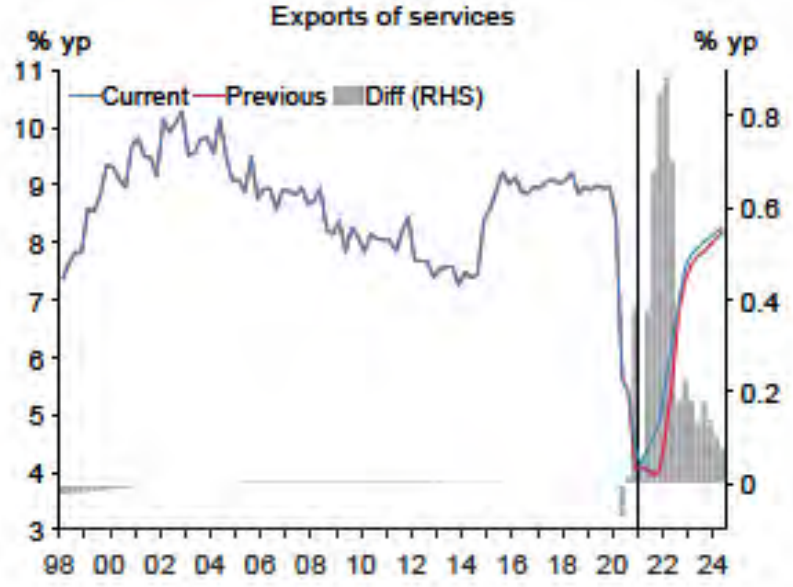

Change in stocks
% yp
% yp
Current
Previous
Diff (RHS)
2
1
0
-1
-2
-3
1
0.5
0
-0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

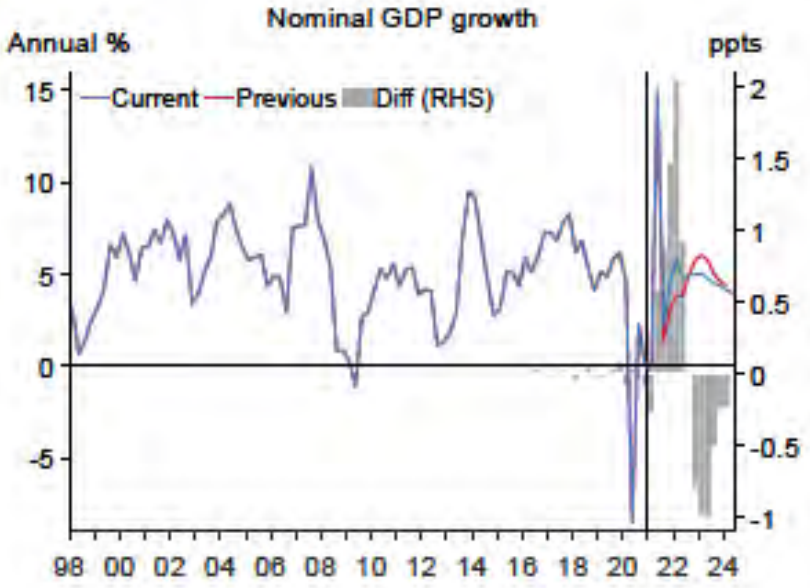

Exports
% yp
% yp
Current
Previous
Diff (RHS)
31
30
29
28
27
26
25
24
23
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

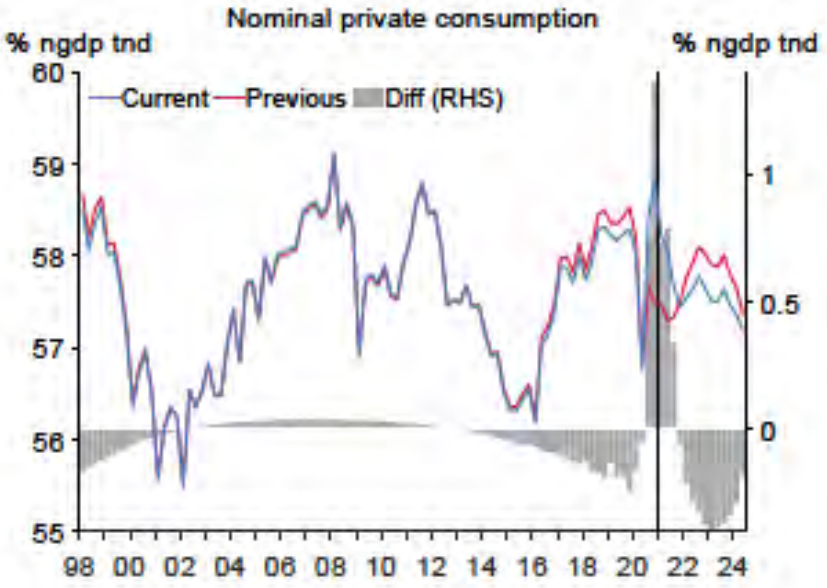

Imports
% yp
% yp
Current
Previous
Diff (RHS)
36
34
32
30
28
26
24
22
3
2.5
2
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

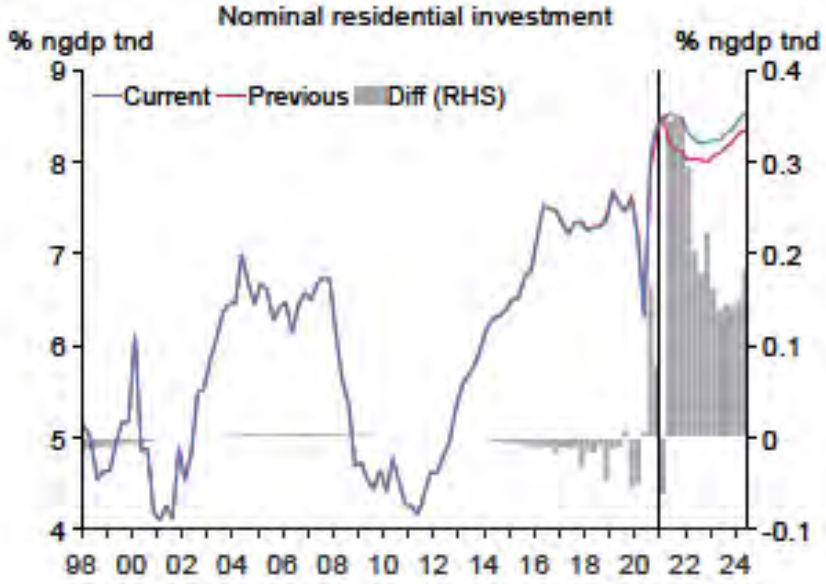

Exports of goods
% yp
% yp
Current
Previous
Diff (RHS)
22
21
20
19
18
17
1
0.8
0.6
0.4
0.2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

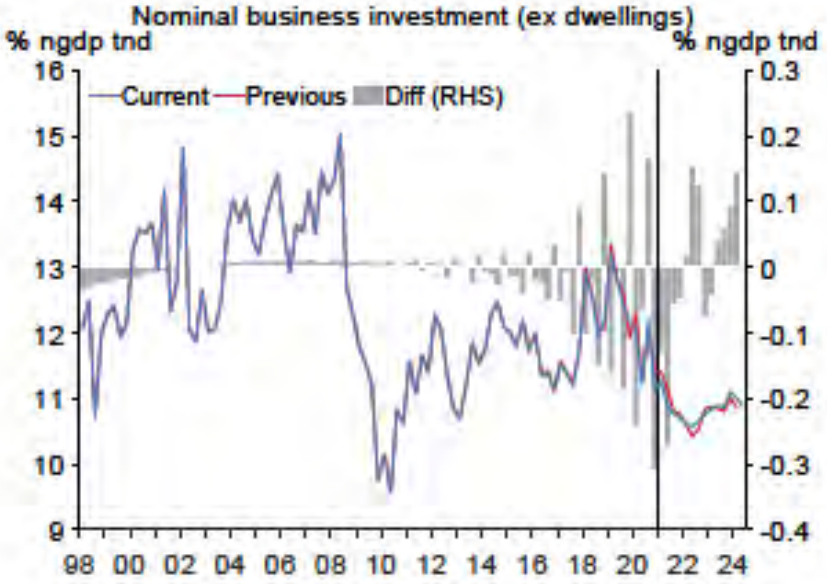

Exports of services
% yp
% yp
Current
Previous
Diff (RHS)
11
10
9
8
7
6
5
4
3
0.8
0.6
0.4
0.2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

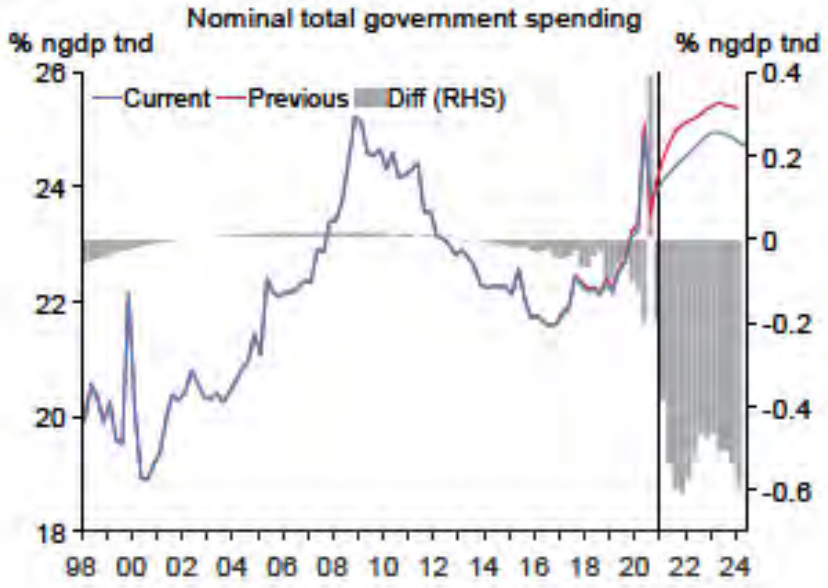

Nominal GDP growth
Annual %
ppts
Current
Previous
Diff (RHS)
15
10
5
0
-5
2
1.5
1
0.5
0
-0.5
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

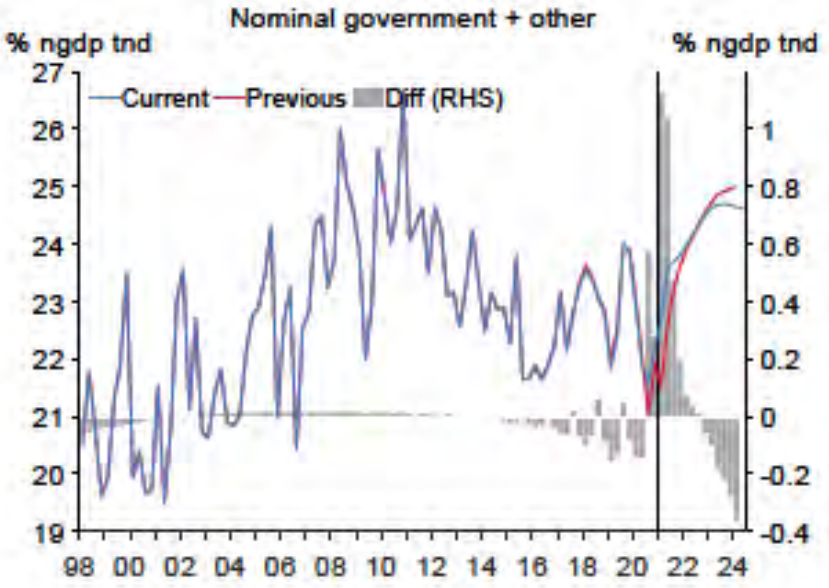

Nominal private consumption
% ngdp tnd
% ngdp tnd
Current
Previous
Diff (RHS)
60
59
58
57
56
55
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

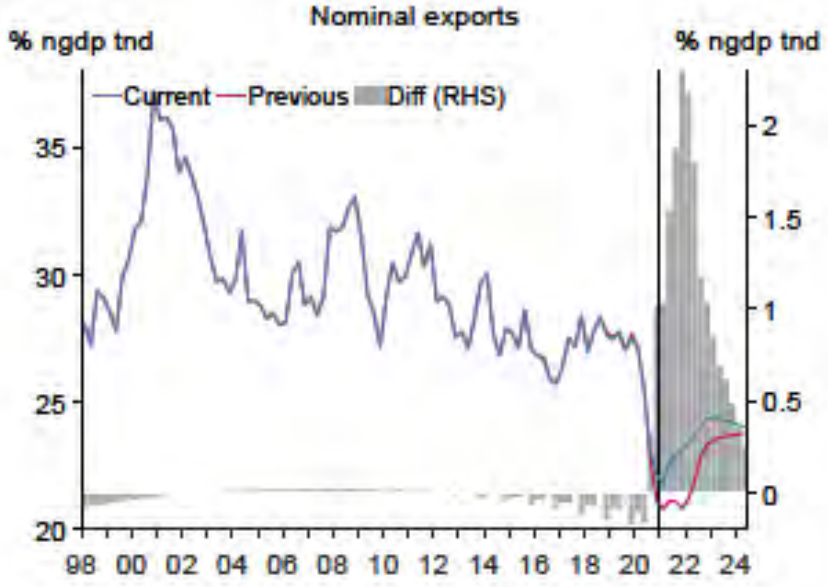

Nominal residential investment
% ngdp tnd
% ngdp tnd
Current
Previous
Diff (RHS)
9
8
7
6
5
4
0.4
0.3
0.2
0.1
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

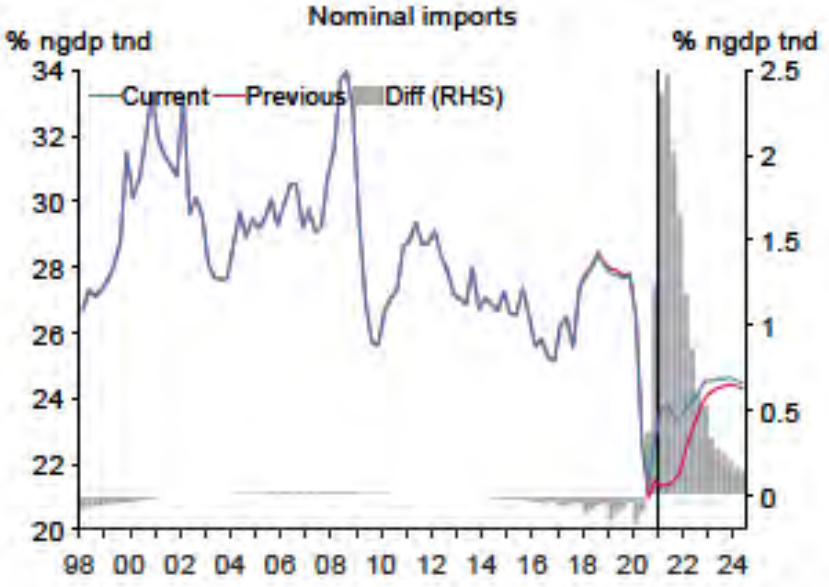

Nominal business investment (ex dwellings)
% ngdp tnd
% ngdp tnd
Current
Previous
Diff (RHS)
16
15
14
13
12
11
10
9
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

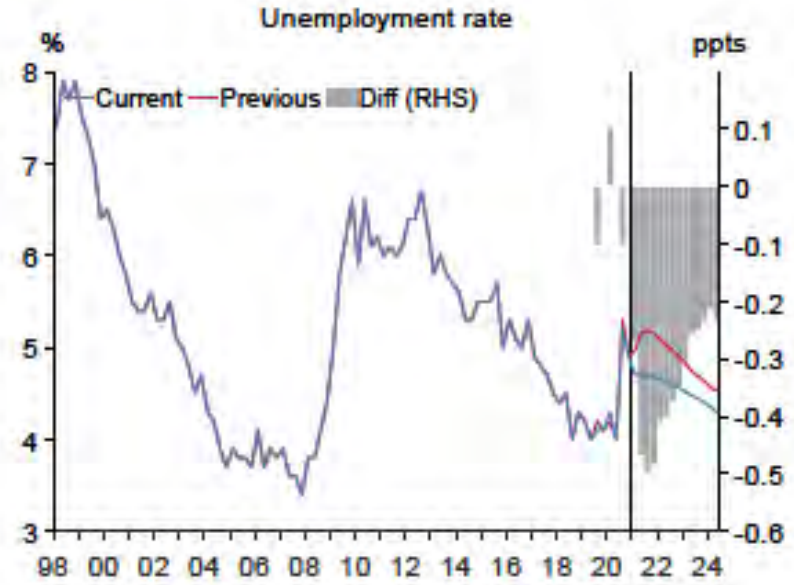

Nominal total government spending
% ngdp tnd
% ngdp tnd
Current
Previous
Diff (RHS)
26
24
22
20
18
0.4
0.2
0
-0.2
-0.4
-0.6
98 00 02 04 06 08 10 12 14 16 18 20 22 24

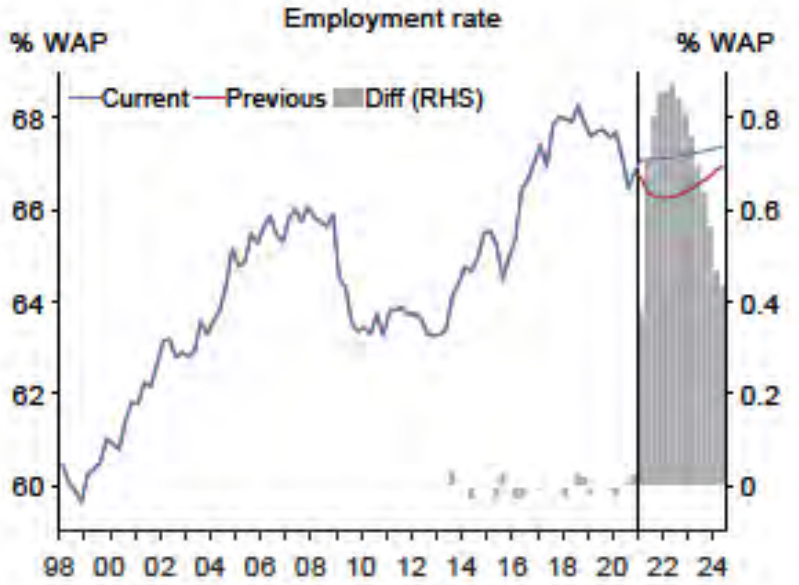

Nominal government + other
% ngdp tnd
% ngdp tnd
Current
Previous
Diff (RHS)
27
26
25
24
23
22
21
20
19
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

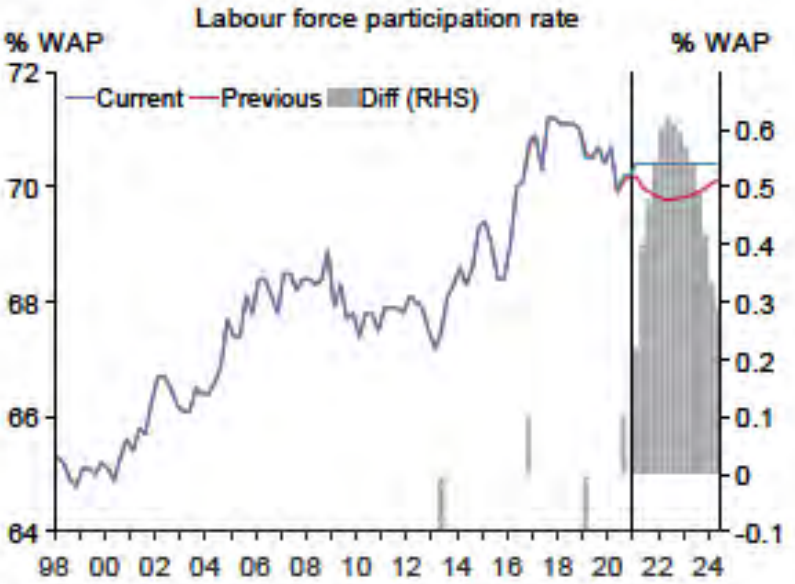

Nominal exports
% ngdp tnd
% ngdp tnd
Current
Previous
Diff (RHS)
35
30
25
20
2
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

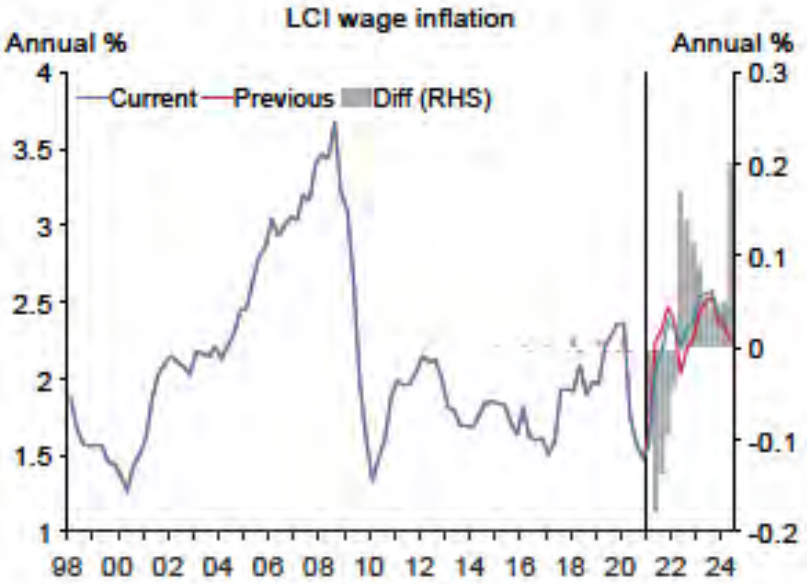

Nominal imports
% ngdp tnd
% ngdp tnd
Current
Previous
Diff (RHS)
34
32
30
28
26
24
22
20
2.5
2
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Labour

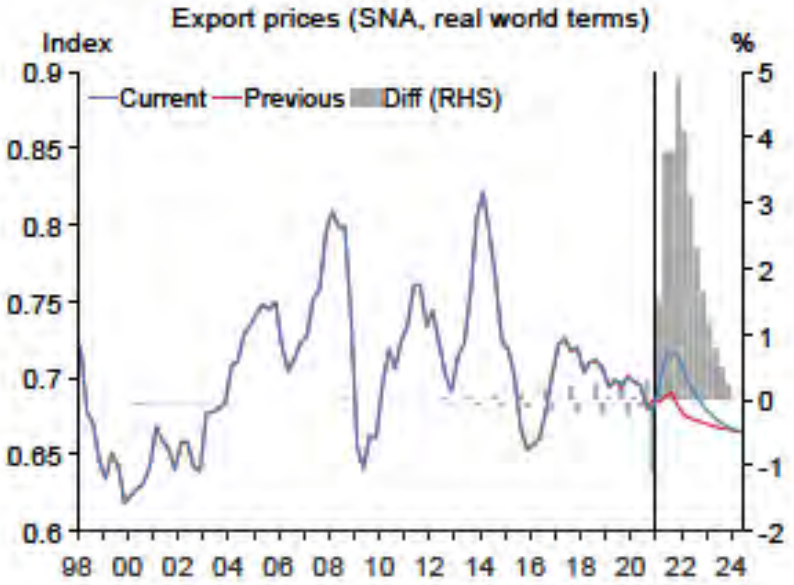

Unemployment rate
%
ppts
Current
Previous
Diff (RHS)
8
7
6
5
4
3
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
98 00 02 04 06 08 10 12 14 16 18 20 22 24

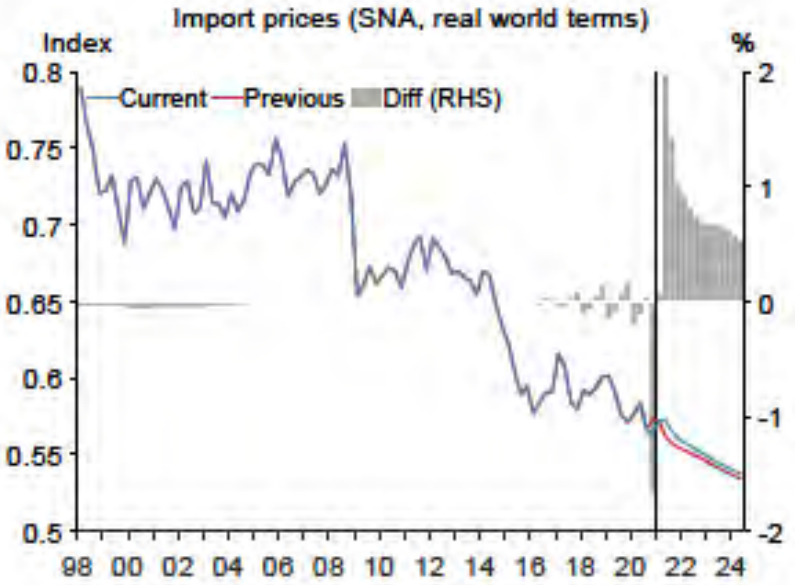

Employment rate
% WAP
% WAP
Current
Previous
Diff (RHS)
68
66
64
62
60
0.8
0.6
0.4
0.2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

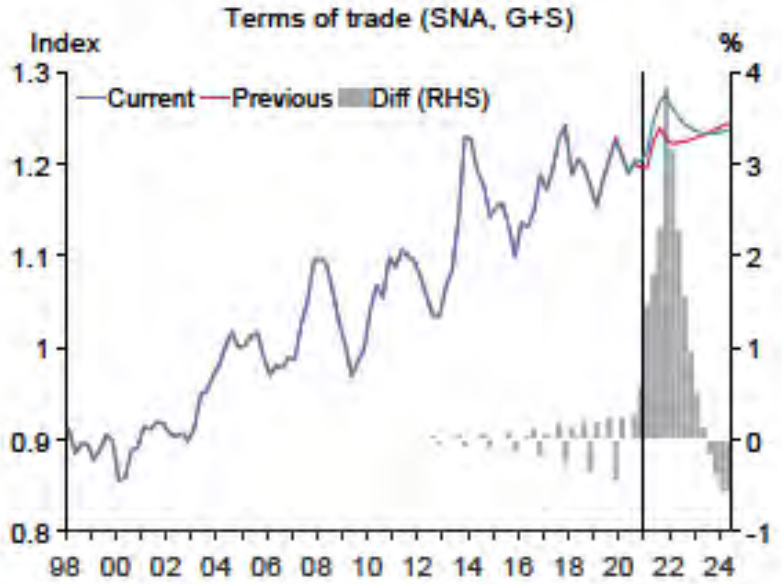

Labour force participation rate
% WAP
% WAP
Current
Previous
Diff (RHS)
72
70
68
66
64
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

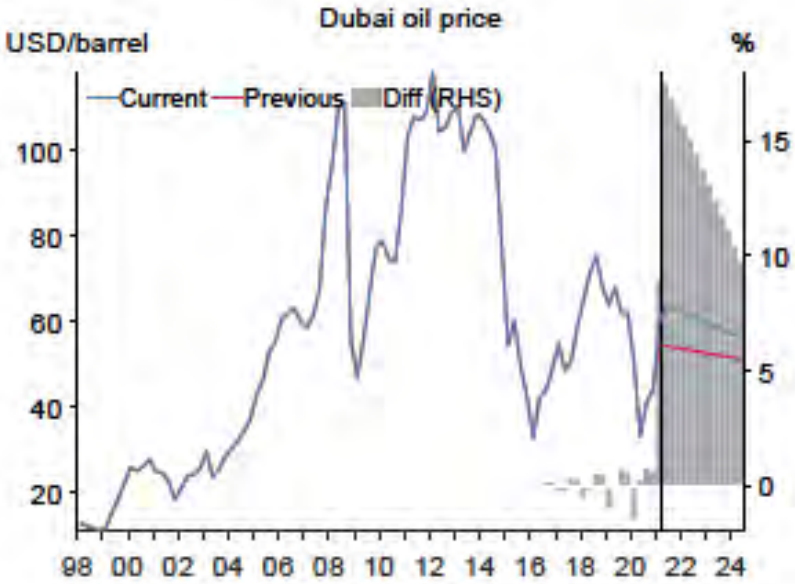

LCI wage inflation
Annual %
Annual %
Current
Previous
Diff (RHS)
4
3.5
3
2.5
2
1.5
1
0.3
0.2
0.1
0
-0.1
-0.2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

External

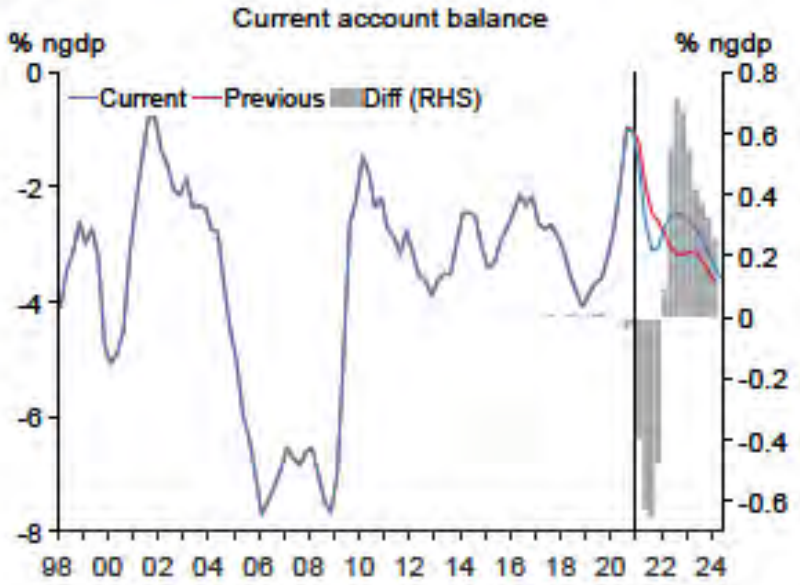

Export prices (SNA, real world terms)
Index
%
Current
Previous
Diff (RHS)
0.9
0.85
0.8
0.75
0.7
0.65
0.6
5
4
3
2
1
0
-1
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

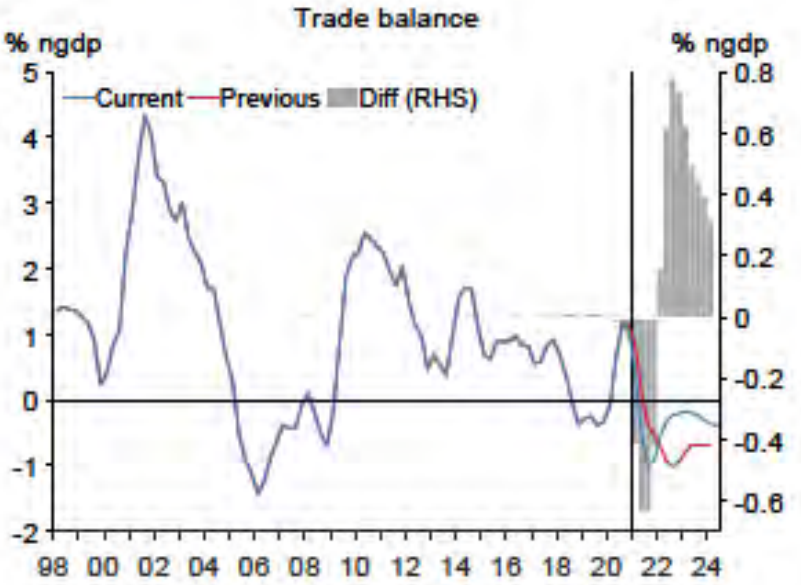

Import prices (SNA, real world terms)
Index
%
Current
Previous
Diff (RHS)
0.8
0.75
0.7
0.65
0.6
0.55
0.5
2
1
0
-1
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

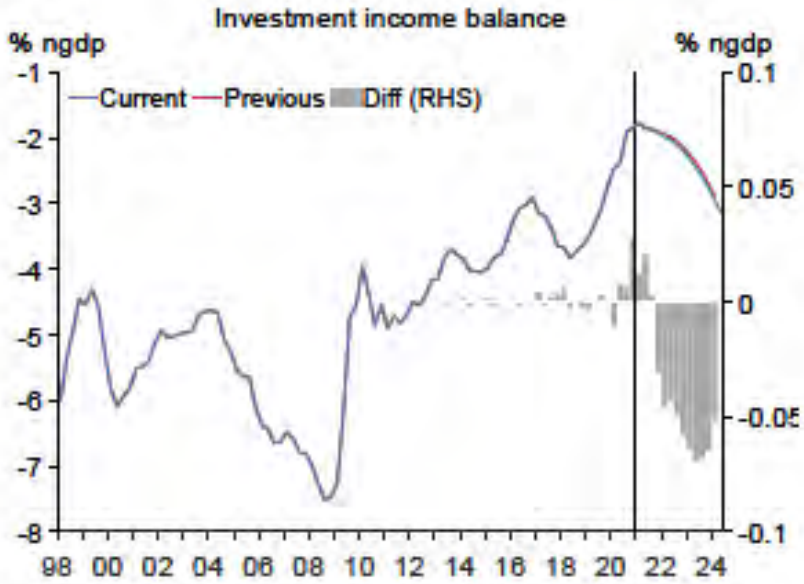

Terms of trade (SNA, G+S)
Index
%
Current
Previous
Diff (RHS)
1.3
1.2
1.1
1
0.9
0.8
4
3
2
1
0
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

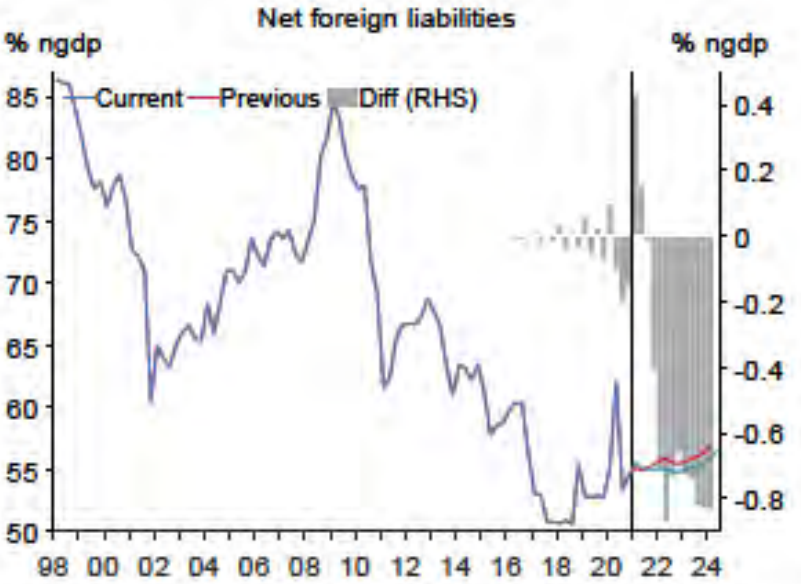

Dubai oil price
USD/barrel
%
Current
Previous
Diff (RHS)
100
80
60
40
20
15
10
5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

External

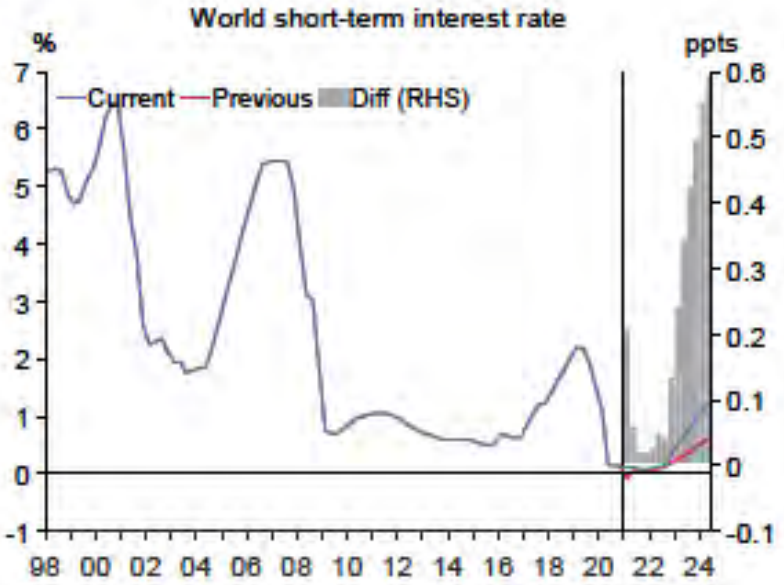

Current account balance
% ngdp
% ngdp
Current
Previous
Diff (RHS)
0
-2
-4
-6
-8
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
98 00 02 04 06 08 10 12 14 16 18 20 22 24

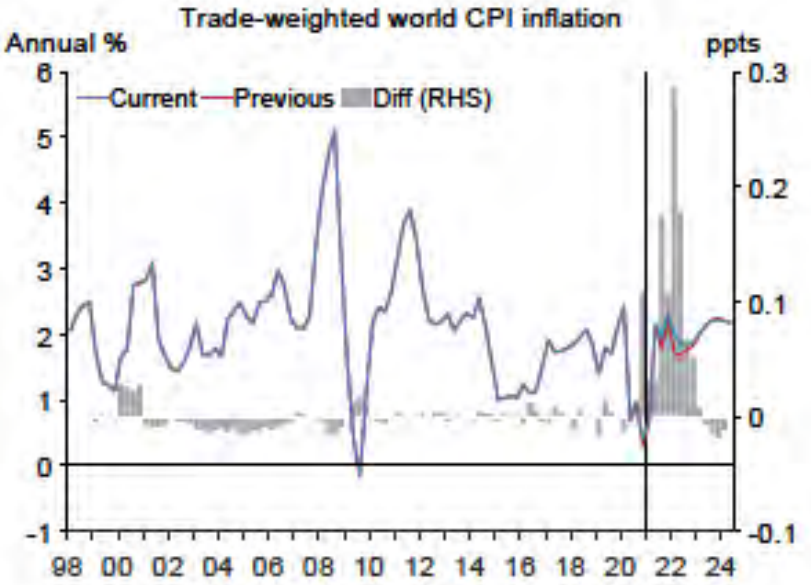

Trade balance
% ngdp
% ngdp
Current
Previous
Diff (RHS)
5
4
3
2
1
0
-1
-2
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
98 00 02 04 06 08 10 12 14 16 18 20 22 24

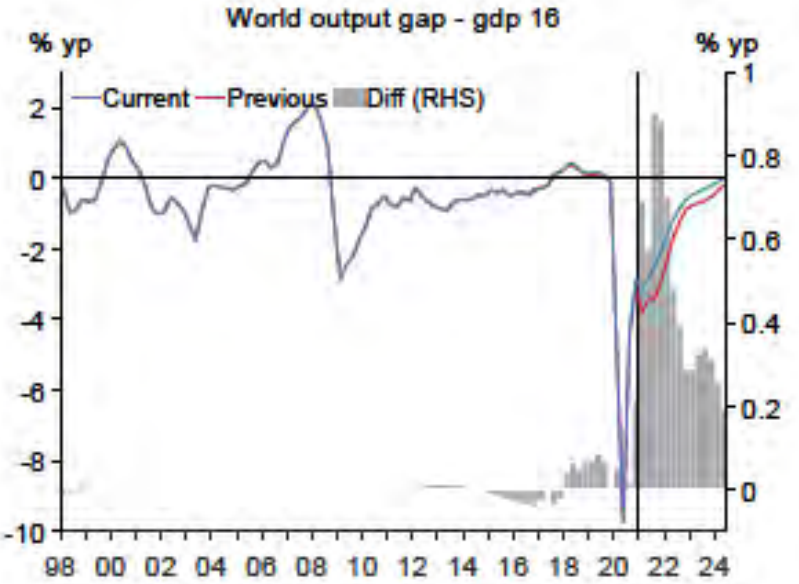

Investment income balance
% ngdp
% ngdp
Current
Previous
Diff (RHS)
-1
-2
-3
-4
-5
-6
-7
-8
0.1
0.05
0
-0.05
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

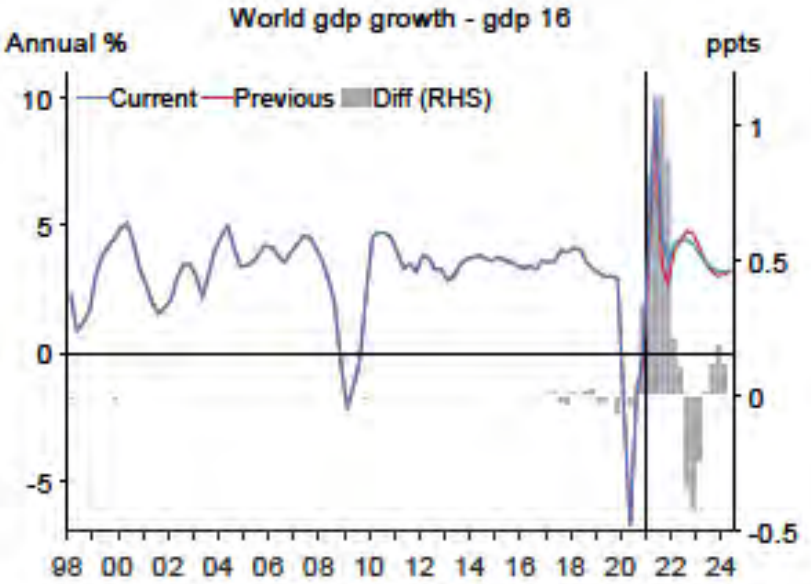

Net foreign liabilities
% ngdp
% ngdp
Current
Previous
Diff (RHS)
85
80
75
70
65
60
55
50
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
98 00 02 04 06 08 10 12 14 16 18 20 22 24

World

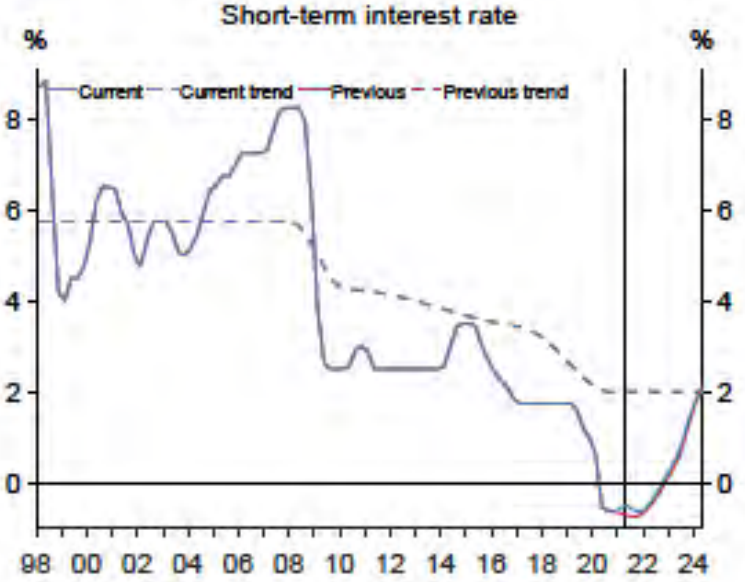

World short-term interest rate
%
ppts
Current
Previous
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

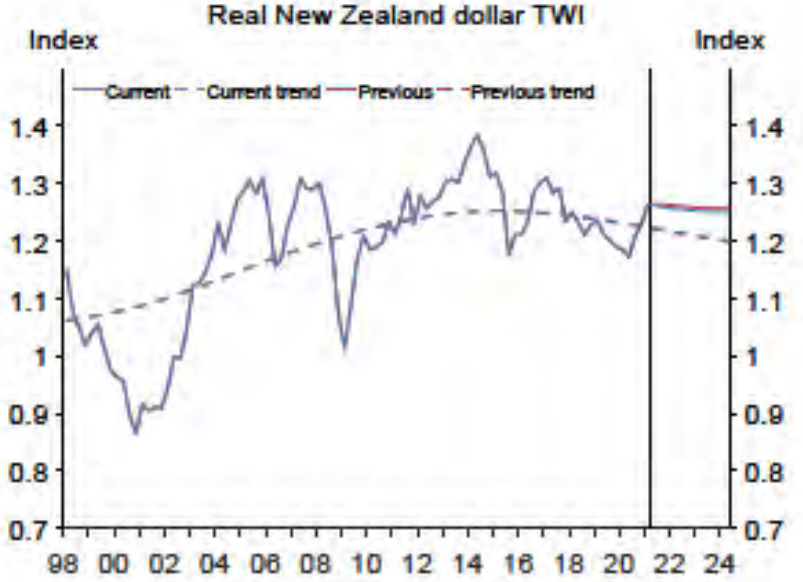

Trade-weighted world CPI inflation
Annual %
ppts
Current
Previous
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

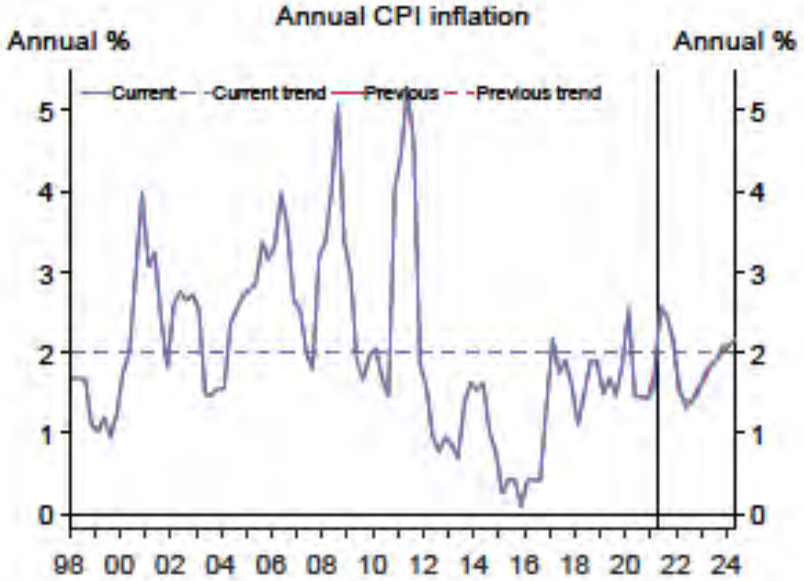

World output gap - gdp 16
% yp
% yp
Current
Previous
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

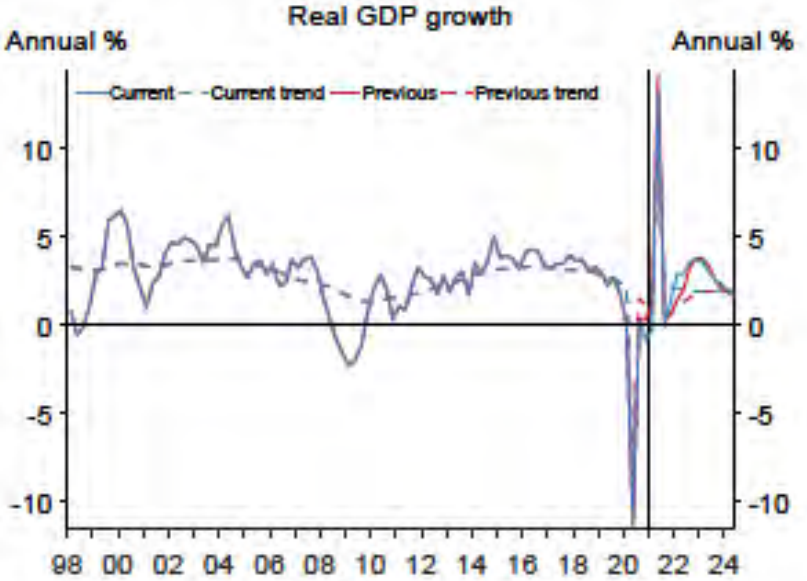

World gdp growth - gdp 16
Annual %
ppts
Current
Previous
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

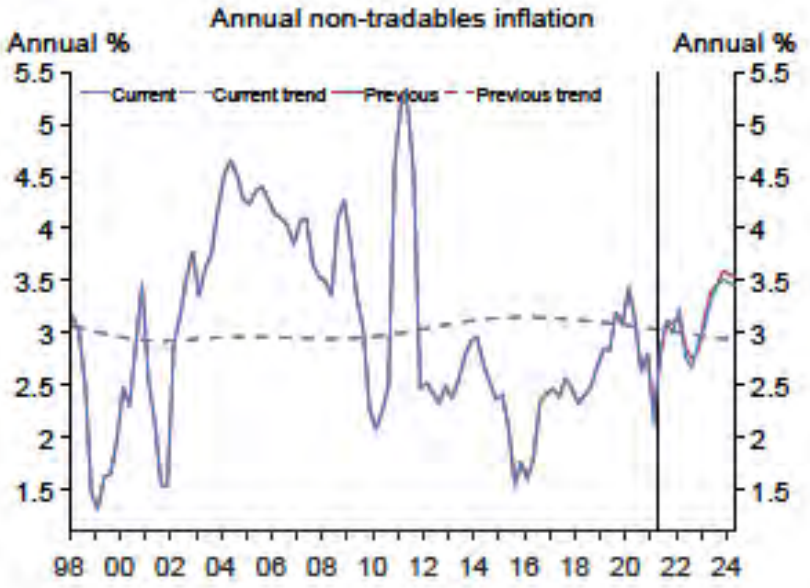

Short-term interest rate
%
%
Current
Current trend
Previous
Previous trend
8
6
4
2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

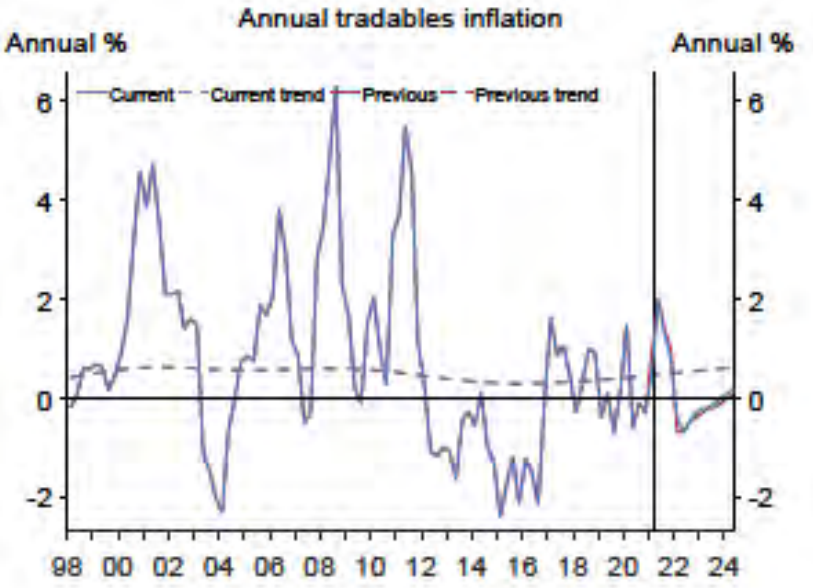

Real New Zealand dollar TWI
Index
Index
Current
Current trend
Previous
Previous trend
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
98 00 02 04 06 08 10 12 14 16 18 20 22 24


Annual CPI inflation
Annual %
Annual %
Current
Current trend
Previous
Previous trend
5
4
3
2
1
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

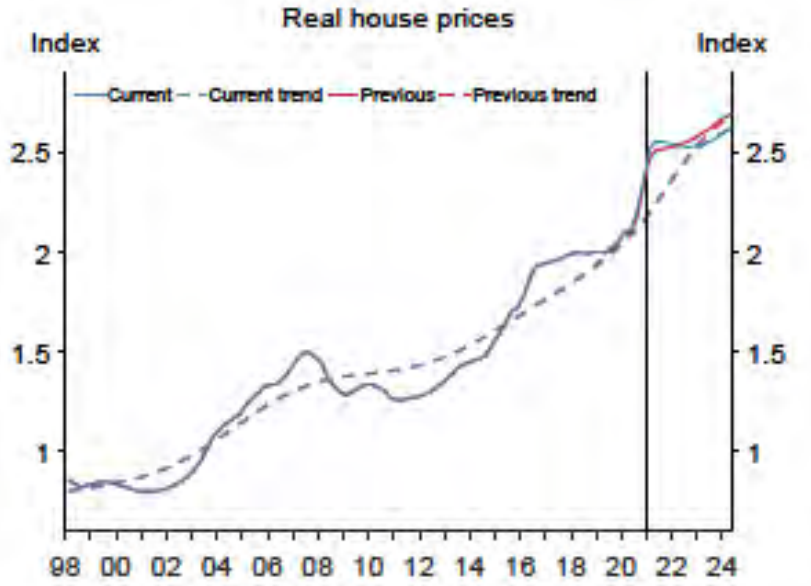

Real GDP growth
Annual %
Annual %
Current
Current trend
Previous
Previous trend
10
5
0
-5
-10
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

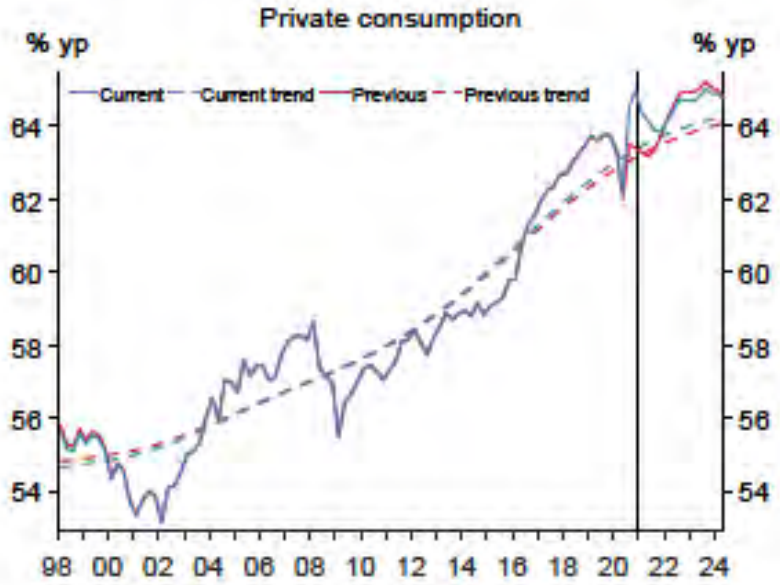

Annual non-tradables inflation
Annual %
Annual %
Current
Current trend
Previous
Previous trend
5.5
5
4.5
4
3.5
3
2.5
2
1.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

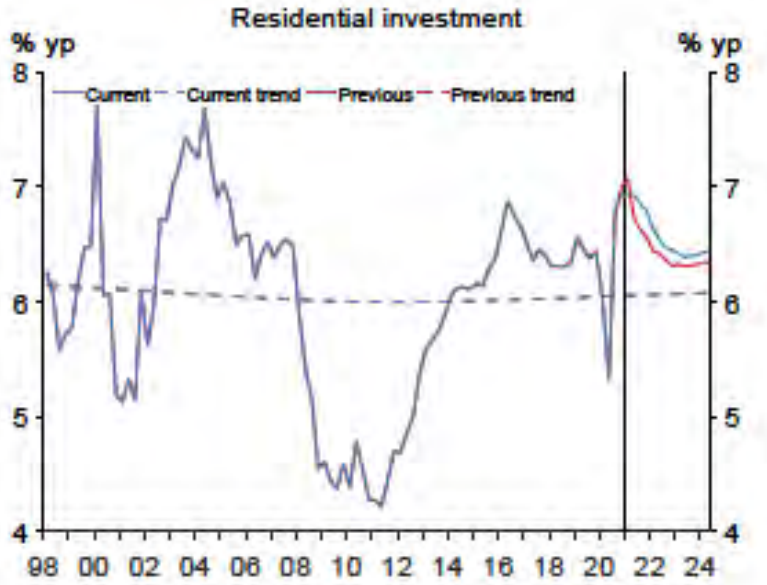

Annual tradables inflation
Annual %
Annual %
Current
Current trend
Previous
Previous trend
6
4
2
0
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

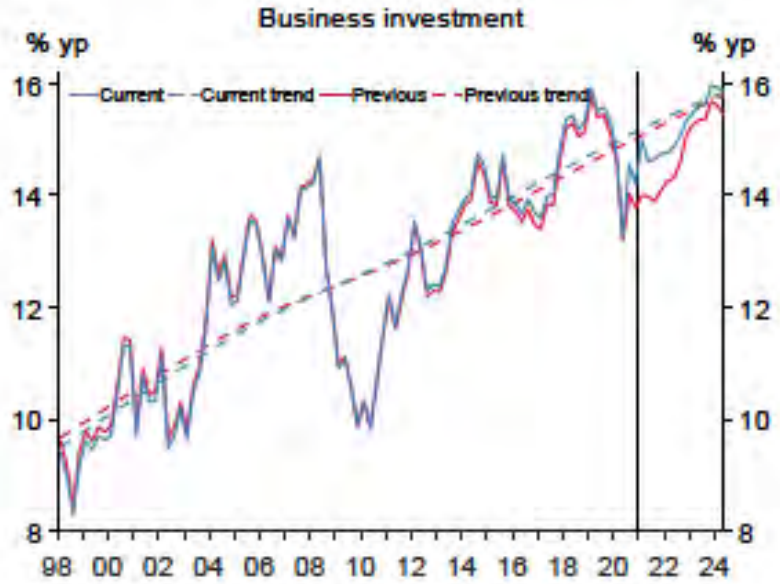

Real wage (LCI private sector)
Index
Index
Current
Current trend
Previous
Previous trend
0.98
0.96
0.94
0.92
0.9
0.88
98 00 02 04 06 08 10 12 14 16 18 20 22 24

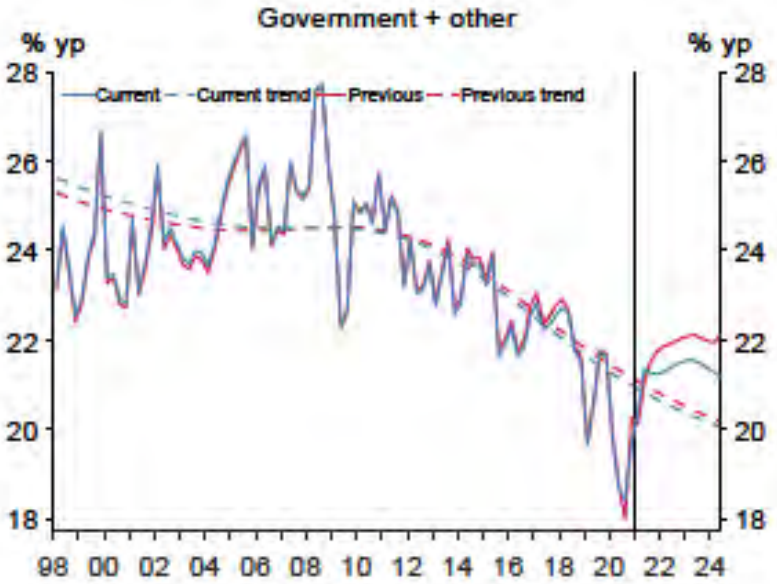

Real house prices
Index
Index
Current
Current trend
Previous
Previous trend
2.5
2
1.5
1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

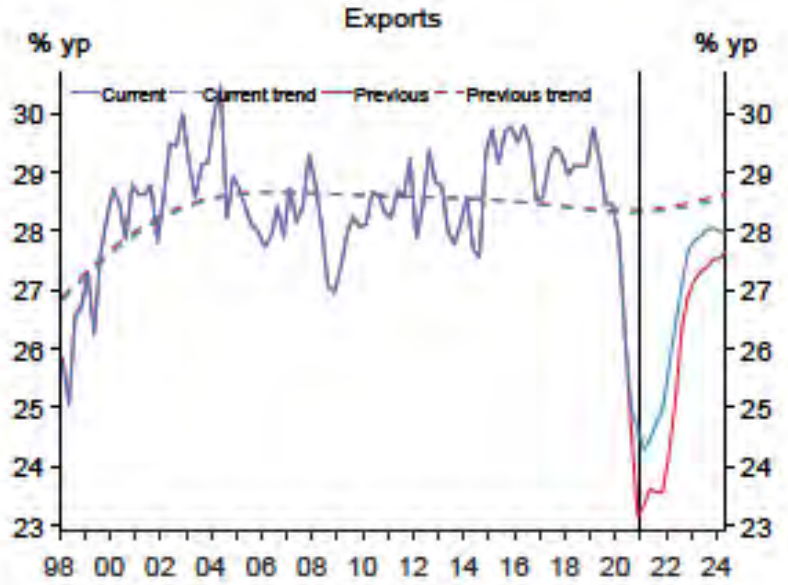

Private consumption
% yp
% yp
Current
Current trend
Previous
Previous trend
64
62
60
58
56
54
98 00 02 04 06 08 10 12 14 16 18 20 22 24

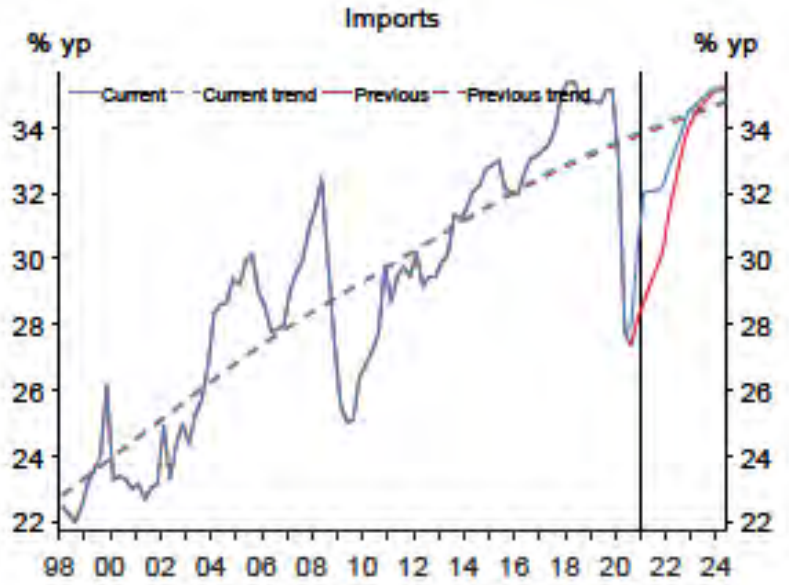

Residential investment
% yp
% yp
Current
Current trend
Previous
Previous trend
8
7
6
5
4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

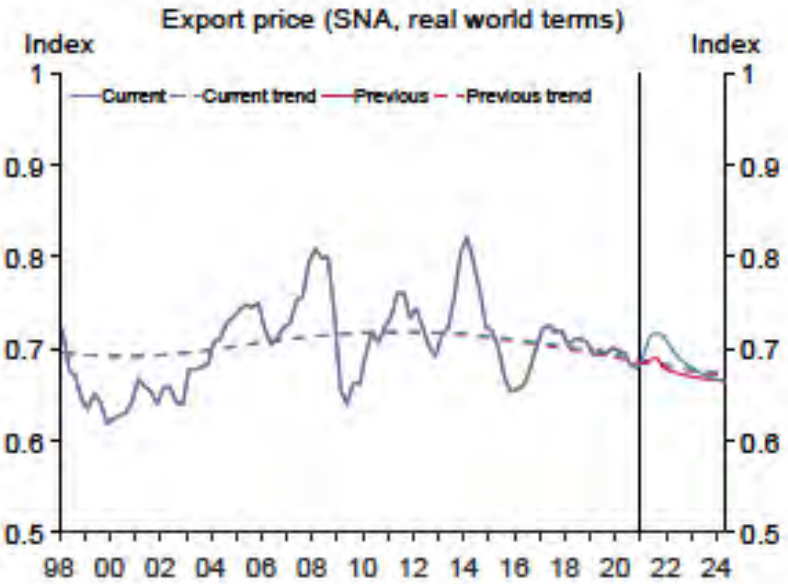

Business investment
% yp
% yp
Current
Current trend
Previous
Previous trend
16
14
12
10
8
98 00 02 04 06 08 10 12 14 16 18 20 22 24

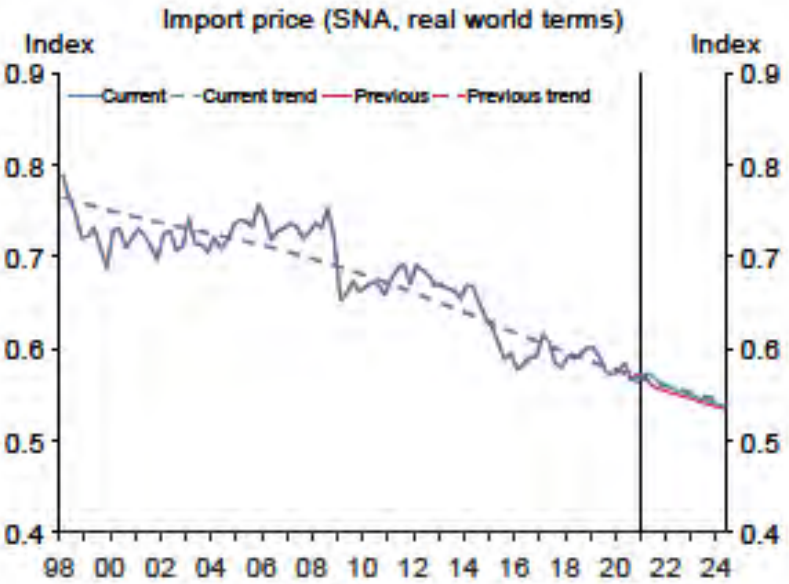

Government + other
% yp
% yp
Current
Current trend
Previous
Previous trend
28
26
24
22
20
18
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

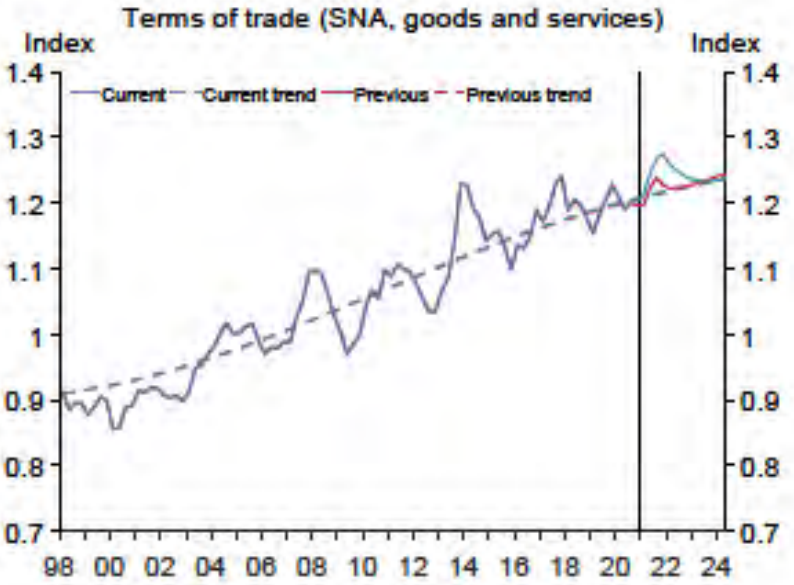

Exports
% yp
% yp
Current
Current trend
Previous
Previous trend
30
29
28
27
26
25
24
23
98 00 02 04 06 08 10 12 14 16 18 20 22 24

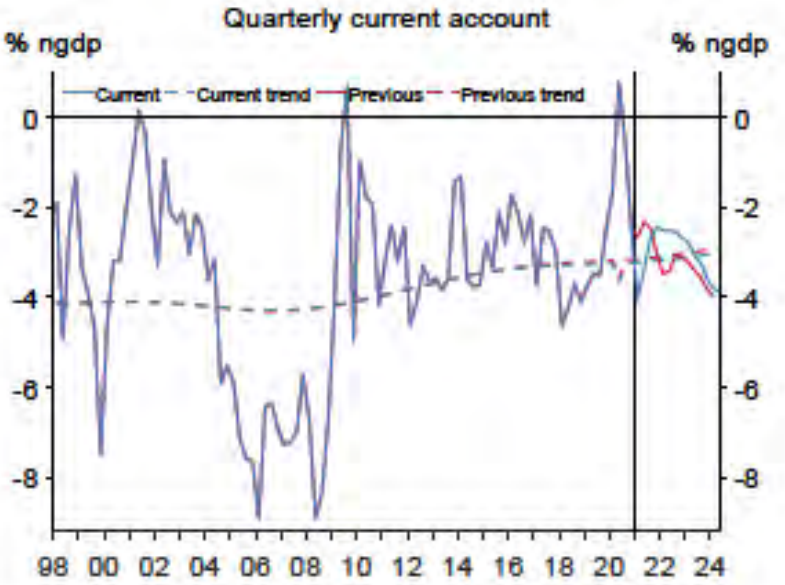

Imports
% yp
% yp
Current
Current trend
Previous
Previous trend
34
32
30
28
26
24
22
98 00 02 04 06 08 10 12 14 16 18 20 22 24

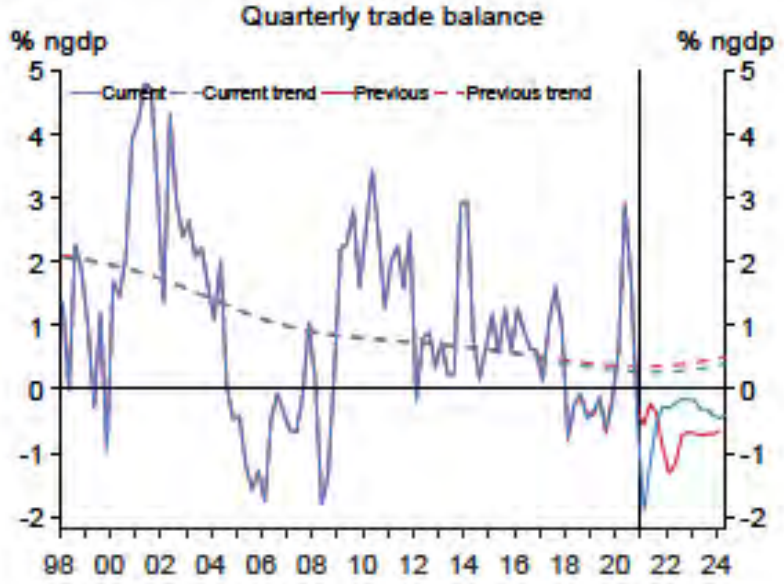

Export price (SNA, real world terms)
Index
Index
Current
Current trend
Previous
Previous trend
1
0.9
0.8
0.7
0.6
0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

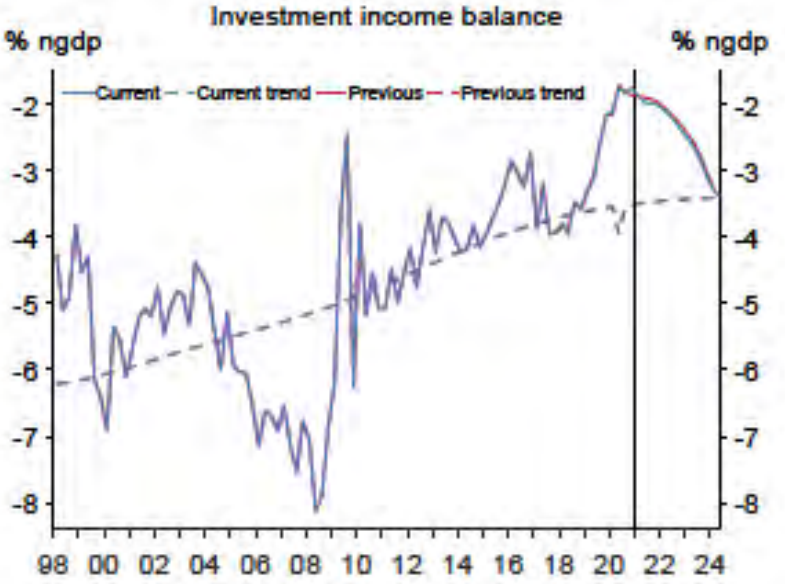

Import price (SNA, real world terms)
Index
Index
Current
Current trend
Previous
Previous trend
0.9
0.8
0.7
0.6
0.5
0.4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

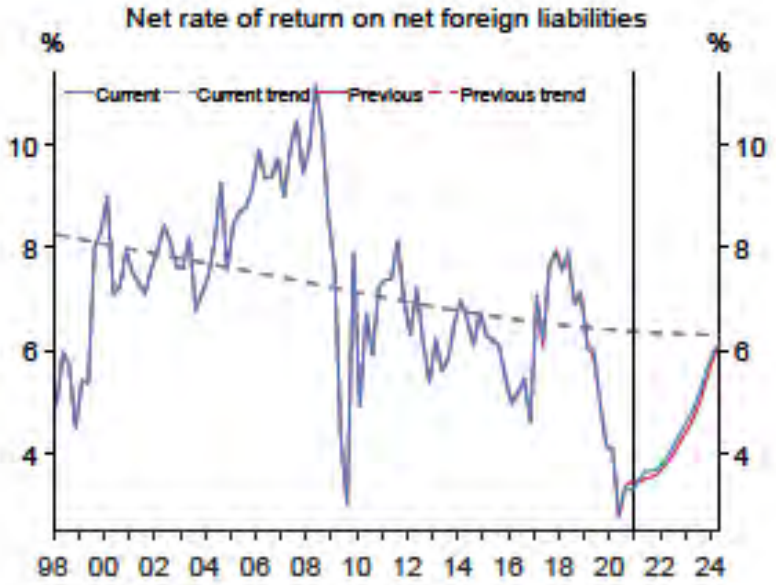

Terms of trade (SNA, goods and services)
Index
Index
Current
Current trend
Previous
Previous trend
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
98 00 02 04 06 08 10 12 14 16 18 20 22 24

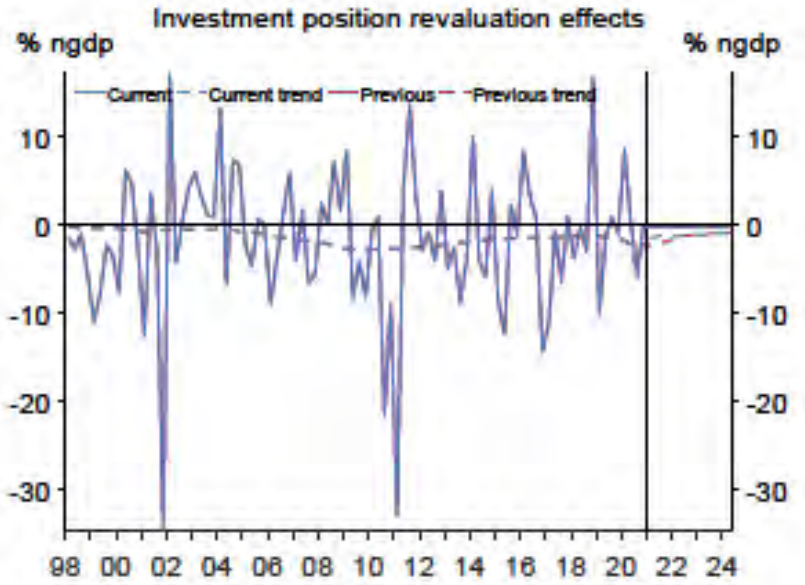

Quarterly current account
% ngdp
% ngdp
Current
Current trend
Previous
Previous trend
0
-2
-4
-6
-8
98 00 02 04 06 08 10 12 14 16 18 20 22 24

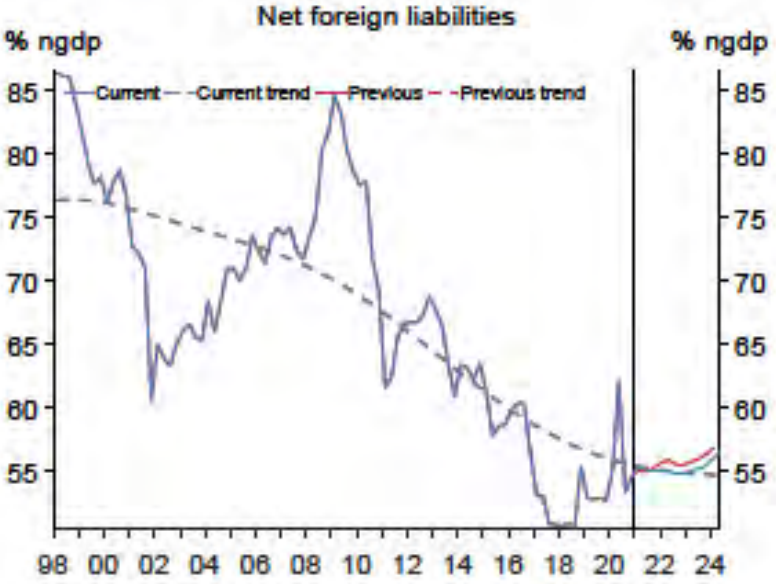

Quarterly trade balance
% ngdp
% ngdp
Current
Current trend
Previous
Previous trend
5
4
3
2
1
0
-1
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

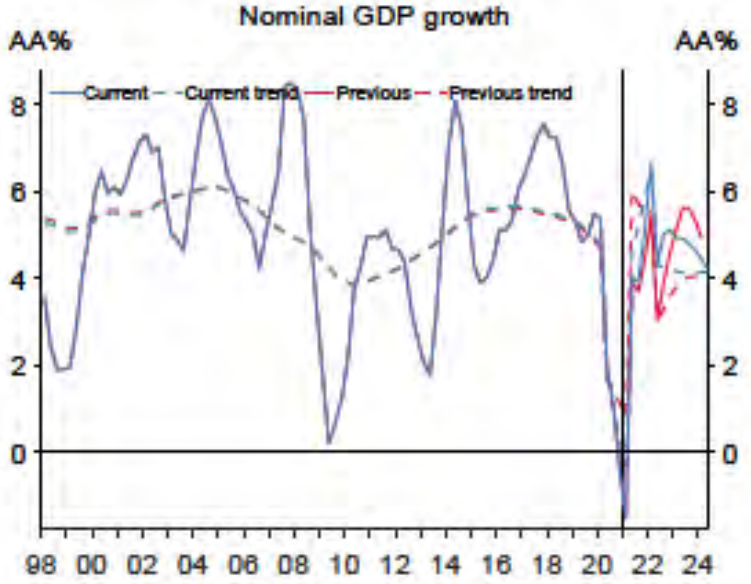

Investment income balance
% ngdp
% ngdp
Current
Current trend
Previous
Previous trend
-2
-3
-4
-5
-6
-7
-8
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

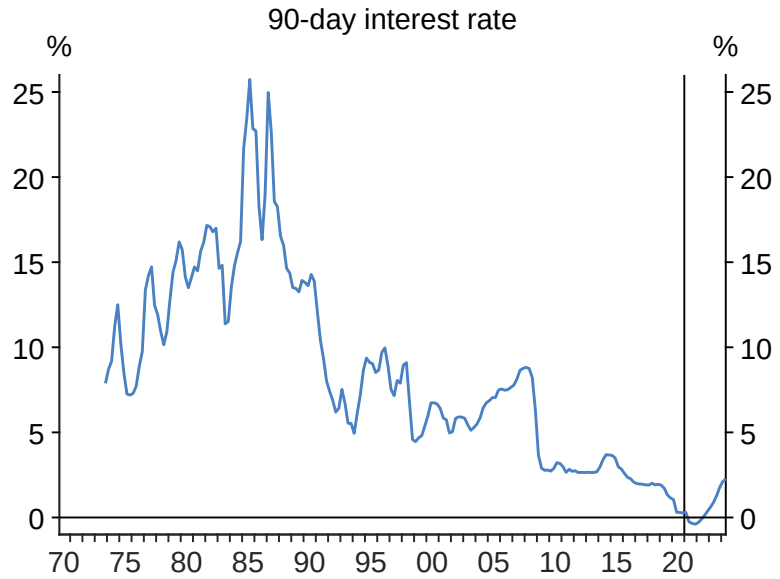

Net rate of return on net foreign liabilities
%
%
Current
Current trend
Previous
Previous trend
10
8
6
4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

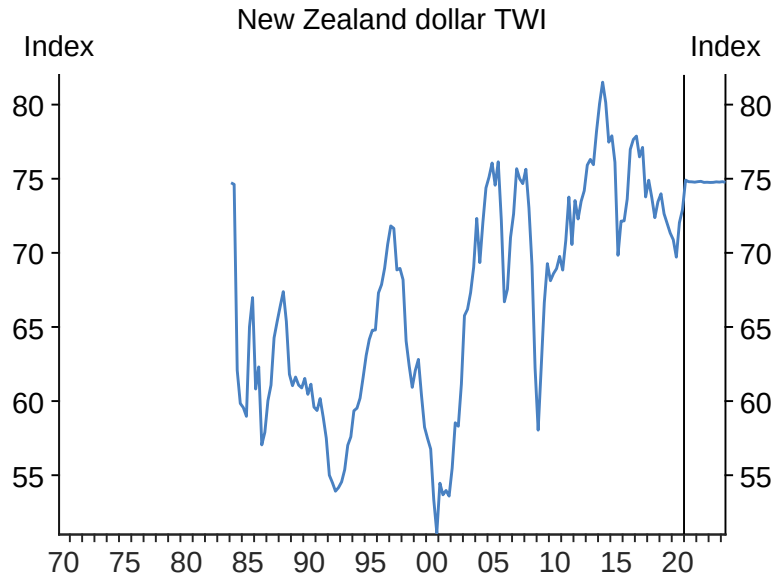

Investment position revaluation effects
% ngdp
% ngdp
Current
Current trend
Previous
Previous trend
10
0
-10
-20
-30
98 00 02 04 06 08 10 12 14 16 18 20 22 24

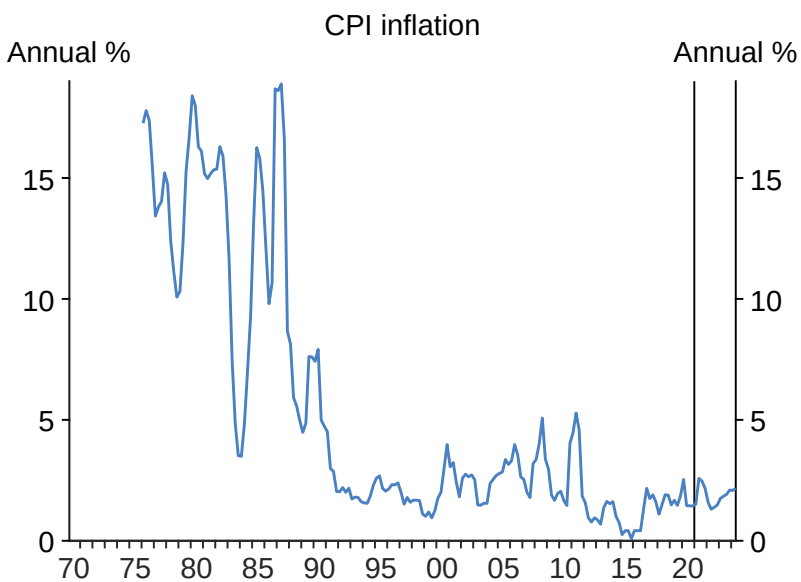

Net foreign liabilities
% ngdp
% ngdp
Current
Current trend
Previous
Previous trend
85
80
75
70
65
60
55
98 00 02 04 06 08 10 12 14 16 18 20 22 24

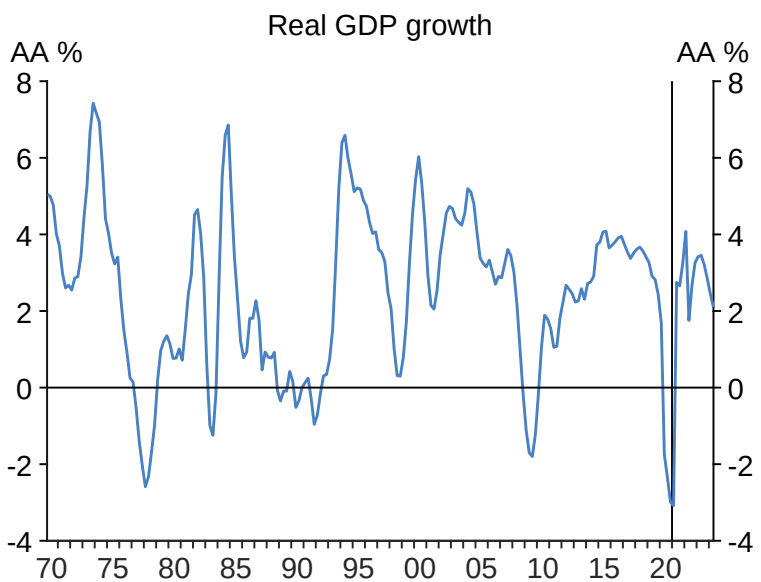

Nominal GDP growth
AA%
AA%
Current
Current trend
Previous
Previous trend
8
6
4
2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Long Term

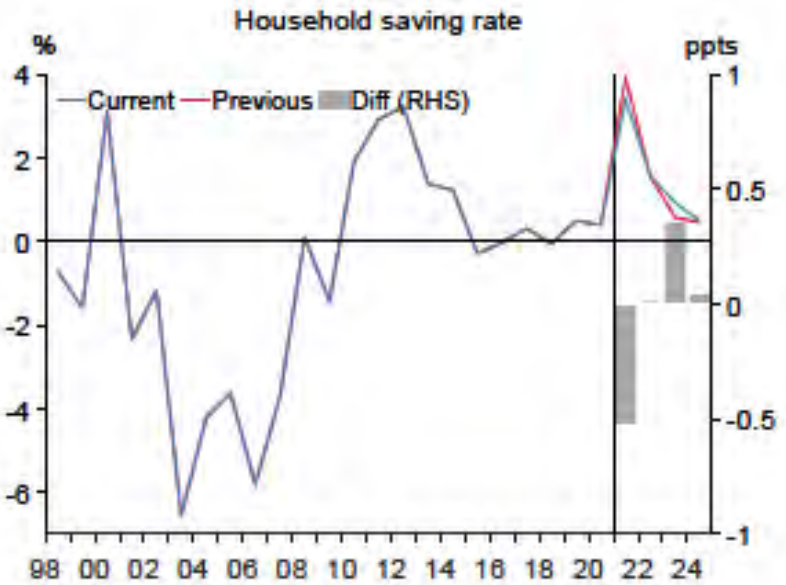

90-day interest rate
%
%
25
20
15
10
5
0
70 75 80 85 90 95 00 05 10 15 20

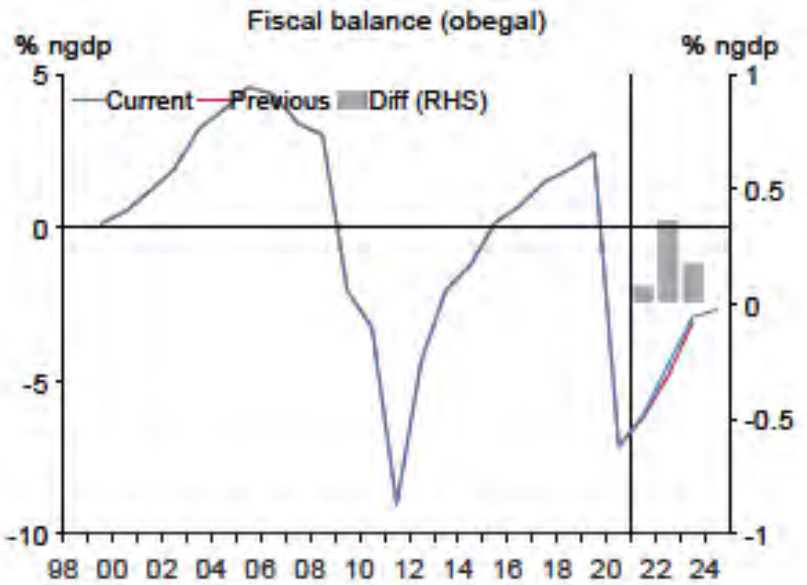

New Zealand dollar TWI
Index
Index
80
75
70
65
60
55
70 75 80 85 90 95 00 05 10 15 20


CPI inflation
Annual %
Annual %
15
10
5
0
70 75 80 85 90 95 00 05 10 15 20


Real GDP growth
AA %
AA %
8
6
4
2
0
-2
-4
70 75 80 85 90 95 00 05 10 15 20

Other


Household saving rate
%
ppts
Current
Previous
Diff (RHS)
4
2
0
-2
-4
-6
1
0.5
0
-0.5
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

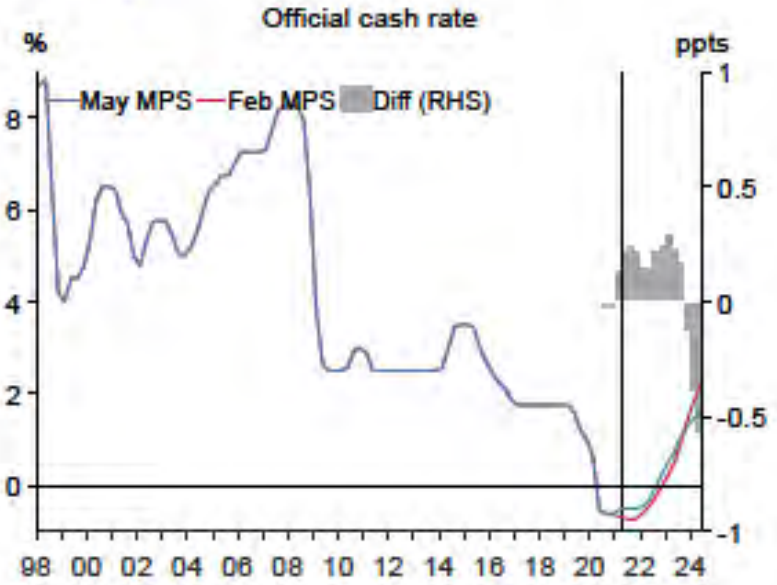

Fiscal balance (obegal)
% ngdp
% ngdp
Current
Previous
Diff (RHS)
5
0
-5
-10
1
0.5
0
-0.5
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

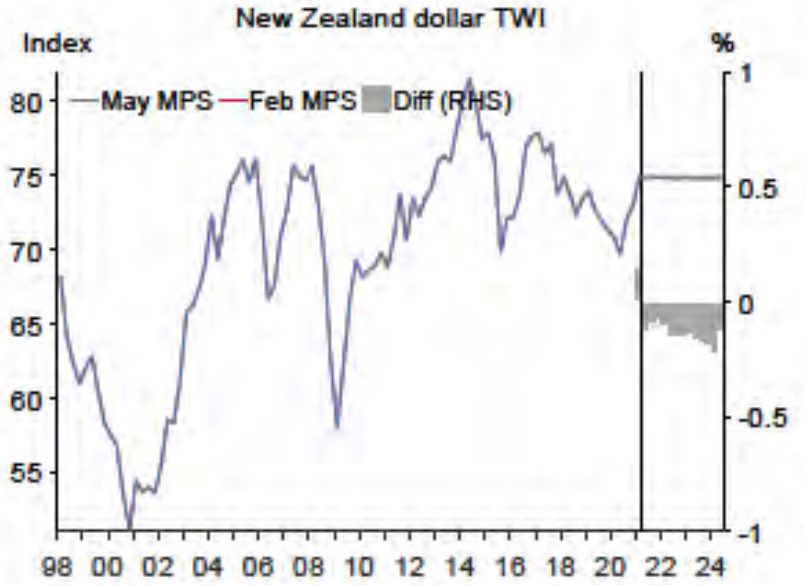
Forecast Chartpack

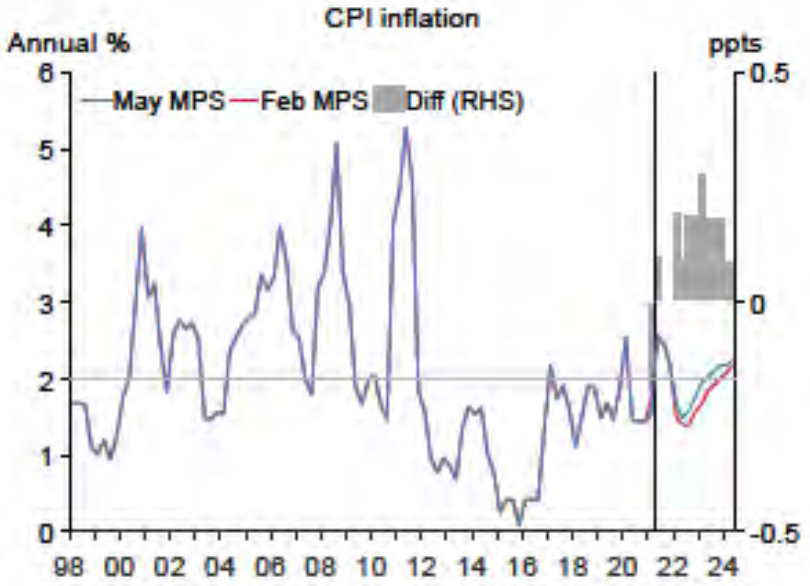
May MPS versus Feb MPS

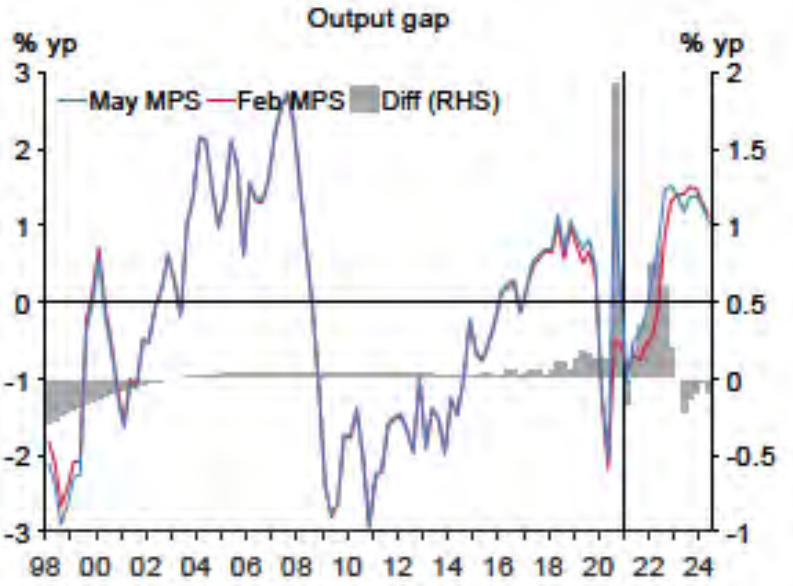
May 24, 2021

Summary

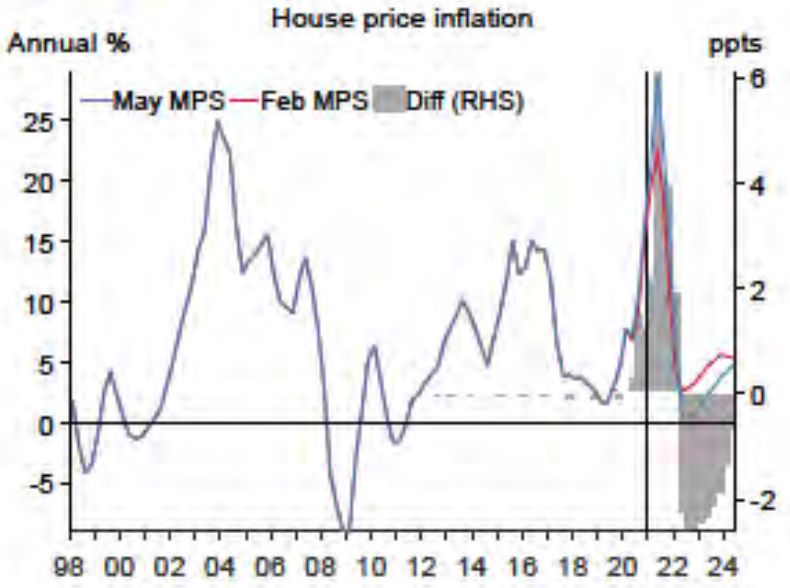

Official cash rate
%
ppts
May MPS
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

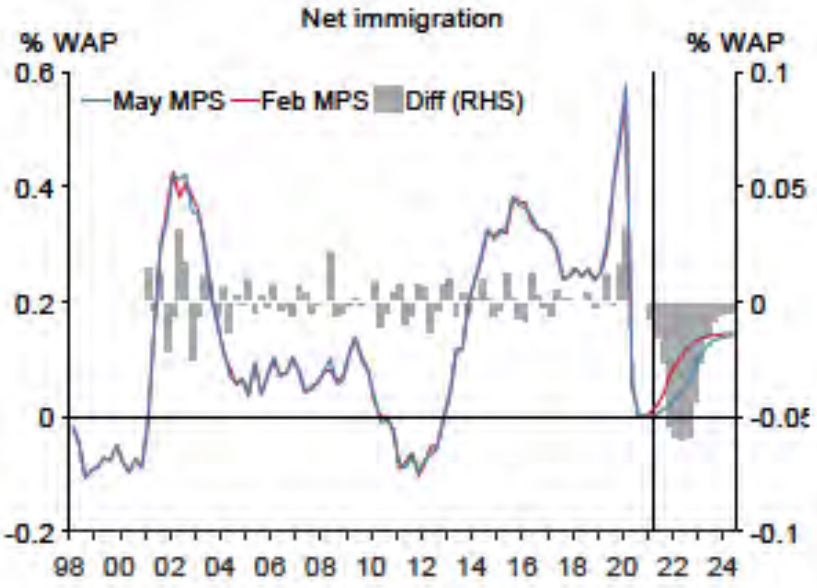

New Zealand dollar TWI
Index
%
May MPS
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

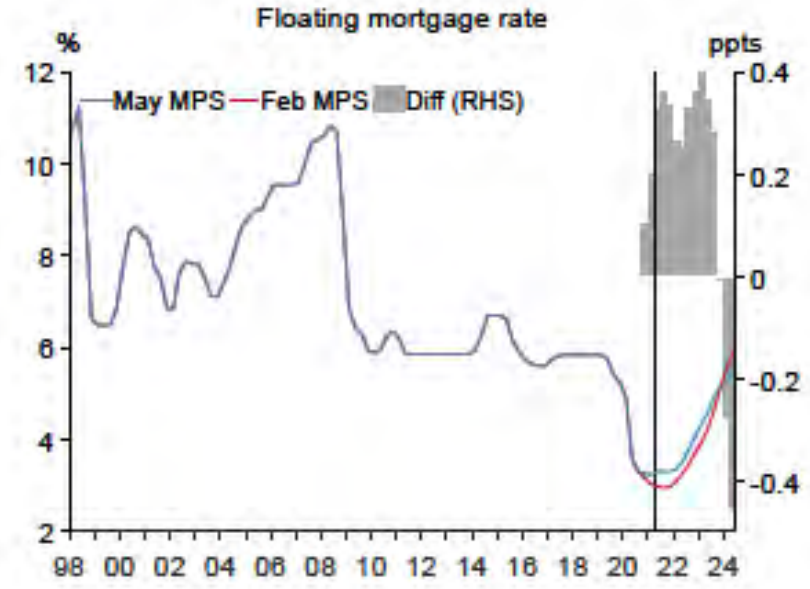

CPI inflation
Annual %
ppts
May MPS
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

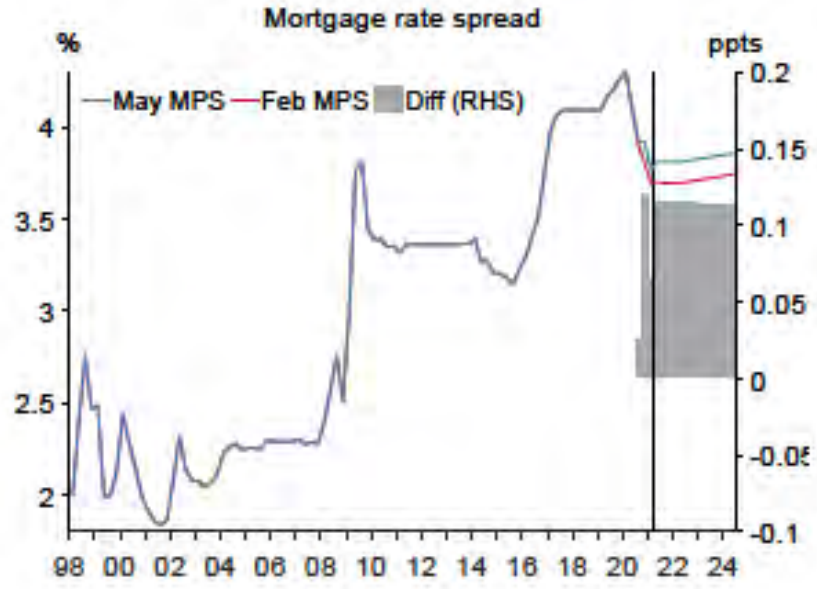

Output gap
% yp
% yp
May MPS
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Housing

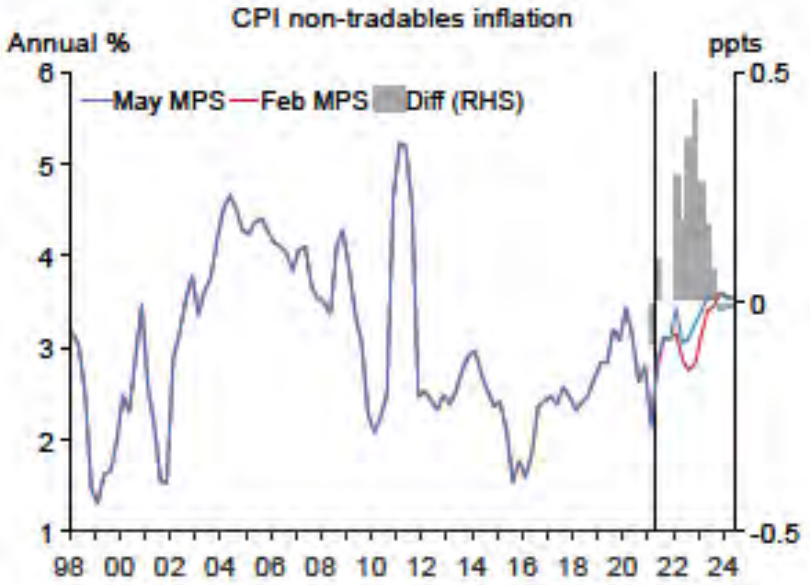

House price inflation
Annual %
ppts
May MPS
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

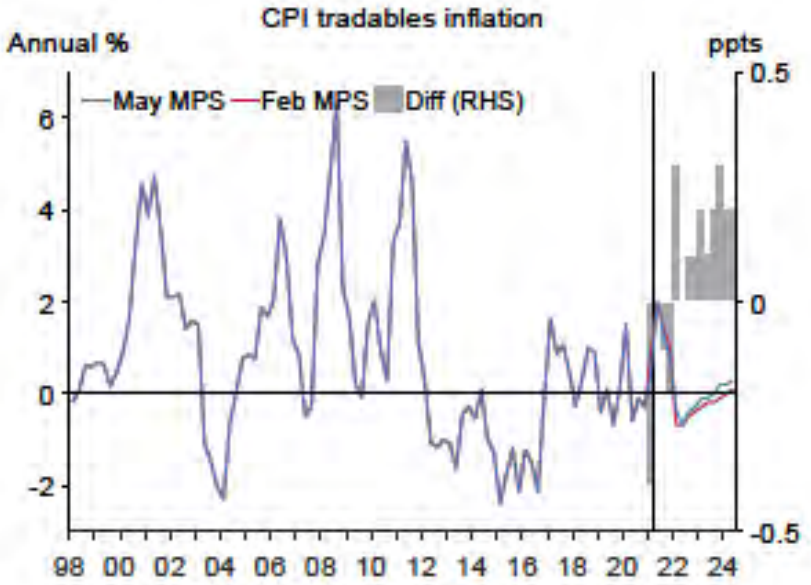

Net immigration
% WAP
% WAP
May MPS
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

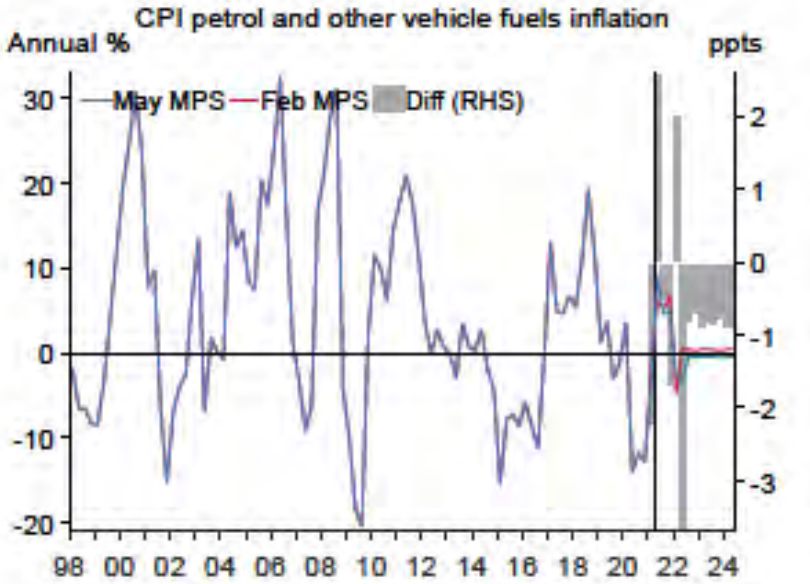

Floating mortgage rate
%
ppts
May MPS
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

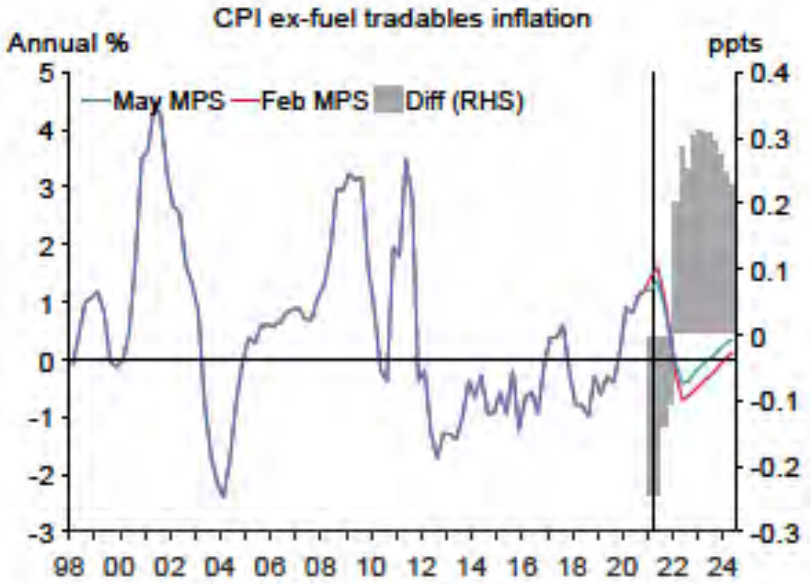

Mortgage rate spread
%
ppts
May MPS
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Inflation

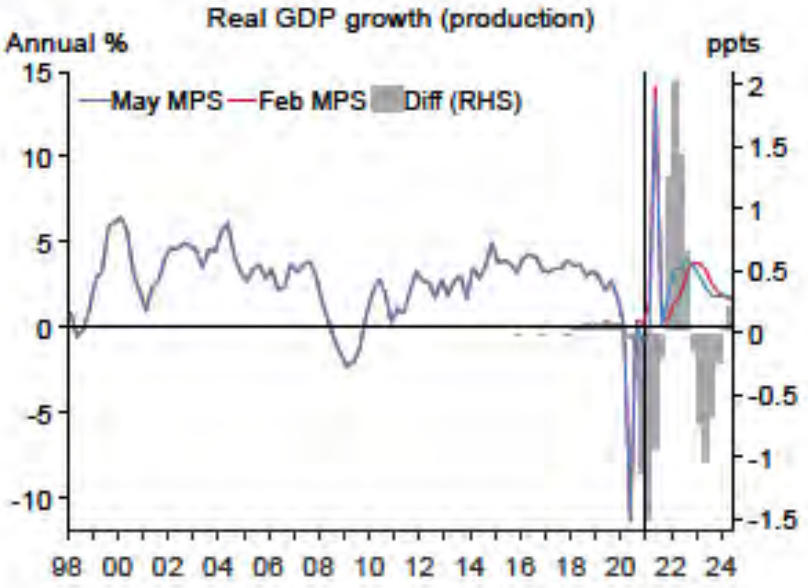

CPI non-tradables inflation
Annual %
ppts
May MPS
Feb MPS
Diff (RHS)
6
5
4
3
2
1
0.5
0
-0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

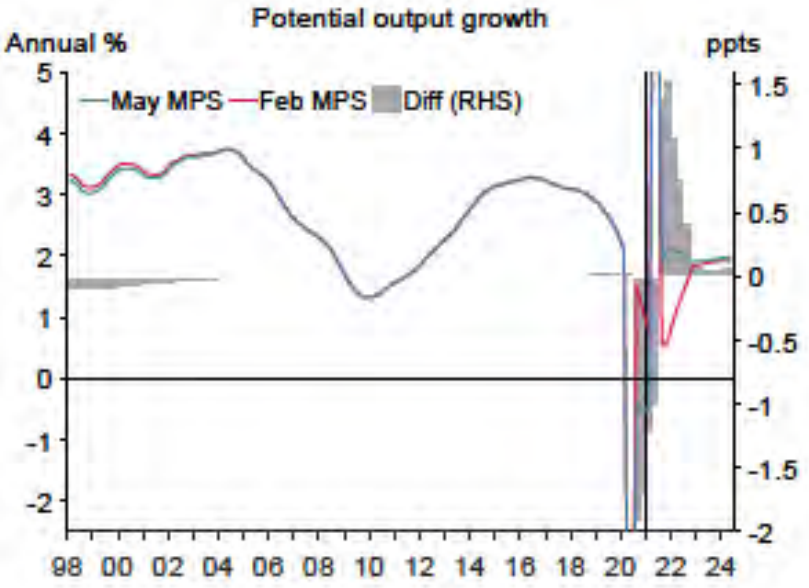

CPI tradables inflation
Annual %
ppts
May MPS
Feb MPS
Diff (RHS)
6
4
2
0
-2
0.5
0
-0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

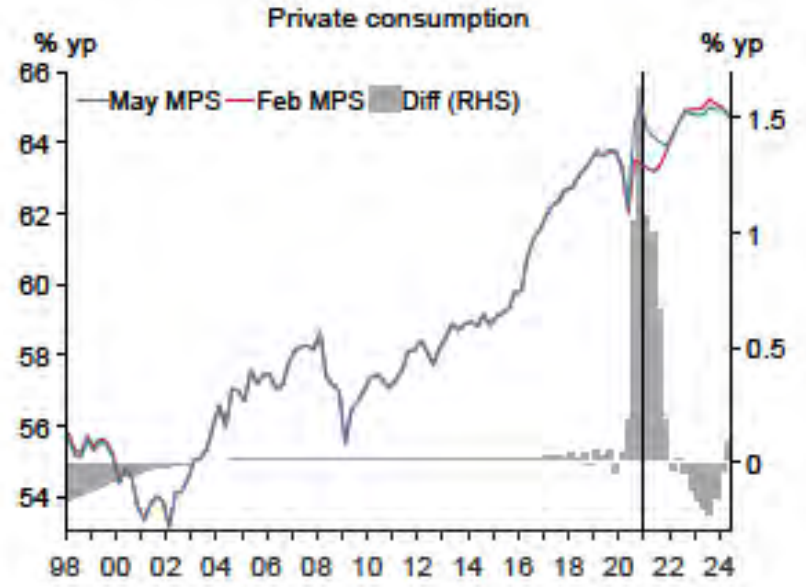

CPI petrol and other vehicle fuels inflation
Annual %
ppts
May MPS
Feb MPS
Diff (RHS)
30
20
10
0
-10
-20
2
1
0
-1
-2
-3
98 00 02 04 06 08 10 12 14 16 18 20 22 24

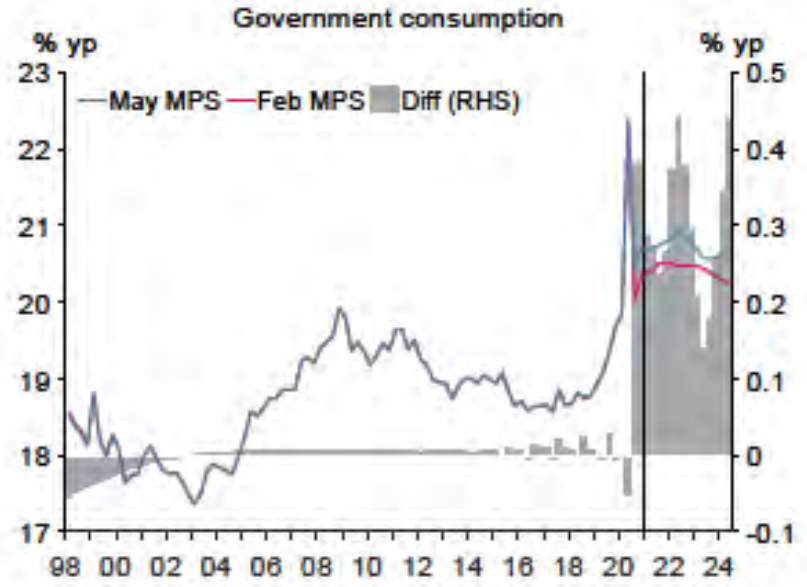

CPI ex-fuel tradables inflation
Annual %
ppts
May MPS
Feb MPS
Diff (RHS)
5
4
3
2
1
0
-1
-2
-3
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

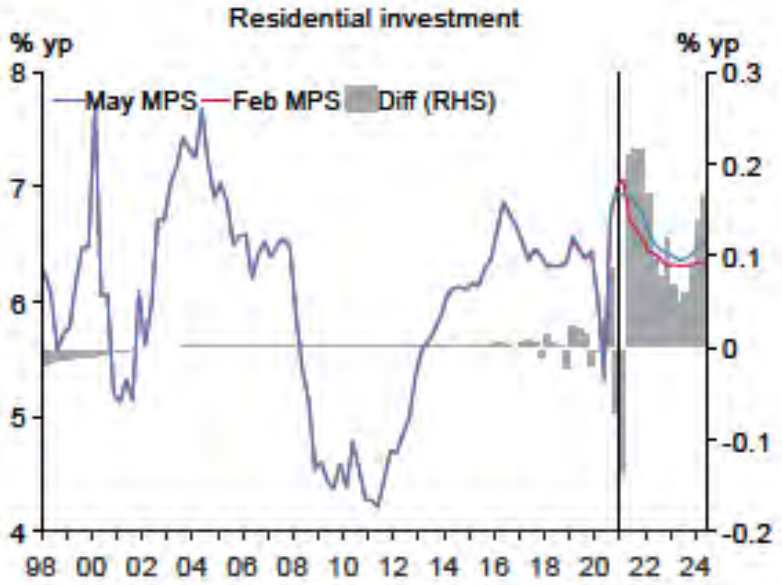

Real GDP growth (production)
Annual %
ppts
May MPS
Feb MPS
Diff (RHS)
15
10
5
0
-5
-10
2
1.5
1
0.5
0
-0.5
-1
-1.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

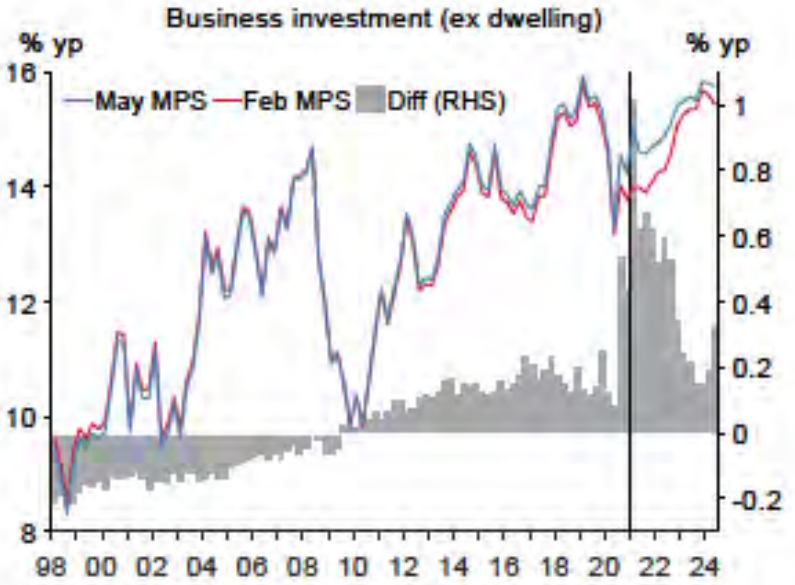

Potential output growth
Annual %
ppts
May MPS
Feb MPS
Diff (RHS)
5
4
3
2
1
0
-1
-2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

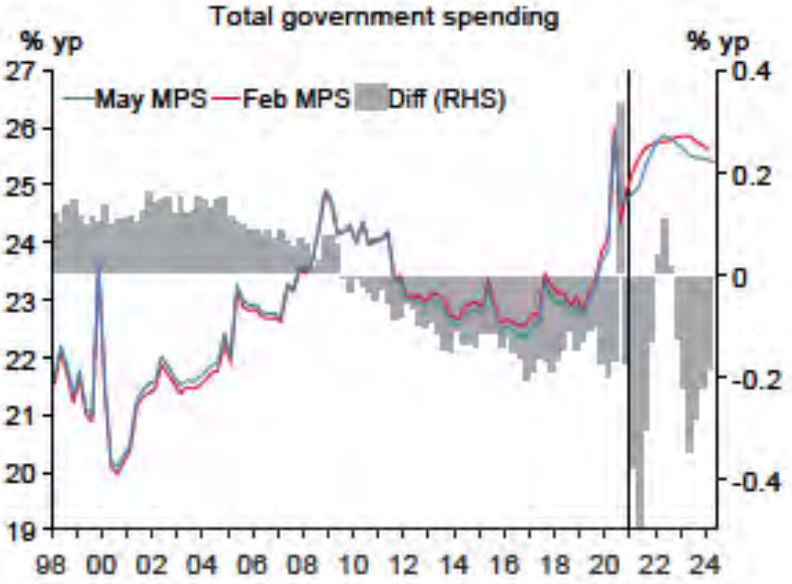

Private consumption
% yp
% yp
May MPS
Feb MPS
Diff (RHS)
66
64
62
60
58
56
54
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

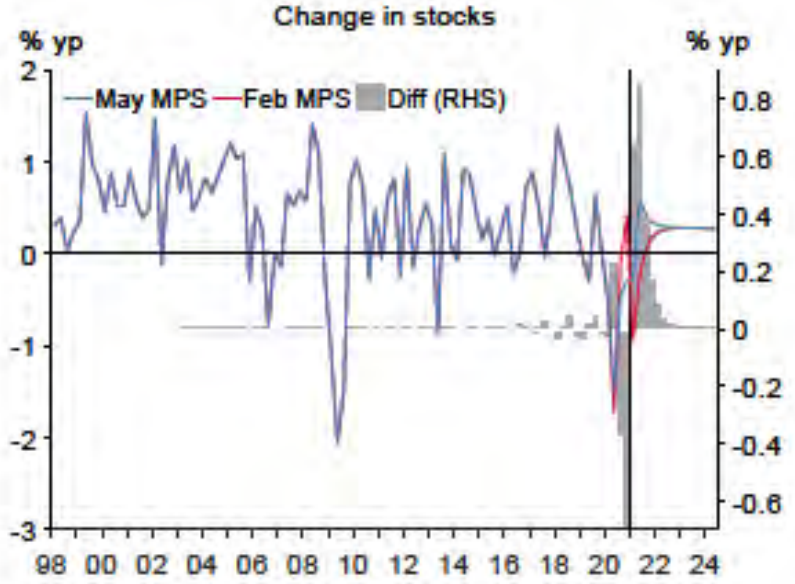

Government consumption
% yp
% yp
May MPS
Feb MPS
Diff (RHS)
23
22
21
20
19
18
17
0.5
0.4
0.3
0.2
0.1
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

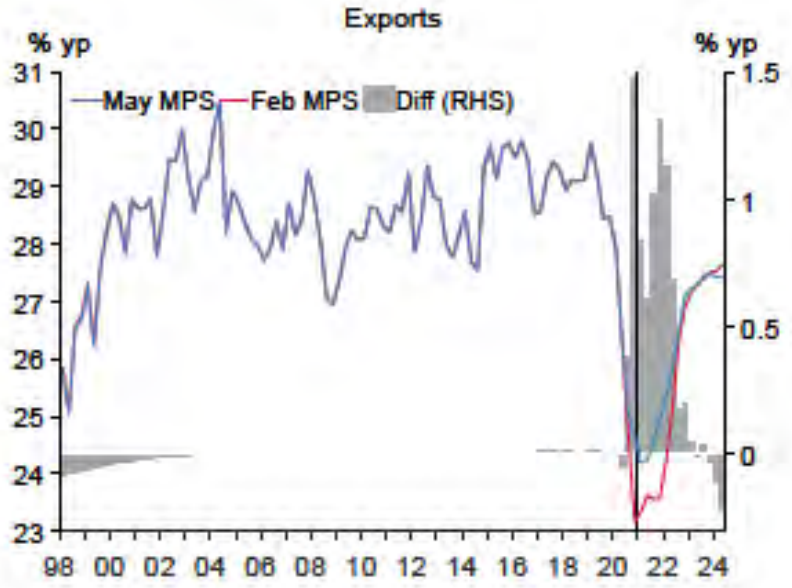

Residential investment
% yp
% yp
May MPS
Feb MPS
Diff (RHS)
8
7
6
5
4
0.3
0.2
0.1
0
-0.1
-0.2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

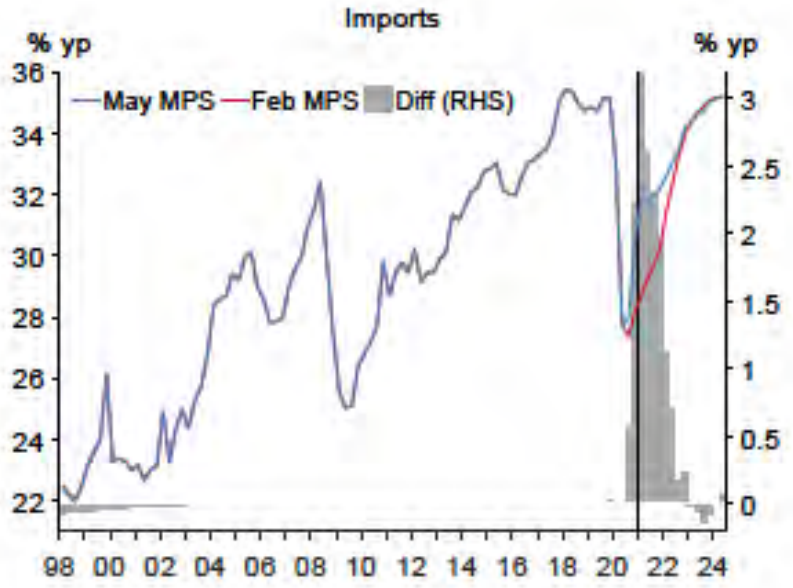

Business investment (ex dwelling)
% yp
% yp
May MPS
Feb MPS
Diff (RHS)
16
14
12
10
8
1
0.8
0.6
0.4
0.2
0
-0.2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

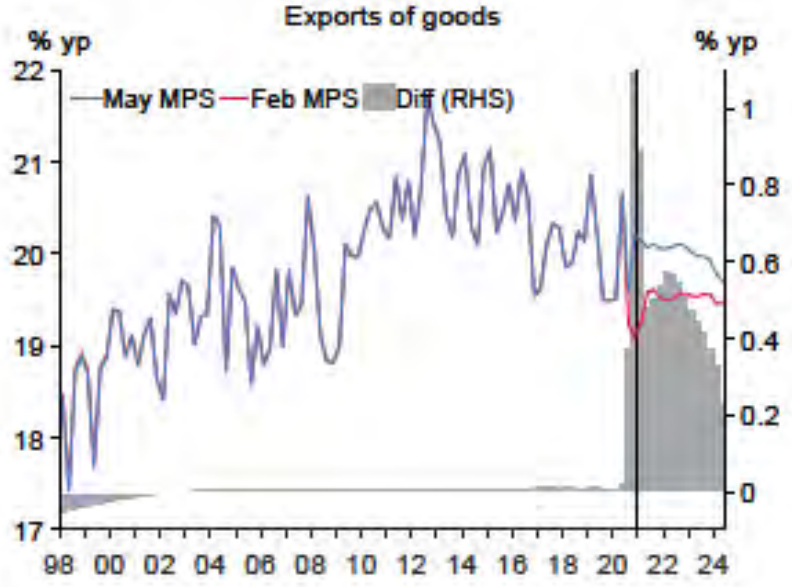

Total government spending
% yp
% yp
May MPS
Feb MPS
Diff (RHS)
27
26
25
24
23
22
21
20
19
0.4
0.2
0
-0.2
-0.4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

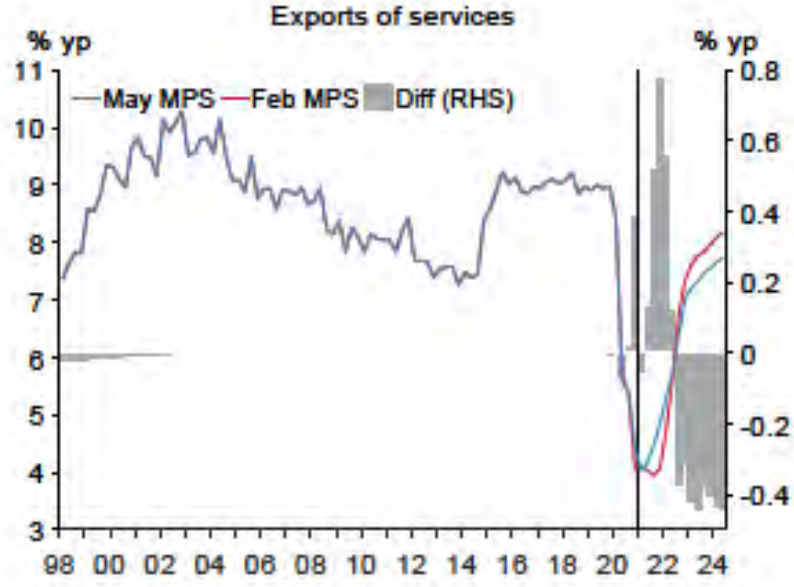

Change in stocks
% yp
% yp
May MPS
Feb MPS
Diff (RHS)
2
1
0
-1
-2
-3
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

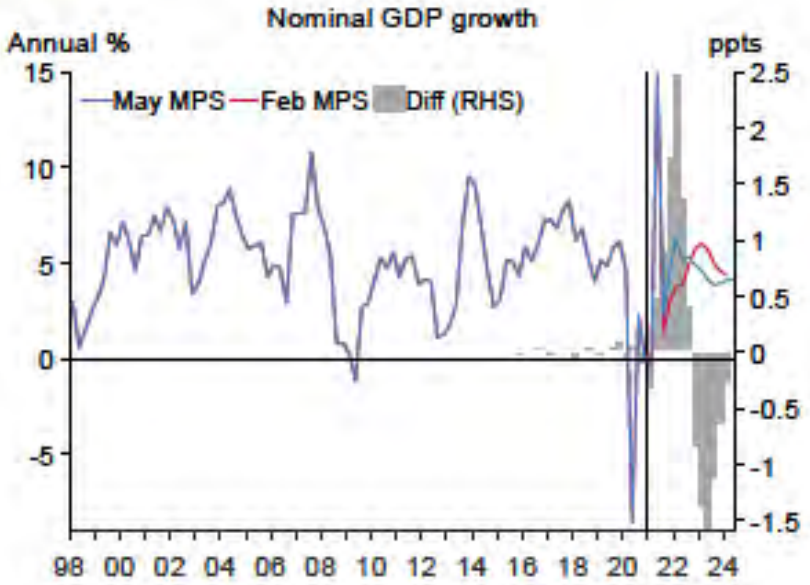

Exports
% yp
% yp
May MPS
Feb MPS
Diff (RHS)
31
30
29
28
27
26
25
24
23
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

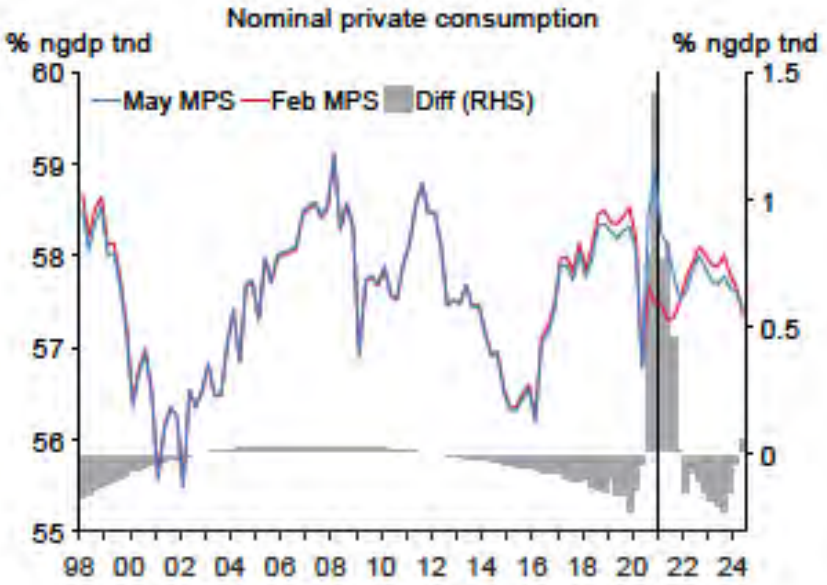

Imports
% yp
% yp
May MPS
Feb MPS
Diff (RHS)
36
34
32
30
28
26
24
22
3
2.5
2
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

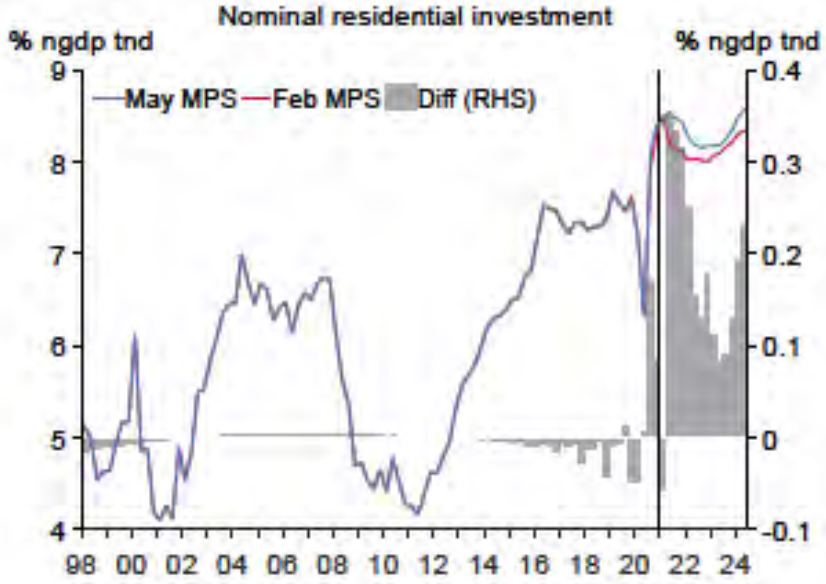

Exports of goods
% yp
% yp
May MPS
Feb MPS
Diff (RHS)
22
21
20
19
18
17
1
0.8
0.6
0.4
0.2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

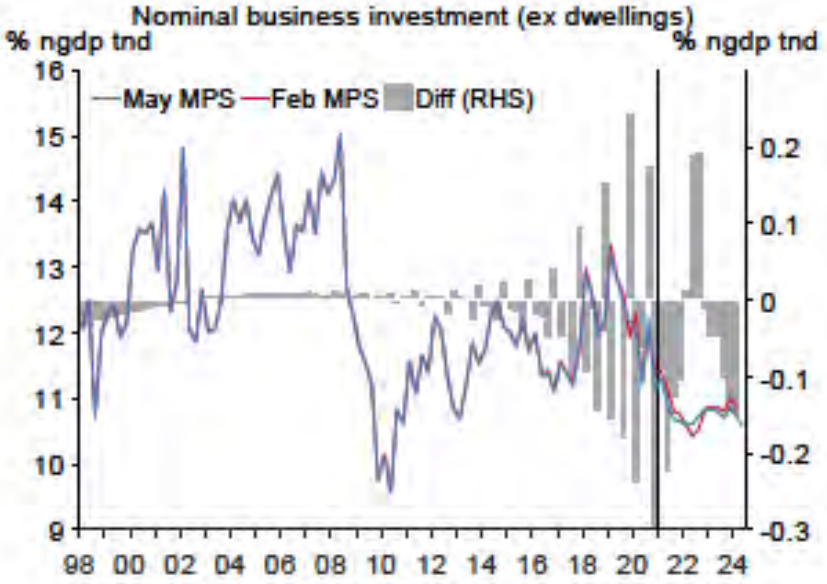

Exports of services
% yp
% yp
May MPS
Feb MPS
Diff (RHS)
11
10
9
8
7
6
5
4
3
0.8
0.6
0.4
0.2
0
-0.2
-0.4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

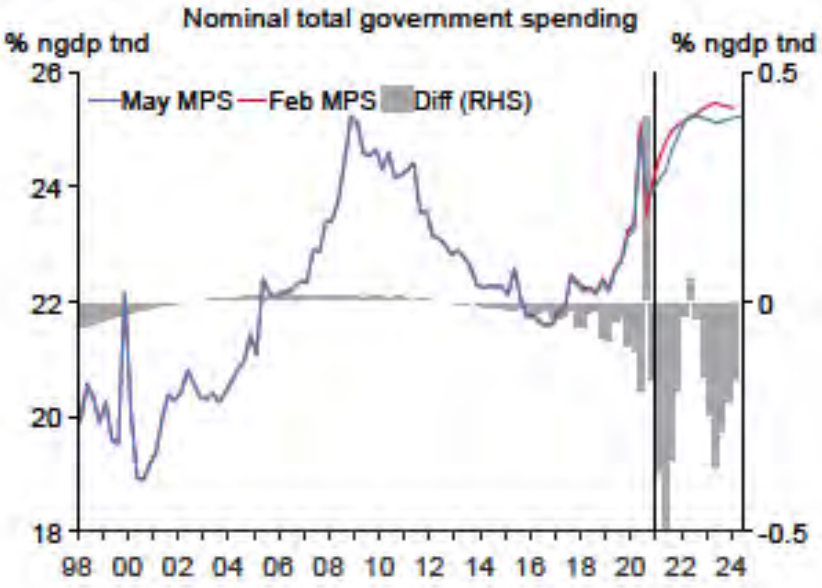

Nominal GDP growth
Annual %
ppts
May MPS
Feb MPS
Diff (RHS)
15
10
5
0
-5
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

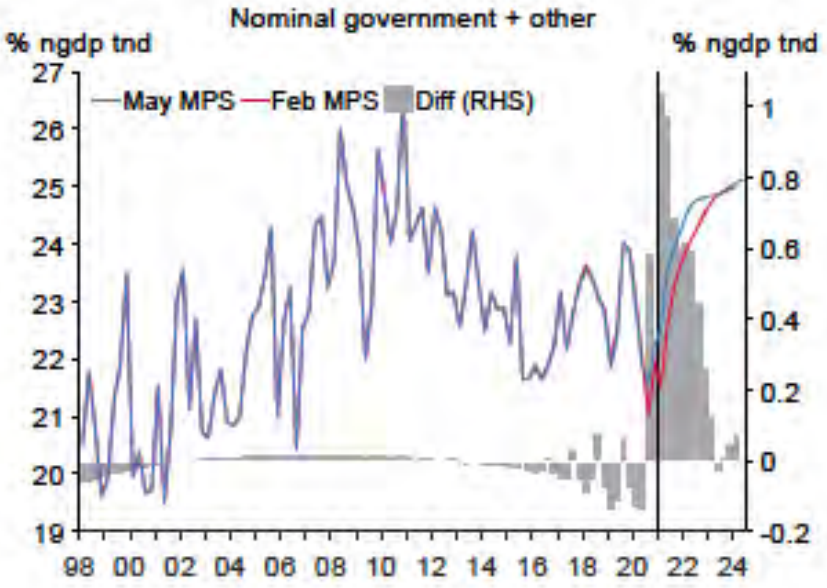

Nominal private consumption
% ngdp tnd
% ngdp tnd
May MPS
Feb MPS
Diff (RHS)
60
59
58
57
56
55
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

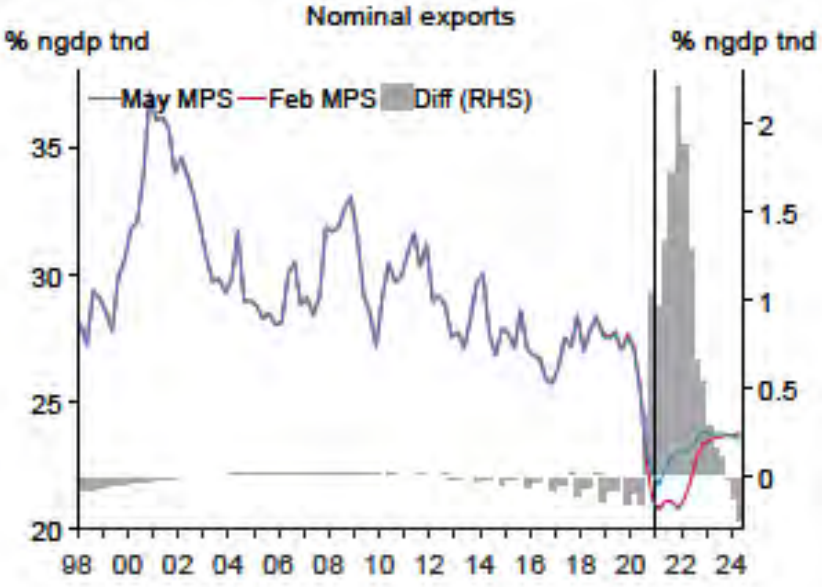

Nominal residential investment
% ngdp tnd
% ngdp tnd
May MPS
Feb MPS
Diff (RHS)
9
8
7
6
5
4
0.4
0.3
0.2
0.1
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

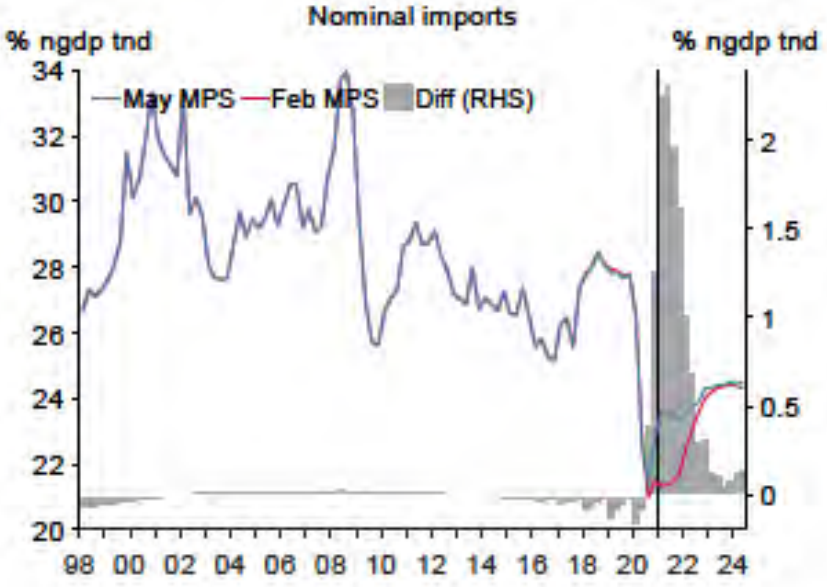

Nominal business investment (ex dwellings)
% ngdp tnd
% ngdp tnd
May MPS
Feb MPS
Diff (RHS)
16
15
14
13
12
11
10
9
0.2
0.1
0
-0.1
-0.2
-0.3
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

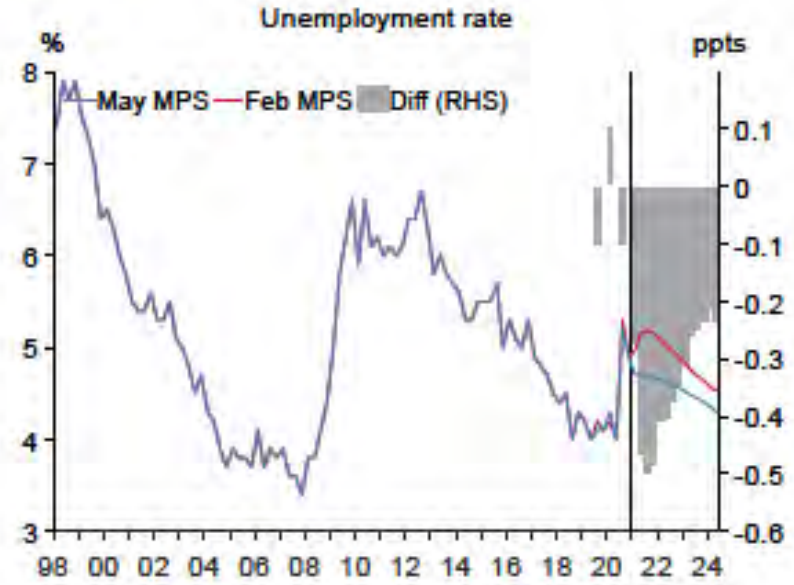

Nominal total government spending
% ngdp tnd
% ngdp tnd
May MPS
Feb MPS
Diff (RHS)
26
24
22
20
18
0.5
0
-0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

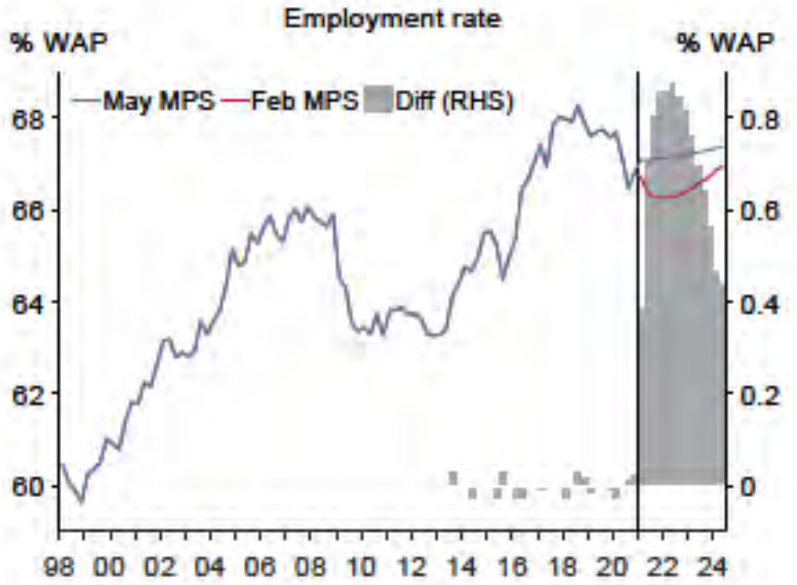

Nominal government + other
% ngdp tnd
% ngdp tnd
May MPS
Feb MPS
Diff (RHS)
27
26
25
24
23
22
21
20
19
1
0.8
0.6
0.4
0.2
0
-0.2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

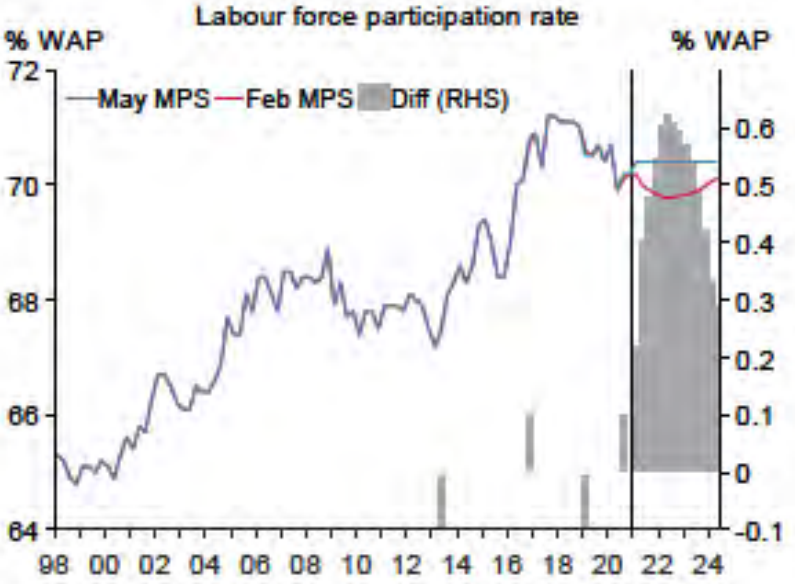

Nominal exports
% ngdp tnd
% ngdp tnd
May MPS
Feb MPS
Diff (RHS)
35
30
25
20
2
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

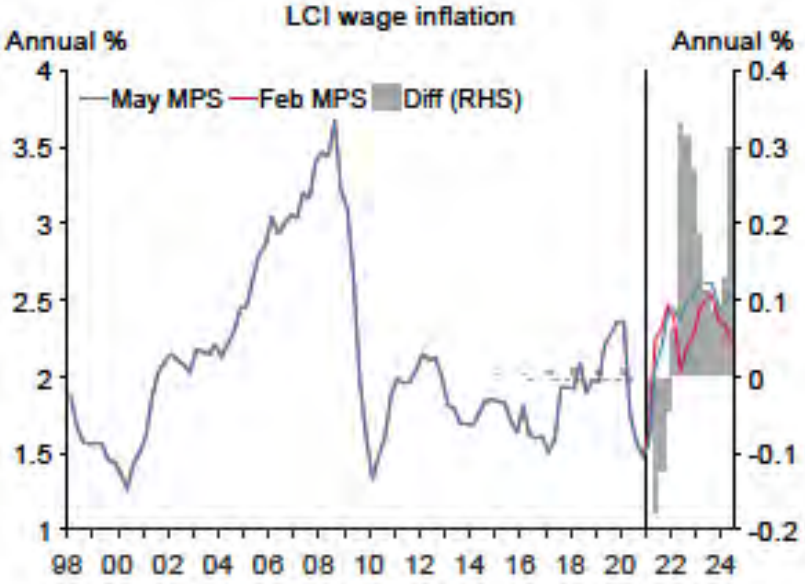

Nominal imports
% ngdp tnd
% ngdp tnd
May MPS
Feb MPS
Diff (RHS)
34
32
30
28
26
24
22
20
2
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Labour

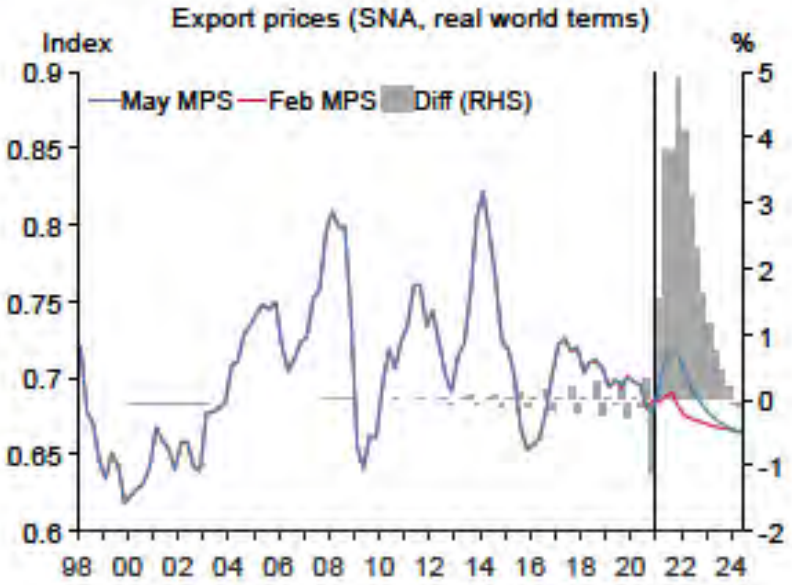

Unemployment rate
%
ppts
May MPS
Feb MPS
Diff (RHS)
8
7
6
5
4
3
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
98 00 02 04 06 08 10 12 14 16 18 20 22 24

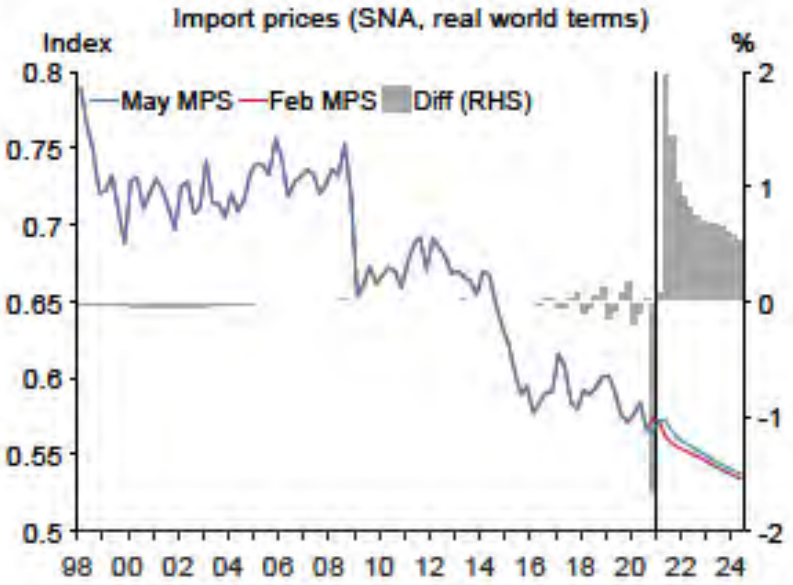

Employment rate
% WAP
% WAP
May MPS
Feb MPS
Diff (RHS)
68
66
64
62
60
0.8
0.6
0.4
0.2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

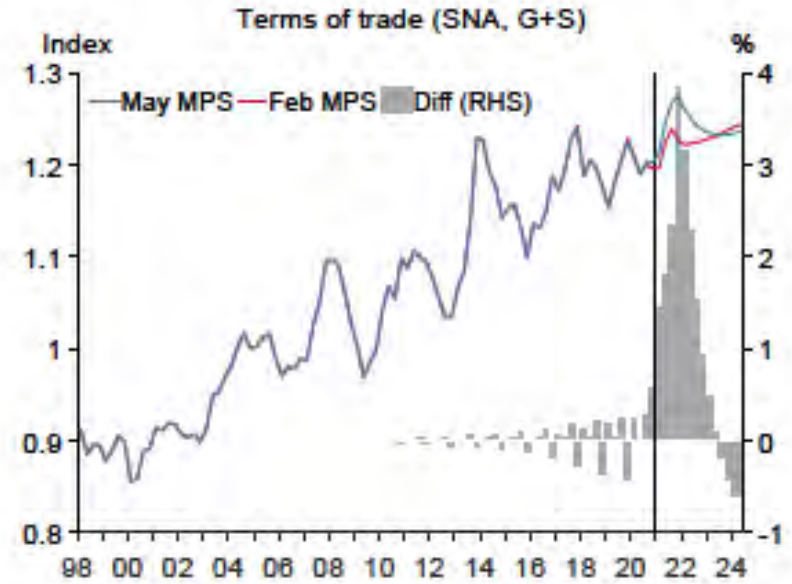

Labour force participation rate
% WAP
% WAP
May MPS
Feb MPS
Diff (RHS)
72
70
68
66
64
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

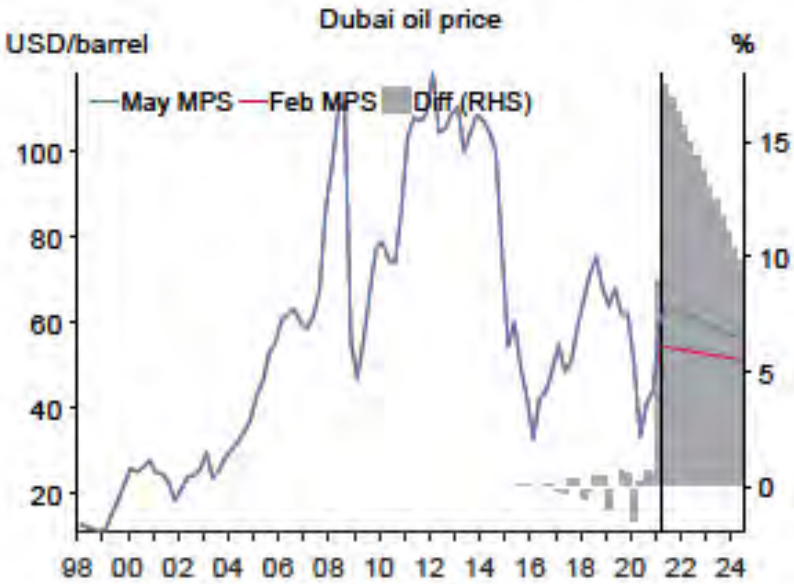

LCI wage inflation
Annual %
Annual %
May MPS
Feb MPS
Diff (RHS)
4
3.5
3
2.5
2
1.5
1
0.4
0.3
0.2
0.1
0
-0.1
-0.2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

External

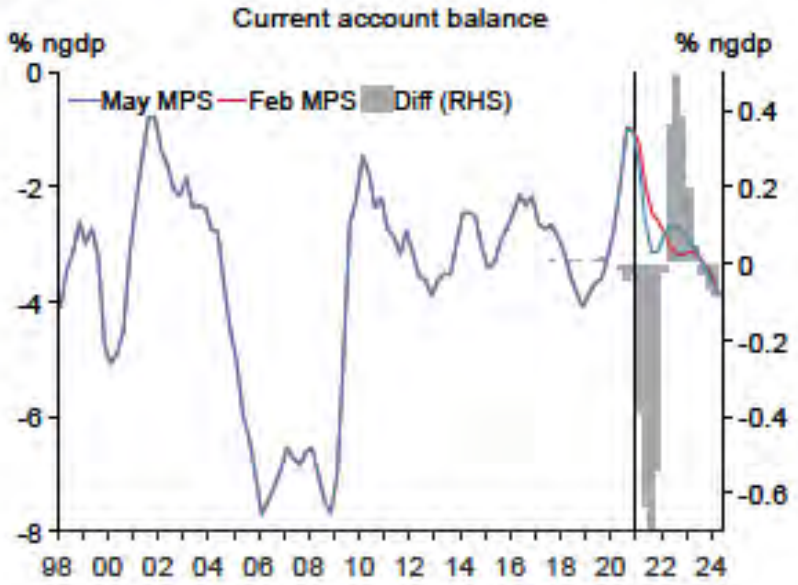

Export prices (SNA, real world terms)
Index
%
May MPS
Feb MPS
Diff (RHS)
0.9
0.85
0.8
0.75
0.7
0.65
0.6
5
4
3
2
1
0
-1
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

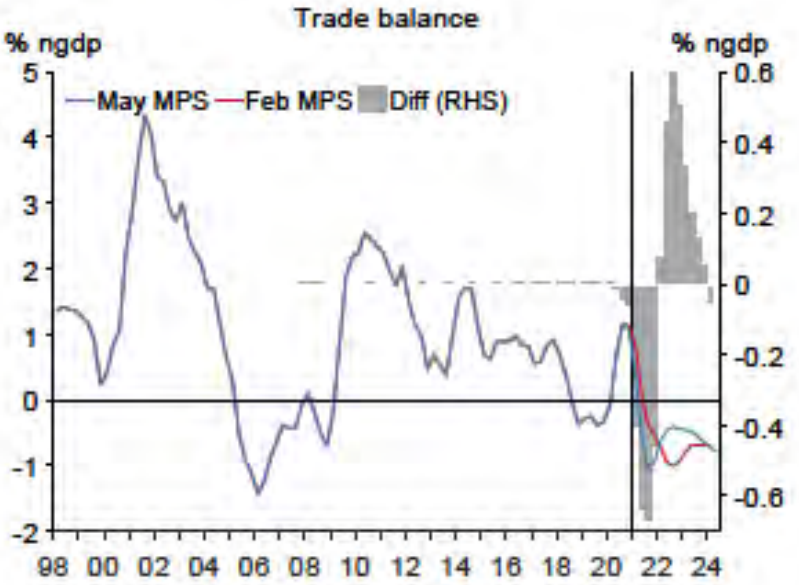

Import prices (SNA, real world terms)
Index
%
May MPS
Feb MPS
Diff (RHS)
0.8
0.75
0.7
0.65
0.6
0.55
0.5
2
1
0
-1
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

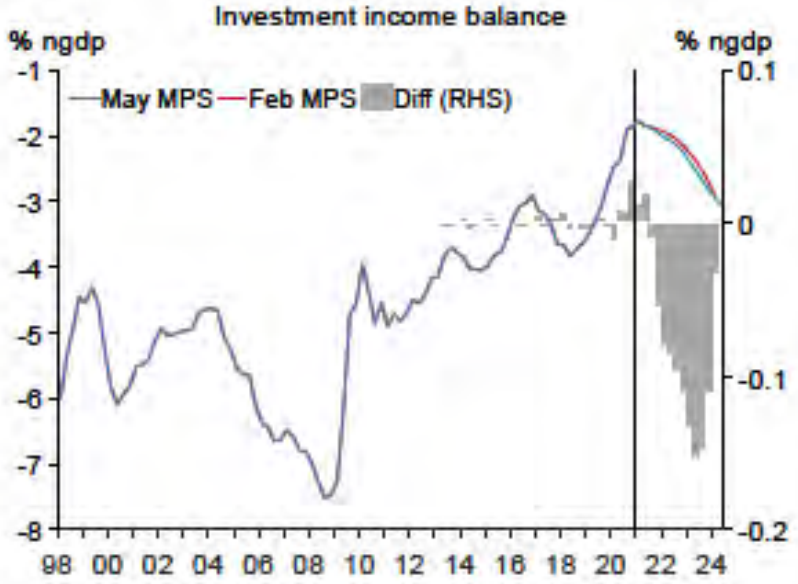

Terms of trade (SNA, G+S)
Index
%
May MPS
Feb MPS
Diff (RHS)
1.3
1.2
1.1
1
0.9
0.8
4
3
2
1
0
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

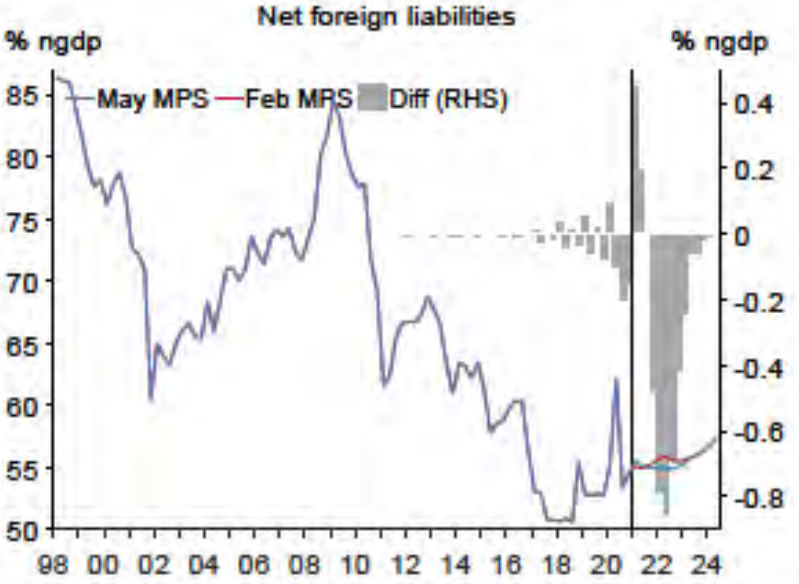

Dubai oil price
USD/barrel
%
May MPS
Feb MPS
Diff (RHS)
100
80
60
40
20
15
10
5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

External

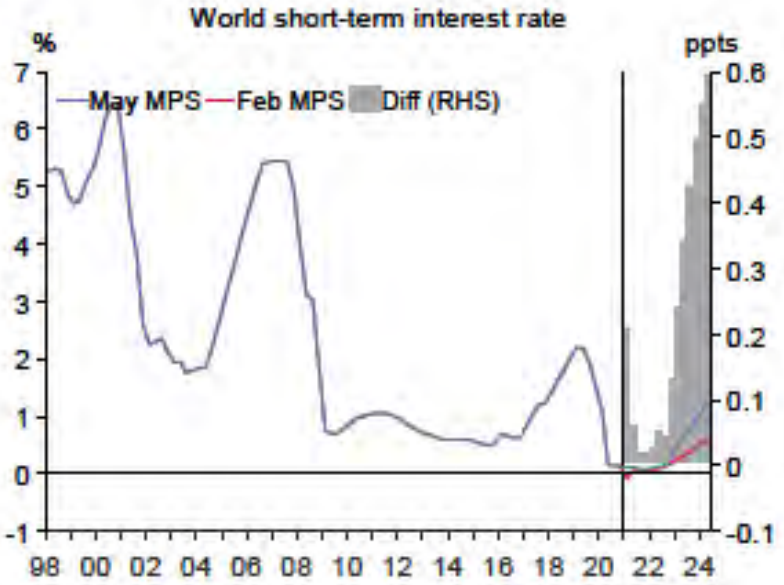

Current account balance
% ngdp
% ngdp
May MPS
Feb MPS
Diff (RHS)
0
-2
-4
-6
-8
0.4
0.2
0
-0.2
-0.4
-0.6
98 00 02 04 06 08 10 12 14 16 18 20 22 24

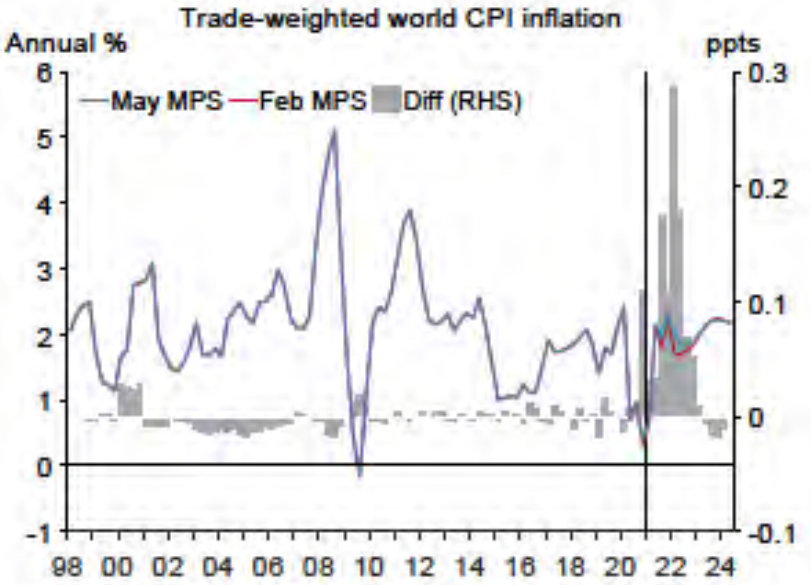

Trade balance
% ngdp
% ngdp
May MPS
Feb MPS
Diff (RHS)
5
4
3
2
1
0
-1
-2
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
98 00 02 04 06 08 10 12 14 16 18 20 22 24

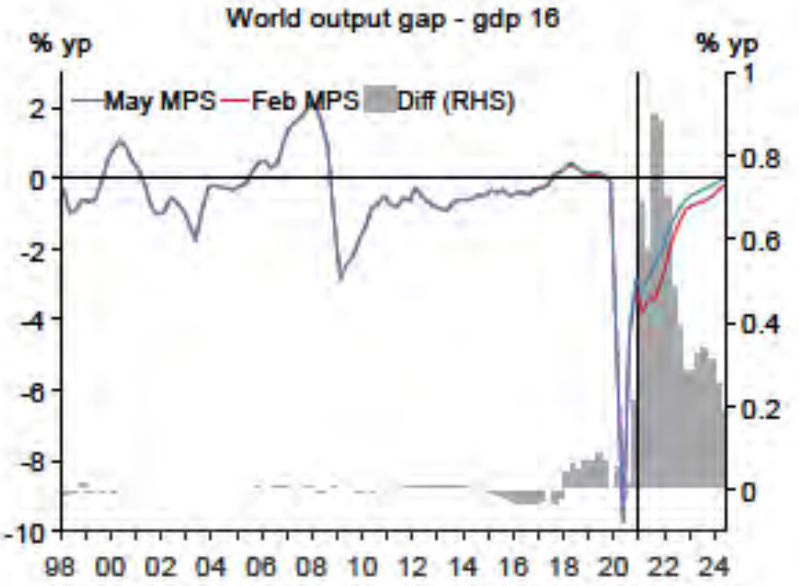

Investment income balance
% ngdp
% ngdp
May MPS
Feb MPS
Diff (RHS)
-1
-2
-3
-4
-5
-6
-7
-8
0.1
0
-0.1
-0.2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

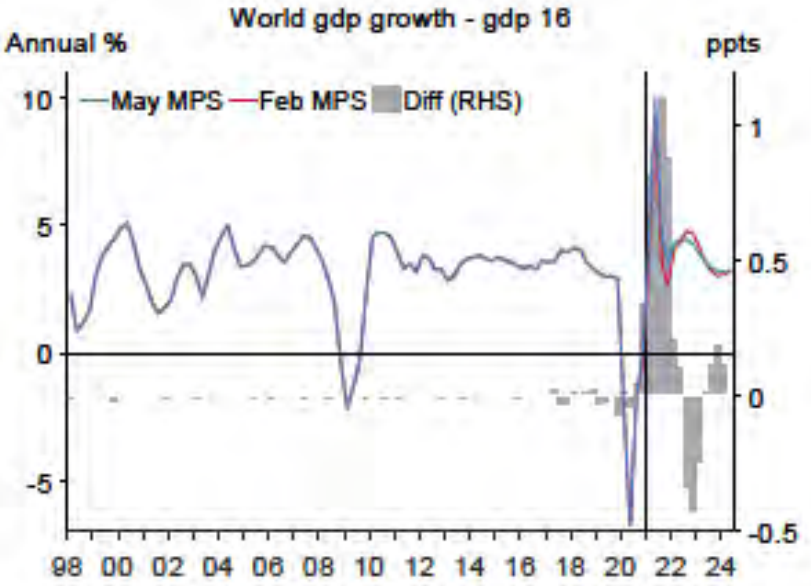

Net foreign liabilities
% ngdp
% ngdp
May MPS
Feb MPS
Diff (RHS)
85
80
75
70
65
60
55
50
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
98 00 02 04 06 08 10 12 14 16 18 20 22 24

World

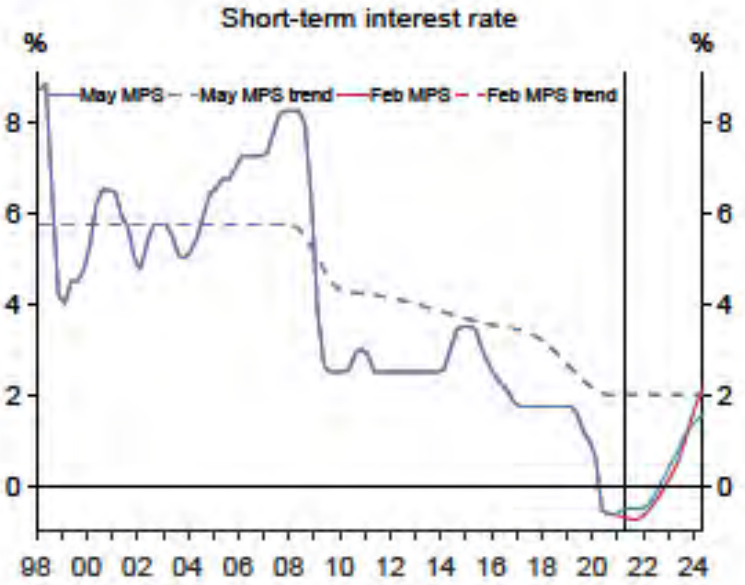

World short-term interest rate
%
ppts
May MPS
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

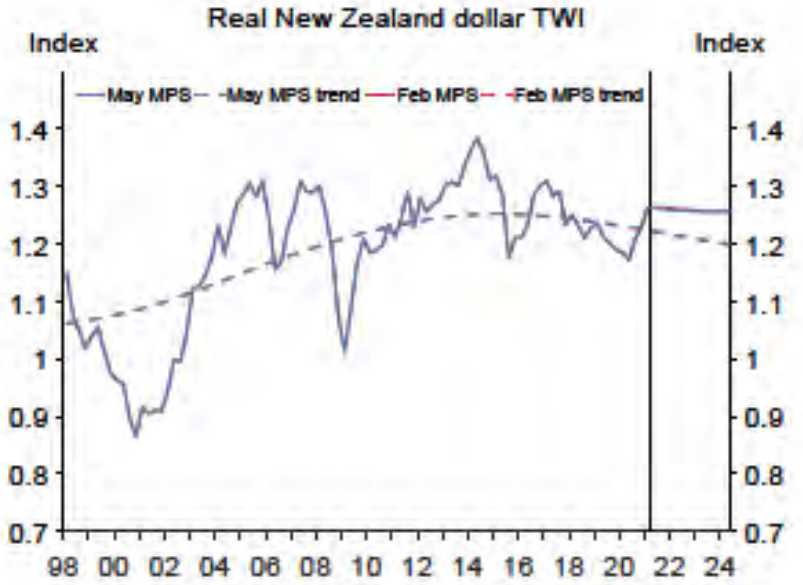

Trade-weighted world CPI inflation
Annual %
ppts
May MPS
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

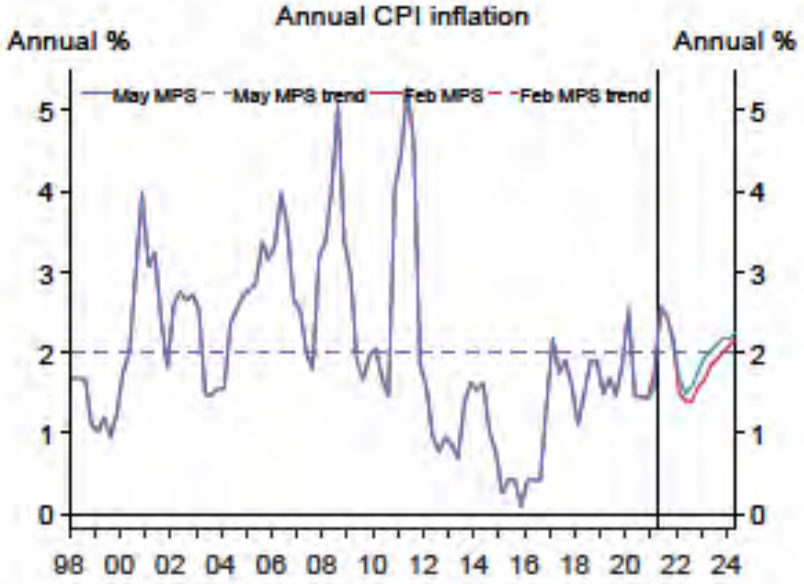

World output gap - gdp 16
% yp
% yp
May MPS
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

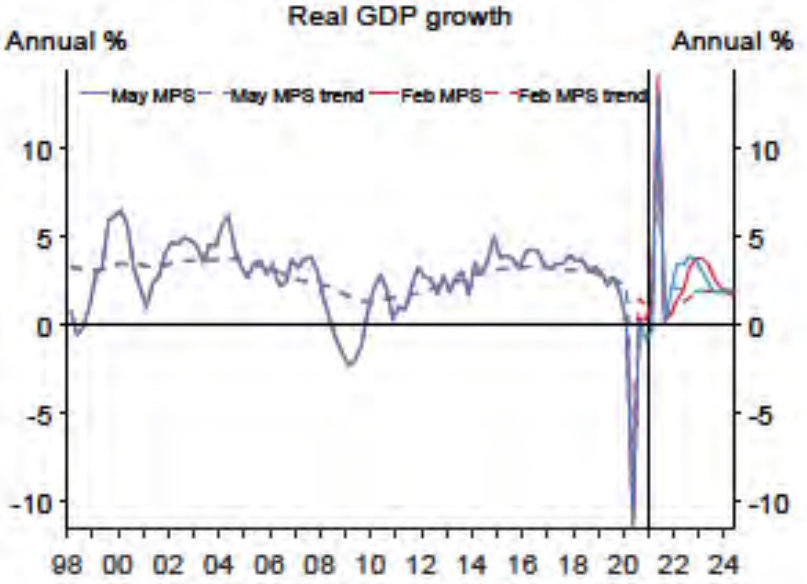

World gdp growth - gdp 16
Annual %
ppts
May MPS
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

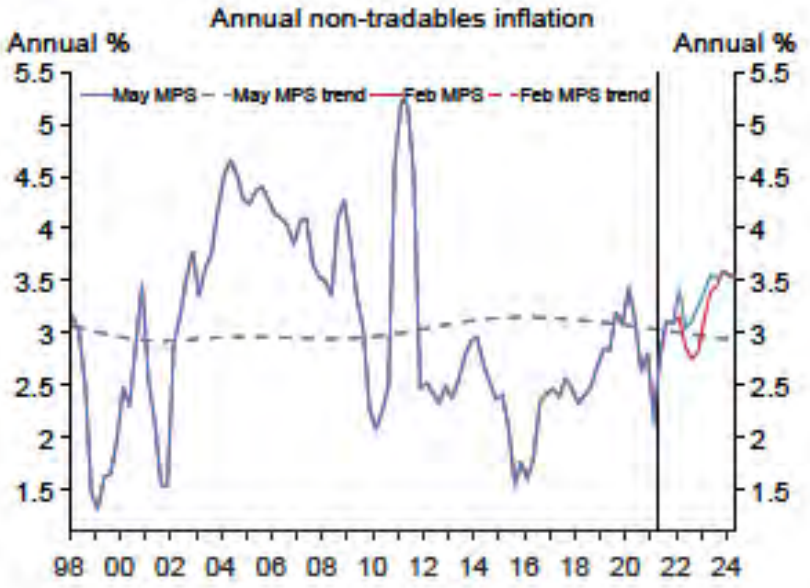

Short-term interest rate
%
%
May MPS
May MPS trend
Feb MPS
Feb MPS trend
8
6
4
2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

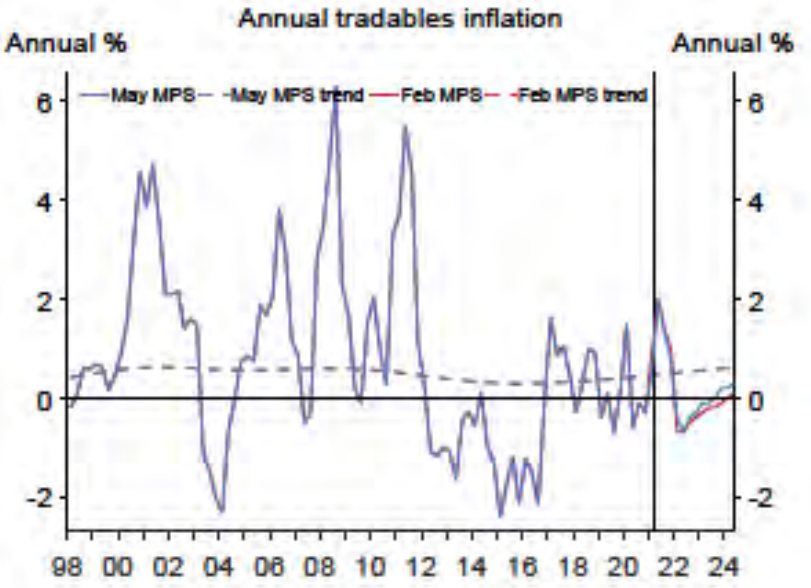

Real New Zealand dollar TWI
Index
Index
May MPS
May MPS trend
Feb MPS
Feb MPS trend
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
98 00 02 04 06 08 10 12 14 16 18 20 22 24

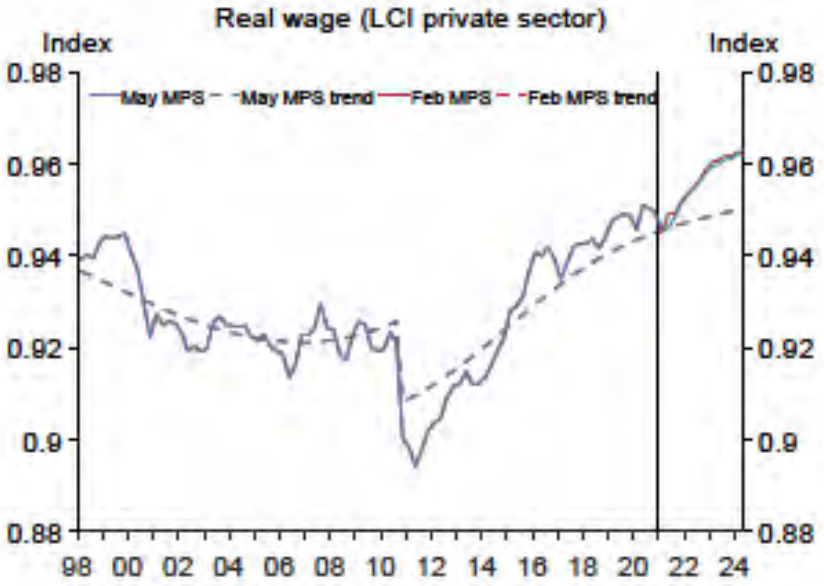

Annual CPI inflation
Annual %
Annual %
May MPS
May MPS trend
Feb MPS
Feb MPS trend
5
4
3
2
1
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

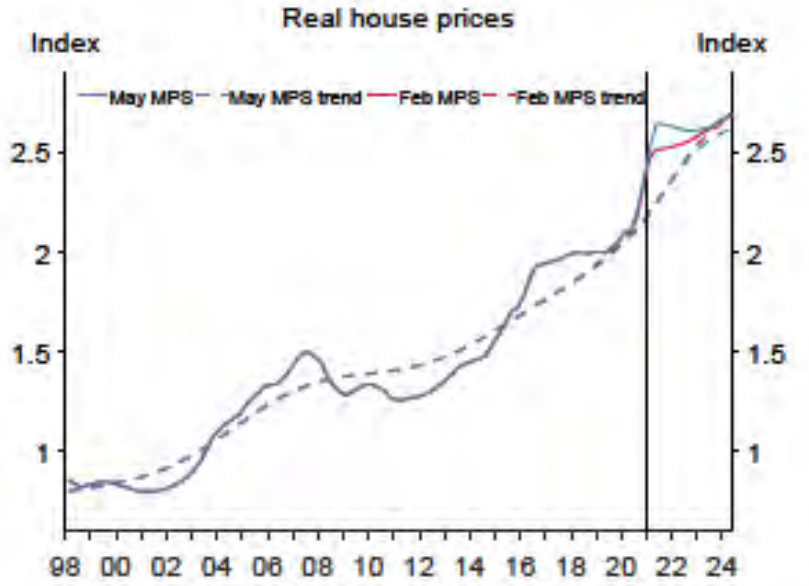

Real GDP growth
Annual %
Annual %
May MPS
May MPS trend
Feb MPS
Feb MPS trend
10
5
0
-5
-10
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

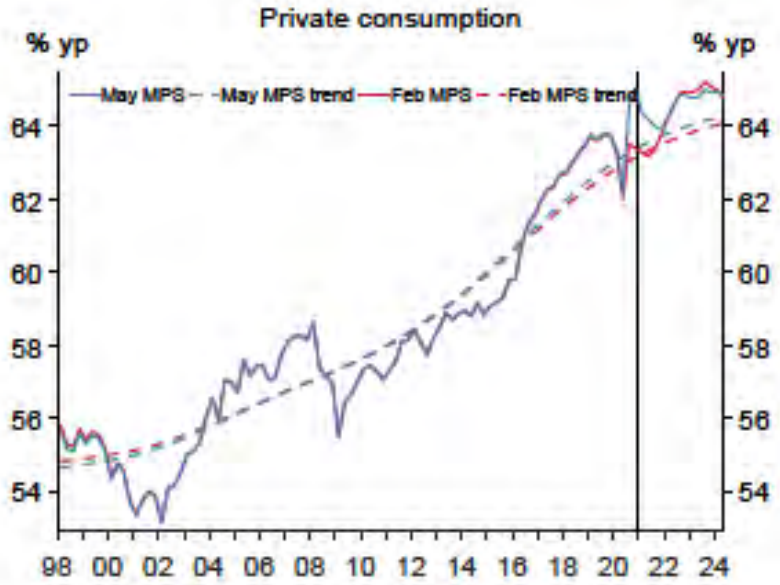

Annual non-tradables inflation
Annual %
Annual %
May MPS
May MPS trend
Feb MPS
Feb MPS trend
5.5
5
4.5
4
3.5
3
2.5
2
1.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

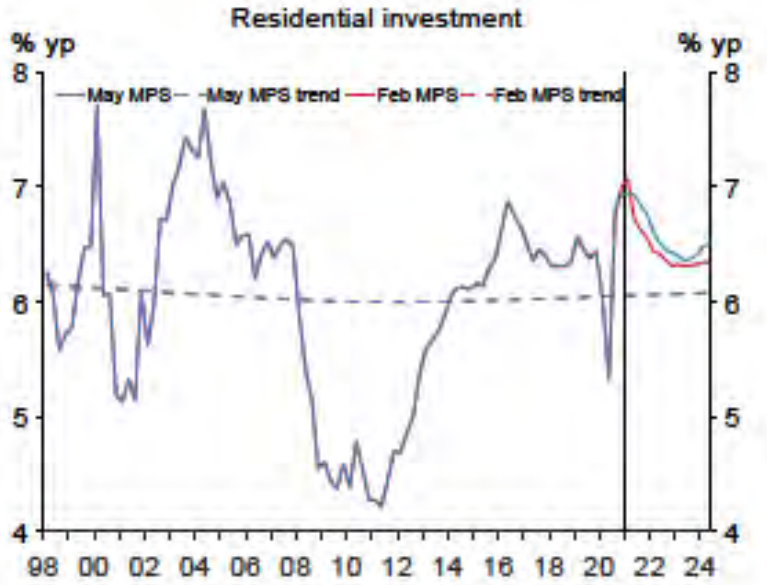

Annual tradables inflation
Annual %
Annual %
May MPS
May MPS trend
Feb MPS
Feb MPS trend
6
4
2
0
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

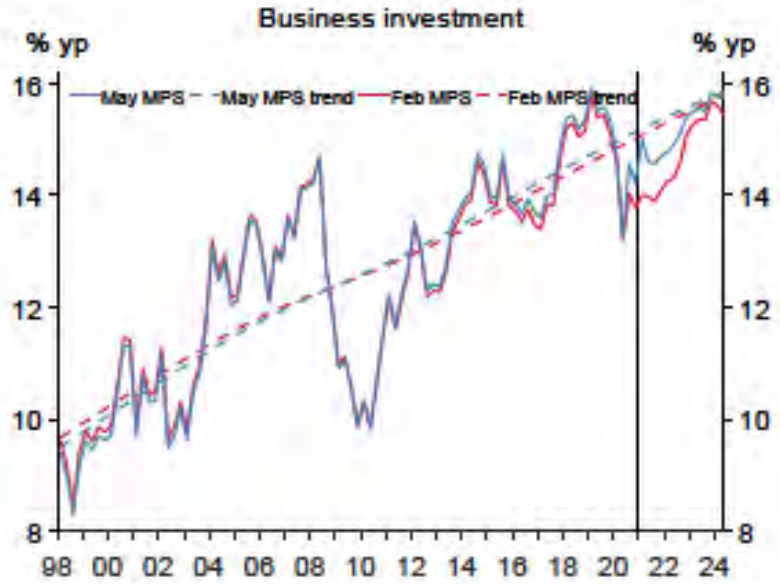

Real wage (LCI private sector)
Index
Index
May MPS
May MPS trend
Feb MPS
Feb MPS trend
0.98
0.96
0.94
0.92
0.9
0.88
98 00 02 04 06 08 10 12 14 16 18 20 22 24

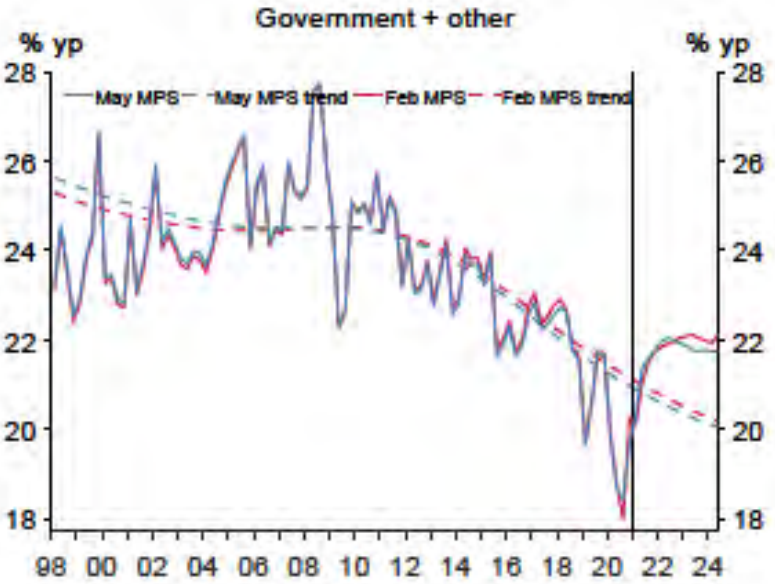

Real house prices
Index
Index
May MPS
May MPS trend
Feb MPS
Feb MPS trend
2.5
2
1.5
1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

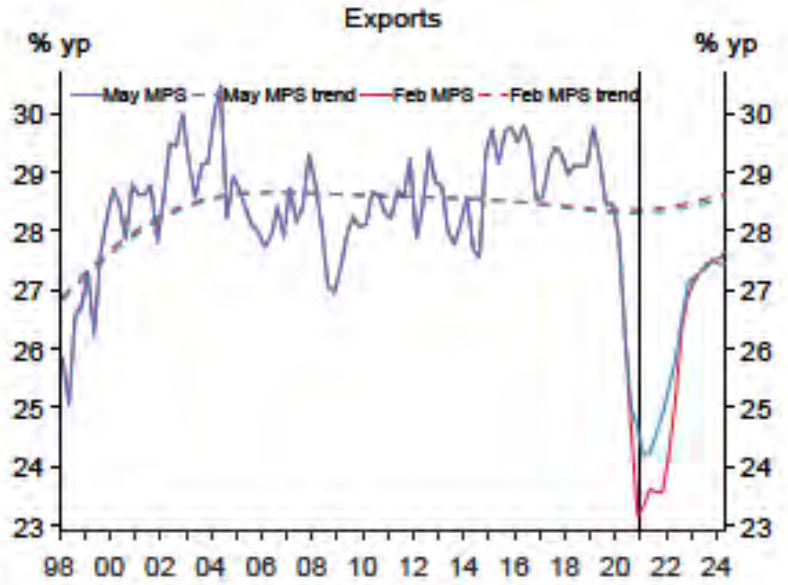

Private consumption
% yp
% yp
May MPS
May MPS trend
Feb MPS
Feb MPS trend
64
62
60
58
56
54
98 00 02 04 06 08 10 12 14 16 18 20 22 24

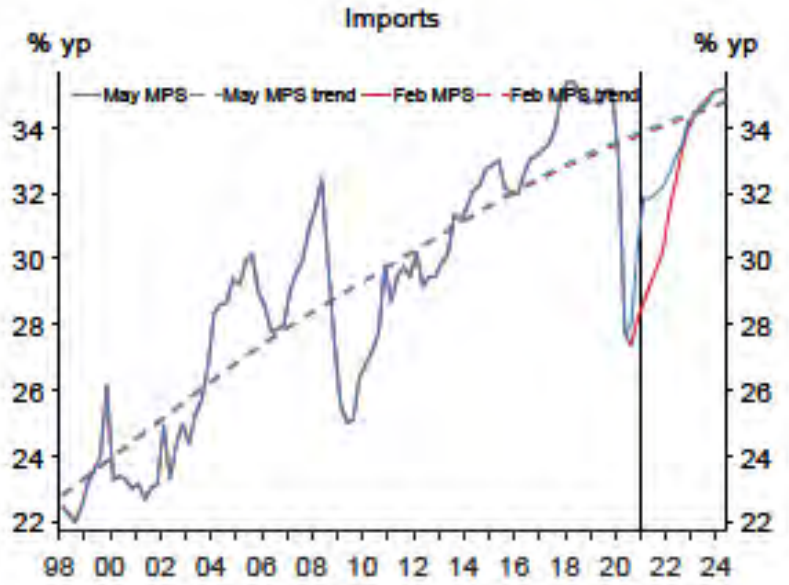

Residential investment
% yp
% yp
May MPS
May MPS trend
Feb MPS
Feb MPS trend
8
7
6
5
4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

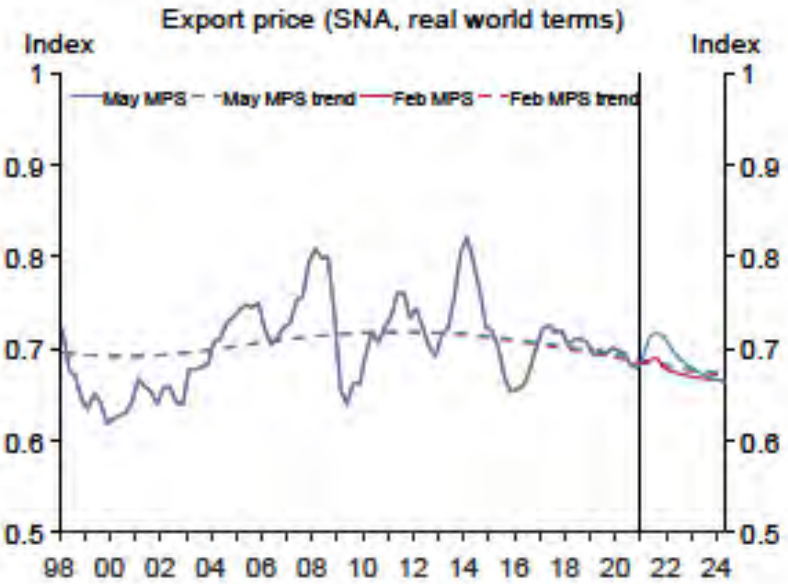

Business investment
% yp
% yp
May MPS
May MPS trend
Feb MPS
Feb MPS trend
16
14
12
10
8
98 00 02 04 06 08 10 12 14 16 18 20 22 24

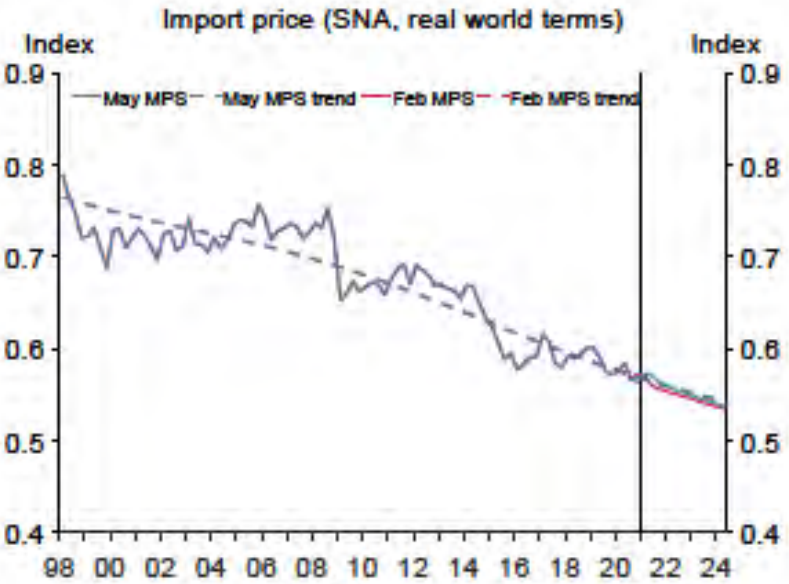

Government + other
% yp
% yp
May MPS
May MPS trend
Feb MPS
Feb MPS trend
28
26
24
22
20
18
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

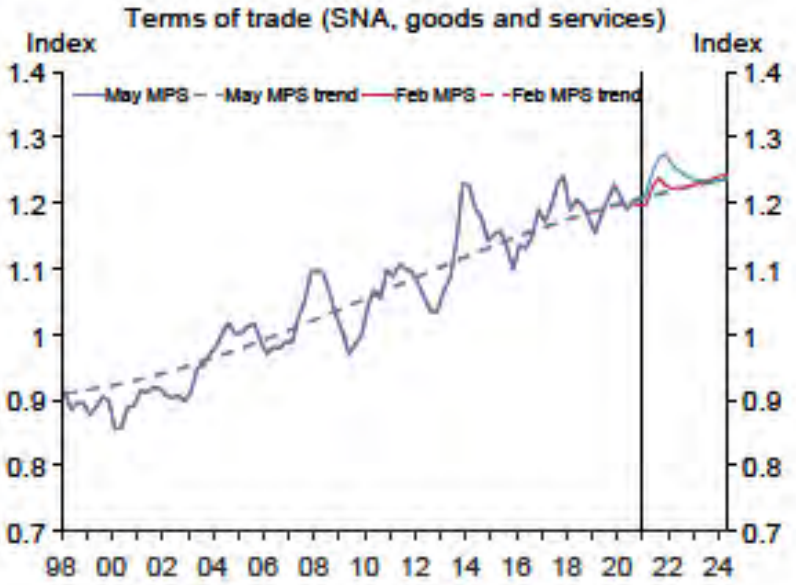

Exports
% yp
% yp
May MPS
May MPS trend
Feb MPS
Feb MPS trend
30
29
28
27
26
25
24
23
98 00 02 04 06 08 10 12 14 16 18 20 22 24

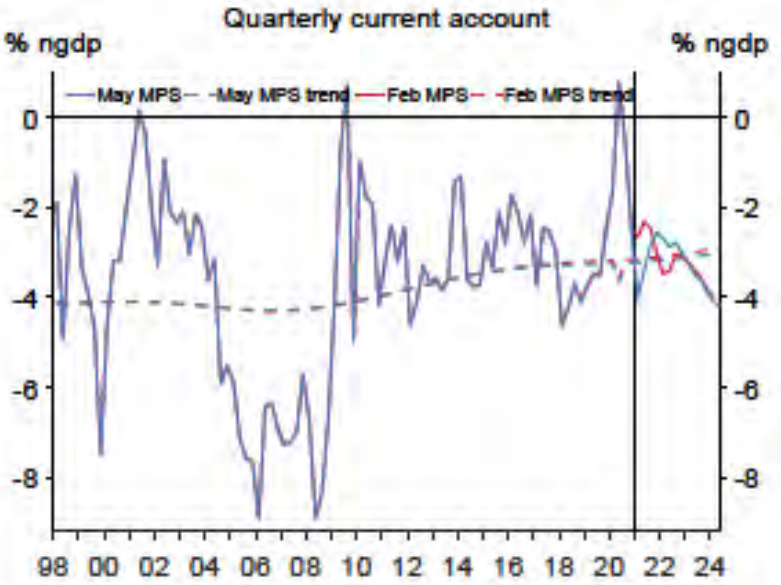

Imports
% yp
% yp
May MPS
May MPS trend
Feb MPS
Feb MPS trend
34
32
30
28
26
24
22
98 00 02 04 06 08 10 12 14 16 18 20 22 24

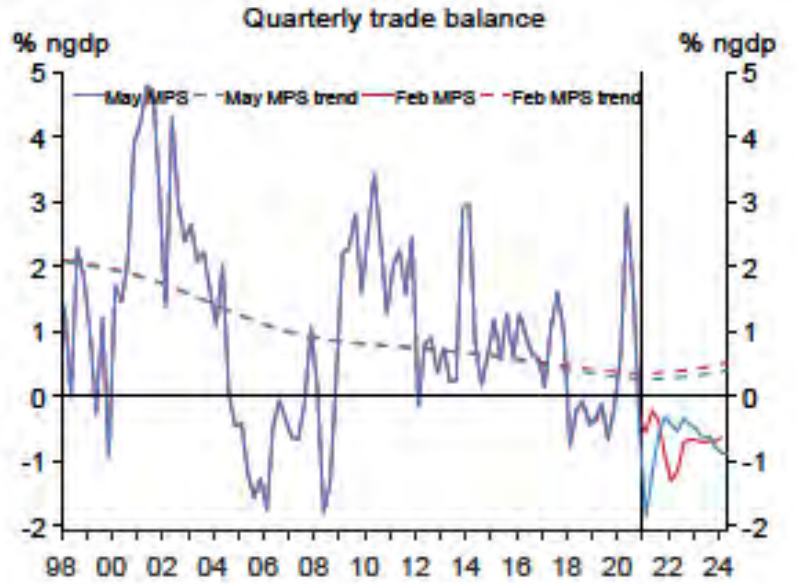

Export price (SNA, real world terms)
Index
Index
May MPS
May MPS trend
Feb MPS
Feb MPS trend
1
0.9
0.8
0.7
0.6
0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

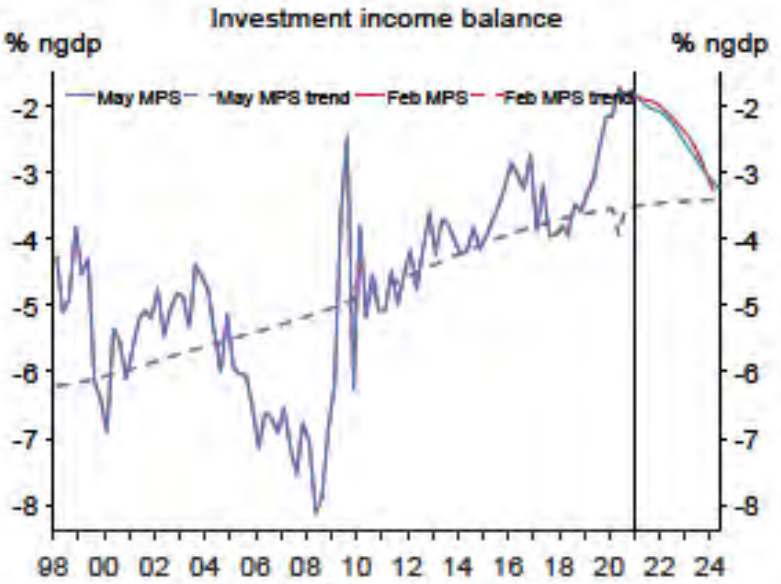

Import price (SNA, real world terms)
Index
Index
May MPS
May MPS trend
Feb MPS
Feb MPS trend
0.9
0.8
0.7
0.6
0.5
0.4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

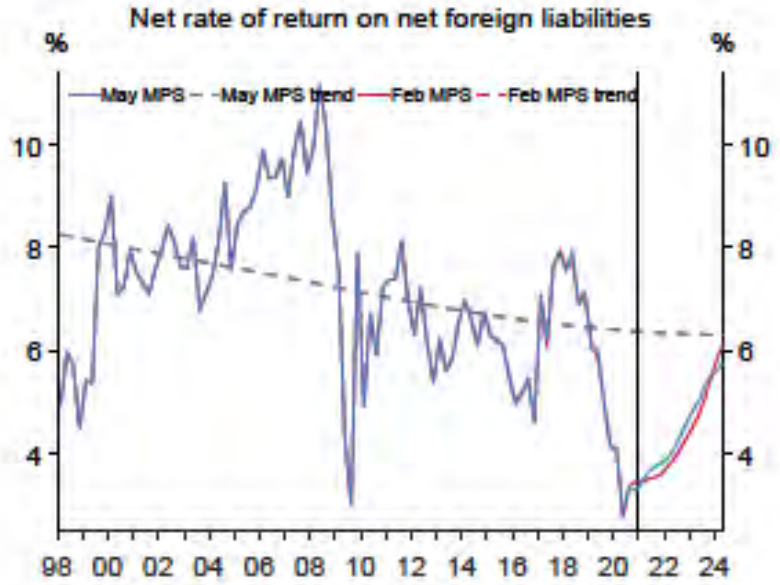

Terms of trade (SNA, goods and services)
Index
Index
May MPS
May MPS trend
Feb MPS
Feb MPS trend
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
98 00 02 04 06 08 10 12 14 16 18 20 22 24

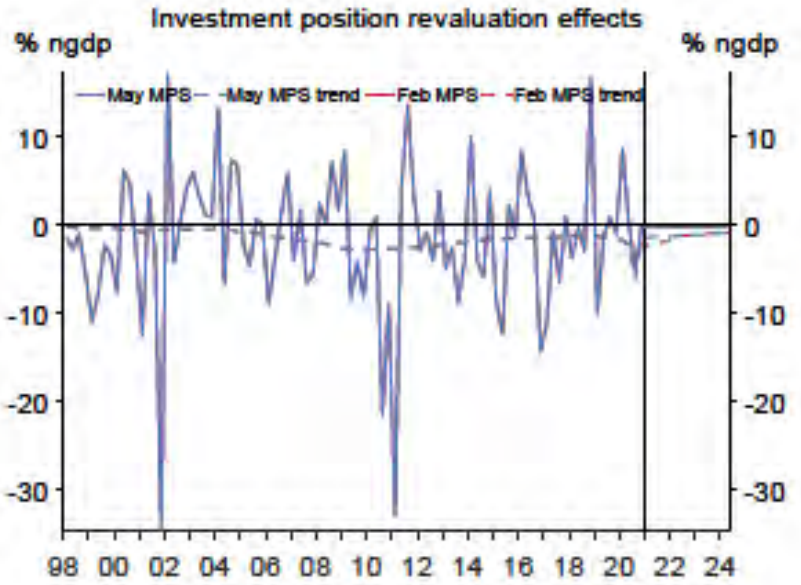

Quarterly current account
% ngdp
% ngdp
May MPS
May MPS trend
Feb MPS
Feb MPS trend
0
-2
-4
-6
-8
98 00 02 04 06 08 10 12 14 16 18 20 22 24

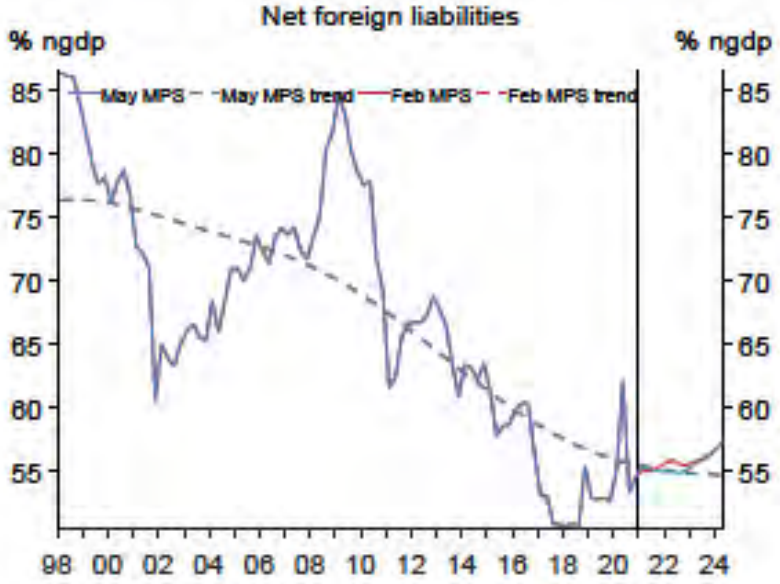

Quarterly trade balance
% ngdp
% ngdp
May MPS
May MPS trend
Feb MPS
Feb MPS trend
5
4
3
2
1
0
-1
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

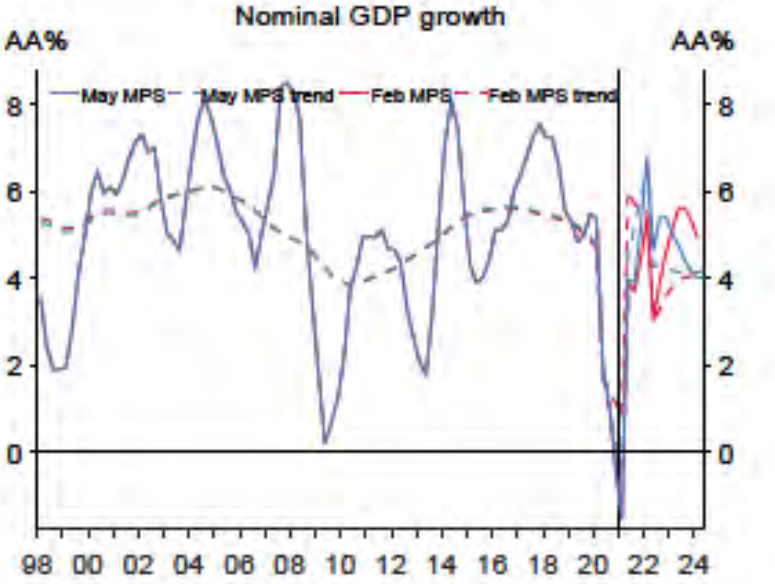

Investment income balance
% ngdp
% ngdp
May MPS
May MPS trend
Feb MPS
Feb MPS trend
-2
-3
-4
-5
-6
-7
-8
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

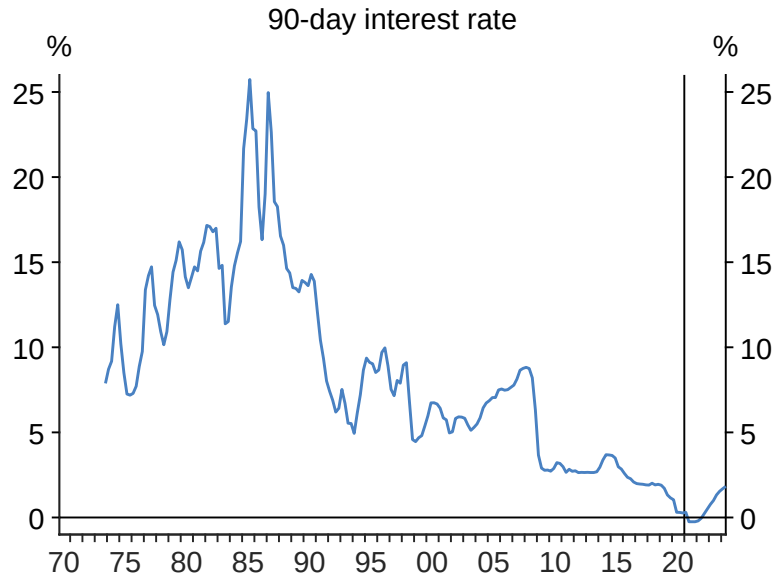

Net rate of return on net foreign liabilities
%
%
May MPS
May MPS trend
Feb MPS
Feb MPS trend
10
8
6
4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

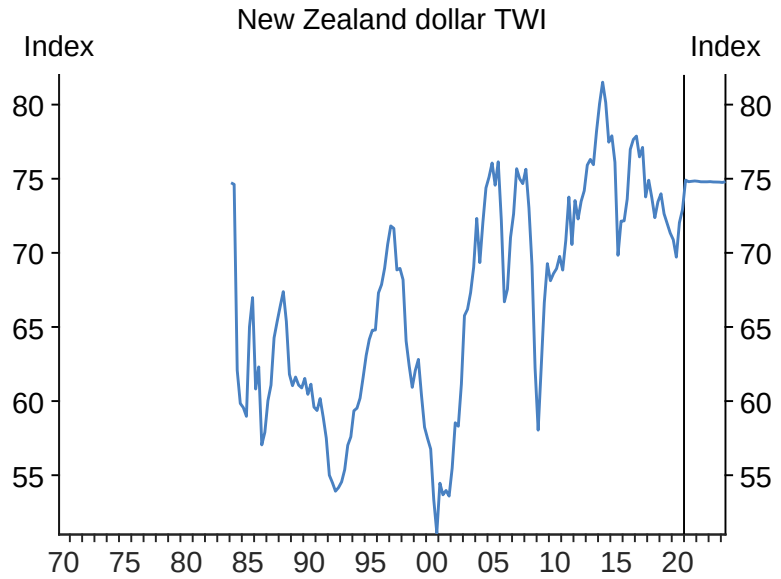

Investment position revaluation effects
% ngdp
% ngdp
May MPS
May MPS trend
Feb MPS
Feb MPS trend
10
0
-10
-20
-30
98 00 02 04 06 08 10 12 14 16 18 20 22 24

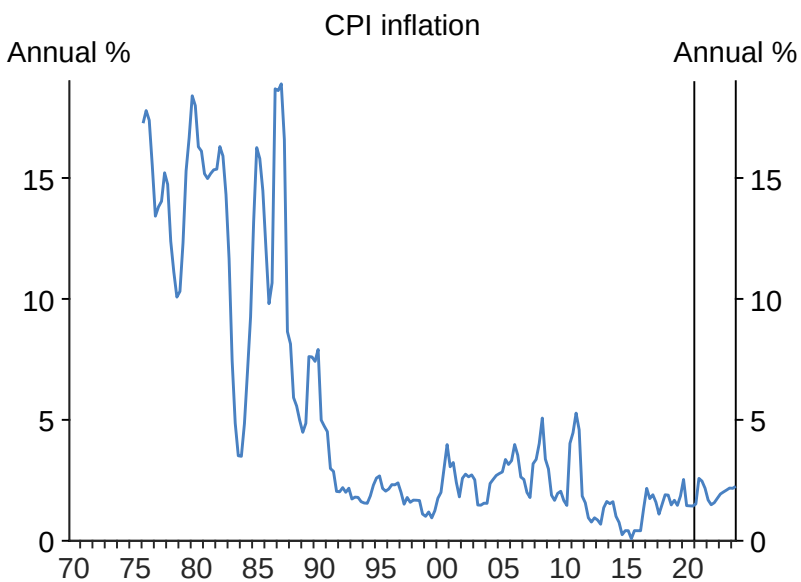

Net foreign liabilities
% ngdp
% ngdp
May MPS
May MPS trend
Feb MPS
Feb MPS trend
85
80
75
70
65
60
55
98 00 02 04 06 08 10 12 14 16 18 20 22 24

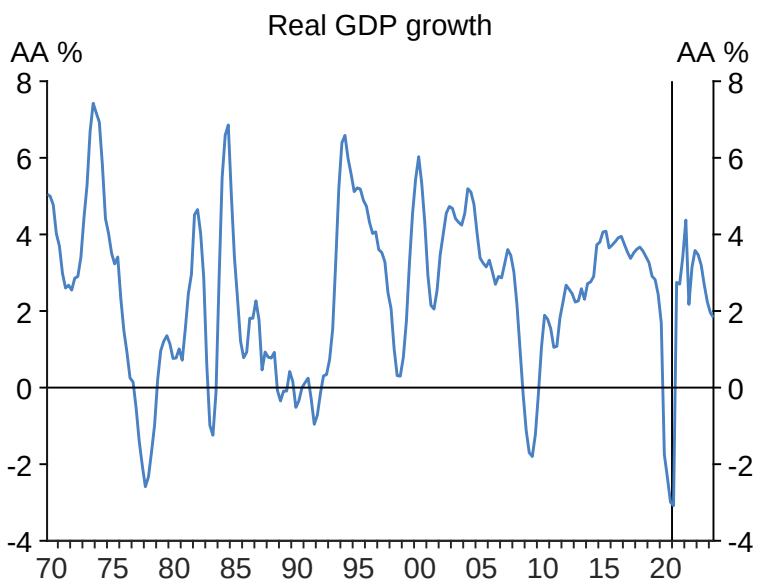

Nominal GDP growth
AA%
AA%
May MPS
May MPS trend
Feb MPS
Feb MPS trend
8
6
4
2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Long Term

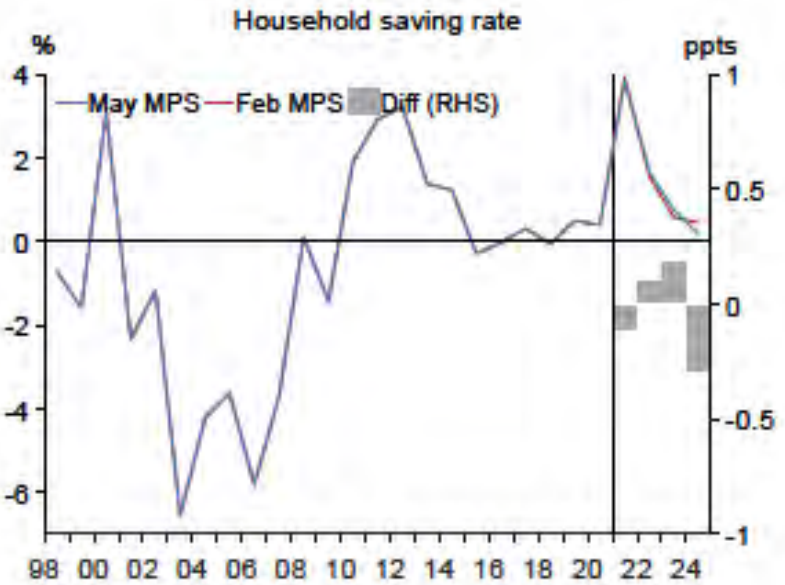

90-day interest rate
%
%
25
20
15
10
5
0
70 75 80 85 90 95 00 05 10 15 20

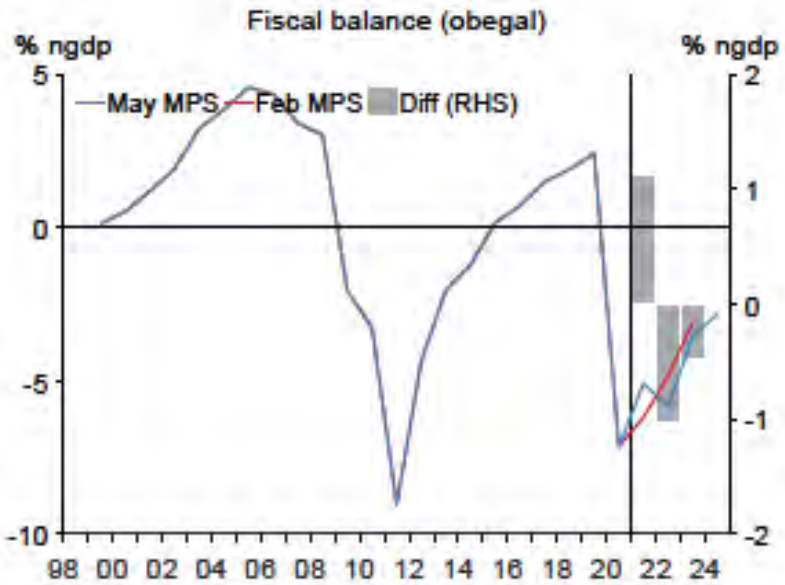

New Zealand dollar TWI
Index
Index
80
75
70
65
60
55
70 75 80 85 90 95 00 05 10 15 20


CPI inflation
Annual %
Annual %
15
10
5
0
70 75 80 85 90 95 00 05 10 15 20


Real GDP growth
AA %
AA %
8
6
4
2
0
-2
-4
70 75 80 85 90 95 00 05 10 15 20

Other


Household saving rate
%
ppts
May MPS
Feb MPS
Diff (RHS)
4
2
0
-2
-4
-6
1
0.5
0
-0.5
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

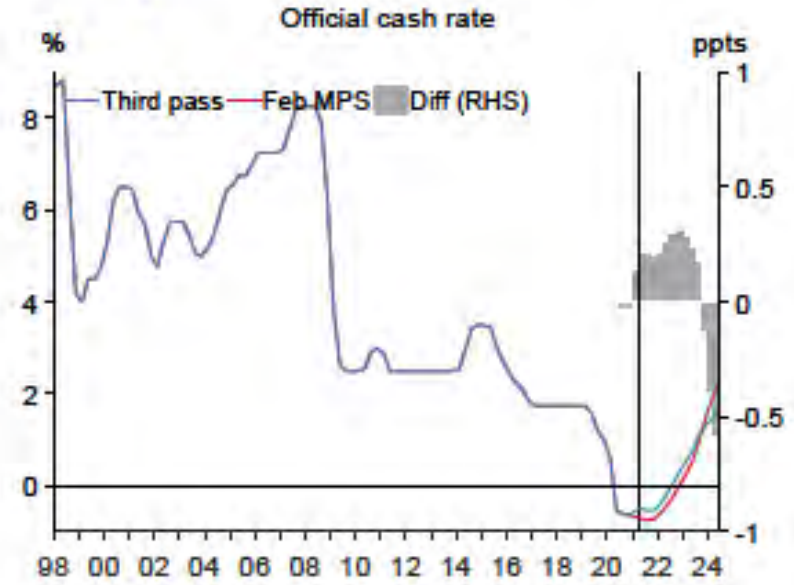

Fiscal balance (obegal)
% ngdp
% ngdp
May MPS
Feb MPS
Diff (RHS)
5
0
-5
-10
2
1
0
-1
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

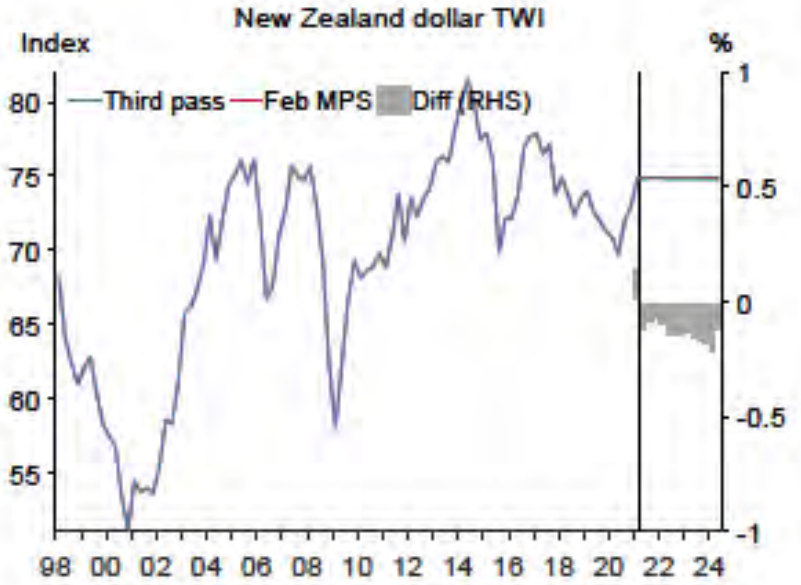
Forecast Chartpack

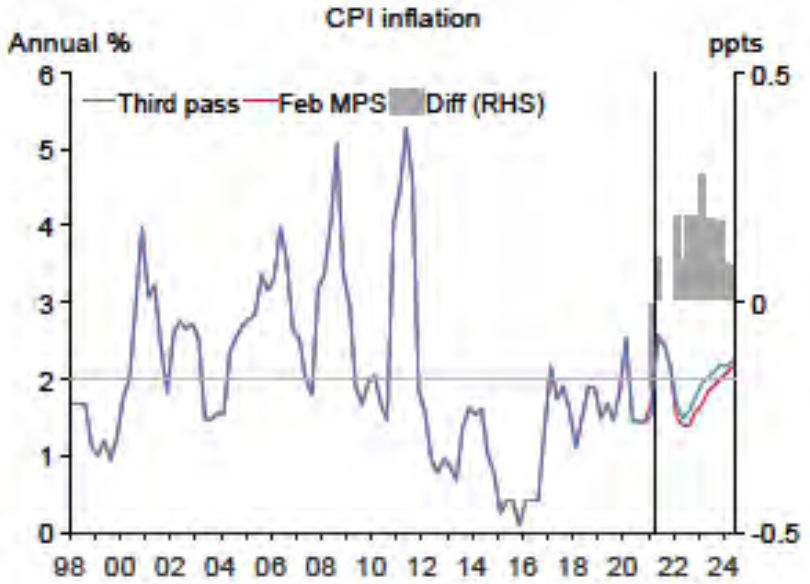
Third pass versus Feb MPS

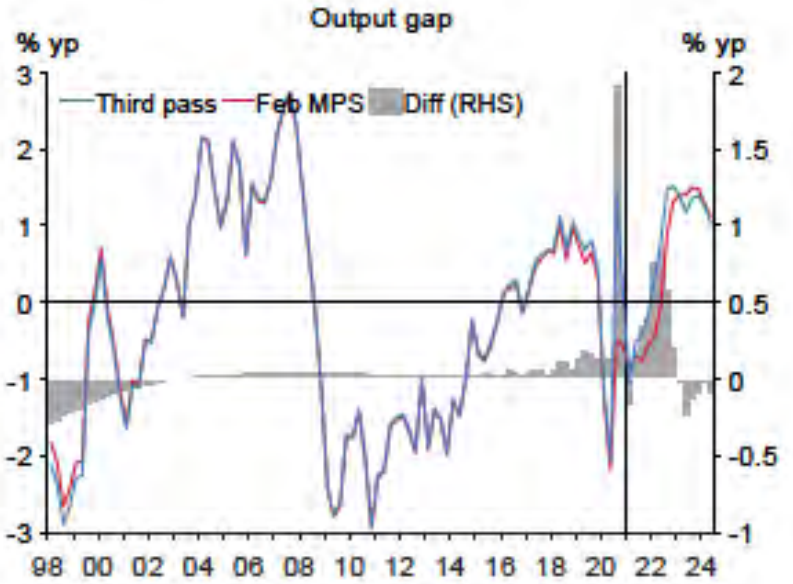
May 24, 2021

Summary

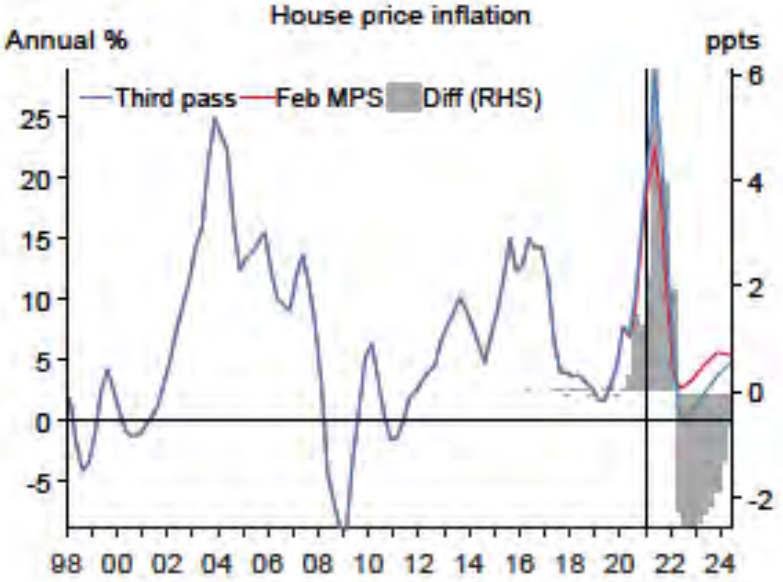

Official cash rate
%
ppts
Third pass
Feb MPS
Diff (RHS)
8
6
4
2
0
1
0.5
0
-0.5
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

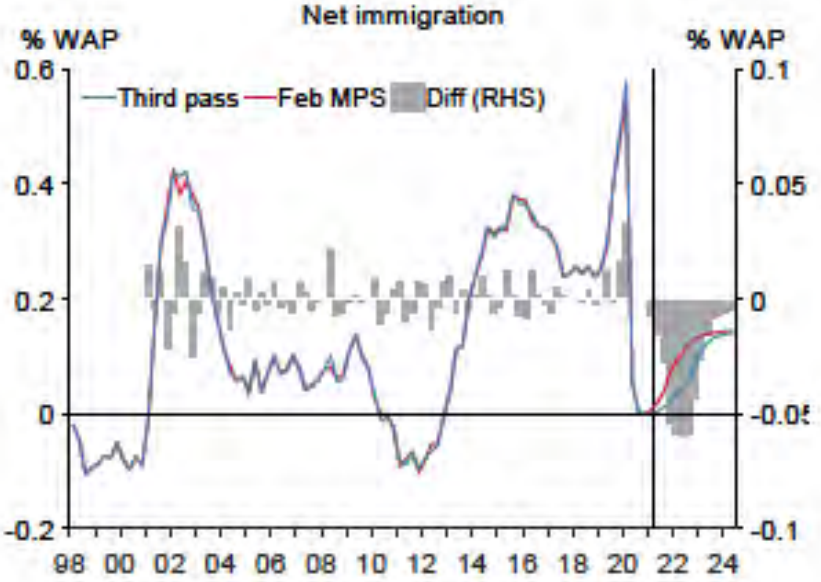

New Zealand dollar TWI
Index
%
Third pass
Feb MPS
Diff (RHS)
80
75
70
65
60
55
1
0.5
0
-0.5
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

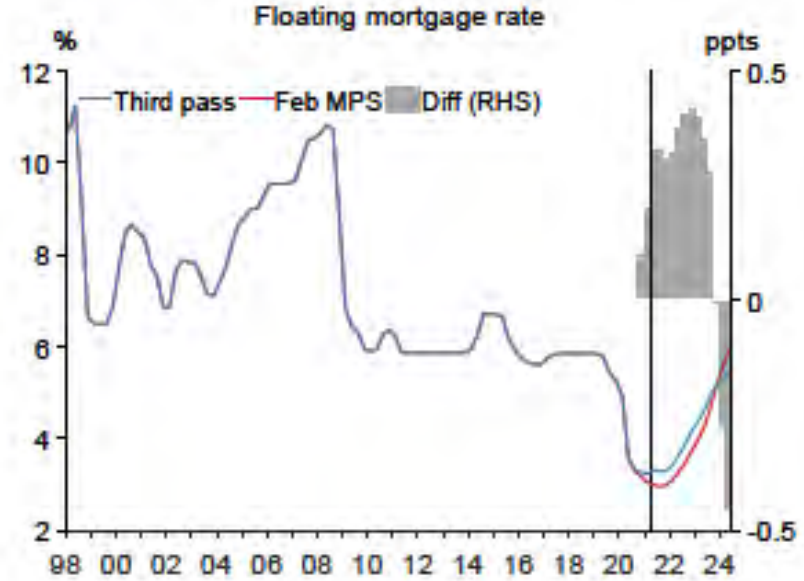

CPI inflation
Annual %
ppts
Third pass
Feb MPS
Diff (RHS)
6
5
4
3
2
1
0
0.5
0
-0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

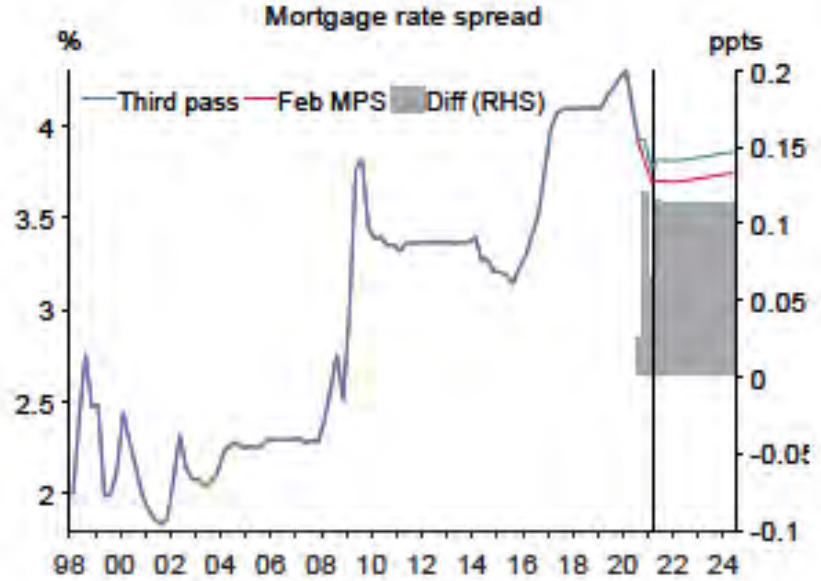

Output gap
% yp
% yp
Third pass
Feb MPS
Diff (RHS)
3
2
1
0
-1
-2
-3
2
1.5
1
0.5
0
-0.5
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Housing

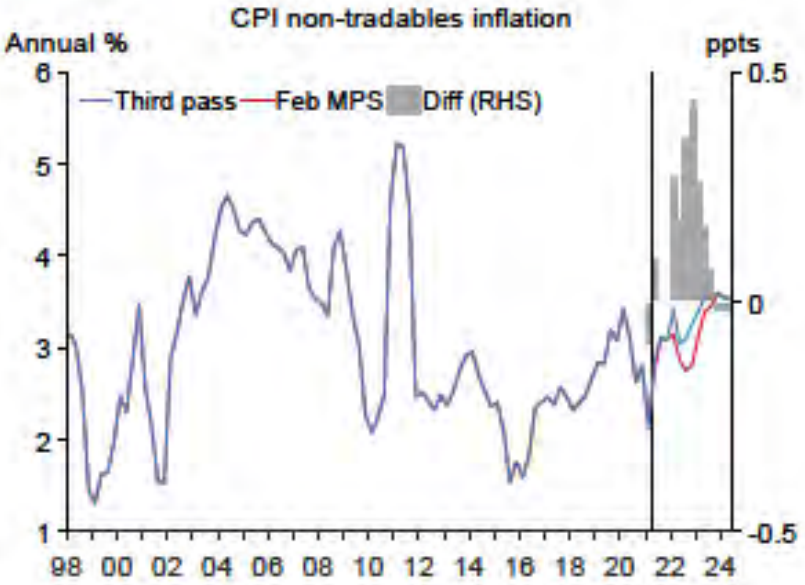

House price inflation
Annual %
ppts
Third pass
Feb MPS
Diff (RHS)
25
20
15
10
5
0
-5
6
4
2
0
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

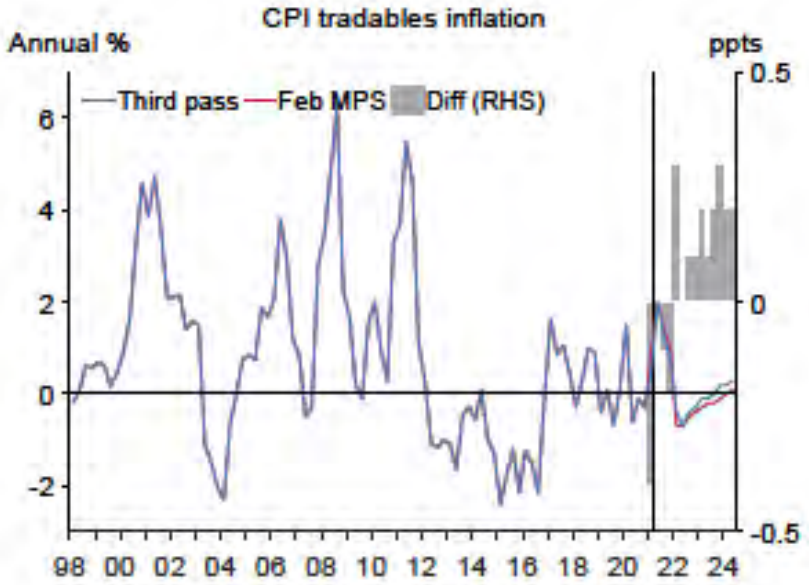

Net immigration
% WAP
% WAP
Third pass
Feb MPS
Diff (RHS)
0.6
0.4
0.2
0
-0.2
0.1
0.05
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

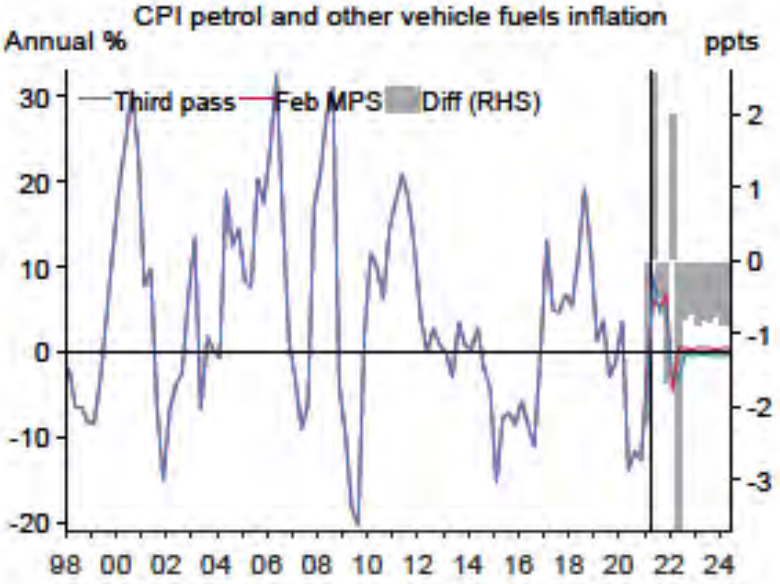

Floating mortgage rate
%
ppts
Third pass
Feb MPS
Diff (RHS)
12
10
8
6
4
2
0.5
0
-0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

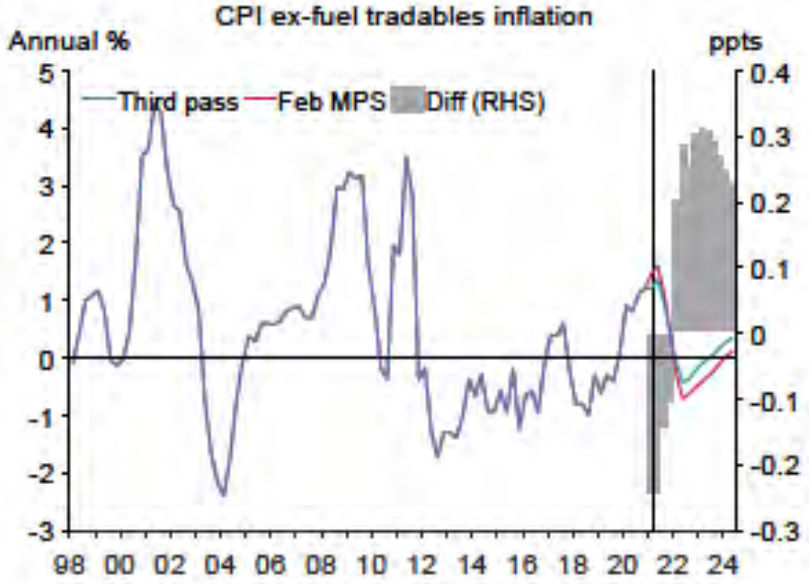

Mortgage rate spread
%
ppts
Third pass
Feb MPS
Diff (RHS)
4
3.5
3
2.5
2
0.2
0.15
0.1
0.05
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Inflation

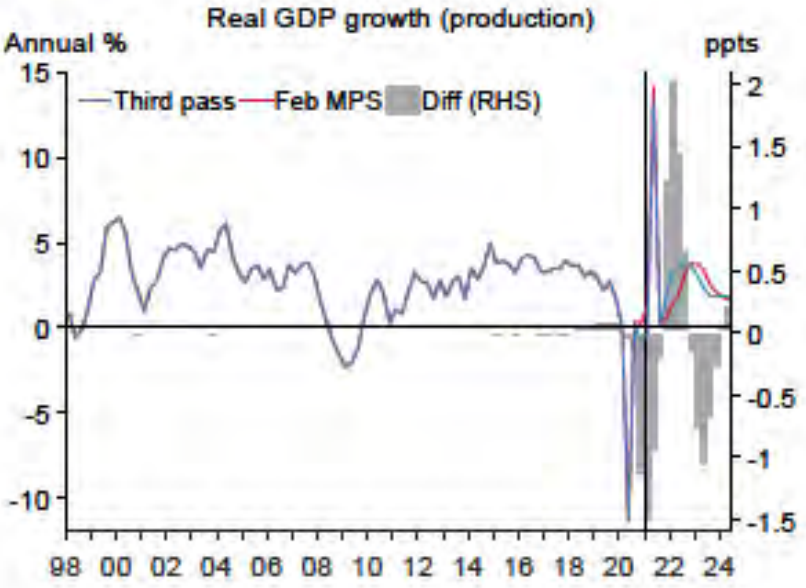

CPI non-tradables inflation
Annual %
ppts
Third pass
Feb MPS
Diff (RHS)
6
5
4
3
2
1
0.5
0
-0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

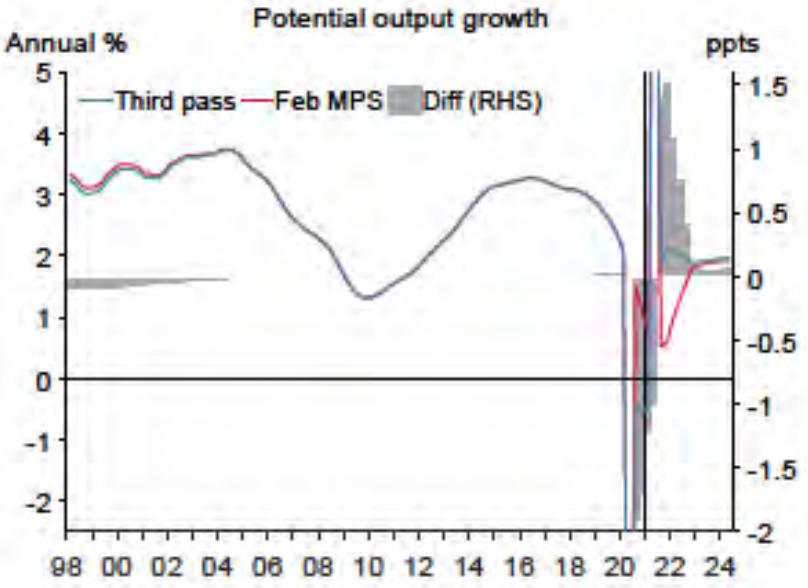

CPI tradables inflation
Annual %
ppts
Third pass
Feb MPS
Diff (RHS)
6
4
2
0
-2
0.5
0
-0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

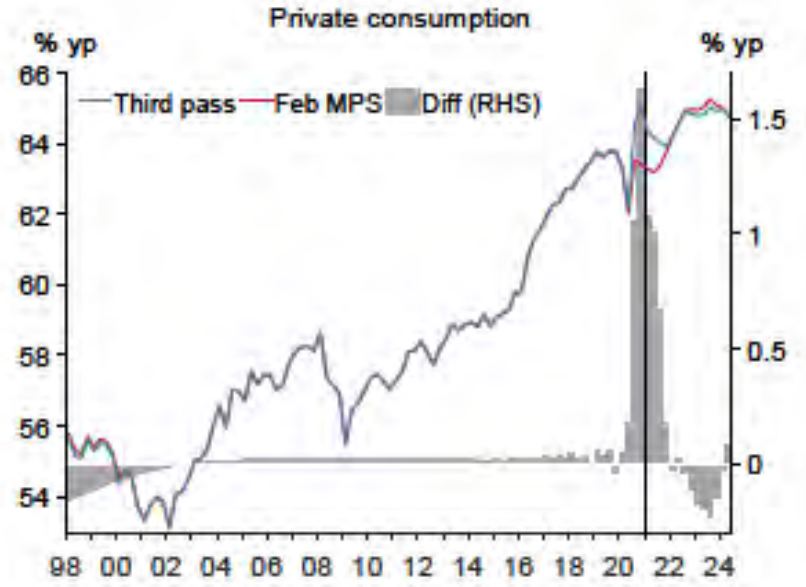

CPI petrol and other vehicle fuels inflation
Annual %
ppts
Third pass
Feb MPS
Diff (RHS)
30
20
10
0
-10
-20
2
1
0
-1
-2
-3
98 00 02 04 06 08 10 12 14 16 18 20 22 24

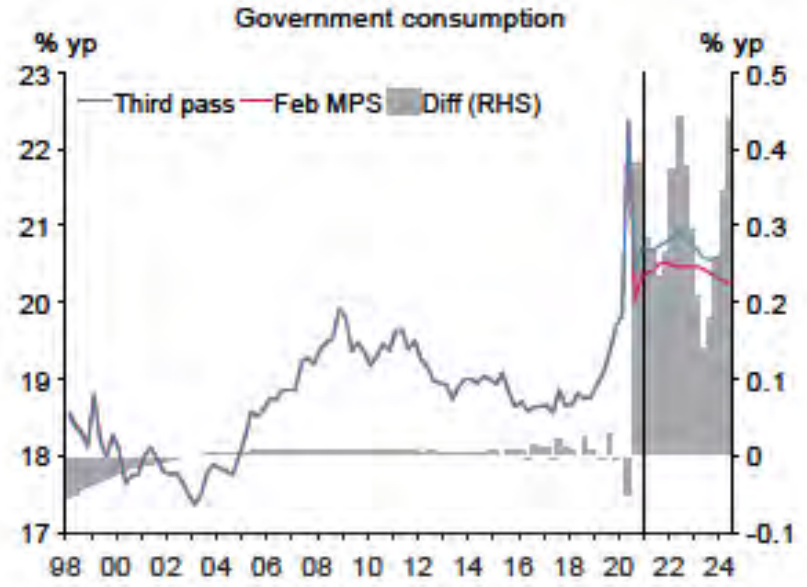

CPI ex-fuel tradables inflation
Annual %
ppts
Third pass
Feb MPS
Diff (RHS)
5
4
3
2
1
0
-1
-2
-3
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

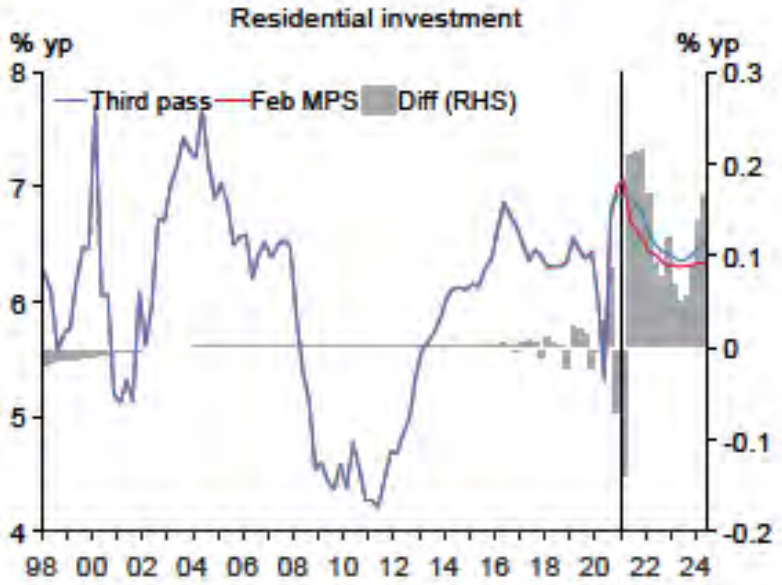

Real GDP growth (production)
Annual %
ppts
Third pass
Feb MPS
Diff (RHS)
15
10
5
0
-5
-10
2
1.5
1
0.5
0
-0.5
-1
-1.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

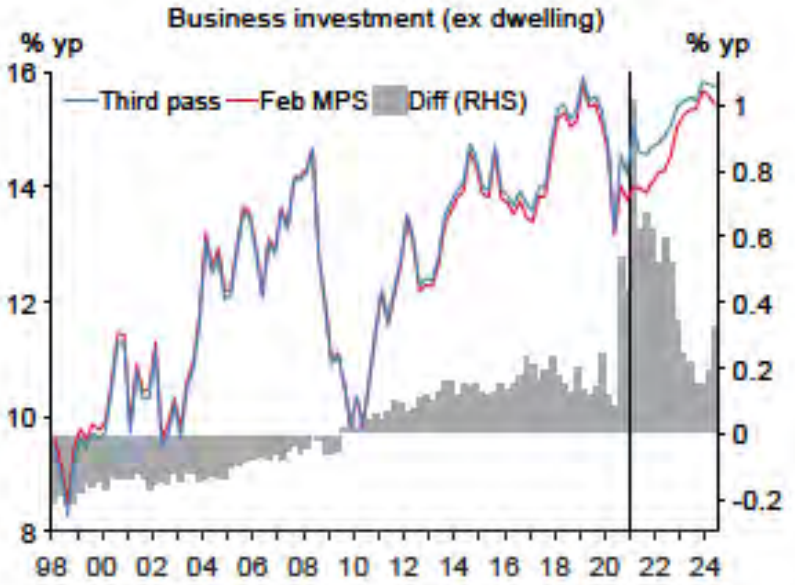

Potential output growth
Annual %
ppts
Third pass
Feb MPS
Diff (RHS)
5
4
3
2
1
0
-1
-2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

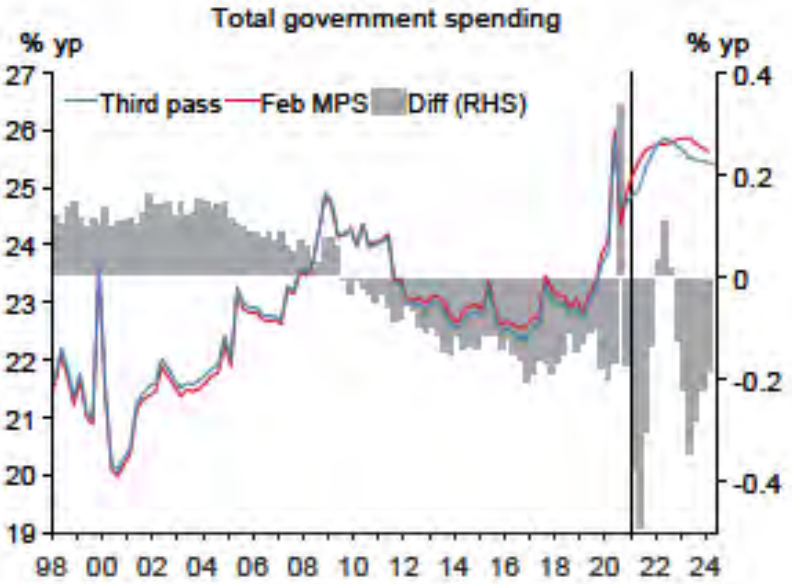

Private consumption
% yp
% yp
Third pass
Feb MPS
Diff (RHS)
66
64
62
60
58
56
54
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

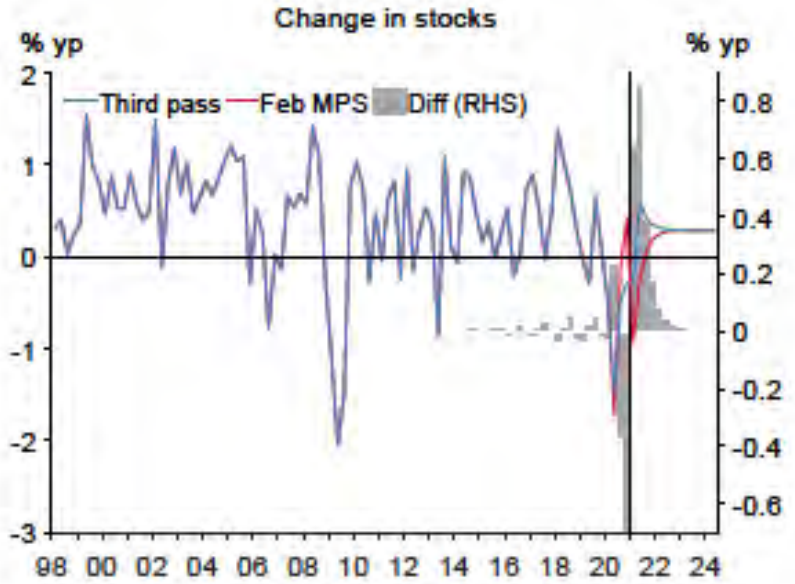

Government consumption
% yp
% yp
Third pass
Feb MPS
Diff (RHS)
23
22
21
20
19
18
17
0.5
0.4
0.3
0.2
0.1
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

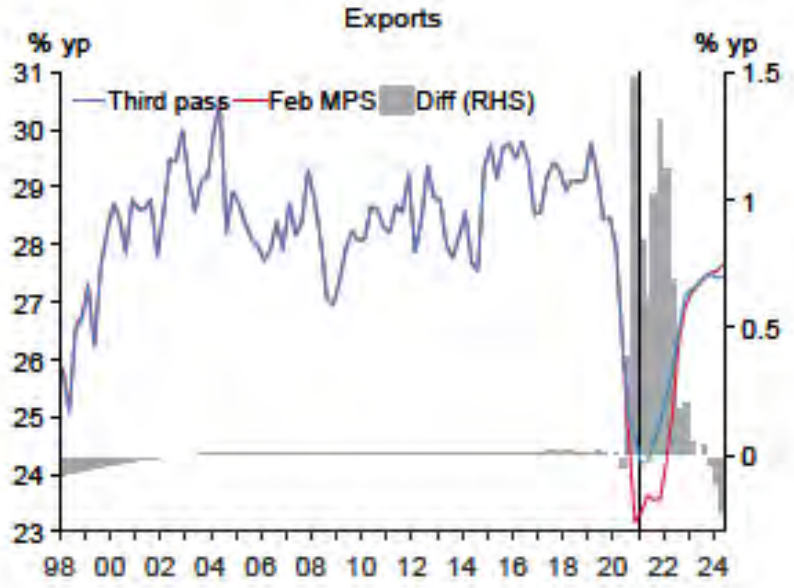

Residential investment
% yp
% yp
Third pass
Feb MPS
Diff (RHS)
8
7
6
5
4
0.3
0.2
0.1
0
-0.1
-0.2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

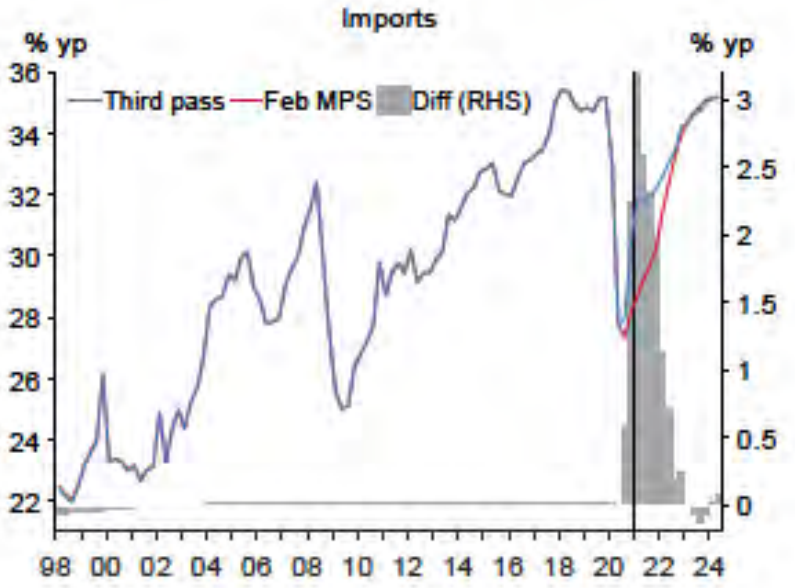

Business investment (ex dwelling)
% yp
% yp
Third pass
Feb MPS
Diff (RHS)
16
14
12
10
8
1
0.8
0.6
0.4
0.2
0
-0.2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

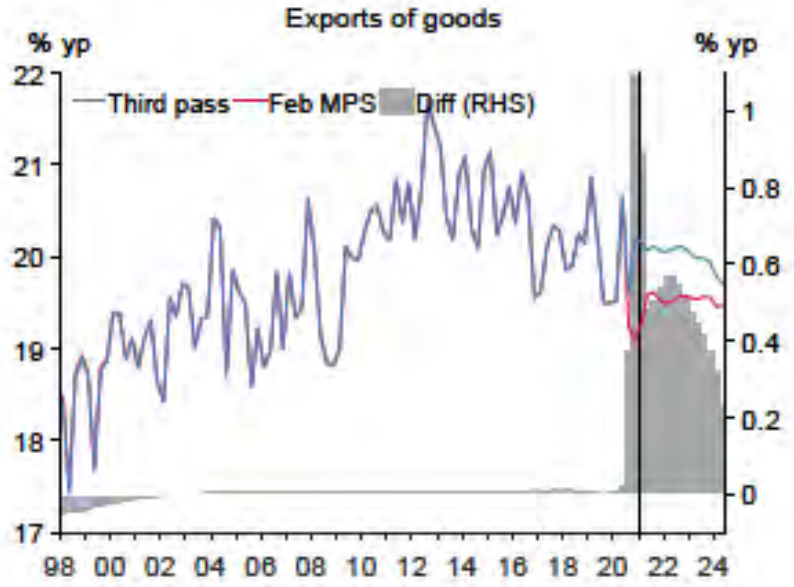

Total government spending
% yp
% yp
Third pass
Feb MPS
Diff (RHS)
27
26
25
24
23
22
21
20
19
0.4
0.2
0
-0.2
-0.4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

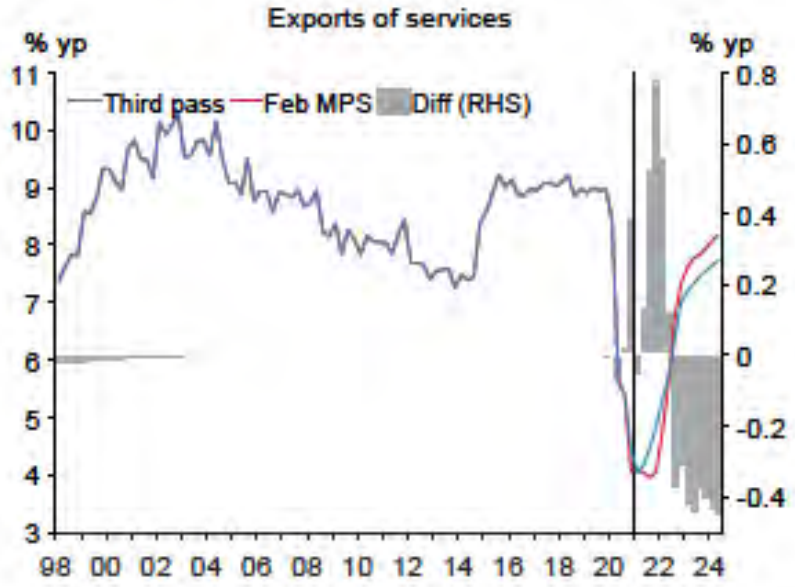

Change in stocks
% yp
% yp
Third pass
Feb MPS
Diff (RHS)
2
1
0
-1
-2
-3
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

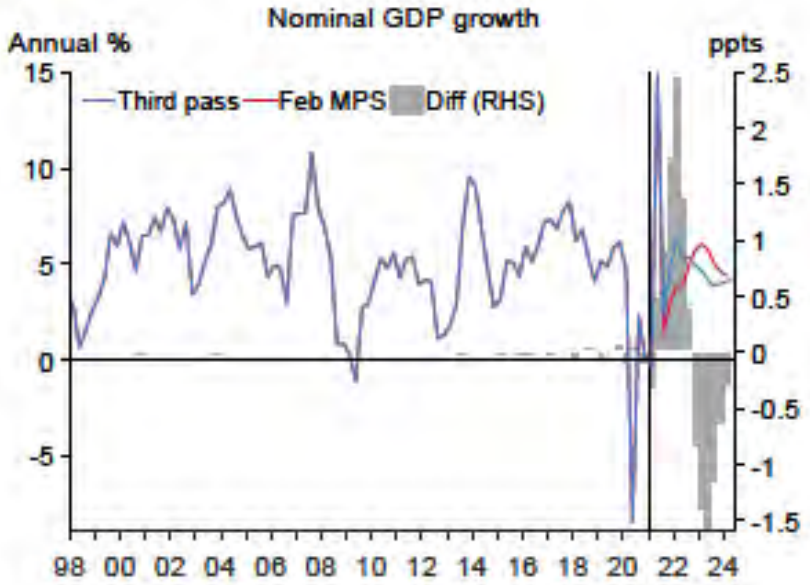

Exports
% yp
% yp
Third pass
Feb MPS
Diff (RHS)
31
30
29
28
27
26
25
24
23
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

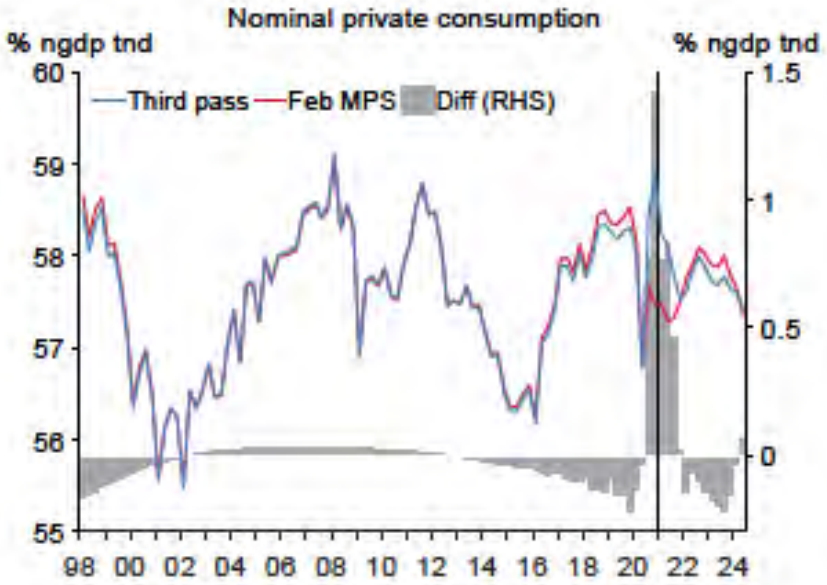

Imports
% yp
% yp
Third pass
Feb MPS
Diff (RHS)
36
34
32
30
28
26
24
22
3
2.5
2
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

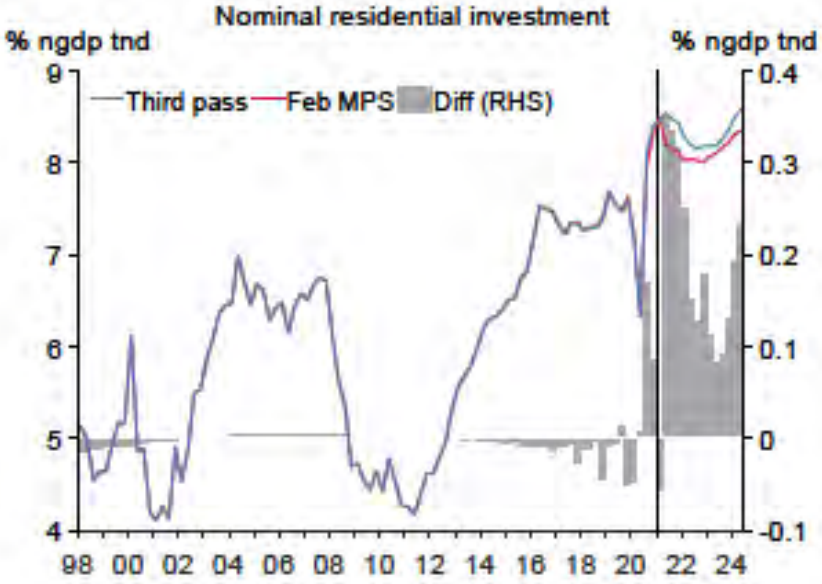

Exports of goods
% yp
% yp
Third pass
Feb MPS
Diff (RHS)
22
21
20
19
18
17
1
0.8
0.6
0.4
0.2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

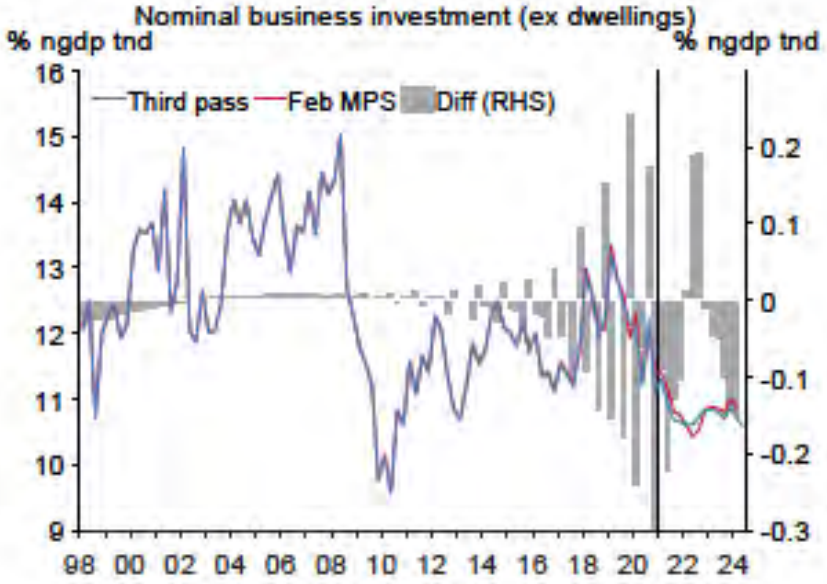

Exports of services
% yp
% yp
Third pass
Feb MPS
Diff (RHS)
11
10
9
8
7
6
5
4
3
0.8
0.6
0.4
0.2
0
-0.2
-0.4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

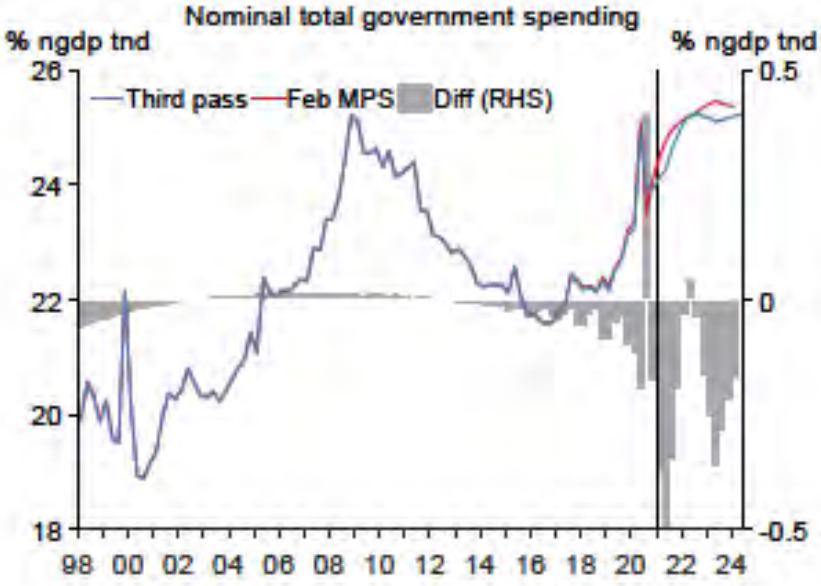

Nominal GDP growth
Annual %
ppts
Third pass
Feb MPS
Diff (RHS)
15
10
5
0
-5
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

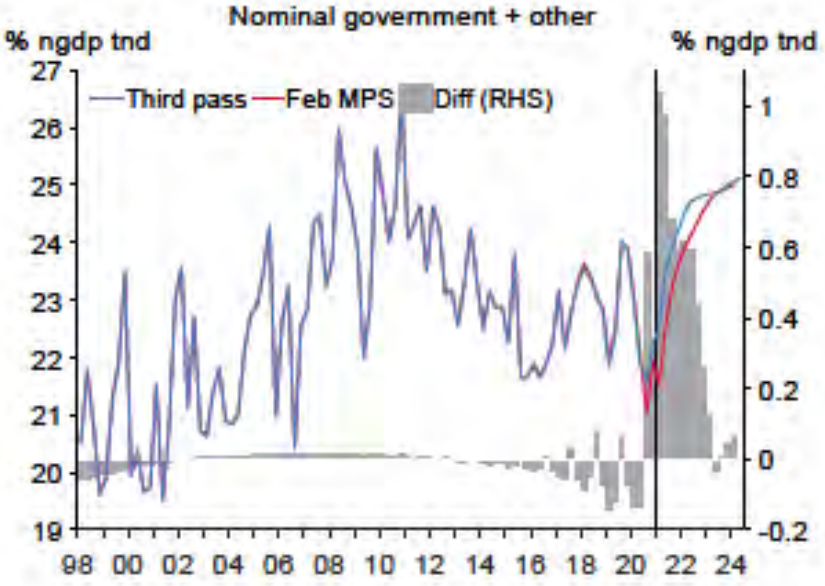

Nominal private consumption
% ngdp tnd
% ngdp tnd
Third pass
Feb MPS
Diff (RHS)
60
59
58
57
56
55
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

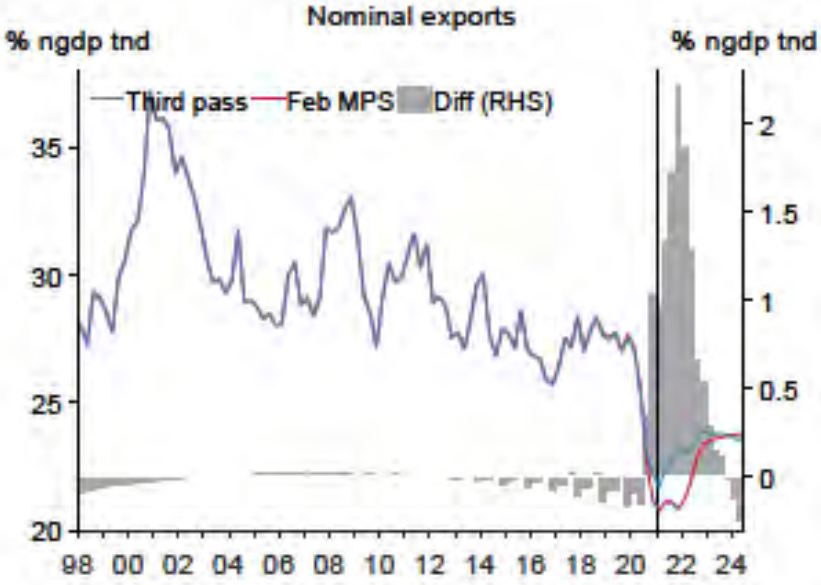

Nominal residential investment
% ngdp tnd
% ngdp tnd
Third pass
Feb MPS
Diff (RHS)
9
8
7
6
5
4
0.4
0.3
0.2
0.1
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

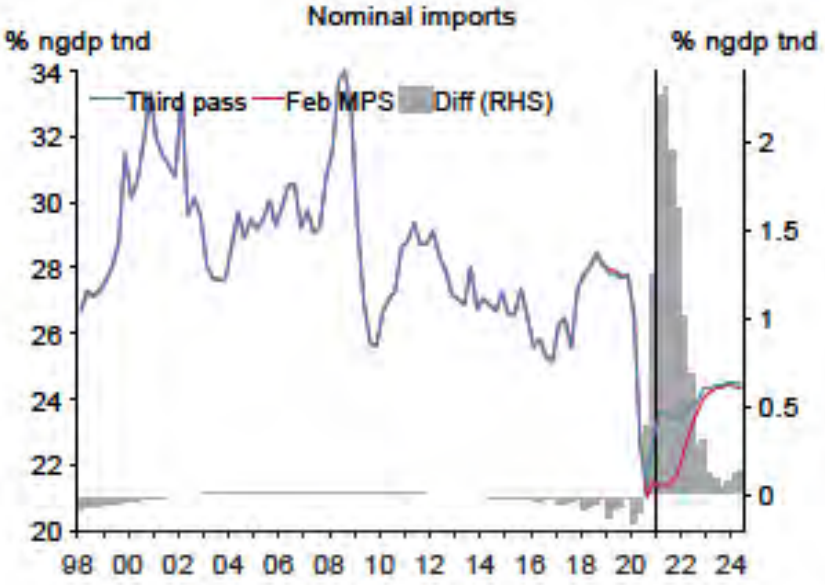

Nominal business investment (ex dwellings)
% ngdp tnd
% ngdp tnd
Third pass
Feb MPS
Diff (RHS)
16
15
14
13
12
11
10
9
0.2
0.1
0
-0.1
-0.2
-0.3
98 00 02 04 06 08 10 12 14 16 18 20 22 24

GDP

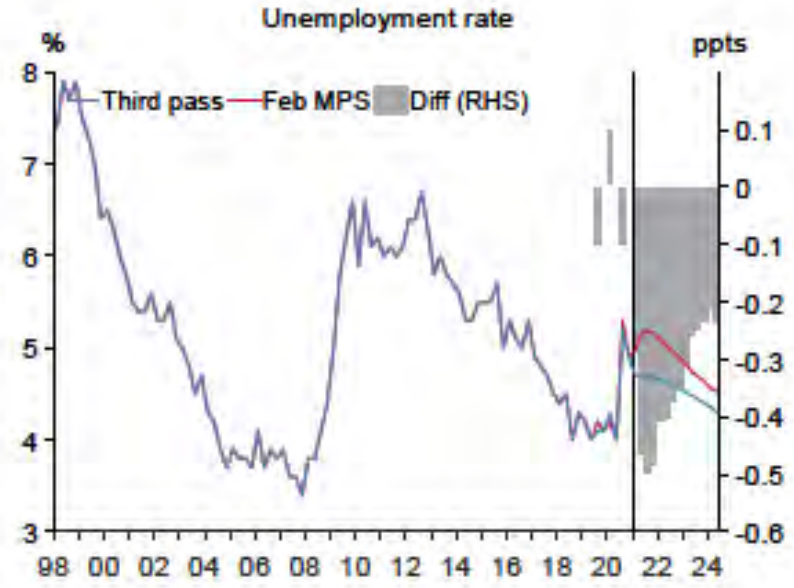

Nominal total government spending
% ngdp tnd
% ngdp tnd
Third pass
Feb MPS
Diff (RHS)
26
24
22
20
18
0.5
0
-0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

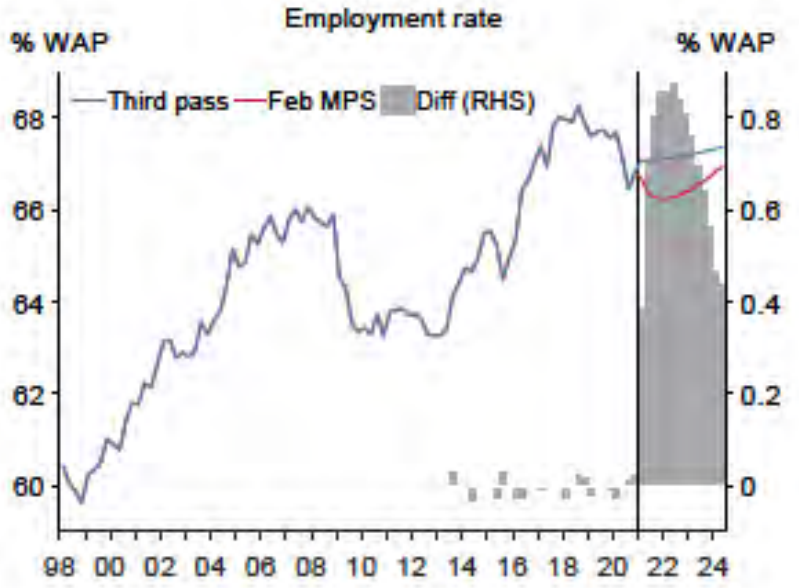

Nominal government + other
% ngdp tnd
% ngdp tnd
Third pass
Feb MPS
Diff (RHS)
27
26
25
24
23
22
21
20
19
1
0.8
0.6
0.4
0.2
0
-0.2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

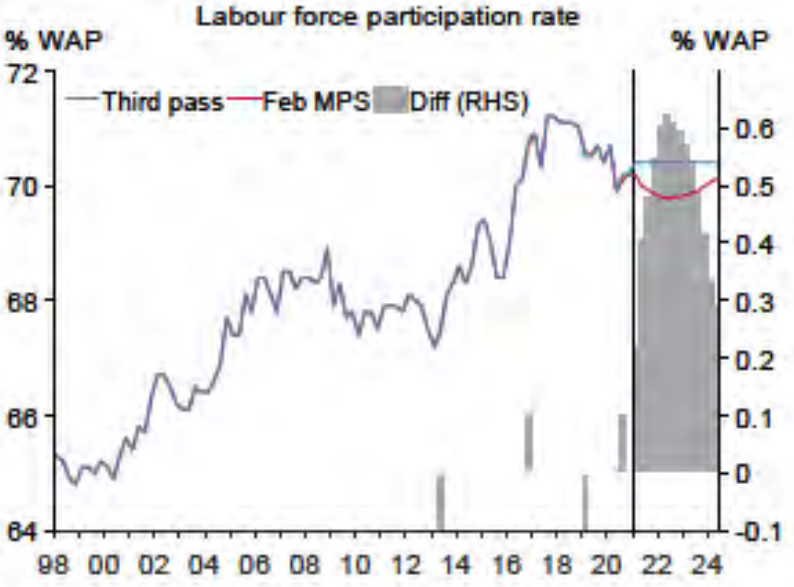

Nominal exports
% ngdp tnd
% ngdp tnd
Third pass
Feb MPS
Diff (RHS)
35
30
25
20
2
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

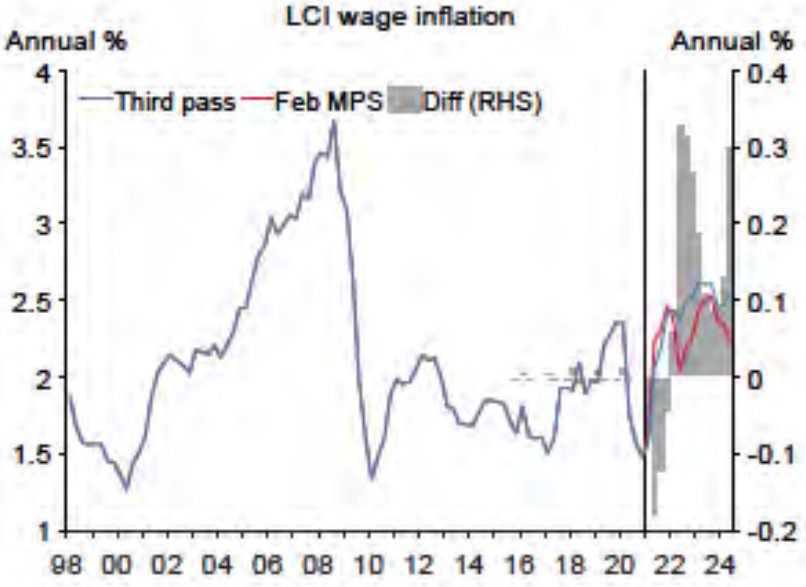

Nominal imports
% ngdp tnd
% ngdp tnd
Third pass
Feb MPS
Diff (RHS)
34
32
30
28
26
24
22
20
2
1.5
1
0.5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Labour

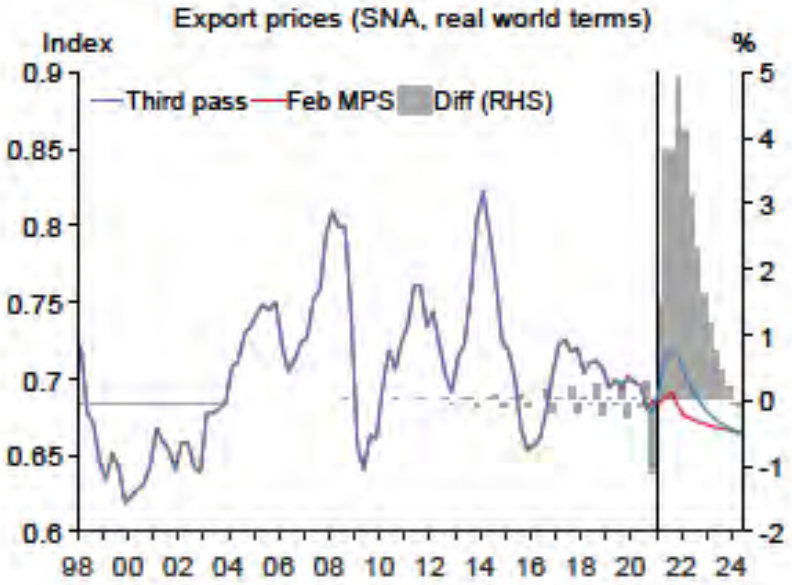

Unemployment rate
%
ppts
Third pass
Feb MPS
Diff (RHS)
8
7
6
5
4
3
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
98 00 02 04 06 08 10 12 14 16 18 20 22 24

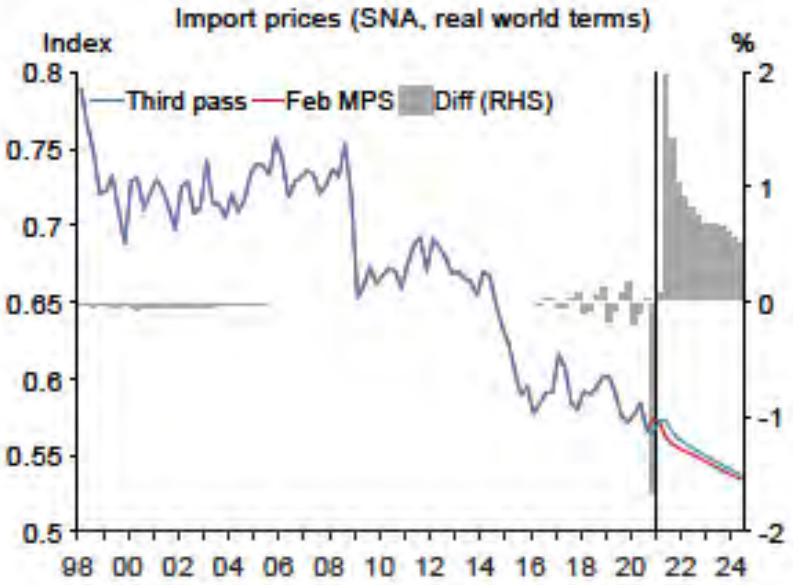

Employment rate
% WAP
% WAP
Third pass
Feb MPS
Diff (RHS)
68
66
64
62
60
0.8
0.6
0.4
0.2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

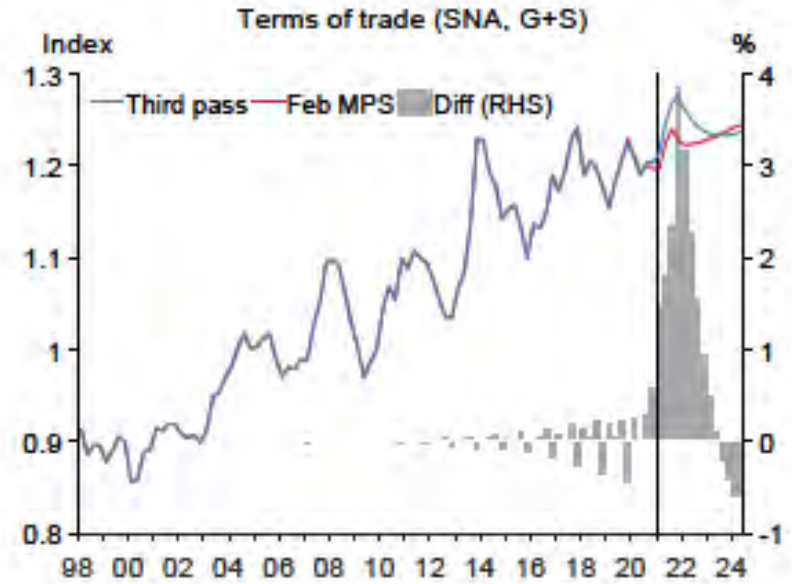

Labour force participation rate
% WAP
% WAP
Third pass
Feb MPS
Diff (RHS)
72
70
68
66
64
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

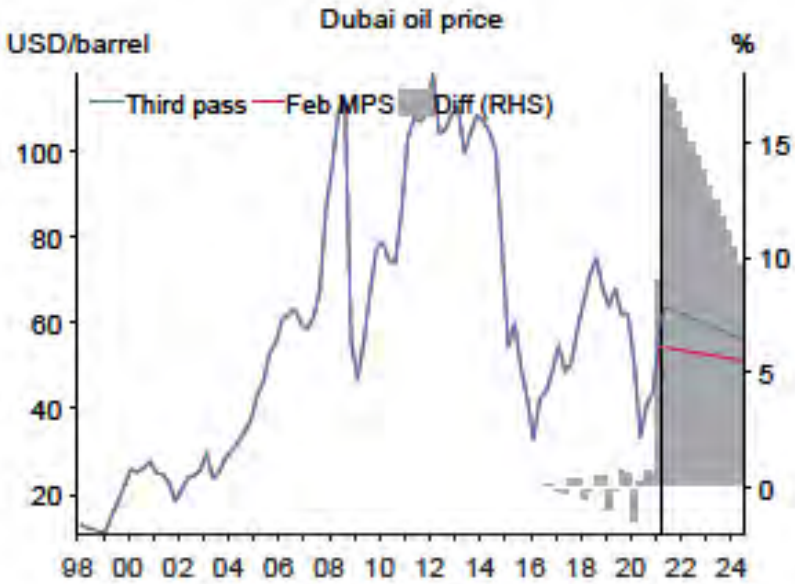

LCI wage inflation
Annual %
Annual %
Third pass
Feb MPS
Diff (RHS)
4
3.5
3
2.5
2
1.5
1
0.4
0.3
0.2
0.1
0
-0.1
-0.2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

External

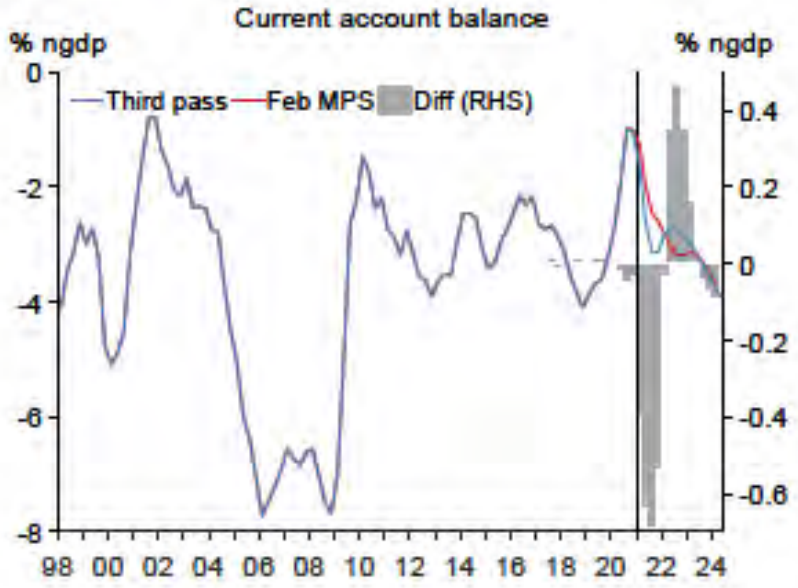

Export prices (SNA, real world terms)
Index
%
Third pass
Feb MPS
Diff (RHS)
0.9
0.85
0.8
0.75
0.7
0.65
0.6
5
4
3
2
1
0
-1
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

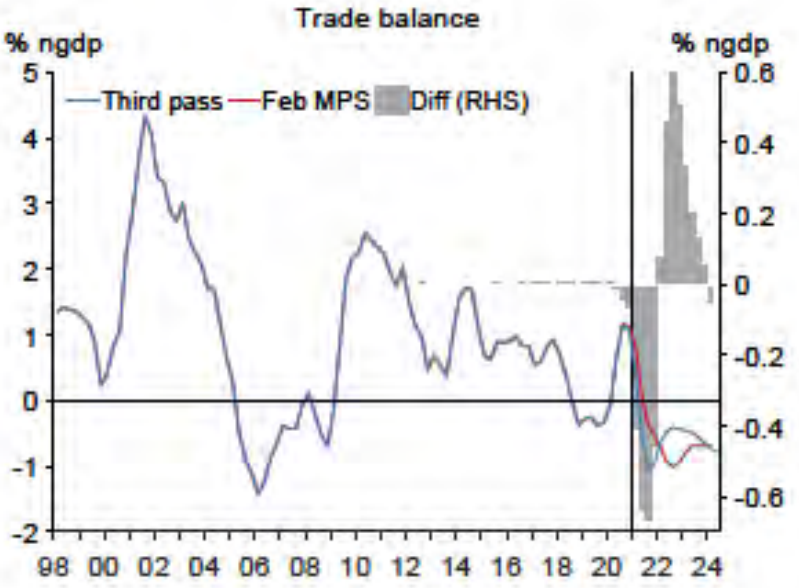

Import prices (SNA, real world terms)
Index
%
Third pass
Feb MPS
Diff (RHS)
0.8
0.75
0.7
0.65
0.6
0.55
0.5
2
1
0
-1
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

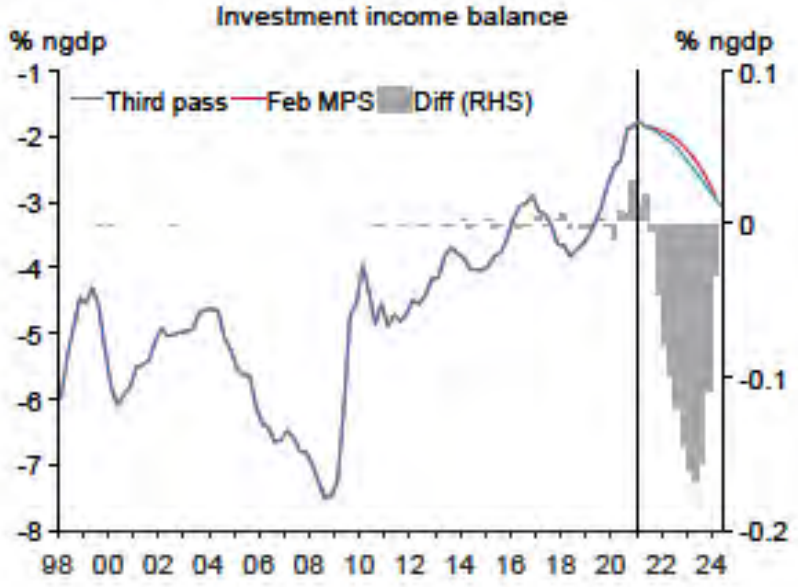

Terms of trade (SNA, G+S)
Index
%
Third pass
Feb MPS
Diff (RHS)
1.3
1.2
1.1
1
0.9
0.8
4
3
2
1
0
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

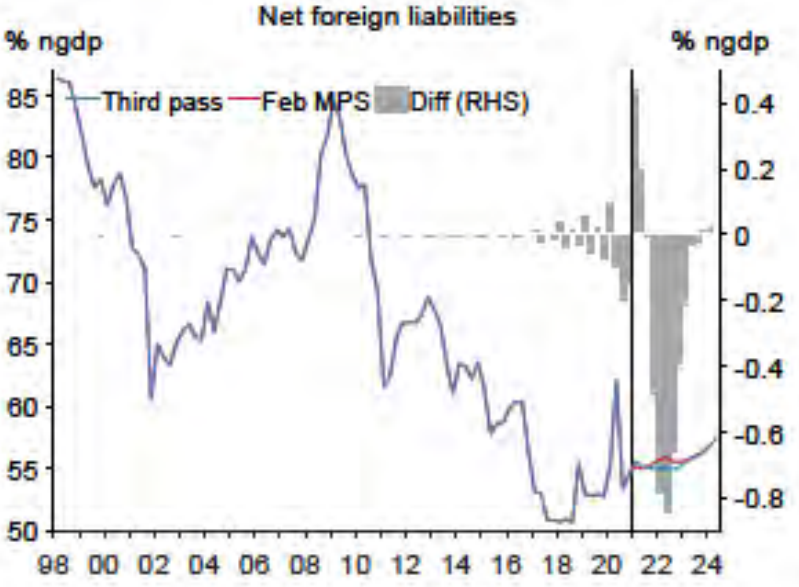

Dubai oil price
USD/barrel
%
Third pass
Feb MPS
Diff (RHS)
100
80
60
40
20
15
10
5
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

External

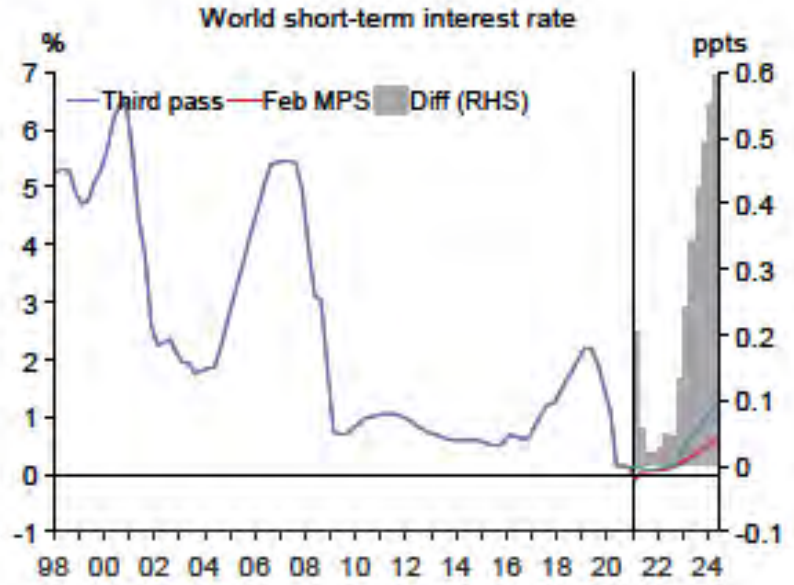

Current account balance
% ngdp
% ngdp
Third pass
Feb MPS
Diff (RHS)
0
-2
-4
-6
-8
0.4
0.2
0
-0.2
-0.4
-0.6
98 00 02 04 06 08 10 12 14 16 18 20 22 24

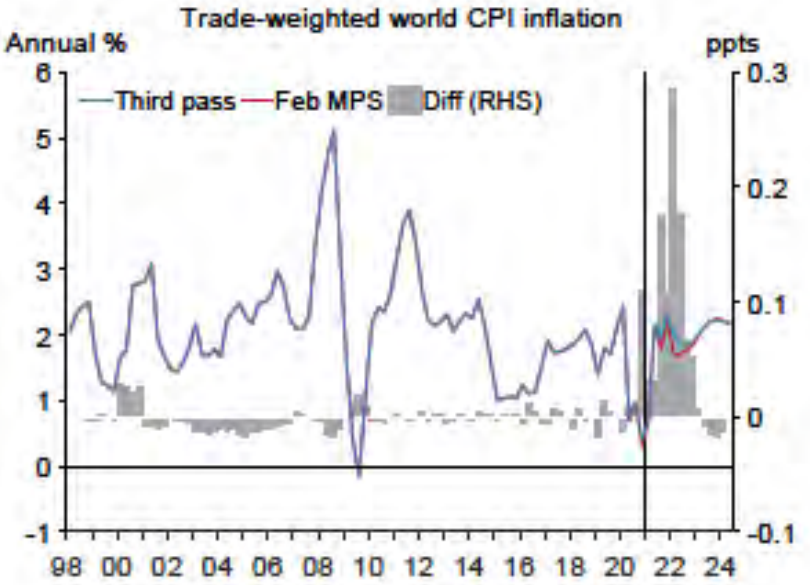

Trade balance
% ngdp
% ngdp
Third pass
Feb MPS
Diff (RHS)
5
4
3
2
1
0
-1
-2
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
98 00 02 04 06 08 10 12 14 16 18 20 22 24

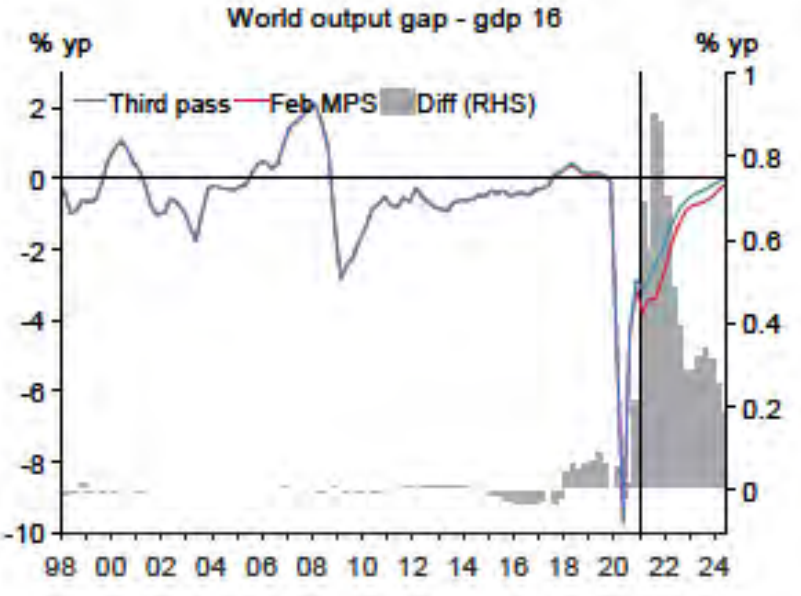

Investment income balance
% ngdp
% ngdp
Third pass
Feb MPS
Diff (RHS)
-1
-2
-3
-4
-5
-6
-7
-8
0.1
0
-0.1
-0.2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

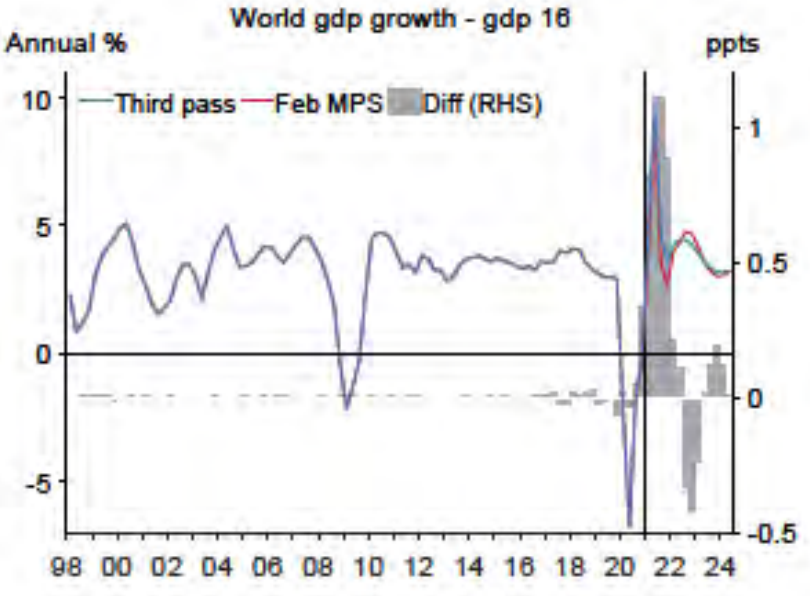

Net foreign liabilities
% ngdp
% ngdp
Third pass
Feb MPS
Diff (RHS)
85
80
75
70
65
60
55
50
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
98 00 02 04 06 08 10 12 14 16 18 20 22 24

World

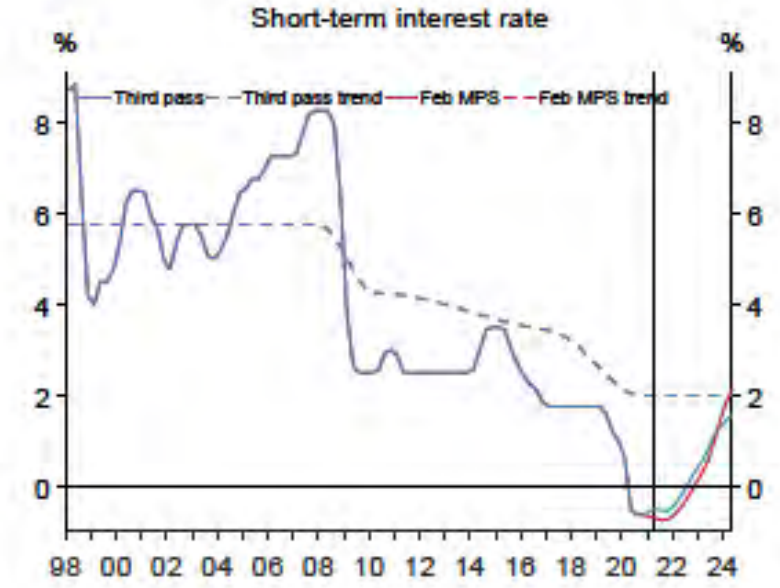

World short-term interest rate
%
ppts
Third pass
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

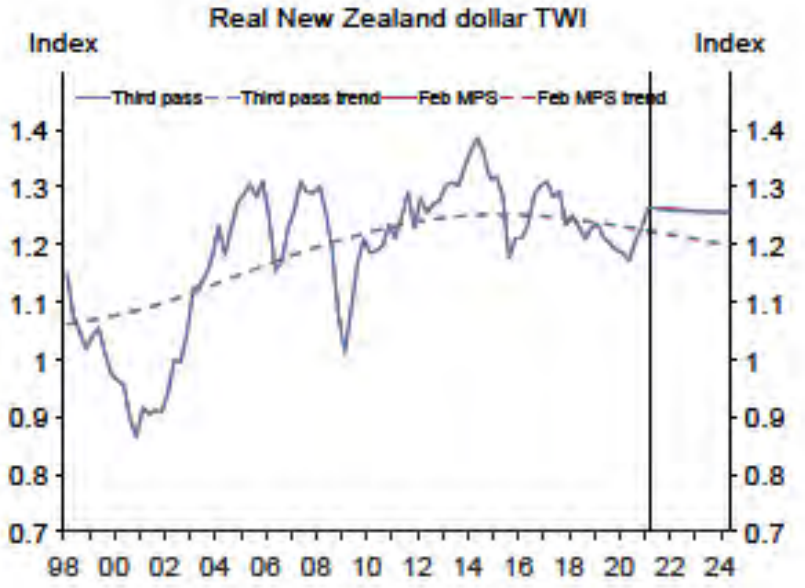

Trade-weighted world CPI inflation
Annual %
ppts
Third pass
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

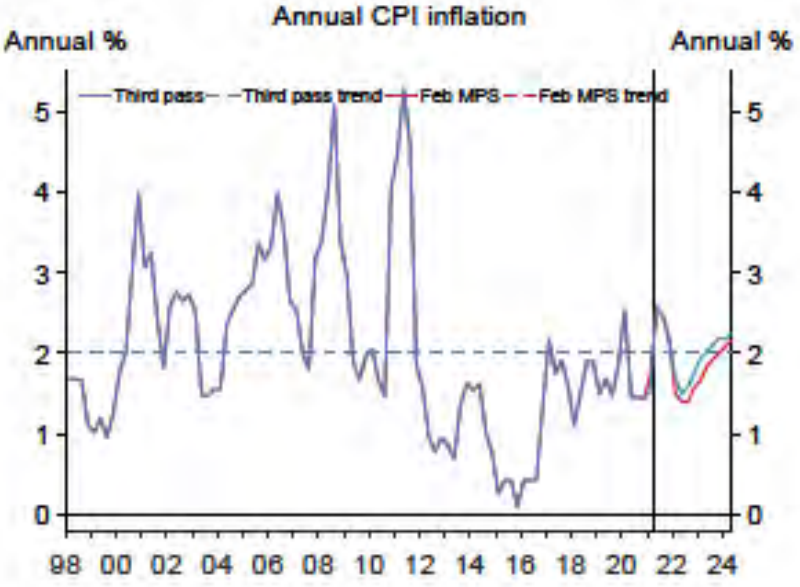

World output gap - gdp 16
% yp
% yp
Third pass
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

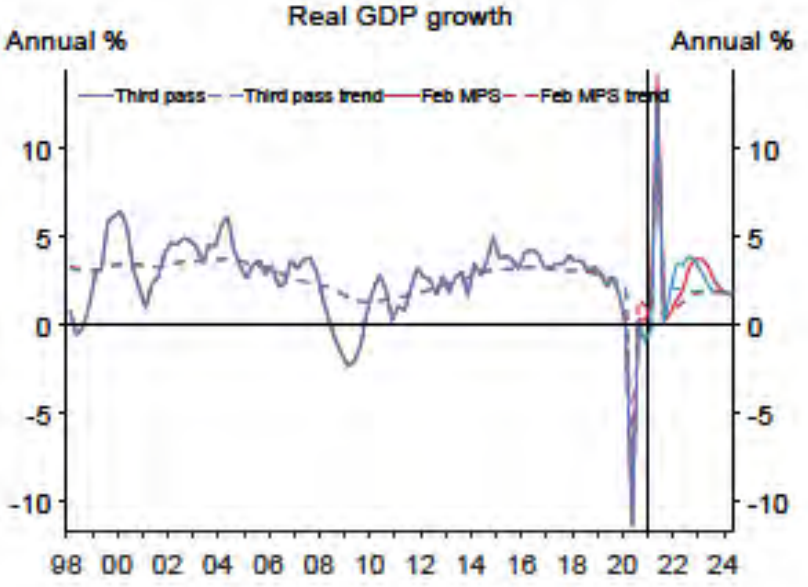

World gdp growth - gdp 16
Annual %
ppts
Third pass
Feb MPS
Diff (RHS)
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

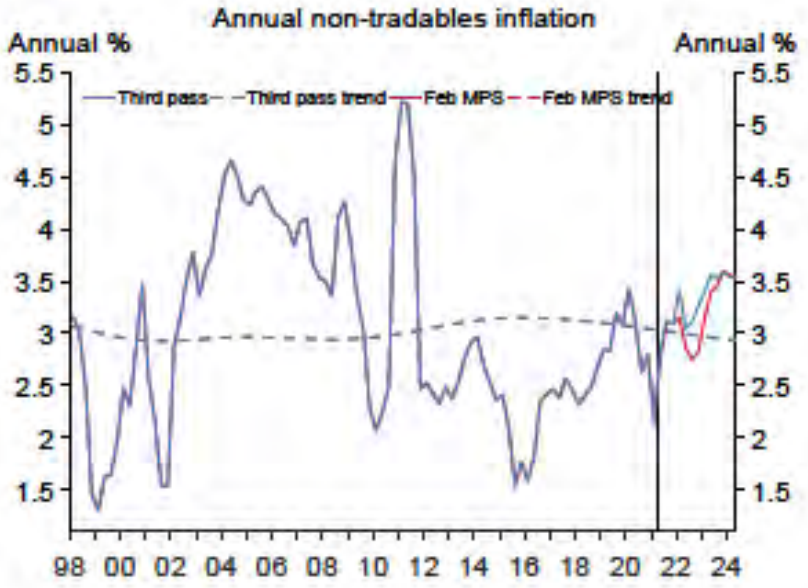

Short-term interest rate
%
%
Third pass
Third pass trend
Feb MPS
Feb MPS trend
8
6
4
2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

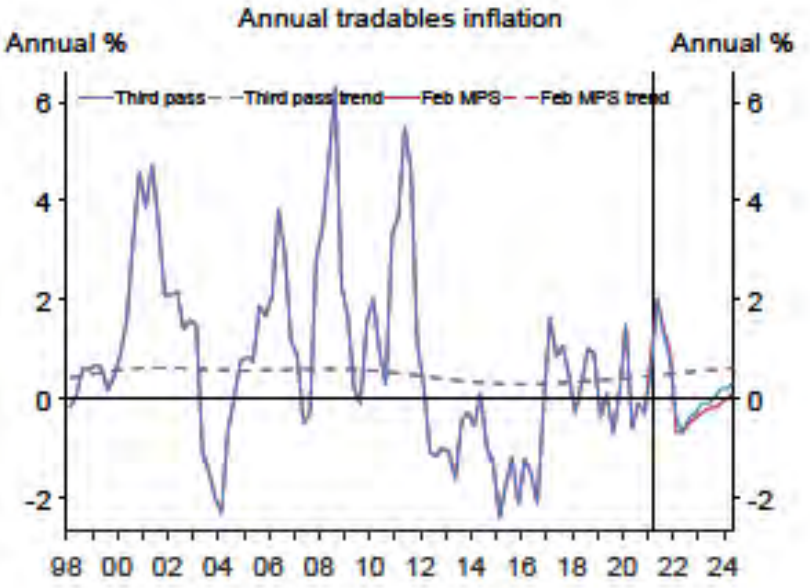

Real New Zealand dollar TWI
Index
Index
Third pass
Third pass trend
Feb MPS
Feb MPS trend
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
98 00 02 04 06 08 10 12 14 16 18 20 22 24

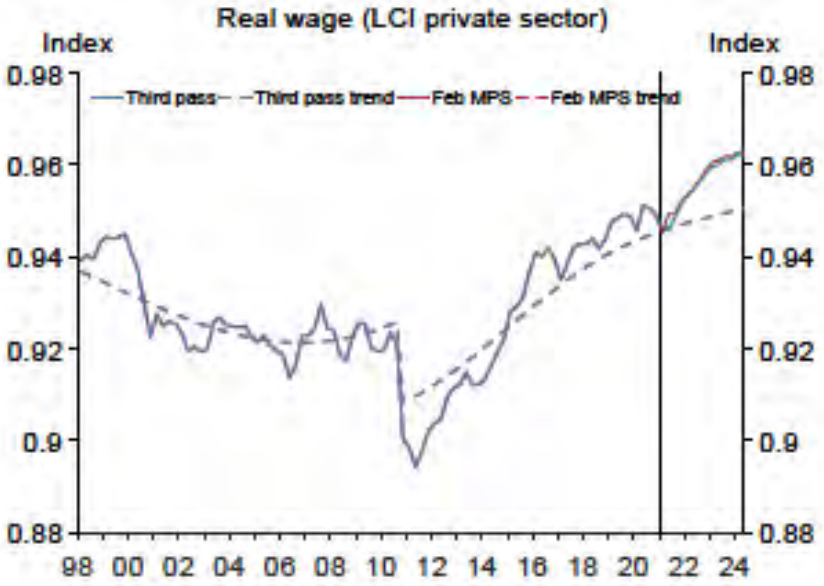

Annual CPI inflation
Annual %
Annual %
Third pass
Third pass trend
Feb MPS
Feb MPS trend
5
4
3
2
1
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

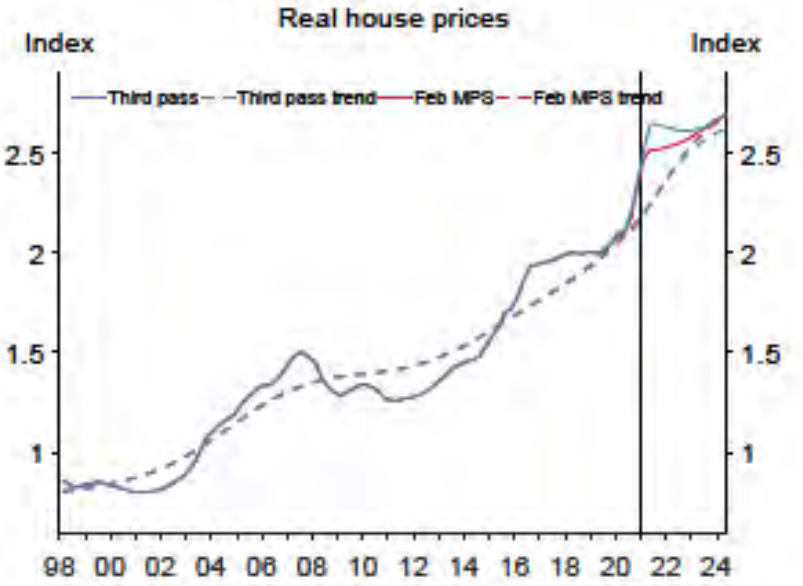

Real GDP growth
Annual %
Annual %
Third pass
Third pass trend
Feb MPS
Feb MPS trend
10
5
0
-5
-10
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

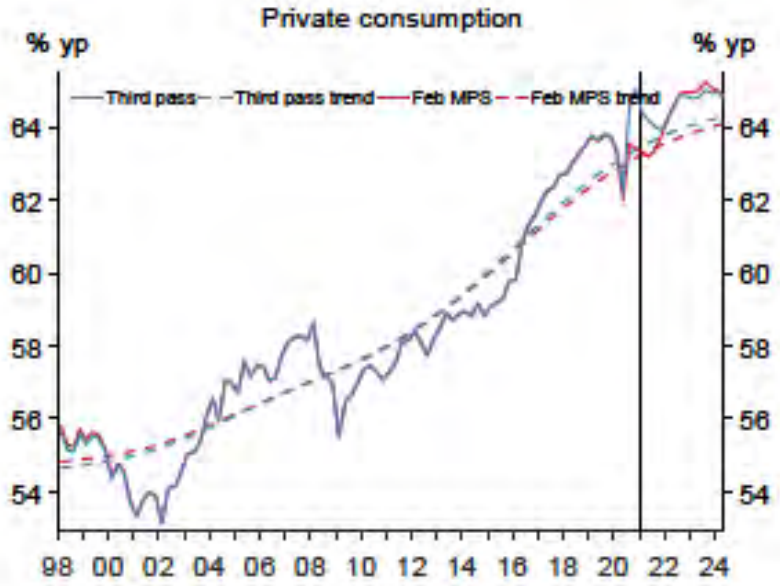

Annual non-tradables inflation
Annual %
Annual %
Third pass
Third pass trend
Feb MPS
Feb MPS trend
5.5
5
4.5
4
3.5
3
2.5
2
1.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

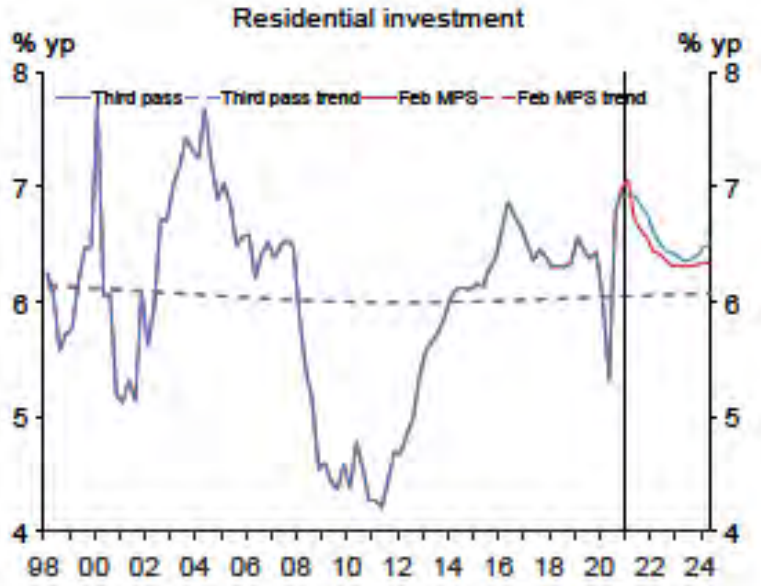

Annual tradables inflation
Annual %
Annual %
Third pass
Third pass trend
Feb MPS
Feb MPS trend
6
4
2
0
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

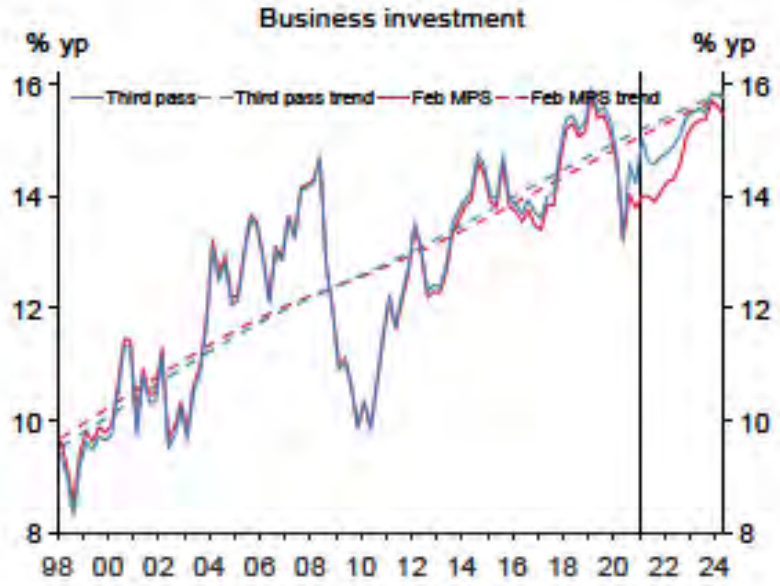

Real wage (LCI private sector)
Index
Index
Third pass
Third pass trend
Feb MPS
Feb MPS trend
0.98
0.96
0.94
0.92
0.9
0.88
98 00 02 04 06 08 10 12 14 16 18 20 22 24

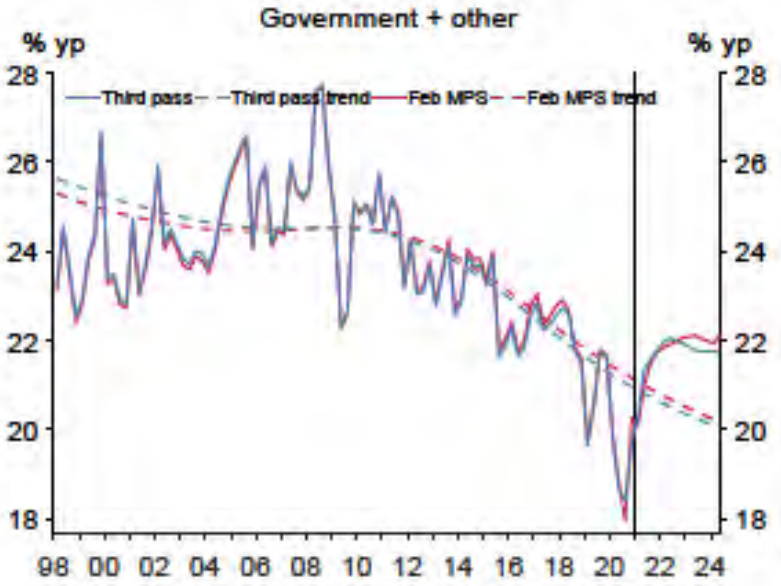

Real house prices
Index
Index
Third pass
Third pass trend
Feb MPS
Feb MPS trend
2.5
2
1.5
1
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

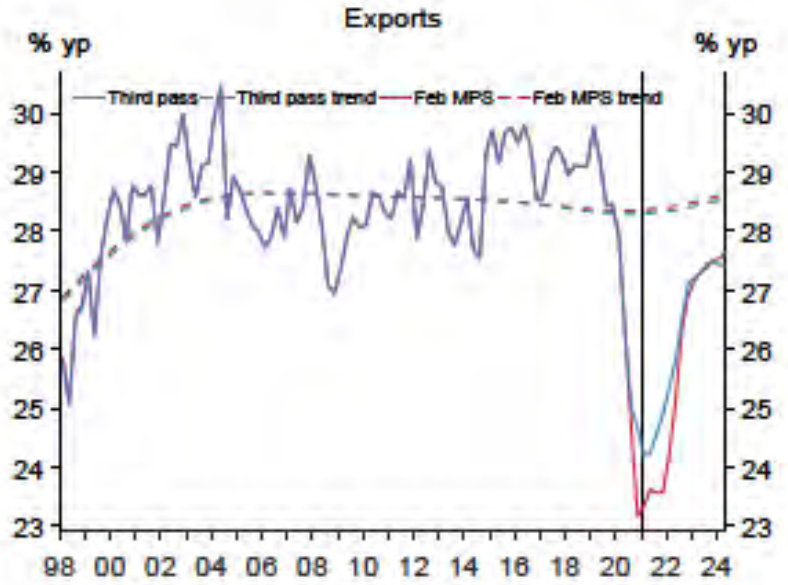

Private consumption
% yp
% yp
Third pass
Third pass trend
Feb MPS
Feb MPS trend
64
62
60
58
56
54
98 00 02 04 06 08 10 12 14 16 18 20 22 24

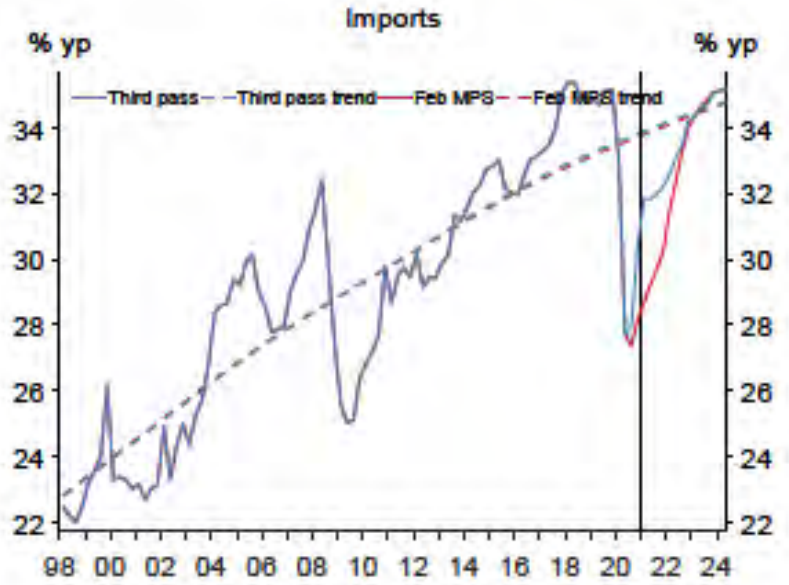

Residential investment
% yp
% yp
Third pass
Third pass trend
Feb MPS
Feb MPS trend
8
7
6
5
4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

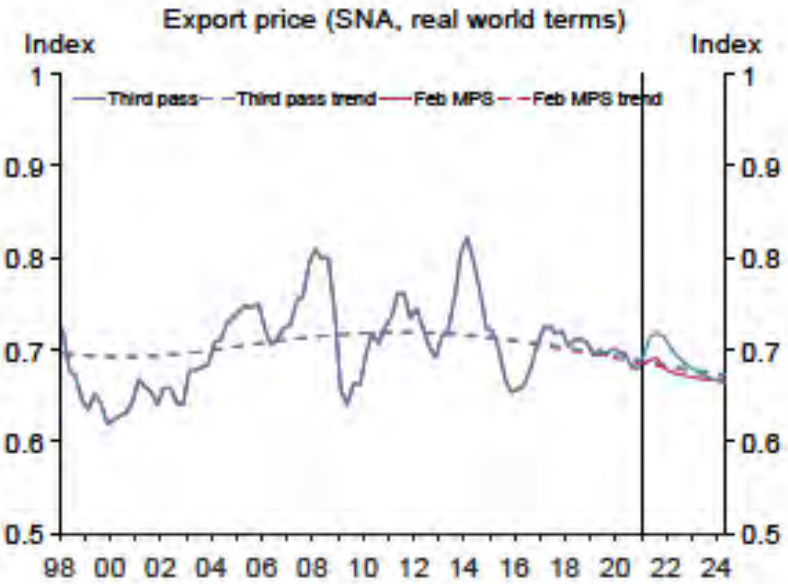

Business investment
% yp
% yp
Third pass
Third pass trend
Feb MPS
Feb MPS trend
16
14
12
10
8
98 00 02 04 06 08 10 12 14 16 18 20 22 24

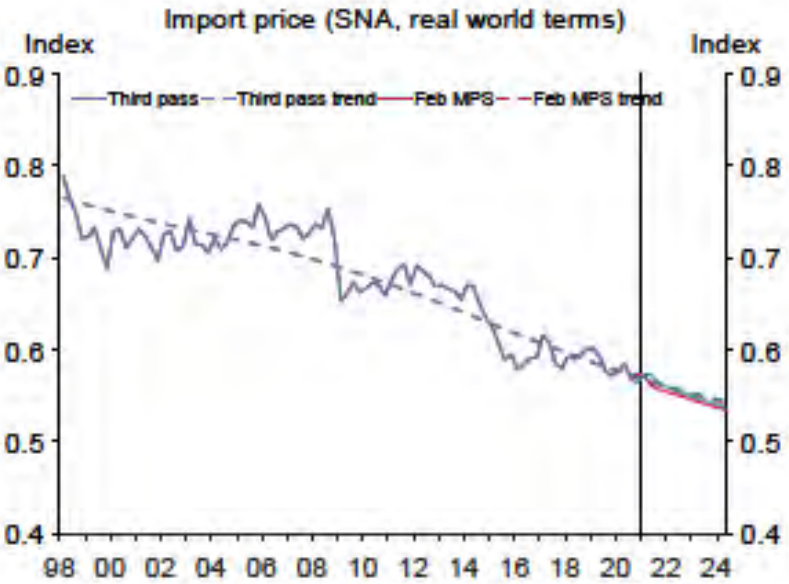

Government + other
% yp
% yp
Third pass
Third pass trend
Feb MPS
Feb MPS trend
28
26
24
22
20
18
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

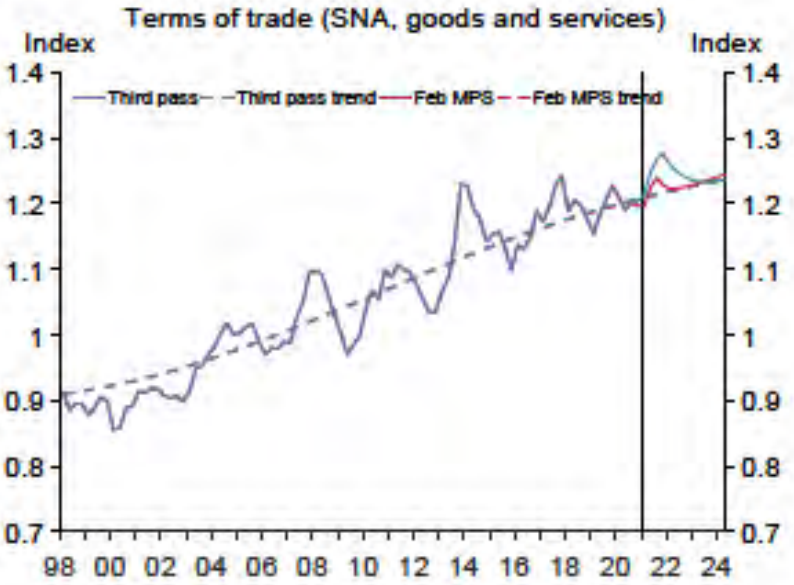

Exports
% yp
% yp
Third pass
Third pass trend
Feb MPS
Feb MPS trend
30
29
28
27
26
25
24
23
98 00 02 04 06 08 10 12 14 16 18 20 22 24

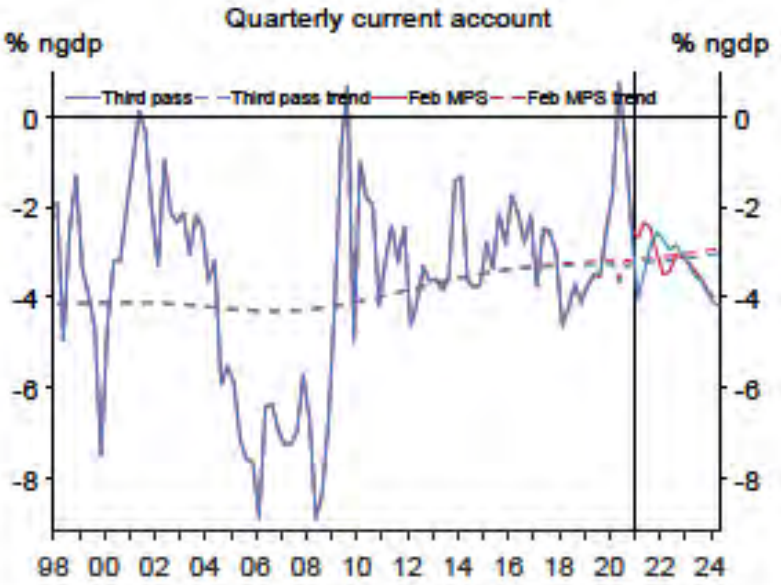

Imports
% yp
% yp
Third pass
Third pass trend
Feb MPS
Feb MPS trend
34
32
30
28
26
24
22
98 00 02 04 06 08 10 12 14 16 18 20 22 24

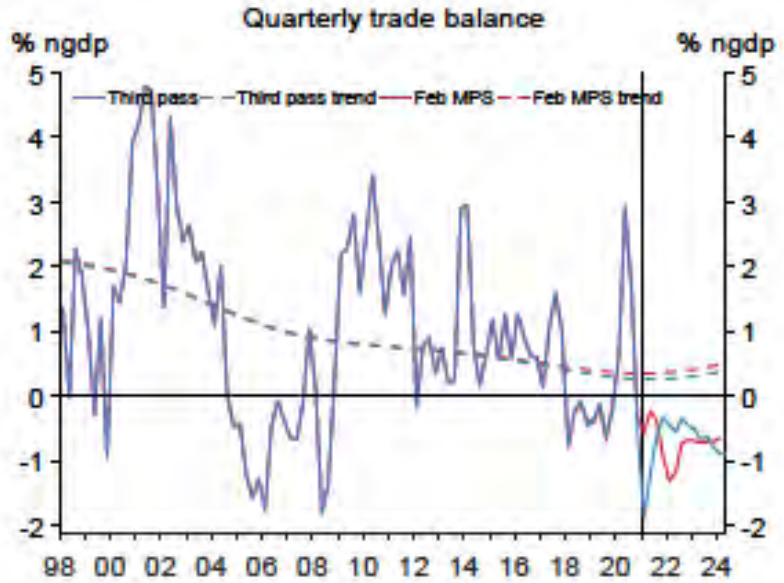

Export price (SNA, real world terms)
Index
Index
Third pass
Third pass trend
Feb MPS
Feb MPS trend
1
0.9
0.8
0.7
0.6
0.5
98 00 02 04 06 08 10 12 14 16 18 20 22 24

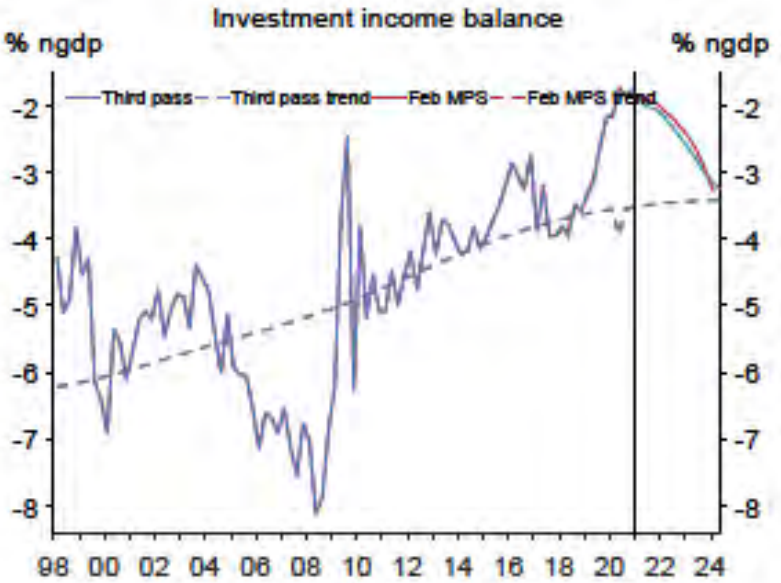

Import price (SNA, real world terms)
Index
Index
Third pass
Third pass trend
Feb MPS
Feb MPS trend
0.9
0.8
0.7
0.6
0.5
0.4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

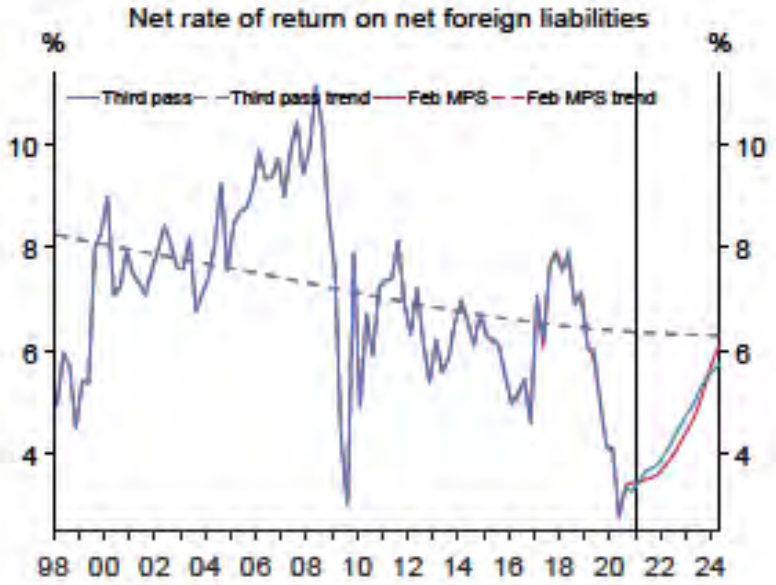

Terms of trade (SNA, goods and services)
Index
Index
Third pass
Third pass trend
Feb MPS
Feb MPS trend
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
98 00 02 04 06 08 10 12 14 16 18 20 22 24

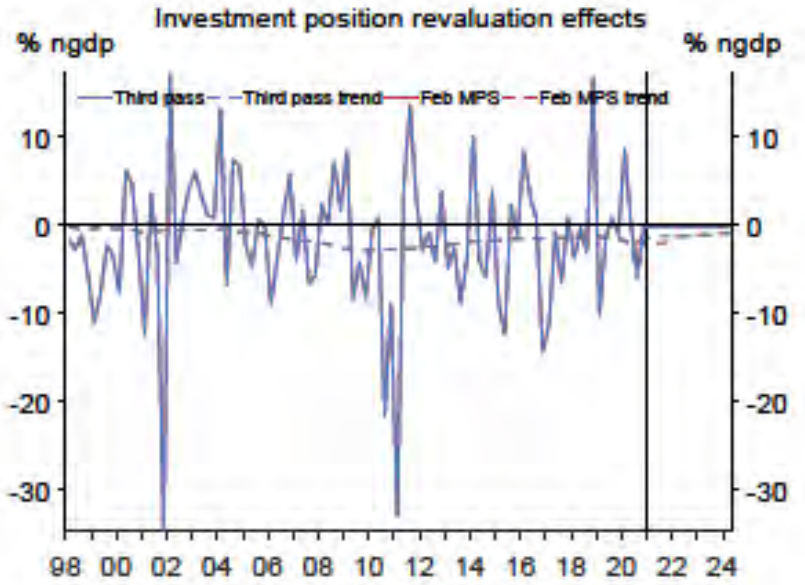

Quarterly current account
% ngdp
% ngdp
Third pass
Third pass trend
Feb MPS
Feb MPS trend
0
-2
-4
-6
-8
98 00 02 04 06 08 10 12 14 16 18 20 22 24

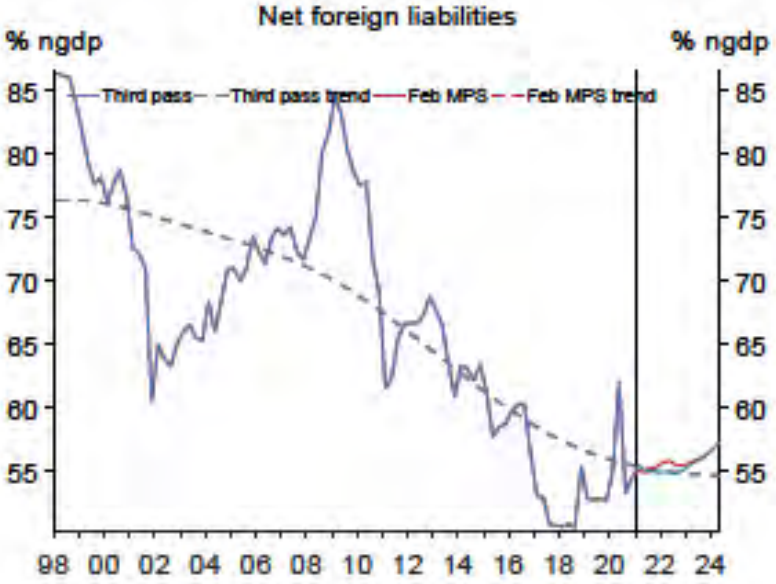

Quarterly trade balance
% ngdp
% ngdp
Third pass
Third pass trend
Feb MPS
Feb MPS trend
5
4
3
2
1
0
-1
-2
98 00 02 04 06 08 10 12 14 16 18 20 22 24

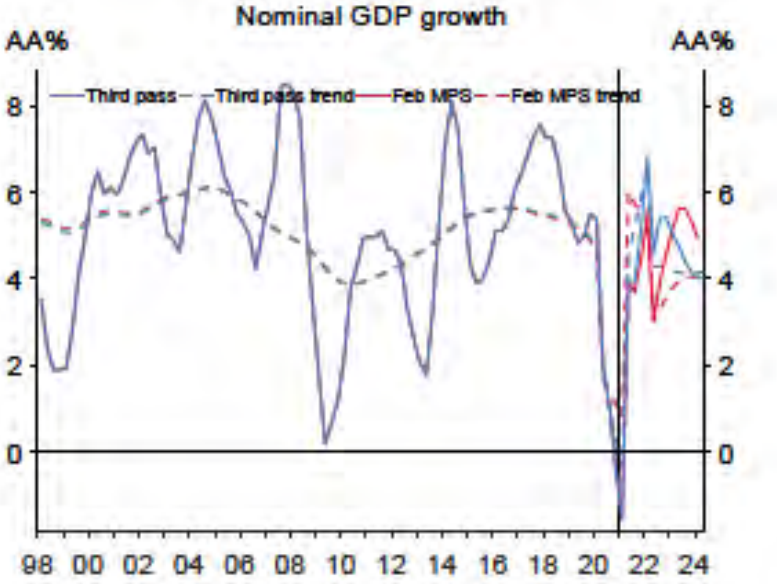

Investment income balance
% ngdp
% ngdp
Third pass
Third pass trend
Feb MPS
Feb MPS trend
-2
-3
-4
-5
-6
-7
-8
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Trends

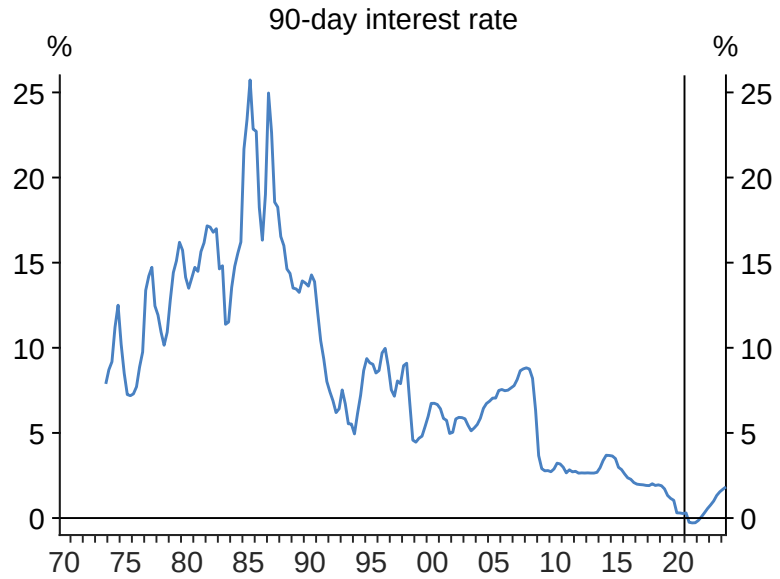

Net rate of return on net foreign liabilities
%
%
Third pass
Third pass trend
Feb MPS
Feb MPS trend
10
8
6
4
98 00 02 04 06 08 10 12 14 16 18 20 22 24

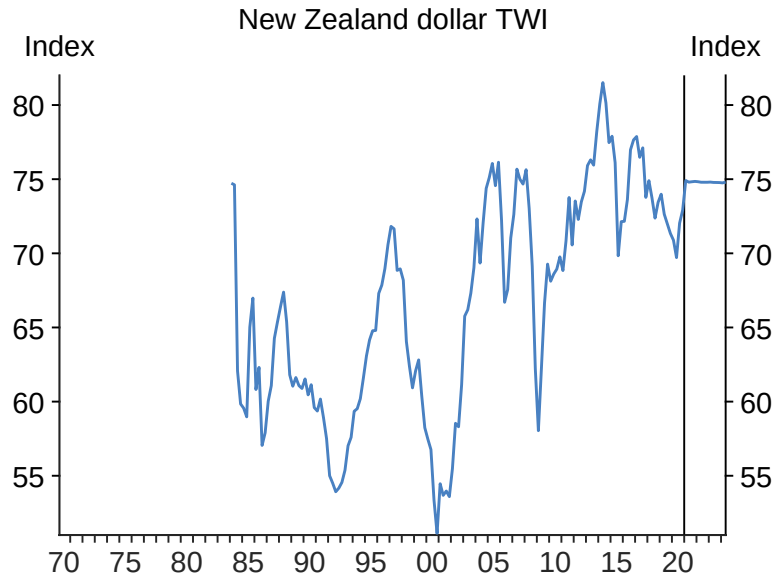

Investment position revaluation effects
% ngdp
% ngdp
Third pass
Third pass trend
Feb MPS
Feb MPS trend
10
0
-10
-20
-30
98 00 02 04 06 08 10 12 14 16 18 20 22 24

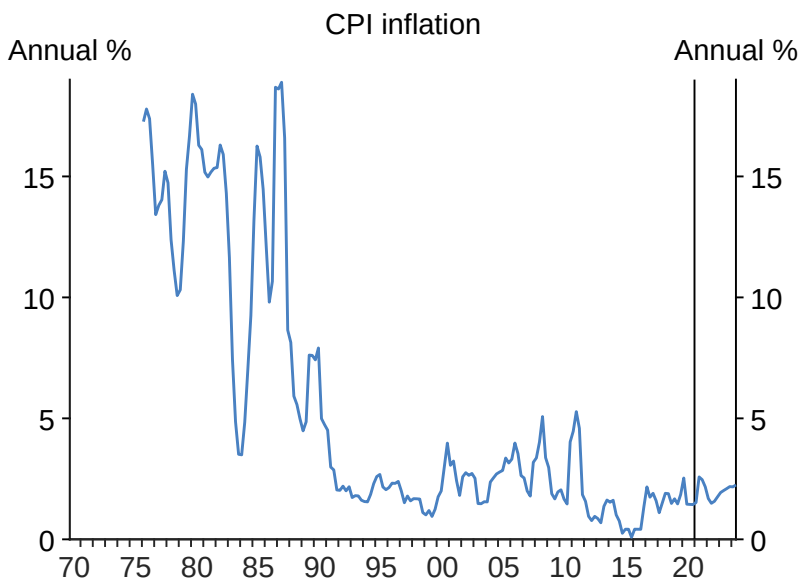

Net foreign liabilities
% ngdp
% ngdp
Third pass
Third pass trend
Feb MPS
Feb MPS trend
85
80
75
70
65
60
55
98 00 02 04 06 08 10 12 14 16 18 20 22 24

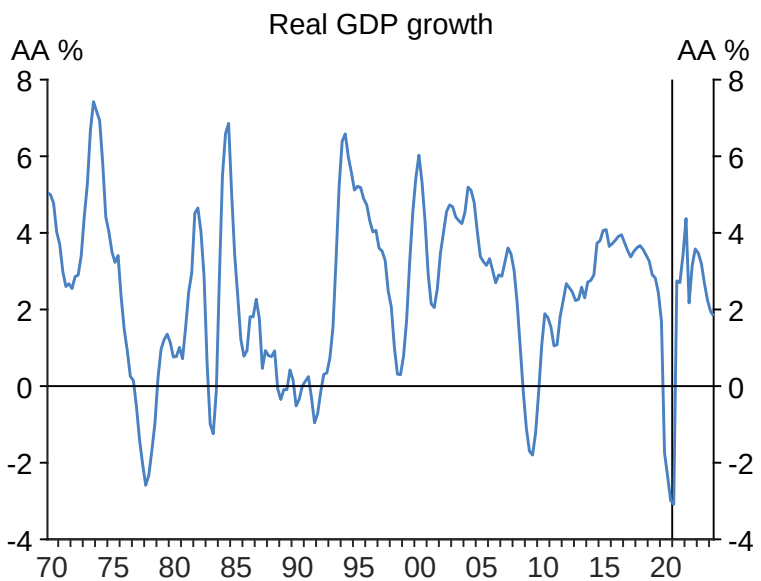

Nominal GDP growth
AA%
AA%
Third pass
Third pass trend
Feb MPS
Feb MPS trend
8
6
4
2
0
98 00 02 04 06 08 10 12 14 16 18 20 22 24

Long Term

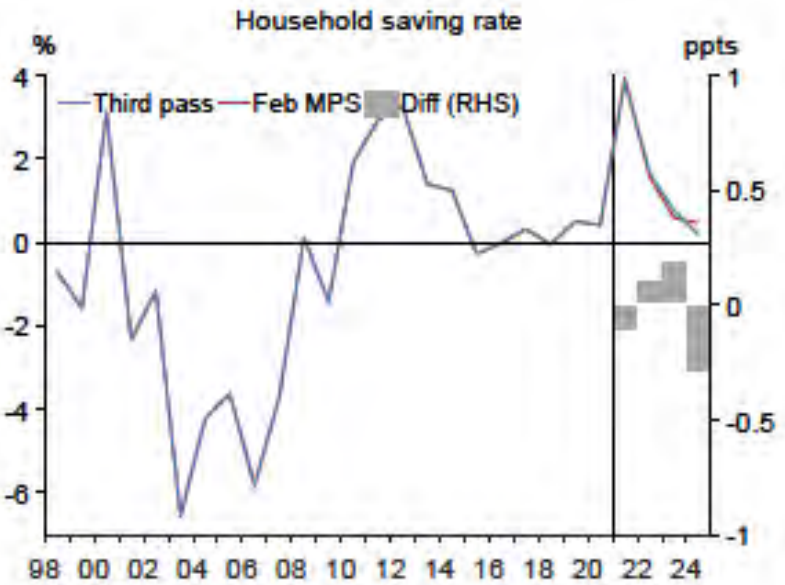

90-day interest rate
%
%
25
20
15
10
5
0
70 75 80 85 90 95 00 05 10 15 20

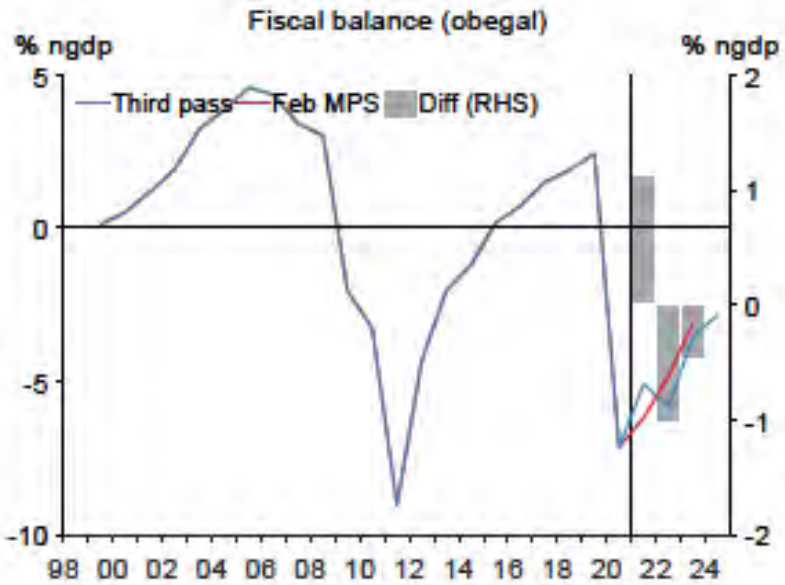

New Zealand dollar TWI
Index
Index
80
75
70
65
60
55
70 75 80 85 90 95 00 05 10 15 20


CPI inflation
Annual %
Annual %
15
10
5
0
70 75 80 85 90 95 00 05 10 15 20


Real GDP growth
AA %
AA %
8
6
4
2
0
-2
-4
70 75 80 85 90 95 00 05 10 15 20

Other


Household saving rate
%
ppts
Third pass
Feb MPS
Diff (RHS)
4
2
0
-2
-4
-6
1
0.5
0
-0.5
-1
98 00 02 04 06 08 10 12 14 16 18 20 22 24


Fiscal balance (obegal)
% ngdp
% ngdp
Third pass
Feb MPS
Diff (RHS)
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-5
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98 00 02 04 06 08 10 12 14 16 18 20 22 24

Forecast Tables

May first pass

May 12, 2021

Contents

Table A Summary of economic projections (*MPS* table 6.5)

(Annual percentage change, unless specified otherwise)

	Actuals			Projections		
March year	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Price measures						
CPI	1.5	2.5	1.5	1.6	1.8	2.1
Labour costs (LCI private sector)	2.0	2.4	1.6	2.3	2.5	2.4
Import prices ($NZ, SNA, goods and services)	4.2	2.5	-5.3	-0.4	0.3	0.4
Export prices ($NZ, SNA, goods and services)	1.3	7.4	-5.1	3.5	-1.7	0.4
Monetary conditions						
Official cash rate (year average)	1.8	1.2	0.3	0.2	0.5	1.5
New Zealand dollar TWI (year average)	73.4	71.7	72.4	74.8	74.8	74.8
Output						
GDP (production, annual average % change)	3.3	1.7	-3.1	4.1	3.4	2.4
Potential output (annual average % change)	3.0	2.4	-2.5	4.2	1.9	1.9
Output gap (% of potential GDP, year average)	0.9	0.2	-0.4	-0.5	0.9	1.4
Labour market						
Total employment	1.5	2.6	0.3	0.9	1.2	1.4
Unemployment rate (March qtr, s.a.)	4.2	4.3	4.7	4.7	4.5	4.4
Trend labour productivity	0.1	0.1	0.3	0.6	0.8	0.9
Key balances						
Government operating balance (June yr, % of GDP)	2.4	-7.3	-5.9	-4.4	-2.9	-2.7
Current account balance (% of GDP, year average)	-3.9	-2.8	-1.6	-2.8	-2.6	-3.4
Terms of trade (annual average % change)	-2.5	2.0	-0.3	5.0	-1.6	-0.7
Household saving rate (% of disposable income)	0.5	0.4	3.4	1.6	0.9	0.5
World economy						
World GDP (annual average % change)	3.5	1.6	-1.0	5.5	4.3	3.3
World CPI inflation	1.4	2.4	0.7	2.0	2.0	2.2

Table B Key forecast variables (*MPS* table 6.1)

							Not published in MPS *table 6.1*				
		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 %			
	Dec	1.1	0.1	1.9	73.4	1.8	0.9	2.7	5.8	2.7	4.3
2019	Mar	0.5	0.1	1.5	74.0	1.8	-0.4	2.8	5.8	2.6	4.3
	Jun	0.5	0.6	1.7	72.6	1.6	0.1	2.8	5.8	2.5	4.3
	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	4.4
2020	Mar	-1.2	0.8	2.5	70.9	0.9	1.5	3.4	4.9	2.1	4.4
	Jun	-11.0	-0.5	1.5	69.7	0.3	-0.6	3.1	3.6	2.0	4.4
	Sep	13.9	0.7	1.4	72.0	0.3	-0.1	2.6	3.3	2.0	4.5
	Dec	-1.0	0.5	1.4	72.9	0.3	-0.3	2.8	3.3	2.0	4.7
2021	Mar	-0.6	0.8	1.5	74.9	0.3	0.5	2.1	3.2	2.0	4.7
	Jun	1.0	0.6	2.6	74.8	0.3	2.0	2.9	3.3	2.0	4.7
	Sep	0.5	0.6	2.5	74.8	0.2	1.3	3.1	3.2	2.0	4.6
	Dec	0.5	0.2	2.2	74.8	0.1	0.8	3.0	3.2	2.0	4.6
2022	Mar	0.8	0.3	1.6	74.8	0.1	-0.4	3.2	3.3	2.0	4.6
	Jun	1.0	0.3	1.3	74.8	0.2	-0.7	2.8	3.4	2.0	4.5
	Sep	1.1	0.6	1.4	74.8	0.4	-0.5	2.7	3.7	2.0	4.5
	Dec	0.7	0.3	1.5	74.8	0.5	-0.3	2.9	3.9	2.0	4.5
2023	Mar	0.6	0.5	1.8	74.7	0.7	-0.2	3.1	4.2	2.0	4.5
	Jun	0.5	0.4	1.8	74.8	0.9	-0.2	3.3	4.5	2.0	4.5
	Sep	0.7	0.7	1.9	74.8	1.3	-0.1	3.5	4.9	2.0	4.5
	Dec	0.5	0.4	2.1	74.8	1.7	0.0	3.5	5.4	2.0	4.5
2024	Mar	0.3	0.5	2.1	74.8	2.1	0.1	3.5	5.7	2.0	4.5
	Jun	0.2	0.4	2.2	74.8	2.2	0.2	3.5	5.9	2.0	4.5

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

(Annual average percentage change, unless specified otherwise)

	Actuals						Projections			
March year	**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	-1.9	4.2	2.9	2.3
Public	3.4	2.3	2.2	3.4	3.7	6.1	4.9	2.2	1.6	1.3
Total	3.3	3.7	5.5	4.6	4.2	3.6	-0.3	3.7	2.6	2.1
Gross fixed capital formation										
Residential	8.3	7.1	8.8	-1.8	3.0	1.5	0.8	8.5	-3.0	0.9
Other	7.9	2.8	0.3	10.7	6.6	1.1	-7.4	8.9	6.4	5.0
Total	8.0	3.9	2.5	7.3	5.7	1.2	-5.4	8.8	3.9	4.0
Final domestic expenditure	4.4	3.8	4.8	5.2	4.6	3.0	-1.5	4.8	2.9	2.5
Stockbuilding (percentage point contribution)	0.5	-0.3	0.1	0.2	-0.1	-0.5	-0.5	1.0	-0.2	-0.0
Gross national expenditure	4.6	3.3	5.0	5.7	4.5	2.4	-2.3	6.2	2.8	2.5
Exports of goods and services	4.7	6.6	1.7	3.6	3.2	-0.2	-14.5	4.1	11.2	4.7
Imports of goods and services	7.7	2.6	5.6	7.8	4.4	1.0	-16.5	13.8	7.6	4.9
Expenditure on GDP	3.7	4.4	3.8	4.4	4.1	2.1	-0.9	3.5	3.3	2.3
GDP (production)	3.8	3.7	3.7	3.6	3.3	1.7	-3.1	4.1	3.4	2.4
GDP (production, March qtr to March qtr)	3.8	4.1	3.2	3.6	3.0	0.1	-0.3	2.9	3.5	1.9

Table D World outlook

(Annual average percentage change, unless specified otherwise)

	Actuals				Projections				
March year	**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	0.3	0.9	1.4
World GDP	3.5	3.9	3.5	1.6	-1.0	5.5	4.3	3.3	3.2
World CPI inflation	1.4	1.8	1.8	2.0	0.7	2.1	1.9	2.2	2.2
Domestic (SNA, goods and services)									
Export prices	4.7	5.6	0.3	0.9	-0.8	5.8	-2.0	-0.2	1.1
Import prices	2.0	1.0	2.8	-1.0	-0.5	0.8	-0.3	0.5	0.6
Terms of trade	2.6	4.6	-2.5	2.0	-0.3	5.0	-1.6	-0.7	0.5

Table E Percentage point contributions to real GDP growth

(Annual average percentage change)

	Actuals				Projections				
March year	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Final consumption expenditure									
Private	3.9	3.0	2.7	1.8	-1.2	2.7	1.9	1.5	0.9
Public	0.4	0.6	0.7	1.1	1.0	0.5	0.3	0.3	0.3
Total	4.3	3.7	3.4	2.9	-0.2	3.1	2.2	1.8	1.2
Gross fixed capital formation									
Residential	0.6	-0.1	0.2	0.1	0.0	0.6	-0.2	0.1	0.2
Other	0.1	1.9	1.2	0.2	-1.4	1.6	1.2	1.0	0.1
Total	0.6	1.8	1.4	0.3	-1.4	2.2	1.0	1.0	0.3
Stockbuilding	0.1	0.2	-0.1	-0.5	-0.5	1.1	-0.2	-0.0	-0.0
Exports of goods and services	0.5	1.0	0.9	-0.1	-4.1	1.0	2.8	1.3	0.6
Imports of goods and services	-1.8	-2.6	-1.5	-0.4	5.7	-4.1	-2.5	-1.7	-0.8
Residual (expenditure/production and chain link)	0.0	-0.5	-0.9	-0.6	-2.5	0.8	0.0	0.0	0.0
GDP (production)	3.7	3.6	3.3	1.7	-3.1	4.1	3.4	2.4	1.3

Table F Household income and consumption

(Annual average percentage change, unless specified otherwise)

	Actuals				Projections				
March year	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Compensation of employees	5.2	6.1	6.1	6.0	2.2	5.6	4.3	5.4	NaN
Non-farm entrepreneurial income	10.1	3.5	9.1	7.7	3.8	6.3	4.7	-2.0	NaN
Farm entrepreneurial income	143.4	20.4	-4.4	-1.3	-5.2	-11.7	-13.4	-37.4	NaN
Other income	5.6	6.2	7.5	2.3	4.2	-0.1	2.2	4.6	NaN
Total income	7.7	6.2	6.5	5.1	2.7	3.9	3.5	3.5	NaN
Less income tax	7.0	7.5	5.7	7.2	3.2	4.4	3.9	3.8	NaN
Nominal disposable income	7.9	6.0	6.6	4.6	2.5	3.8	3.4	3.4	NaN
Consumption deflator	1.0	1.6	2.6	2.3	1.4	1.5	1.1	1.5	NaN
Real disposable income	6.8	4.3	3.9	2.3	1.1	2.2	2.3	1.9	NaN
Real household consumption	6.5	4.9	4.4	2.8	-1.9	4.2	2.9	2.3	1.5
Household saving rate (% of disposable income)	0.3	-0.1	0.5	0.4	3.4	1.6	0.9	0.5	NaN

Table G Fiscal accounts

($ billions, unless specified otherwise)

	Actuals					Projections			
June year	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Direct taxation	48.8	51.8	56.4	55.3	57.8	57.9	63.7	66.2	69.1
Indirect taxation	26.2	27.8	29.3	29.3	32.1	31.8	32.6	33.6	34.5
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	116.0	118.6	120.6	129.2	134.2	138.9
Social welfare	30.6	30.2	33.9	49.9	44.2	43.7	45.2	47.4	49.1
Debt servicing	4.2	4.2	4.3	3.8	2.6	1.8	1.8	2.2	2.6
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	137.9	135.3	139.1	143.7	147.8
Operating balance (OBEGAL)	4.1	5.5	7.4	-23.1	-19.4	-15.1	-10.3	-10.0	-9.3
(% of nominal production GDP)	1.5	1.9	2.4	-7.3	-5.9	-4.4	-2.9	-2.7	-2.4
Net core crown debt excluding NZ super fund assets (% of nominal production GDP)	21.5	19.4	18.6	26.3	38.5	47.4	51.6	51.5	49.9

Table H External

	Actuals				Projections				
March year	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Trade volumes									
(annual average % change)									
Exports									
Goods	1.8	3.0	3.7	-0.7	-0.3	3.9	2.0	1.2	0.6
Services	1.5	4.9	2.0	0.7	-46.2	4.7	49.1	14.6	6.2
Total	1.7	3.6	3.2	-0.2	-14.5	4.1	11.2	4.7	2.2
Imports									
Oil	0.5	8.2	4.6	-2.9	-19.8	14.5	11.3	1.5	4.7
Non-oil	6.0	7.7	4.4	1.4	-16.2	13.8	7.3	5.2	2.0
Total	5.6	7.8	4.4	1.0	-16.5	13.8	7.6	4.9	2.2
Current account									
($ billion)									
Goods and services balance	1.5	2.1	-0.9	-0.3	1.4	-1.9	-0.6	-1.4	-0.9
Investment income balance	-8.8	-10.9	-11.0	-8.1	-5.8	-6.9	-8.4	-11.1	-13.4
Transfers balance	-0.2	-0.4	-0.3	-0.6	-1.0	-0.6	-0.4	-0.3	-0.2
Current account	-7.4	-9.2	-12.1	-9.0	-5.4	-9.4	-9.4	-12.8	-14.5
(% of nominal production GDP)	-2.7	-3.2	-3.9	-2.8	-1.6	-2.8	-2.6	-3.4	-3.8

Table I Labour market

	Actuals					Projections			
March year	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Change in labour force:									
Natural increase (000's)	33.9	27.9	28.3	18.2	32.2	21.2	20.6	20.2	19.8
Net migration (000's)	34.9	28.3	27.4	50.4	1.6	2.0	9.0	15.8	17.1
Increase in participation (000's)	70.3	7.6	-23.3	7.9	-12.2	-0.0	-0.0	0.0	-0.0
Total change in labour force (000's)	139.1	63.8	32.4	76.5	21.6	23.2	29.6	35.9	37.0
Population of working age (000's)	3797	3876	3955	4052	4100	4133	4175	4226	4279
Labour force participation rate (%WAP)	70.9	71.1	70.5	70.7	70.4	70.4	70.4	70.4	70.4
Total labour force (000's)	2692	2756	2788	2865	2886	2910	2939	2975	3012
Total employment (000's)	2559	2634	2673	2742	2750	2774	2806	2846	2885
Annual growth (%)	5.9	2.9	1.5	2.6	0.3	0.9	1.2	1.4	1.4
Unemployment (000's)	133.1	121.8	115.3	122.8	136.4	135.7	132.9	129.5	127.6
Unemployment rate (s.a., %LF)	4.9	4.4	4.2	4.3	4.7	4.7	4.5	4.4	4.2
Total hours worked									
Annual growth (%)	4.3	4.8	3.5	1.1	-0.4	1.0	1.0	1.3	1.3
Labour productivity (aa%)	0.9	-0.1	-0.3	0.4	-1.6	0.9	2.6	1.2	-0.1
Trend (aa%)	0.4	0.2	0.1	0.1	0.2	0.5	0.8	0.9	0.8
LCI private sector wages									
Annual growth (%)	1.5	1.9	2.0	2.4	1.6	2.3	2.5	2.4	2.0

Table J Real GDP and components - short-term projections

(Quarterly percentage change, unless specified otherwise)

		Actuals		Projections							
	GDP share	**Sep20**	**Dec20**	**Mar21**	**Jun21**	**Sep21**	**Dec21**	**Mar22**	**Jun22**	**Sep22**	**Dec22**
Final consumption expenditure											
Private	50	14.2	1.0	-0.5	0.2	0.2	0.4	0.9	0.9	0.9	0.4
Public	16	0.5	1.7	0.3	0.3	0.6	0.3	0.3	0.4	0.5	0.5
Total	67	10.6	1.2	-0.3	0.2	0.3	0.4	0.8	0.8	0.8	0.4
Gross fixed capital formation											
Residential	5	40.3	1.9	0.5	0.5	-0.5	-0.3	-1.9	-1.0	-0.6	0.1
Other	11	20.7	-2.0	6.1	-2.2	0.9	1.2	0.6	1.1	1.7	2.3
Total	16	26.4	-0.8	4.3	-1.3	0.4	0.7	-0.1	0.5	1.0	1.6
Change in stocks (contribution)		0.9	0.2	0.1	0.9	-0.2	-0.1	-0.0	-0.0	-0.0	-0.0
$millions		-292	-185	-99	469	316	247	215	201	195	192
Exports											
Goods	16	4.3	3.4	0.2	0.1	0.9	0.2	0.5	0.6	0.6	0.4
Services	5	6.3	-17.3	-6.4	7.1	5.4	6.6	15.3	12.6	10.6	9.4
Total	20	4.7	-1.1	-1.0	1.3	1.7	1.4	3.4	3.2	3.0	2.7
Imports											
Oil	2	26.5	22.4	-10.0	4.0	2.0	1.0	3.0	7.0	0.7	0.3
Non-oil	22	9.8	8.1	7.3	0.4	0.5	1.0	2.3	1.7	2.2	2.5
Total	23	10.9	9.1	5.9	0.7	0.6	1.0	2.3	2.1	2.1	2.3
GDP (expenditure)		14.3	-1.5	-1.1	1.0	0.5	0.5	0.8	1.0	1.1	0.7
GDP (production)		13.9	-1.0	-0.6	1.0	0.5	0.5	0.8	1.0	1.1	0.7

Forecast Tables

May MPS

May 24, 2021

Contents

Table A Summary of economic projections (*MPS* table 6.5)

(Annual percentage change, unless specified otherwise)

	Actuals			Projections		
March year	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Price measures						
CPI	1.5	2.5	1.5	1.7	1.9	2.2
Labour costs (LCI private sector)	2.0	2.4	1.6	2.4	2.6	2.5
Import prices ($NZ, SNA, goods and services)	4.2	2.5	-5.4	-0.4	0.3	0.6
Export prices ($NZ, SNA, goods and services)	1.3	7.4	-5.2	3.4	-1.8	0.5
Monetary conditions						
Official cash rate (year average)	1.8	1.2	0.3	0.3	0.6	1.4
New Zealand dollar TWI (year average)	73.4	71.7	72.4	74.8	74.8	74.8
Output						
GDP (production, annual average % change)	3.3	1.7	-3.1	4.4	3.5	2.0
Potential output (annual average % change)	3.0	2.4	-2.6	4.2	2.0	1.9
Output gap (% of potential GDP, year average)	0.9	0.2	-0.4	-0.2	1.3	1.3
Labour market						
Total employment	1.5	2.6	0.3	0.9	1.2	1.4
Unemployment rate (March qtr, s.a.)	4.2	4.3	4.7	4.7	4.5	4.4
Trend labour productivity	0.1	0.1	0.4	0.6	0.8	0.8
Key balances						
Government operating balance (June yr, % of GDP)	2.4	-7.3	-4.9	-5.8	-3.5	-2.8
Current account balance (% of GDP, year average)	-3.9	-2.8	-1.6	-2.9	-3.0	-3.8
Terms of trade (annual average % change)	-2.5	2.0	-0.3	5.0	-1.7	-0.7
Household saving rate (% of disposable income)	0.5	0.4	3.8	1.7	0.8	0.2
World economy						
World GDP (annual average % change)	3.5	1.6	-1.0	5.5	4.3	3.3
World CPI inflation	1.4	2.4	0.7	2.0	2.0	2.2

Table B Key forecast variables (*MPS* table 6.1)

							Not published in MPS *table 6.1*				
		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 %			
	Dec	1.1	0.1	1.9	73.4	1.8	0.9	2.7	5.8	2.7	4.4
2019	Mar	0.5	0.1	1.5	74.0	1.8	-0.4	2.8	5.8	2.6	4.4
	Jun	0.5	0.6	1.7	72.6	1.6	0.1	2.8	5.8	2.5	4.3
	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
2020	Mar	-1.2	0.8	2.5	70.9	0.9	1.5	3.4	4.9	2.1	4.3
	Jun	-11.0	-0.5	1.5	69.7	0.3	-0.6	3.1	3.6	2.0	4.3
	Sep	13.9	0.7	1.4	72.0	0.3	-0.1	2.6	3.3	2.0	4.5
	Dec	-1.0	0.5	1.4	72.9	0.3	-0.3	2.8	3.3	2.0	4.7
2021	Mar	-0.6	0.8	1.5	74.9	0.3	0.5	2.1	3.2	2.0	4.6
	Jun	1.0	0.6	2.6	74.8	0.3	2.0	2.9	3.3	2.0	4.6
	Sep	0.6	0.6	2.5	74.8	0.3	1.3	3.1	3.3	2.0	4.6
	Dec	0.8	0.2	2.2	74.8	0.3	0.8	3.1	3.3	2.0	4.6
2022	Mar	0.9	0.4	1.7	74.8	0.3	-0.4	3.4	3.4	2.0	4.5
	Jun	1.0	0.4	1.5	74.8	0.3	-0.7	3.0	3.5	2.0	4.5
	Sep	1.1	0.6	1.6	74.8	0.5	-0.4	3.1	3.8	2.0	4.5
	Dec	0.5	0.4	1.8	74.8	0.7	-0.3	3.3	4.1	2.0	4.5
2023	Mar	0.4	0.5	1.9	74.8	0.9	-0.1	3.4	4.4	2.0	4.5
	Jun	0.3	0.5	2.0	74.8	1.0	-0.1	3.6	4.6	2.0	4.4
	Sep	0.7	0.7	2.1	74.8	1.3	0.0	3.5	4.9	2.0	4.4
	Dec	0.5	0.4	2.2	74.8	1.5	0.2	3.6	5.1	2.0	4.4
2024	Mar	0.4	0.5	2.2	74.8	1.6	0.2	3.5	5.3	2.0	4.4
	Jun	0.3	0.5	2.2	74.8	1.8	0.3	3.5	5.4	2.0	4.4

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

(Annual average percentage change, unless specified otherwise)

	Actuals								Projections	
March year	**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	-1.9	4.2	3.1	2.2
Public	3.4	2.3	2.2	3.4	3.7	6.1	5.0	3.1	2.1	0.9
Total	3.3	3.7	5.5	4.6	4.2	3.6	-0.3	3.9	2.8	1.9
Gross fixed capital formation										
Residential	8.3	7.1	8.8	-1.8	3.0	1.5	0.8	8.2	-3.2	1.4
Other	7.9	2.8	0.3	10.7	6.6	1.1	-7.4	10.0	6.5	3.9
Total	8.0	3.9	2.5	7.3	5.7	1.2	-5.3	9.5	4.0	3.3
Final domestic expenditure	4.4	3.8	4.8	5.2	4.6	3.0	-1.5	5.2	3.1	2.2
Stockbuilding (percentage point contribution)	0.5	-0.3	0.1	0.2	-0.1	-0.5	-0.6	1.0	-0.1	-0.0
Gross national expenditure	4.6	3.3	5.0	5.7	4.5	2.4	-2.3	6.5	3.0	2.2
Exports of goods and services	4.7	6.6	1.7	3.6	3.2	-0.2	-14.6	3.3	9.8	4.8
Imports of goods and services	7.7	2.6	5.6	7.8	4.4	1.0	-16.6	13.5	7.1	5.3
Expenditure on GDP	3.7	4.4	3.8	4.4	4.1	2.1	-0.9	3.8	3.3	1.9
GDP (production)	3.8	3.7	3.7	3.6	3.3	1.7	-3.1	4.4	3.5	2.0
GDP (production, March qtr to March qtr)	3.8	4.1	3.2	3.6	3.0	0.1	-0.3	3.4	3.0	1.8

Table D World outlook

(Annual average percentage change, unless specified otherwise)

	Actuals					Projections			
March year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
World policy rate (level, %)	0.6	0.7	1.2	1.9	1.7	0.1	0.1	0.3	0.9
World GDP	3.5	3.5	3.9	3.5	1.6	-1.0	5.5	4.3	3.3
World CPI inflation	1.1	1.4	1.8	1.8	2.0	0.7	2.1	1.9	2.2
Domestic (SNA, goods and services)									
Export prices	-9.8	4.7	5.6	0.3	0.9	-0.8	5.8	-2.0	-0.2
Import prices	-7.0	2.0	1.0	2.8	-1.0	-0.5	0.8	-0.3	0.5
Terms of trade	-3.0	2.6	4.6	-2.5	2.0	-0.3	5.0	-1.7	-0.7

Table E Percentage point contributions to real GDP growth

(Annual average percentage change)

	Actuals					Projections			
March year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Final consumption expenditure									
Private	2.5	3.9	3.0	2.7	1.8	-1.2	2.7	2.0	1.4
Public	0.4	0.4	0.6	0.7	1.1	1.0	0.7	0.4	0.2
Total	2.9	4.3	3.7	3.4	2.9	-0.2	3.4	2.4	1.6
Gross fixed capital formation									
Residential	0.4	0.6	-0.1	0.2	0.1	0.0	0.5	-0.2	0.1
Other	0.5	0.1	1.9	1.2	0.2	-1.4	1.8	1.3	0.8
Total	0.9	0.6	1.8	1.4	0.3	-1.4	2.4	1.0	0.9
Stockbuilding	-0.3	0.1	0.2	-0.1	-0.5	-0.6	1.1	-0.1	-0.0
Exports of goods and services	1.9	0.5	1.0	0.9	-0.1	-4.2	0.8	2.4	1.3
Imports of goods and services	-0.9	-1.8	-2.6	-1.5	-0.4	5.7	-4.0	-2.3	-1.8
Residual (expenditure/production and chain link)	-0.9	0.0	-0.5	-0.9	-0.6	-2.5	0.8	0.0	0.0
GDP (production)	3.7	3.7	3.6	3.3	1.7	-3.1	4.4	3.5	2.0

Table F Household income and consumption

(Annual average percentage change, unless specified otherwise)

	Actuals					Projections			
March year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Compensation of employees	5.3	5.2	6.1	6.1	6.0	2.2	5.7	4.5	5.5
Non-farm entrepreneurial income	6.7	10.1	3.5	9.1	7.7	3.8	6.5	4.8	3.8
Farm entrepreneurial income	-15.6	143.4	20.4	-4.4	-1.3	10.5	-10.0	-18.9	-33.5
Other income	6.0	5.6	6.2	7.5	2.3	4.2	-1.4	2.5	0.0
Total income	5.3	7.7	6.2	6.5	5.1	3.1	3.6	3.5	3.3
Less income tax	4.5	7.0	7.5	5.7	7.2	3.7	4.1	3.9	3.6
Nominal disposable income	5.5	7.9	6.0	6.6	4.6	3.0	3.5	3.4	3.2
Consumption deflator	1.0	1.0	1.6	2.6	2.3	1.4	1.6	1.3	1.6
Real disposable income	4.4	6.8	4.3	3.9	2.3	1.5	1.9	2.1	1.6
Real household consumption	4.2	6.5	4.9	4.4	2.8	-1.9	4.2	3.1	2.2
Household saving rate (% of disposable income)	-0.0	0.3	-0.1	0.5	0.4	3.8	1.7	0.8	0.2

Table G Fiscal accounts

($ billions, unless specified otherwise)

	Actuals					Projections			
June year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Direct taxation	44.9	48.8	51.8	56.4	55.3	58.0	59.0	64.8	67.1
Indirect taxation	24.8	26.2	27.8	29.3	29.3	31.8	32.0	33.2	34.7
Non-tax revenue	28.5	29.3	30.4	33.4	31.5	30.2	31.2	33.0	34.9
Total revenue	98.2	104.2	110.0	119.1	116.0	120.1	122.2	131.1	136.7
Social welfare	28.9	30.6	30.2	33.9	49.9	43.5	44.8	46.6	47.9
Debt servicing	4.3	4.2	4.2	4.3	3.8	2.5	2.3	2.7	3.4
Other	62.6	65.1	69.7	73.2	85.3	90.1	94.6	94.0	95.5
Total expenses	95.9	99.8	104.0	111.4	138.9	136.1	141.8	143.3	146.8
Operating balance (OBEGAL)	1.8	4.1	5.5	7.4	-23.1	-16.2	-19.8	-12.6	-10.5
(% of nominal production GDP)	0.7	1.5	1.9	2.4	-7.3	-4.9	-5.8	-3.5	-2.8
Net core crown debt excluding NZ super fund assets (% of nominal production GDP)	23.9	21.5	19.4	18.6	26.3	34.9	45.3	51.0	51.9

Table H External

	Actuals					Projections			
March year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Trade volumes									
(annual average % change)									
Exports									
Goods	2.4	1.8	3.0	3.7	-0.7	-0.3	3.9	1.9	1.1
Services	17.7	1.5	4.9	2.0	0.7	-46.5	0.9	43.2	15.9
Total	6.6	1.7	3.6	3.2	-0.2	-14.6	3.3	9.8	4.8
Imports									
Oil	1.1	0.5	8.2	4.6	-2.9	-19.8	14.5	11.3	1.5
Non-oil	2.8	6.0	7.7	4.4	1.4	-16.3	13.4	6.7	5.6
Total	2.6	5.6	7.8	4.4	1.0	-16.6	13.5	7.1	5.3
Current account									
($ billion)									
Goods and services balance	2.4	1.5	2.1	-0.9	-0.3	1.4	-2.2	-1.7	-2.7
Investment income balance	-8.5	-8.8	-10.9	-11.0	-8.1	-5.8	-7.0	-8.6	-11.0
Transfers balance	-0.3	-0.2	-0.4	-0.3	-0.6	-1.0	-0.6	-0.4	-0.3
Current account	-6.4	-7.4	-9.2	-12.1	-9.0	-5.3	-9.8	-10.7	-14.1
(% of nominal production GDP)	-2.5	-2.7	-3.2	-3.9	-2.8	-1.6	-2.9	-3.0	-3.8

Table I Labour market

	Actuals					Projections			
March year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Change in labour force:									
Natural increase (000's)	27.7	33.9	27.9	28.3	18.2	32.2	21.2	20.6	20.2
Net migration (000's)	36.4	34.9	28.3	27.4	50.4	1.6	2.0	9.0	15.8
Increase in participation (000's)	-14.4	70.3	7.6	-23.3	7.9	-12.2	-0.0	-0.0	0.0
Total change in labour force (000's)	49.7	139.1	63.8	32.4	76.5	21.6	23.2	29.6	35.9
Population of working age (000's)	3700	3797	3876	3955	4052	4100	4133	4175	4226
Labour force participation rate (%WAP)	69.0	70.9	71.1	70.5	70.7	70.4	70.4	70.4	70.4
Total labour force (000's)	2553	2692	2756	2788	2865	2886	2910	2939	2975
Total employment (000's)	2417	2559	2634	2673	2742	2750	2774	2806	2846
Annual growth (%)	2.2	5.9	2.9	1.5	2.6	0.3	0.9	1.2	1.4
Unemployment (000's)	136.0	133.1	121.8	115.3	122.8	136.4	135.7	132.9	129.5
Unemployment rate (s.a., %LF)	5.3	4.9	4.4	4.2	4.3	4.7	4.7	4.5	4.4
Total hours worked									
Annual growth (%)	2.8	4.3	4.8	3.5	1.1	-0.4	1.0	1.0	1.3
Labour productivity (aa%)	1.5	0.9	-0.1	-0.3	0.4	-1.6	1.1	2.6	0.7
Trend (aa%)	0.6	0.4	0.3	0.1	0.1	0.3	0.5	0.8	0.8
LCI private sector wages									
Annual growth (%)	1.8	1.5	1.9	2.0	2.4	1.6	2.4	2.6	2.5

Table J Real GDP and components - short-term projections

(Quarterly percentage change, unless specified otherwise)

		Actuals				Projections					
	GDP share	**Sep20**	**Dec20**	**Mar21**	**Jun21**	**Sep21**	**Dec21**	**Mar22**	**Jun22**	**Sep22**	**Dec22**
Final consumption expenditure											
Private	50	14.2	1.0	-0.5	0.2	0.3	0.4	0.9	1.1	0.9	0.4
Public	16	0.5	1.7	0.4	0.6	0.8	0.8	0.8	0.7	0.2	0.1
Total	67	10.6	1.2	-0.3	0.3	0.4	0.5	0.9	1.0	0.7	0.3
Gross fixed capital formation											
Residential	5	40.3	1.9	0.5	0.5	-0.8	-0.4	-1.9	-1.0	-0.5	0.2
Other	11	20.7	-2.0	6.1	-2.2	0.3	1.5	0.9	1.4	1.7	2.6
Total	16	26.4	-0.8	4.3	-1.3	-0.1	0.9	0.0	0.6	1.0	1.9
Change in stocks (contribution)		0.9	0.2	-0.0	0.9	-0.2	-0.1	-0.0	-0.0	-0.0	-0.0
$millions		-292	-185	-186	385	278	229	208	198	194	192
Exports											
Goods	16	4.3	3.4	0.2	0.1	0.8	0.3	0.5	0.6	0.6	0.3
Services	5	6.3	-17.3	-8.7	3.6	7.7	8.9	10.2	8.6	12.1	10.5
Total	20	4.7	-1.1	-1.4	0.7	2.0	1.8	2.3	2.3	3.2	2.8
Imports											
Oil	2	26.5	22.4	-10.0	4.0	2.0	1.0	3.0	7.0	0.7	0.3
Non-oil	22	9.8	8.1	6.7	0.1	1.0	1.2	1.5	1.5	1.7	3.0
Total	23	10.9	9.1	5.3	0.4	1.1	1.2	1.6	1.9	1.6	2.8
GDP (expenditure)		14.3	-1.5	-1.1	1.0	0.6	0.8	0.9	0.9	1.1	0.5
GDP (production)		13.9	-1.0	-0.6	1.0	0.6	0.8	0.9	1.0	1.1	0.5

Forecast Tables

Third pass

May 24, 2021

Contents

Table A Summary of economic projections (*MPS* table 6.5)

(Annual percentage change, unless specified otherwise)

	Actuals			Projections		
March year	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Price measures						
CPI	1.5	2.5	1.5	1.7	1.9	2.2
Labour costs (LCI private sector)	2.0	2.4	1.6	2.4	2.6	2.5
Import prices ($NZ, SNA, goods and services)	4.2	2.5	-5.4	-0.4	0.3	0.6
Export prices ($NZ, SNA, goods and services)	1.3	7.4	-5.2	3.4	-1.8	0.5
Monetary conditions						
Official cash rate (year average)	1.8	1.2	0.3	0.2	0.6	1.4
New Zealand dollar TWI (year average)	73.4	71.7	72.4	74.8	74.8	74.8
Output						
GDP (production, annual average % change)	3.3	1.7	-3.1	4.4	3.5	2.0
Potential output (annual average % change)	3.0	2.4	-2.6	4.2	2.0	1.9
Output gap (% of potential GDP, year average)	0.9	0.2	-0.4	-0.2	1.3	1.3
Labour market						
Total employment	1.5	2.6	0.3	0.9	1.2	1.4
Unemployment rate (March qtr, s.a.)	4.2	4.3	4.7	4.7	4.5	4.4
Trend labour productivity	0.1	0.1	0.4	0.6	0.8	0.8
Key balances						
Government operating balance (June yr, % of GDP)	2.4	-7.3	-4.9	-5.8	-3.5	-2.8
Current account balance (% of GDP, year average)	-3.9	-2.8	-1.6	-2.9	-3.0	-3.8
Terms of trade (annual average % change)	-2.5	2.0	-0.3	5.0	-1.7	-0.7
Household saving rate (% of disposable income)	0.5	0.4	3.8	1.7	0.8	0.2
World economy						
World GDP (annual average % change)	3.5	1.6	-1.0	5.5	4.3	3.3
World CPI inflation	1.4	2.4	0.7	2.0	2.0	2.2

Table B Key forecast variables (*MPS* table 6.1)

							Not published in MPS *table 6.1*				
		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 %			
	Dec	1.1	0.1	1.9	73.4	1.8	0.9	2.7	5.8	2.7	4.4
2019	Mar	0.5	0.1	1.5	74.0	1.8	-0.4	2.8	5.8	2.6	4.4
	Jun	0.5	0.6	1.7	72.6	1.6	0.1	2.8	5.8	2.5	4.3
	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
2020	Mar	-1.2	0.8	2.5	70.9	0.9	1.5	3.4	4.9	2.1	4.3
	Jun	-11.0	-0.5	1.5	69.7	0.3	-0.6	3.1	3.6	2.0	4.3
	Sep	13.9	0.7	1.4	72.0	0.3	-0.1	2.6	3.3	2.0	4.5
	Dec	-1.0	0.5	1.4	72.9	0.3	-0.3	2.8	3.3	2.0	4.7
2021	Mar	-0.6	0.8	1.5	74.9	0.3	0.5	2.1	3.2	2.0	4.6
	Jun	1.0	0.6	2.6	74.8	0.3	2.0	2.9	3.3	2.0	4.6
	Sep	0.6	0.6	2.5	74.8	0.2	1.3	3.1	3.3	2.0	4.6
	Dec	0.8	0.2	2.2	74.8	0.2	0.8	3.1	3.3	2.0	4.6
2022	Mar	0.9	0.4	1.7	74.8	0.3	-0.4	3.4	3.4	2.0	4.5
	Jun	1.0	0.4	1.5	74.8	0.4	-0.7	3.0	3.6	2.0	4.5
	Sep	1.1	0.6	1.6	74.8	0.6	-0.4	3.1	3.9	2.0	4.5
	Dec	0.5	0.4	1.8	74.8	0.7	-0.3	3.3	4.1	2.0	4.5
2023	Mar	0.4	0.5	1.9	74.8	0.8	-0.1	3.4	4.3	2.0	4.5
	Jun	0.3	0.5	2.0	74.8	1.0	-0.1	3.6	4.6	2.0	4.4
	Sep	0.7	0.7	2.1	74.8	1.3	0.0	3.5	4.9	2.0	4.4
	Dec	0.5	0.4	2.2	74.8	1.5	0.2	3.6	5.1	2.0	4.4
2024	Mar	0.4	0.5	2.2	74.8	1.6	0.2	3.5	5.3	2.0	4.4
	Jun	0.3	0.5	2.2	74.8	1.8	0.3	3.5	5.4	2.0	4.4

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

(Annual average percentage change, unless specified otherwise)

	Actuals								Projections	
March year	**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	-1.9	4.2	3.1	2.2
Public	3.4	2.3	2.2	3.4	3.7	6.1	5.0	3.1	2.1	0.9
Total	3.3	3.7	5.5	4.6	4.2	3.6	-0.3	3.9	2.8	1.9
Gross fixed capital formation										
Residential	8.3	7.1	8.8	-1.8	3.0	1.5	0.8	8.2	-3.2	1.4
Other	7.9	2.8	0.3	10.7	6.6	1.1	-7.4	10.0	6.5	3.9
Total	8.0	3.9	2.5	7.3	5.7	1.2	-5.3	9.5	4.0	3.3
Final domestic expenditure	4.4	3.8	4.8	5.2	4.6	3.0	-1.5	5.2	3.1	2.2
Stockbuilding (percentage point contribution)	0.5	-0.3	0.1	0.2	-0.1	-0.5	-0.6	1.0	-0.1	-0.0
Gross national expenditure	4.6	3.3	5.0	5.7	4.5	2.4	-2.3	6.5	3.0	2.2
Exports of goods and services	4.7	6.6	1.7	3.6	3.2	-0.2	-14.6	3.3	9.8	4.8
Imports of goods and services	7.7	2.6	5.6	7.8	4.4	1.0	-16.6	13.5	7.1	5.3
Expenditure on GDP	3.7	4.4	3.8	4.4	4.1	2.1	-0.9	3.8	3.3	1.9
GDP (production)	3.8	3.7	3.7	3.6	3.3	1.7	-3.1	4.4	3.5	2.0
GDP (production, March qtr to March qtr)	3.8	4.1	3.2	3.6	3.0	0.1	-0.3	3.4	3.0	1.8

Table D World outlook

(Annual average percentage change, unless specified otherwise)

	Actuals					Projections			
March year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
World policy rate (level, %)	0.6	0.7	1.2	1.9	1.7	0.1	0.1	0.3	0.9
World GDP	3.5	3.5	3.9	3.5	1.6	-1.0	5.5	4.3	3.3
World CPI inflation	1.1	1.4	1.8	1.8	2.0	0.7	2.1	1.9	2.2
Domestic (SNA, goods and services)									
Export prices	-9.8	4.7	5.6	0.3	0.9	-0.8	5.8	-2.0	-0.2
Import prices	-7.0	2.0	1.0	2.8	-1.0	-0.5	0.8	-0.3	0.5
Terms of trade	-3.0	2.6	4.6	-2.5	2.0	-0.3	5.0	-1.7	-0.7

Table E Percentage point contributions to real GDP growth

(Annual average percentage change)

	Actuals					Projections			
March year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Final consumption expenditure									
Private	2.5	3.9	3.0	2.7	1.8	-1.2	2.7	2.0	1.4
Public	0.4	0.4	0.6	0.7	1.1	1.0	0.7	0.4	0.2
Total	2.9	4.3	3.7	3.4	2.9	-0.2	3.4	2.4	1.6
Gross fixed capital formation									
Residential	0.4	0.6	-0.1	0.2	0.1	0.0	0.5	-0.2	0.1
Other	0.5	0.1	1.9	1.2	0.2	-1.4	1.8	1.3	0.8
Total	0.9	0.6	1.8	1.4	0.3	-1.4	2.4	1.0	0.9
Stockbuilding	-0.3	0.1	0.2	-0.1	-0.5	-0.6	1.1	-0.1	-0.0
Exports of goods and services	1.9	0.5	1.0	0.9	-0.1	-4.2	0.8	2.4	1.3
Imports of goods and services	-0.9	-1.8	-2.6	-1.5	-0.4	5.7	-4.0	-2.3	-1.8
Residual (expenditure/production and chain link)	-0.9	0.0	-0.5	-0.9	-0.6	-2.5	0.8	0.0	0.0
GDP (production)	3.7	3.7	3.6	3.3	1.7	-3.1	4.4	3.5	2.0

Table F Household income and consumption

(Annual average percentage change, unless specified otherwise)

	Actuals					Projections			
March year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Compensation of employees	5.3	5.2	6.1	6.1	6.0	2.2	5.7	4.5	5.5
Non-farm entrepreneurial income	6.7	10.1	3.5	9.1	7.7	3.8	6.5	4.8	3.8
Farm entrepreneurial income	-15.6	143.4	20.4	-4.4	-1.3	10.5	-10.0	-18.9	-33.5
Other income	6.0	5.6	6.2	7.5	2.3	4.2	-1.4	2.5	0.0
Total income	5.3	7.7	6.2	6.5	5.1	3.1	3.6	3.5	3.3
Less income tax	4.5	7.0	7.5	5.7	7.2	3.7	4.1	3.9	3.6
Nominal disposable income	5.5	7.9	6.0	6.6	4.6	3.0	3.5	3.4	3.2
Consumption deflator	1.0	1.0	1.6	2.6	2.3	1.4	1.6	1.3	1.6
Real disposable income	4.4	6.8	4.3	3.9	2.3	1.5	1.9	2.1	1.6
Real household consumption	4.2	6.5	4.9	4.4	2.8	-1.9	4.2	3.1	2.2
Household saving rate (% of disposable income)	-0.0	0.3	-0.1	0.5	0.4	3.8	1.7	0.8	0.2

Table G Fiscal accounts

($ billions, unless specified otherwise)

	Actuals					Projections			
June year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Direct taxation	44.9	48.8	51.8	56.4	55.3	58.0	59.0	64.8	67.1
Indirect taxation	24.8	26.2	27.8	29.3	29.3	31.8	32.0	33.2	34.7
Non-tax revenue	28.5	29.3	30.4	33.4	31.5	30.2	31.2	33.0	34.9
Total revenue	98.2	104.2	110.0	119.1	116.0	120.1	122.2	131.1	136.7
Social welfare	28.9	30.6	30.2	33.9	49.9	43.5	44.8	46.6	47.9
Debt servicing	4.3	4.2	4.2	4.3	3.8	2.5	2.3	2.7	3.4
Other	62.6	65.1	69.7	73.2	85.3	90.1	94.6	94.0	95.5
Total expenses	95.9	99.8	104.0	111.4	138.9	136.1	141.8	143.3	146.8
Operating balance (OBEGAL)	1.8	4.1	5.5	7.4	-23.1	-16.2	-19.8	-12.6	-10.5
(% of nominal production GDP)	0.7	1.5	1.9	2.4	-7.3	-4.9	-5.8	-3.5	-2.8
Net core crown debt excluding NZ super fund assets (% of nominal production GDP)	23.9	21.5	19.4	18.6	26.3	34.9	45.3	51.1	51.9

Table H External

	Actuals					Projections			
March year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Trade volumes									
(annual average % change)									
Exports									
Goods	2.4	1.8	3.0	3.7	-0.7	-0.3	3.9	1.9	1.1
Services	17.7	1.5	4.9	2.0	0.7	-46.5	0.9	43.2	15.9
Total	6.6	1.7	3.6	3.2	-0.2	-14.6	3.3	9.8	4.8
Imports									
Oil	1.1	0.5	8.2	4.6	-2.9	-19.8	14.5	11.3	1.5
Non-oil	2.8	6.0	7.7	4.4	1.4	-16.3	13.4	6.7	5.6
Total	2.6	5.6	7.8	4.4	1.0	-16.6	13.5	7.1	5.3
Current account									
($ billion)									
Goods and services balance	2.4	1.5	2.1	-0.9	-0.3	1.4	-2.2	-1.7	-2.7
Investment income balance	-8.5	-8.8	-10.9	-11.0	-8.1	-5.8	-7.0	-8.8	-11.1
Transfers balance	-0.3	-0.2	-0.4	-0.3	-0.6	-1.0	-0.6	-0.4	-0.3
Current account	-6.4	-7.4	-9.2	-12.1	-9.0	-5.3	-9.8	-10.8	-14.1
(% of nominal production GDP)	-2.5	-2.7	-3.2	-3.9	-2.8	-1.6	-2.9	-3.0	-3.8

Table I Labour market

	Actuals					Projections			
March year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Change in labour force:									
Natural increase (000's)	27.7	33.9	27.9	28.3	18.2	32.2	21.2	20.6	20.2
Net migration (000's)	36.4	34.9	28.3	27.4	50.4	1.6	2.0	9.0	15.8
Increase in participation (000's)	-14.4	70.3	7.6	-23.3	7.9	-12.2	-0.0	-0.0	0.0
Total change in labour force (000's)	49.7	139.1	63.8	32.4	76.5	21.6	23.2	29.6	35.9
Population of working age (000's)	3700	3797	3876	3955	4052	4100	4133	4175	4226
Labour force participation rate (%WAP)	69.0	70.9	71.1	70.5	70.7	70.4	70.4	70.4	70.4
Total labour force (000's)	2553	2692	2756	2788	2865	2886	2910	2939	2975
Total employment (000's)	2417	2559	2634	2673	2742	2750	2774	2806	2846
Annual growth (%)	2.2	5.9	2.9	1.5	2.6	0.3	0.9	1.2	1.4
Unemployment (000's)	136.0	133.1	121.8	115.3	122.8	136.4	135.7	132.9	129.5
Unemployment rate (s.a., %LF)	5.3	4.9	4.4	4.2	4.3	4.7	4.7	4.5	4.4
Total hours worked									
Annual growth (%)	2.8	4.3	4.8	3.5	1.1	-0.4	1.0	1.0	1.3
Labour productivity (aa%)	1.5	0.9	-0.1	-0.3	0.4	-1.6	1.1	2.6	0.7
Trend (aa%)	0.6	0.4	0.3	0.1	0.1	0.3	0.5	0.8	0.8
LCI private sector wages									
Annual growth (%)	1.8	1.5	1.9	2.0	2.4	1.6	2.4	2.6	2.5

Table J Real GDP and components - short-term projections

(Quarterly percentage change, unless specified otherwise)

		Actuals				Projections					
	GDP share	**Sep20**	**Dec20**	**Mar21**	**Jun21**	**Sep21**	**Dec21**	**Mar22**	**Jun22**	**Sep22**	**Dec22**
Final consumption expenditure											
Private	50	14.2	1.0	-0.5	0.2	0.3	0.4	0.9	1.1	0.9	0.4
Public	16	0.5	1.7	0.4	0.6	0.8	0.8	0.8	0.7	0.2	0.1
Total	67	10.6	1.2	-0.3	0.3	0.4	0.5	0.9	1.0	0.7	0.3
Gross fixed capital formation											
Residential	5	40.3	1.9	0.5	0.5	-0.8	-0.4	-1.9	-1.0	-0.5	0.2
Other	11	20.7	-2.0	6.1	-2.2	0.3	1.5	0.9	1.4	1.7	2.6
Total	16	26.4	-0.8	4.3	-1.3	-0.1	0.9	0.0	0.6	1.0	1.9
Change in stocks (contribution)		0.9	0.2	-0.0	0.9	-0.2	-0.1	-0.0	-0.0	-0.0	-0.0
$millions		-292	-185	-186	385	278	229	208	198	194	192
Exports											
Goods	16	4.3	3.4	0.2	0.1	0.8	0.3	0.5	0.6	0.6	0.3
Services	5	6.3	-17.3	-8.7	3.6	7.7	8.9	10.2	8.6	12.1	10.5
Total	20	4.7	-1.1	-1.4	0.7	2.0	1.8	2.3	2.3	3.2	2.8
Imports											
Oil	2	26.5	22.4	-10.0	4.0	2.0	1.0	3.0	7.0	0.7	0.3
Non-oil	22	9.8	8.1	6.7	0.1	1.0	1.2	1.5	1.5	1.7	3.0
Total	23	10.9	9.1	5.3	0.4	1.1	1.2	1.6	1.9	1.6	2.8
GDP (expenditure)		14.3	-1.5	-1.1	1.0	0.6	0.8	0.9	0.9	1.1	0.5
GDP (production)		13.9	-1.0	-0.6	1.0	0.6	0.8	0.9	1.0	1.1	0.5

International Chartpack

Location: R \Monetary_ Policy \Policy operations \IMA \Intl \Chart_ pack

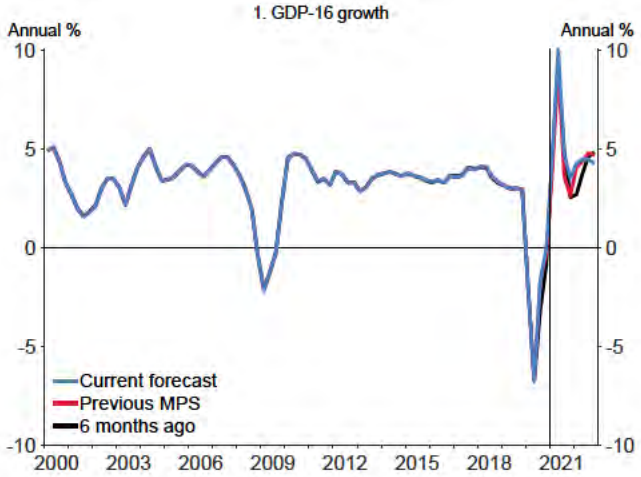
May 12, 2021

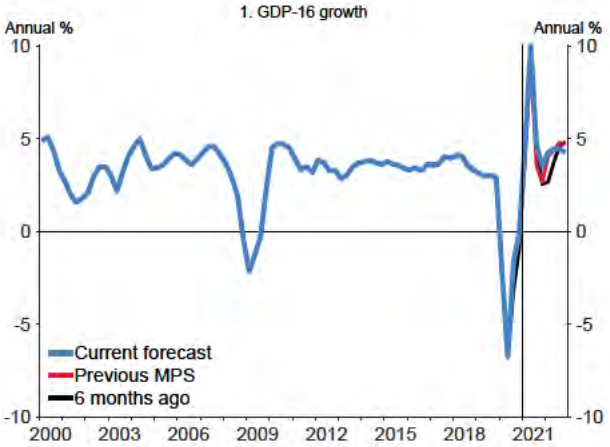
Forecast Table

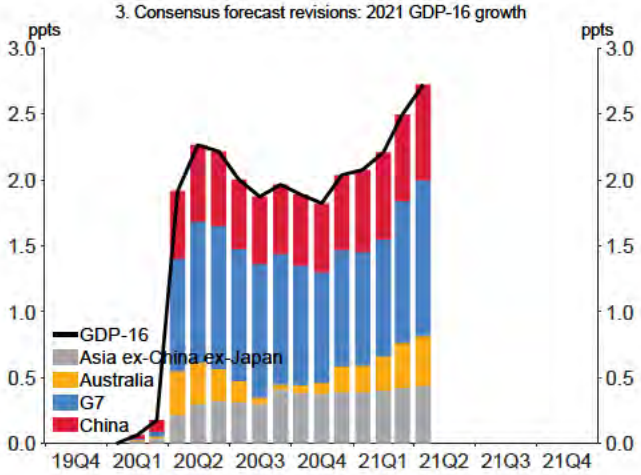
Trading partner real GDP (annual average % change, calendar years)

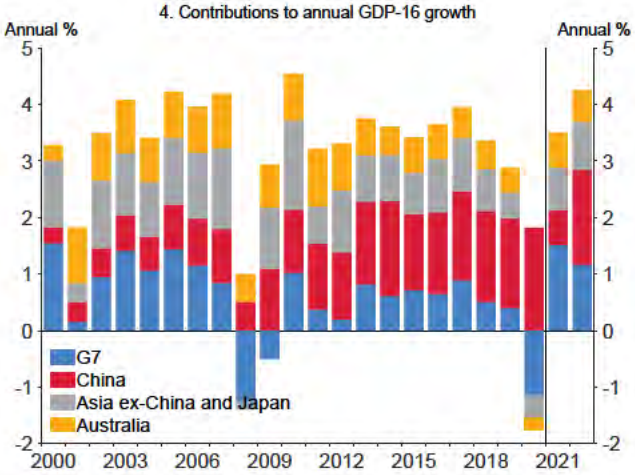
	Trade weight	2014	2015	2016	2017	2018	2019	2020	2021
Australia	19.0%	2.3	2.7	2.4	2.8	1.9	-2.4	4.3	3.0
China	27.9%	7.0	6.9	7.0	6.8	6.0	2.0	7.2	5.5
G7	34.5%	2.3	1.5	2.3	2.0	1.5	-5.4	5.1	4.0
USA	15.5%	3.1	1.7	2.3	3.0	2.2	-3.5	6.2	4.1
euro area	6.4%	1.9	1.8	2.7	1.9	1.3	-6.7	4.2	4.3
Japan	6.3%	1.6	0.7	1.7	0.6	0.3	-4.9	2.8	2.4
UK	4.5%	2.4	1.7	1.7	1.3	1.4	-9.8	5.4	5.6
Canada	1.8%	0.7	1.0	3.0	2.4	1.9	-5.4	5.9	3.8
AxJxC	18.7%	3.8	4.3	4.6	4.3	2.8	-4.4	5.5	4.6
NIEs	10.0%	2.5	2.8	3.7	3.0	1.3	-2.5	4.8	3.6
Korea	3.2%	2.8	2.9	3.2	2.9	2.0	-0.9	-	-
Hong Kong	2.2%	2.4	2.2	3.8	2.9	-1.2	-6.3	-	-
Taiwan	2.3%	1.5	2.2	3.3	2.8	3.0	3.1	-	-
Singapore	2.3%	3.0	3.3	4.5	3.5	1.3	-5.4	-	-
ASEAN	6.6%	4.8	4.9	5.4	5.1	4.4	-5.8	4.9	5.9
Thailand	1.7%	3.1	3.4	4.2	4.2	2.3	-6.2	-	-
Indonesia	1.7%	4.9	5.0	5.1	5.2	5.0	-2.0	-	-
Malaysia	1.8%	5.0	4.4	5.8	4.8	4.5	-5.7	-	-
Philippines	1.4%	6.3	7.1	6.9	6.3	6.1	-9.4	-	-
India	2.1%	7.5	9.0	6.1	7.3	4.8	-7.1	-	-
GDP-16	100.0%	3.6	3.4	3.8	3.8	3.0	-2.7	5.7	4.3

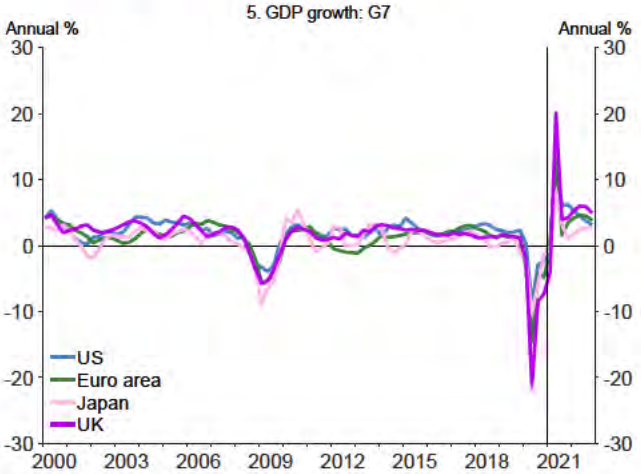
Aggregate

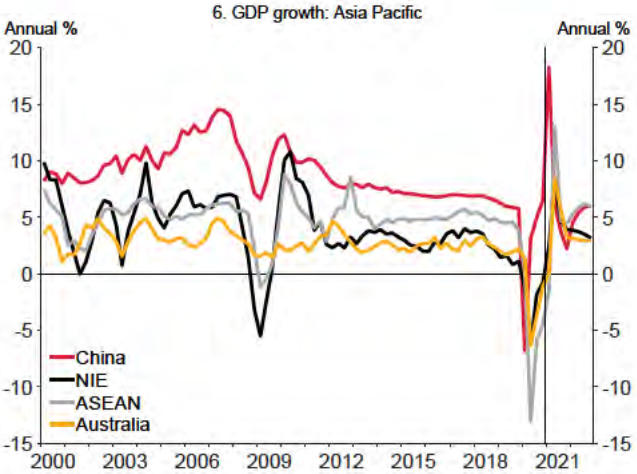

1. GDP-16 growth
Annual %
Annual %
Current forecast
Previous MPS
6 months ago


1. GDP-16 growth
Annual %
Annual %
Current forecast
Previous MPS
6 months ago


3. Consensus forecast revisions: 2021 GDP-16 growth
ppts
ppts
GDP-16
Asia ex-China ex-Japan
Australia
G7
China

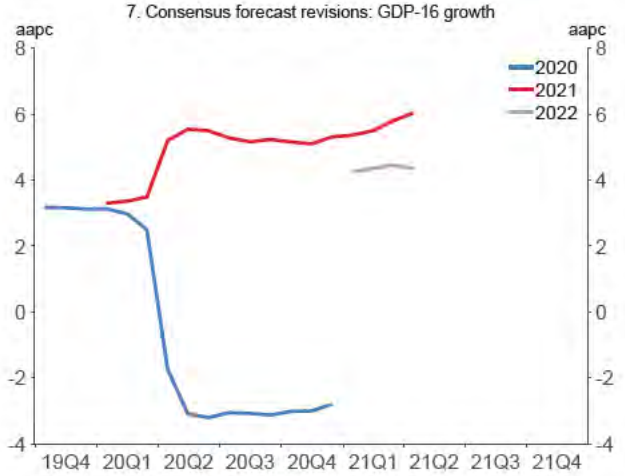

4. Contributions to annual GDP-16 growth
Annual %
Annual %
G7
China
Asia ex-China and Japan
Australia


5. GDP growth: G7
Annual %
Annual %
US
Euro area
Japan
UK

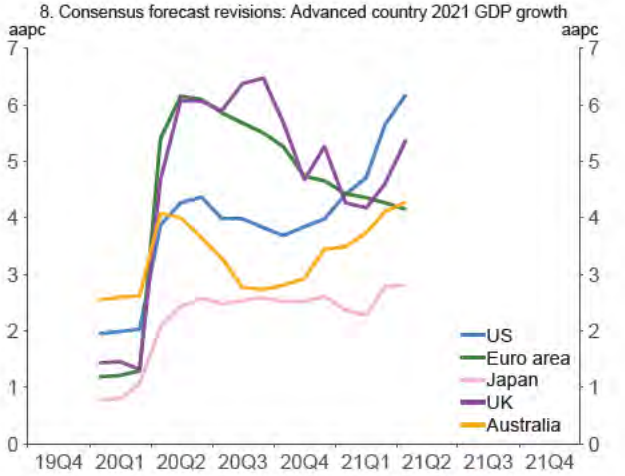

6. GDP growth: Asia Pacific
Annual %
Annual %
China
NIE
ASEAN
Australia

Aggregate

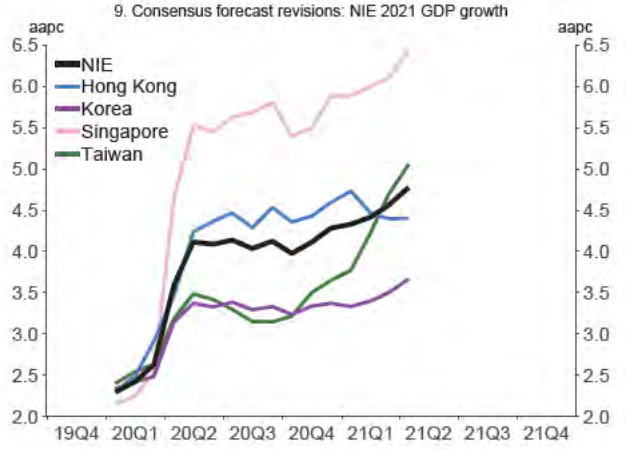
7. Consensus forecast revisions: GDP-16 growth



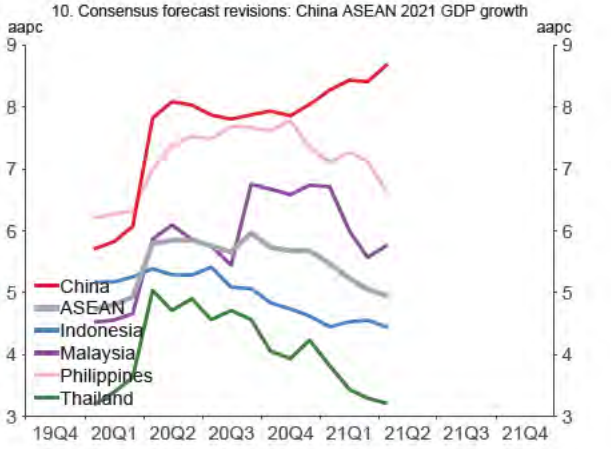
8. Consensus forecast revisions: Advanced country 2021 GDP growth



9. Consensus forecast revisions: NIE 2021 GDP growth



10. Consensus forecast revisions: China ASEAN 2021 GDP growth



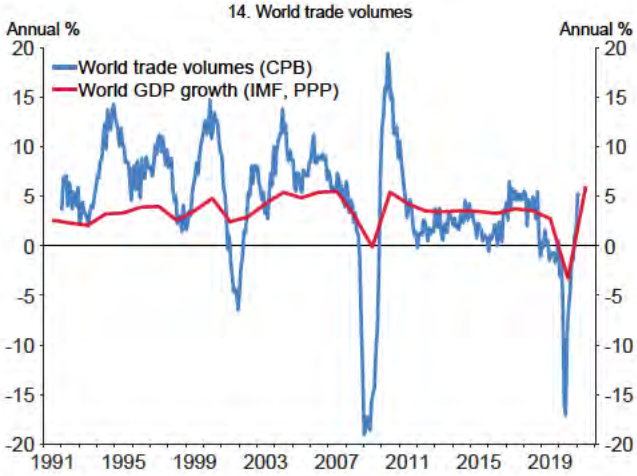
11. Global PMI vs GDP-16 (JPMorgan/Markit)

12. Developed and emerging economy PMIs (Markit)

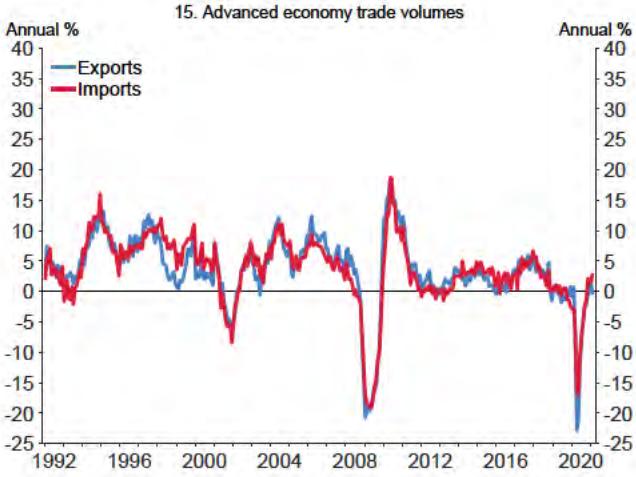
Aggregate

13. Industrial production

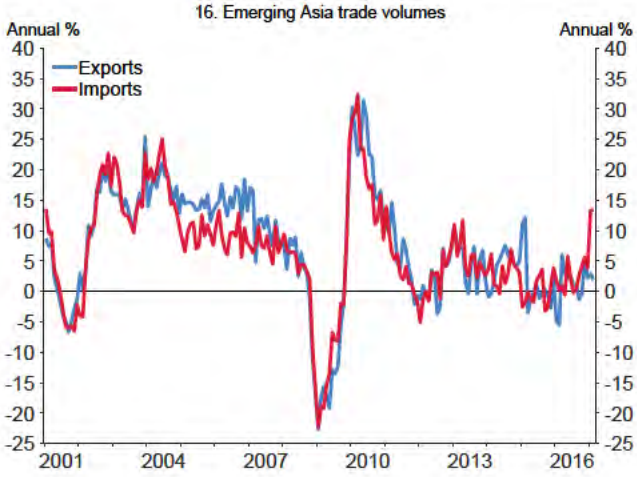
14. World trade volumes



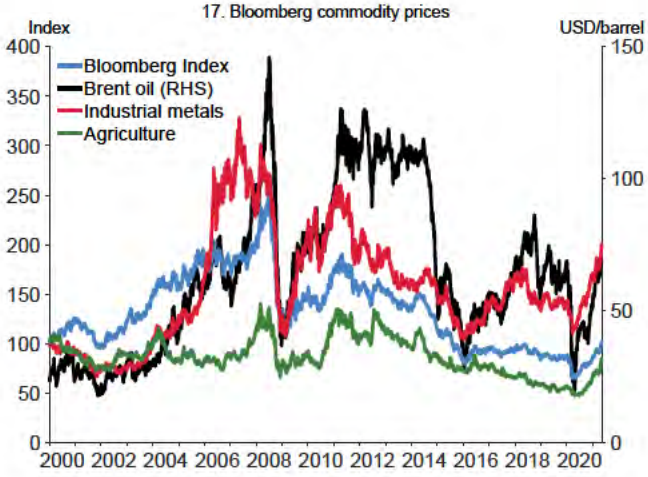
15. Advanced economy trade volumes



16. Emerging Asia trade volumes

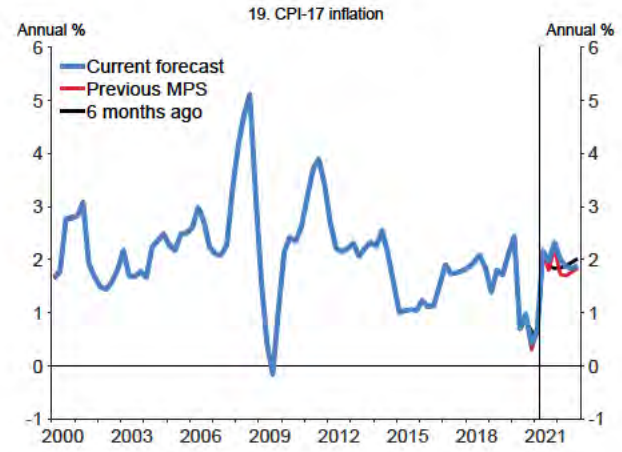


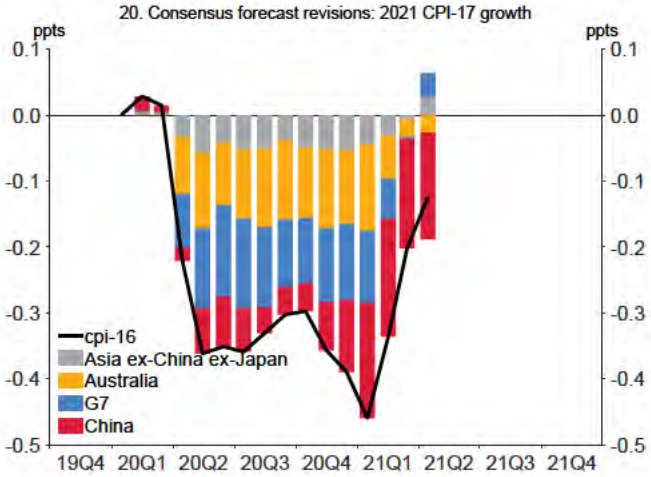
17. Bloomberg commodity prices

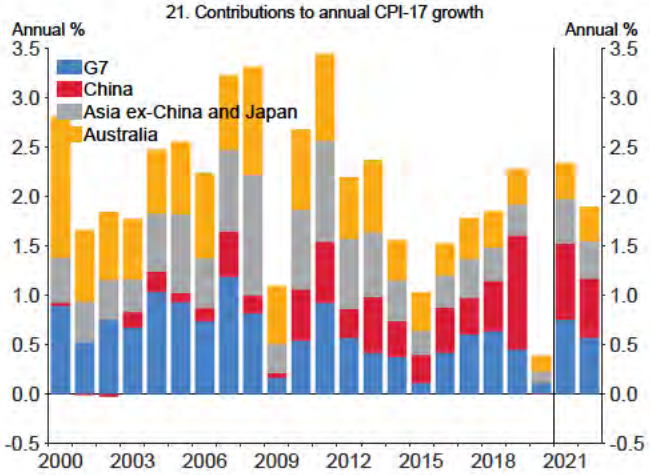


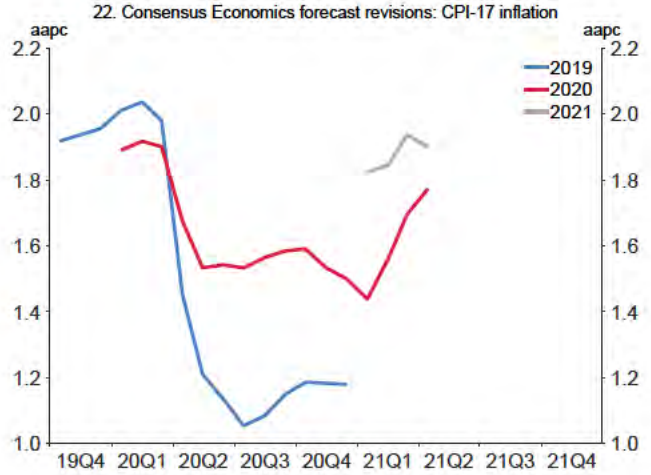
18. Equity Indices

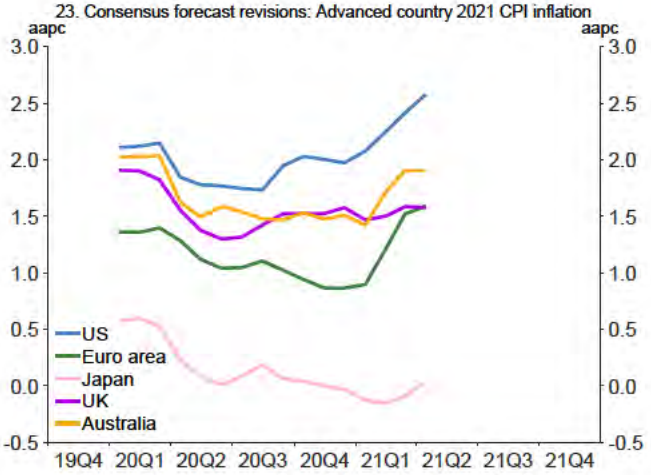
Aggregate

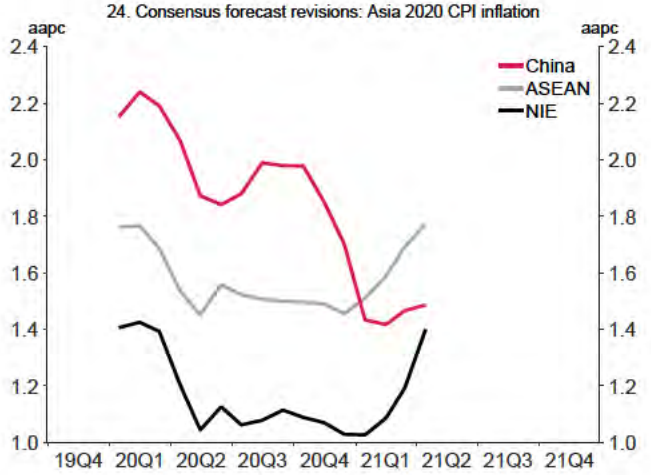

19. CPI-17 inflation
Annual %
Annual %
Current forecast
Previous MPS
6 months ago
2000 2003 2006 2009 2012 2015 2018 2021


20. Consensus forecast revisions: 2021 CPI-17 growth
ppts
ppts
cpi-16
Asia ex-China ex-Japan
Australia
G7
China
19Q4 20Q1 20Q2 20Q3 20Q4 21Q1 21Q2 21Q3 21Q4

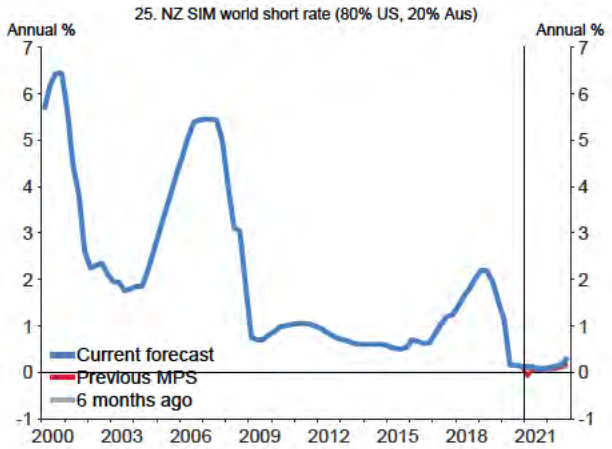

21. Contributions to annual CPI-17 growth
Annual %
Annual %
G7
China
Asia ex-China and Japan
Australia
2000 2003 2006 2009 2012 2015 2018 2021

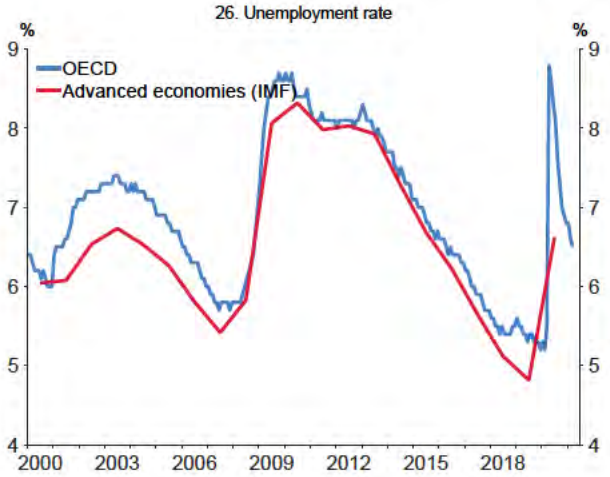

22. Consensus Economics forecast revisions: CPI-17 inflation
aapc
aapc
2019
2020
2021
19Q4 20Q1 20Q2 20Q3 20Q4 21Q1 21Q2 21Q3 21Q4

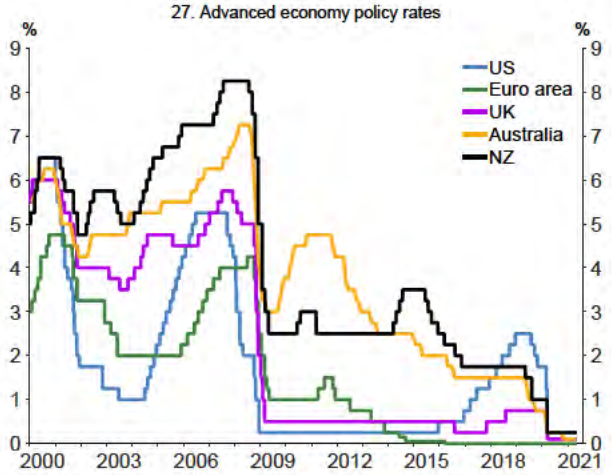

23. Consensus forecast revisions: Advanced country 2021 CPI inflation
aapc
aapc
US
Euro area
Japan
UK
Australia
19Q4 20Q1 20Q2 20Q3 20Q4 21Q1 21Q2 21Q3 21Q4

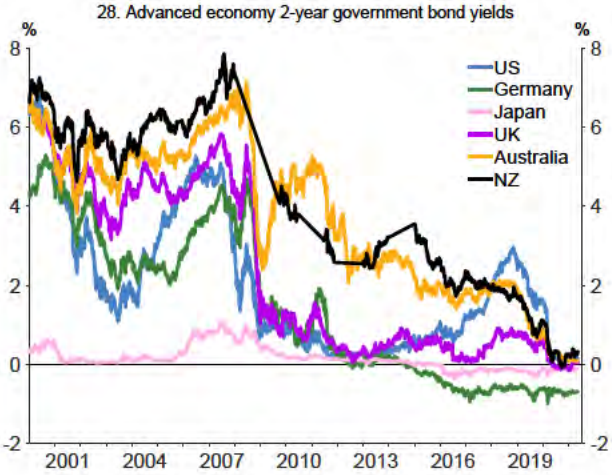

24. Consensus forecast revisions: Asia 2020 CPI inflation
aapc
aapc
China
ASEAN
NIE
19Q4 20Q1 20Q2 20Q3 20Q4 21Q1 21Q2 21Q3 21Q4

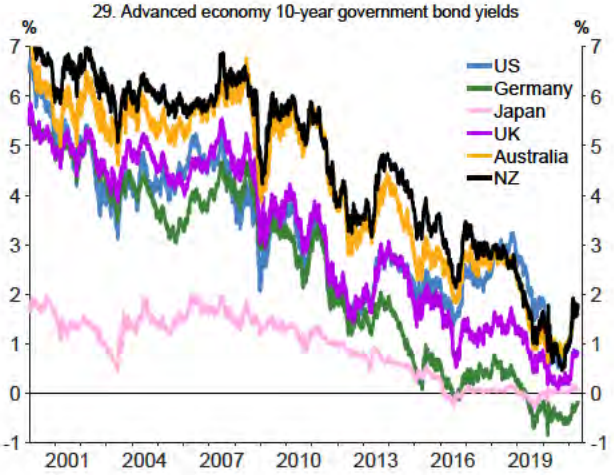
Aggregate

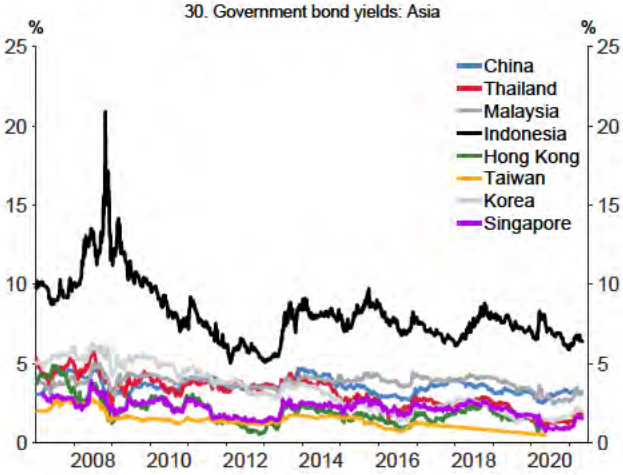

25. NZ SIM world short rate (80% US, 20% Aus)
Annual %
Annual %
Current forecast
Previous MPS
6 months ago


26. Unemployment rate
%
%
OECD
Advanced economies (IMF)

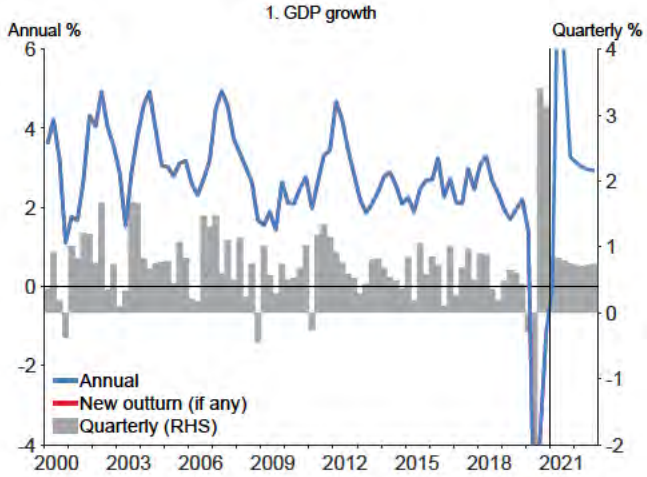

27. Advanced economy policy rates
%
%
US
Euro area
UK
Australia
NZ

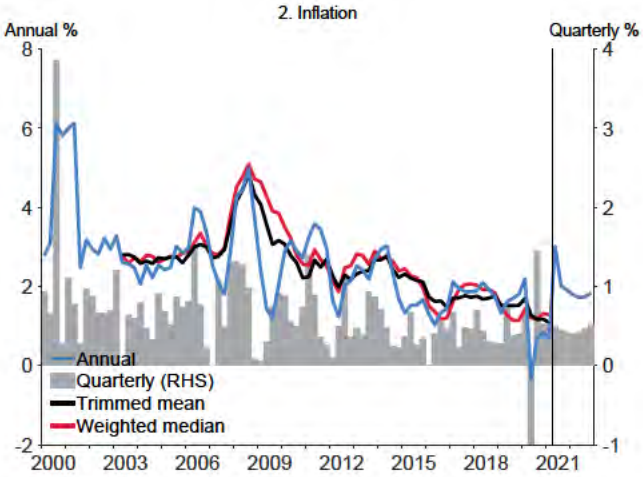

28. Advanced economy 2-year government bond yields
%
%
US
Germany
Japan
UK
Australia
NZ

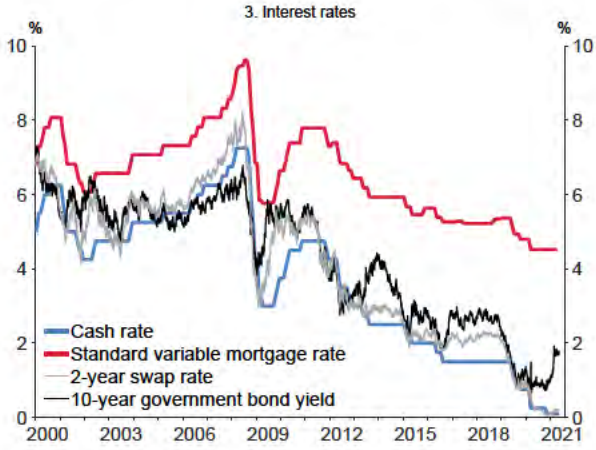

29. Advanced economy 10-year government bond yields
%
%
US
Germany
Japan
UK
Australia
NZ

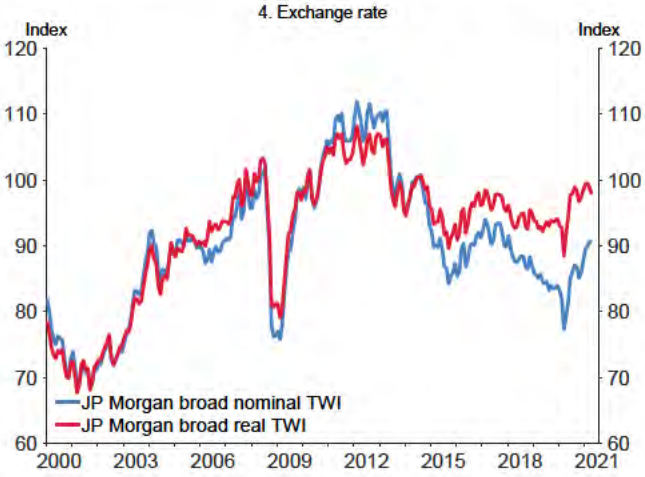

30. Government bond yields: Asia
%
%
China
Thailand
Malaysia
Indonesia
Hong Kong
Taiwan
Korea
Singapore

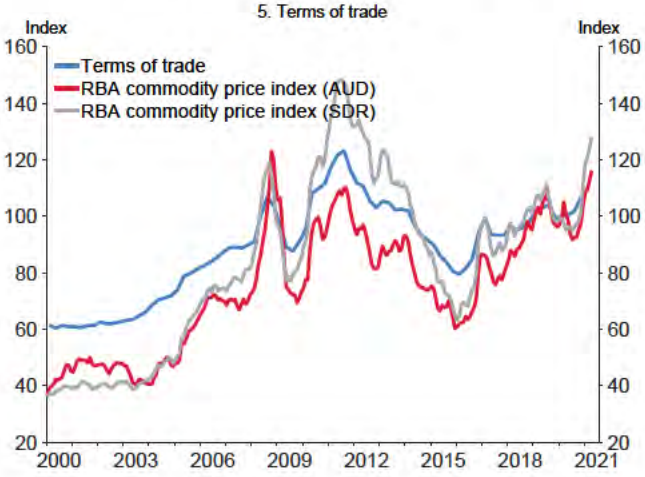
Australia

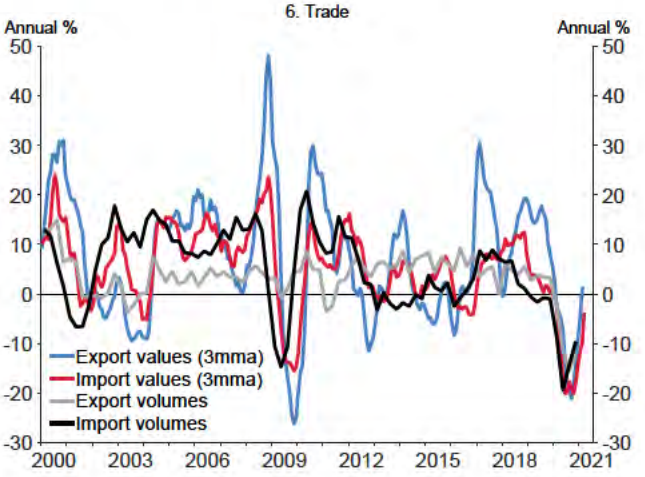

1. GDP growth
Annual %
Quarterly %
Annual
New outturn (if any)
Quarterly (RHS)


2. Inflation
Annual %
Quarterly %
Annual
Quarterly (RHS)
Trimmed mean
Weighted median

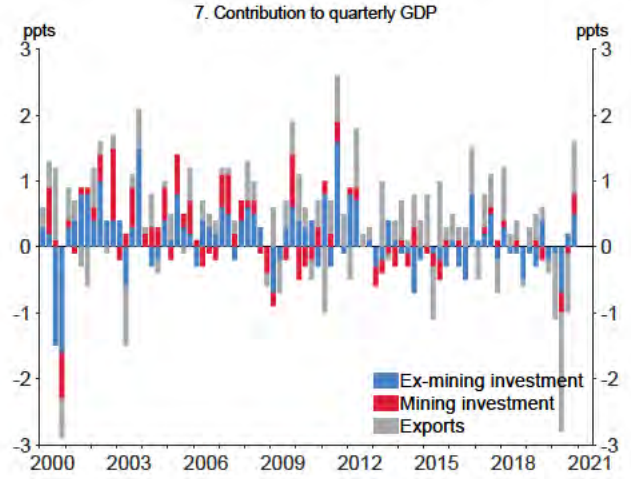

3. Interest rates
%
%
Cash rate
Standard variable mortgage rate
2-year swap rate
10-year government bond yield

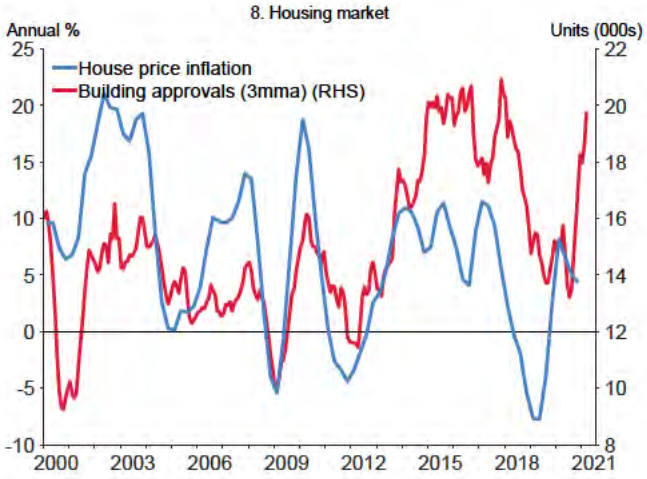

4. Exchange rate
Index
Index
JP Morgan broad nominal TWI
JP Morgan broad real TWI

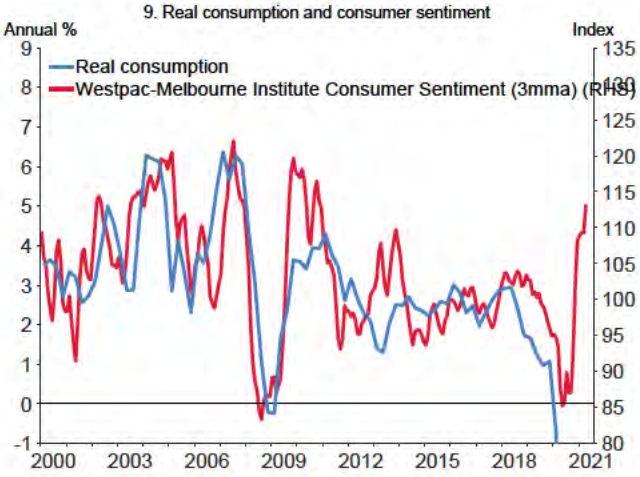

5. Terms of trade
Index
Index
Terms of trade
RBA commodity price index (AUD)
RBA commodity price index (SDR)

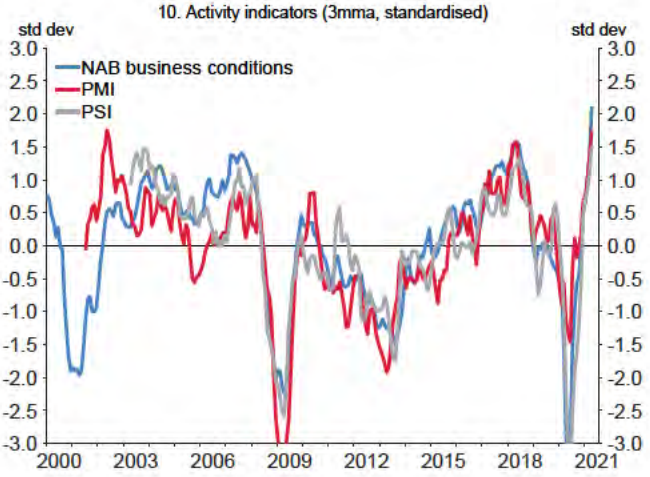

6. Trade
Annual %
Annual %
Export values (3mma)
Import values (3mma)
Export volumes
Import volumes

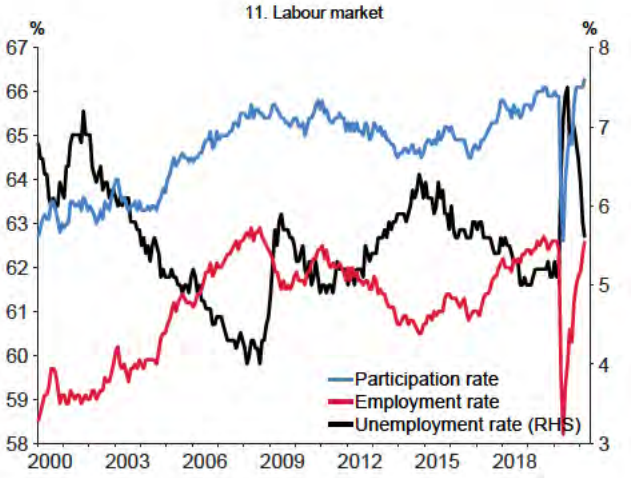
Australia

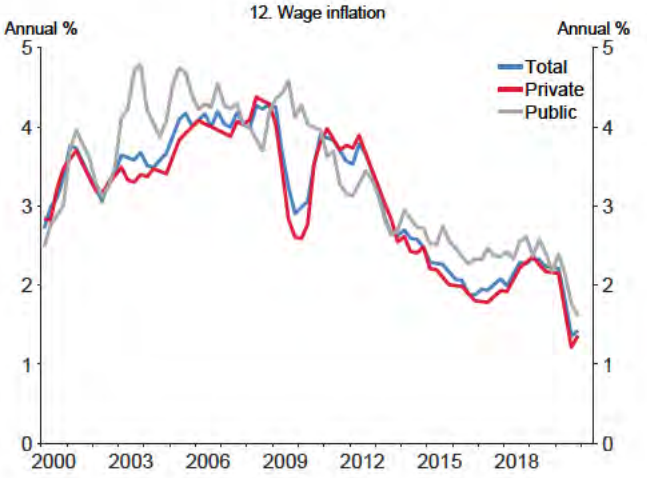

7. Contribution to quarterly GDP
ppts
ppts
Ex-mining investment
Mining investment
Exports


8. Housing market
Annual %
Units (000s)
House price inflation
Building approvals (3mma) (RHS)

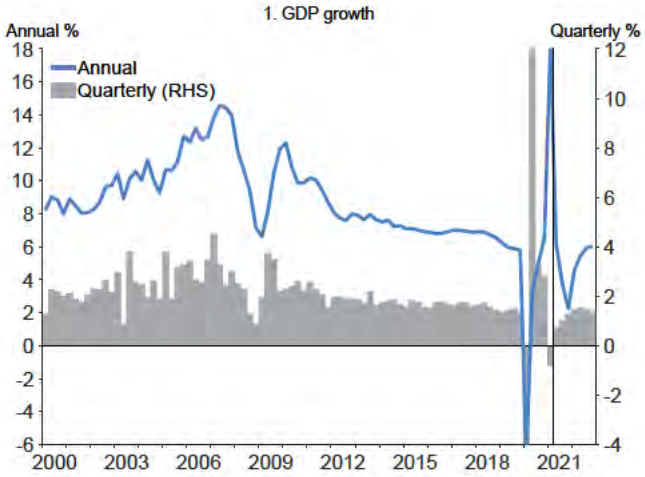

9. Real consumption and consumer sentiment
Annual %
Index
Real consumption
Westpac-Melbourne Institute Consumer Sentiment (3mma) (RHS)

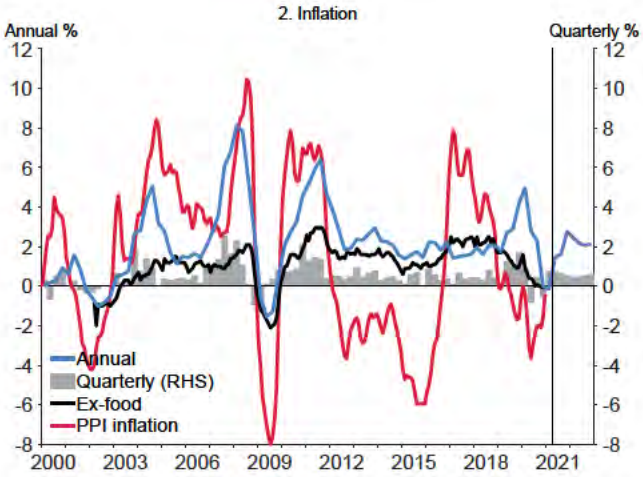

10. Activity indicators (3mma, standardised)
std dev
std dev
NAB business conditions
PMI
PSI

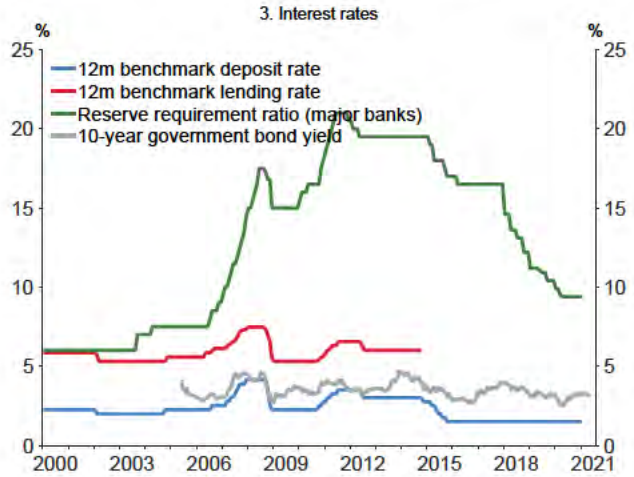

11. Labour market
%
%
Participation rate
Employment rate
Unemployment rate (RHS)

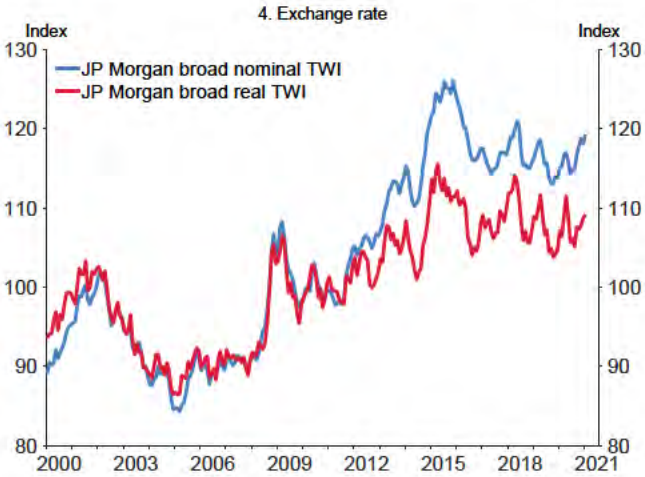

12. Wage inflation
Annual %
Annual %
Total
Private
Public

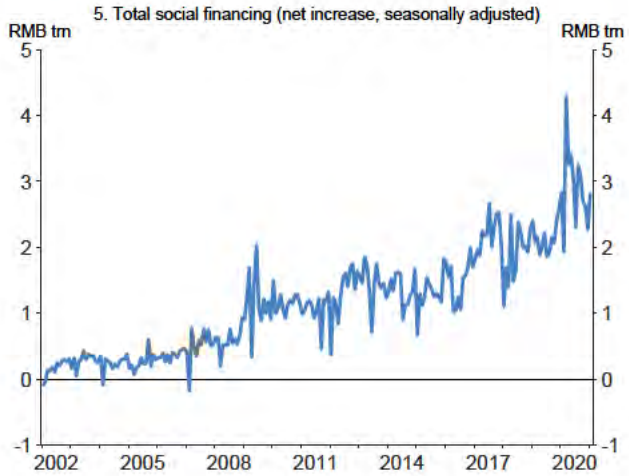
China

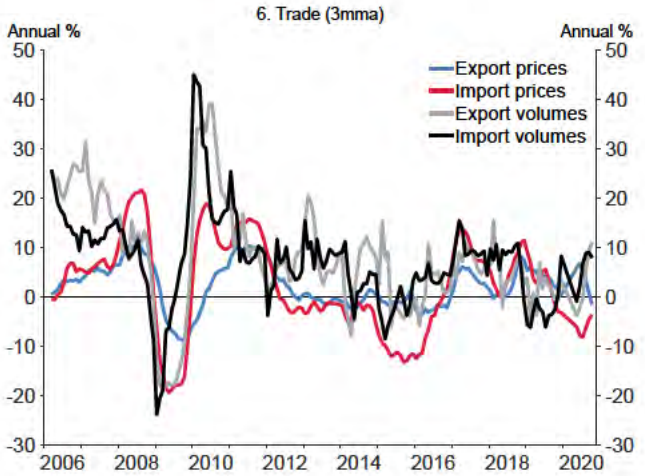

1. GDP growth
Annual %
Quarterly %
Annual
Quarterly (RHS)


2. Inflation
Annual %
Quarterly %
Annual
Quarterly (RHS)
Ex-food
PPI inflation

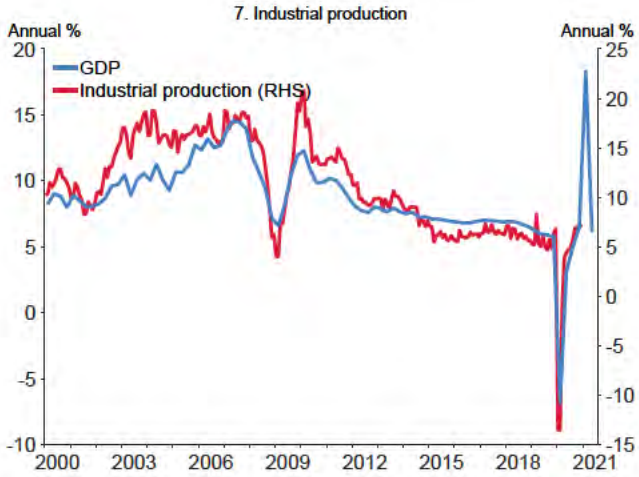

3. Interest rates
%
%
12m benchmark deposit rate
12m benchmark lending rate
Reserve requirement ratio (major banks)
10-year government bond yield

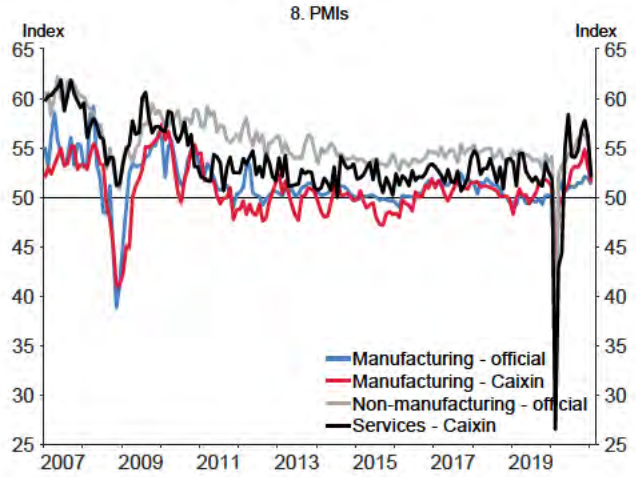

4. Exchange rate
Index
Index
JP Morgan broad nominal TWI
JP Morgan broad real TWI

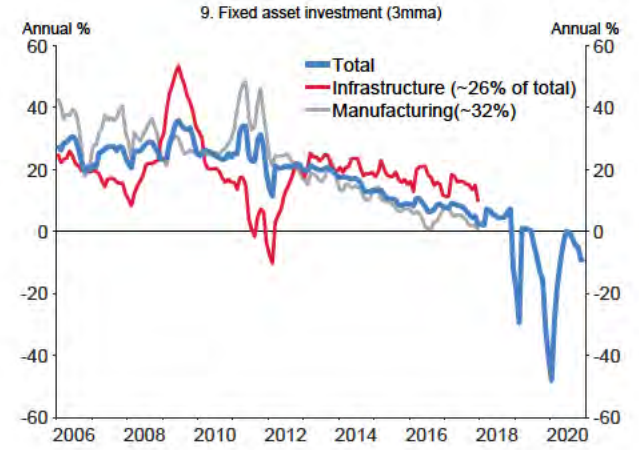

5. Total social financing (net increase, seasonally adjusted)
RMB trn
RMB trn

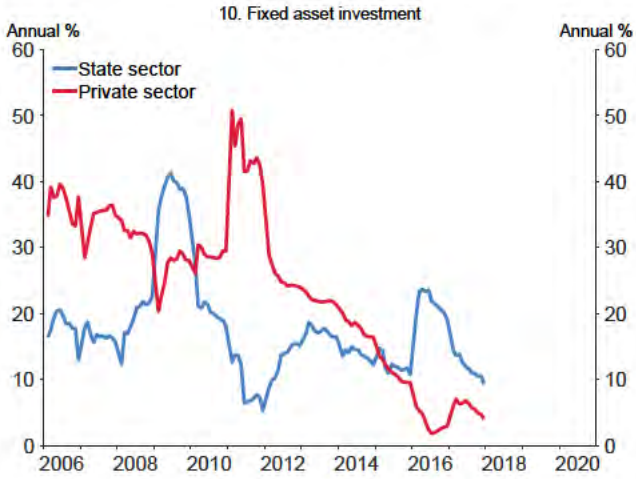

6. Trade (3mma)
Annual %
Annual %
Export prices
Import prices
Export volumes
Import volumes

China


7. Industrial production
Annual %
Annual %
GDP
Industrial production (RHS)
20
15
10
5
0
-5
-10
25
20
15
10
5
0
-5
-10
-15
2000
2003
2006
2009
2012
2015
2018
2021


8. PMIs
Index
Index
Manufacturing - official
Manufacturing - Caixin
Non-manufacturing - official
Services - Caixin
65
60
55
50
45
40
35
30
25
2007
2009
2011
2013
2015
2017
2019


9. Fixed asset investment (3mma)
Annual %
Annual %
Total
Infrastructure (~26% of total)
Manufacturing(~32%)
60
40
20
0
-20
-40
-60
2006
2008
2010
2012
2014
2016
2018
2020

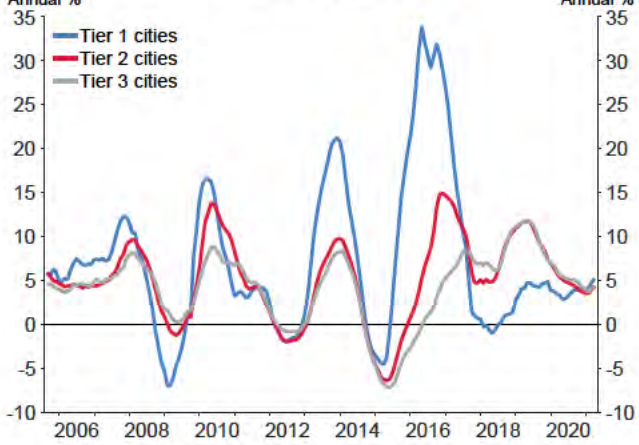

10. Fixed asset investment
Annual %
Annual %
State sector
Private sector
60
50
40
30
20
10
0
2006
2008
2010
2012
2014
2016
2018
2020


11. Real estate investment (3mma)
Annual %
Annual %
50
40
30
20
10
0
-10
2000
2003
2006
2009
2012
2015
2018
2021

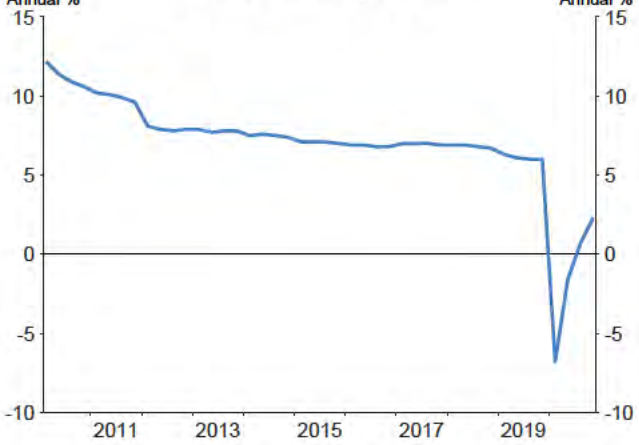

12. Inventory/sales
Months
Months
Total buildings
Residential
7
6
5
4
3
2
1
0
2008
2010
2012
2014
2016
2018
2020

China

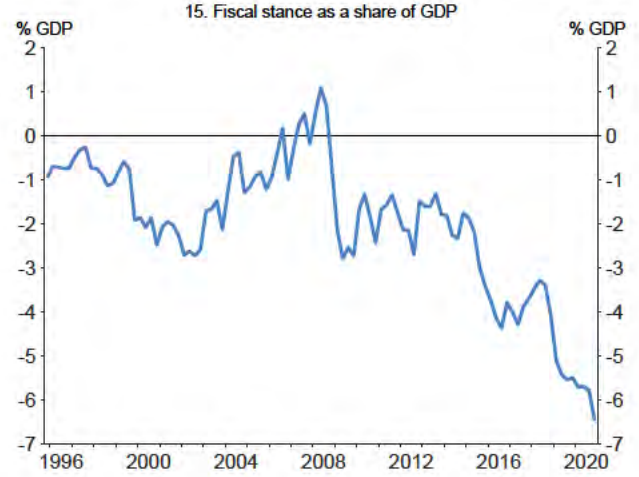
13. House price inflation



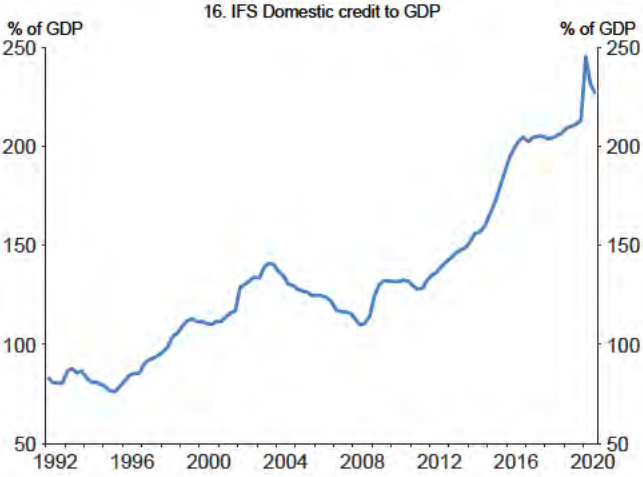
14. Real consumption (year to date)



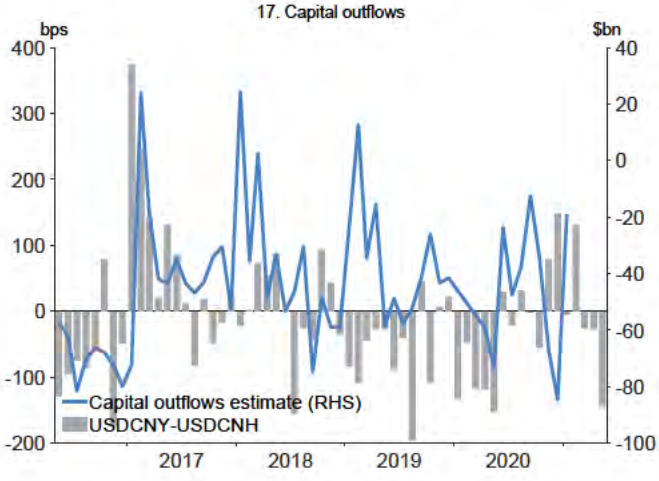
15. Fiscal stance as a share of GDP



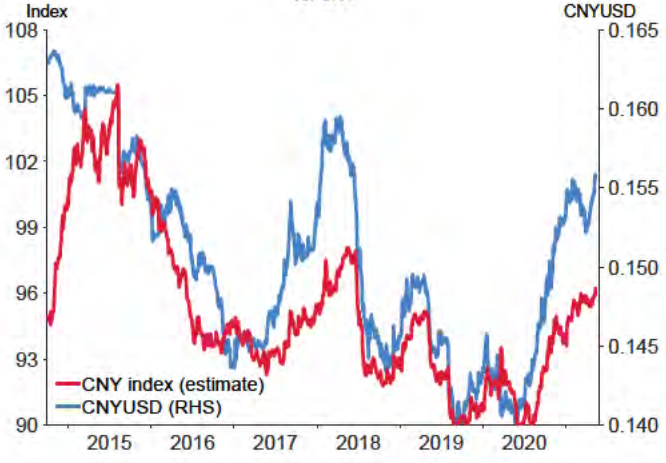
16. IFS Domestic credit to GDP



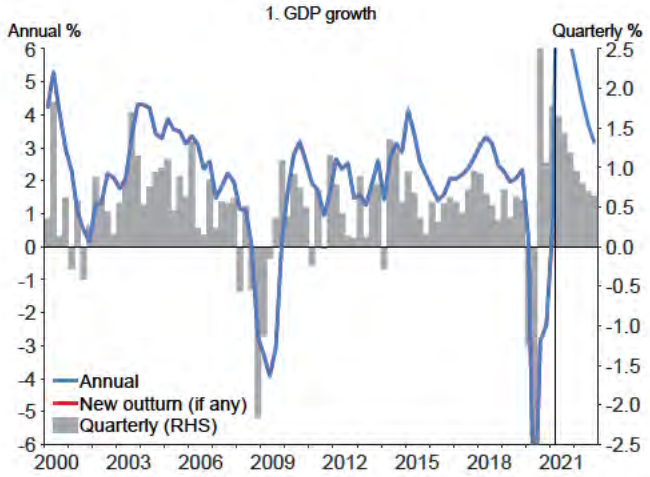
17. Capital outflows

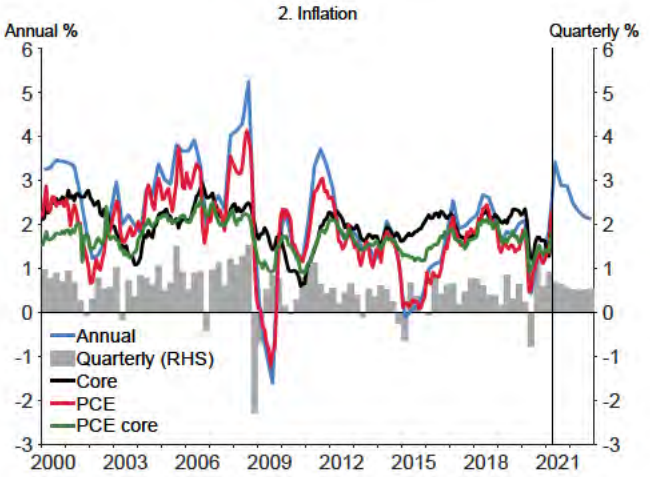


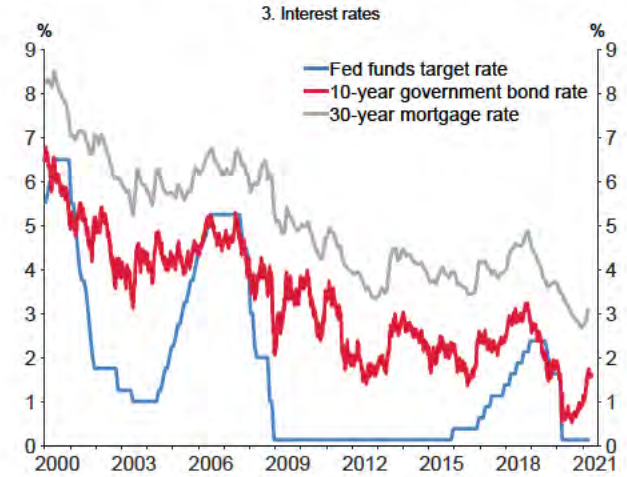
18. CNY

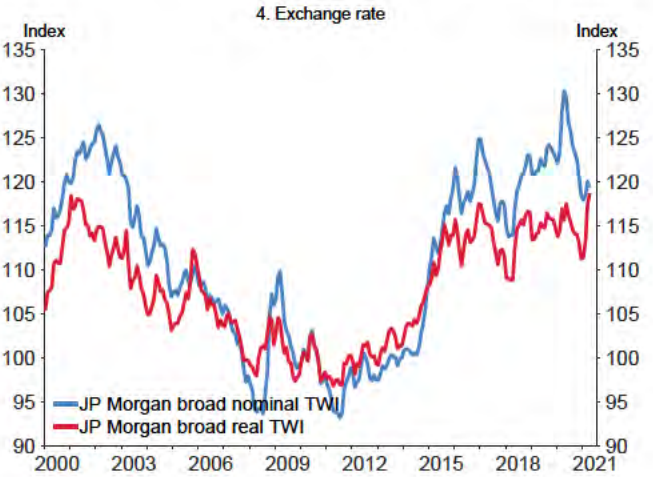


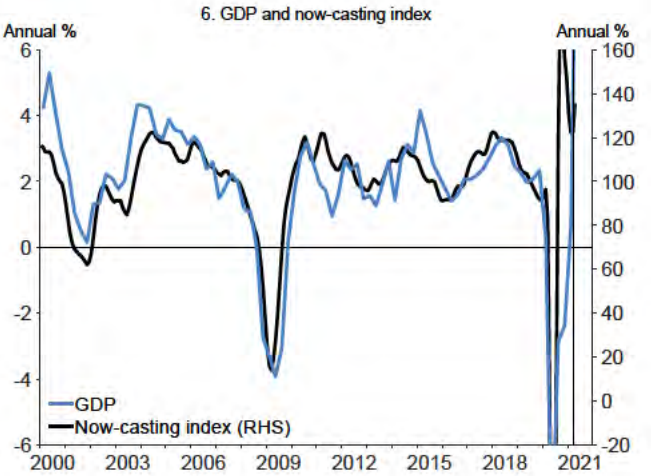
United States



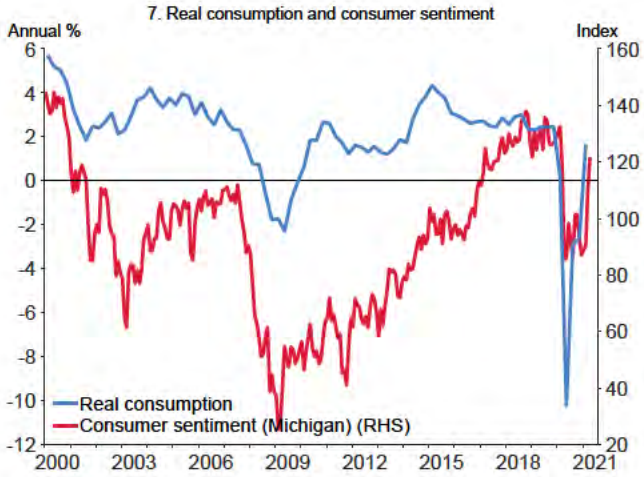


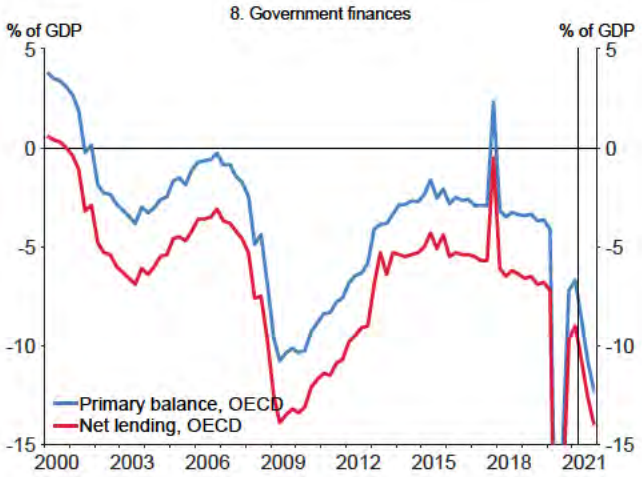


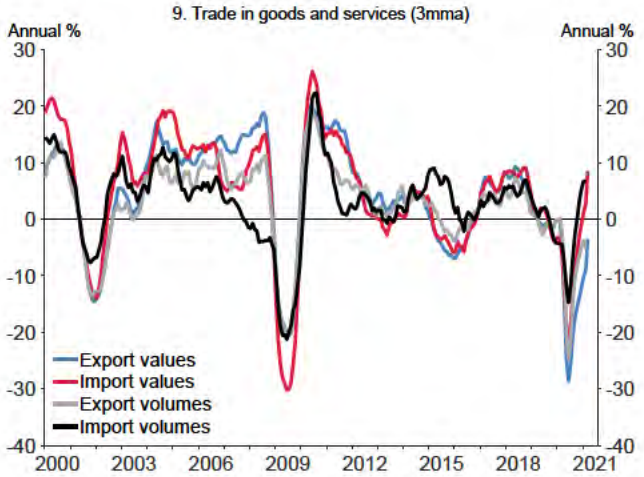


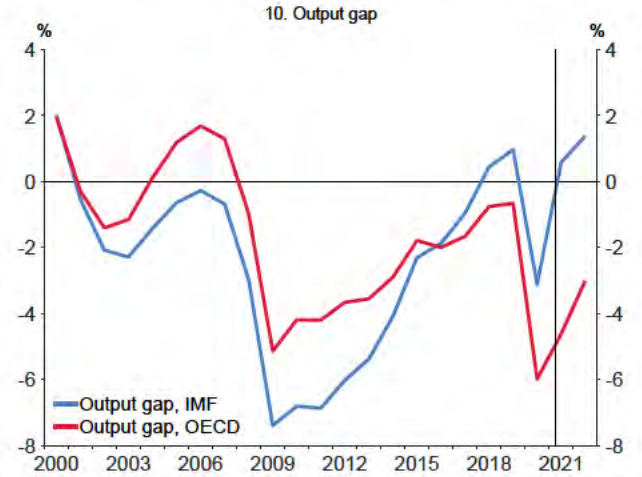


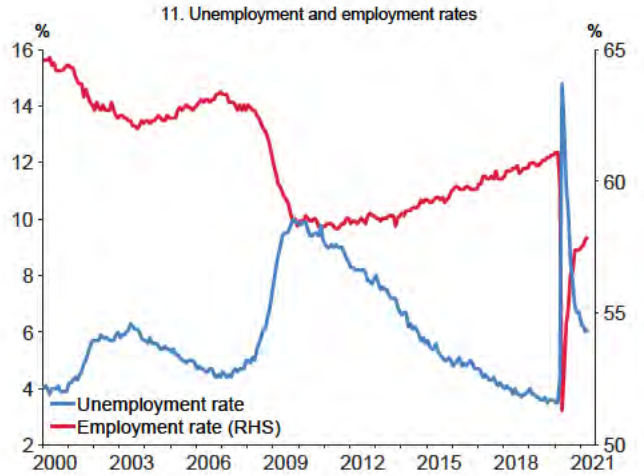
United States



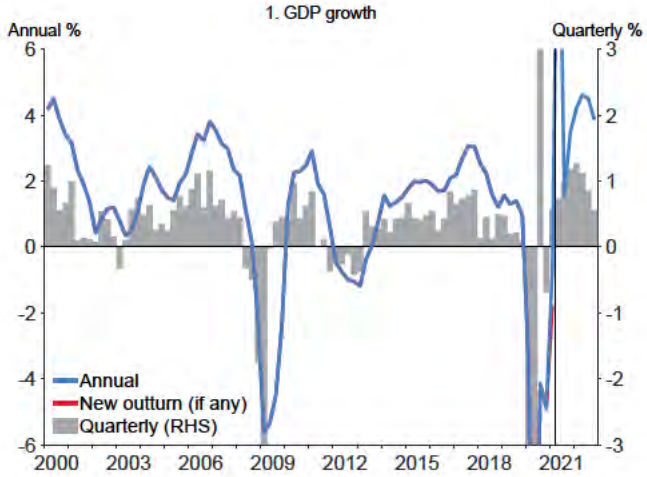


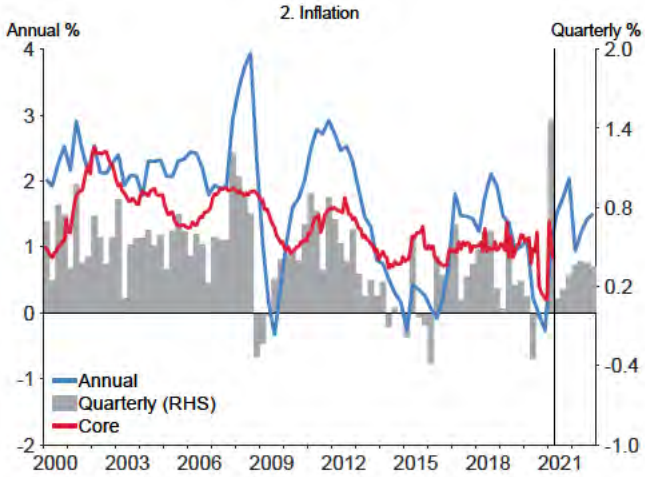


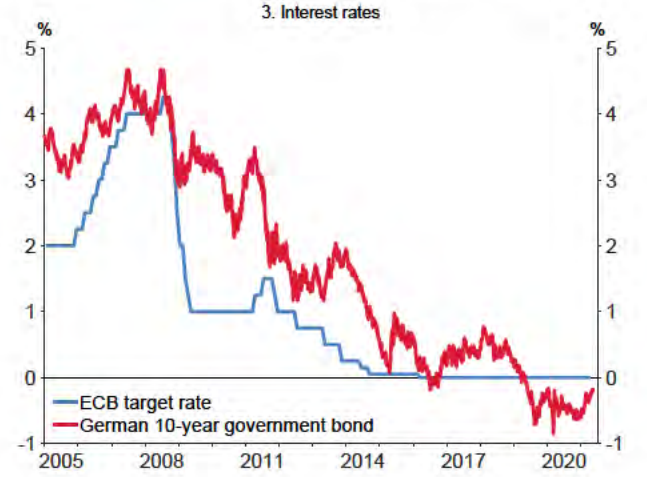


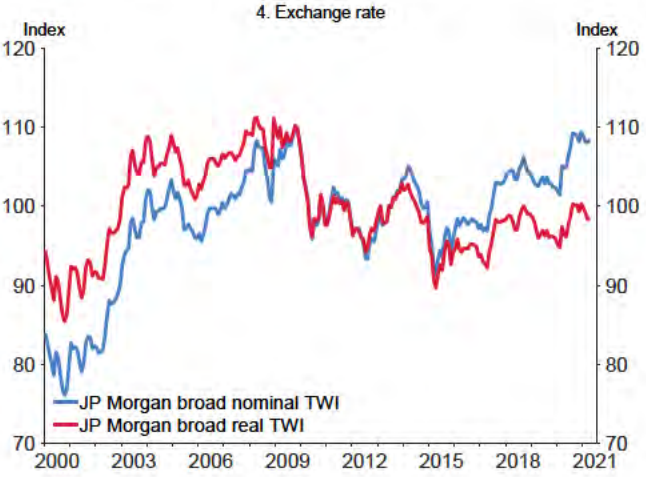


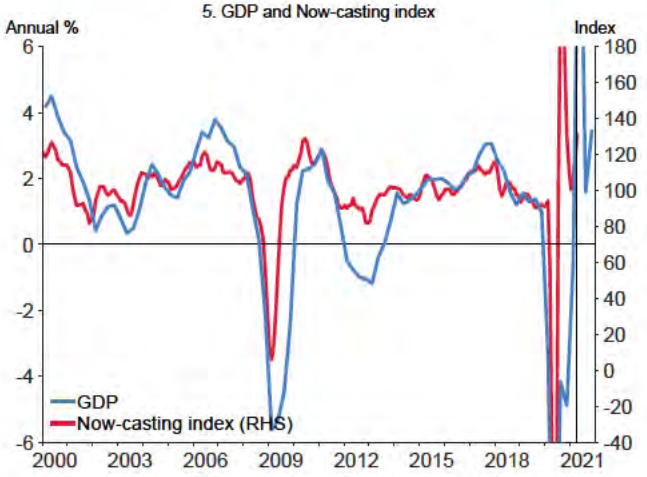
Euro area

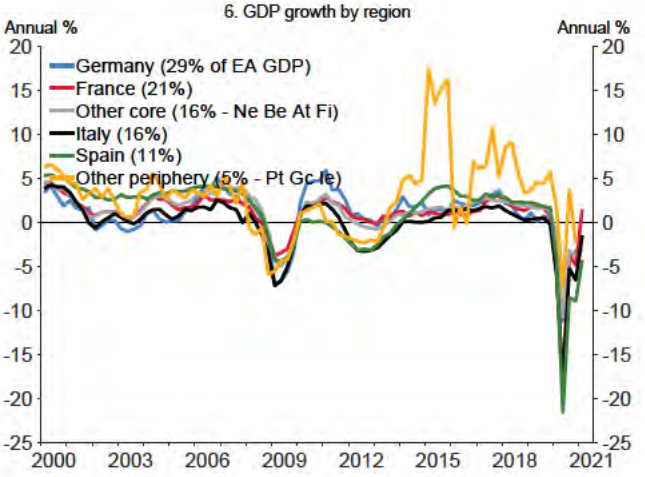

1. GDP growth
Annual %
Quarterly %
Annual
New outturn (if any)
Quarterly (RHS)


2. Inflation
Annual %
Quarterly %
Annual
Quarterly (RHS)
Core

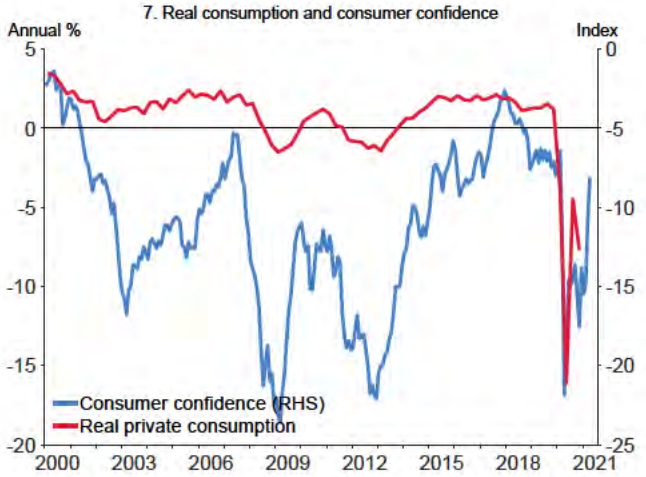

3. Interest rates
%
%
ECB target rate
German 10-year government bond

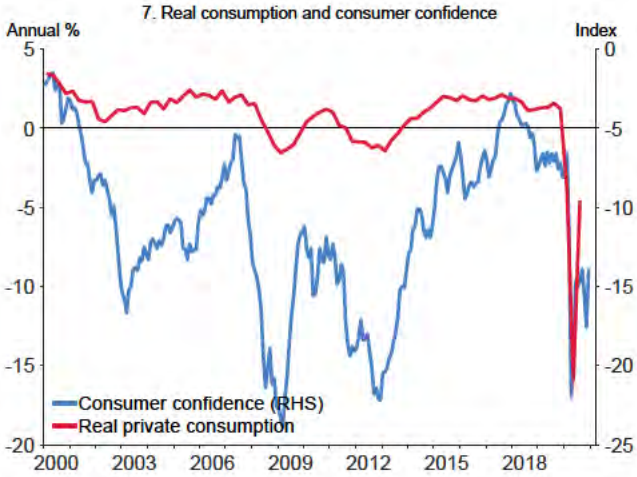

4. Exchange rate
Index
Index
JP Morgan broad nominal TWI
JP Morgan broad real TWI

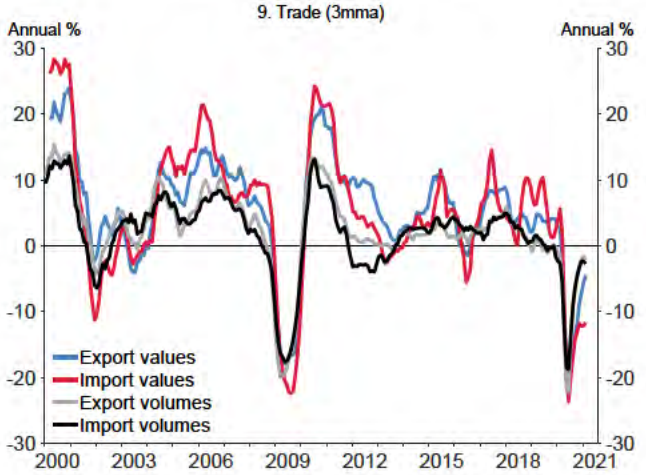

5. GDP and Now-casting index
Annual %
Index
GDP
Now-casting index (RHS)

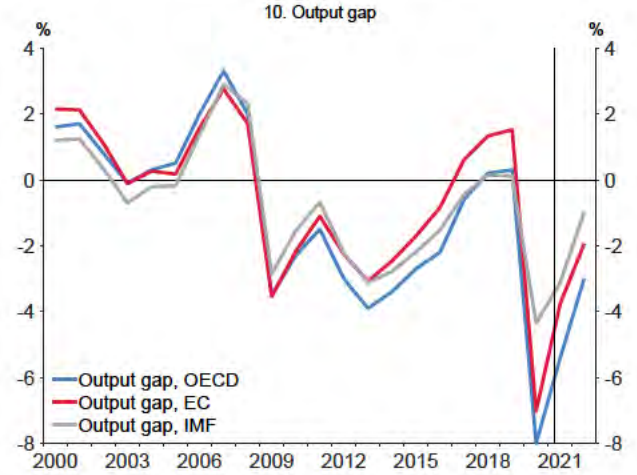

6. GDP growth by region
Annual %
Annual %
Germany (29% of EA GDP)
France (21%)
Other core (16% - Ne Be At Fi)
Italy (16%)
Spain (11%)
Other periphery (5% - Pt Gc Ie)

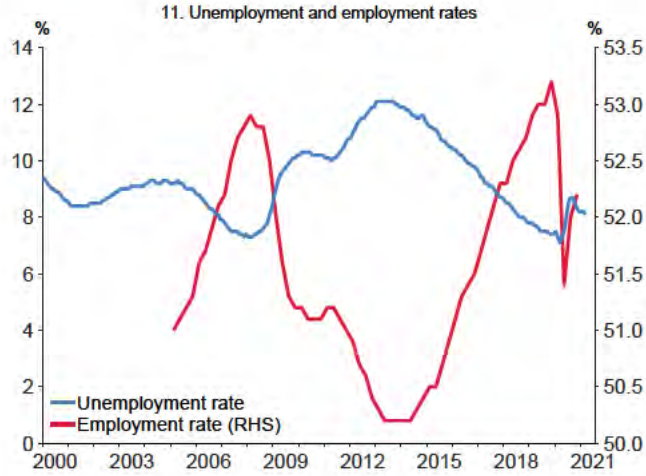
Euro area


7. Real consumption and consumer confidence
Annual %
Index
Consumer confidence (RHS)
Real private consumption


7. Real consumption and consumer confidence
Annual %
Index
Consumer confidence (RHS)
Real private consumption

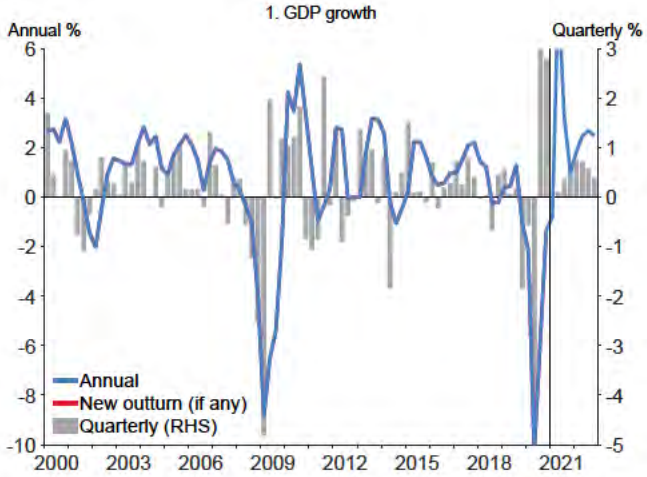

9. Trade (3mma)
Annual %
Annual %
Export values
Import values
Export volumes
Import volumes

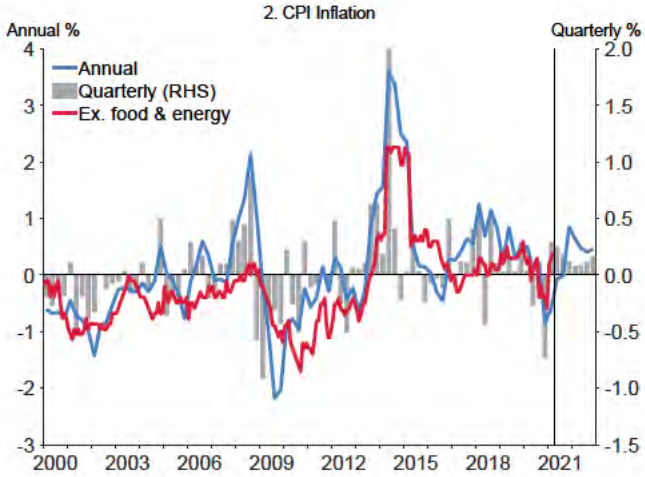

10. Output gap
%
%
Output gap, OECD
Output gap, EC
Output gap, IMF

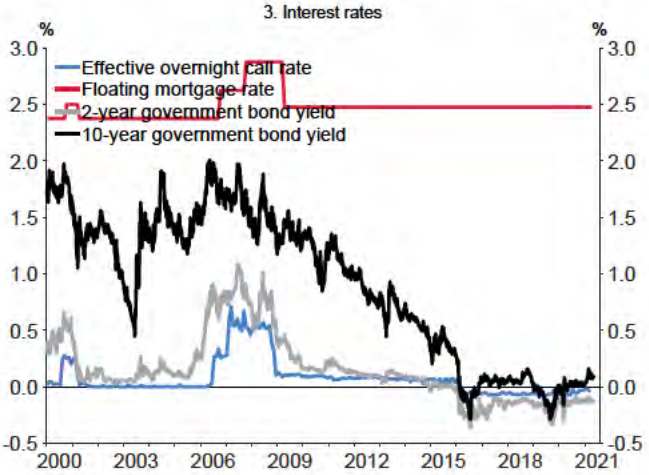

11. Unemployment and employment rates
%
%
Unemployment rate
Employment rate (RHS)

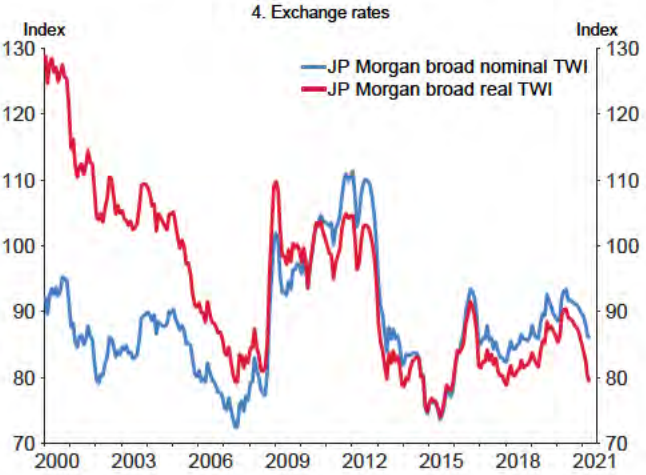

12. Housing market
Annual %
Annual %
Gross fixed capital formation, housing
House price index (RHS)

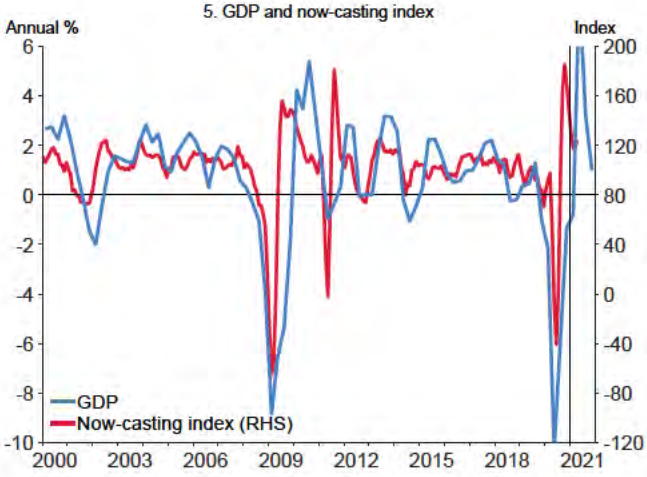
Japan

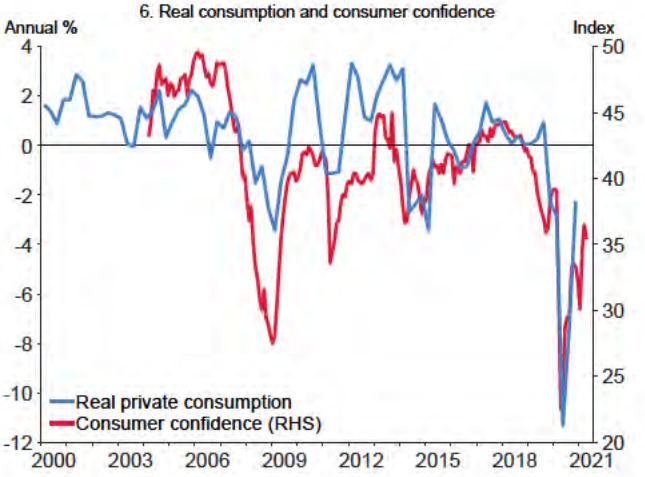

1. GDP growth
Annual %
Quarterly %
Annual
New outturn (if any)
Quarterly (RHS)


2. CPI Inflation
Annual %
Quarterly %
Annual
Quarterly (RHS)
Ex. food & energy


3. Interest rates
%
%
Effective overnight call rate
Floating mortgage rate
2-year government bond yield
10-year government bond yield

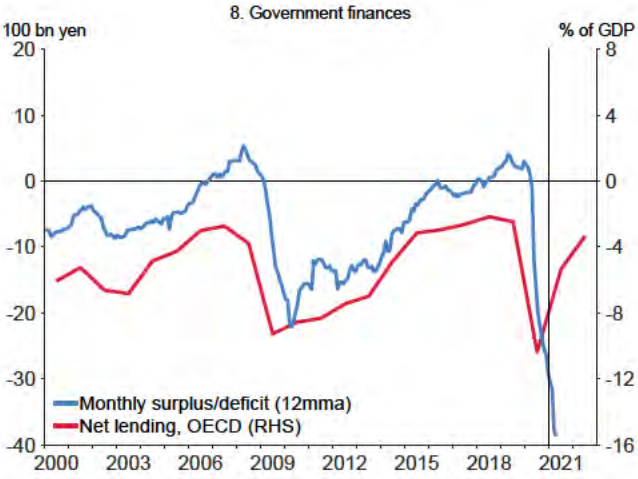

4. Exchange rates
Index
Index
JP Morgan broad nominal TWI
JP Morgan broad real TWI

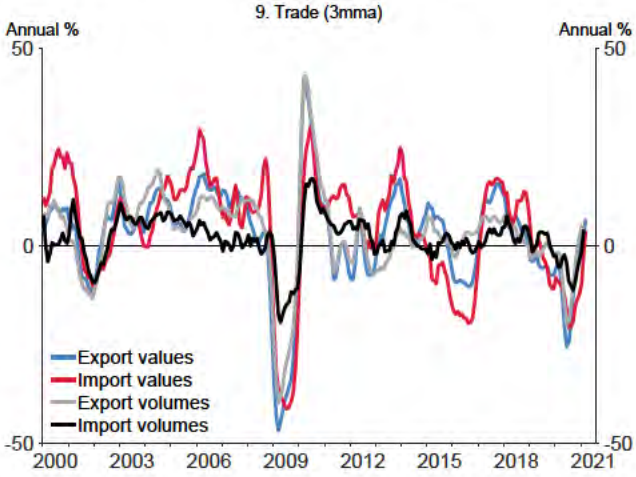

5. GDP and now-casting index
Annual %
Index
GDP
Now-casting index (RHS)

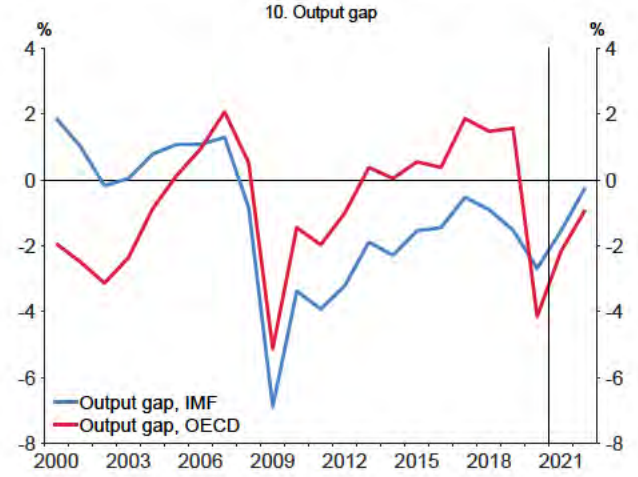

6. Real consumption and consumer confidence
Annual %
Index
Real private consumption
Consumer confidence (RHS)

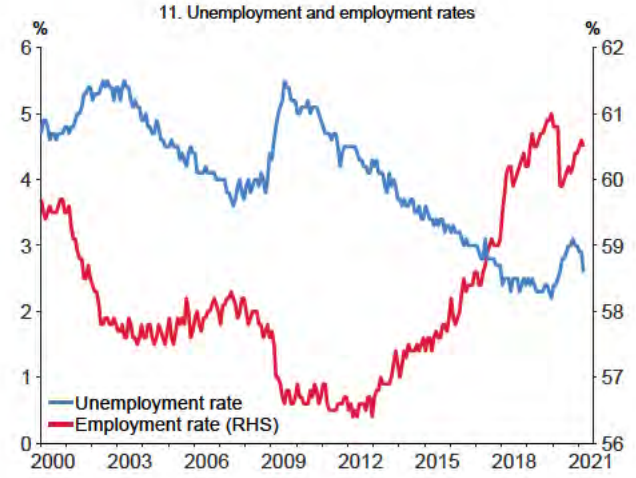
Japan


7. Industrial production and PMI (manufacturing)
Annual %
Index
Industrial production
PMI (RHS)


8. Government finances
100 bn yen
% of GDP
Monthly surplus/deficit (12mma)
Net lending, OECD (RHS)

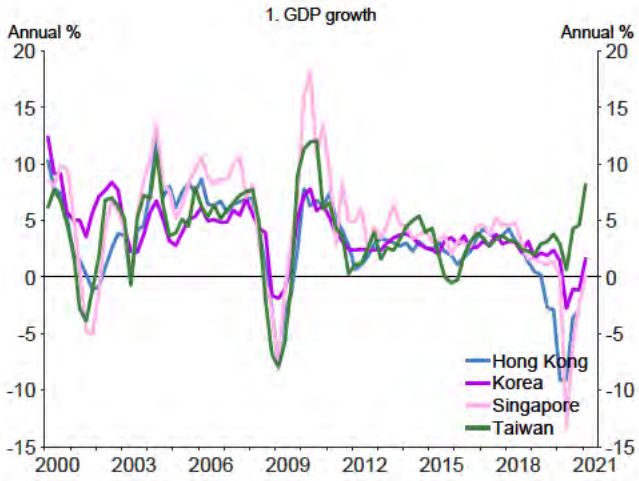

9. Trade (3mma)
Annual %
Annual %
Export values
Import values
Export volumes
Import volumes

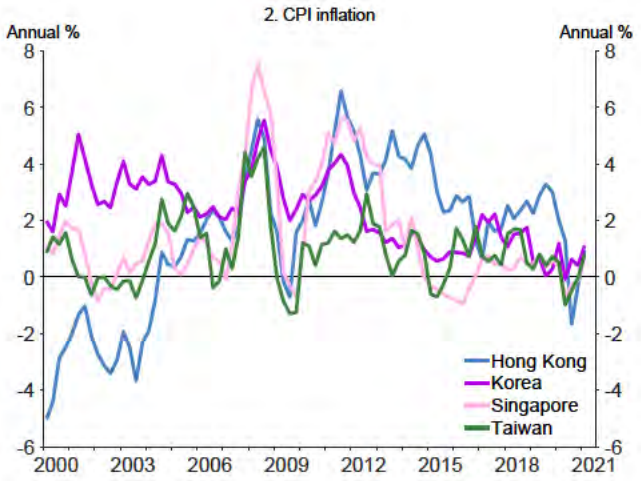

10. Output gap
%
%
Output gap, IMF
Output gap, OECD

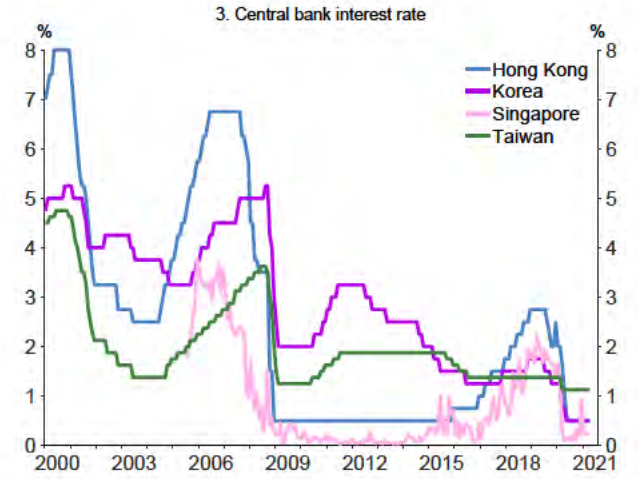

11. Unemployment and employment rates
%
%
Unemployment rate
Employment rate (RHS)

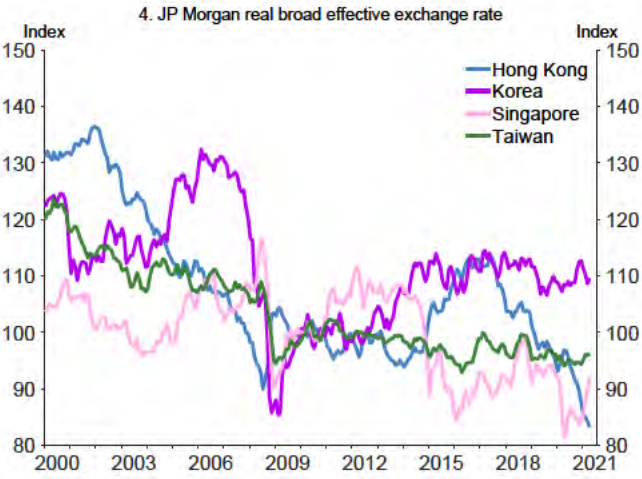

12. Housing market
Annual %
Annual %
Construction works put in place
Gross fixed capital formation, residential buildings

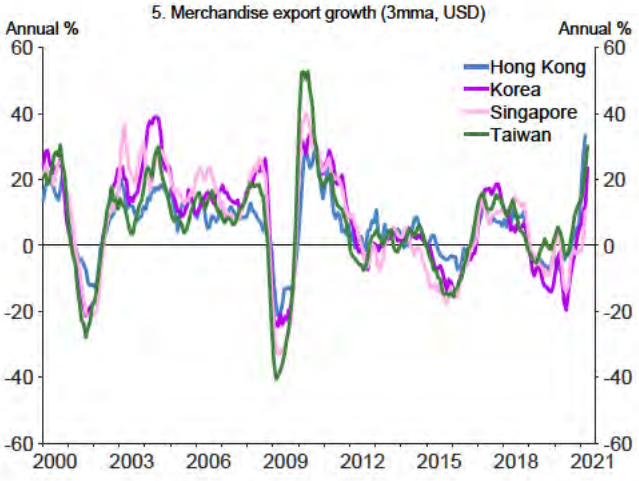
NIE

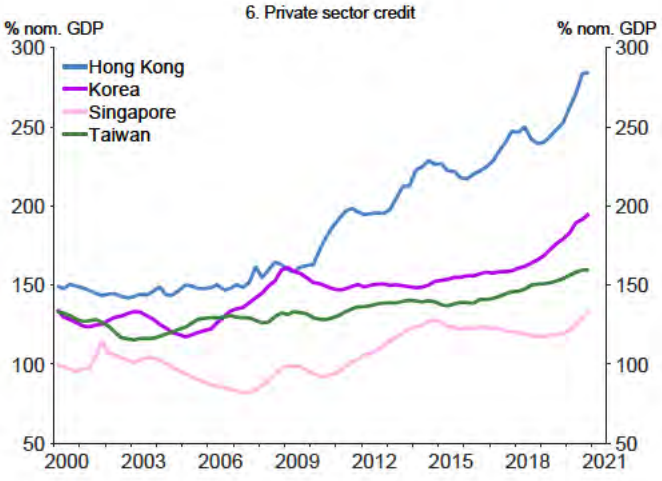

1. GDP growth
Annual %
Annual %
Hong Kong
Korea
Singapore
Taiwan


2. CPI inflation
Annual %
Annual %
Hong Kong
Korea
Singapore
Taiwan

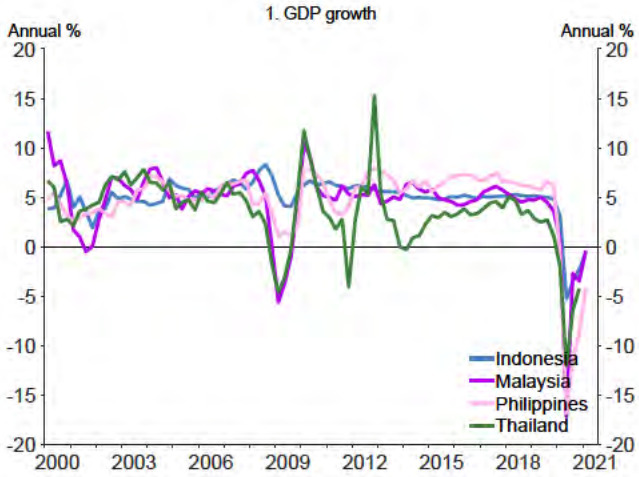

3. Central bank interest rate
%
%
Hong Kong
Korea
Singapore
Taiwan

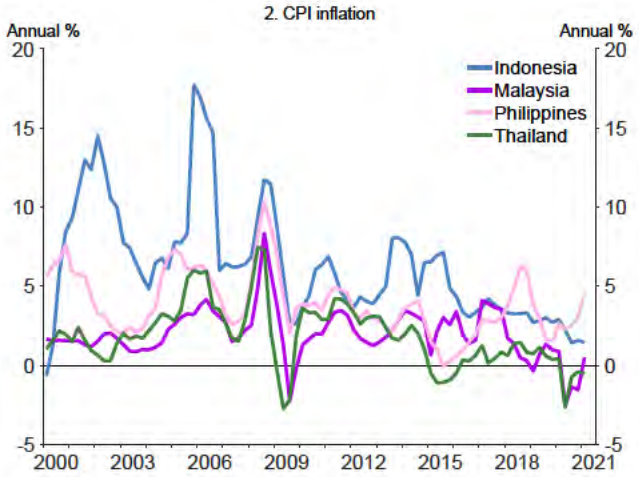

4. JP Morgan real broad effective exchange rate
Index
Index
Hong Kong
Korea
Singapore
Taiwan

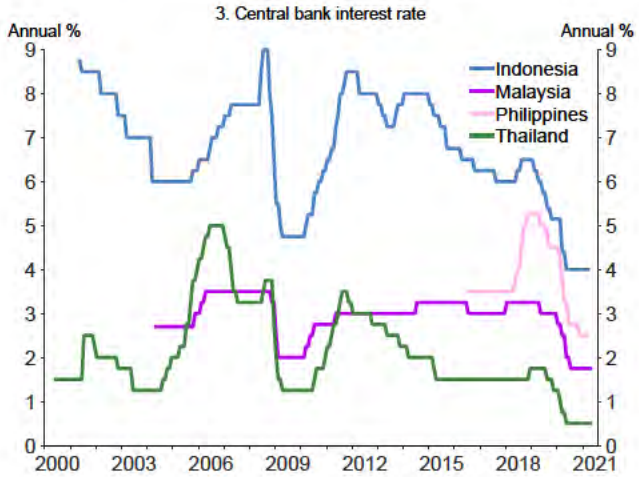

5. Merchandise export growth (3mma, USD)
Annual %
Annual %
Hong Kong
Korea
Singapore
Taiwan

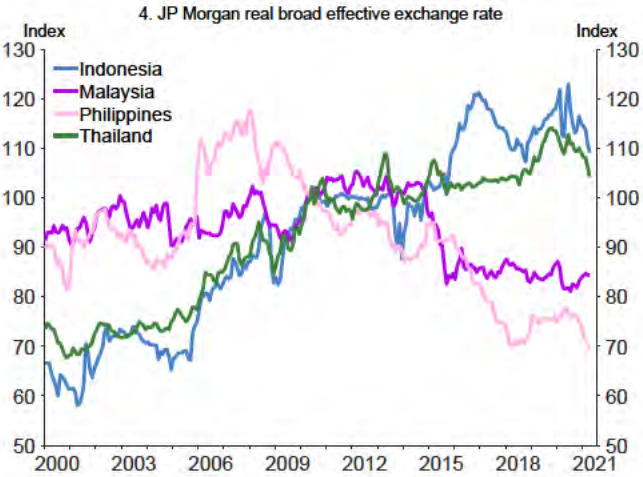

6. Private sector credit
% nom. GDP
% nom. GDP
Hong Kong
Korea
Singapore
Taiwan

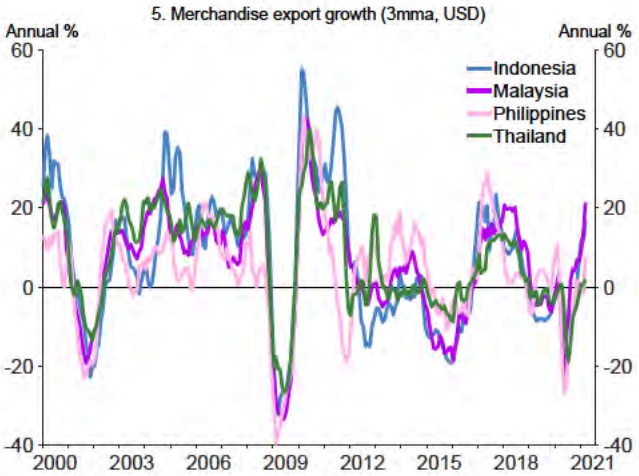
ASEAN

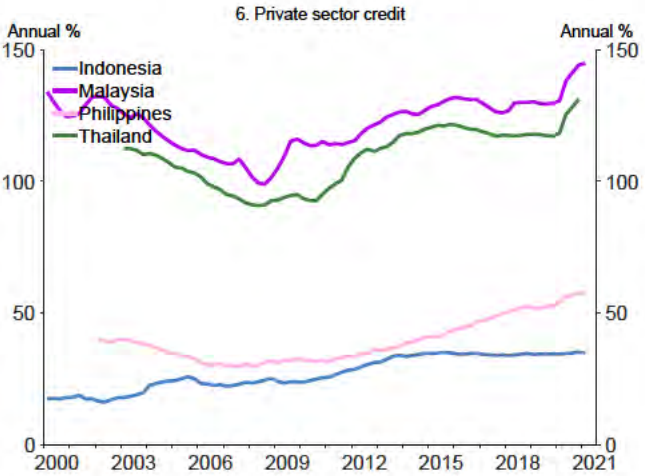

1. GDP growth
Annual %
Annual %
Indonesia
Malaysia
Philippines
Thailand


2. CPI inflation
Annual %
Annual %
Indonesia
Malaysia
Philippines
Thailand


3. Central bank interest rate
Annual %
Annual %
Indonesia
Malaysia
Philippines
Thailand

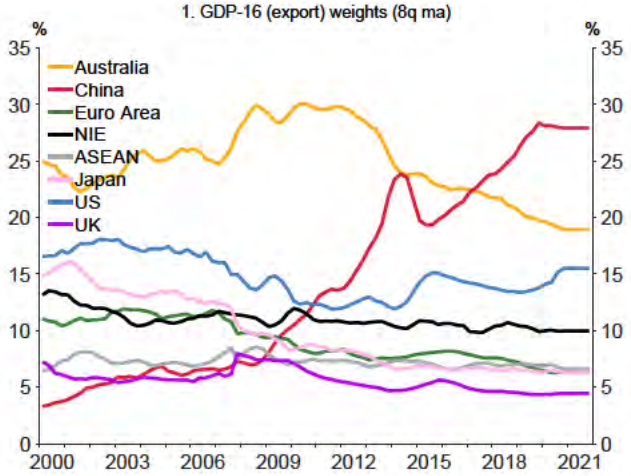

4. JP Morgan real broad effective exchange rate
Index
Index
Indonesia
Malaysia
Philippines
Thailand


5. Merchandise export growth (3mma, USD)
Annual %
Annual %
Indonesia
Malaysia
Philippines
Thailand

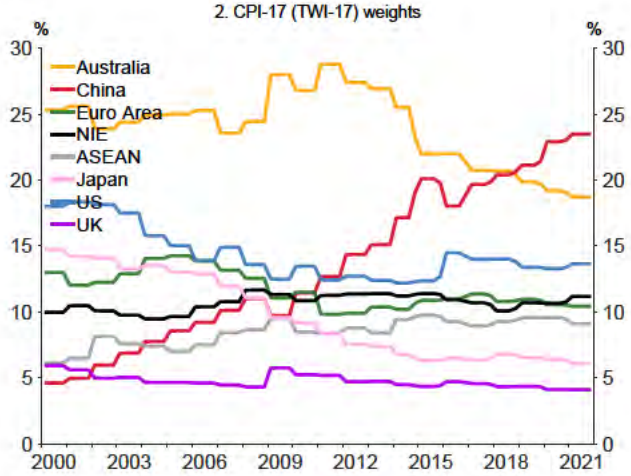

6. Private sector credit
Annual %
Annual %
Indonesia
Malaysia
Philippines
Thailand

Trade composition

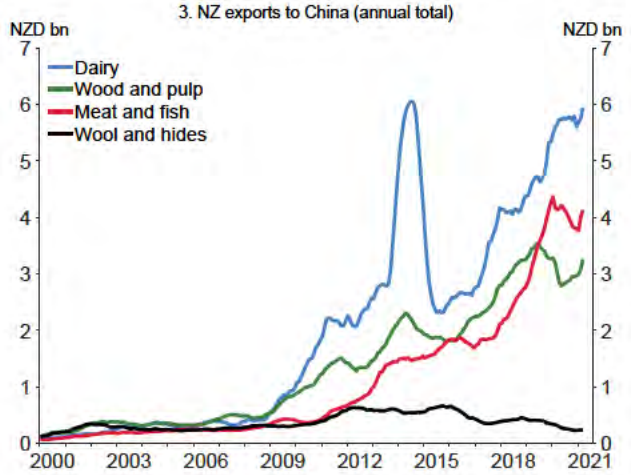
1. GDP-16 (export) weights (8q ma)



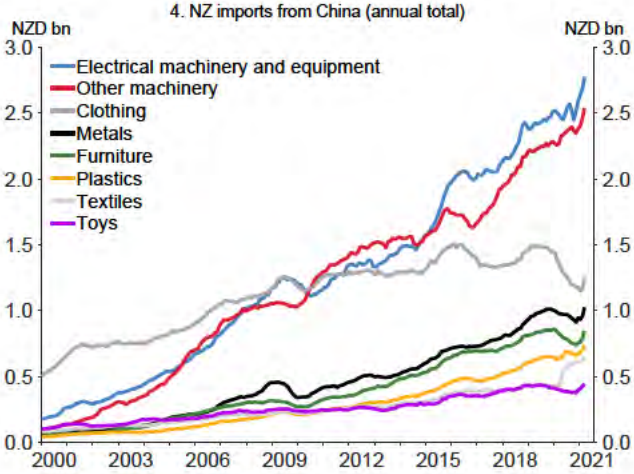
2. CPI-17 (TWI-17) weights



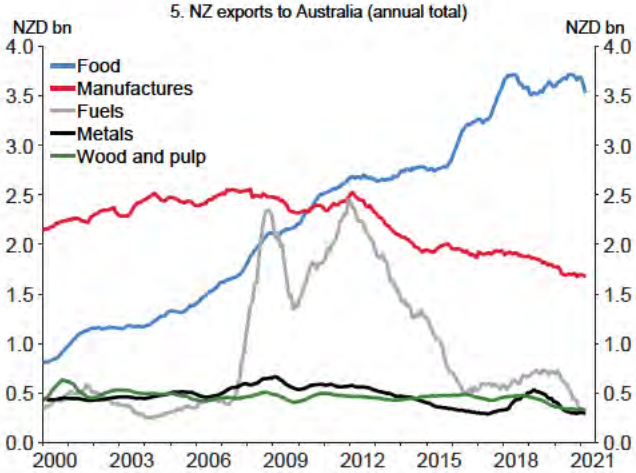
3. NZ exports to China (annual total)



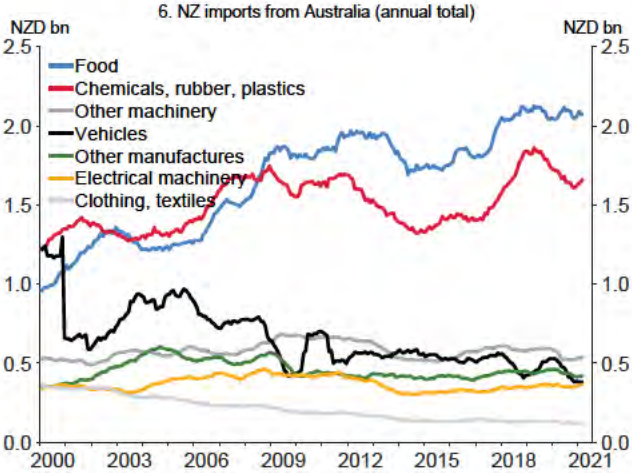
4. NZ imports from China (annual total)



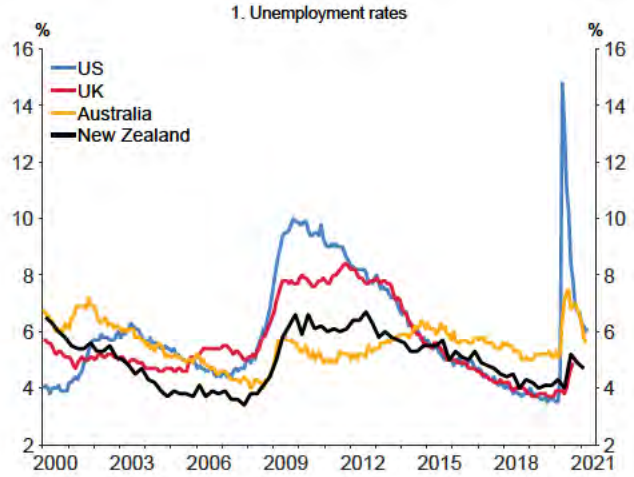
5. NZ exports to Australia (annual total)

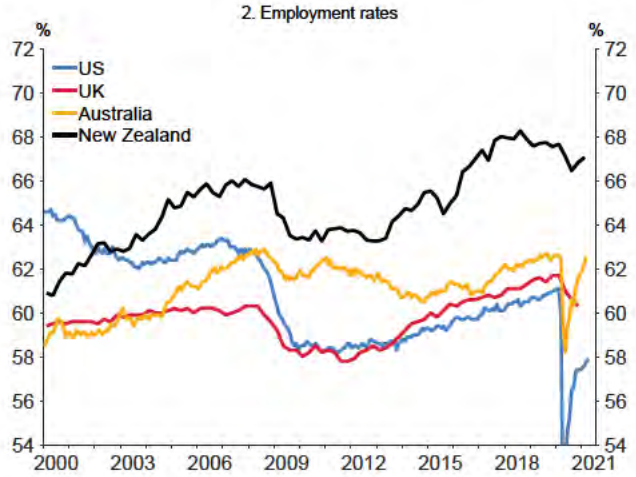


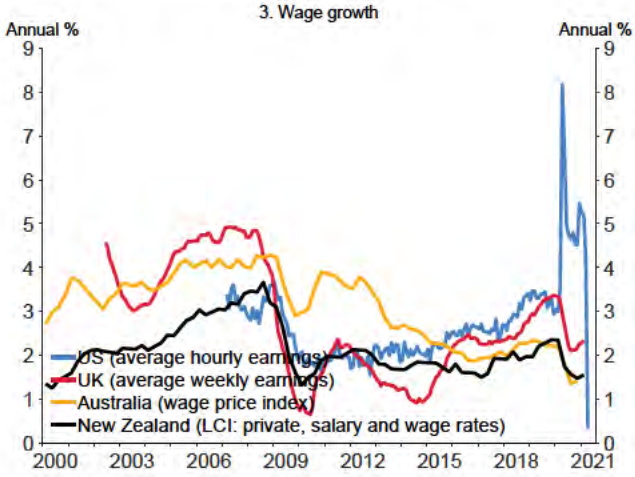
6. NZ imports from Australia (annual total)

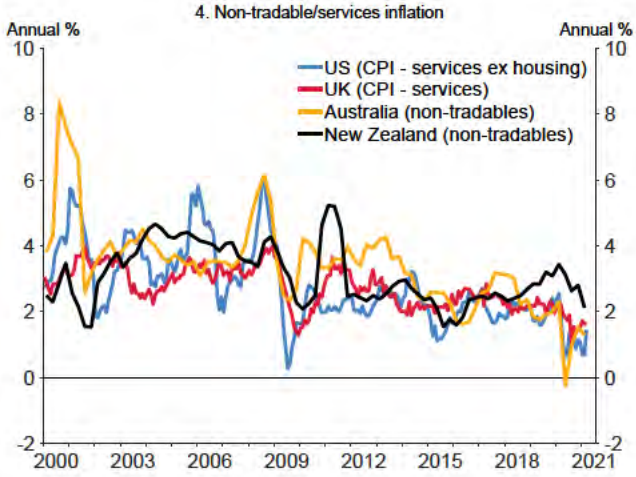


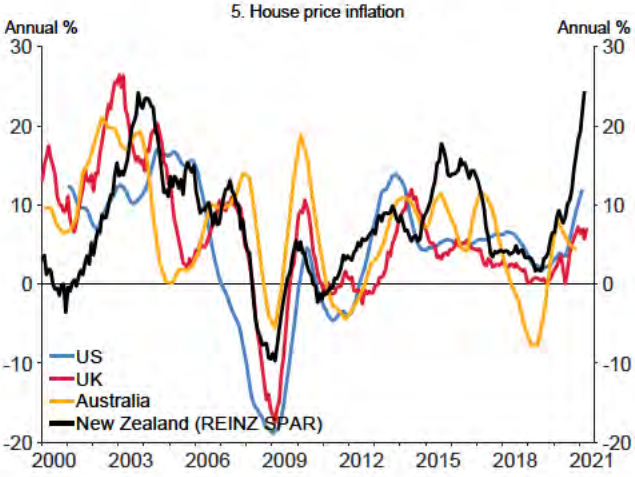
New Zealand comparisons

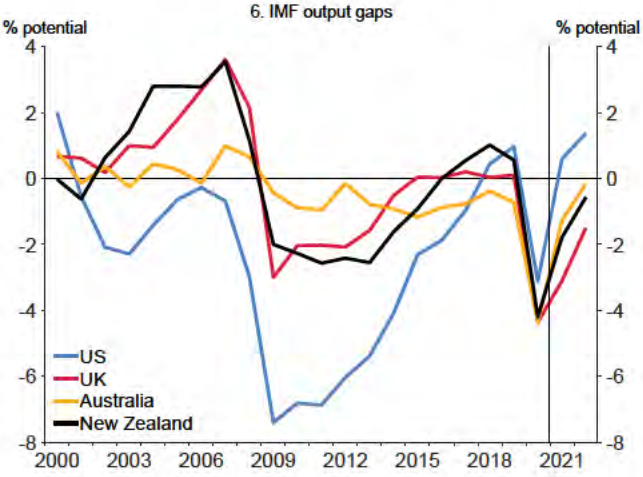












International Chartpack

Location: R \Monetary_ Policy \Policy operations \IMA \Intl \Chart_ pack

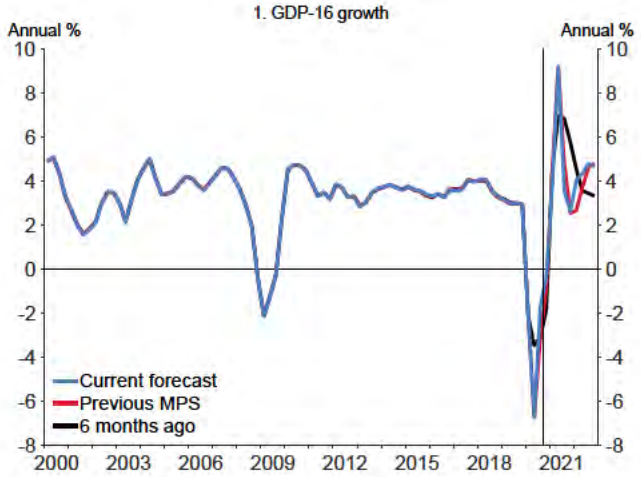
February 11, 2021

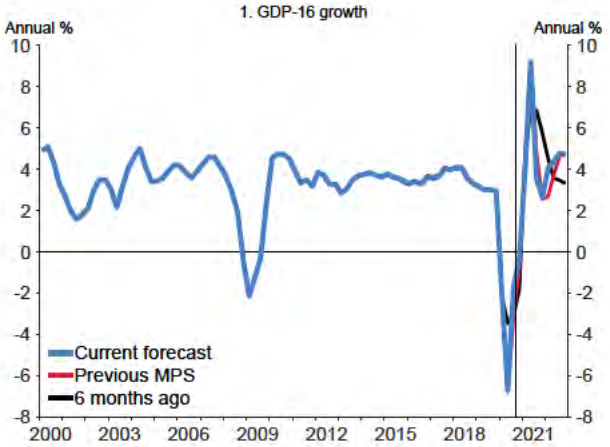
Forecast Table

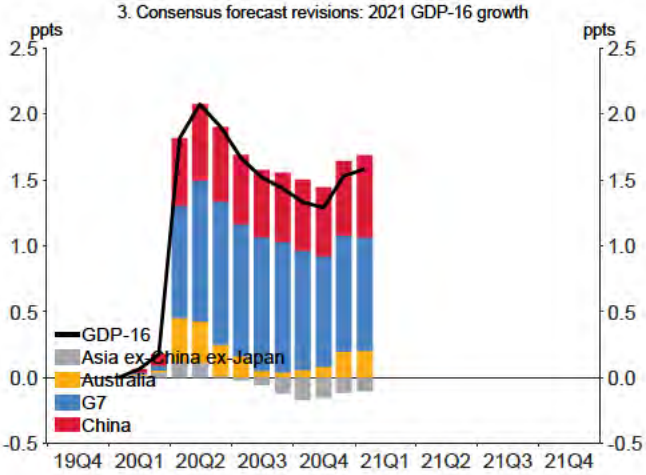
Trading partner real GDP (annual average % change, calendar years)

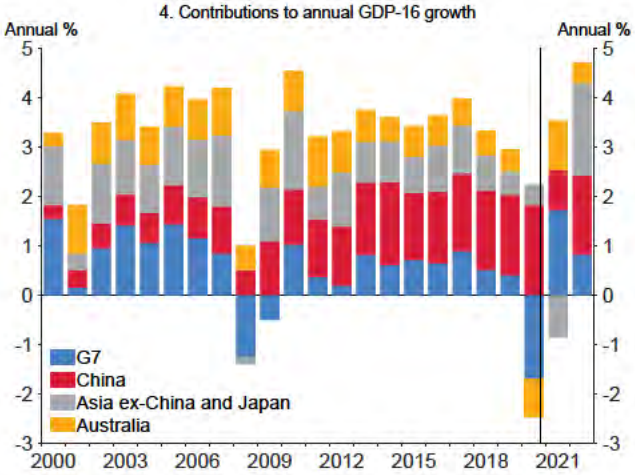
	Trade weight	2014	2015	2016	2017	2018	2019	2020	2021
Australia	19.2%	2.3	2.7	2.4	2.8	1.9	-3.2	3.5	3.1
China	28.0%	7.0	6.9	7.0	6.8	6.1	2.0	7.4	5.9
G7	34.0%	2.3	1.5	2.3	2.0	1.5	-5.8	4.0	3.6
USA	15.2%	3.1	1.7	2.3	3.0	2.2	-3.6	4.4	3.4
euro area	6.3%	1.9	1.8	2.7	1.9	1.3	-7.3	4.4	4.0
Japan	6.4%	1.6	0.7	1.7	0.6	0.3	-5.3	2.4	2.2
UK	4.4%	2.4	1.7	1.7	1.3	1.4	-11.1	4.3	5.8
Canada	1.8%	0.7	1.0	3.0	2.4	1.9	-5.7	4.5	4.0
AxJxC	18.9%	3.8	4.3	4.7	4.2	2.7	-3.3	3.1	5.2
NIEs	9.9%	2.5	2.7	3.6	3.0	1.1	-2.7	4.3	3.3
Korea	3.2%	2.8	2.9	3.2	2.9	2.0	-0.9	-	-
Hong Kong	2.2%	2.4	2.2	3.8	2.9	-1.2	-6.2	-	-
Taiwan	2.2%	1.5	2.2	3.3	2.8	3.0	3.0	-	-
Singapore	2.3%	3.0	3.3	4.3	3.5	0.7	-5.7	-	-
ASEAN	6.8%	4.8	4.9	5.4	5.0	4.4	-5.8	5.5	5.7
Thailand	1.7%	3.2	3.4	4.1	4.1	2.4	-	-	-
Indonesia	1.7%	4.9	5.0	5.1	5.2	5.0	-2.0	-	-
Malaysia	1.9%	5.0	4.4	5.8	4.8	4.3	-	-	-
Philippines	1.5%	6.3	7.1	6.9	6.3	6.0	-9.4	-	-
India	2.2%	7.5	9.0	6.6	6.7	4.8	-	-	-
GDP-16	100.0%	3.6	3.4	3.8	3.8	3.0	-2.7	4.8	4.5

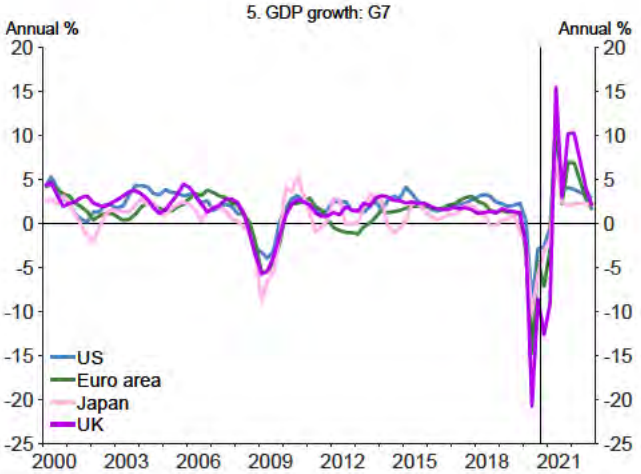
Aggregate

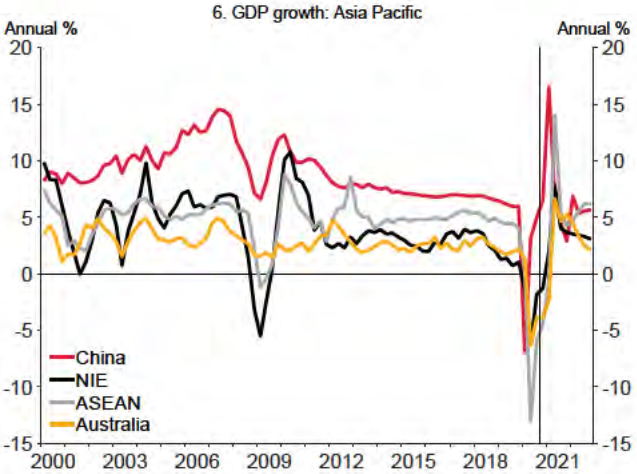

1. GDP-16 growth
Annual %
Annual %
Current forecast
Previous MPS
6 months ago


1. GDP-16 growth
Annual %
Annual %
Current forecast
Previous MPS
6 months ago


3. Consensus forecast revisions: 2021 GDP-16 growth
ppts
ppts
GDP-16
Asia ex-China ex-Japan
Australia
G7
China

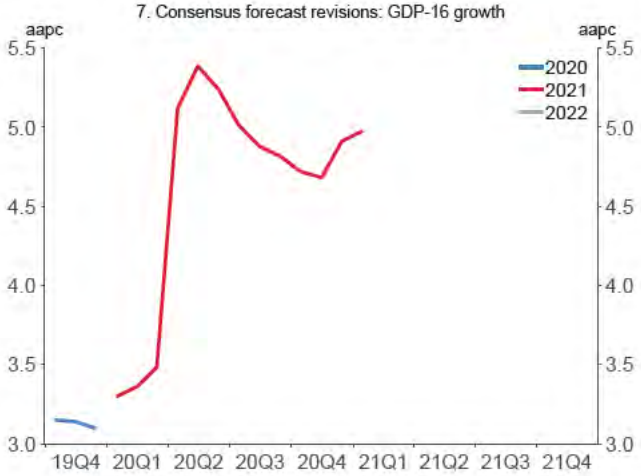

4. Contributions to annual GDP-16 growth
Annual %
Annual %
G7
China
Asia ex-China and Japan
Australia


5. GDP growth: G7
Annual %
Annual %
US
Euro area
Japan
UK

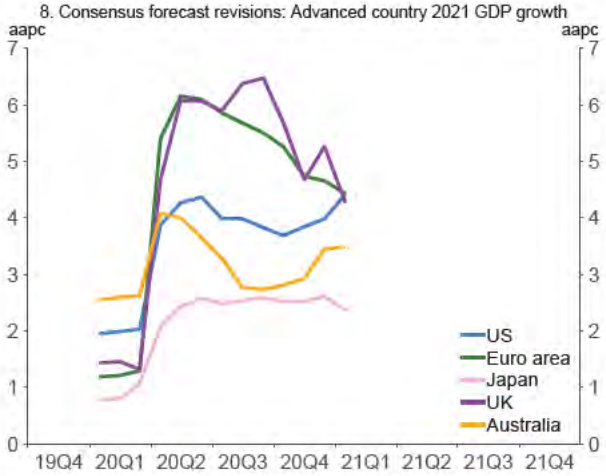

6. GDP growth: Asia Pacific
Annual %
Annual %
China
NIE
ASEAN
Australia

Aggregate

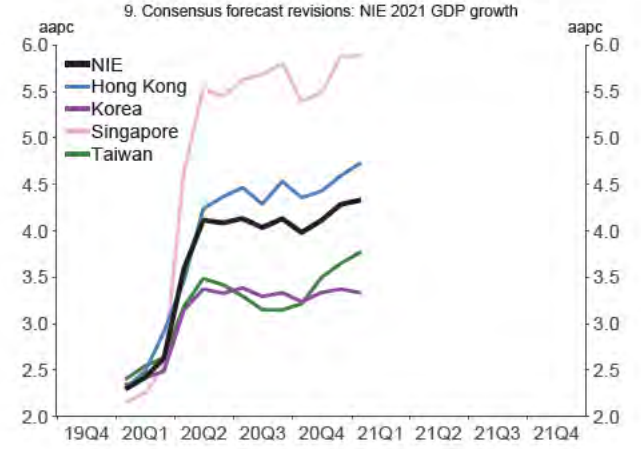
7. Consensus forecast revisions: GDP-16 growth



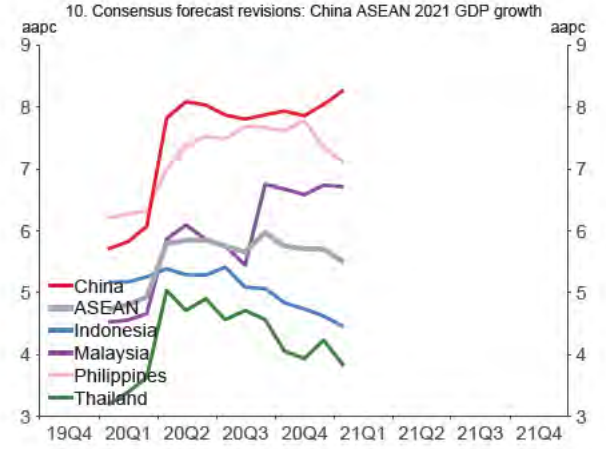
8. Consensus forecast revisions: Advanced country 2021 GDP growth



9. Consensus forecast revisions: NIE 2021 GDP growth



10. Consensus forecast revisions: China ASEAN 2021 GDP growth



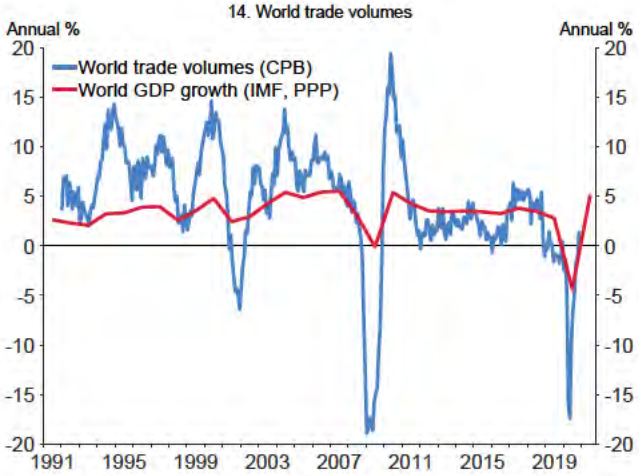
11. Global PMI vs GDP-16 (JPMorgan/Markit)

12. Developed and emerging economy PMIs (Markit)

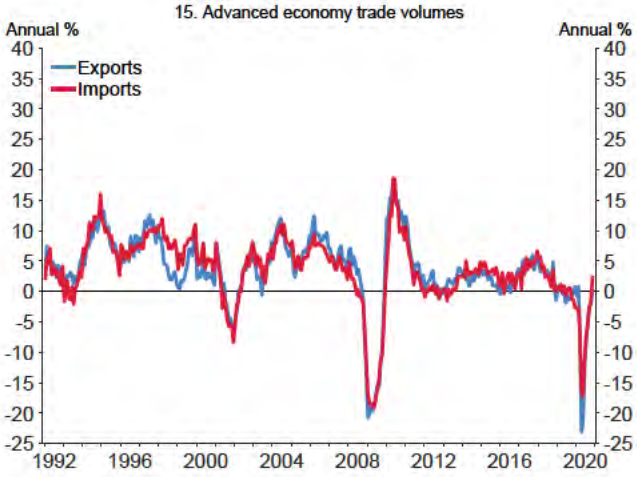
Aggregate

13. Industrial production

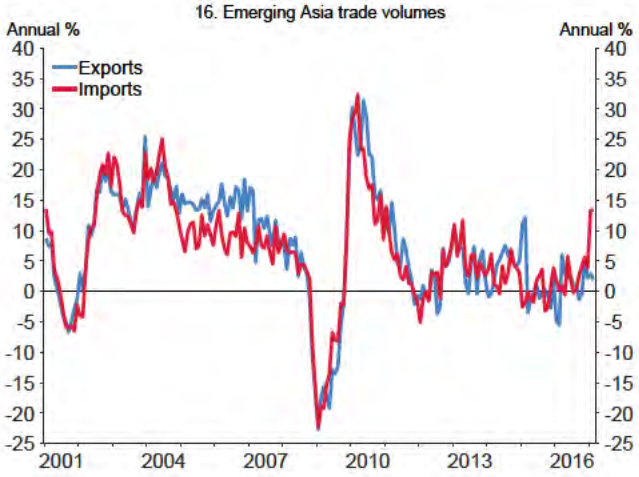
14. World trade volumes



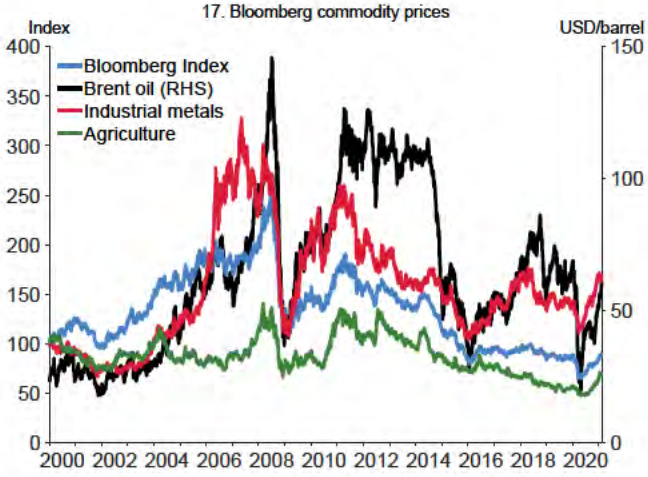
15. Advanced economy trade volumes



16. Emerging Asia trade volumes

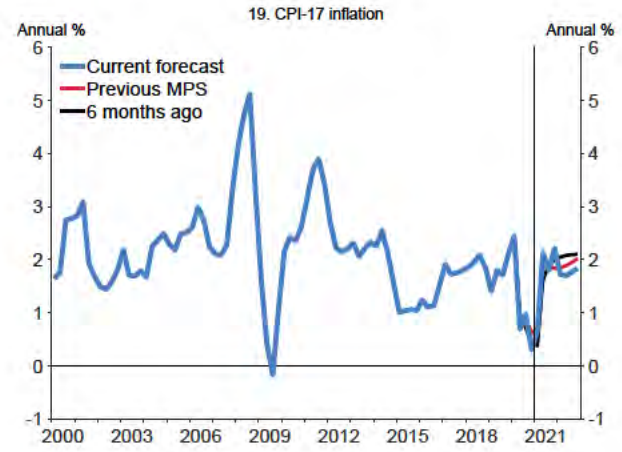


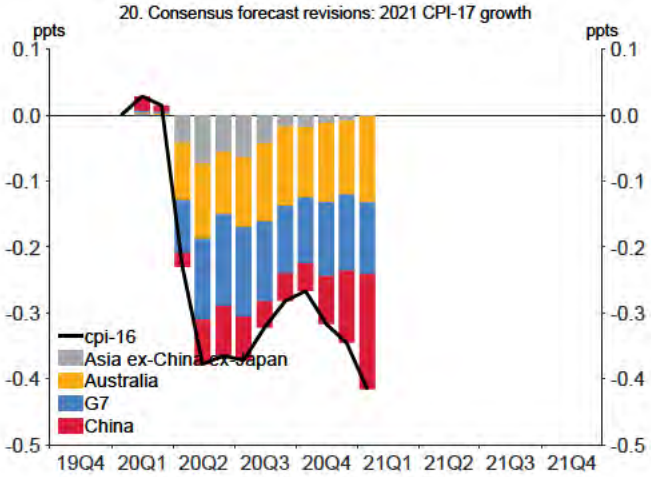
17. Bloomberg commodity prices



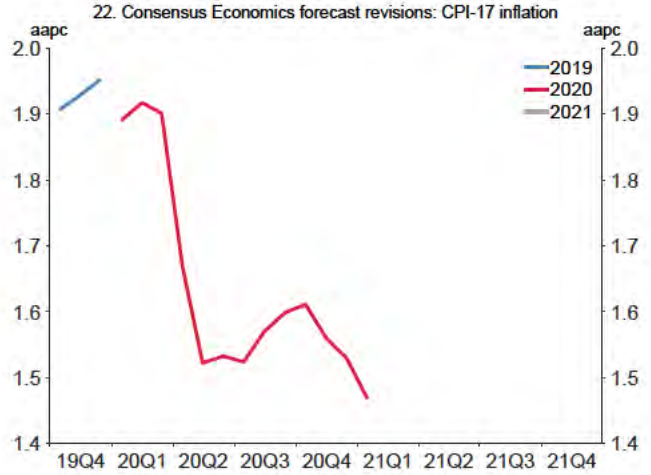
18. Equity Indices

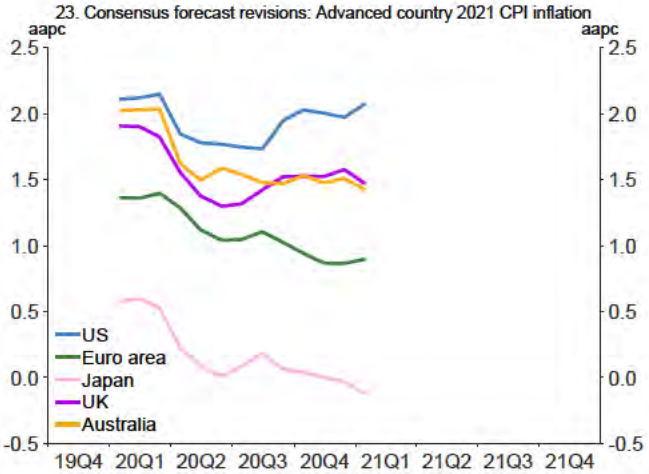
Aggregate

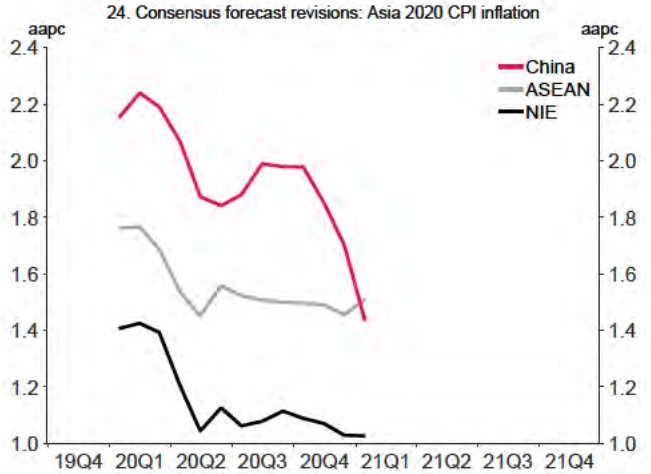

19. CPI-17 inflation
Annual %
Annual %
Current forecast
Previous MPS
6 months ago
2000 2003 2006 2009 2012 2015 2018 2021


20. Consensus forecast revisions: 2021 CPI-17 growth
ppts
ppts
cpi-16
Asia ex-China ex-Japan
Australia
G7
China
19Q4 20Q1 20Q2 20Q3 20Q4 21Q1 21Q2 21Q3 21Q4

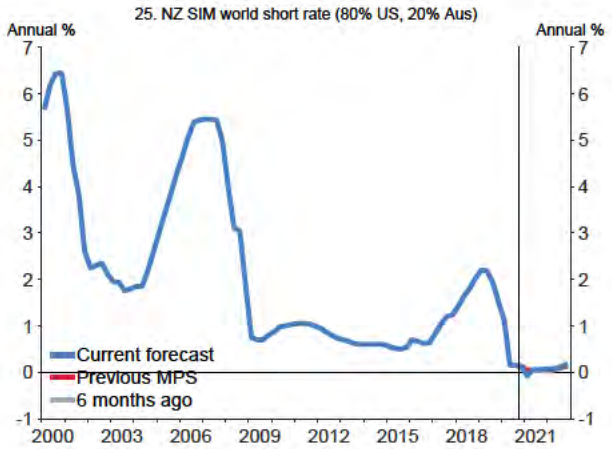

21. Contributions to annual CPI-17 growth
Annual %
Annual %
G7
China
Asia ex-China and Japan
Australia
2000 2003 2006 2009 2012 2015 2018 2021

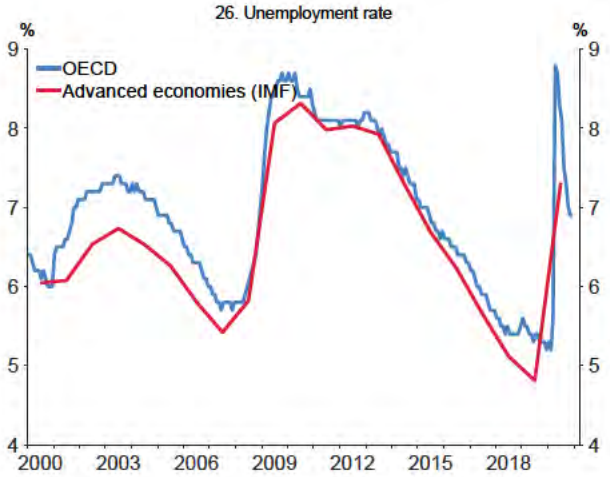

22. Consensus Economics forecast revisions: CPI-17 inflation
aapc
aapc
2019
2020
2021
19Q4 20Q1 20Q2 20Q3 20Q4 21Q1 21Q2 21Q3 21Q4

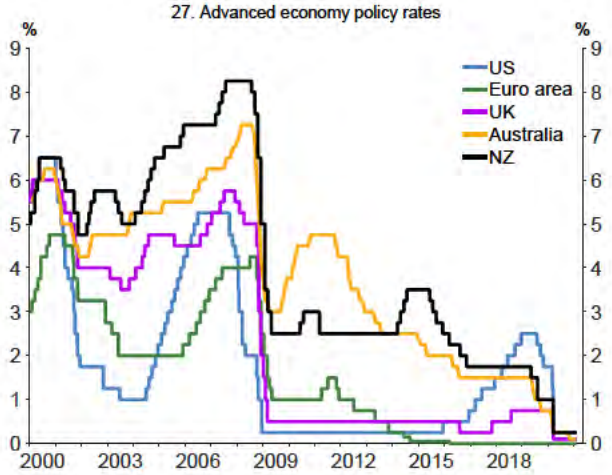

23. Consensus forecast revisions: Advanced country 2021 CPI inflation
aapc
aapc
US
Euro area
Japan
UK
Australia
19Q4 20Q1 20Q2 20Q3 20Q4 21Q1 21Q2 21Q3 21Q4

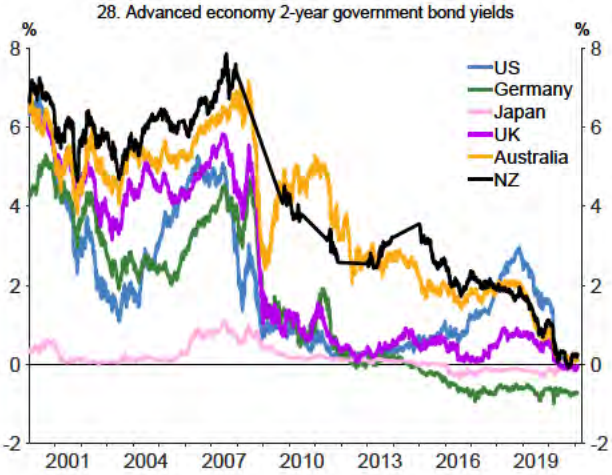

24. Consensus forecast revisions: Asia 2020 CPI inflation
aapc
aapc
China
ASEAN
NIE
19Q4 20Q1 20Q2 20Q3 20Q4 21Q1 21Q2 21Q3 21Q4

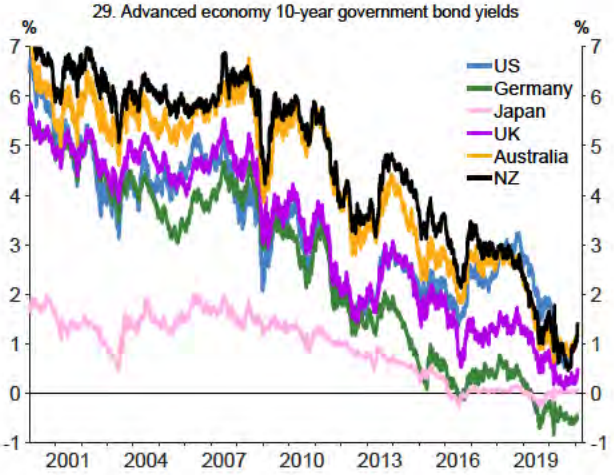
Aggregate

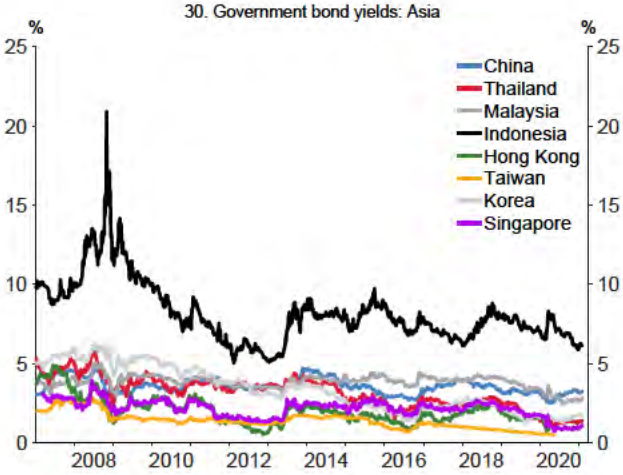

25. NZ SIM world short rate (80% US, 20% Aus)
Annual %
Annual %
Current forecast
Previous MPS
6 months ago


26. Unemployment rate
%
%
OECD
Advanced economies (IMF)

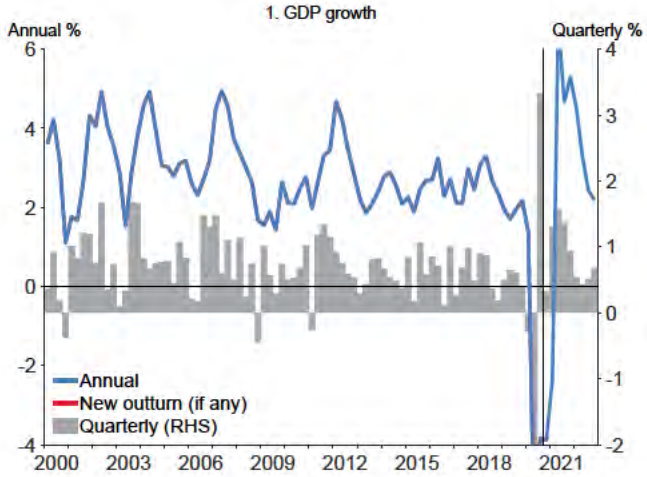

27. Advanced economy policy rates
%
%
US
Euro area
UK
Australia
NZ

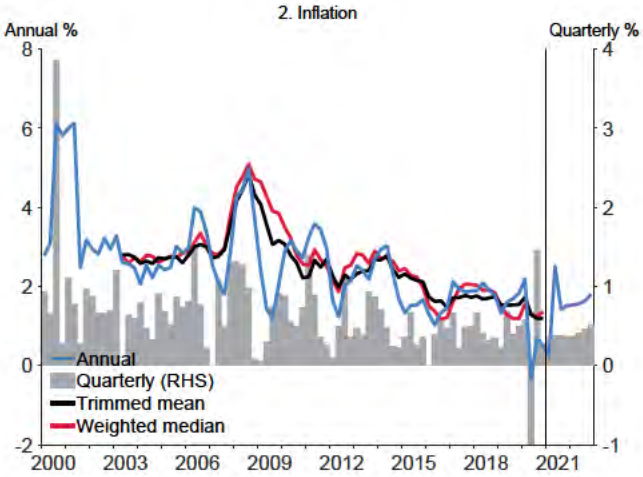

28. Advanced economy 2-year government bond yields
%
%
US
Germany
Japan
UK
Australia
NZ

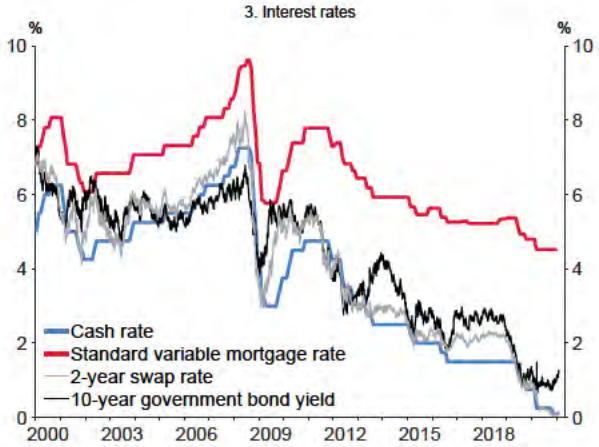

29. Advanced economy 10-year government bond yields
%
%
US
Germany
Japan
UK
Australia
NZ

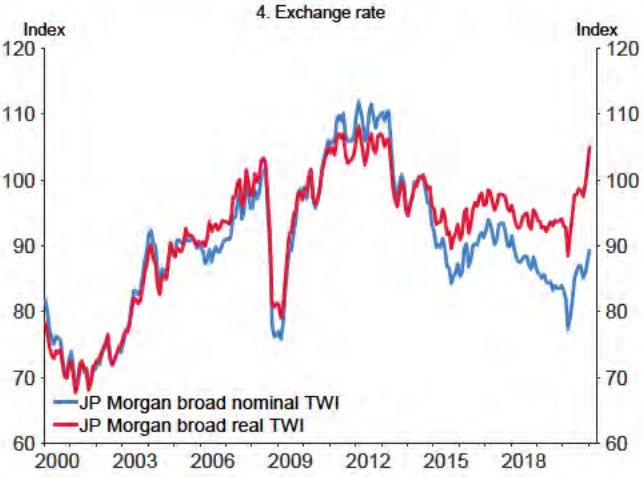

30. Government bond yields: Asia
%
%
China
Thailand
Malaysia
Indonesia
Hong Kong
Taiwan
Korea
Singapore

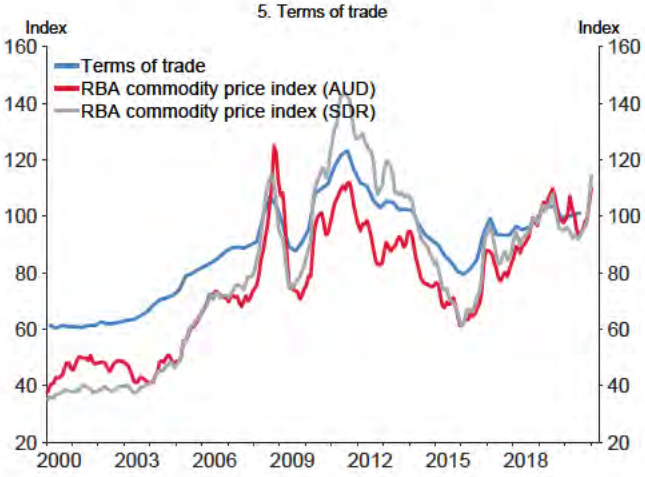
Australia

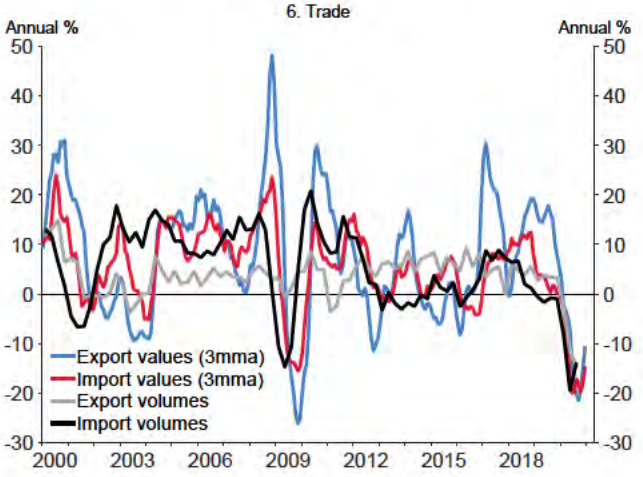

1. GDP growth
Annual %
Quarterly %
Annual
New outturn (if any)
Quarterly (RHS)


2. Inflation
Annual %
Quarterly %
Annual
Quarterly (RHS)
Trimmed mean
Weighted median

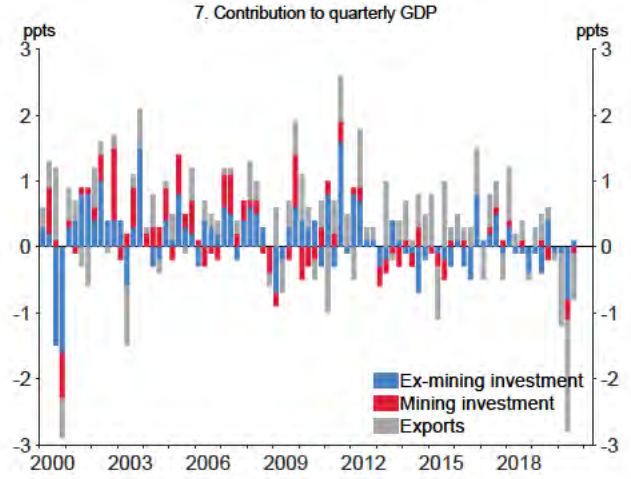

3. Interest rates
%
%
Cash rate
Standard variable mortgage rate
2-year swap rate
10-year government bond yield

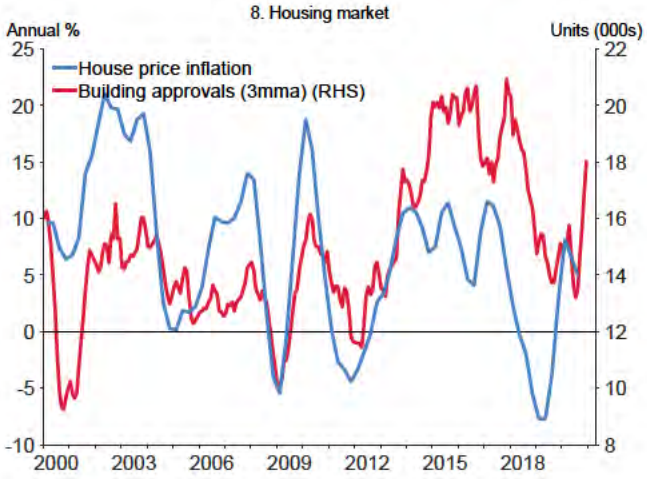

4. Exchange rate
Index
Index
JP Morgan broad nominal TWI
JP Morgan broad real TWI

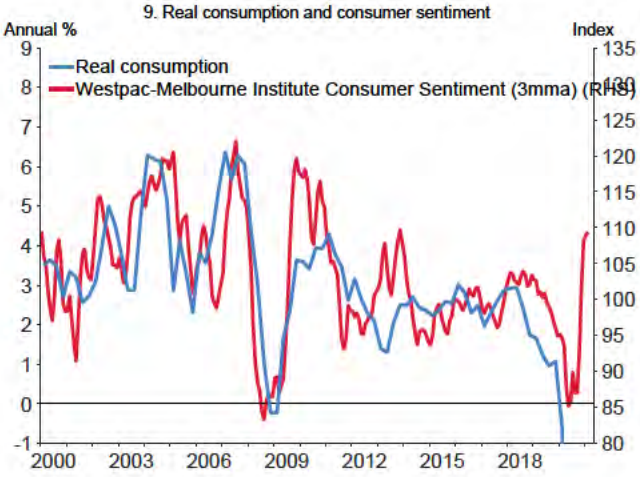

5. Terms of trade
Index
Index
Terms of trade
RBA commodity price index (AUD)
RBA commodity price index (SDR)

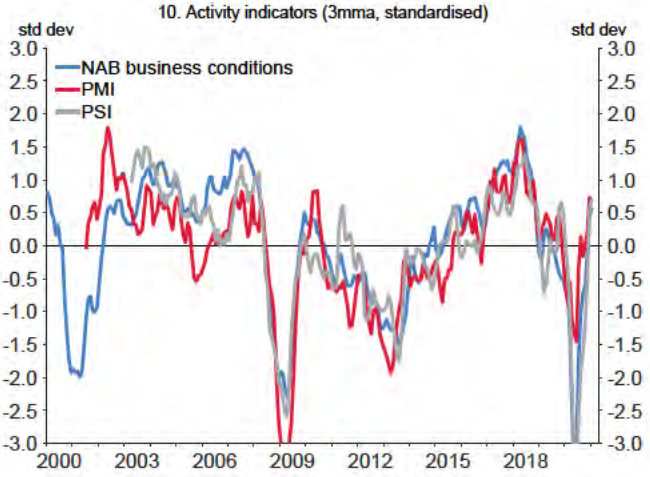

6. Trade
Annual %
Annual %
Export values (3mma)
Import values (3mma)
Export volumes
Import volumes

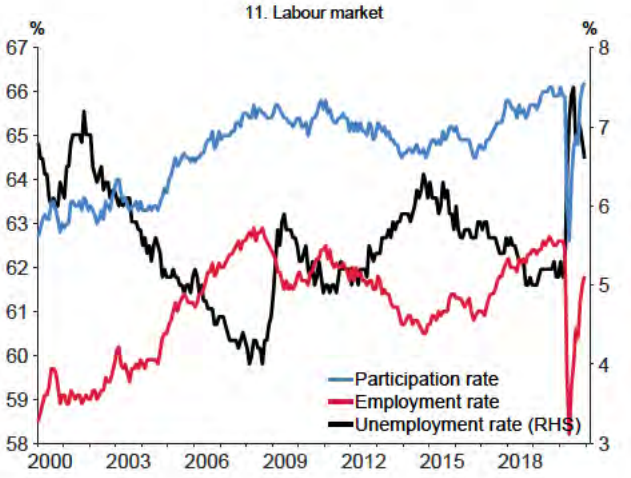
Australia

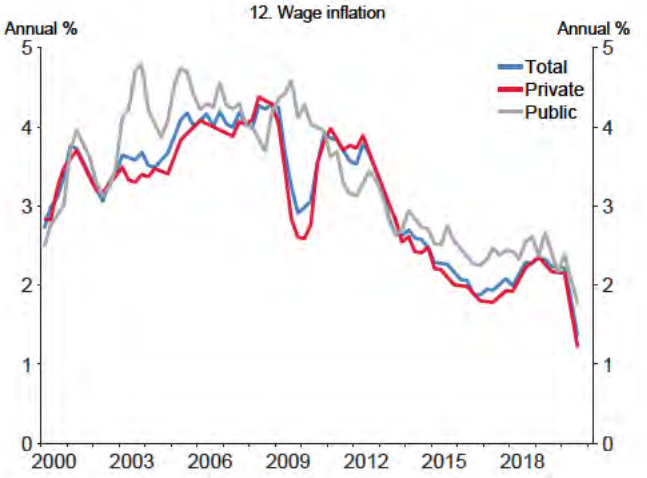

7. Contribution to quarterly GDP
ppts
ppts
Ex-mining investment
Mining investment
Exports


8. Housing market
Annual %
Units (000s)
House price inflation
Building approvals (3mma) (RHS)

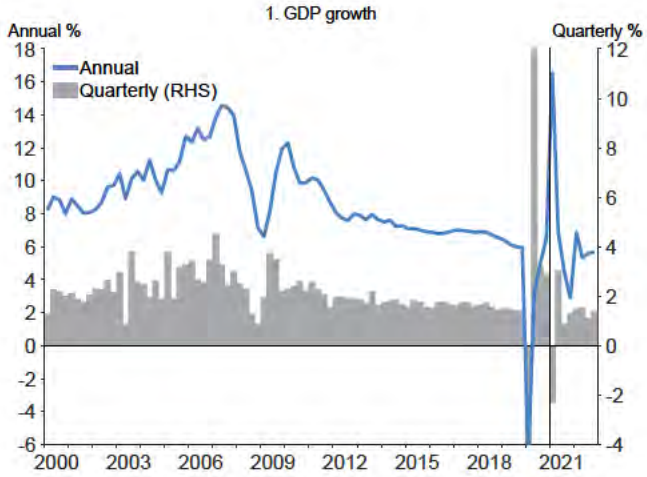

9. Real consumption and consumer sentiment
Annual %
Index
Real consumption
Westpac-Melbourne Institute Consumer Sentiment (3mma) (RHS)

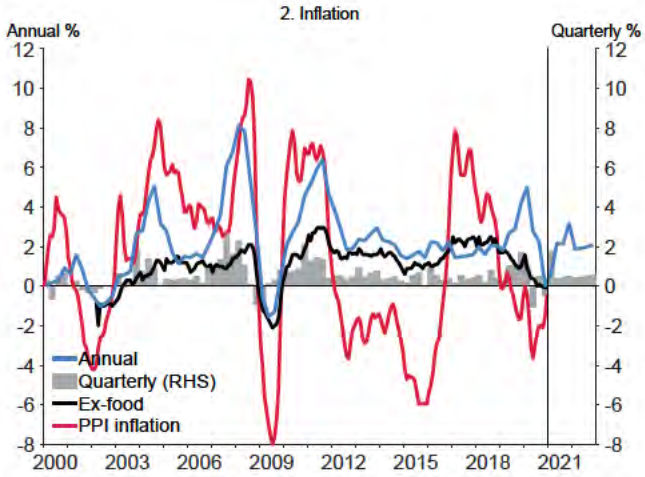

10. Activity indicators (3mma, standardised)
std dev
std dev
NAB business conditions
PMI
PSI

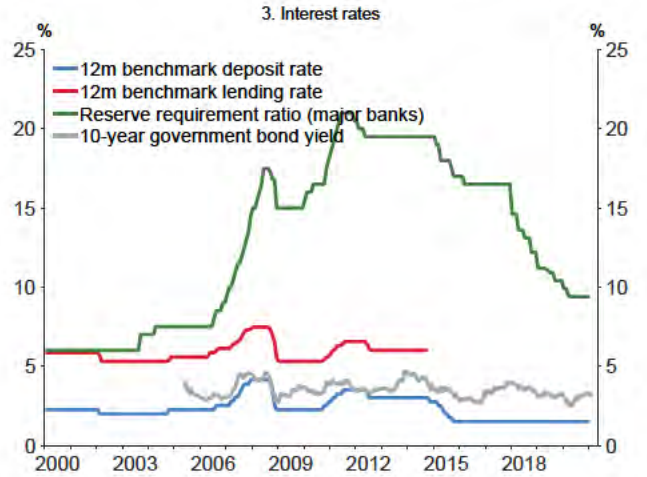

11. Labour market
%
%
Participation rate
Employment rate
Unemployment rate (RHS)

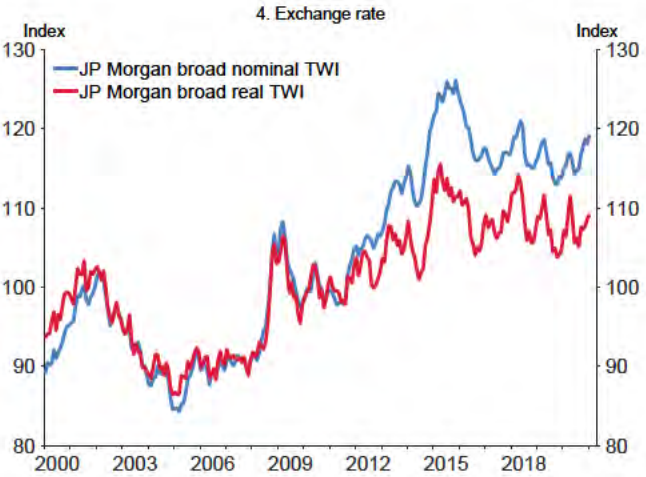

12. Wage inflation
Annual %
Annual %
Total
Private
Public

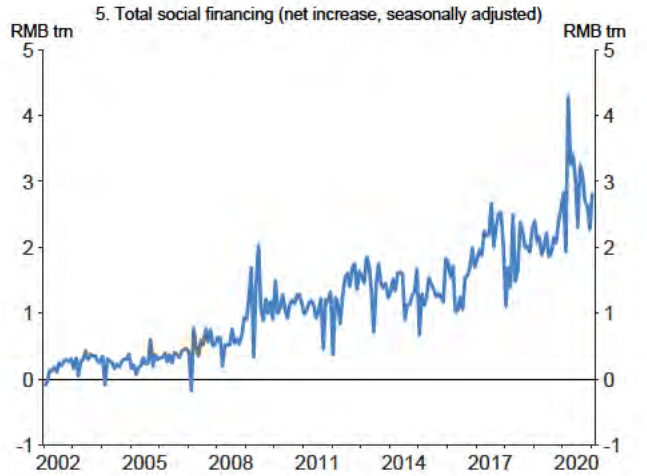
China

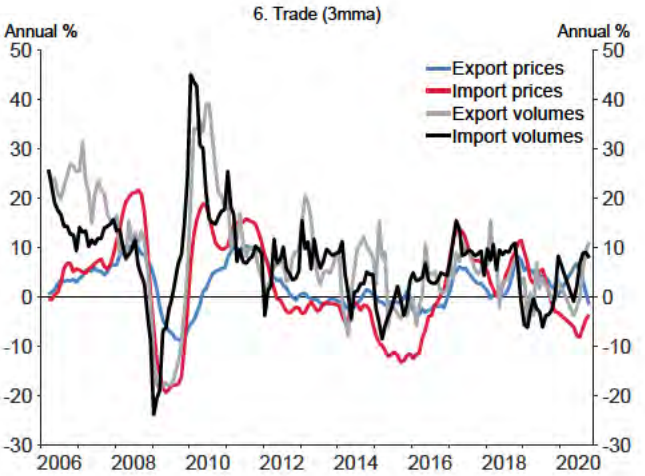

1. GDP growth
Annual %
Quarterly %
Annual
Quarterly (RHS)


2. Inflation
Annual %
Quarterly %
Annual
Quarterly (RHS)
Ex-food
PPI inflation

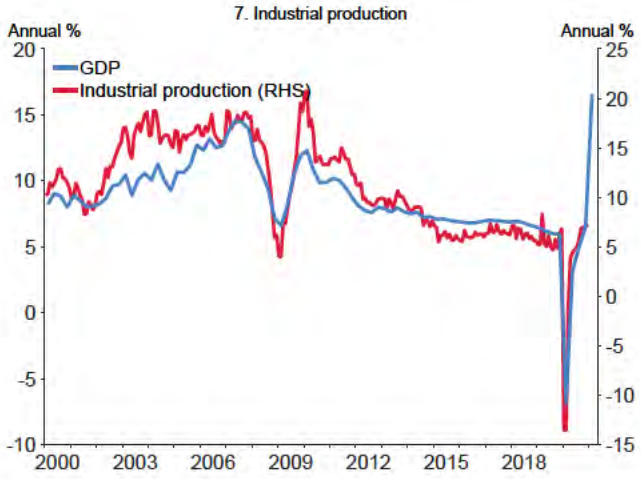

3. Interest rates
%
%
12m benchmark deposit rate
12m benchmark lending rate
Reserve requirement ratio (major banks)
10-year government bond yield

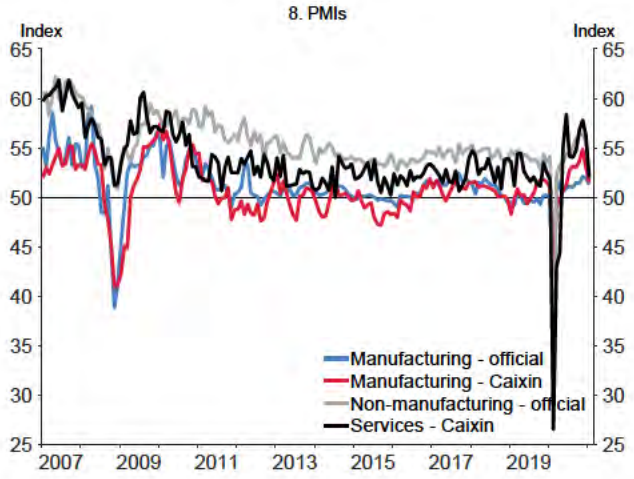

4. Exchange rate
Index
Index
JP Morgan broad nominal TWI
JP Morgan broad real TWI

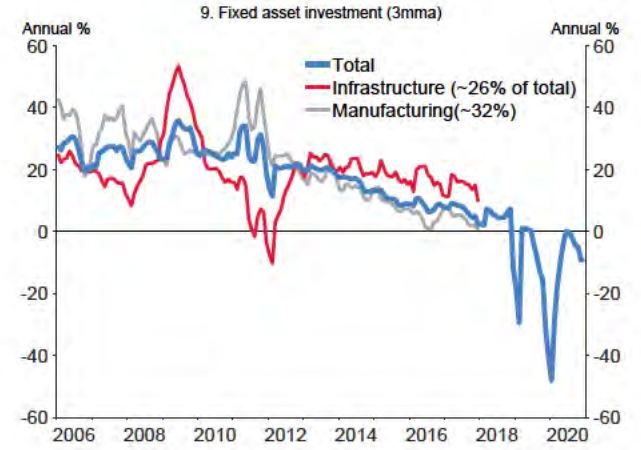

5. Total social financing (net increase, seasonally adjusted)
RMB trn
RMB trn

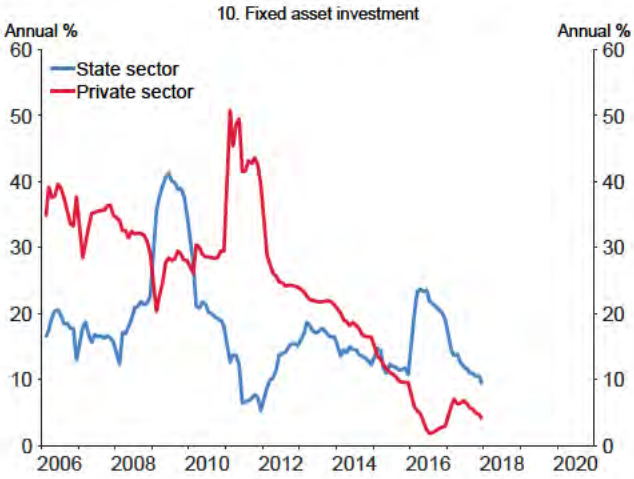

6. Trade (3mma)
Annual %
Annual %
Export prices
Import prices
Export volumes
Import volumes

China


7. Industrial production
Annual %
Annual %
GDP
Industrial production (RHS)
20
15
10
5
0
-5
-10
25
20
15
10
5
0
-5
-10
-15
2000
2003
2006
2009
2012
2015
2018


8. PMIs
Index
Index
Manufacturing - official
Manufacturing - Caixin
Non-manufacturing - official
Services - Caixin
65
60
55
50
45
40
35
30
25
2007
2009
2011
2013
2015
2017
2019

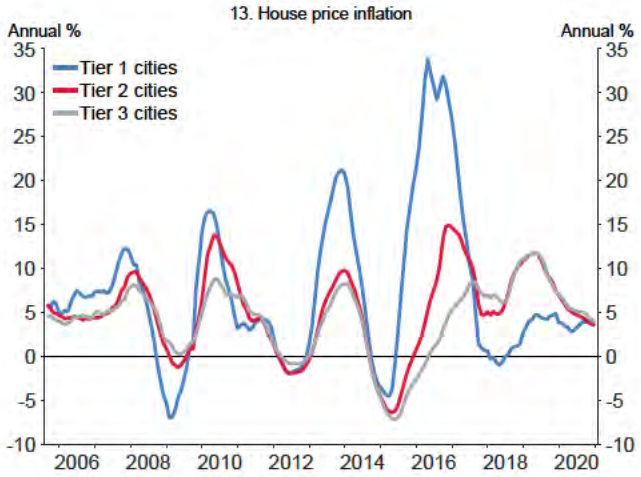

9. Fixed asset investment (3mma)
Annual %
Annual %
Total
Infrastructure (~26% of total)
Manufacturing(~32%)
60
40
20
0
-20
-40
-60
2006
2008
2010
2012
2014
2016
2018
2020

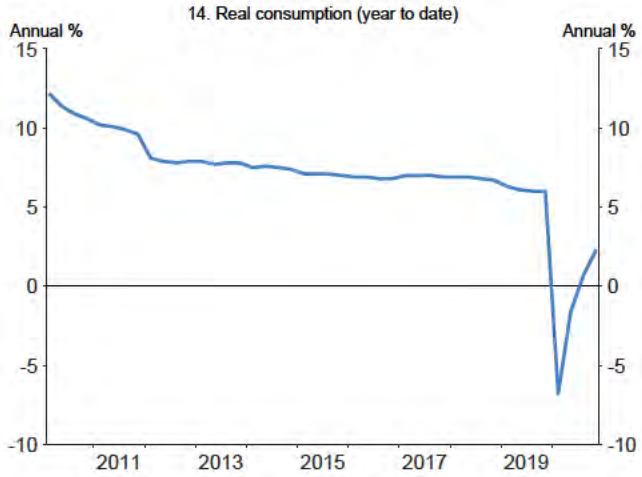

10. Fixed asset investment
Annual %
Annual %
State sector
Private sector
60
50
40
30
20
10
0
2006
2008
2010
2012
2014
2016
2018
2020

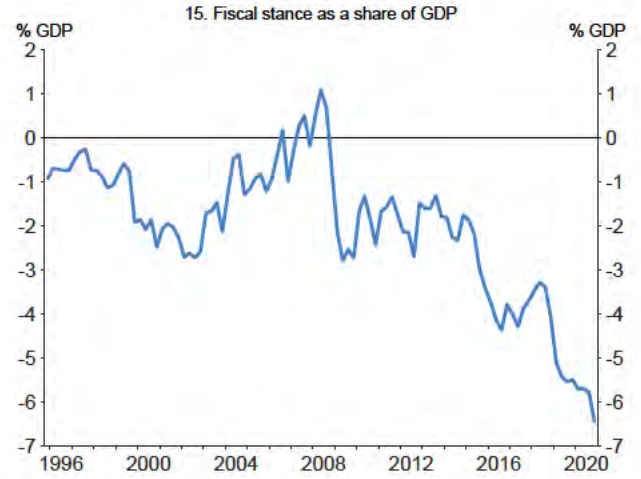

11. Real estate investment (3mma)
Annual %
Annual %
50
40
30
20
10
0
-10
2000
2003
2006
2009
2012
2015
2018

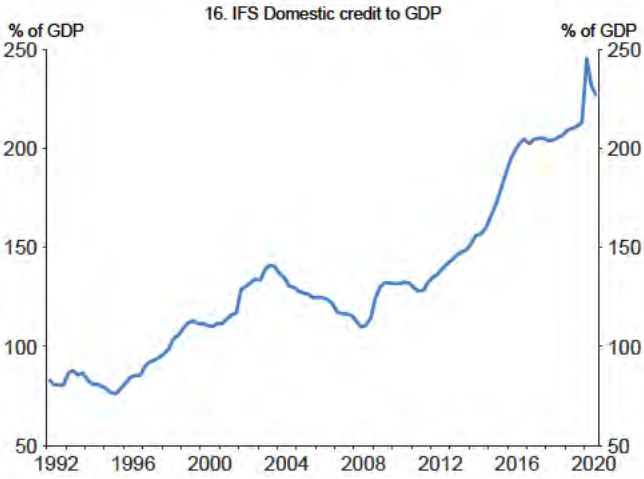

12. Inventory/sales
Months
Months
Total buildings
Residential
7
6
5
4
3
2
1
0
2008
2010
2012
2014
2016
2018
2020

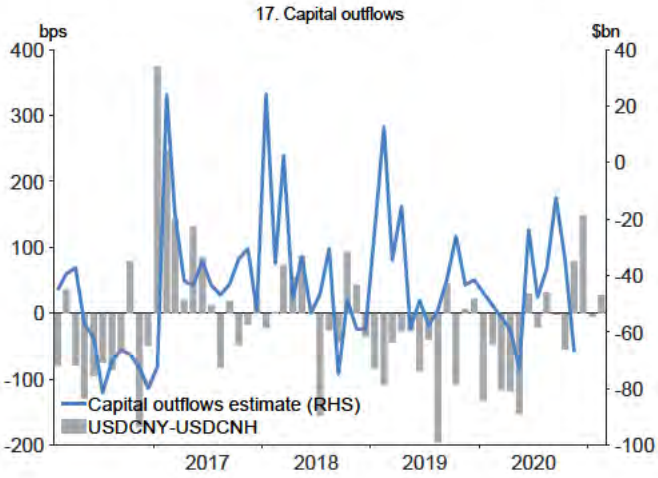
China

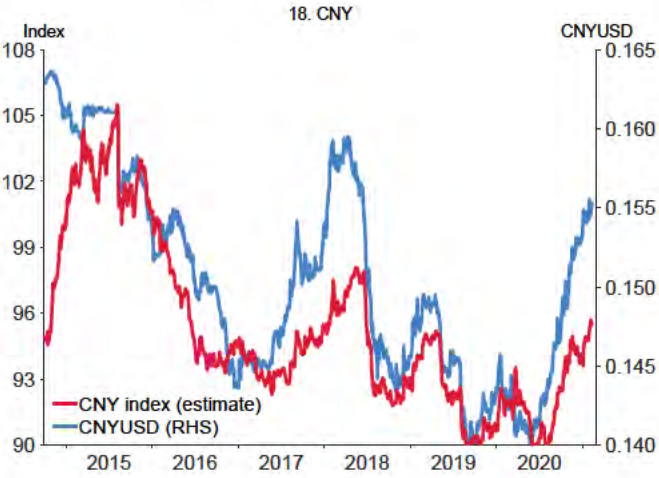

13. House price inflation
Annual %
Annual %
Tier 1 cities
Tier 2 cities
Tier 3 cities
35
30
25
20
15
10
5
0
-5
-10
2006
2008
2010
2012
2014
2016
2018
2020


14. Real consumption (year to date)
Annual %
Annual %
15
10
5
0
-5
-10
2011
2013
2015
2017
2019

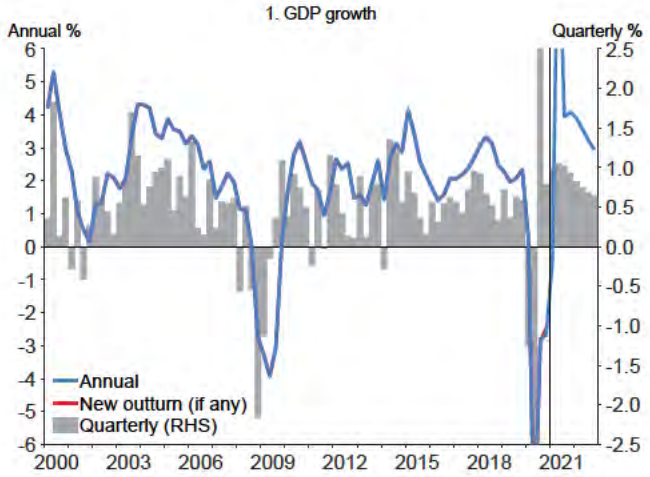

15. Fiscal stance as a share of GDP
% GDP
% GDP
2
1
0
-1
-2
-3
-4
-5
-6
-7
1996
2000
2004
2008
2012
2016
2020

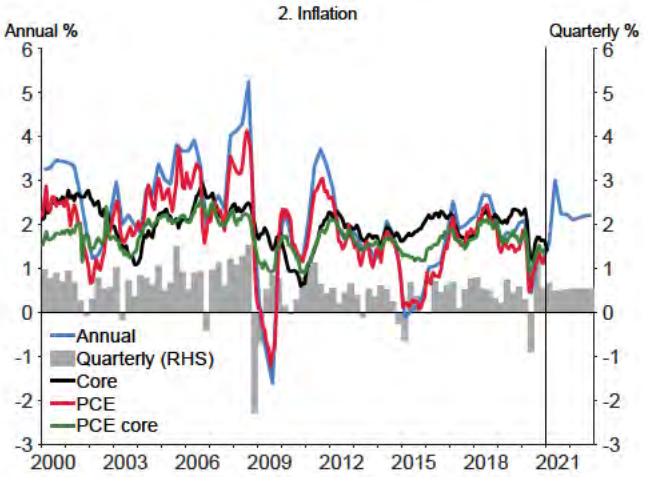

16. IFS Domestic credit to GDP
% of GDP
% of GDP
250
200
150
100
50
1992
1996
2000
2004
2008
2012
2016
2020

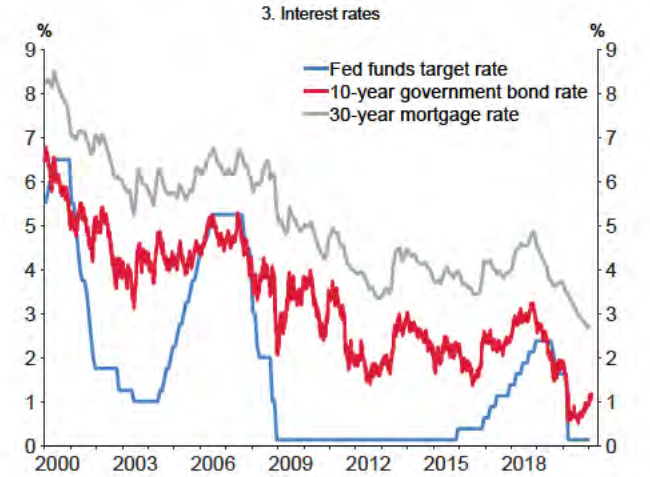

17. Capital outflows
bps
$bn
400
300
200
100
0
-100
-200
40
20
0
-20
-40
-60
-80
-100
Capital outflows estimate (RHS)
USDCNY-USDCNH
2017
2018
2019
2020

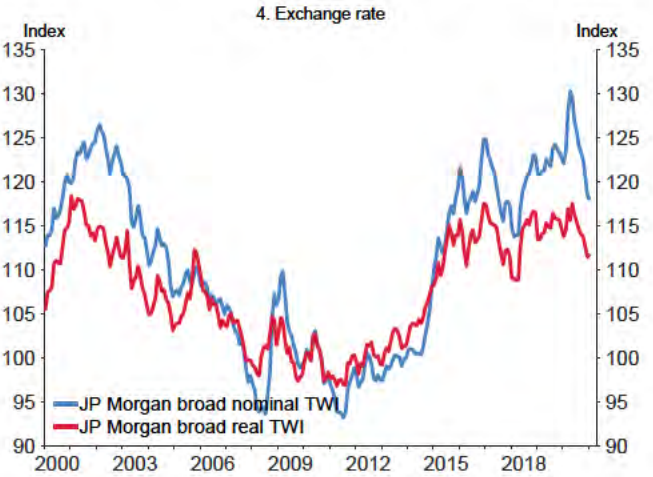

18. CNY
Index
CNYUSD
108
105
102
99
96
93
90
0.165
0.160
0.155
0.150
0.145
0.140
CNY index (estimate)
CNYUSD (RHS)
2015
2016
2017
2018
2019
2020

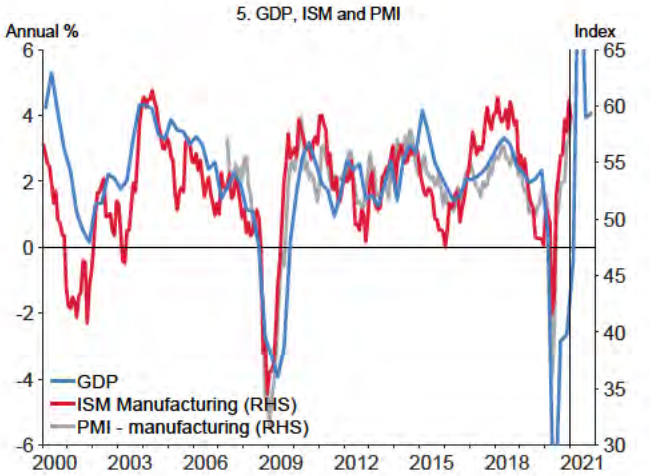
United States



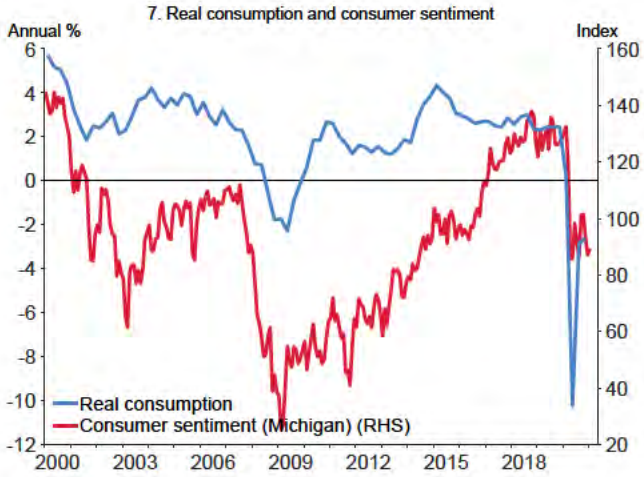


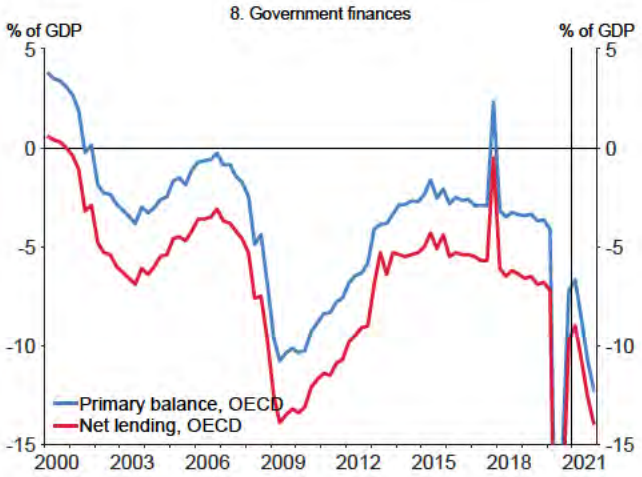


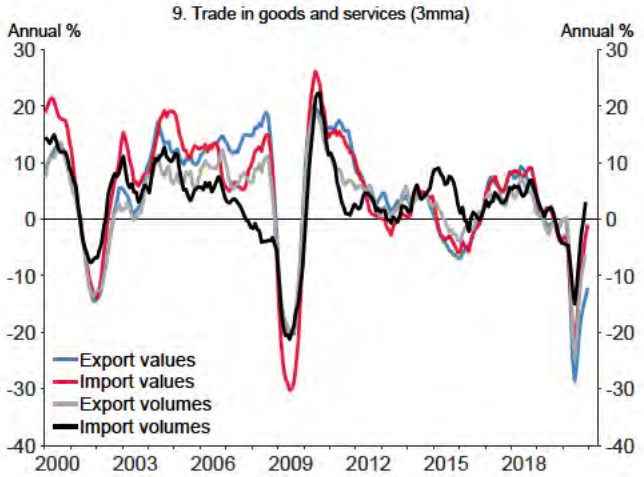


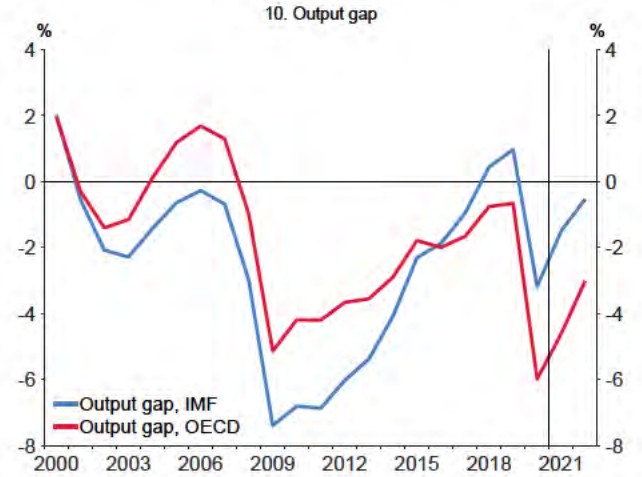


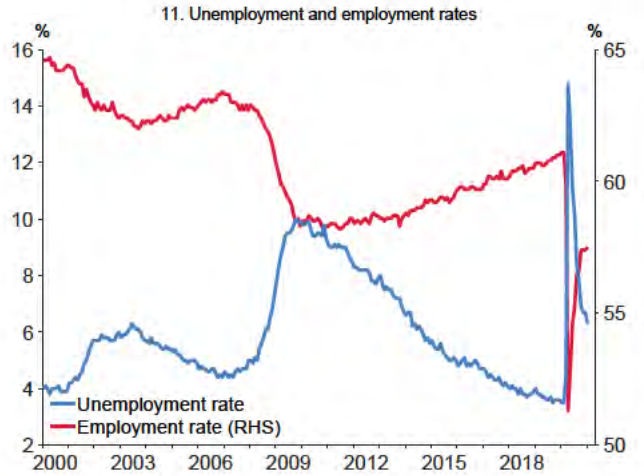
United States



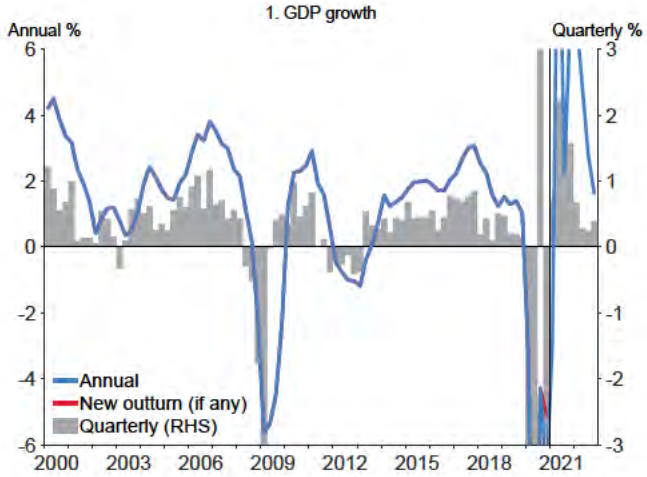


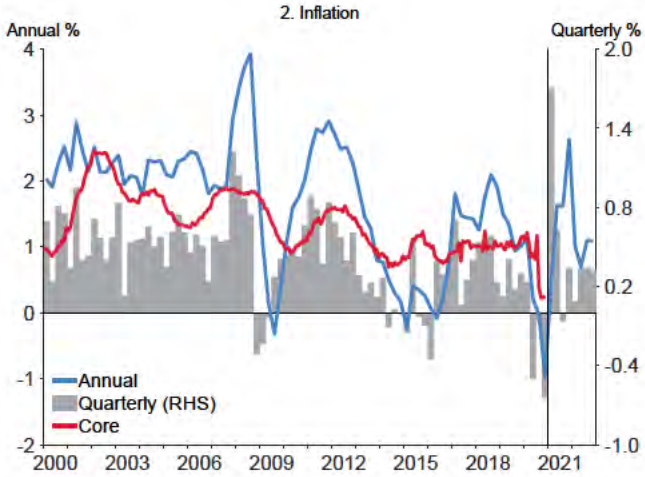


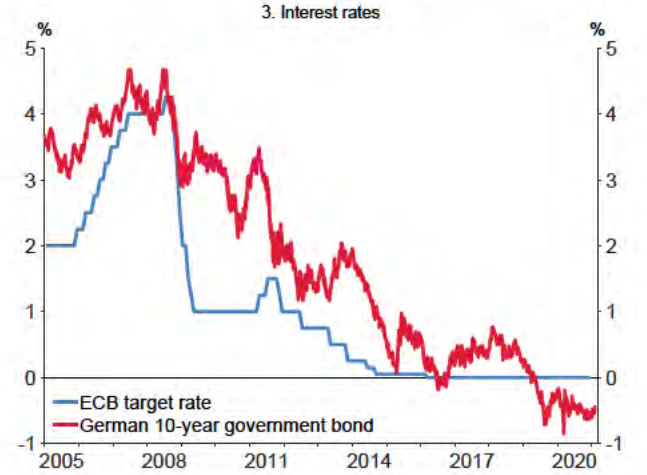


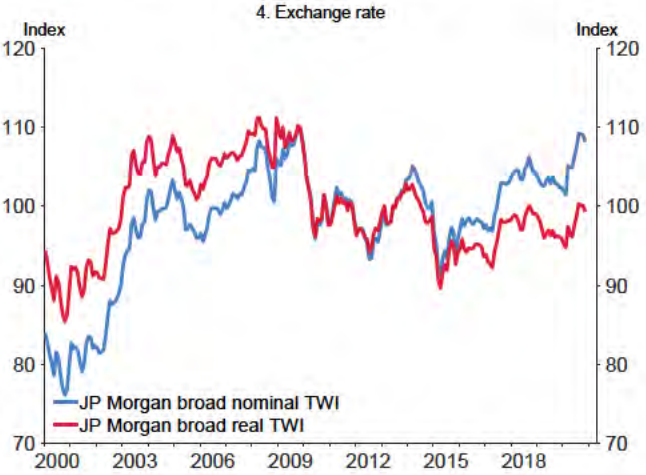


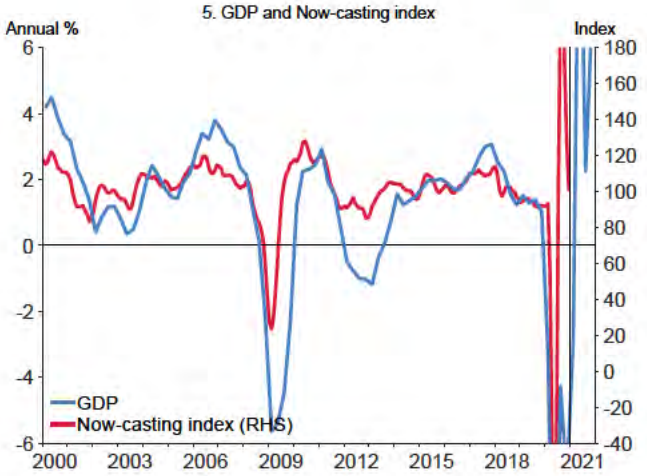
Euro area

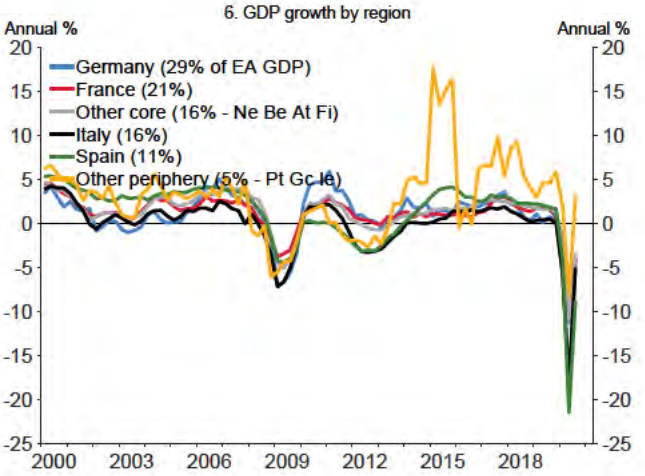

1. GDP growth
Annual %
Quarterly %
Annual
New outturn (if any)
Quarterly (RHS)


2. Inflation
Annual %
Quarterly %
Annual
Quarterly (RHS)
Core

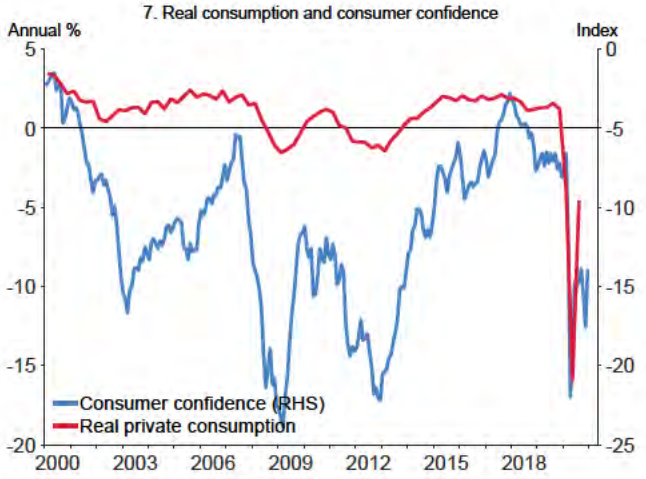

3. Interest rates
%
%
ECB target rate
German 10-year government bond

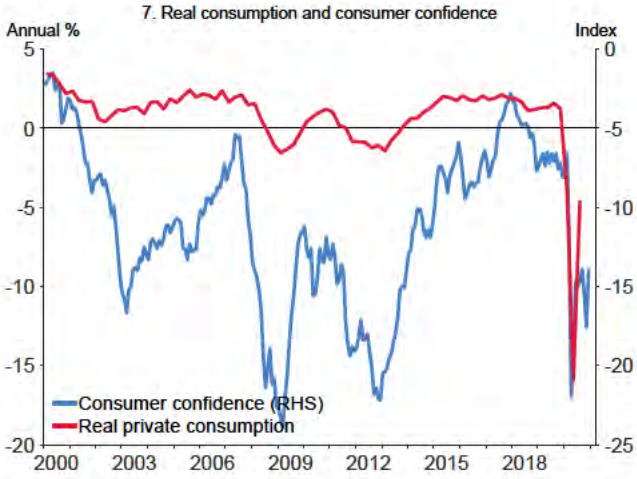

4. Exchange rate
Index
Index
JP Morgan broad nominal TWI
JP Morgan broad real TWI

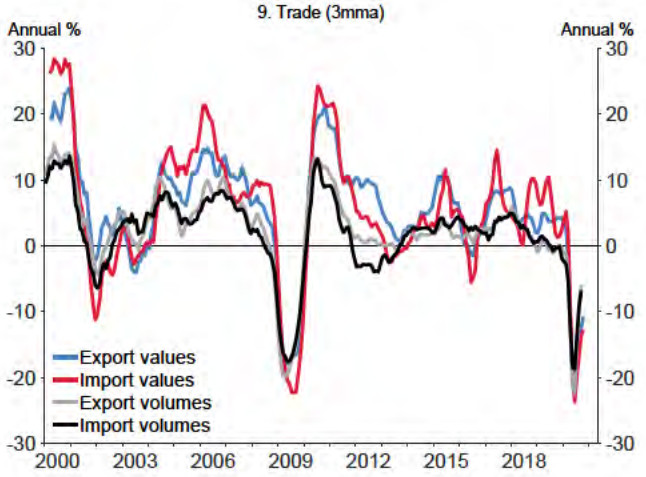

5. GDP and Now-casting index
Annual %
Index
GDP
Now-casting index (RHS)

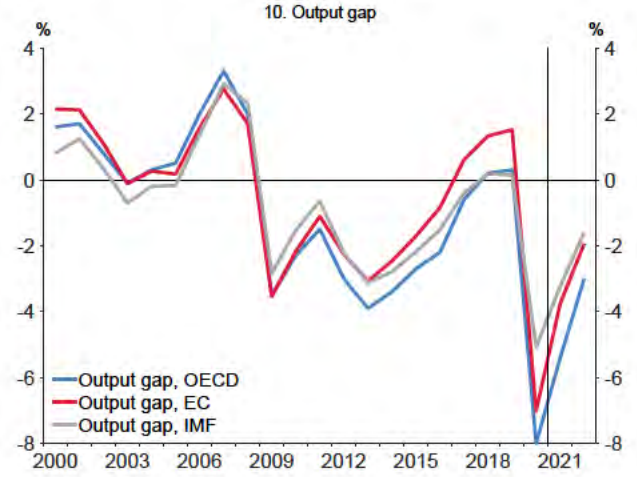

6. GDP growth by region
Annual %
Annual %
Germany (29% of EA GDP)
France (21%)
Other core (16% - Ne Be At Fi)
Italy (16%)
Spain (11%)
Other periphery (5% - Pt Gc Ie)

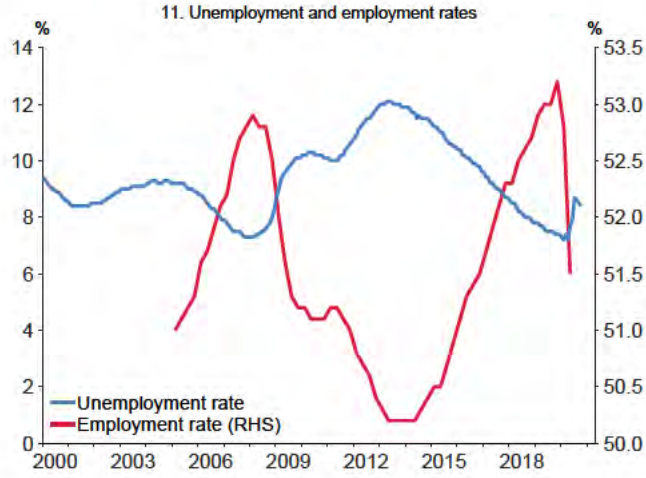
Euro area

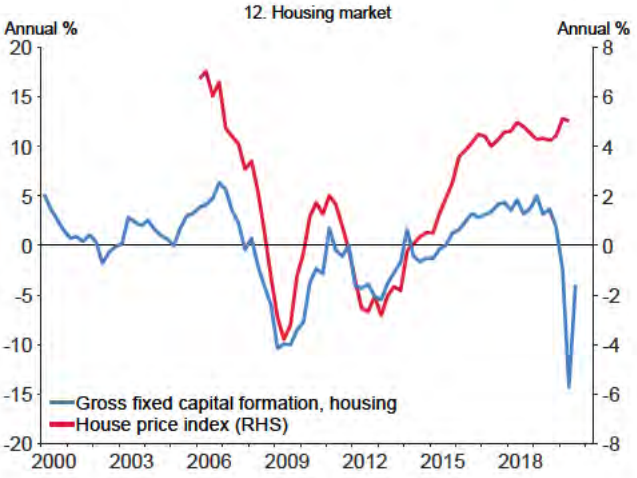

7. Real consumption and consumer confidence
Annual %
Index
Consumer confidence (RHS)
Real private consumption


7. Real consumption and consumer confidence
Annual %
Index
Consumer confidence (RHS)
Real private consumption

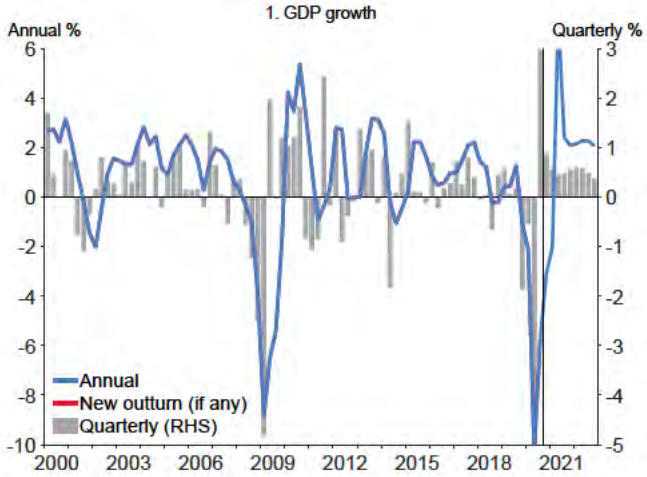

9. Trade (3mma)
Annual %
Annual %
Export values
Import values
Export volumes
Import volumes

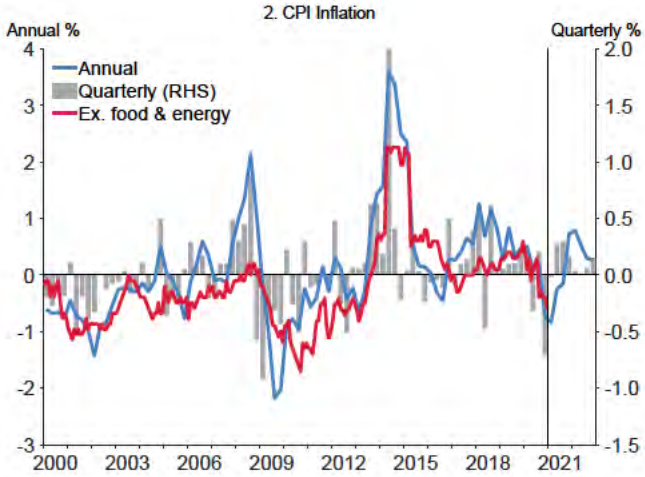

10. Output gap
%
%
Output gap, OECD
Output gap, EC
Output gap, IMF

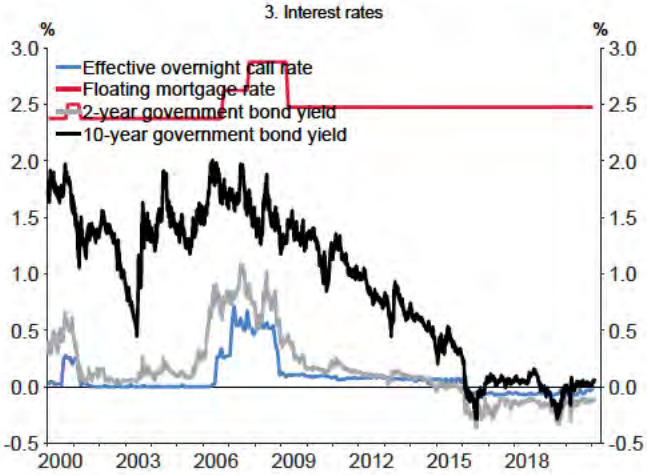

11. Unemployment and employment rates
%
%
Unemployment rate
Employment rate (RHS)

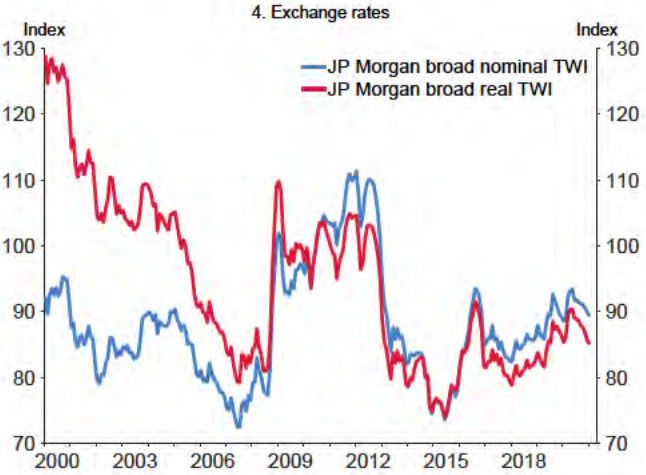

12. Housing market
Annual %
Annual %
Gross fixed capital formation, housing
House price index (RHS)

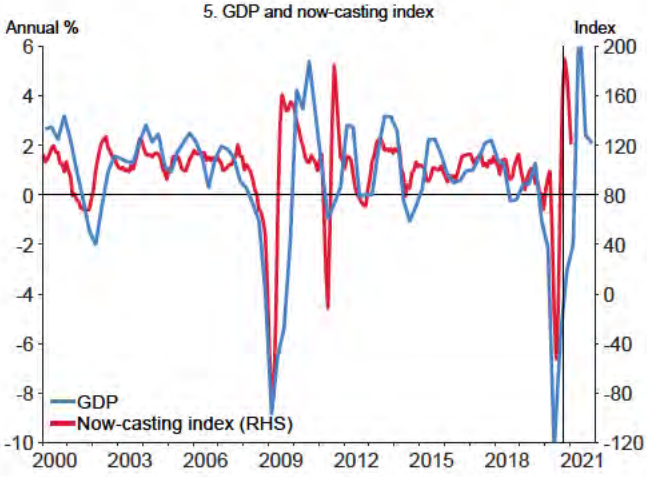
Japan

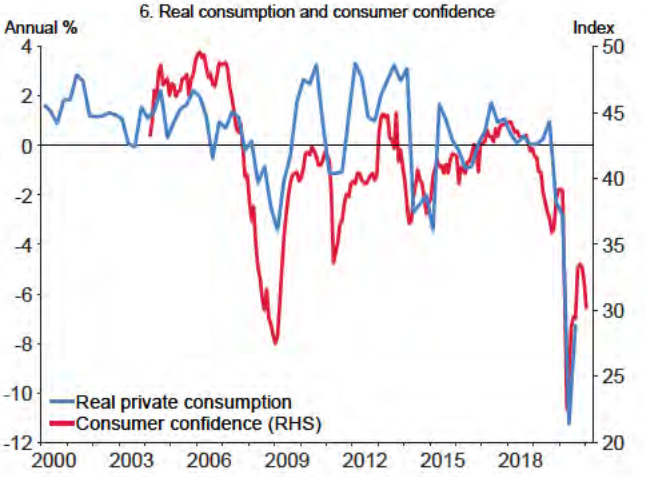

1. GDP growth
Annual %
Quarterly %
Annual
New outturn (if any)
Quarterly (RHS)


2. CPI Inflation
Annual %
Quarterly %
Annual
Quarterly (RHS)
Ex. food & energy

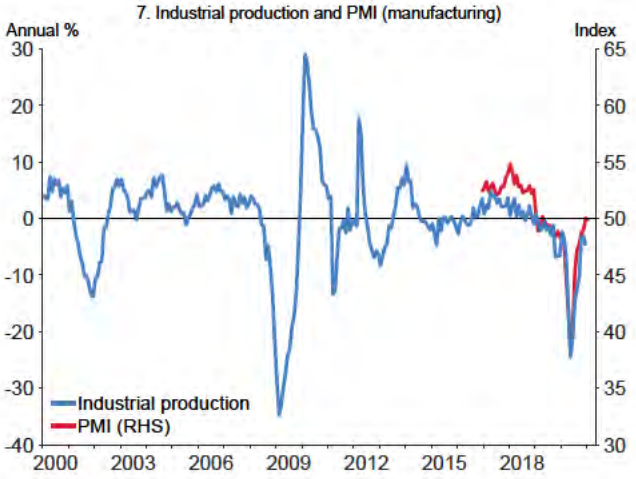

3. Interest rates
%
%
Effective overnight call rate
Floating mortgage rate
2-year government bond yield
10-year government bond yield

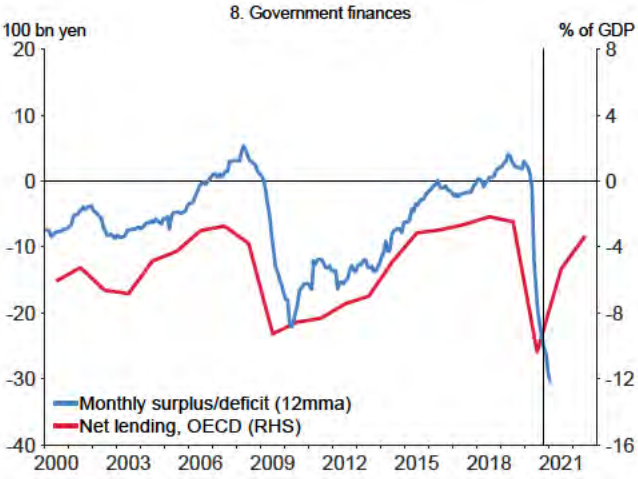

4. Exchange rates
Index
Index
JP Morgan broad nominal TWI
JP Morgan broad real TWI

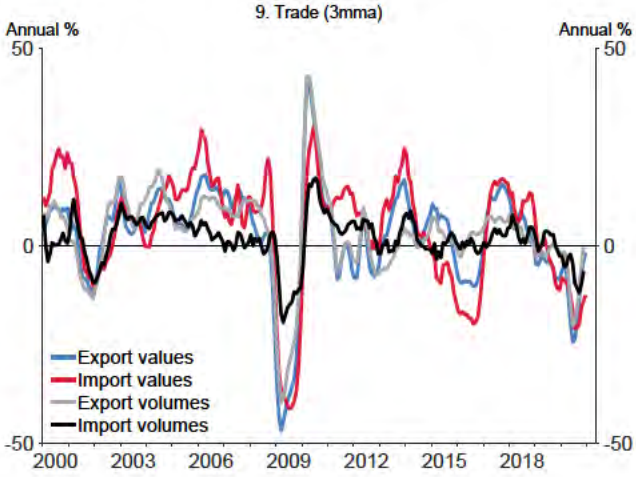

5. GDP and now-casting index
Annual %
Index
GDP
Now-casting index (RHS)

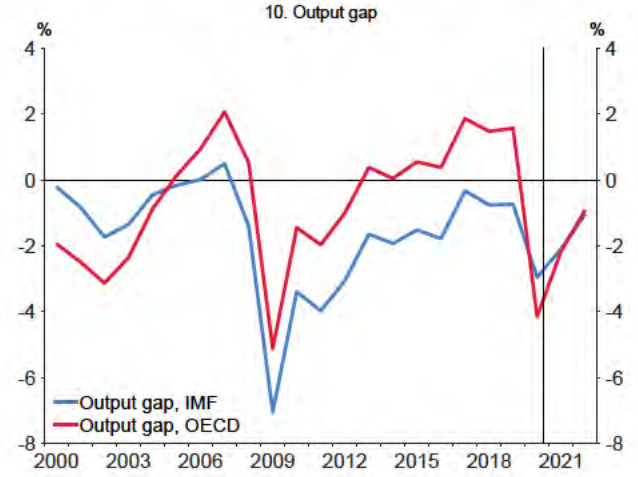

6. Real consumption and consumer confidence
Annual %
Index
Real private consumption
Consumer confidence (RHS)

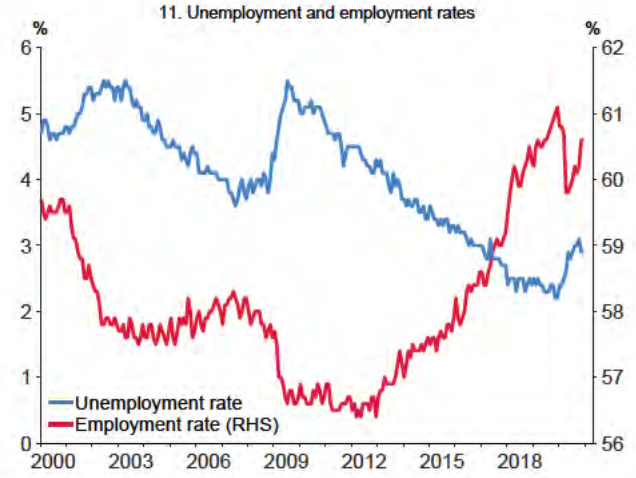
Japan


7. Industrial production and PMI (manufacturing)
Annual %
Index
Industrial production
PMI (RHS)


8. Government finances
100 bn yen
% of GDP
Monthly surplus/deficit (12mma)
Net lending, OECD (RHS)

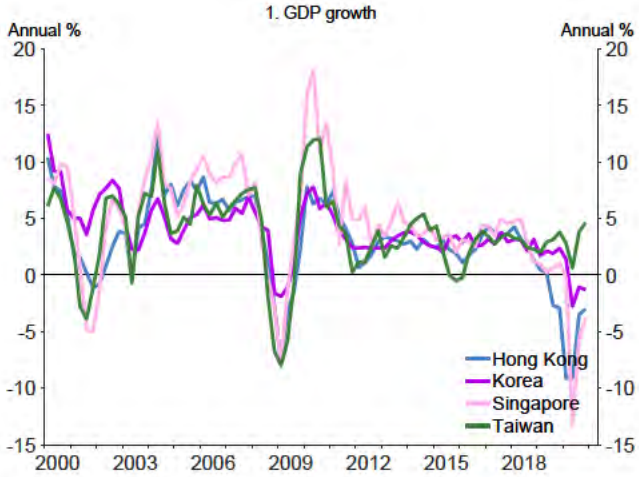

9. Trade (3mma)
Annual %
Annual %
Export values
Import values
Export volumes
Import volumes

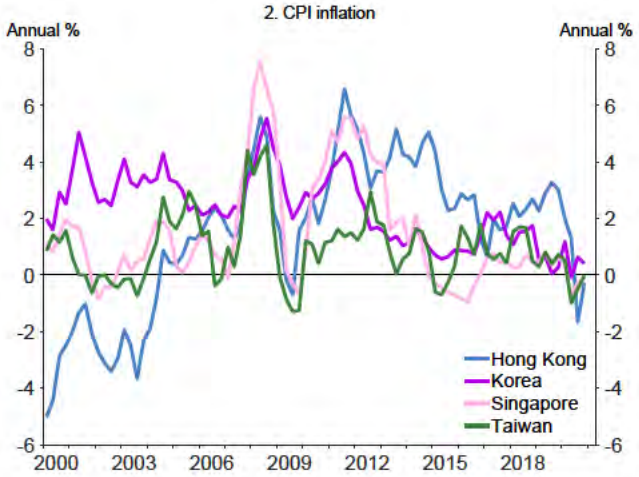

10. Output gap
%
%
Output gap, IMF
Output gap, OECD

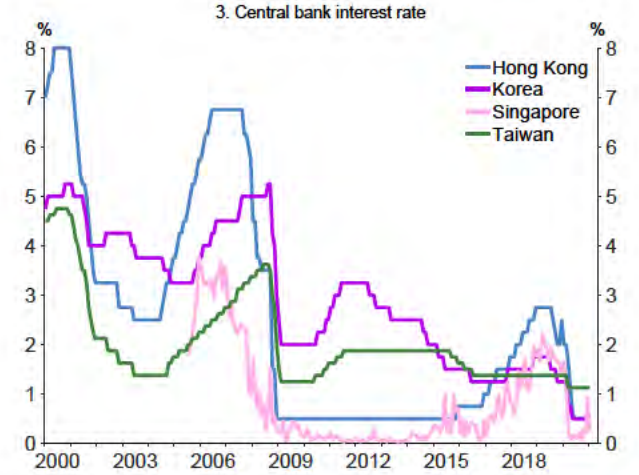

11. Unemployment and employment rates
%
%
Unemployment rate
Employment rate (RHS)

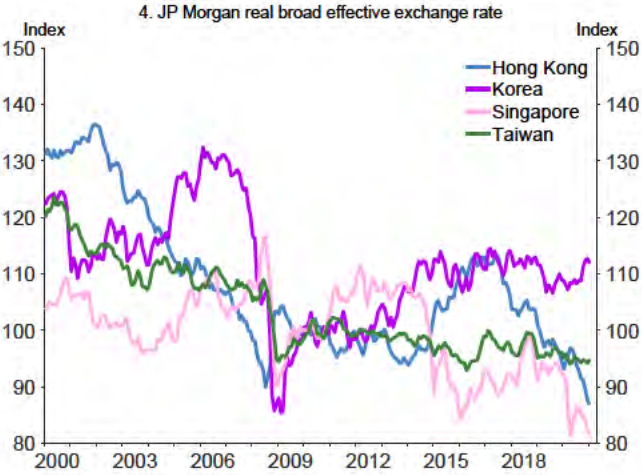

12. Housing market
Annual %
Annual %
Construction works put in place
Gross fixed capital formation, residential buildings

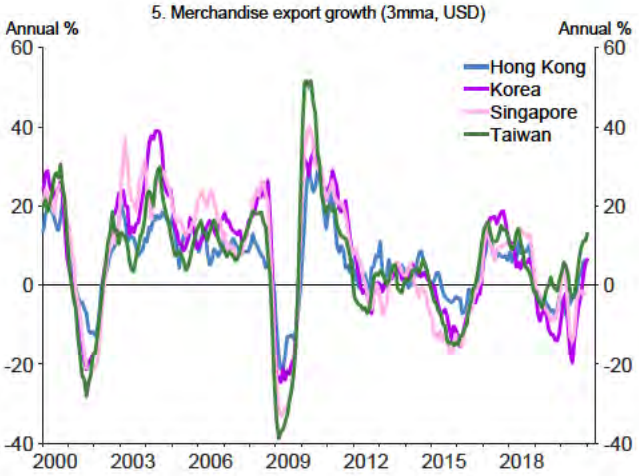
NIE

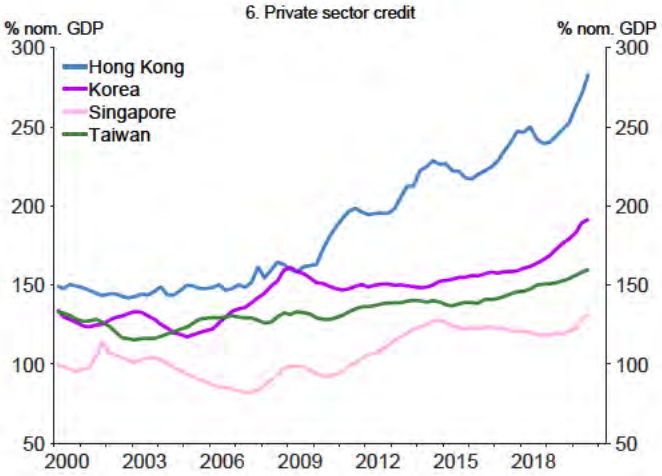

1. GDP growth
Annual %
Annual %
Hong Kong
Korea
Singapore
Taiwan


2. CPI inflation
Annual %
Annual %
Hong Kong
Korea
Singapore
Taiwan

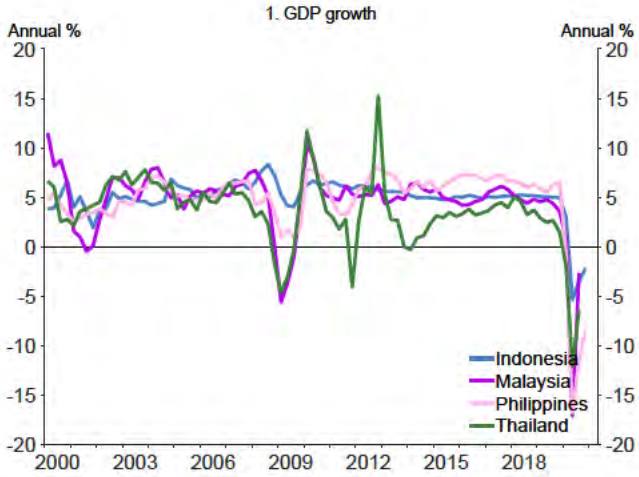

3. Central bank interest rate
%
%
Hong Kong
Korea
Singapore
Taiwan

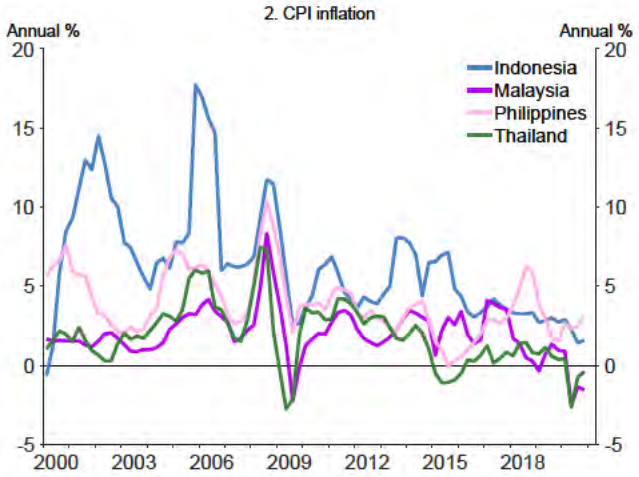

4. JP Morgan real broad effective exchange rate
Index
Index
Hong Kong
Korea
Singapore
Taiwan

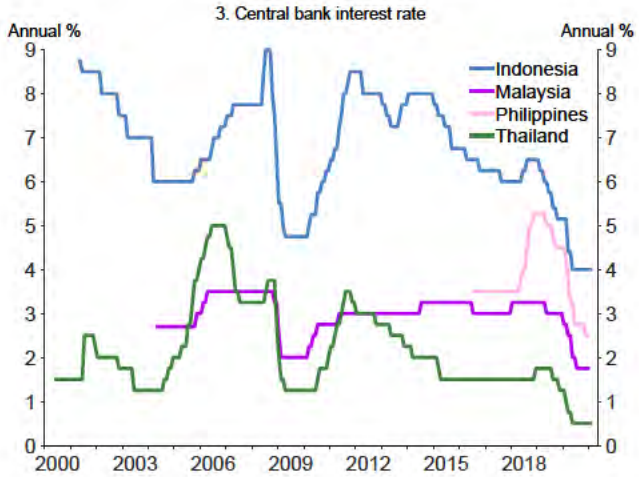

5. Merchandise export growth (3mma, USD)
Annual %
Annual %
Hong Kong
Korea
Singapore
Taiwan

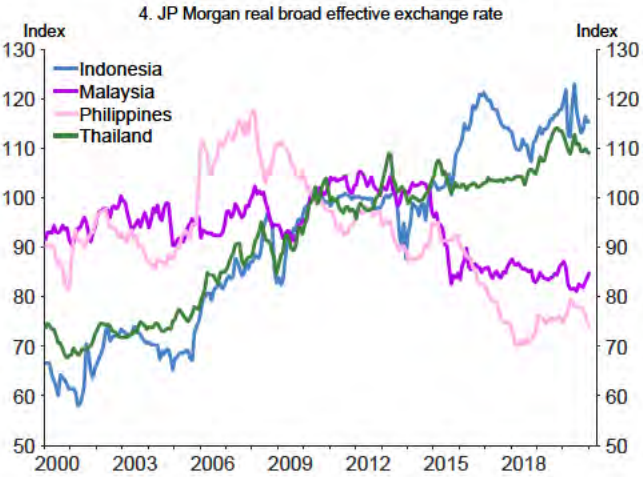

6. Private sector credit
% nom. GDP
% nom. GDP
Hong Kong
Korea
Singapore
Taiwan

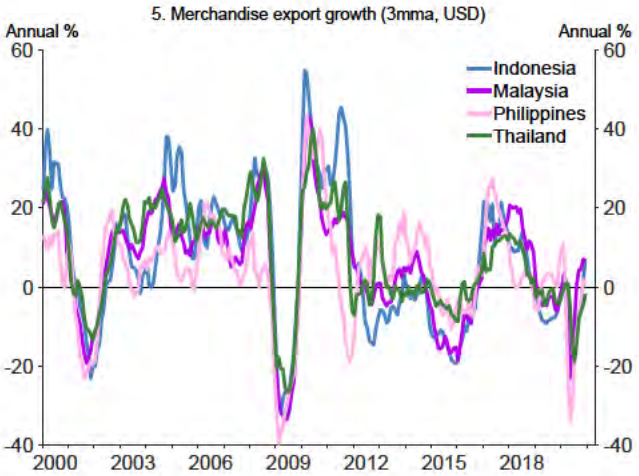
ASEAN

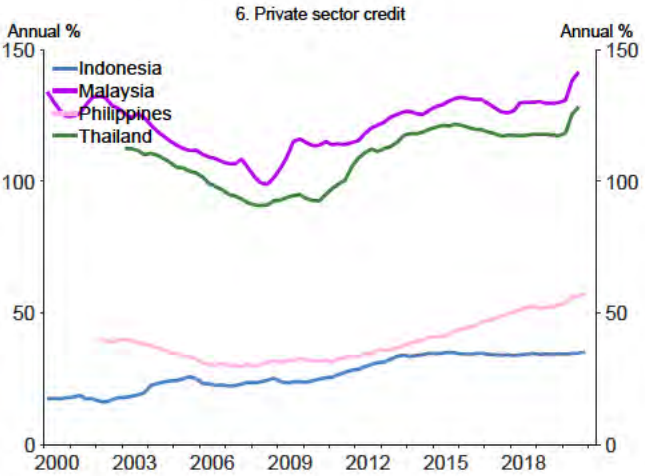

1. GDP growth
Annual %
Annual %
Indonesia
Malaysia
Philippines
Thailand


2. CPI inflation
Annual %
Annual %
Indonesia
Malaysia
Philippines
Thailand

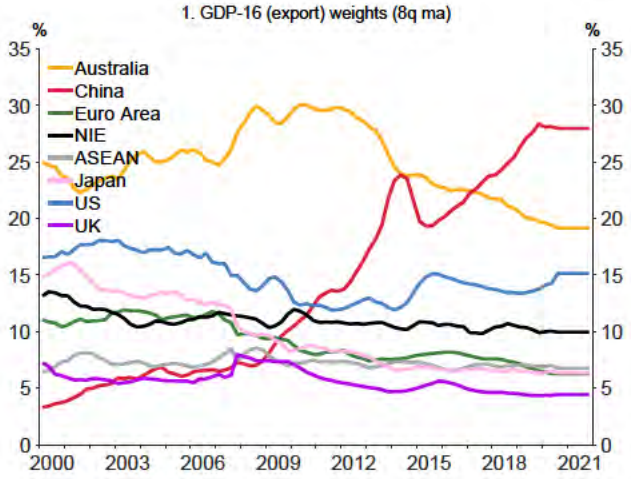

3. Central bank interest rate
Annual %
Annual %
Indonesia
Malaysia
Philippines
Thailand

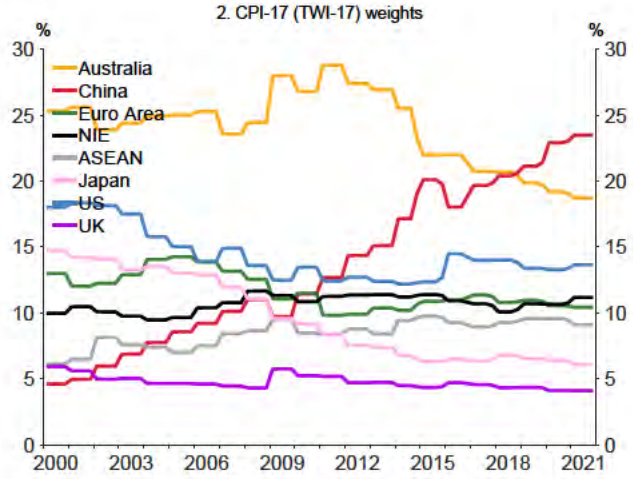

4. JP Morgan real broad effective exchange rate
Index
Index
Indonesia
Malaysia
Philippines
Thailand

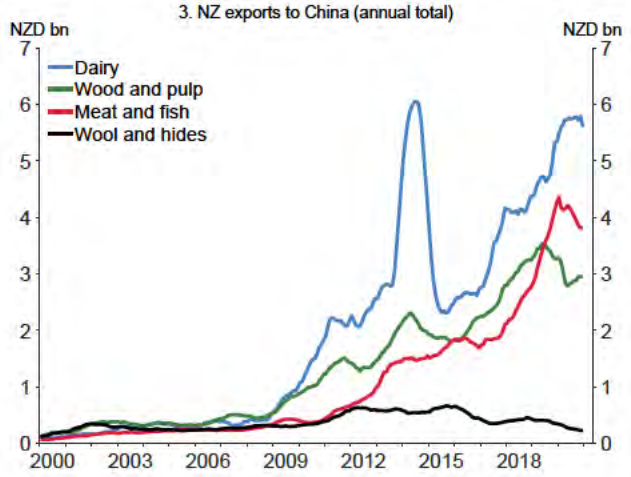

5. Merchandise export growth (3mma, USD)
Annual %
Annual %
Indonesia
Malaysia
Philippines
Thailand

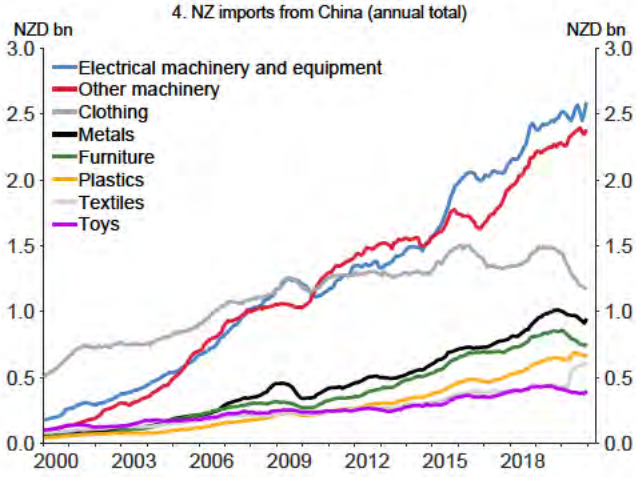

6. Private sector credit
Annual %
Annual %
Indonesia
Malaysia
Philippines
Thailand

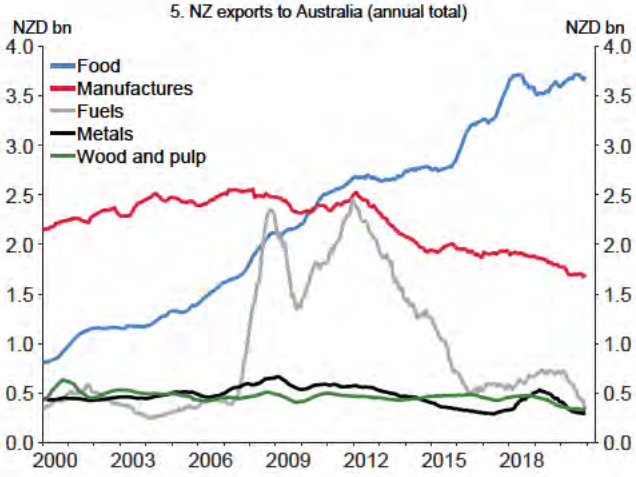
Trade composition

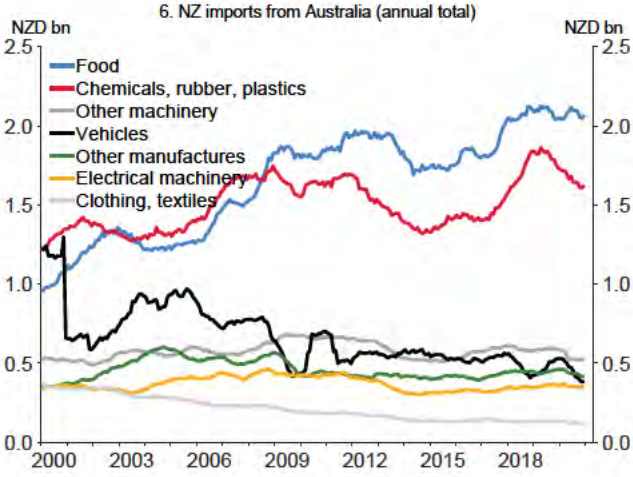




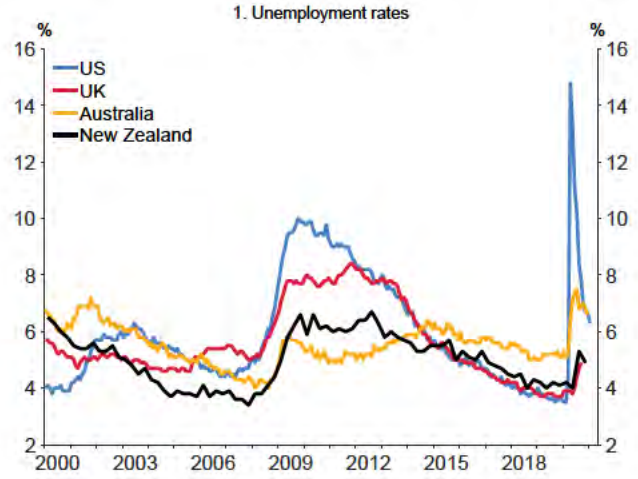


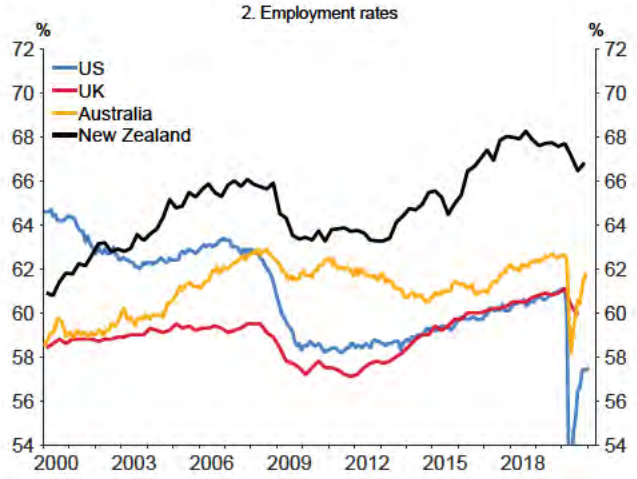


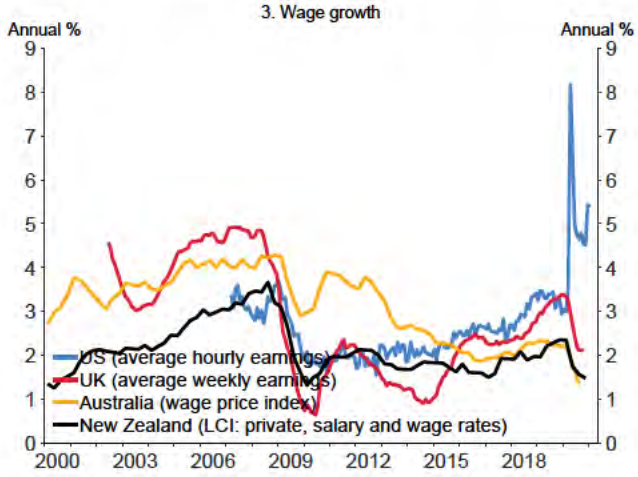


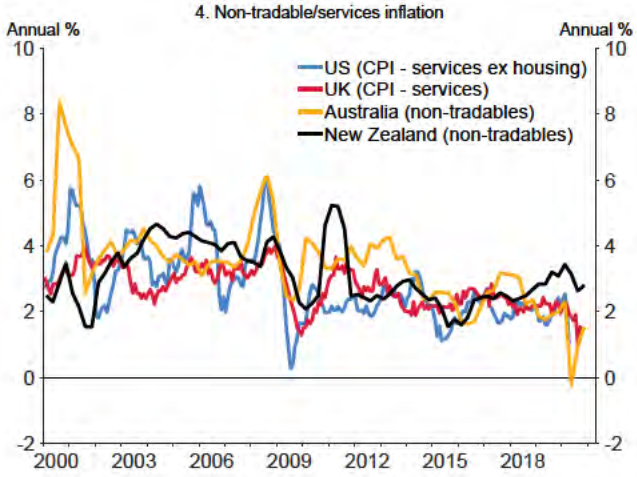


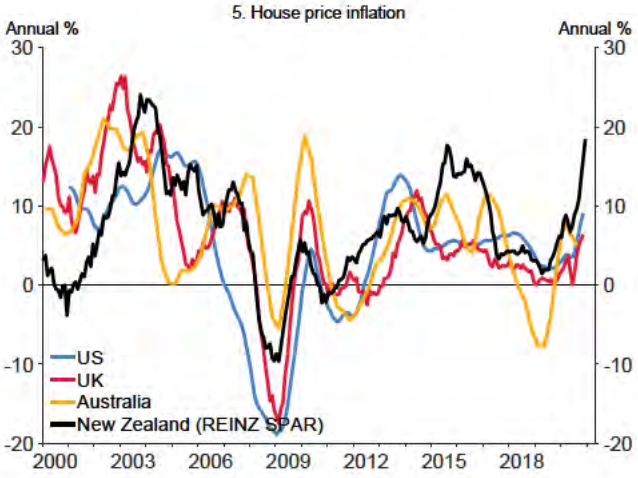
New Zealand comparisons

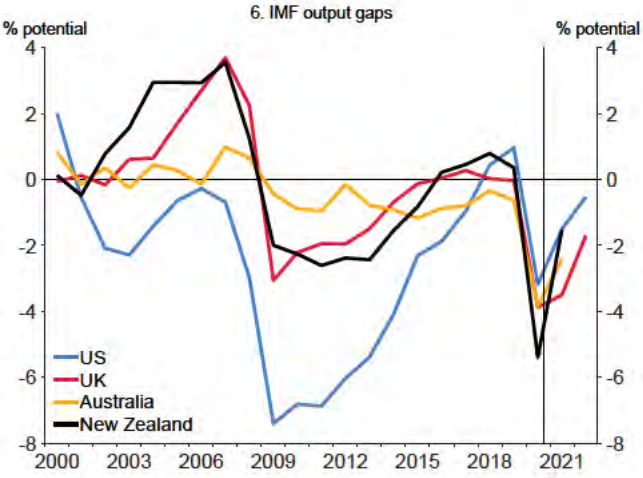












Forecast Week material
May 2021 round

Recent developments

- Paper 1: Where are we relative to our economic objectives?
  (Tyler Smith, Andrew Besuyen, Daniel Wills)

- Paper 2: How much stimulus are we providing?
  (Tom Barker, Ranko Berich, David Craigie, John Knowles)

Issues

- Paper 3.1: International economic and financial markets developments
  (Liza Reiderman, Katie Davis, Niall Healey, Jibran Siddiqi)

- Paper 3.2: Supply considerations – supply chain and labour market disruptions
  (Daniel Wills)

- Paper 3.3: Interest rates and house prices in New Zealand: Some data, some evidence, and some theory
  (Punnoose Jacob)

    - *Draft MPS material*: Chapter 4 topic on monetary policy and house price sustainability (Lewis Kerr, not presented but included for information)

- Paper 3.4: Business developments
  (Thomas Bohm)

Economic projections

- Paper 4: How much stimulus do we need? (with chartpack and tables)
  (Tom Stannard, Marea Sing)

Strategy, tool calibration and market intelligence

- Paper 5.1: The calibration of monetary policy tools
  (Michael Callaghan, Severin Bernhard, David Craigie, Riki Fujii-Rajani, Cameron Haworth, John Knowles, Liza Reiderman)

- Paper 5.2: Market intelligence report and expectations for monetary policy
  (Nick Mulligan)

Supporting material

- Summary of recent discussions with businesses: May 2021
  (Andrew Besuyen)

- External forecasts comparison
  (Marea Sing)

- Sectoral overviews
  - External (India Power)
  - Household (Waran Bhahirethan)
  - Business investment (Thomas Bohm)
  - Labour market (Andrew Besuyen)
  - GDP and capacity pressure (Tyler Smith)
  - Inflation (Daniel Wills)
  - Fiscal (Thomas Bohm)

- Risk survey template (to be handed out following the presentation of the economic projections – Paper 4)

- International chartpack
  (MIA)

- MPC risk appetite statement
  (Julia Ratcliffe, Evelyn Truong)

- MPC operational framework
  (Julia Ratcliffe, Evelyn Truong)

- MPC facts, beliefs, and understandings
  (Julia Ratcliffe, Evelyn Truong)

- Monetary Policy Strategy
  (Julia Ratcliffe, Evelyn Truong)

Forecast Week meeting agenda
May 2021 round

Day One: Monday, 17 May
11.00am – 12.30pm
Overview and recent developments

1. Overview (Rebecca Williams)
2. Where are we relative to our economic objectives? (Paper 1, *Tyler Smith*)
3. How much stimulus are we providing? (Paper 2, *Tom Barker*)

1.30pm – 4.30pm
Issues

4. International economic and financial market developments (Paper 3.1, *Liza Reiderman*)
5. Supply focus: Supply chain and labour market disruptions (Paper 3.2, *Daniel Wills*)

   (Break)
6. Interest rates and house prices in New Zealand: Some data, some evidence, and some theory (Paper 3.3, *Punnoose Jacob*)
7. Business developments (Paper 3.4, *Thomas Bohm*)

Day Two: Tuesday 18 May
9.30am – 11.30am
Economic projections

8. How much stimulus do we need? (Paper 4, *Tom Stannard*)

*** Risk Survey handed out, to be completed before leaving the meeting.***

1.30pm – 3.30pm
Harvest session

Purpose: Use risk survey results to discuss the economic outlook and our assumptions.

Day Three: Wednesday 19 May
1.00pm – 2.30pm
MPC deliberations: Economic outlook

Purpose: MPC-only meeting to explore divergences in view on the economic outlook, and reach consensus on the overall degree of stimulus required**. Forecasting staff given MPC guidance on any changes needed to finalise the projection** (excluding policy track tweaks that can occur later in the process).

MPC Secretary begins drafting the economic situation and outlook sections of the Summary Record of Meeting.

2.30pm – 4.00pm
Strategy and trade-offs

Gael Price to lead discussion (no paper).

Purpose: Discuss monetary policy strategy and trade-offs. Discuss secondary considerations.

Day Four: Thursday 20 May

10.00am – 11.30am
MPC deliberations: Strategy and trade-offs

Second pass presented at the beginning of the meeting if required.

Purpose: MPC-only meeting to explore divergences in view on monetary policy strategy, trade-offs, and secondary considerations.

MPC Secretary begins drafting the strategy/trade-off/secondary considerations sections of the Summary Record of Meeting.

Day Five: Friday 21 May

9.30am – 11.30am
Tool calibration and market expectations

10. The calibration of monetary policy tools (Paper 5.1, *Michael Callaghan*)

11. Market intelligence report and expectations for monetary policy (Paper 5.2, *Nick Mulligan*)

Purpose: Following presentations and discussion on tool calibration and market expectations, discuss key communication considerations of various calibration options.

***** Written advice on tool calibration and communications due to Gulnara Nolan (MPAG secretary) by 3pm *****

Day Six: Monday 24 May

11.30am – 1.00pm
MPC: Decision and communications

Part One: Discuss set of potential changes to the Monetary Policy Strategy outlined in the *Monetary Policy Statement*, following recent MPC discussion on risk appetite statement etc. (Evelyn Truong)

Part Two Purpose: MPC-only meeting to explore divergences in view on the policy decision and communications. MPC to reach consensus/vote on policy decision and communications. MPC to provide final advice on draft Summary Record of Meeting. Forecasting Manager advised of any final adjustments required to the published policy path projection.

Day Seven: Tuesday 25 May
10.00am – 12noon
MPC: Decision and communications

Purpose: Optional MPC-only meeting to allow for further discussion if required.

Day Eight (*MPS* Release day): Wednesday 26 May
9.00am – 11.00am
MPC decision meeting

Purpose: MPC-only meeting to finalise policy decision, finalise Summary Record of Meeting.

Monetary policy announcement and MPS release 2:00pm
Media conference 3:00pm

Risk Survey

Forecast Week, May 2021

The purpose of this survey is to understand where MPAG assesses the risks are to the forecast, to assist with deliberations on the economic outlook and feed into revisions to the central forecast.

Please circle which applies: MPC member Non-MPC member

1. How do you perceive the balance of risk for the **GDP** forecast?

1	2	3	4	5
Strong downside risk		Balanced		Strong upside risk

2. How do you perceive the balance of risk for the **inflation** forecast?

1	2	3	4	5
Strong downside risk		Balanced		Strong upside risk

3. How do you perceive the balance of risk for the **unemployment rate** forecast?

1	2	3	4	5
Strong downside risk (unemployment rate is higher)		Balanced		Strong upside risk (unemployment rate is lower)

4. Please list the most significant risks you see to the economic outlook:

RESERVE BANK OF NEW ZEALAND
TE PŪTEA MATUA

MEMORANDUM FOR	MPC
FROM	Julia Ratcliffe and Evelyn Truong
DATE	March 12th 2021 (last updated 12.05.2021)
SUBJECT	MPC Operational Framework
FOR YOUR	Approval

Purpose and background

This paper outlines an operational framework to embed the MPC's existing foundations, so that they can continue to be efficient in their decision making, capture institutional knowledge, and operate in a way that is consistent with the Bank's and their own values and culture, across time and members.

Introduction

The Monetary Policy Committee's (MPC)'s operational framework (table 1) serves as the foundation on which its monetary policy decisions are built. These foundations enable the MPC to operate both effectively and efficiently. That is, capitalising on the MPC's and RBNZ's resources to make the best policy decisions by having focused, robust, and relevant discussions and deliberations.

This paper makes explicit these foundations, so that the MPC can continue to be efficient in its decision making, capture institutional knowledge, and operate consistently with the Bank's and MPC's values and desired culture.

Table 1: MPC Operational Framework

Foundation	Description
Purpose and Vision	What the MPC are here to do, articulated in both a legal and aspirational sense
Risk Appetite Statement	The MPC's appetite or tolerance for risks it needs to actively seek and manage in order to achieve its purpose
Facts	The data, the agreed knowledge base and bounds that the MPC operate under
Beliefs and Understandings	The implicit assumptions the MPC believe and their underpinnings (theoretical or empirical support)
Strategic framework	The approaches and tools the MPC have to achieve its purpose, and how they are anchored to facts and beliefs
Capabilities and Capacity	The existing skills, technology, processes, and structures the MPC have to implement its strategy on an ongoing basis, both within the Bank and externally
Values and Culture	How the MPC operates most effectively and efficiently to ensure it succeeds as a committee through time and provides confidence to its stakeholders

Purpose and Vision

Purpose

The RBNZ Act 1989 underpins the MPC's purpose, which is to promote the prosperity and well-being of New Zealanders, and contribute to a sustainable and productive economy. The MPC are mandated to do this by formulating monetary policy to achieve and maintain stability in the general level of prices over the medium term and support maximum sustainable employment, subject to secondary considerations.

In particular, the *Remit* specifies under section 2:

(1) For the purpose of this remit the MPC's operational objectives shall be to:

(a) keep future annual inflation between 1 and 3 percent over the medium term, with a focus on keeping future inflation near the 2 percent midpoint. This target will be defined in terms of the All Groups Consumers Price Index, as published by Statistics New Zealand; and

(b) support maximum sustainable employment. The MPC should consider a broad range of labour market indicators to form a view of where employment is relative to its maximum sustainable level, taking into account that the level of maximum sustainable employment is largely determined by non-monetary factors that affect the structure and dynamics of the labour market and is not directly measurable.

(2) In pursuing the operational objectives, the MPC shall:

(a) have regard to the efficiency and soundness of the financial system;
(b) seek to avoid unnecessary instability in output, interest rates, and the exchange rate; and
(c) discount events that have only transitory effects on inflation, setting policy with a medium-term orientation.
(d) assess the effect of its monetary policy decisions on the Government's policy set out in subclause (3).

(3) The Government's policy is to support more sustainable house prices, including by dampening investor demand for existing housing stock, which would improve affordability for first-home buyers.

The MPC's Charter further outlines the duties and responsibilities for the MPC in an operational sense.

Vision

The MPC will maximise its operational objectives, while not taking undue risk. Undue risk can be defined as risks over and above those outlined in their Risk Appetite Statement below.

Risk Appetite Statement

The MPC aims to maximise the operational objectives (to fulfil its purpose) while not taking undue risk. The purpose of the MPC's Risk Appetite Statement is to distinguish between necessary and undue risk. That is, to summarise the MPC's willingness to take on different types of risks as necessary to best fulfil their purpose and vision.

The MPC's willingness to take on some types of risk, such as those provided for in Section 2b) of the *Remit*, must be guided by its legal mandate. Others, such as the financial risk borne by the Reserve Bank as a consequence of the MPC's monetary policy decisions, will be heavily influenced by the risk preferences of the Bank. However, there remain a significant number of operational, legal, and reputational risks which the MPC may take in pursuit of their mandate. Table 2 provides some definitions and examples of the types of risks the MPC face.

Work on how the MPC's risk framework will be implemented is underway.

Table 2: Defining the risks faced by the Monetary Policy Committee

Risk	Definition and examples
Operational	*The risk that people, systems, and processes disruptions impact on the MPC meeting and formulating monetary policy effectively as a committee.* • One or more MPC members can't meet due to illness, technical difficulties or similar issues • MPC members can meet, but they don't have the best information or resources available to make their decision • MPC must make decisions under less than ideal conditions – e.g. without sufficient time for deliberation • MPC can make a decision, but don't have the resources to communicate it well
Legal	*The risk that the MPC does not fulfil their lawful mandate and are subject to legal challenge. Lawful mandate covers the Act, Remit, Charter, and Code of Conduct.* • The legality of MPC monetary policy decsions is questioned • An MPC member is found to have acted illegally, e.g. by failing to declare a conflict of interest
Reputational	*The risk that damage to credibility results in a loss of stakeholder trust or confidence in monetary policy and/or the MPC.* • MPC policies produce poor outcomes • MPC policies produce good outcomes, but are received poorly by the public or other key stakeholders • Monetary policy credibility is lost • The reputation of MPC or MPC members is compromised by factors other than policy choices
Financial	*The MPC bear no financial risk at the Committee level, but have the responsibility to set policies which may cause significant financial risk to be borne by the Reserve Bank.*

Monetary Policy Committee Risk Appetite Statement

Risk Categories and tolerance levels (A coloured box denotes the default tolerance level, exceptions are listed in italics)

Operational			Legal			Financial	Reputation		
L	M	H	L	M	H		L	M	H
	New systems and processes							*External challenge*	*Learning from international peers and innovative or novel policy*

Statement	Success indicators
Operational Risk • We have low appetite for directing the Reserve Bank to undertake policies that would exceed their operational capacity, or lead to a policy being launched without sufficient preparation. • We have low appetite for making decisions without thorough deliberation and a sound understanding of the information available at the time. However, we operate in an inherently uncertain environment, therefore we necessarily have a high tolerance for setting policy under uncertainty. • We have low tolerance for making a decision without all members contributing, but are flexible with respect to how members come together to deliberate. • We have moderate appetite to test new internal systems and processes, seeking continuous improvement in the way we operate	- Monetary policy decisions are implemented effectively by the RBNZ.
Reputational Risk • We recognise the importance of credibility for effective monetary policy. We have low appetite for policies or decisions that could cause inflation expectations to become unanchored. • We have moderate appetite for external criticism and challenge, and will respond as necessary to maintain our legal licence to operate. • We have high appetite to learn from our international peers and to design and test new or novel policies to respond to uncharted economic conditions.	- Medium-to-long-term inflation expectations are anchored near the target midpoint. - Market rates (e.g. OIS) move as intended when implementing monetary policy.
Legal and financial risk • We have very low appetite for legal challenge, and no appetite for acting illegally. • We bear no financial risk at the Committee level, but have the responsibility to set policies which may cause significant financial risk to be borne by the Reserve Bank. For this reason, we are guided by the Reserve Bank's internal risk appetite and institutional arrangements in these areas.	- Monetary policy decisions are explained and justified in the Monetary Policy Statement. - Record of meeting reflects; consideration of a broad range of information, robust discussion, and acknowledgement of secondary considerations. - Members continuously seek to reach consensus. - Inflation and employment are near or forecast to converge towards their respective targets.

Facts

Two parts make up the MPC's fact base: the data, and things about monetary policy and their role in formulating it that the MPC agree to be indisputably true. We shall call the latter "monetary policy facts".

The data are the information used as evidence in the MPC's decision-making. The facts the Reserve Bank use come from a wide range of data sources, including StatsNZ, Bloomberg, surveys, private banks, and other private data companies such as CoreLogic. At each monetary policy decision meeting, the MPC are faced with a new set of facts about the evolution of the economy. While we recognise the limitations of some data, such as measurement error or the potential for it to be revised, it is the Bank's best gauge on the domestic and international economy.

Chapter 5 of the MPC's Handbook lays out in detail the key features of the New Zealand economy from a monetary policy perspective, and characterises the data we use to inform the Bank's economic assessment and forecasts.

The monetary policy facts that the MPC operate using are listed below:

- We are legally required to pursue our *Remit* objectives at all times.
- The *Remit* is consistent with the fact that interest rates will vary to achieve a stable level of general prices. Interest rates could also vary to achieve a stable level of the exchange rate, but not both.
- Our monetary policy decisions impact on our inflation and employment goals with long and variable lags. We must takes the lags and uncertainty into our policy consideration so as to avoid unnecessary instability in output, interest rates and the exchange rate.
- At the time of monetary policy decision-making, the Government's published fiscal policy settings are taken as given. Official fiscal policy updates are an input into our monetary policy decision making.

Beliefs and understandings

In order to arrive at a monetary policy decision, the MPC must interpret the facts through the lens of their beliefs and understandings. These beliefs and understandings are evidence-based, and will evolve over time in response to new evidence. Unlike facts, beliefs are open to challenge, because the nature of the available information means they cannot be conclusively tested.

Committee members may at times hold different beliefs when faced with the same set of facts. Diversity is a core principle of good deliberation by a monetary policy committee, which includes diversity of thought. One type of diversity of thought relevant to the MPC is different economic beliefs and understandings. Some beliefs will be shared by all MPC members, others may form the foundation for points of difference. Being able to articulate the beliefs and understandings that all members share and the ones that they don't will help facilitate more effective policy deliberation.

Below, we list a set of shared beliefs and understandings which form the foundation for monetary policy decision making within the MPC.[1] There are currently no divergences, but this does not mean that members cannot change their views or dissent – only that they should be explicit when they do so. These beliefs and understandings are subject to change through time in light of new information, or as a consequence of deliberation and improved understanding.

Summary of key beliefs

Section 1: Understanding the *Remit*

A. The current *Remit* is fit for the purposes defined in the Reserve Bank Act.
B. Maximum sustainable employment can be defined as “the highest utilisation of labour resources that can be maintained without creating a sustained acceleration in inflation”.
C. The MPC should aim for policy settings that maximise welfare across primary objectives and secondary considerations, subject to meeting *Remit* requirements.

Section 2: Monetary Policy Effectiveness

A. The credibility of policy targets and communications underpins policy effectiveness.
B. Inflation expectations are an important measure of our credibility. They have a direct impact on and are influenced by actual inflation outcomes.
C. Monetary policy is effective because the term structure of interest rates influences real economic activity and inflation.
D. The appropriate mix of monetary policy instruments will vary through time as economic circumstances change. Some tools may be more appropriate in some situations than others.
E. An “effective lower bound” on interest rates exists and the cost-benefit balance of adding stimulus changes as we approach the ELB.
F. In most circumstances, aiming for the mid-point of our inflation target over an effective policy horizon maximises our chance of meeting the *Remit*. However, there may be times when aiming for slightly above or below the mid-point of the inflation target is more effective in achieving the *Remit* outcomes sustainably.
G. Monetary policy is not the best instrument through which financial stability can be achieved. Other instruments are more effective at achieving financial stability.

[1] Short descriptions of each belief are provided in the attached Facts, Beliefs, and Understandings paper.

Strategic frameworks

The RBNZ has created a few different strategic frameworks to support the decision-making process and make trade-offs along different dimensions. The MPC owns these strategies as they form the basis of their decision making, and can review or change them as they see fit. The strategic frameworks should be anchored to the facts, and shared beliefs and understandings.

First and foremost, the MPC's monetary policy strategy is published in the front pages of the *Monetary Policy Statement.*[2] The MPC's monetary policy strategy is its overarching plan for how it will formulate monetary policy under different circumstances to achieve its objectives. It outlines a consistent approach to how the MPC intends to achieve its objectives across time, accounting for trade-offs and uncertainty. The MPC's strategy can be summarised in five key components.

- The MPC practices forecast targeting which means that it sets monetary policy such that it expects to achieve its inflation and employment goals in the medium term
- The MPC takes into account both its inflation and employment objectives when 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.
- The MPC responds to both deviations above target and deviations below target.
- 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.
- The MPC has regard to the efficiency and soundness of the financial system.

Secondly, the RBNZ provided the MPC with the Principles for Monetary Policy Tools. This framework allows the MPC to compare different tools across five categories: effectiveness, efficiency, financial system soundness, public balance sheet risk, and operational readiness. The principles recognise that new tools in our expanded monetary policy toolkit may operate differently from the OCR and, therefore, can have different side effects. Ultimately, the principles are designed to ensure that these tools would only be used to meet the Committee's *Remit*.

Lastly, given the increasing interaction of new monetary tools, the need for a robust framework to assess the trade-offs of the tools with their financial stability implications is imperative, alongside how monetary and financial stability policy should interact in different instances. Work will be underway in 2021 to develop an enduring framework for the MPC's use in this space.

[2] This background material for this strategy is published in Ratcliffe and Kendall (2019), 'Monetary policy strategy in New Zealand', Reserve Bank of New Zealand, Bulletin, Vol. 82, No. 3, April, and Chapter 7 of the MPC's Handbook.

Capabilities and capacity

Legal and financial capability

The MPC and the RBNZ have the legal capacity to formulate and implement monetary policy.[3] This means that they can use monetary policy tools to achieve their legal mandate.

The RBNZ has the financial capacity to implement monetary policy through the use of its balance sheet. The RBNZ has full control of its balance sheet subject to the annual dividend it must pay to the Government. The RBNZ places internal risk controls on the balance sheet, which determine how much fiscal capacity the MPC is provided.

The RBNZ's forthcoming Financial Risk Appetite Statement defines the amount of financial risk the [Board/Governor] is willing for RBNZ Management to take in pursuit of their mandate. Within the statement a policy portfolio is defined, which sets out the scope of operations that the RBNZ need to be able to implement to achieve its mandate, and for which it holds capital. Among other things, the policy portfolio is used to allocate capital to monetary policy implementation operations. This constrains the total amount of market risk that the Monetary Policy Committee can take.[4]

If the RBNZ has insufficient financial capital to implement the monetary policy formulated by the MPC, they can request an indemnity under the Memorandum of Understanding (MoU) between the RBNZ and the Minister of Finance, regarding the use of Alternative Monetary Policy (AMP) tools (i.e. monetary tools other than the OCR). To summarise how the MoU works in practice:

- The RBNZ must ask the Minister for a Crown indemnity before using AMP that involves financial risks beyond the capacity of the RBNZ;
- The MPC has the freedom to use AMP up to the limits set out in the indemnity;
- The Minister's financial risk appetite determines the limits on the use of AMP, via the requirement on the RBNZ to seek an indemnity;
- The indemnity eliminates the RBNZ's financial risks from AMP, passing them onto the Crown;
- Legally the RBNZ could implement AMP if an indemnity request was denied but, in practice, the RBNZ wouldn't because of the financial and reputational risks.

Organisational capabilities and capacity

[3] The distinction between 'formulating' and 'implementing' monetary policy is not specified. This means the MPC can choose which features of monetary policy to decide upon (formulating) and what features are left to RBNZ staff (implementing).
[4] The finalised Financial Risk Appetite Statement will be attached when it is published.

The RBNZ has a variety of resources directed towards helping the MPC to effectively formulate and implement monetary policy. The Economics and Financial Markets departments have flexibility to readjust their capabilities and capacity to respond to the changing needs of the MPC over time.

To aid the MPC in their decision-making, the Economics department offers policy-relevant economic research, economic models such as NZSIM[5], and policy papers to address topical issues each policy round. The Financial Markets department also contributes to this analysis.

In addition to providing market analysis, the Financial Markets Department has the responsibility for implementing monetary policy. They use a variety of resources to manage monetary policy operations, domestic market liquidity and the RBNZ's balance sheet risk. Prior to introducing AMP tools, the Portfolio Management team ran open market operations through daily tenders and foreign exchange swaps to manage the level of settlement cash and the OCR. As monetary policy has changed over 2020, the department has adapted its existing operations, such as introducing Yieldbroker to manage the new LSAP programme.

The RBNZ also have strong external relationships that we can utilise for a wide array of things such as information gathering, consultations, and research we don't have the expertise for. In the Bank's network, we include the academic community, private banks, other central banks, New Zealand government agencies, and private economic think tanks and consultancies.

The MPC have limitations on their time, in that they only work part time. They are expected to allocate time for policy meetings, and to read surrounding material. 9(2)(a) This is subject to individual members' schedules.

Values/culture

The MPC's Code of Conduct and Charter lay out the Committee's legal obligations in terms of how they operate as a group. At a high level, the Code of Conduct states, "Members must at all times act with honesty and integrity, in good faith, with respect for their colleagues and staff, and with reasonable care, diligence, and skill, having regard to the functions of the MPC." There are two times in particular when these values are most important – in decision making and in external communications.

Decision making

In particular, the MPC members must "contribute actively to and participate in MPC meetings, treating others' contributions with respect at all times, and exchange ideas

[5] Section 5.8 of the MPC's Handbook explores the models in more detail.

freely to promote excellence in the MPC's deliberations." They must also seek consensus in their decision making.

Chapter 2 of the MPC's Handbook outlines a Bank view on the principles of good deliberation by a monetary policy committee, which are aimed at supporting the MPC in upholding the deliberation aspects of their Code of Conduct and Charter. Table 3 outlines the three core components of good deliberation: clear objectives, diversity, and inclusion.

Table 3: Principles of MPC deliberations for monetary policy

Principles of MPC deliberation		
Clear objectives		• The MPC understands and is committed to the objectives of monetary policy. • MPC meetings have clear objectives and formal protocols to ensure efficient use of time, expertise and collective commitment.
Diversity		• Decision makers are diverse in personal characteristics, skills, and thought.
Inclusion	Information	• Meetings occur in three stages: Information pooling, deliberation, and decision making. • Experts present data and advice in information pooling meetings. • Decisions are based on all information and evidence.
	People	• Decision meetings are chaired by the Governor to ensure all views are aired and differences in view are duly deliberated. • Members come prepared to engage in open and constructive deliberations. • The Committee seek to make decisions by consensus and reflect the balance of views held.

Clear objectives and diversity are supported by external factors, such as the directions contained within the *Remit* and the structure and composition of the Monetary Policy Committee. Therefore, we focus our attention on ways in which we can support inclusion of diverse people and ideas within our monetary policy deliberations.

Structuring MPC meetings such that policy deliberation meetings are distinct from decision-making meetings ensures that all data and information pertaining to the decision have been understood and debated before the decision is deliberated. This helps to avoid bias in the ideas or information that are included, which can occur when an individual states their policy preference early in group discussions or during information pooling sessions.

Consensus decision making implies that the views of all decision makers, including dissenting views, have been aired and understood in the decision-making process. Members work through differing or opposing positions to come to an agreement.

The Act states that the Governor will be the chairperson of the MPC. In the MPC, the chairperson should encourage open debate and genuinely collective decision making and guide the committee to a consensus decision. The chairperson role is particularly important during the deliberation and decision-making meetings.

The principle of inclusion implies that an MPC chairperson should not be overly dominant. A dominant chairperson can overpower the views of members of the committee and reduce the degree of deliberation behind decisions. Blinder's (2006) analysis suggests that the level of dissent accepted within the committee could be a key indicator of whether a committee makes decisions collectively or by following the preferences of the chairperson.[6] Normalising dissent during deliberations also enables individuals to take ownership of the shared decision, therefore balancing the consensus decision with individual accountability.

External communications

The Charter allows MPC members to express their individual views but reminds them that they should do so with respect for the other members and the Committee as a whole. In line with this, they must not characterise the views of any other individual members and communications must be consistent with the MPC's official communications.

RBNZ values and culture

The Reserve Bank of New Zealand has its own organisational values that the MPC can choose to adopt if they think it is appropriate. As four of the seven members of the MPC are internal members who adhere to the RBNZ values and culture, the MPC should at least be aware of how the RBNZ operates organisationally.

The RBNZ has a vision of Great Team, Best Central Bank. By 'Great' we mean consistently working together in a way which represents our values of innovation, integrity, and inclusiveness. This means operating within a constructive culture – pursuing a standard of excellence; maintaining personal integrity; and supporting, collaborating and cooperating cohesively with others. 'Best' is being effective in what we do and striving for best practice individually, and collectively. We can then be the most cost-effective and fit-for-purpose central bank for New Zealand.

[6] Blinder, A (2006), 'Monetary policy by committee: why and how', *DNB Working Paper* No 92.

Monetary Policy Committee Risk Appetite Framework	
Tolerance level classification	
Risk appetite	**Description**
High	We readily accept exposure to these risks, as they are central to the pursuit of our mandate. Managing them on an appropriate risk-reward basis is one of our core competencies.
Medium	We accept exposure to these risks, but on a controlled basis. These risks contribute to the achievement of our mandate but may come at a material cost, and are taken on a modest basis.
Low	We generally avoid these risks, as they have the potential to undermine our ability to achieve our mandate. When these risks arise, extra measures are taken to mitigate them.
Risk type classification	
Risk	**Definition**
Operational	The risk that people, systems, and processes disruptions impact on the MPC meeting and formulating monetary policy effectively as a committee.
Legal	The risk that the MPC does not fulfil their lawful mandate and are subject to legal challenge. Lawful mandate covers the Act, Remit, Charter, and Code of Conduct.
Reputational	The risk that damage to credibility results in a loss of stakeholder trust or confidence in monetary policy and/or the MPC.
Financial	The MPC bear no financial risk at the Committee level, but have the responsibility to set policies which may cause significant financial risk to be borne by the Reserve Bank.

Monetary Policy Committee Risk Appetite Statement

Risk Categories and tolerance levels (A coloured box denotes the default tolerance level, exceptions are listed in italics)

Operational			Legal			Financial	Reputation		
L	M	H	L	M	H		L	M	H
	New systems and processes							*External challenge*	*Learning from international peers and innovative or novel policy*

Statement	Success indicators
Operational Risk • We have low appetite for directing the Reserve Bank to undertake policies that would exceed their operational capacity, or lead to a policy being launched without sufficient preparation. • We have low appetite for making decisions without thorough deliberation and a sound understanding of the information available at the time. However, we operate in an inherently uncertain environment, therefore we necessarily have a high tolerance for setting policy under uncertainty. • We have low tolerance for making a decision without all members contributing, but are flexible with respect to how members come together to deliberate. • We have moderate appetite to test new internal systems and processes, seeking continuous improvement in the way we operate	- Monetary policy decisions are implemented effectively by the RBNZ.
Reputational Risk • We recognise the importance of credibility for effective monetary policy. We have low appetite for policies or decisions that could cause inflation expectations to become unanchored. • We have moderate appetite for external criticism and challenge, and will respond as necessary to maintain our legal licence to operate. • We have high appetite to learn from our international peers and to design and test new or novel policies to respond to uncharted economic conditions.	- Medium-to-long-term inflation expectations are anchored near the target midpoint. - Market rates (e.g. OIS) move as intended when implementing monetary policy. - Inflation and employment are near or forecast to converge towards their respective targets.

Legal and financial risk • We have very low appetite for legal challenge, and no appetite for acting illegally. • We bear no financial risk at the Committee level, but have the responsibility to set policies which may cause financial risk to be borne by the Reserve Bank. For this reason, we are guided by the Reserve Bank's internal risk appetite and institutional arrangements in these areas.	- Monetary policy decisions are explained and justified in the Monetary Policy Statement. - Record of meeting reflects; consideration of a broad range of information, robust discussion, and acknowledgement of secondary considerations. - Members continuously seek to reach consensus.

Negative OCR back-pockets

Last update: 17 February 2021

Q&A back pockets

What are negative interest rates?

Negative interest rates enable central banks to provide additional stimulus when short-term policy rates, such as the Official Cash Rate (OCR), have approached zero.

Negative policy rates have been implemented overseas in the euro area, Japan, Switzerland, Sweden, and Denmark. If negative interest rates were to be implemented in New Zealand, the Reserve Bank would lower the OCR below zero. It would work in a similar way to conventional monetary policy, by lowering the cost of short term wholesale borrowing which would then flow through to other interest rates in the economy.

Negative policy rates do not necessarily mean negative retail deposit rates. In countries where negative interest rates have been used overseas, deposit rates for households and small businesses have tended to stay at or above zero.

Is a negative OCR different to a positive OCR?

There's nothing magic about an OCR that is zero or mildly negative, rather than positive. Cuts to the OCR below zero work through all the same channels as cuts to the OCR above zero.

However, there are two reasons why a *very low or negative* OCR might work a bit differently to a higher OCR. First, banks generally choose not to lower retail deposit rates below zero, meaning that transmission through this channel might be weaker than usual.

Second, if the OCR were to be very negative, some firms and households might find it preferable to hold some of their savings as cash.

Neither of these constraints start to bind exactly at zero. On-call deposit rates, for example, have been at zero for some time. Excess cash withdrawals, on the other hand, are unlikely to happen until the costs of the negative rate outweigh the costs of storing and moving cash, and offset the convenience of electronic accounts.

The only constraints that bind at exactly zero are the operational constraints – primarily IT systems which no longer function appropriately with a negative number. Throughout 2020 banks worked hard to ensure that these operational constraints were overcome, and we are now confident that our financial system could operate with negative rates in place.

Why have you not used negative interest rates before?

There are 2 reasons we did not use negative rates last year:

- Firstly, our correspondence with banks had shown that not all banks' systems and processes were ready to operate with a zero or negative OCR at that time. Operational readiness is one of the 5 principles we consider when deciding whether to implement a monetary policy tool.
- Secondly, recognising that operational constraints were likely to be an issue for some time, in March 2020, the Monetary Policy Committee (MPC) provided forward guidance that the OCR would stay at 0.25 percent for at least 12 months. This guidance provided clarity and certainty to financial market participants through a highly uncertain time.

More generally, interest rates have never needed to be as low in New Zealand as they are now because neutral interest rates, (the interest rate which on average over time is neither expansionary

nor contractionary) have been gradually declining for decades. This means that the average level around which the OCR will fluctuate has trended downwards over time. We see this long run trend in advanced economies all over the world, driven by low productivity growth, population ageing, increasing globalisation, and increasing awareness and concern about financial stability risks.

A low neutral interest rate, combined with a significant economic shock, means that this is the first time in history when such a low OCR has been needed in New Zealand.

Are banks now ready for negative interest rates?

Yes. Banks have confirmed that they are ready to operate in a negative interest rate environment.

Does that mean you will implement negative interest rates soon?

At every monetary policy decision, the Monetary Policy Committee (MPC) will make an assessment of the economy and the amount of stimulus required to achieve its mandate of full employment and low and stable inflation.

MPC will assess the tools available using the principles of effectiveness, efficiency, financial system soundness, balance sheet risk and operational readiness.

A negative OCR will be used if the MPC judges that monetary stimulus is required, and based on our principles, a negative interest rate is the best tool for the job.

Other central banks, such as those in Australia and the United States, have been unwilling to use negative interest rates. What makes New Zealand different/what makes you think you know better?

Every country is unique in its economic structure and the structure of its financial system, so it would be unsurprising if some policies which could be highly effective in one country could be less useful in another. Internationally, the global academic debate continues as to how effective negative rates can be in what conditions, and at what cost.

Negative policy rates have been implemented overseas in the euro area, Japan, Switzerland, Sweden, and Denmark, and all of these countries saw short term and long term market interest rates fall as a result. The Bank of England has also signalled its banking system to begin preparing their operational systems to implement negative rates, as we did at the beginning of last year.

Throughout the course of the year, we have looked closely at how negative interest rates might work in New Zealand, looking to countries who have already used negative rates as examples, as well as considering the theoretical literature on the topic. We've assessed the tool against all of our *principles.* This requires considering both the costs and the benefits of any policy, using the full extent of our knowledge about the New Zealand economy. Having carefully worked on this assessment over the past year, we judge that negative rates could well be an appropriate option for providing economic stimulus if required.

Won't it mean negative interest rates for savers?

A negative OCR is unlikely to result in negative interest rates for most households and businesses. Many countries around the world have implemented negative policy rates, but there have been very few instances of negative interest rates faces by consumers. The few exceptions to this rule tend to be due to unique structural features of the banking system in those countries, or for customers with large deposit balances. It is up to banks to make decisions around how they price their products.

Won't negative rates impact banks' profits and subsequently their ability/appetite to lend to businesses and consumers?

International studies have found mixed results of the effect of negative interest rates on bank profitability. Monetary stimulus strengthens the economy, reducing loan defaults and increasing credit demand.

It is likely that negative interest rates reduce bank profitability, because they have a lot of deposits that they are unlikely to charge negative interest on, while we are charging them on their deposits with us. But our mandate is employment and inflation, and we are confident that a lower OCR will support those goals, partly through the banking system, but also through other channels.

If necessary, we can also design our facilities to reduce the negative interest burden on the banking system to support pass-through of monetary policy. Many other central banks with negative interest rates have introduced 'exemption tiering', where banks are only charged negative interest on a portion of their deposits with the central bank. FLP funding will also become cheaper due to the negative OCR.

Compared to some other countries that have implemented negative interest rates, New Zealand's banking system is starting from a point of high profitability.

Are you subsidising the big banks if you give them an exemption tier from negative rates?

FMD to work on additional Q+As around exemption tiering over the coming weeks.

STRICTLY CONFIDENTIAL TO RECIPIENTS
13 MAY 2021

Paper 1: Where are we relative to our economic objectives?

Forecasting team

Authors: Tyler Smith, Daniel Wills, Andrew Besuyen

SUMMARY

- Inflation and employment remained resilient in the first three months of 2021, with employment outturns better than expected. We expect this resilience to continue over coming quarters, albeit remain uneven across sectors until borders restrictions ease.
  - CPI inflation is expected to increase into the top half of the Reserve Bank's 1-3% target range in 2021. This is accounted for by rising tradables inflation and sustained momentum in non-tradables inflation. Much of the near-term tradables strength is driven by supply chain disruptions, but underlying core inflation has also been rising.
  - In the light of higher structural unemployment, the labour market is likely to remain tight and employment is likely to stay closer to but still below its maximum sustainable level. Wage inflation has been tempered so far. However, the combination of strong demand and supply constraints while stringent border restrictions apply mean we expect wage pressure to emerge across the next two quarters. In addition, this is supported by the minimum wage increase in the June 2021 quarter.

DOMESTIC GROWTH REBOUND EXCEEDS EXPECTATIONS

New Zealand's economic recovery has been swift

Economic activity weakened slightly at the end of 2020, but GDP remains only about 0.9 percent below its pre-COVID-19 level. The successful and sustained containment of COVID-19 has enabled us to continually outperform many of our trading partners (figure 1). New Zealand had a 'V'-shaped recovery during 2020, supported by favourable health outcomes, pent-up demand, substantial monetary and fiscal stimulus, and a robust housing market as well as strong goods export demand (figure 2). Our domestic performance has been stronger than we, or other market commentators, expected in mid-2020.

Figure 1: Trading partner GDP

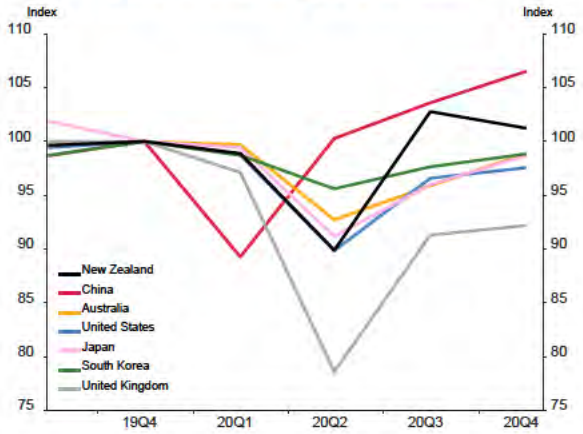
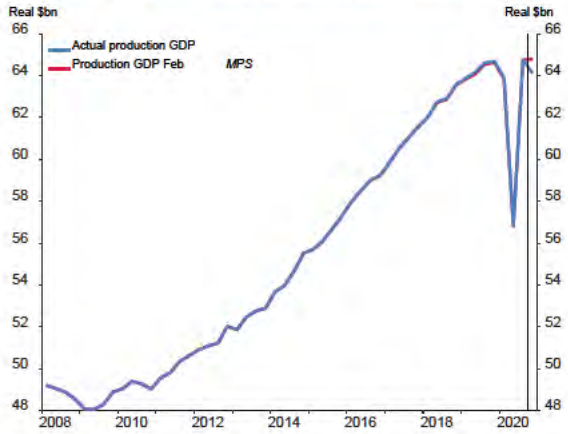


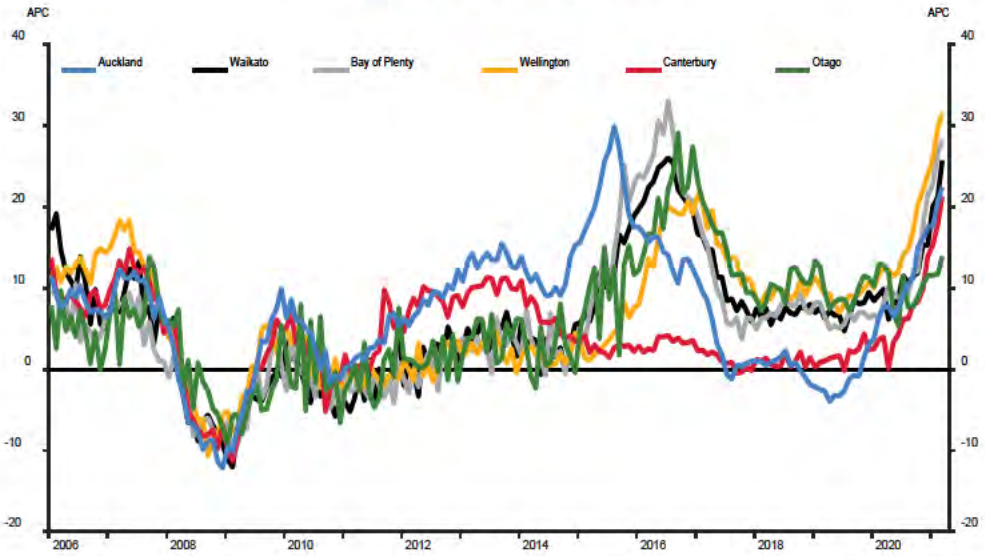
Figure 2: Real production GDP



The tale of two economies continues

Below these strong headline figures for economic activity, a clear sectoral story remains reflecting the tale of two economies. Over 2020 the parts of the economy most exposed to tourism suffered as international travellers were unable to visit New Zealand. However post-lockdown, much of this weakness was offset by strength in the housing market. More recently house price growth has remained strong, with annual house price inflation at 22 percent in early 2021 (figure 3). Key demand-side drivers include high inward migration before border restrictions were implemented, a resilient labour market, and, lower interest rates and the removal of LVR restrictions making mortgages cheaper and more accessible for homebuyers. These factors have taken place in an environment of insufficiently responsive housing supply. The Government's changes to tax policy for property investors announced in April, and low net immigration are expected to dampen house price inflation over the near term (see Box A: Housing announcement in the projections paper).

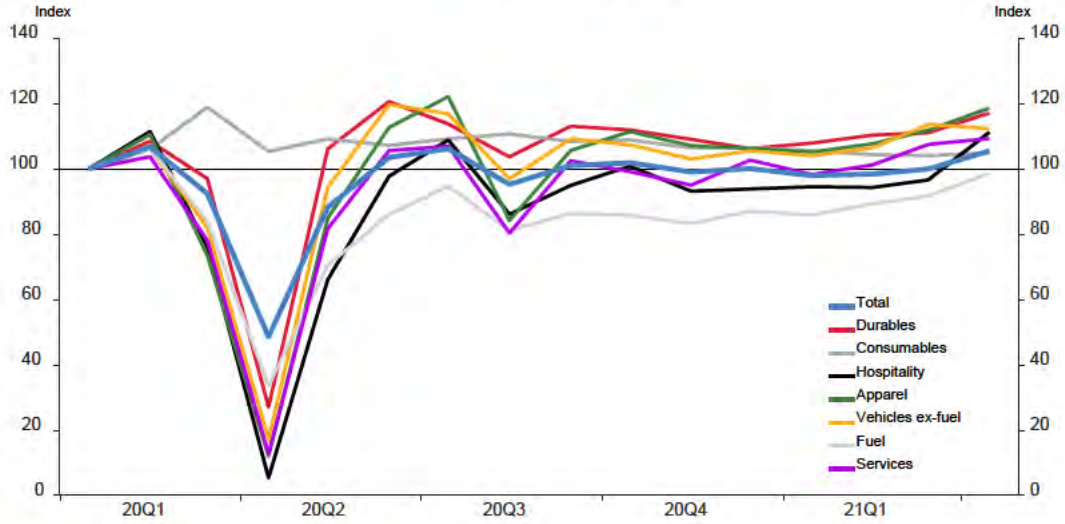
Figure 3: House prices



Spending remains robust

A resilient labour market, savings accumulated across the first half of 2020, and increased household wealth have supported household spending. Retail spending remained above pre-COVID-19 levels in the December 2020 quarter. The strength has continued to be broad-based in most sectors and regions, although early indications are that consumption spending has weakened somewhat since the new year but good indications from the start of the June quarter (figure 4). See paper 4.3B Sectoral Overview for further details.

Figure 4: Electronic card spending
(Jan 2020 = 100, s.a.)



Residential investment is elevated

Residential investment has continued to increase in response to momentum in the housing market (figure 5). Discussions with building firms suggested that the pipeline of work remains full across 2021, consistent with elevated levels of consent issuance in recent months. A growing detachment of issued consents from actual residential work is becoming apparent as construction struggles to keep pace with the heightened demand. Capacity pressures are now beginning to emerge within the construction sector as firms continue to report difficulties in finding labour (both skilled and unskilled) and material shortages have become more acute in the wake of global supply chain disruptions.

Figure 5: Residential investment

Total construction sector activity, including non-residential and other construction, was weaker in the December quarter. In part, this reflects weaker non-residential building activity and construction services. But it also reflects that the high levels of activity in the September quarter included some 'pay back' following the lockdown, and were unsustainable. See BIC summary paper for further details. Weakness in construction services is likely to largely be a one-off.

The tourism sector is still a drag

The sectors most exposed to international tourism remain weak. The absence of international visitors continues to drag on economic activity, and has been only partially offset by an increase in domestic tourism. There has been some improvement in these sectors, but they are still significantly below their pre-COVID-19 levels (figure 6). Since the New Zealand summer holiday period ended, support to these areas by domestic tourism has faded reinforcing our outlook for a slightly weaker domestic economy in the near term.

Figure 6: Firm activity

There is light at the end of tunnel

The recent opening of the trans-Tasman travel bubble should provide some offset to this weakness. We expect the up-take to be gradual with safety concerns and fears of renewed lockdowns tempering initial optimism to travel to Australia. Arrival and departure data show a couple of thousands travellers each day (figure 7 & 8). Early indications suggest travel is slightly skewed in New Zealand's favour with more Australians coming here than New Zealanders heading the other way. Anecdotal evidence from BICs suggest initial travel is largely driven by people traveling to seeing family and friends on the other side of the Tasman, with slightly more coming from Australia due to the one-way travel bubble New Zealanders already had with certain Australian states and New Zealand's significant diaspora in Australia (see paper 4.3A Sectoral overviews for further details). Ongoing risks to trans-Tasman travel continue to persist from further outbreaks and regional lockdowns.

Figure 7: Arrivals in NZ by passport

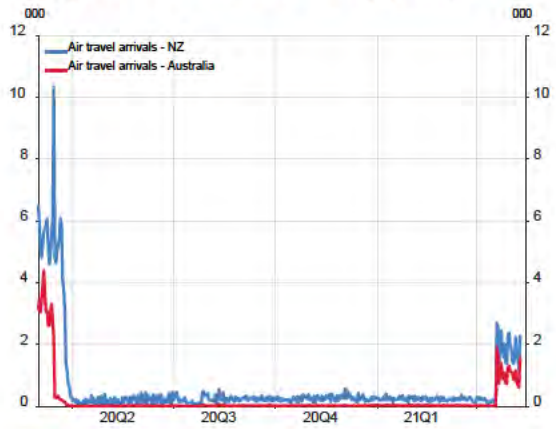
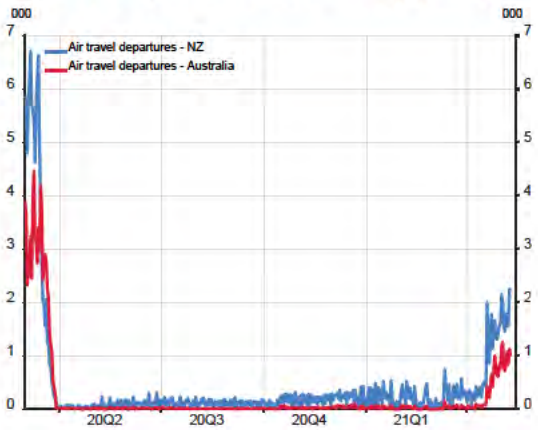


Figure 8: Departures from NZ by passport

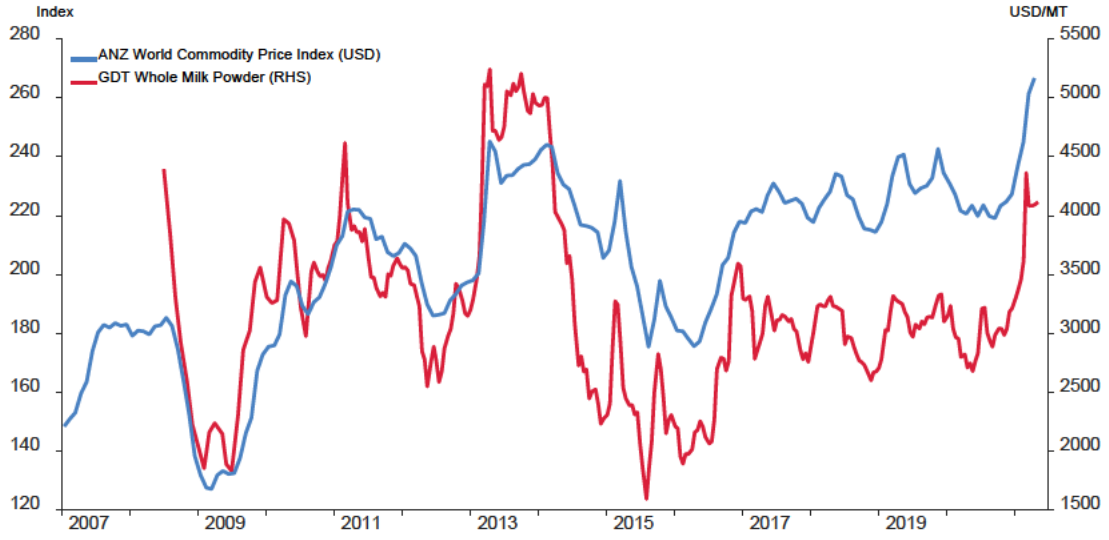


Businesses are still cautious but are beginning to spend

Many businesses took a 'wait and see' approach to capital spending, postponing it throughout 2020. Business investment has remained well below pre-COVID-19 levels, consistent with subdued growth in lending to the business sector. However, since the new year, indicators for investment are beginning to recover and at a faster pace than we had expected. Strength in the housing market has driven demand for new transport and plant, machinery and equipment investment (see paper 4.3C Sectoral overviews for further details).

The announcement of the trans-Tasman bubble also poses some upside risks for investment as tourist operators who put off planned maintenance bring this forward to meet the expected demand from Australian tourists. General business confidence has continued to rise off the back of positive economic developments domestically. Helping to support this, high commodity prices from the rebound of global goods demand has supported New Zealand's commodity exporters (figure 9). The price gains made in dairy products recently highlight this ascendancy with whole milk powder now above $4000 USD per metric tonne, significantly higher than forecast in the February *MPS*. See paper 4.3A Sectoral overviews for further details. However, non-residential investment is likely to weigh on overall investment as the effects of the pandemic on work and consumption habits (i.e. working from home) lessen the need for retail and corporate office space.

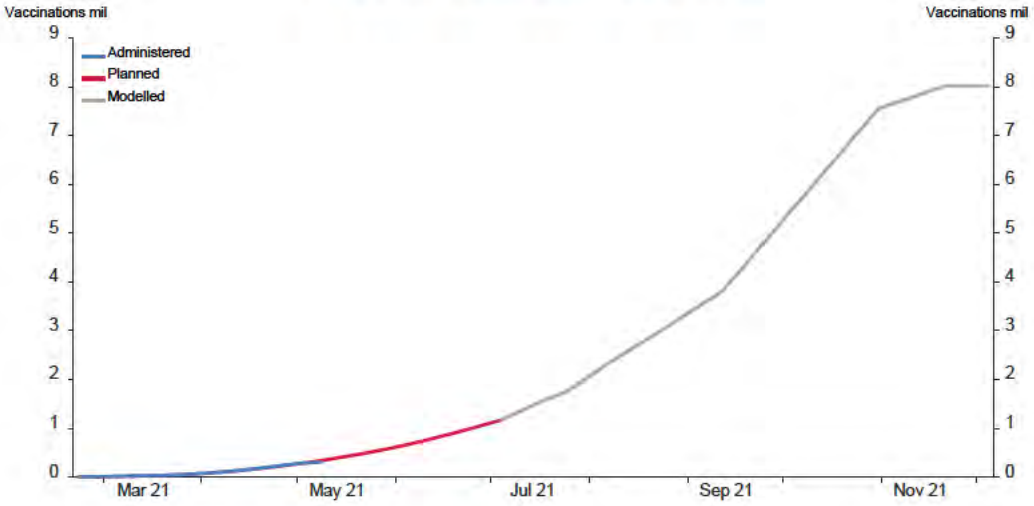
Figure 9: Commodity prices



The vaccination programme is underway in New Zealand

The COVID-19 vaccine rollout has picked up as more at-risk segments of the public have been given access (figure 10). The Ministry of Health timeline for the vaccination programme aims to fully vaccinate the adult New Zealand population by the end of 2021. This is consistent with our assumption that wider border restrictions will begin to ease from early 2022. However, there is some risk to this given the bulk of the vaccination programme is still to occur. Although the supply of vaccines is secured, New Zealand's health system's capacity to administer all of these vaccines is unclear.

Figure 10: Vaccination rollout in NZ



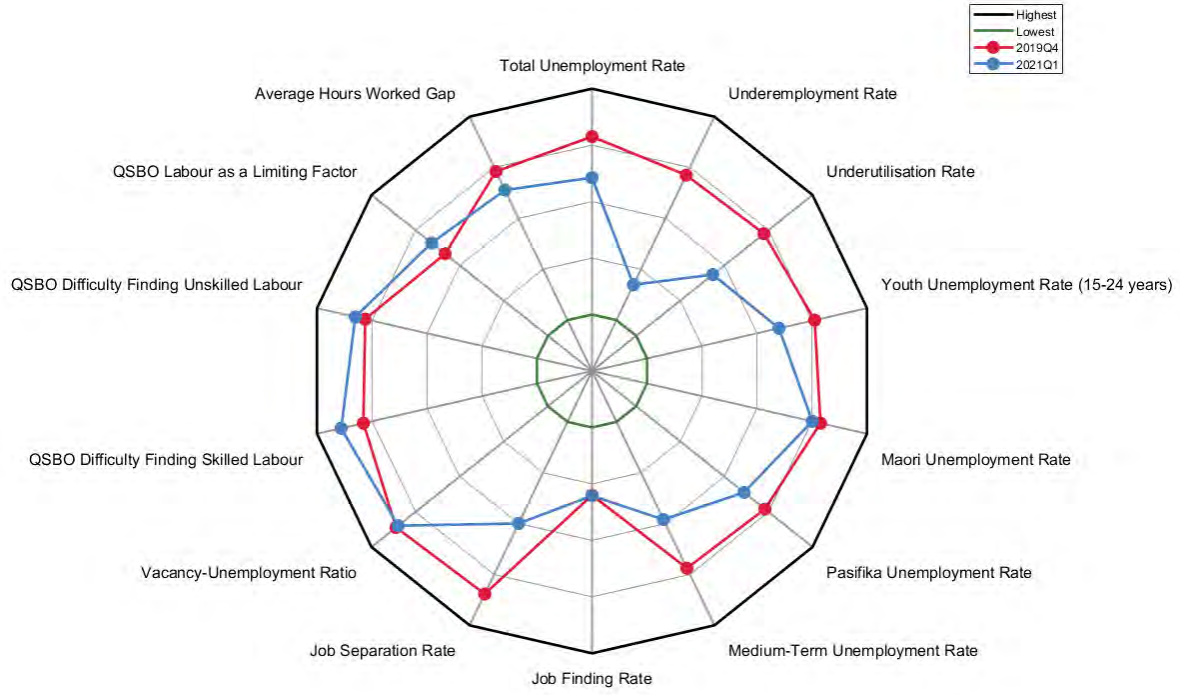
LABOUR MARKET SHOWING RESILIENCE

The labour market surprises again

The labour market strengthened in the first quarter of 2021, with the unemployment rate falling to 4.7 percent. The unemployment rates for men and women converged to 4.7 percent, an increase from 4.5 percent for men and a decline from 5.3 percent for women. As women were disproportionately affected by the COVID-19 downturn, the bounce back in their unemployment rate is reflective of the broader economic recovery. While the outturn was generally strong, underutilisation and underemployment both increased overall (figure 12).

Our suite of labour market indicators suggests there remains some spare capacity in the labour market (see figure 11). On this basis, we think employment is closer to but still below Maximum Sustainable Employment (MSE). However, it appears that with some sectors of the labour market remaining very tight, such as construction, spare labour market capacity may not be well-matched to current demand patterns (see Box B: Potential Output in the projections paper).

Figure 11: Radar chart of MSE

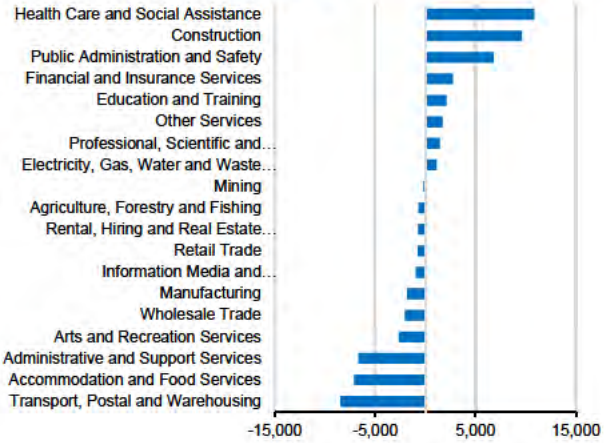


Note: The black ring indicates the highest utilisation of labour while the green ring shows the lowest level since 2000Q1. The black ring should not be taken as being consistent with maximum sustainable employment, but as an overheated labour market. As we continue to learn more about the labour market and these measures we will develop a better sense of where maximum sustainable employment lies. The red line indicates where these measures were in 2019Q4, a time when we judged employment to be near its maximum sustainable level.

The recovery of the labour market has been uneven. The headline unemployment number masks large losses in employment in tourism and hospitality being more than offset by gains in construction and healthcare (figure 13).

Figure 12: Unemployment and underutilisation

Figure 13: Change in Filled Jobs 2020 Q1 to 2021 Q1



Employment demand is strong

Firms expect to increase employment further in 2021 and labour demand is very high for some industries. QSBO employment intentions for all industries is above pre-COVID-19 levels (figure 14). The vacancy rate has reached an all-time high as firms look for workers but cannot fill the positions (figure 15).

Figure 14: QSBO employment intentions

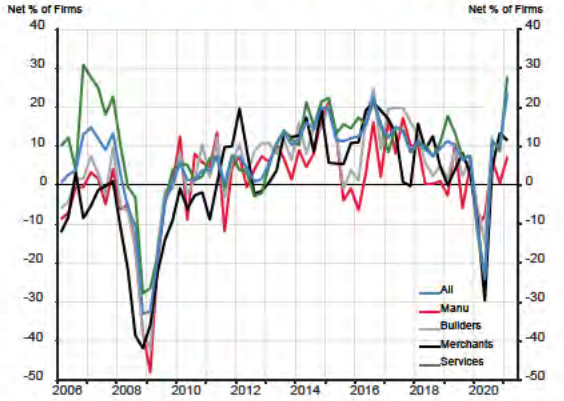
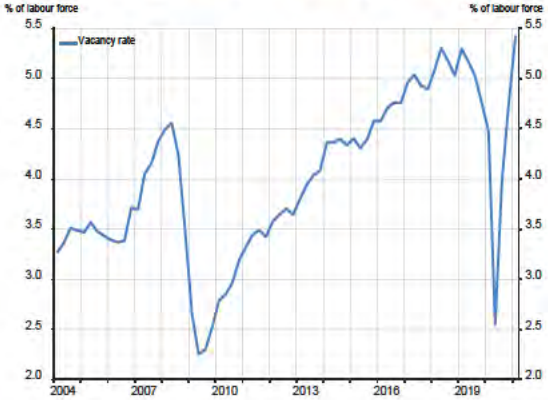


Figure 15: Vacancy Rate



Labour shortages are present in many industries

While labour demand rebounds strongly, the border restrictions are creating labour supply shortages, especially for skilled labour. Construction, IT, and some large retailers are all citing the inability to find qualified workers as a main constraint to growth. The QSBO measure of the difficulty in finding labour has increased sharply (figure 16). Opportunities in the labour market have helped encourage more people to enter the labour force, with the participation rate rising 0.2 percentage points to 70.4 percent. Unfortunately, the skillsets from other sectors with excess labour, like hospitality, do not easily transfer into construction and healthcare.

Figure 16: Difficulty finding labour

Wage growth has increased slightly

LCI wage growth increased 1.6 percent compared to the March 2020 quarter (figure 17). QES also increased 2.6 percent relative to 2020 Q1 (figure 18)[1]. The stronger growth in QES will partially be because it captures compositional changes in the labour market, such as those who can move from tourism-related industries into higher-paying construction and healthcare industries. The challenges in the labour market are not going to disappear quickly, meaning wage cost pressure is probably going to feature more persistently in the near term. In addition, another minimum wage increase in the June 2021 quarter will contribute to higher wage inflation in the near term.

Figure 17: Wage growth – LCI

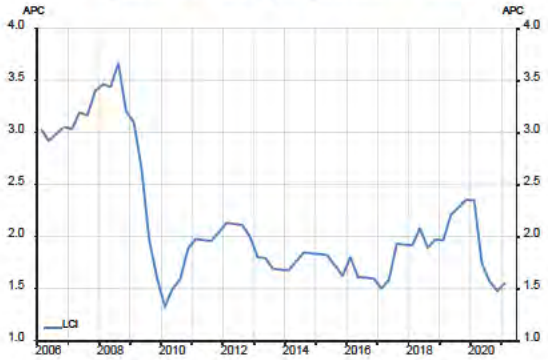
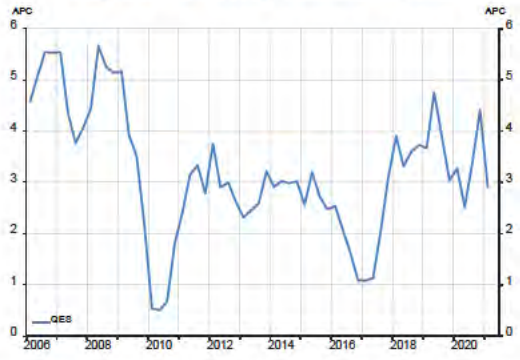


Figure 18: Wage costs - QES



[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.

INFLATION RISING ON TRADABLES UPSWING

Inflation rising, risks to the upside

Annual CPI inflation was 1.5 percent in the March 2021 quarter. Core inflation has continued to trend up towards the mid-point of our target range, while medium-term inflation expectations have remained anchored close to 2 percent (figure 19 and 20). Inflation is expected to increase well into the top half of the Reserve Bank's 1-3% target range in 2021, accounted for by rising tradables inflation and sustained momentum in non-tradables inflation (figure 21). Risks to this outlook remain to the upside if near-term cost-push factors around global supply chain disruptions persist longer than expected. Lingering domestic capacity constraints, especially for labour, may also sustain non-tradables inflation at elevated levels for longer than expected (see paper 3.2: supply-side constraints and monetary policy).

Figure 19: Core Inflation

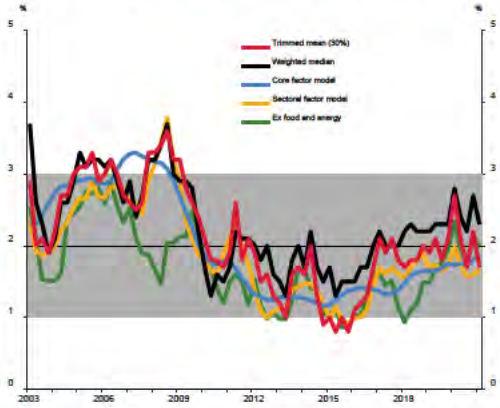


Figure 20: Inflation expectations

Imported inflation accelerates

Tradables inflation is providing a near-term boost to CPI inflation, in contrast to recent years (figure 21). This reflects ongoing disruptions and bottlenecks throughout the global supply chain and a sharp rise in input prices as the global economy begins to re-start from COVID-19 lockdowns. This is reflected in an anticipated sharp acceleration of ex-fuel tradables inflation (figure 22).

Sharply higher imported energy prices (especially oil) have also been a key contributor to rising near-term tradables inflation (figure 22). Lower food prices have been tempering recent rises in tradables. This reflects diversion of peak export produce to domestic markets on current shipping delays/disruptions.

Figure 21: CPI inflation

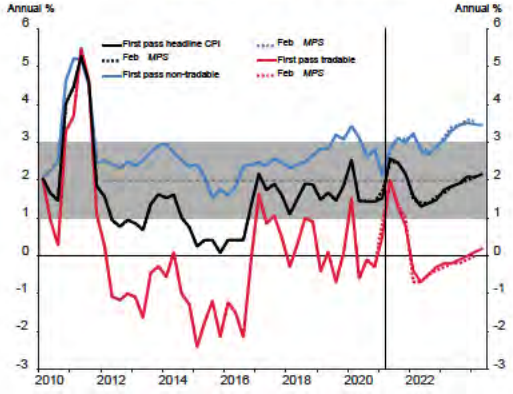
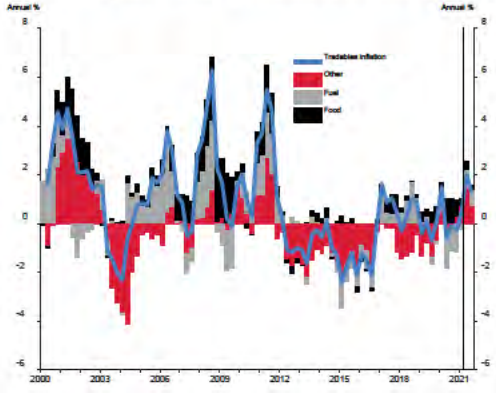


Figure 22: Tradables inflation



In regard to fuel prices, sustained global expansion beyond the post-lockdown rebound could see prices rise further (e.g. higher US public investment). Ex-fuel tradables inflation is likely to be more restrained from later in 2021 as the lagged impact of New Zealand dollar appreciation (over the second half of 2020) is expected to temper price growth from a nascent global recovery. We assume bottlenecks in global supply chains ease from late 2021/early 2022 (see paper 3.2: supply-side constraints and monetary policy).

Labour shortages are increasing domestically

Sustained momentum in non-tradables inflation provides a solid backdrop to rising imported inflation (figure 23). Demand momentum in the strongest sectors of the economy, especially construction/housing, continues to underpin non-tradables inflation at above average levels (figure 23). Emerging supply constraints in both labour and materials is expected to support domestic inflation (figure 24). These supply-side influences are expected to largely offset slower growth over the middle of 2021, including easing housing demand momentum (see paper 4.3AB and 4.3F Sectoral overviews for further details).

Figure 23: CPI inflation contributions

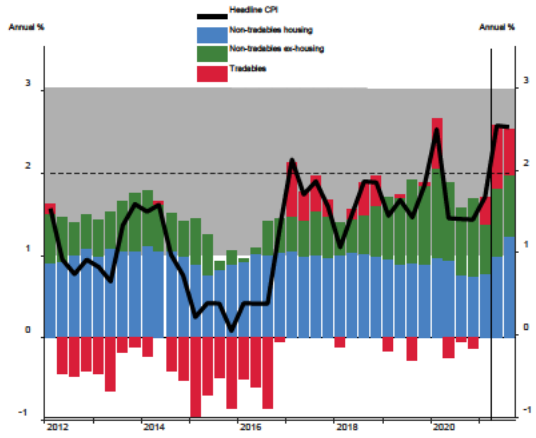
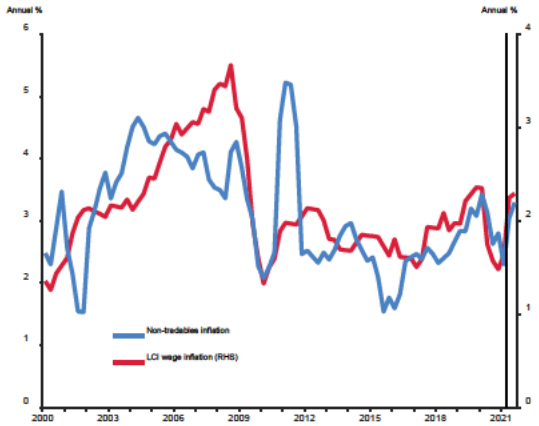


Figure 24: Non-tradables inflation and wages



APPENDIX. GROWTH, EMPLOYMENT AND INFLATION

Growth

Figure 25: New Zealand Activity Index

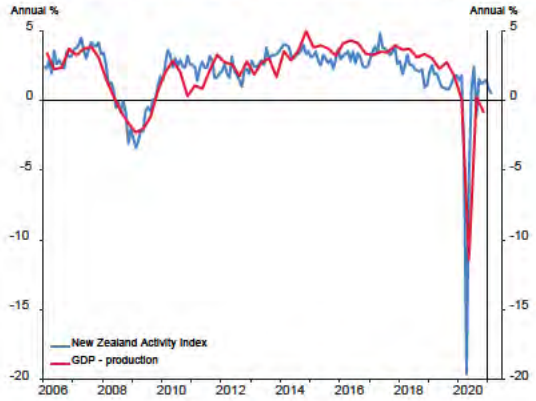


Figure 26: Consumer confidence

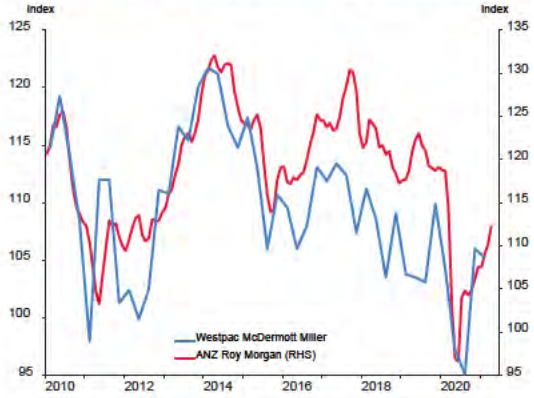
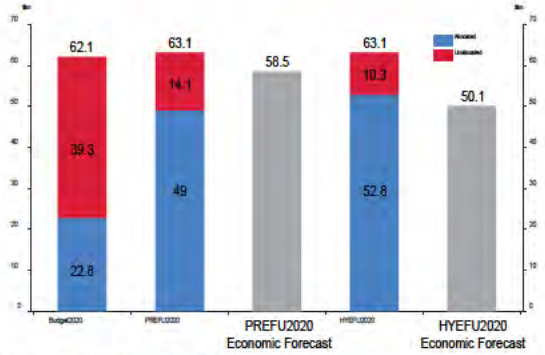
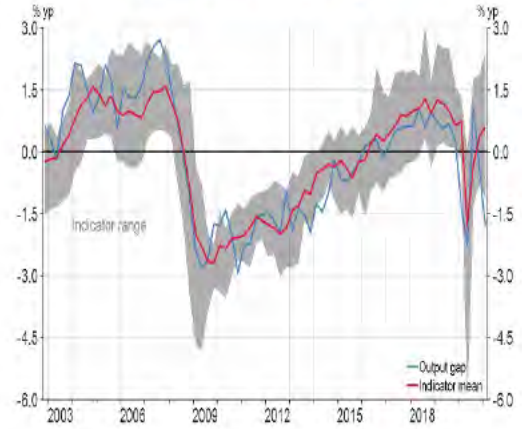


Figure 27: Fiscal spending



PREFU = Pre Election Fiscal Update
HYEFU = Half Year Economic and Fiscal Update

Figure 28: Output gap
(Frist-pass output gap)



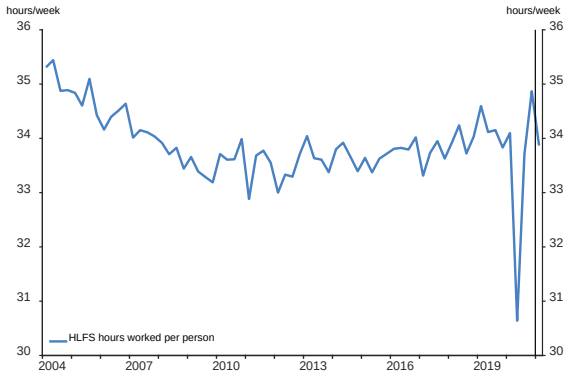
Employment

Figure 29: Labour/non-labour output gap
(First-pass output gap)

Figure 30: Employment, participation

Note: the green shaded areas show the range of the non-labour market output gap indicators. The green line is the mean of these indicators. The yellow shaded areas show the range of the labour market output gap indicators. The yellow line is the mean of these indicators.

Figure 31: Average hours worked per person



Inflation

Figure 32: Inflation expectations curve

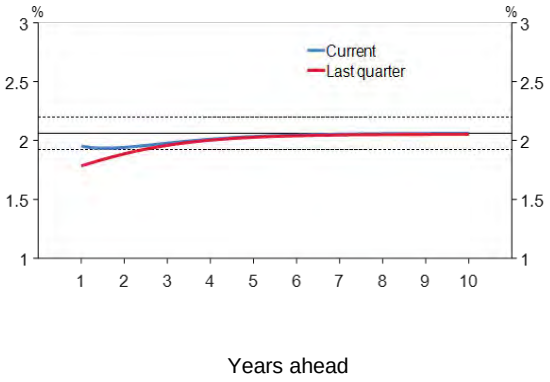


Figure 33: Expected time-to-target
(implied from expectations curve)

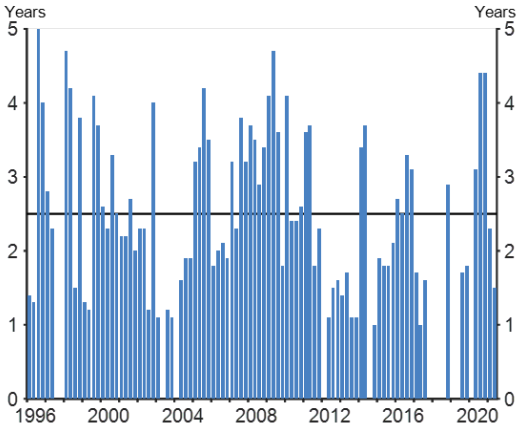


Figure 34: Long-run inflation expectations
(10 years, all surveys)

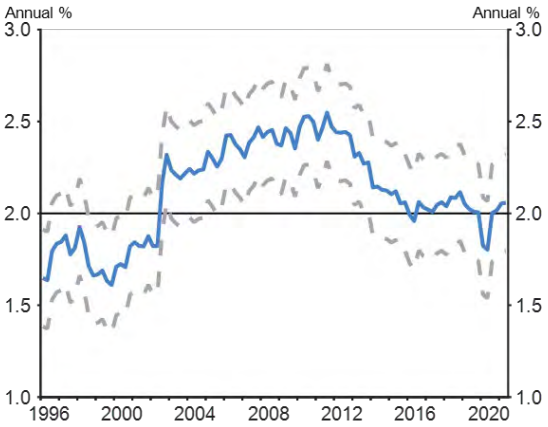


Figure 35: Firm pricing, activity
(ANZBO survey)

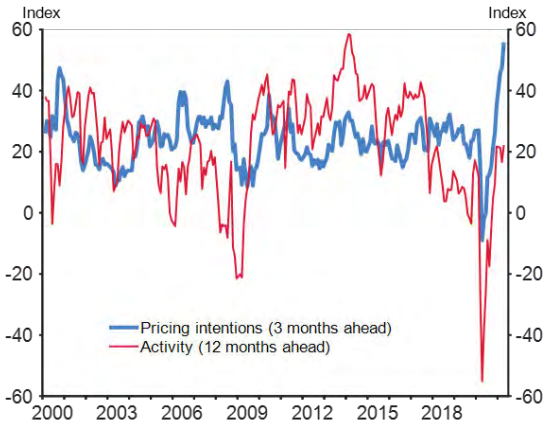
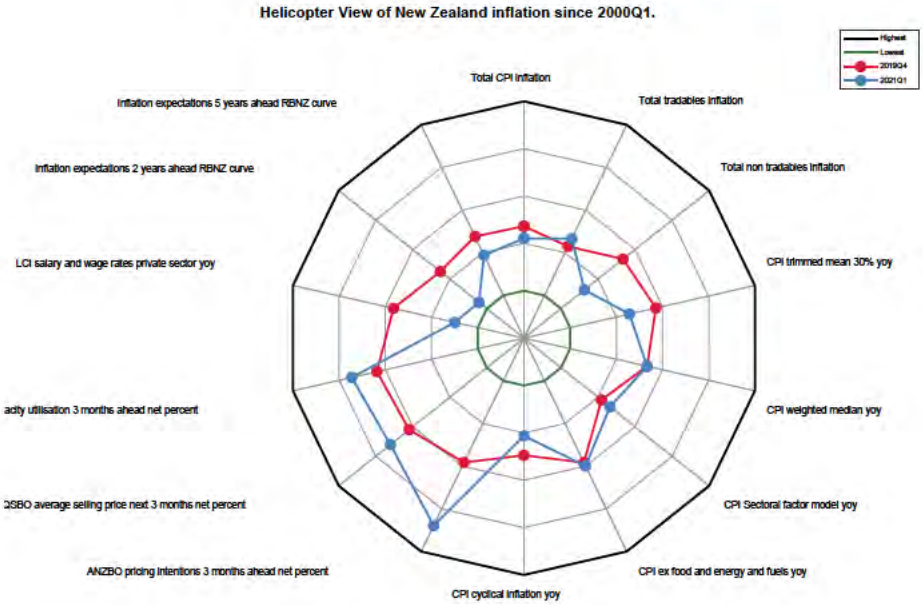


Figure 36: Inflation radar chart



Note: The black ring indicates the highest level of inflation while the green ring shows the lowest level since 2000Q1. The red line indicates where these measures were in 2019Q4, a time when we assessed headline and core inflation to be near the 2% midpoint.

STRICTLY CONFIDENTIAL TO RECIPIENTS
11 FEBRUARY 2021

Paper 1: Where are we relative to our economic objectives?

Forecasting team

Authors: Daniel Wills, Waran Bhahirethan , Gregorius Steven, Tyler Smith

SUMMARY

Inflation and employment were higher than expected in the second half of 2020, with further resilience expected in the first half of 2021. Domestic spending accelerated sharply after COVID-19 restrictions were lifted nation-wide. But growth has been uneven across sectors. Spending growth is expected to take a breather in early 2021, but levels stay high.

- **Annual inflation is expected to temporarily rise to the top half of the 1-3 percent target band** by mid-2021 (we had previously expected inflation to fall below the band). A higher trough in non-tradables and an oil-induced spike in tradables are key drivers.
- **The labour market is re-approaching MSE** after dropping well below following domestic COVID-19 restrictions in early 2020. Capacity pressures are re-emerging in some industries, as firms respond to a rapid recovery in demand.
- **The sustainability of the recent recovery in inflation and employment is highly uncertain**. Firms and households remain cautious about the 2021 outlook given COVID-19 uncertainty and the ongoing hit from closed borders on international tourism. By contrast, near-term housing market momentum is exceptionally strong.

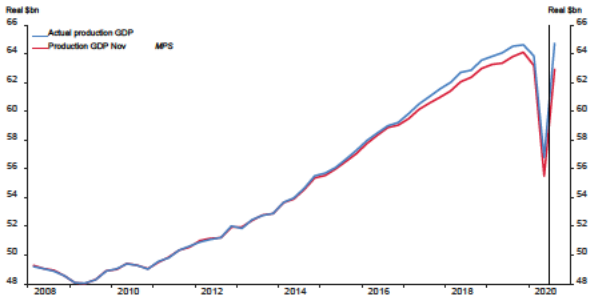
DOMESTIC GROWTH REBOUND EXCEEDS EXPECTATIONS

GDP has recovered sharply to pre-COVID-19 levels…

The economy ended Q3 2020 above pre-COVID-19 levels. New Zealand had a 'V'-shaped recovery from domestic lockdowns. The economy is now 0.2 percent larger than in Q4 2019 (figure 1). Our recovery has been stronger than we, or the market, expected. We have outperformed many trading partners, our COVID-19 containment preventing more lockdowns.

The speed and scale of the bounce-back has lessened the need for further fiscal support. Although fiscal policy remains stimulatory, Treasury now expects around $4-8bn less (of original $50bn package) COVID-related discretionary spending than previously.

Figure 1: Production GDP



...driven by post-lockdown spending, on-shoring, housing resurgence

Household spending rose sharply in the third quarter. Retail sales grew at the fastest pace in 16 years. This recovery was broad-based across sectors and regions. Key drivers of the surge include a stronger-than-expected labour market, government income support, 'on-shoring' of purchases, and pent-up demand from earlier domestic lockdowns. Solid export demand for our key commodity goods exports continues (see paper 4.3A External sector overview).

The housing market has strengthened further. Annual national house price growth approached 20 percent in late 2020. Key drivers include low interest rates and stronger-than-expected net migration (table 1a, appendix), within an environment of insufficiently responsive supply. Ongoing momentum is projected into early-2021 (figure 2). This strength has been broad-based across regions. Residential investment has scaled up as housing demand escalates (figure 3). This ramp-up has seen capacity constraints re-emerge in the construction sector (see paper 4.2 Business developments).

Figure 2: House prices

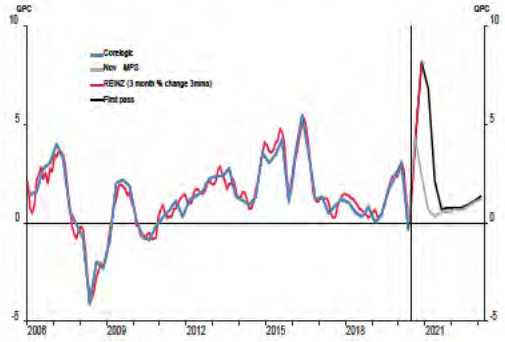


Figure 3: Residential investment

...but growth has been uneven, and firms and households remain cautious

Although strong, the recovery in domestic growth has been uneven. Sectors exposed to international tourism have subdued activity versus pre-COVID-19 (figure 4). A rise in domestic tourism has only partially offset the absence of overseas tourists. The hole left by international tourism will be felt most in summer, when overseas tourist arrivals typically peak. Business contacts expect tourism spending will drop after the domestic summer season ends.

Consumers and firms have tempered their expectations for further growth into 2021. Confidence and activity expectations have partially recovered from lockdown-era lows, but remain below average (figure 5). This caution has been associated with the risk of further domestic lockdowns and tourism concerns. It may limit further near-term rises in spending.

Figure 4: Change in GDP by sector

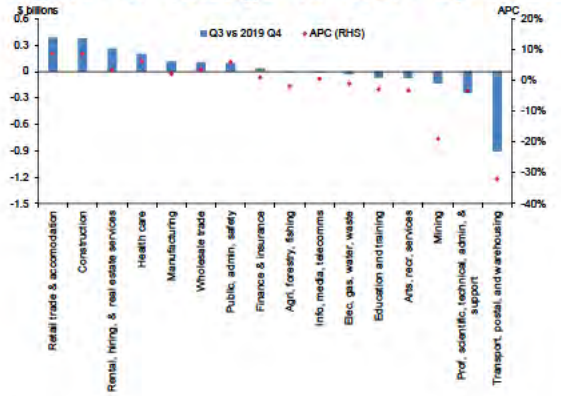


Figure 5: Activity expectations

…with spending and activity growth taking a breather recently

Consumer spending momentum has been moderating in recent months. Annual growth in electronic card transactions levelled off in the December quarter (figure 6). Post-COVID-19 fiscal support to household incomes expired over this period, and pent-up demand may have been dissipating. Household income growth is also modest, with slow wage growth despite a recent ramp-up in labour demand (below, and paper 4.1 Household developments).

Firms' activity has likewise been moderating in recent months after a post-lockdown bounce, particularly in the services sector (figure 7). Timely indicators point to a more muted recovery going forward (see paper 4.2 Business developments). Overall, the New Zealand broad activity indicator has moderated slightly in recent weeks across high frequency firm and consumer indicators (figure 20, appendix).

Figure 6: Electronic card spending

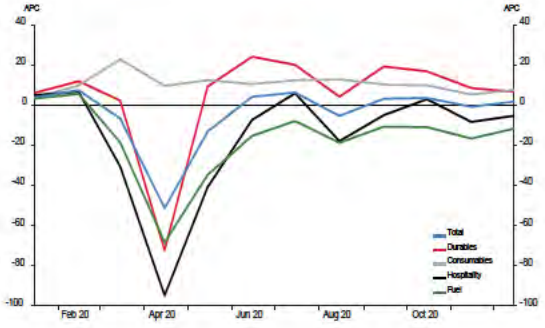


Figure 7: Firm activity

LABOUR MARKET SHOWING RESILIENCE

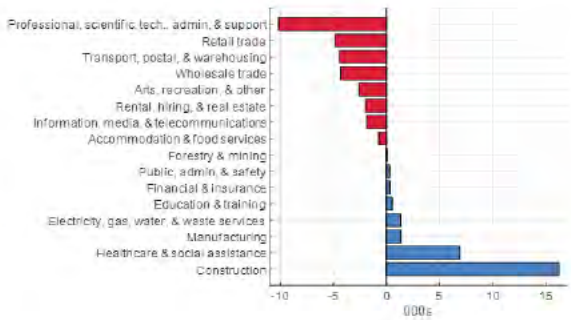
The labour market has been more resilient than expected…

The labour market has been more resilient than expected to COVID-19 disruptions. Unemployment dropped back in late 2020 to less than 5 percent. This is around one percentage point higher than pre-COVID-19. Broader measures of capacity utilisation in the labour market also partially retraced from mid-2020 peaks (figure 8). Employment remains below MSE based on our suite of labour market indicators (see figure 26, appendix).

Stronger-than-expected domestic growth momentum has been the key driver of lower unemployment. Consistent with this, we now expect a lower peak unemployment rate of just over 5 percent (see table 1b, appendix). Construction and health sector demand have been drivers of higher employment, offsetting losses in transport (tourism) and media (figure 9).

Figure 8: Unemployment/underutilisation

Figure 9: Employment by industry
(Q4 vs Q1 2020, QES survey, s.a.)



...with strengthening employment demand...

Firms expect to increase employment further in 2021, with a broad-based increase in employment intentions (figure 10). However, a further tourism scale-back in the new year is expected to see unemployment initially edge up at the start of 2021 (see paper 5: How much stimulus is needed?).

Labour has re-emerged as a key factor constraining firms' further expansion (figure 11, and below). Hiring intentions have generally recovered, especially in the construction industry. The construction industry is working through a backlog of lock-down disrupted work and a sharp rise in new residential construction demand.

Figure 10: Employment intentions

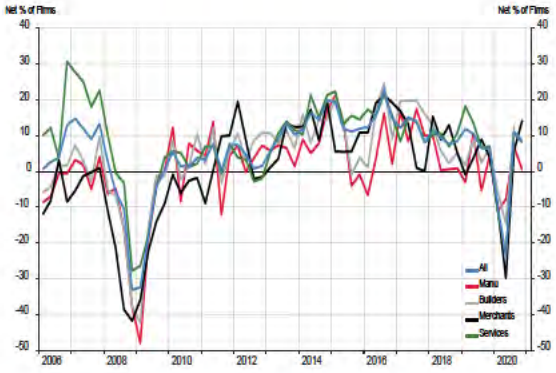
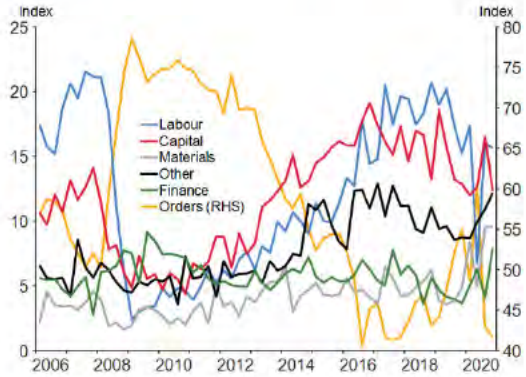


Figure 11: Factor most limiting expansion



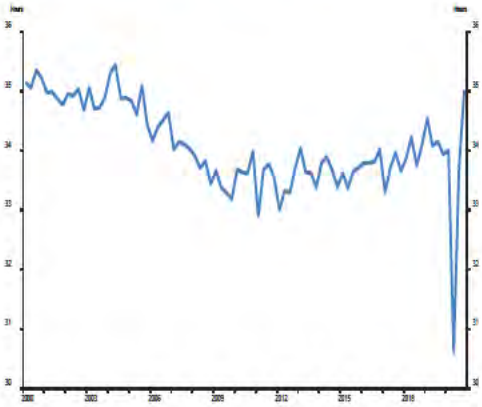
...as labour shortages re-emerge in some industries

The rebound in labour demand has been associated with the re-emergence of labour shortages in some industries, although levels remain below pre-COVID-19 peaks (figure 12). Business contacts corroborate this, with firms reporting increasing difficulty in hiring both skilled and unskilled workers, especially in construction. Closed borders have exacerbated shortages, particularly for skilled workers with specialist skills.

Firms have temporarily plugged labour gaps by increasing hours worked of existing staff and hiring casual workers (figure 13). However, employment needs to be expanded to sustainably meet current demand if sustained.

Figure 12: Difficulty finding labour

Figure 13: Hours worked



...however, wage pressures remain contained for now

Wage inflation remains contained despite strong economic activity and rising difficulty in finding workers. Average hourly wage inflation (QES) has been increasing (figure 14). This reflects relatively stronger growth in higher paying jobs (e.g. less unskilled work in tourism). However, wage inflation is running close to CPI inflation adjusting for the composition of work (LCI). This implies flat real wage growth at present (figure 15). Wage growth is expected to strengthen in the year ahead, consistent with strengthening labour demand and closed borders (figure 14).

Figure 14: Wage costs - QES

Figure 15: Wage costs - LCI

INFLATION RISING AS SPARE CAPACITY TROUGHS, OIL SPIKES

Inflation finds its feet as excess capacity nears its trough...

Like the labour market, inflation has been more resilient than expected. Price growth appears to have passed its trough, with core inflation pressures starting to gradually move up towards 2 percent p.a. overall (figure 16). Near-term surveyed inflation expectations continued to increase in early 2021, but remain below the 2 percent midpoint (see figure 27, appendix).

The key driver of the trough has been a faster-than-expected rebound in New Zealand growth. This has tempered rises in excess capacity. As a result, the COVID-19 trough in non-tradables inflation looks to have been shallower and earlier than previously expected (figure 17).

Ongoing domestic growth momentum will be required to ensure that remaining slack in the economy continues to be lessened (see paper 5: How much stimulus is needed?). The domestic recovery will be partially dependant on ongoing COVID-19 containment in New Zealand and abroad (see table 1c, appendix).

Figure 16: Core Inflation

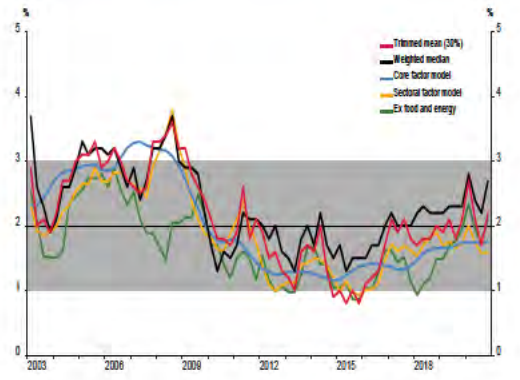
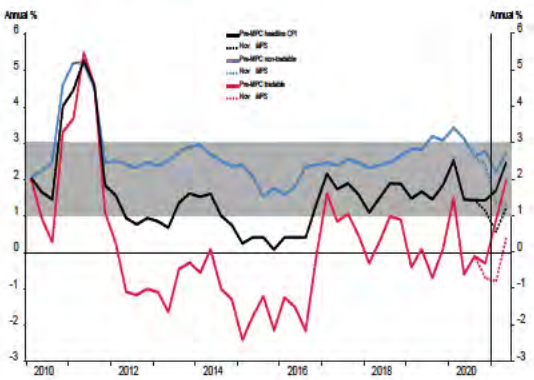


Figure 17: CPI inflation



…global optimism and supply chain bottlenecks also providing a temporary boost….

Tradables inflation is providing a further near-term boost to headline CPI (figure 18). A sharp rise in global oil prices in late 2020 has been a key driver, via its impact on domestic petrol prices. Oil prices have increased alongside a range of other global market prices on market optimism about the 2021 roll-out of COVID-19 vaccines globally (see paper 3.1: International economic and financial market developments).

Supply-chain bottlenecks have added a further layer to import price growth in the near term. Global transport prices have increased and import availability has declined as COVID-19 lockdowns worldwide have disrupted global production and distribution. Cost pressures have been compounded by a variety of other near-term factors, including higher minimum wages (see paper 4.3F Inflation overview).

These extra costs and supply shortages have been associated with a sharp bounce in firms' pricing intentions, to their highest level in around a decade (see figure 30, appendix).The strong domestic demand backdrop via on-shoring of spending and the strong housing market has also been associated with higher pricing intentions.

The speed and effectiveness of the global vaccine rollout in 2021 will influence the sustainability of recent rises in global oil prices and the persistence of global supply-chain bottlenecks (see table 1c, appendix).

Figure 18: CPI inflation contributions

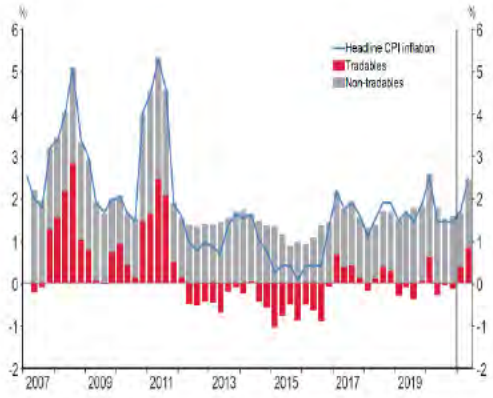
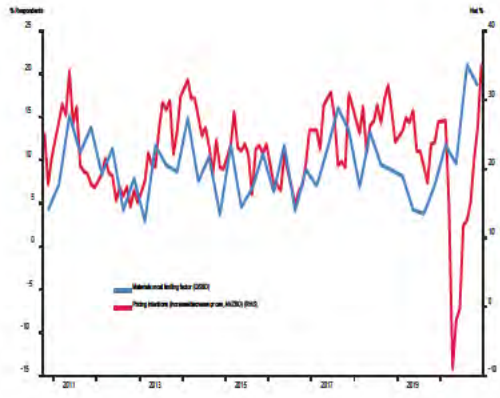


Figure 19: Pricing and materials availability



APPENDIX. GROWTH, EMPLOYMENT AND INFLATION

Table 1a: Key changes to the near-term outlook and assumptions: growth

	Projection change	Key driver	Revised assumption
House prices	• Peaks at 22.6% in the medium term rather than 9.7%.	• A number of factors including inward migration in the first half of 2020.	• Much stronger starting point of migration.
Consumption	• Peak is higher at 14.9% rather than 11.7% with it peaking earlier at 2021 Q2.	• A number of factors including inward migration in the first half of 2020.	• Much stronger starting point of migration.

Table 1b: Key changes to the near-term outlook and assumptions: labour

	Projection change	Key driver	Revised assumption
Unemployment	• Peaks at 5.2% rather than 6.4%.	• As the economy continues to recover participation and hours worked continues to increase.	• Much lower starting point of unemployment.
Wage inflation	• Track is higher with it peaking earlier at 2.4% rather than in the medium term.	• Hours worked per person are now at unsustainable levels in order for firms to keep up with demand.	• A tighter labour market means that firms will need to bid up wages to attract / retain staff.

Table 1c: Key changes to the near-term outlook and assumptions: inflation

Inflation

	Projection change	Key driver	Revised assumption
Tradables	• Spikes to 2% p.a. in mid-2021 (0.4% p.a. prev.)	• Approx. 25% rise in Dubai oil prices in Q1 to around $54.50 (0% change assumed prev.)	• Oil prices decline gradually towards over projection to around $51.50 over the projection, in line with futures pricing (gradually rise to $44 from $40 prev.)
		• Imported materials shortages reach highest level on record in H2 2020 (no assumption prev.)	• Imported materials shortages persist to mid-2021 and then unwind as global production and distribution recovers with vaccine roll-out. • Near-term import shortages do not spill over into generalized inflation pressure via higher wage growth, as employment holds close to MSE in 2021 (no explicit assumption prev.)
Non-tradables	• Non-tradables troughs at 2.2% in Q1 2021 (1.1% in Q4 2021 prev.)	• Output gap troughs at -1.0% of potential output in 2021 (-2.7% assumed prev).	• GDP holds near pre-COVID levels over 2021, no further COVID-19 outbreaks domestically (GDP levels recover to pre-COVID-19 territory at the start of 2022 despite no further COVID-19 outbreaks prev.)
		• Minimum wage increases* by 6% to $20/hr from 18.90/hr on 1 April (no assumption prev.).	• A majority of 2021 minimum wage rise is immediately passed on by firms in the context of re-emerging labour shortages in some industries, closed borders in 2021, and steady demand (no explicit assumption previously, announced in December).

* Also boosts tradables inflation e.g. via fruit and vegetable picking costs.

Growth

Figure 20: New Zealand Activity Index

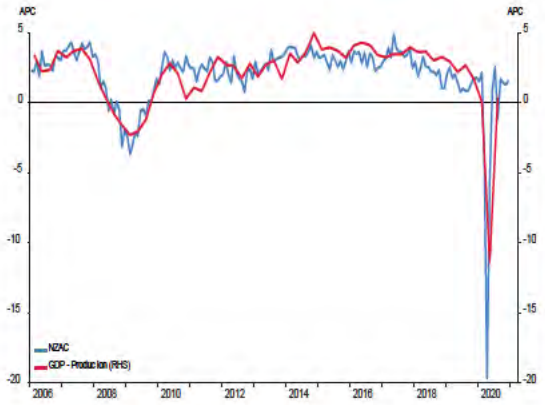


Figure 21: Consumer purchase expectations

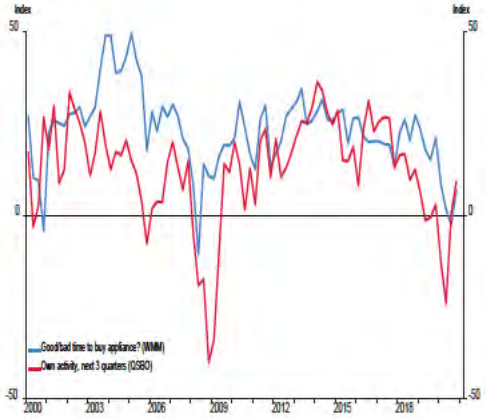


Figure 22: Fiscal spending

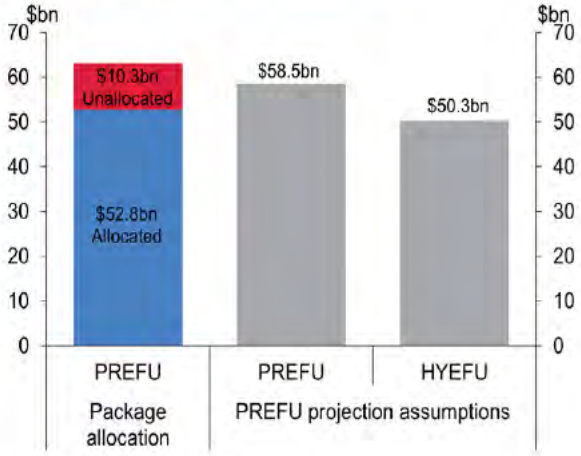
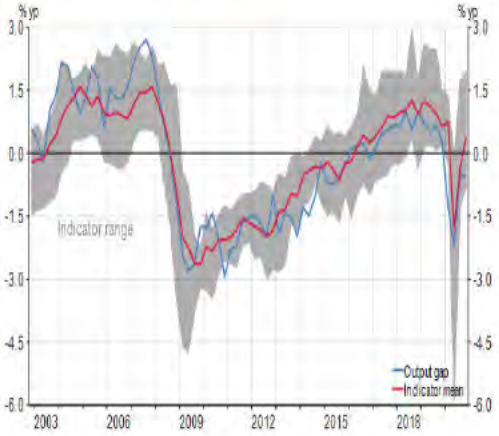


Figure 23: Output gap



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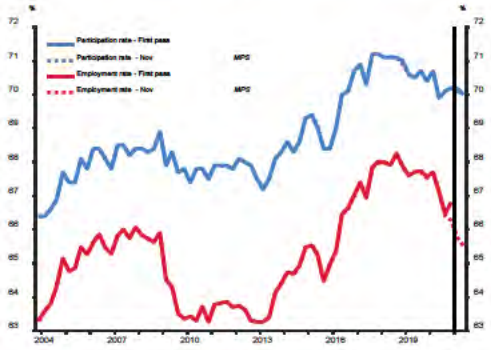
Employment

Figure 24: Labour/non-labour output gap

Figure 25: Employment, participation



Note: the green shaded areas show the range of the non-labour market output gap indicators. The green line is the mean of these indicators. The yellow shaded areas show the range of the labour market output gap indicators. The yellow line is the mean of these indicators.

Figure 26: MSE Indicators

This radar chart summarises labour market conditions. 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.**

Inflation

Figure 27: Inflation expectations curve

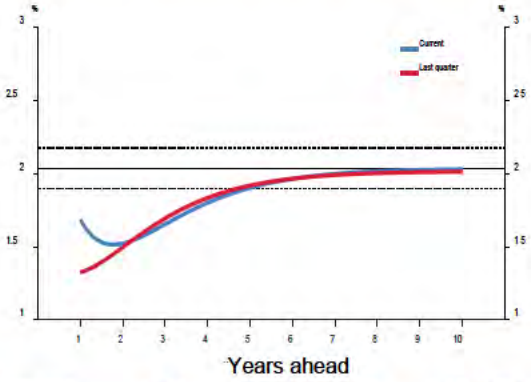


Figure 28: Expected time-to-target (implied from expectations curve)

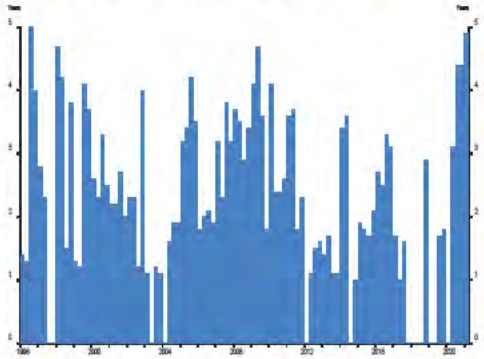


Figure 29: Long-run inflation expectations (10 years, all surveys)

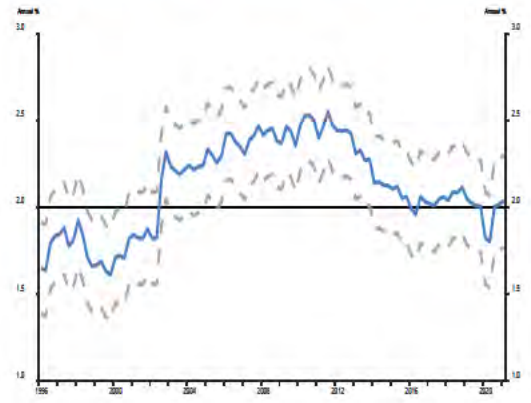


Figure 30: Firm pricing, activity (ANZBO survey)

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11 FEBRUARY 2021

Paper 2: How much stimulus are we providing?

Market Intelligence and Analysis
Main contributors: David Craigie, John Knowles

SUMMARY

- This paper assesses how wholesale financial conditions have changed since the November *MPS*, to what extent these changes have been transmitted to households and businesses, and what model outputs imply about how much stimulus is being provided.

- **Wholesale interest rates have risen and yield curves have steepened since November.** Higher rates reflect stronger domestic economic data and global expectations for a return of inflation over the medium term. The New Zealand dollar has also strengthened, reflecting the same factors, as well as robust export commodity prices and broad downward pressure on the US dollar.

- **Retail deposit and lending rates have fallen further and some banks have already accessed the FLP. Funding conditions are historically favourable for banks.** Mortgage credit growth remains strong while business lending remains subdued, however government backed programmes have seen a pick-up in activity.

- **Overall, financial conditions remain highly accommodative,** despite recent rises in wholesale interest rates and a strong NZD. The amount of stimulus being provided appears slightly less at face value, but taking account of the reduction in mortgage rates and highly accommodative financial conditions, suggests stimulus is broadly unchanged.

Summary Table: Key market moves

Instrument	Current	Δ since start-2020	Δ since Aug MPS	Δ since Nov MPS
NZGB 2023 (2-year)	26bps	-88bps	+3bps	+17bps
NZGB 2025 (5-year)	57bps	-73bps	+27bps	+40bps
NZGB 2031 (10-year)	137bps	-38bps	+63bps	+64bps
90-day bank bill	28bps	-101bps	-2bps	0bps
2-year swap	38bps	-85bps	+22bps	+26bps
5-year swap	84bps	-55bps	+59bps	+57bps
6 month TD	0.80%	-185bps	-70bps	-15bps
1-year mortgage	2.29%	-110bps	-30bps	-20bps
NZD TWI	75.2	+2.5%	+5.6%	+3.7%

PART A: WHOLESALE FINANCIAL CONDITIONS

Monetary policy acts directly on wholesale interest rates, but also indirectly on several other financial conditions, including the exchange rate, credit spreads, and equity prices. The status of financial conditions is determined by considering a broad set of indicators. In this section we examine how these have changed since the November *MPS* and in light of recent economic data.

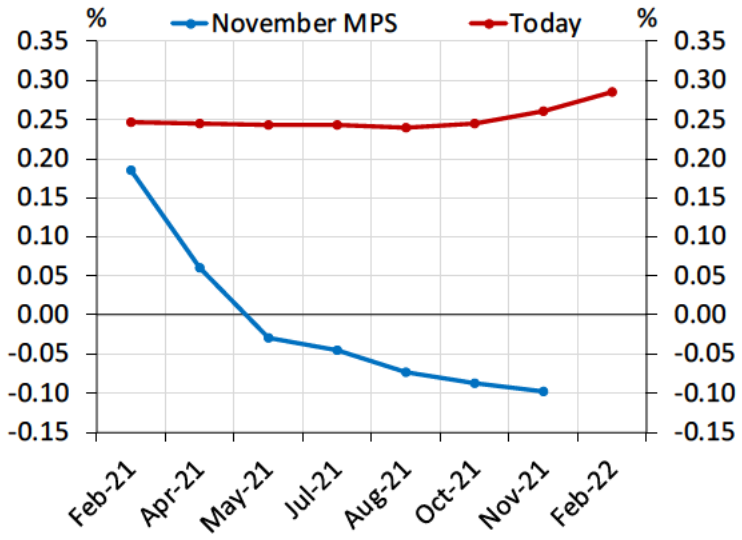
WHOLESALE INTEREST RATES

Wholesale interest rates have risen and yield curves have steepened since November in response to stronger than expected domestic data and the global reflation trade.

Market economists no longer expect further monetary easing following stronger than expected GDP, inflation (CPI), housing and employment data. Consequently, the overnight indexed swap (OIS) market is pricing in no further cuts to the OCR and even a small probability of a hike in 2022 (figure 1a). The *Market Intelligence Report and Expectations for Monetary Policy* provides detail on how market participants are assessing the outlook for monetary policy in light of recent economic data.

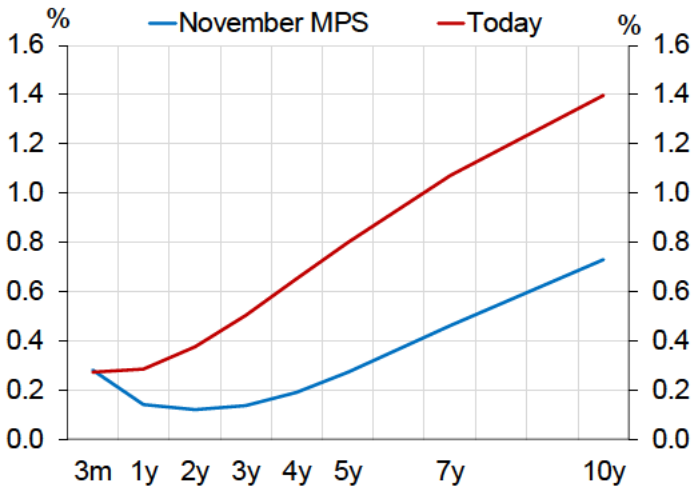
Since re-pricing higher after the November *MPS*, the front-end of the swap curve has largely remained anchored by expectations for continued accommodative monetary policy (figure 1b). However, the middle part of the curve has faced upward pressure following strong economic data, and one major bank has pencilled in a forecast OCR hike in May 2022. The long end of the curve has been rising steadily as earlier expectations that inflation would remain very low have waned, fuelled by optimism around a global recovery, which will rely on a successful roll-out of the vaccine and the prevalence of sustained fiscal and monetary support.

Figure 1a: Overnight Indexed Swap (OIS) curve



Source: Bloomberg, RBNZ

Figure 1b: Interest Rate Swap Curve



Source: Bloomberg, RBNZ

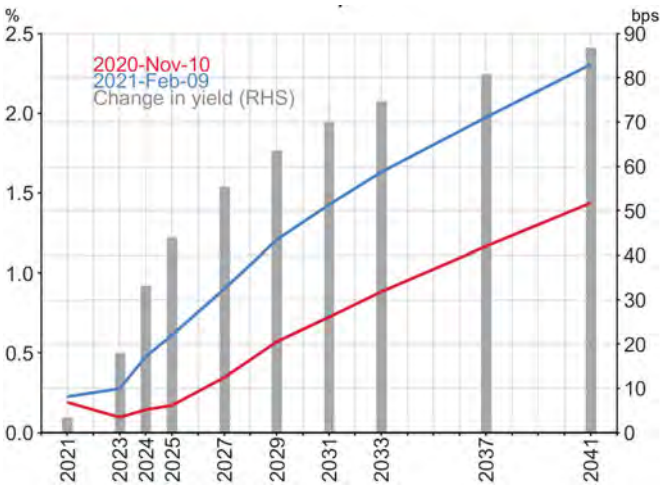
NEW ZEALAND GOVERNMENT BONDS AND LSAP

New Zealand government bond yields have risen and the curve has steepened since November, reflecting the same factors driving wholesale interest rates. However, the Government bond curve has not steepened to quite the same extent as the swap curve, suggesting LSAP purchases have "leaned against" curve steepening to some degree.

LSAP weekly purchase volumes were reduced at the beginning of the year, in line with market expectations, following a significant reduction to the pace of weekly tender issuance by New Zealand Debt Management (NZDM). This followed the Half Year Economic and Fiscal Update in December, which forecast a $5b per annum reduction in debt issuance relative to the previous update. The Crown's high cash balance and strong tax inflows in recent weeks suggest further reductions to NZDM's borrowing programme in the May Budget are likely.

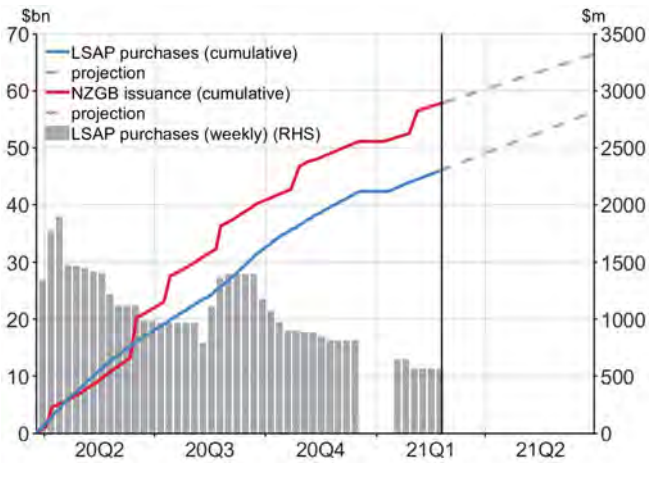
The rate of weekly LSAP purchases still exceeds the rate of tender issuance by around $100m per week. However, the run-rate of purchases can no longer be described as "front loaded" with respect to the $100b envelope and the current end point of the programme. *Paper 6.2: LSAP Advice* contains recommendations for the future pace of purchases.

Figure 2a: NZGB yield curve



Source: Bloomberg, RBNZ

Figure 2b: NZGB purchases and issuance



Source: RBNZ

NEW ZEALAND DOLLAR

The New Zealand dollar has risen in line with global risk appetite, supported by domestic data and strength in New Zealand export prices. The NZD TWI has risen 3.7% since the November *MPS* (figure 3a), and is now stronger than it was at the beginning of 2020. Much of the rise in the TWI is explained by the rise in the NZD versus the USD, which has weakened in recent months following expectations of ongoing accommodative monetary policy and additional fiscal stimulus in the US. Despite the strength in the NZD, New Zealand export commodity prices have held up in NZD terms.

Against the AUD, the NZD has appreciated 1% since November as strong milk prices have outpaced the strength in iron ore prices, and after the RBA surprised markets with an

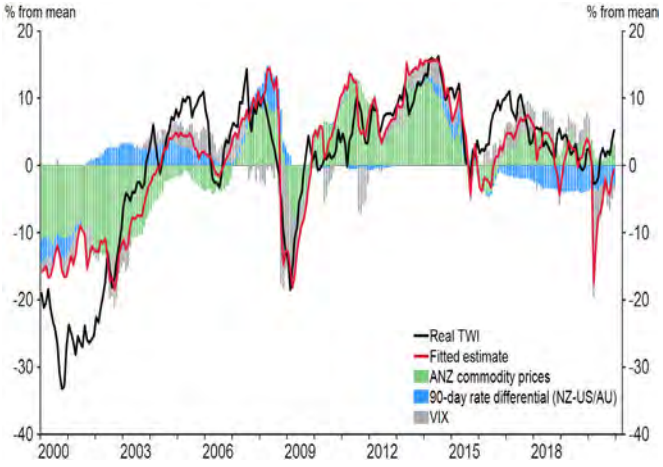
announcement in February that it would be extending its quantitative easing programme when current purchases conclude in April.

Our current exchange rate models suggest that the real NZD TWI is slightly above its expected level, based on historical relationships with key determinants of the exchange rate – interest rate differentials, global risk appetite (proxied by the VIX), and commodity prices (figure 3b).

Figure 3a: NZD exchange rates

Source: Bloomberg, RBNZ
Note: 1 January 2020 = 100

Figure 3b: NZD regression model

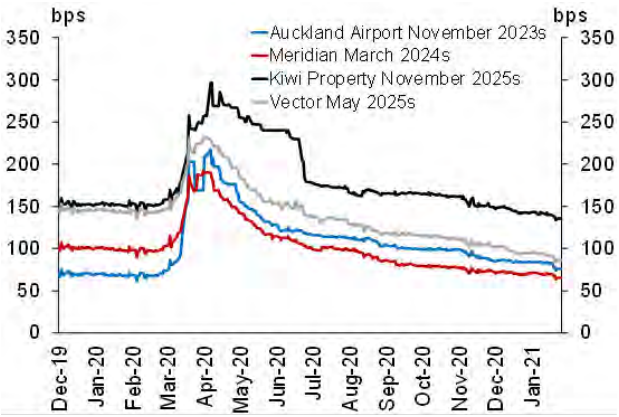


Source: RBNZ

WHOLESALE FUNDING

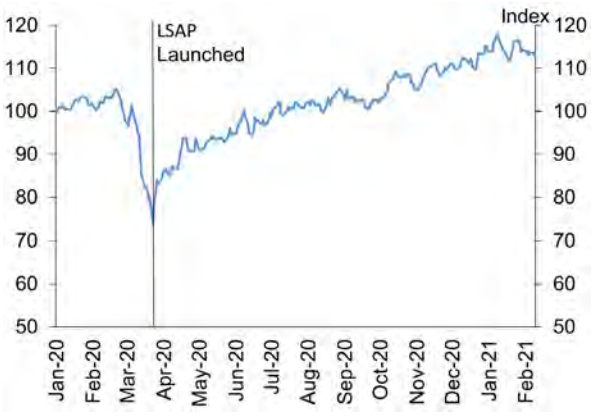
Conditions in wholesale funding markets remain highly favourable for issuers as credit spreads have narrowed to, or through, pre-Covid lows *(figure 4a).* However, the increase in wholesale interest rates over recent months implies that total cost of issuing new debt has risen slightly since November. New issue supply from domestic names has been light over the summer holiday period. Equity prices have remained firm and the NZX50 index set a new record high in January (figure 4b).

Figure 4a: Corporate Credit Spreads



Source: Bloomberg, RBNZ

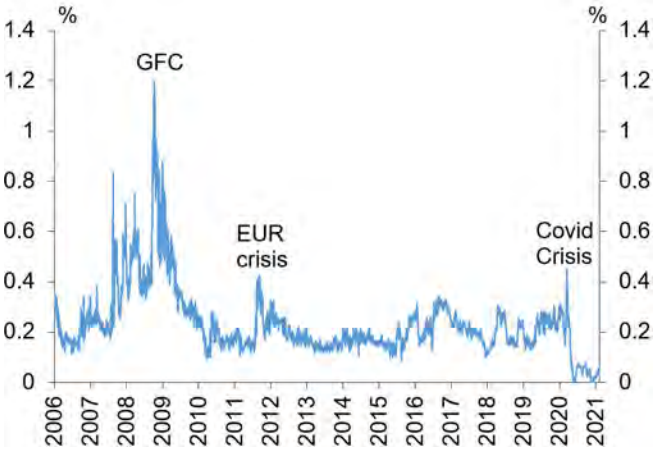
Figure 4b: NZX50 Index



Source: Bloomberg, RBNZ
Note: Index rebased to 100 at 1 January 2020

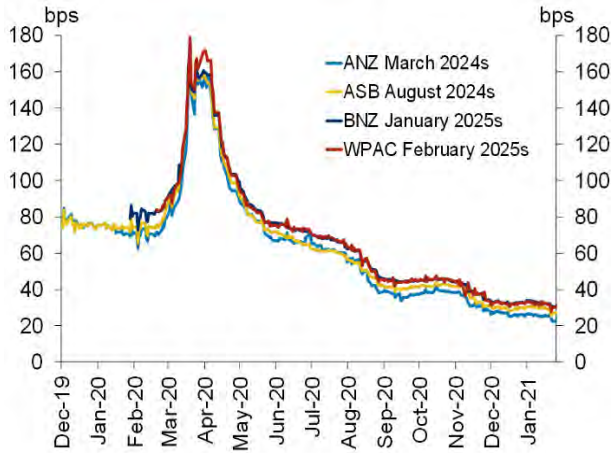
Measures of bank funding risk are at record low levels *(figure 5a)* ***and a lack of new issuance is helping to keep bank credit spreads historically low*** *(figure 5b).* ***The FLP was launched in December and has seen $1.14b in drawdowns.*** One major bank, with large wholesale funding maturities in Q1, accounts for $1b of the total FLP drawdown to date. We expect FLP drawdowns to be loosely tied to the timing of wholesale funding maturities, since although wholesale funding is historically cheap to replace, FLP funding is still the cheapest form of long term (>1yr) funding available to banks.

Figure 5a: 3-month BKBM / OIS spread



Source: Bloomberg, RBNZ

Figure 5b: Bank Credit Spreads



Source: Bloomberg, RBNZ

PART B: PASS-THROUGH TO HOUSEHOLD AND BUSINESS LENDING

The pass-through of accommodative wholesale financial conditions into favourable financing conditions for households and businesses is necessary for monetary policy to meet its objectives for inflation and employment.

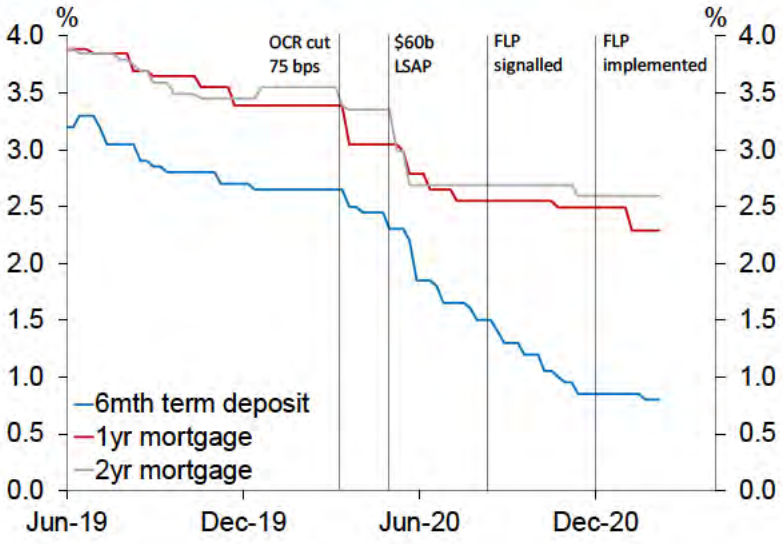
The level of pass-through is influenced by many factors beyond monetary policy itself, including but not limited to, the risk appetite of borrowers and lenders, prudential policy settings, and structural factors like the level of competition in the banking sector.

RETAIL DEPOSIT AND MORTGAGE RATES

Since initiating alternative monetary policy (AMP) tools last year, we have observed continued, albeit more gradual, pass-through of monetary policy stimulus to retail rates. Term deposit rates continued to fall during the second half of 2020, at least partly in anticipation of the launch of the FLP. Since the FLP was operationalised in December, we have observed a roughly 25bps fall in mortgage rates in the most competitive 1yr tenor (figure 6a).

Mortgage rates on other points of the curve have been stickier and the indicative spread of mortgage rates to funding costs has risen (figure 6b). Competitive pressures to cut mortgage rates may be quite weak at present due to the strength in activity in the housing market, with anecdotal evidence that some banks may be at their operational limits for processing new mortgage approvals.

Figure 6a: Deposit and Mortgage Rates



Source: interest.co.nz, RBNZ.
Note: Big 4 bank best rates

Figure 6b: Indicative New Mortgage Rate Spreads to Estimated Marginal Funding Costs

Source: interest.co.nz, RBNZ.
Note: the new bank funding cost at each term is calculated by transforming our estimate of the weighted average cost of new funding to the appropriate tenor using swap rates.

SECTORAL CREDIT GROWTH

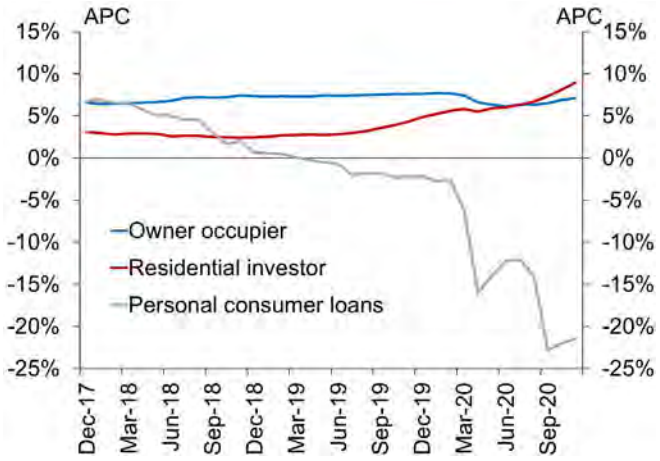
The most recently available data (November) shows household credit growth remaining strong, fuelled by housing lending. Credit growth in other sectors remains weak, however use of government schemes has picked-up recently.

Housing credit growth in the year to November was 7.1% for owner-occupiers and 9.0% for investors. According to RBNZ data, 4 of the top 5 record months for new mortgage commitments have occurred since August 2020. It remains to be seen if this pace of new mortgage commitments will be sustained, given strength in recent months to some extent is "catching-up" for records lows in approvals during lock-down last year. The rolling 12 month average for new monthly mortgage commitments has only just returned to its pre-Covid trend rate. The re-imposition of LVR speed limits is expected to slow housing credit growth in the investor segment and several banks had already moved to adjust their own limits.

Business credit growth overall remains weak with annual growth in business credit in the year to November at -5.4%. However, government administered or supported schemes have seen a pick-up in activity coinciding with improved readings of business confidence and wider eligibility criteria. As at 19 January, total approved exposures under the Business Finance Guarantee Scheme have almost doubled relative to before the November *MPS*, to reach $1.3b from over 1,900 borrowers. This represents close to 2% of all non-property related business lending.

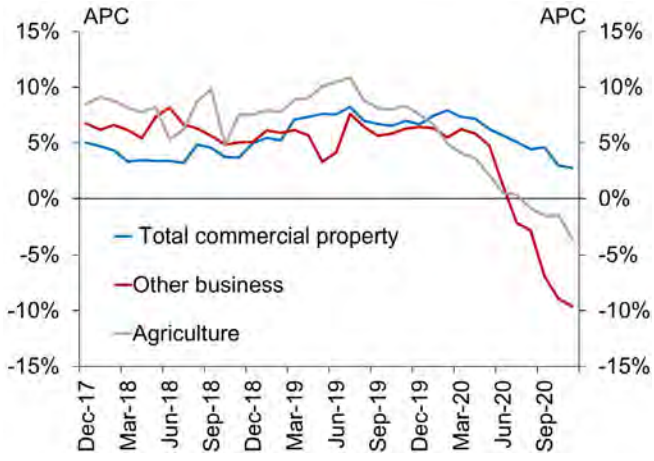
The Small Business Cashflow (Loan) Scheme administered by the IRD had lent $1.7 billion to 102,065 businesses as at 15 January. The Government recently extended the application window of the scheme until the end of 2023 and also widened eligibility criteria. Credit provided through this scheme is not captured under RBNZ statistics. However, the amount advanced under the scheme would account for around 2.4% of non-property related business lending, were it included in that total.

Figure 7a: Household Credit Growth



Source: RBNZ

Figure 7b: Business Credit Growth



Source: RBNZ

PART C: HOW MUCH STIMULUS ARE WE PROVIDING?

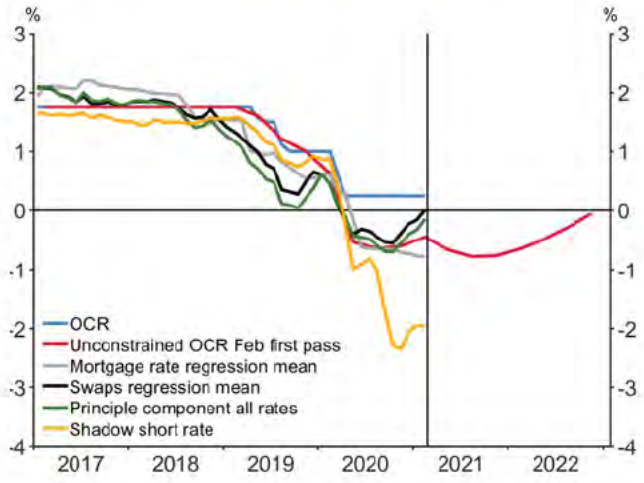
Unconstrained OCR suite and the neutral OCR

There are a number of different ways to assess the level of stimulus we are providing. One tool we have available is the unconstrained OCR suite. At face value, the unconstrained OCR suite suggests a lesser level of stimulus being provided, relative to the November *MPS* (figure 8a). However, this reflects the divergence in wholesale and retail rates. The mortgage rate indicator (grey) has eased slightly, reflecting declines in mortgage rates. The FLP programme works by lowering retail interest rates relative to wholesale interest rates, and so only the mortgage rate indicator captures the stimulus provided by this tool. Each of the other indicators are driven by wholesale interest rates, and so have ticked up as the yield curve has risen. Overall, the level of interest rate stimulus is best characterised as unchanged since the November *MPS.*

Compared to the implied level of stimulus required in the first pass projections (unconstrained OCR of –78bp at its trough), overall the unconstrained OCR suite suggests we are providing a slightly insufficient level of stimulus:

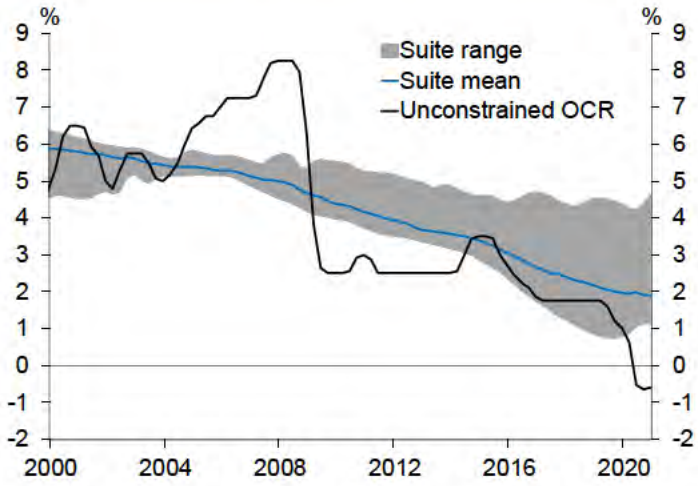
- The mortgage rate indicator is in line with the first pass. This measure has the benefit that it captures FLP transmission, but as the FLP only transmits via the banking system, it could also slightly overstate the level of stimulus.
- The swap and principle component indicators suggest a gap in stimulus required of around 71bps, although they may understate the level of stimulus slightly due to not fully capturing FLP transmission.
- The shadow short rate (SSR) indicator suggests we have materially more stimulus. However, we consider this indicator the least reliable – it is highly sensitive to parameter assumptions, and represents a theoretical (not observable) short rate that agents in the economy cannot transact at.

Figure 8a: Unconstrained OCR Suite



Source: RBNZ

Figure 8b: Neutral OCR Suite and Unconstrained OCR



Source: RBNZ

One way to gauge the level of stimulus we are providing in absolute terms is to compare the estimated unconstrained OCR to our estimate of the neutral OCR (figure 8b). The differential suggests that monetary policy settings are highly stimulatory, with the unconstrained OCR almost 3 percentage points below our estimate of neutral. The additional stimulus delivered since COVID relative to the neutral OCR has been slightly under 2 percentage points. This is considerably less than the change in net stimulus provided during the GFC, although this is in part because prior to the GFC the OCR was well above the neutral rate.

Conclusion

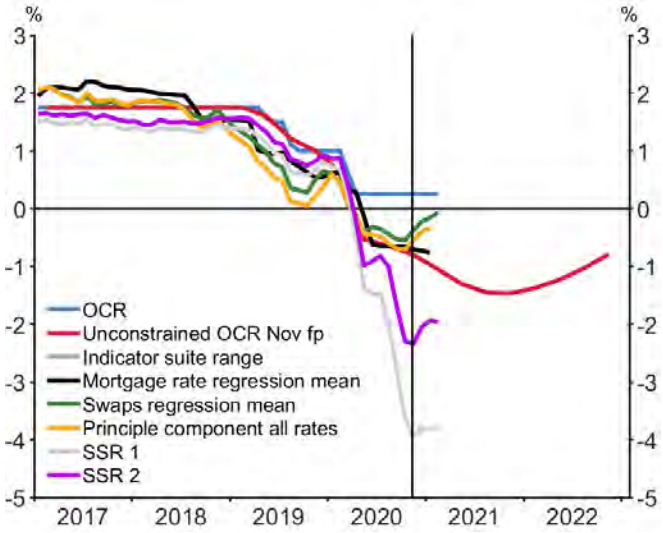
Taking a holistic view, financial conditions appear to be very accommodative in New Zealand at present. We are providing broadly the same degree of stimulus as at the November *MPS*, with the FLP adding additional stimulus via retail rates, while wholesale rates have risen. The New Zealand dollar exchange rate has risen, but this appears to largely reflect fundamentals. Our updated first pass projections take into account both the higher exchange rate and stronger domestic economy to produce an estimate of the stimulus required to achieve our mandate (see: *Paper 5: How much stimulus is needed?*).

While the recent strength in the currency and increases in wholesale interest rates have been justified by stronger fundamentals and have not led to a material tightening of financial conditions in the broader economy, we should remain alert to any disorderly or unjustified price action in financial markets, which could impede the transmission of monetary policy were it to persist for any extended period.

Appendix A: LSAP Implementation Dashboard

Policy considerations

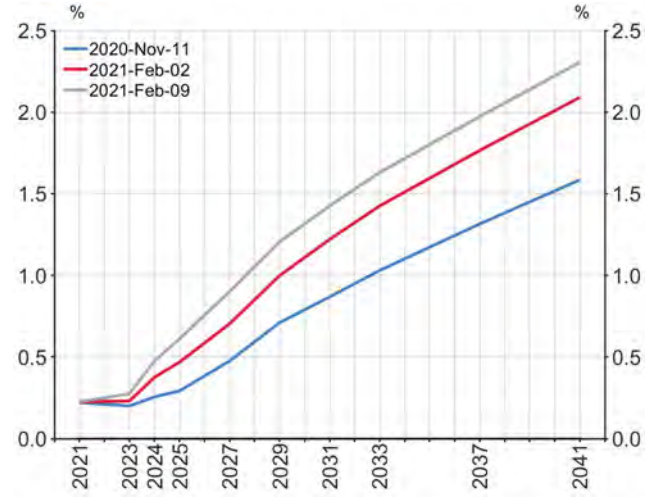
Figure 1: Unconstrained OCR, SSR, and OCR



The unconstrained OCR indicates the level of stimulus that is consistent with meeting the inflation and MSE objectives in our NZSIM model.

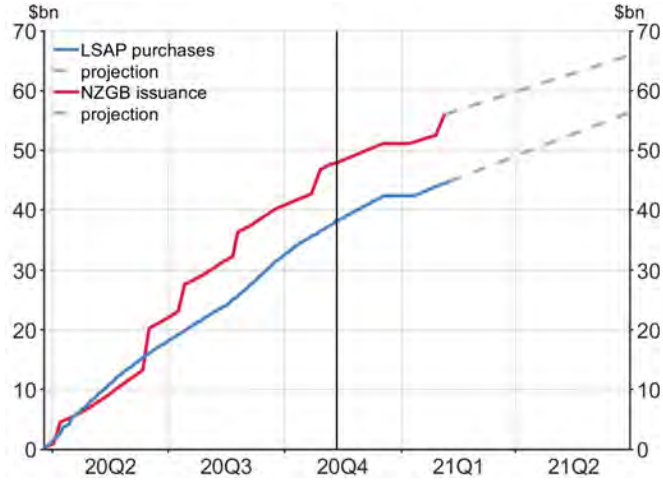
Our preferred indicators suggest the level of stimulus is sufficient on the mortgage rate measure, but insufficient with regard to wholesale rates.

Figure 2: NZGB yield curves and change



The short-end of the NZGB curve is well anchored around the OCR, while yields beyond the 2-year horizon have increased, leading to a curve steepening since the November *MPS*. Part of these moves are driven by global factors, as the US government bond curve has responded to the prospect of increased fiscal stimulus under the incoming Biden administration. Domestic factors, including increased optimism in New Zealand's medium-term economic outlook have also played a role, with output, employment, inflation and housing data all surprising on the upside.

Figure 3: NZDM issuance vs. LSAP purchases



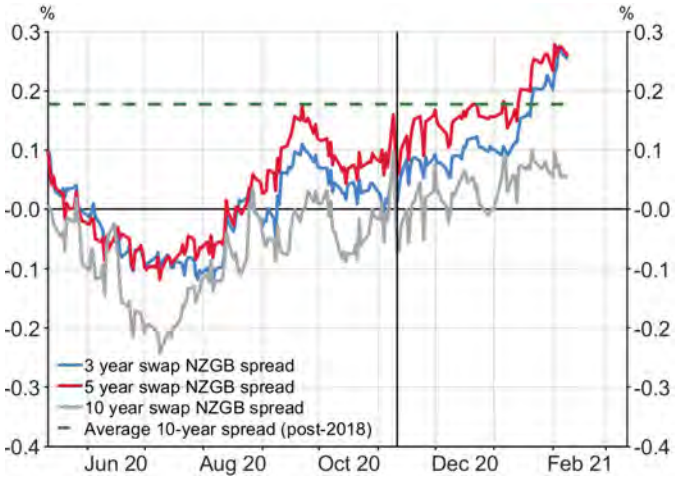
To date, RBNZ's LSAP purchases have totaled $44.2bn. NZGB issuance has totaled $56.0bn since the beginning of LSAP, consisting of $29.5bn in tenders and $26.5bn in syndications.

The HYEFU indicated that the rate of NZGB issuance would be lower in 2021. Total NZGBs outstanding in the market are $128.5bn, 34% of which are held by the RBNZ under the LSAP programme.

The projection in figure 3 assumes NZGB issuance carries on at an average of $475m per week, and that LSAP purchases are maintained at $570m per week (the current pace of purchases).

Valuation considerations

Figure 4: NZ Swap – NZGB Spreads



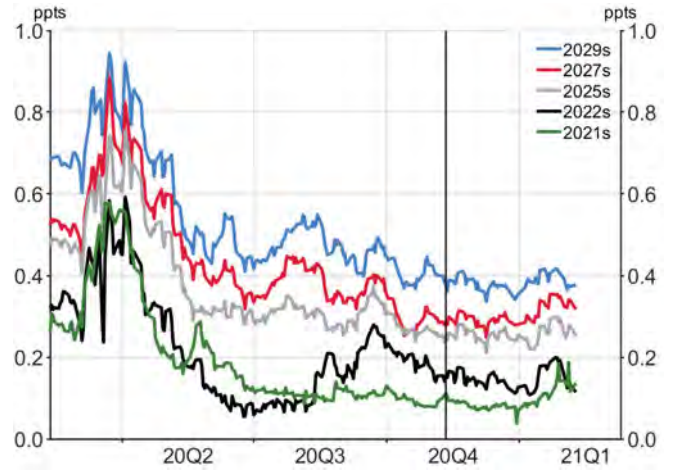
Since the Nov *MPS,* swap spreads have had an upward bias as the swap curve has risen further than the NZGB curve, reflecting the global reflation theme driving markets since the start of the year. The seasonal reduction in liquidity in the swap market over the New Year holiday period may have also contributed to the widening in swap spreads.

Figure 5: Cross-country 10-year Govt spreads

The long-end of the NZGB curve typically tracks offshore moves quite closely, particularly those of the US and Australian sovereign curves.

Over the summer break, US yields led the move higher in rates. However, on the release of surprisingly strong December quarter employment data, NZGB yields increased independently of the US and Australian curves.

Figure 6: LGFA Spreads to NZGB



LSAPs have compressed the spreads between NZGBs and LGFAs as the portfolio rebalancing channel has worked to drive credit spreads lower.

LGFA spreads are lower than they were pre-Covid and have remained fairly stable since the Nov *MPS.*

Paper 3.1: International economic and financial markets developments

Market Intelligence and Analysis
Main contributors: Katie Davis, Niall Healy, Liza Reiderman, Jibran Siddiqi

SUMMARY

- The global economy is continuing to recover from the Covid-19 (Covid) pandemic as vaccinations pave the way for a reopening of businesses, schools, and travel. Divergences between growth trajectories of developed market economies are set to narrow as the pace of vaccination rises. However, concerns have escalated about the global containment of Covid as cases rise sharply and new variants appear in emerging markets.

- Shifting economic conditions and steepening yield curves have led some central banks to adjust their suite of policy tools and communication. Financial conditions remain accommodative, and markets are little changed since the April *MPR*.

INTERNATIONAL ECONOMIC DEVELOPMENTS

Improving Covid outcomes in Northern Hemisphere support reopening plans, activity data

The global economy has continued to grow as vaccinations fuel an increase in activity, but significant challenges remain on the horizon, including the global management of the virus as Covid cases increase sharply in emerging economies (figure 1).

Figure 1: Vaccinations per 100 people

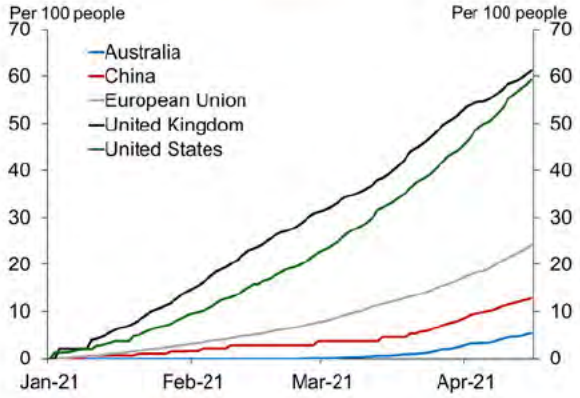
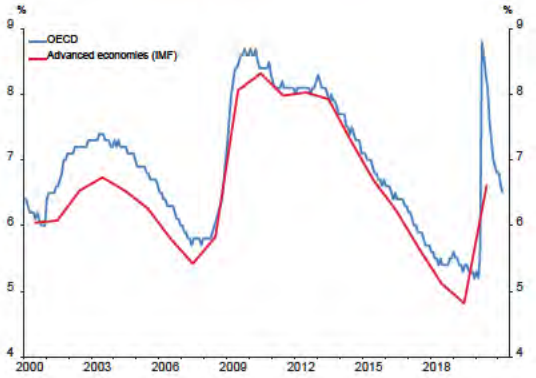


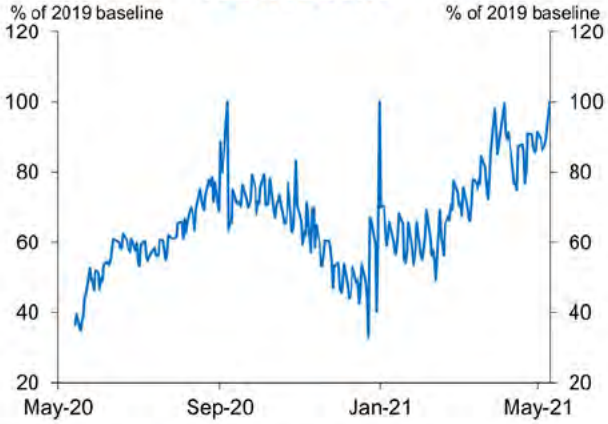
Figure 2: Advanced economies unemployment rate



Since the April *MPR,* governments and companies in Europe and the US have implemented or announced tentative plans to lift mobility restrictions. In particular, progress has been made about permitting travel for individuals that are fully vaccinated or test negative for Covid. Elsewhere, travel bubbles have launched for cross-border travel among countries with stricter Covid containment policies, including between Hong Kong and Singapore. These measures to reopen economies to foreign tourists might support improvement in the leisure and hospitality industries, where global employment rates remain significantly below pre-Covid levels (figure 2 and 3).

Figure 3: Employment in hospitality sectors

Figure 4: Global OpenTable reservations

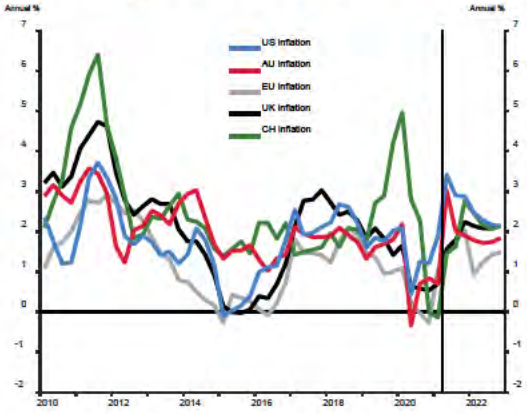


Other efforts to reopen global economies, including return to offices (subject to occupancy caps), have been implemented. Some high-frequency measures – including restaurants and airline data – show slowly rising utilisation, which is consistent with rising consumer confidence and a decline in global household savings (figure 4). However, utilisation remains significantly below pre-Covid levels, and significant challenges to normalisation of activity remain.

Nonetheless, higher activity levels have supported expectations that recent increases in energy prices, base effects, supply disruptions, and fiscal transfers will push global inflation rates higher in 2021, but this pressure is largely viewed as temporary by most central banks and economists (figures 5 and 6). Some survey expectations point to more sustained increases in inflation in 2022 and 2023, in line with expectation of reduced slack in labour markets. Upside surprises to growth and faster employment gains could provide a boost to inflation prints, while economic scarring, greater automation post-Covid, and further challenges associated with the recovery create downside risk to the outlook.

Figure 5: Trading partner inflation

Figure 6: CPI forecasts

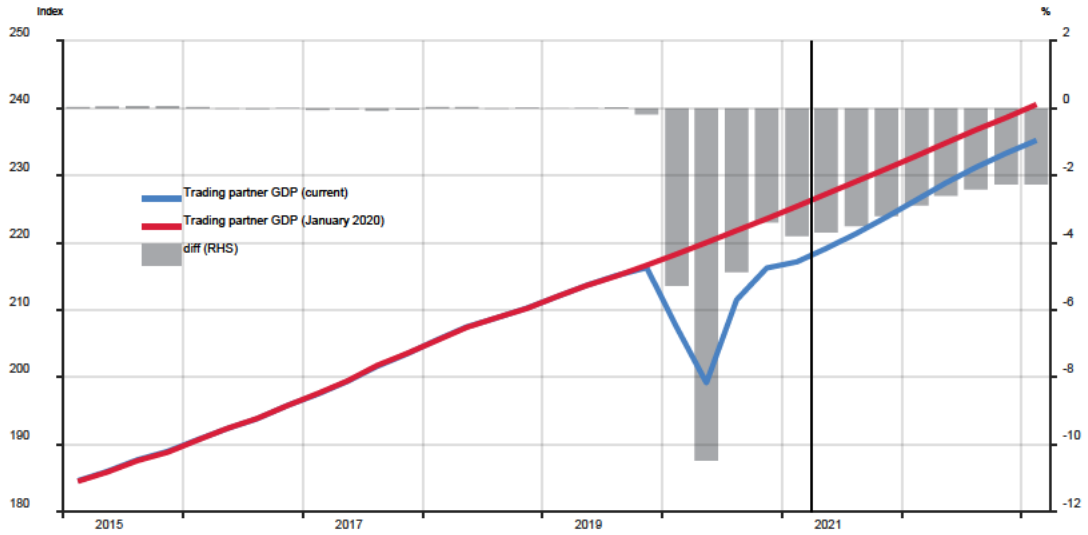


Indeed, a sharp deceleration in the pace of job gains in the US has brought to the fore a discussion about the challenges associated with a recovery from the pandemic in labour markets. Despite rising job vacancies and lower labour force participation, data outturns since the April *MPR* reflect a slowing pace of job gains in the US, which some attribute to childcare challenges, ongoing concerns about contracting Covid despite rising rates of vaccinations, a potential skills mismatch between jobs lost in 2020 and gained in 2021, and robust unemployment benefits passed in response to the pandemic. Other US data over the

period, however, continues to reflect a gradual improvement in economic conditions and confidence about the outlook.

Across the Atlantic, European data outturns also reflect a slowly improving pace of normalisation. GDP contracted in 2021Q1 on the back of renewed activity restrictions, but by less than anticipated; similarly, unemployment ticked down to 8.1% and retail sales showed modest gains. The vaccination process in Europe was slow to launch, but has accelerated meaningfully in recent weeks. Nearby, the UK economy is expected to recovery strongly over 2021 toward pre-Covid levels, consistent with the reopening of the economy as vaccination rates top 50%, which has prompted the government to announce a lift to major restrictions on business and domestic travel by end of May.

Figure 7: Trading Partner GDP



Chinese, Australian growth holds steady; sharp increase in EM Covid cases

While high vaccination rates are supporting the recovery in the Northern Hemisphere, containment of Covid is supporting economic growth in Australia and China. Australia's solid economic recovery has continued, with the unemployment rate declining to 5.6% in March, relative to 5.1% pre-Covid. Survey measures of business activity have surged, particularly in the manufacturing sector. Consumer confidence measures have increased sharply, house prices are increasing quickly across all major cities, and increasing consumer demand is shown in declining household savings rates. However, recent CPI and wage data confirmed that inflationary pressures remained subdued; under the RBA's central scenario, inflation is expected to reach 1.5% in 2021 and 2% in mid-2023.

After a brisk economic rebound in 2020, Chinese data points to continued expansion with some signs of overheating in the industrial and property sectors (figure 8). As a result, the government has unwound some stimulus and attempted to target tightening in these sectors through multiple policy levers, including limits on leverage for major property developers. Other segments of the economy, including hospitality, still reflect meaningful slack. Strong inflows into China on the back of its economic recovery have led to an appreciation of the renminbi against the US dollar, leading the government to more closely manage the exchange rate through daily yuan fixings.

Figure 8: China GDP

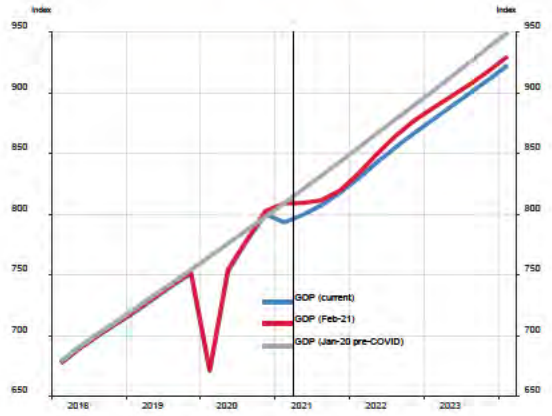
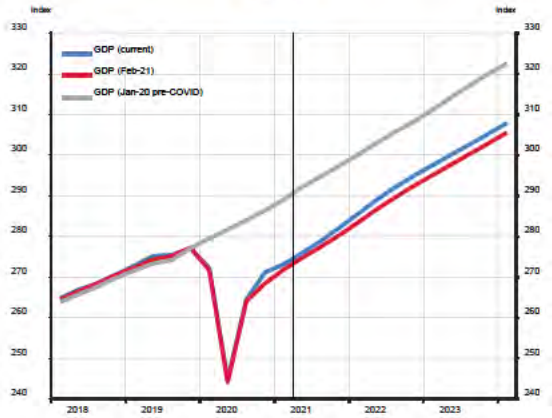


Figure 9: Emerging Asia (Ex-China) GDP



Other emerging markets (EM) are slower to recover (figure 9). On net, EM trading partners' GDP are expected to remain below their pre-Covid level for some time. Vaccination rates have been slower in EM, and Covid containment has varied. While some trading partner EM economies have successfully managed domestic outbreaks, the sharp increase in new cases in India has brought to the fore challenges with the global efforts to contain Covid and limit new virus strains amid severe pressure on the country's medical infrastructure.

FINANCIAL MARKETS

Equities, rates little changed since April MPR

Global financial conditions remain accommodative, characterised by low interest rates, rising equity prices, and narrow credit spreads. Since the April *MPR*, nominal sovereign bond yields are little changed after climbing sharply higher over February and March (figure 10). Since the beginning of the year, improvement in the growth outlook and higher inflation expectations have led to steeper sovereign yield curves, led by increases in longer term nominal yields. Over the same period, shorter term sovereign yields continue to remain anchored by central bank forward guidance for leaving policy rates unchanged for a number of years.

Figure 10: Equity market and rates since 2020

Figure 11: Equity market sectors year-to-date

Global equities is the MSCI ACWI Index, and sector indices are the MSCI ACWI sector indices.

Since the April *MPR*, equity markets are largely unchanged. Year-to-date, improving growth and the ongoing economic reopening has supported global higher equity indices, led by financial, energy, and materials stocks. Financial companies have outperformed the broader market in line with steepening in yield curves, which is seen as being beneficial for bank profitability. The reduction in mobility restrictions and subsequent recovery in energy demand has supported the outperformance of energy companies. Materials companies have outperformed in line with rising commodity prices and the resumption in construction activity.

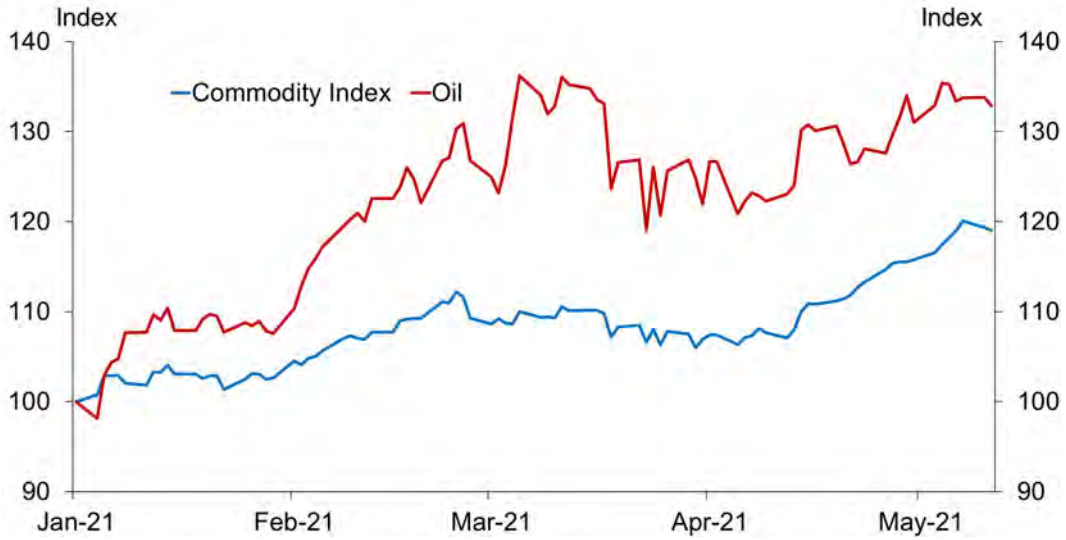
Shares of technology companies have declined since the rise in sovereign yields during February, reducing some concern about pockets of exuberant investor sentiment in equity markets. Going forward, investors expect sovereign yields to continue to move higher, and for companies tied to the economic reopening (e.g. energy, consumer services) to outperform the broader market.

Commodity, oil prices firm on supply, demand pressures

The gradual normalisation of economic activity towards pre-pandemic levels is supporting a broad based recovery in demand for commodities (figure 12). Aggregate commodity market indices have increased 20 percent since the start of the year. In particular, the reduction in mobility restrictions enabled by the vaccine rollout is supporting an increase in energy demand, the primary driver lifting oil prices higher.

OPEC+ reduced oil production last year in response to the pandemic, creating spare energy production capacity that could be brought online fairly quickly. Since its decision to reduce oil production, OPEC+ members have pursued a cautious approach to further increases in oil production, which has also supported the rise in oil prices. In line with rising demand, OPEC+ member states are set to increase oil supply between May and July as part of gradually unwinding the previous production cuts.

Figure 12: Commodity index and oil prices, year-to-date



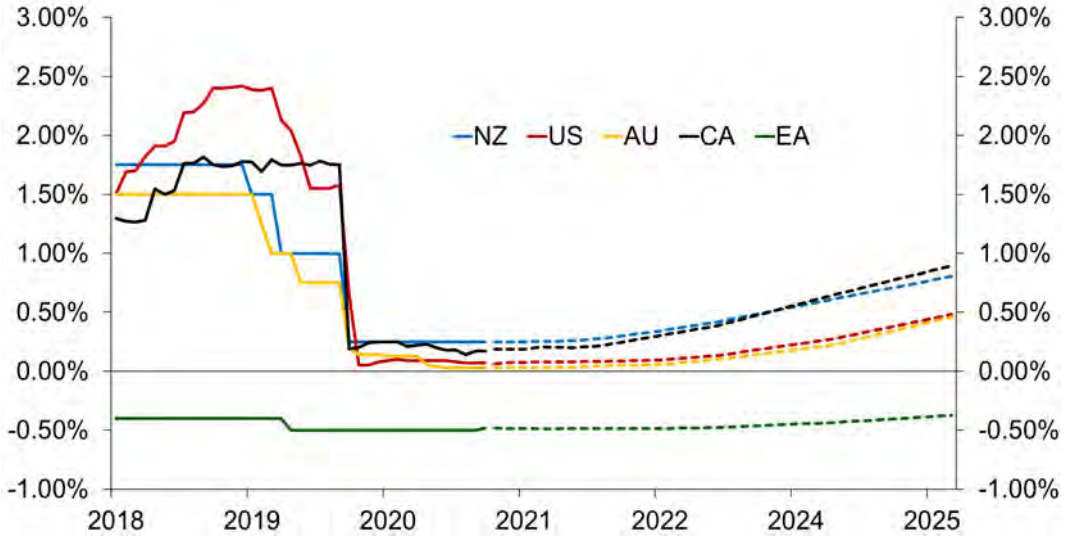
Commodity Index is the Bloomberg Commodity Index, Oil is the WTI oil price.

CENTRAL BANK UPDATE

Global central banks evaluate suite of policy tools against shifting economic conditions

The growing recovery has placed pressure on central banks to offer additional guidance on normalisation, including adjustments to balance sheet operations. Differences in monetary policy have been smaller amongst central banks in the developed world as policy rates are set to remain lower for longer; the first increase to a major central bank policy rate anticipated by markets is for 2023 (figure 13). Rather, the near-term market focus is around the timing of tapering asset purchases. While the Bank of Canada (BoC) and Bank of England (BoE) have shifted the parameters of their QE programs, the Federal Reserve and Reserve Bank of Australia (RBA) reinforced current policies, and the European Central Bank (ECB) expanded its purchases in March.

Figure 13: Policy rates



Bank of Canada, Bank of England adjust purchase programs

In April, the BoC became the first major central bank to taper large-scale asset purchases with the stated intent of reducing policy accommodation. To explain the shift in its policy stance, the BoC noted the decision is “consistent with the progress toward economic recovery.” The announcement had limited impact on financial markets, as prior BoC communication introduced the possibility of a taper at April meeting.

While the BoE has announced a decrease in the pace of its QE purchases in May, it explicitly noted that the decision should not be interpreted as a change in the monetary stance. Rather, it characterised the reduction in the pace of purchases as “consistent with developments in financial markets.” Market expectations are for the Bank Rate to increase by 25 basis points by 4Q2022 to 1Q2023.

Expectations grow for Fed taper announcement in 2021

The Fed has not made any adjustments to its suite of policy tools. In March, Chairman Powell characterised the upward move in yields as representing “an improved economic

outlook." In frequent questions about tapering asset purchases raised at recent press conferences, Powell has insisted the Fed is not "thinking about thinking" about tapering.

Modal expectations from the Survey of Primary Dealers are for the Fed to adjust its pace of QE purchases in 1Q 2022, with an announcement to be made by the end of 2021, with some expectations for an announcement be made at the Jackson Hole Economic Symposium in August. Modal expectations are for the Fed to increase the fed funds rate by 25 basis points in 3Q2023, although market pricing points to a possible 2Q2023 hike.

RBA continues yield curve control ahead of July announcement

In its May statement, the RBA lifted its near-term forecasts for growth, employment and inflation. These forecasts are based on a faster-than-expected recovery following the Covid shock. However, the baseline forecasts still suggest that the economy is not set to achieve conditions consistent with inflation sustainably within its target range until 2024. The RBA also stated that at its July meeting, it will decide whether to extend its QE programme beyond September, and whether to roll its YCC target from the April 2024 bond to the November 2024 bond.

At present, the yield of the November 2024 bond is considerably higher than the 10bp on the targeted April 2024 bond, suggesting markets may be surprised if the RBA extends YCC. Already, market pricing indicates a material probability that the OCR rises before April 2024.

At its May meeting, the RBA also confirmed that the Term Funding Facility (TFF) would close to additional drawdowns at the end of June. Previously the RBA had signalled that the facility could be extended if there was a deterioration in funding markets or credit conditions, but since this has not materialised an extension of the scheme is not warranted. According to the RBA, banks have drawn $102 billion under the facility so far and a further $98 billion remained available at the time of the May meeting.

ECB stays the course after increasing purchase pace in March

The ECB made no policy changes at its meeting in April after expanding its purchases in March "[b]ased on a joint assessment of financing conditions and the inflation outlook." In particular, one of the factors that the ECB cited in expanding its purchases was the tightening of financial conditions observed in February and March. Specifically, ECB President Lagarde noted that the rise in yields could have "undesirable" impact on the economic recovery; subsequently, the ECB's chief economist supported the move, suggesting that an increase in the pace of purchases helps "decouple" the euro area market from international trends.

APPENDIX 1: FINANCIAL MARKET INDICATORS

Figure 1: 10-year government bond yields

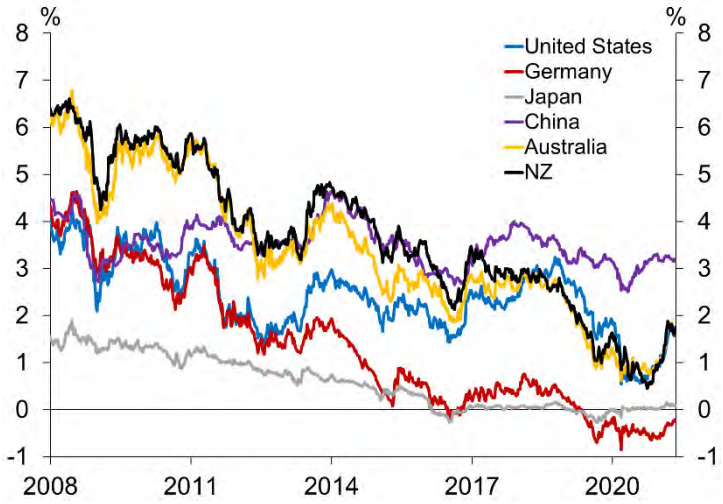


Figure 2: Monetary policy expectations

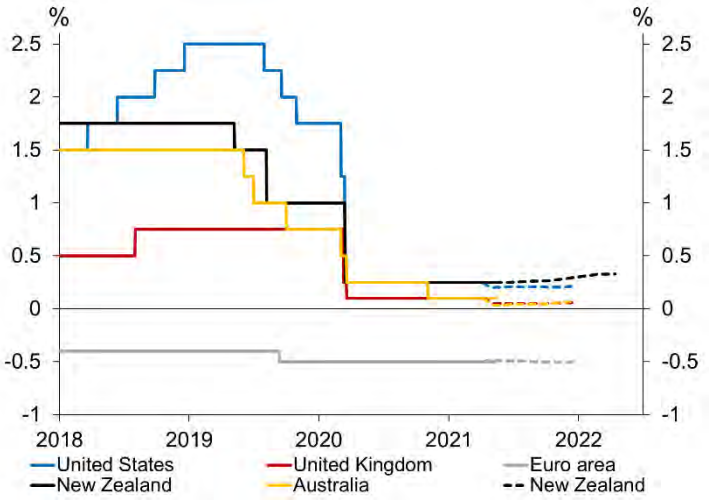


Figure 3: 10-year break-even inflation rates

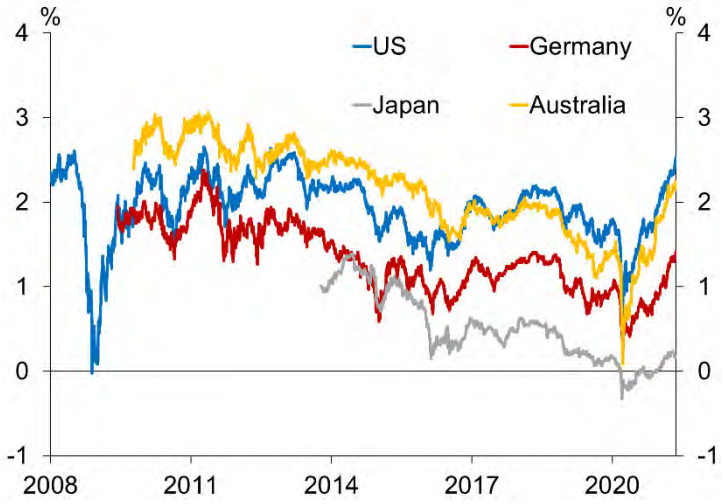


Figure 4: *Real* 10-year government yields

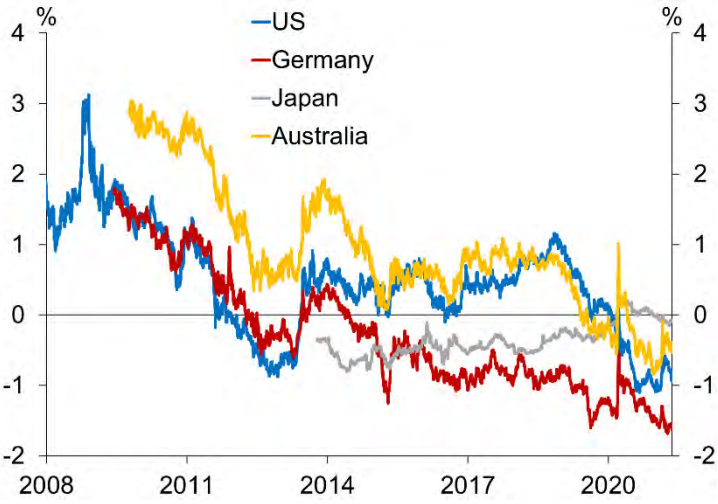


Figure 5: Investment-grade corporate bond spreads

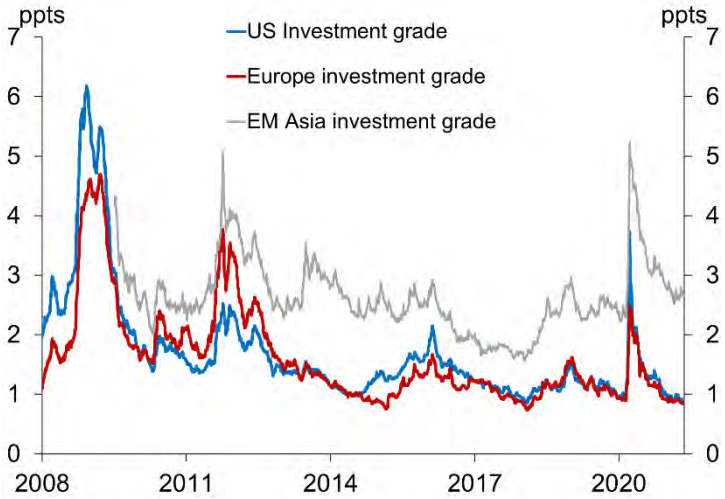


Figure 6: High-yield corporate bond spreads

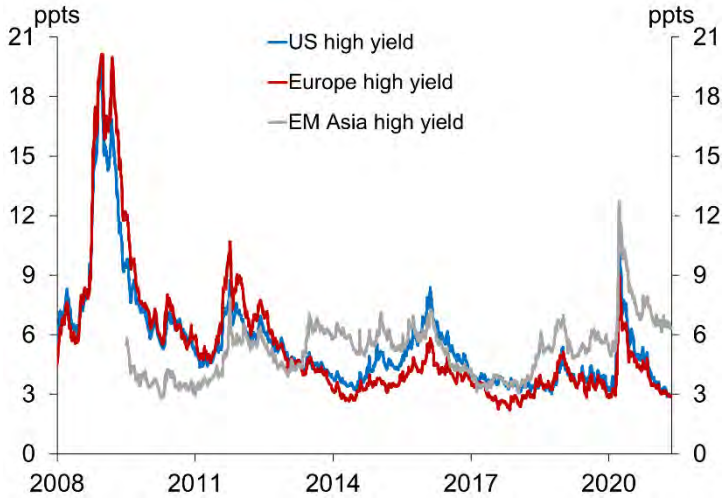
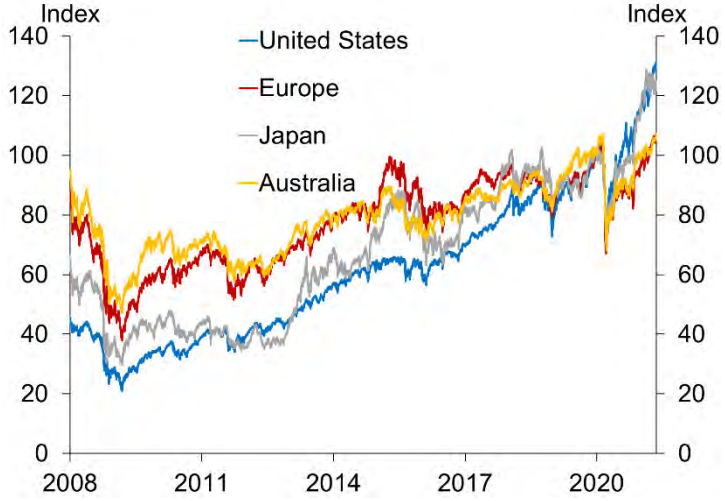


Figure 7: Long-term equity returns



Note: 1/1/2020=100

Figure 8: Drivers of 2021 US equity returns

Figure 10: US implied volatility indices

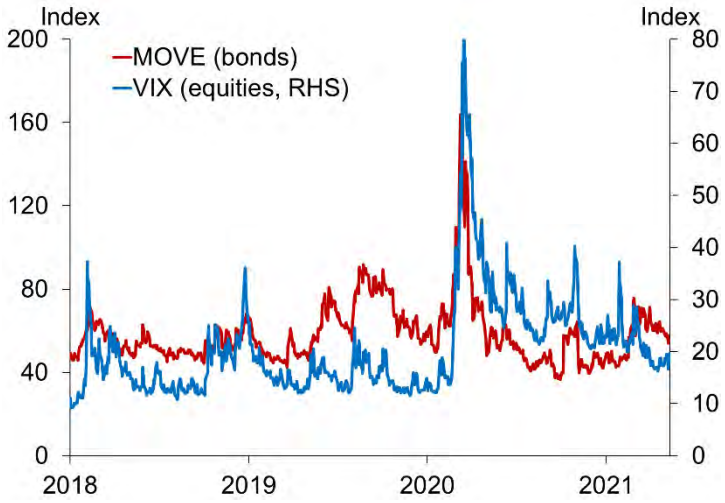


Figure 11: Drivers of US equity market volatility

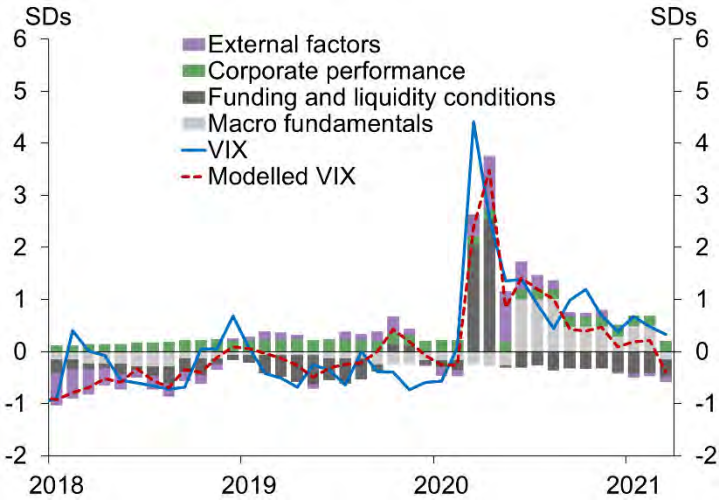
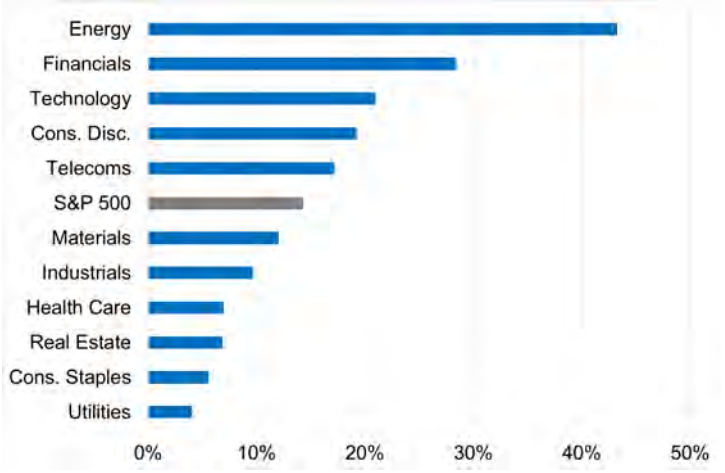


Figure 12: S&P 500 Sector Returns



Paper 3.1: International economic and financial markets developments

Market Intelligence and Analysis
Main contributors: Tom Barker, Niall Healy, Liza Reiderman, Jibran Siddiqi

SUMMARY

- **The path of the global economy will be highly related to the rollout of vaccines in 2021. Despite challenges in both production and logistics of vaccine rollout, there is optimism that inoculation campaigns will be successful at making progress toward herd immunity in late 2021.**

- **Positive economic momentum in Q420 was tempered by worsening virus spread and mobility restrictions in Q121in the Northern Hemisphere, while China and Australia, as well as smaller Asian economies, continued to make gains.**

- **Confidence about the economic outlook has supported global financial conditions since the November MPS. Financial conditions continue to be accommodative, characterised by gains in global equities, near-record low sovereign yields, and narrow credit spreads.**

COVID-19

Inoculation campaigns commence amid logistical, production challenges

The Covid-19 virus continues to drive financial market and economic outcomes. While an economic recovery is underway, its speed will depend on the production, distribution, and access to vaccine. The baseline assumption of the IMF is for broad vaccine availability in advanced economies and some emerging economies by the second half of 2021, and in most economies by the second half of 2022.

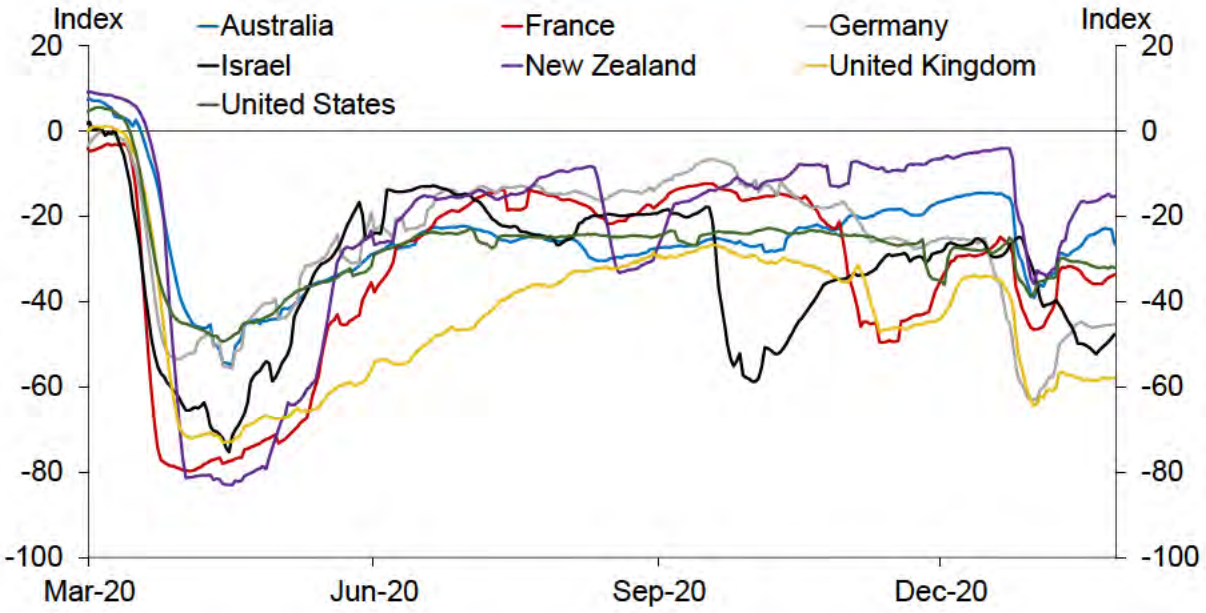
The medium-term economic outlook has improved since November due to vaccine rollout and stronger data outturns in some economies. However, rising infections in some regions, due in part to new virus strains, have weighed on activity. New restrictions and social distancing has caused mobility to decline recently (Figure 1).

There are risks to the vaccine rollout. Storage requirements provide logistical challenges, particularly in emerging economies. And it is too soon to be confident that existing vaccines will provide strong protection against new virus strains, in particular the degree to which they will reduce the likelihood of infecting others.

Uneven vaccine access could hurt emerging market recovery

Many advanced economies have pre-purchased vaccines with large population coverage, including domestic production agreements. NZ and major trading partners including China, Australia, and the US are well positioned for vaccine access.

Figure 1: Mobility indices[1]



In contrast, vaccine access for emerging economies lags significantly. Inequitable distribution of vaccines could lead to an incomplete global recovery. Emerging economies accounted for 65 percent of global growth (40 percent excluding China) over 2017-19. Delays in addressing the pandemic in these economies could slow global growth momentum, and in turn undermine the sustainability of the global recovery.

GLOBAL ECONOMIES

Uneven recovery becoming more pronounced

The strength of the recovery is projected to vary significantly across countries depending on effectiveness of policy support, exposure to cross-country spill overs and structural characteristics entering the crisis. Economies geared to global goods demand are performing relatively better than those dependent on tourism and service sector activity. The relative weakness in the service sector will likely play an important role in driving outcomes for regional growth, inflation and labour markets. The latest IMF forecasts are expecting emerging Asia to continue to outperform the rest of the world. Our trading partner growth is forecast to outpace that of advanced economies (see Figure 2a).

Third quarter GDP outturns mostly surprised on the upside, though the re-instated lockdowns across some developed countries will impact global activity for the first quarter this year. Trading partner growth is expected to pick up over the second half of the year, as countries progress with the vaccine rollout. However, trading partner

[1] Google mobility data provide indicative mobility trends relative to a pre-Covid baseline period (January and February 2020).

GDP is forecast to remain several percentage points below its pre-COVID trend (see Figure 2b).

Figure 2a: IMF Growth Forecasts

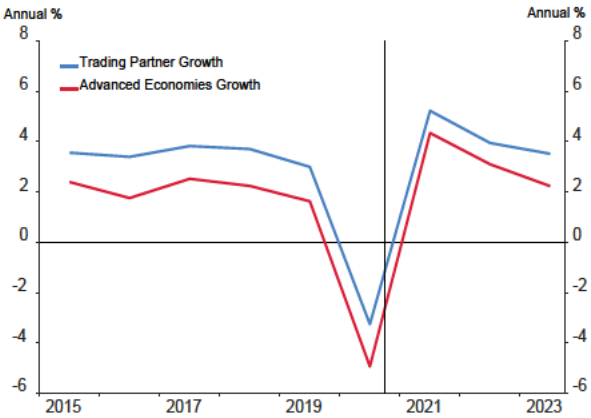
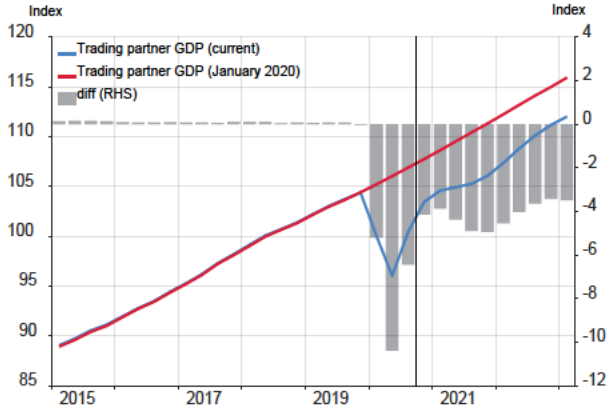


Figure 2b: Trading Partner activity below pre-COVID trend



The economic recovery in China is progressing strongly…

In China, both activity and growth have now surpassed pre-Covid levels, with 2020 December quarter GDP 6.5% higher than a year earlier. China's recovery has been primarily led by industrial activity and exports. The acceleration in industrial activity is being supported by strong credit growth, while exports have been boosted by demand for PPE and electronic goods. However, consumption growth is taking longer to recover, consistent with policy support focused on industry, rather than supporting the income of households. The Chinese government has signalled an intent previously to move away from the current export-led growth model to something more self-sustaining and climate friendly. This transition could provide some future headwinds for economic outcomes.

…while virus outcomes dampen the near-term activity outlook in US/Europe

While the fiscal stimulus provided during the first wave of the COVID-19 crisis was significant, a key concern is that the fiscal stance could turn more austere. However, the US fiscal response is likely to be materially stronger than other developed markets. Despite both the US and Europe seeing renewed spikes in COVID-19 cases, certain economic indicators are staring to diverge (see figure 3a and 3b). This shows that the fiscal cushion in the US is having the desired effect. Since Australia has been able to contain to the spread of the virus, economic activity hasn't experienced the same level of suppression when compared to the US and Europe. However, there does remains considerable slack in the economy, in particular the labour market (see Appendix for a comparison of New Zealand and Australian economies).

Figure 3a: Retail Sales (Index = Dec 2019)

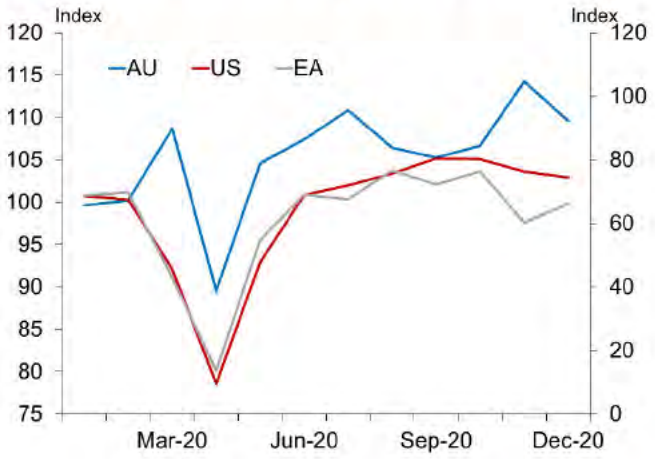
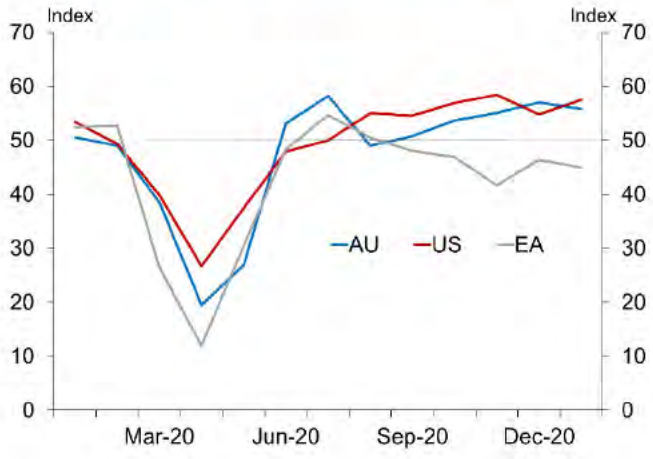


Figure 3b: Services PMI



The inflationary picture remains distorted

The inflation outlook for New Zealand's trading partners is roughly unchanged compared to the November MPS. Although COVID-19 represents both a negative demand and supply shock, the fall in demand was the dominant driver last year. The drop in core-service price inflation highlights this negative demand shock.

With services being a much larger component of core CPI, the muted trend in core services inflation may be a better guide to the underlying inflationary trends in the global economy. We are also noticing some divergence in inflationary trends across China and other trading partners (see Figure 4). The weakness in Chinese inflation indicates subdued demand as households remain cautious.

Figure 4: Core CPI from China, Australia and the United States

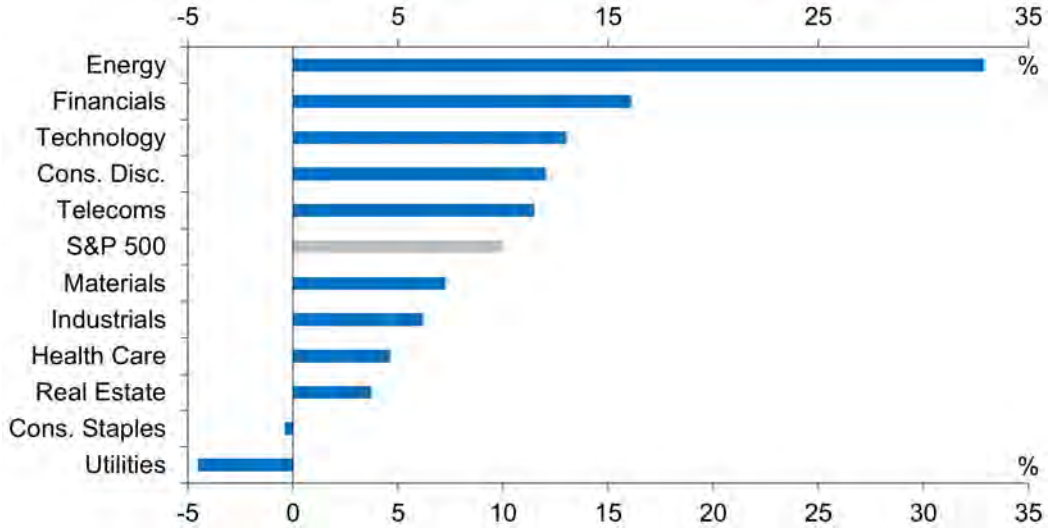
FINANCIAL MARKETS

Global markets continue to reflect accommodative financial conditions

Confidence about the economic outlook has supported global financial conditions since the November MPS. Financial conditions continue to be accommodative, characterised by gains in global equities, near-record low sovereign yields, and narrow credit spreads. Since the November MPS, the US S&P 500 index rose by nearly 10 percent, sovereign nominal yields increased, and global market measures of inflation compensation have risen moderately.

Major global equity indices have increased by a range of 5 to 10 percent since the November MPS, though volatility has increased in the market as it grapples with the countervailing forces of a positive medium-term outlook against near-term weakness. Compositional analysis reflects continued gains in energy sector shares, consistent with a firming in commodity prices (see Figure 5). Technology firms continue to benefit from the significant impact that the Covid-19 pandemic has had on work and consumption behaviour.

Figure 5: S&P 500 returns by sector since November *MPS*



Equity market performance continues to be supported primarily by fundamental factors, including low discount rates, fiscal support, and accommodative monetary policy. Indeed, since the November *MPS*, global central banks have reinforced or expanded their accommodative stance. The Federal Reserve kept its policy rate and purchase programmes unchanged at its January meeting, while the Bank of England communicated it intends to keep optionality around negative rates. The European Central Bank extended its purchase program in January, and the RBA announced a further $100 billion of bond purchases in February. Current market prices reflect a modal belief that policy rate increases will not commence until at least late 2022 among these institutions, and no global central banks have communicated an intention to taper balance sheet holdings since the November MPS.

In addition to the continued monetary support, realised and expected additional fiscal stimulus in the US has supported financial markets. Indeed, global fiscal support and higher rates of household saving have increased investor conviction that the global economy will expand in 2021, despite risks around production and logistics related to vaccine deployment.

Despite the supportive backdrop, equity investors are focussing on some growing risks, including near-term concerns about virus containment and related mobility restrictions, especially in Europe; the potential for higher corporate taxes under the new US administration; the possibility for higher risk-free rates; and the potential that fiscal support could be removed before the recovery is entrenched (see Box for further discussion). Consistent with these near-term risks, measures of implied volatility on equities have risen slightly since the November MPS.

Government bond yields rise in most countries

Since the November MPS, yields on long-term nominal sovereign bonds have increased, while short-term rates have remained low, resulting in a modest steepening of global yield curves (see Figure 6). The steepening, which is led by yields of US Treasury rates, is prompted by two factors. First, expectations for large-scale additional fiscal stimulus by the Biden Administration have prompted measures of the term premium to increase, consistent with expectations for additional debt issuance. Model-based estimates of the term premium have reached their highest level since 2018 (see Figure 7).

Figure 6: Nominal Yield Curves (Difference Between 10- and 2-Year Yields)

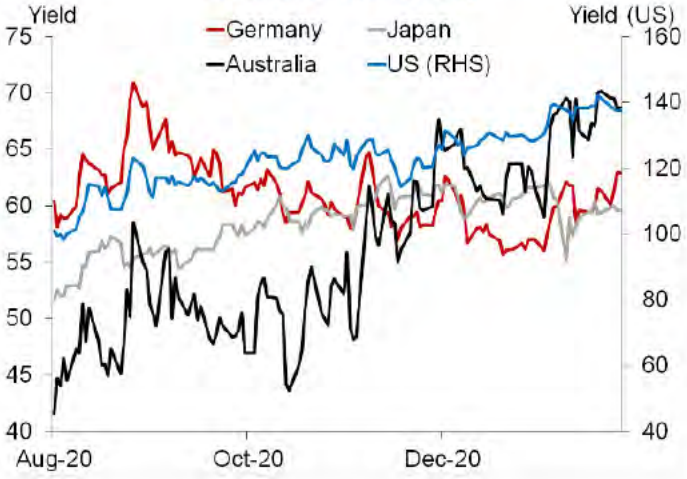
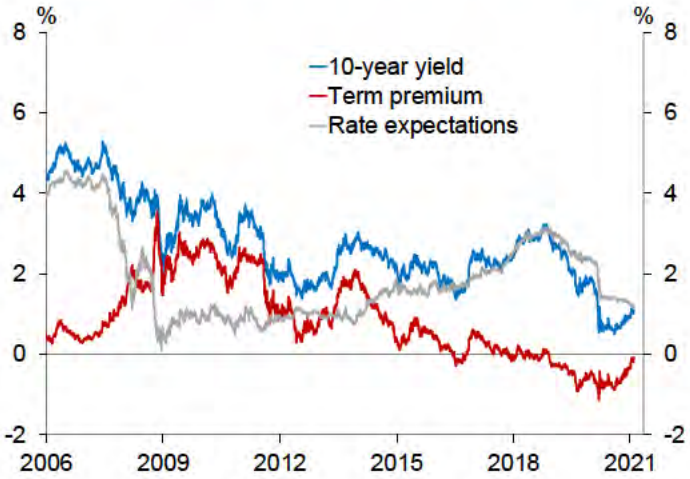


Figure 7: Decomposition of US 10-Year Rates

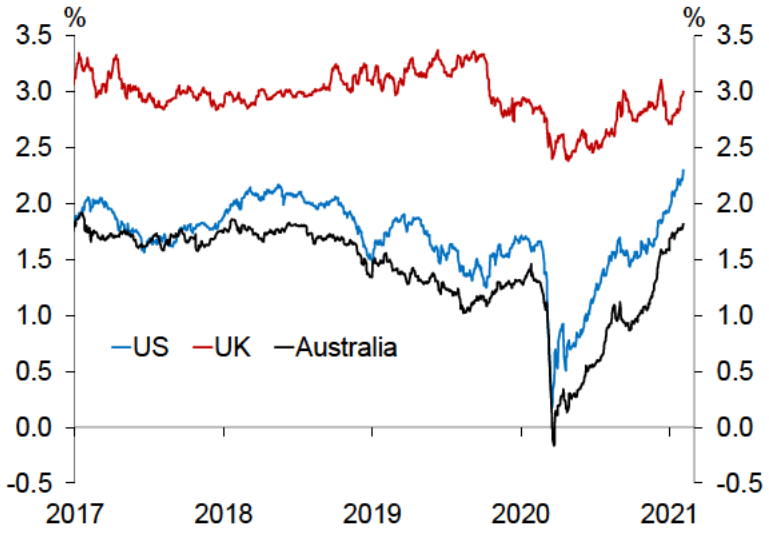


Second, an increase of market-based inflation compensation measures has supported a rise in nominal yields; real yields continue to be low, consistent with continued expectations of monetary policy to stay at or near the effective lower bound. Market-based inflation compensation is the combination of **expected inflation**, **liquidity**

premium, and inflation **risk premium,** where inflation risk premium captures the uncertainty around expected inflation.

The growing popularity of the reflation trade is based on a belief that downside risk regarding deflationary or low inflation outcomes has declined, while upside risk to inflation has increased. This is largely due to fiscal and monetary support, as well as a strengthening global economy. The Federal Reserve's recent adoption of an average inflation targeting framework may also be contributing, as investors believe the Fed is more likely to tolerate an inflation overshoot. As a result, the inflation risk premium has increased, leading to a rise in market-based measures of inflation (see Figure 9).

Figure 8: Global Inflation Compensation (10-Year)



Current assessment of the transmission of international events to NZ

This section assesses how international developments are transmitting through to NZ, using our standard framework (Figure 9).

Trade channel

- NZ goods exports continue to hold up better than expected since the onset of the crisis, partly due to the *relative* economic outperformance of countries in Asia and the Pacific that have better controlled the virus. As well, the largely primary nature of NZ's goods exports have proven resilient to global containment measures.
- Risks to the outlook for global demand, and therefore demand for NZ goods exports, are less skewed to the downside compared to the November *MPS*, due to positive vaccine developments.
- Service exports remain severely impacted by the ongoing border closures, and are not likely to return to their previous scale for several years.

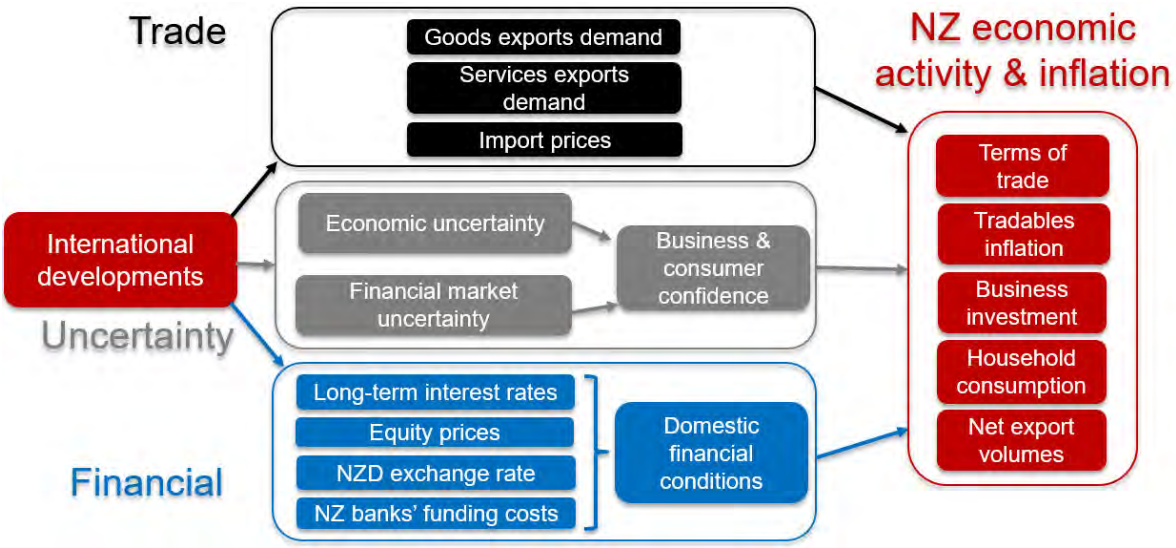
Financial market channel

- Domestic long-term government bond yields have risen since the November *MPS*, in tandem with increasing offshore sovereign yields over this time. The common factor driving these moves is optimism around a faster than expected recovery in global growth leading to more inflationary pressure.
- Positive global risk sentiment in global markets over recent months has contributed to the NZD TWI and the NZX50 both rising since the November *MPS*.
- Historically, a channel through which a spike in offshore financial market volatility flows through to NZ is through higher offshore wholesale funding costs for banks. At present this channel is likely more muted, as at this stage it seems unlikely that banks will tap offshore wholesale markets, due to banks being well-funded by deposits, and the launch of the FLP (which may act as a substitute for wholesale market funding).

Uncertainty channel

- Uncertainty around the global economic outlook remains elevated compared to history, which is likely dragging on domestic employment, investment and consumption decisions. That said, it is likely that the approval and rollout of a number of vaccines has seen *economic* uncertainty reduce slightly since the November *MPS*.
- In contrast to elevated levels of economic uncertainty, implied measures of global *financial market* uncertainty remain comparatively low. Currency and bond implied volatility indices are below historical averages, while equity market volatility is slightly elevated compared to recent years.

Figure 9: Transmission channels of international shocks to the NZ economy



BOX: INSIGHTS FROM RECENT INTERNATIONAL ENGAGEMENTS

This box summarises key themes from a recent EMEAP Monetary and Financial Stability Committee Meeting on global asset prices.

Asset prices recovered strongly in EMEAP economies over 2020…

Many members have been surprised by the extent to which equity and property prices in their jurisdictions have increased over the past year. As is the case globally, equity prices have recovered significantly from their March lows, and property prices have been more resilient than expected given the size of economic shock.

…driven by lower discount rates and an improving economic outlook.

Members agreed that the reduction in risk-free interest rates justified some of the increase in equity and property prices over 2020. More recently, asset prices, particularly equities, have been driven by improved expectations of the global recovery given the approval and rollout of vaccines.

Overall, members view the general level of equity and property prices in their jurisdictions as reasonable. That said, in discussing risks to current asset valuations, commonly cited drivers of a possible market correction from members included:

- Economic and/or vaccine outcomes missing expectations on the downside;
- Higher-than-expected inflation outcomes causing risk-free interest rates to rise earlier than expected; and
- A premature withdrawal of fiscal support before the recovery is entrenched.

Members agreed that monetary policy should remain accommodative to support the nascent economic recovery…

There was a consensus from members that monetary policy needs to remain stimulatory until a sustainable recovery in economic activity takes hold. No members talked about altering their stance of monetary policy in response to recent asset price developments. There was an emphasis that until vaccines are widely available, the economic recovery remains predicated on continued monetary and fiscal policy support.

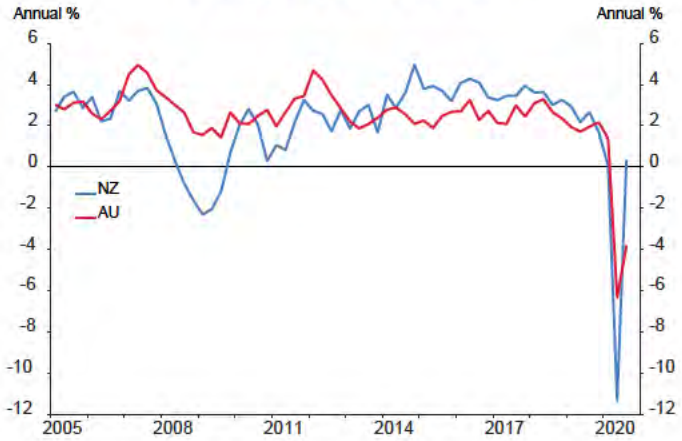
…with macro-prudential and fiscal policy better suited to addressing financial stability risks.

Members agreed that targeted macro-prudential measures, and fiscal policy are more efficient policy tools to address risks from rising asset prices. 9(2)(ba)(i)

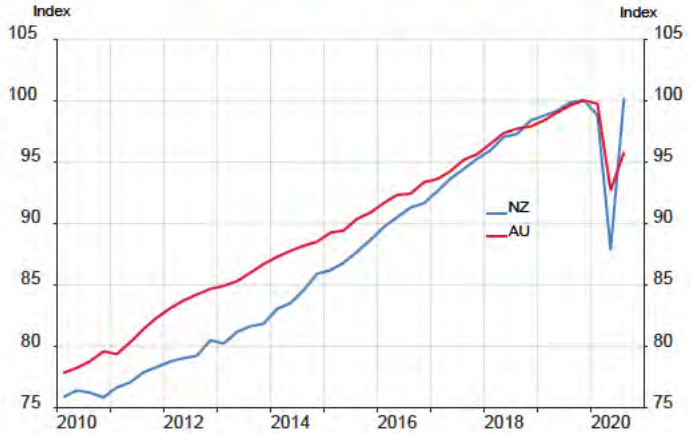
APPENDIX 1: NEW ZEALAND VERSUS AUSTRALIA

Following a sharper contraction in Q2, NZ GDP growth in Q3 has surpassed Australian GDP growth. The biggest divergence can be seen through the recovery in the respective labour markets. While falling slightly recently, Australian unemployment remains notably higher relative to pre-Covid levels. Hours worked and wage inflation both remain lower relative to pre-Covid levels.

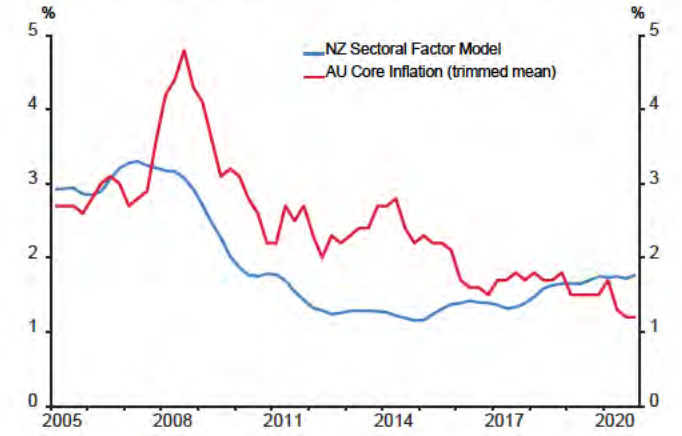
Annual GDP Growth



GDP (Index = Q4 2019)



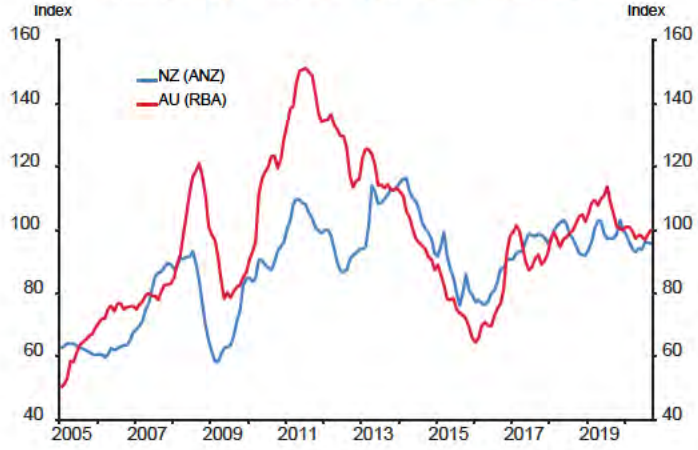
RBNZ and RBA Core Inflation Measures



Inflation Expectations 2 years ahead

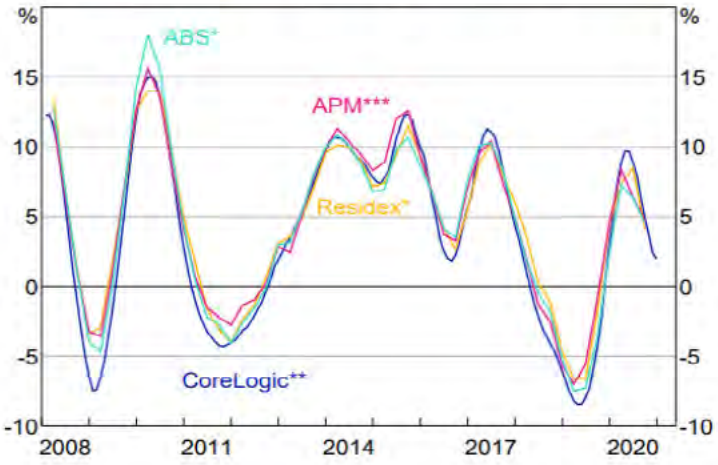
Terms of Trade (Index = Q4 2019)

Commodity Prices (Index = Dec 2019)



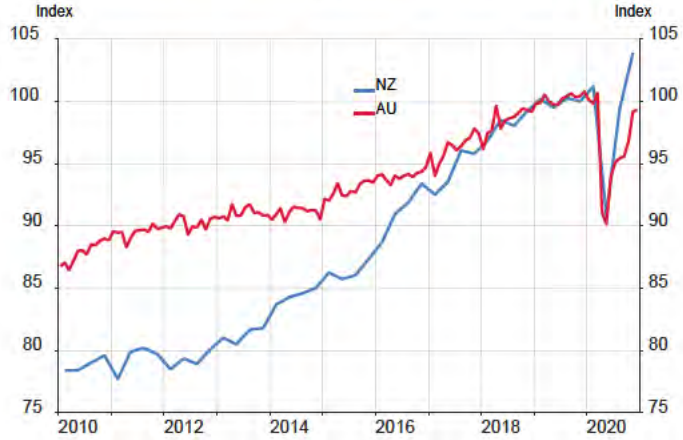
New Zealand House Price Inflation

Australia House Price Inflation (RBA)



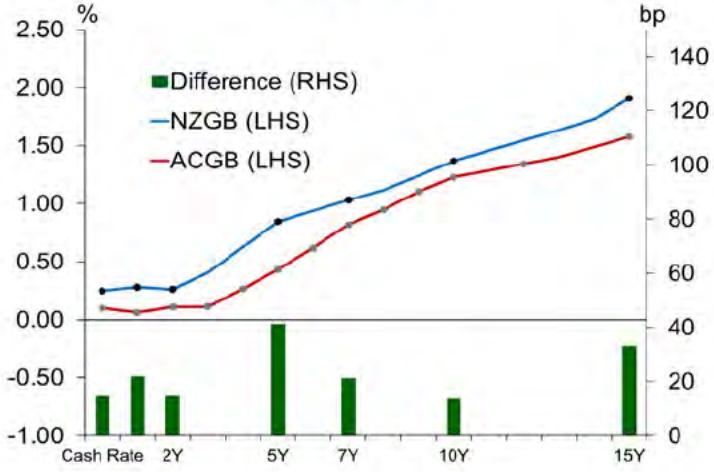
Unemployment

Hours Worked (Index = Q4 2019)



Wage Inflation (Private Sector)

Yield Curves



APPENDIX 2: FINANCIAL MARKET INDICATORS

- Interest rates are priced to stay at record lows for a number of years, and then increase only gradually (or not at all) over the long term.
- Inflation is priced to remain below central bank targets, but this pricing is actually higher than pre-Covid in some regions.
- Compensation for risk is at low levels.
- Corporate earnings are expected to bounce back, but not converge to the pre-Covid trend.

Figure 1: 10-year government bond yields

Figure 2: Monetary policy expectations

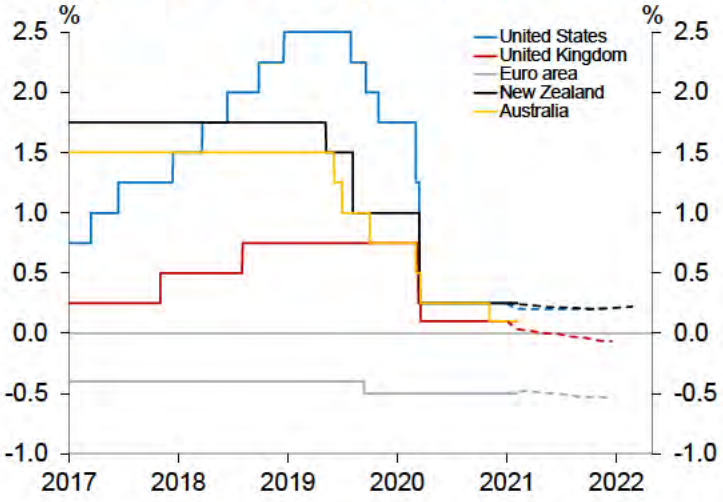


Figure 3: 10-year break-even inflation rates

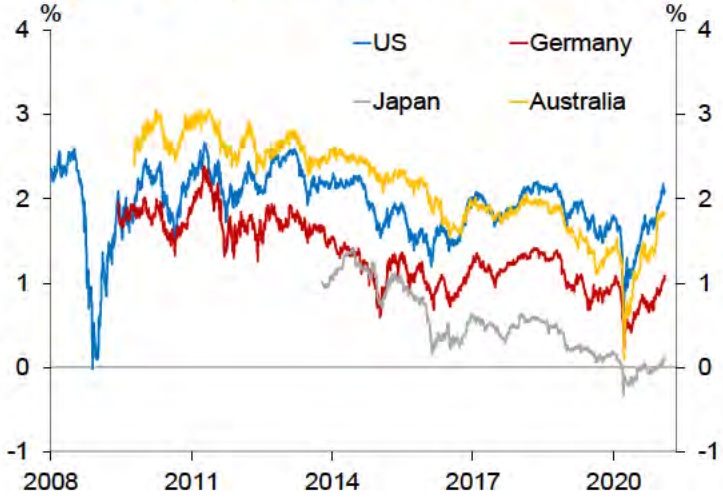


Figure 4: *Real* 10-year government yields

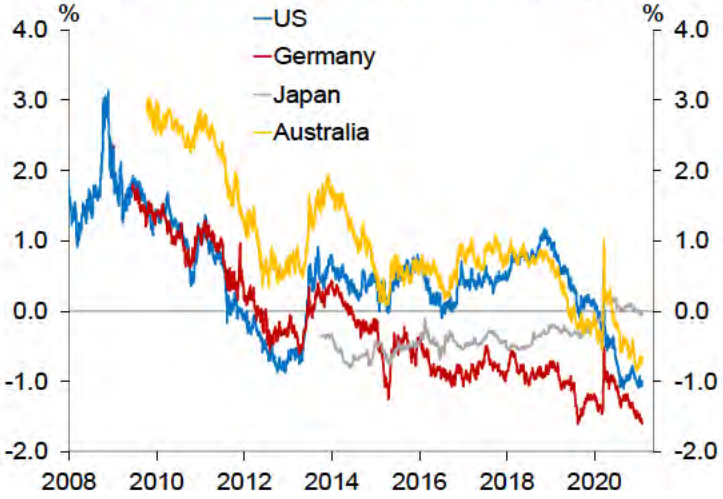


Figure 5: Investment-grade corporate bond spreads

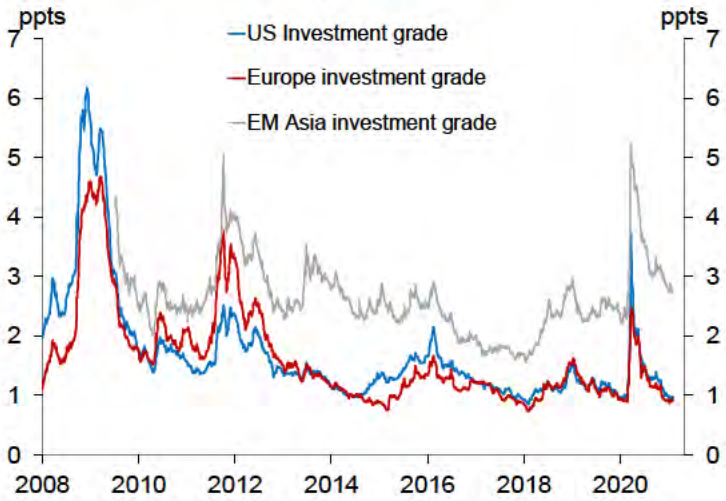


Figure 6: High-yield corporate bond spreads

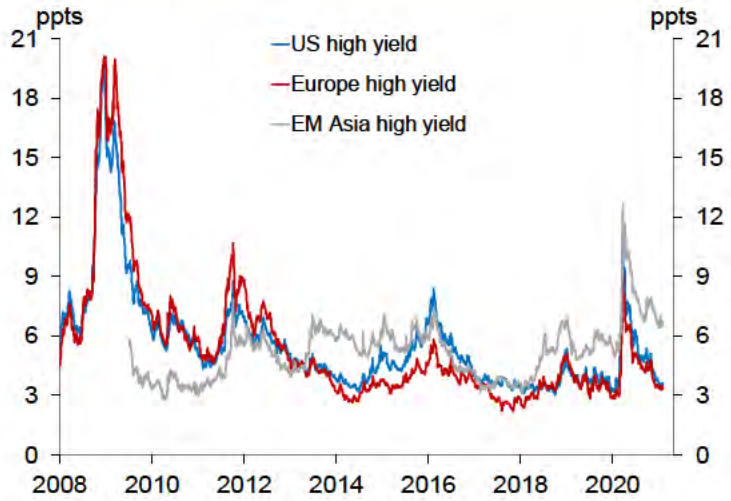
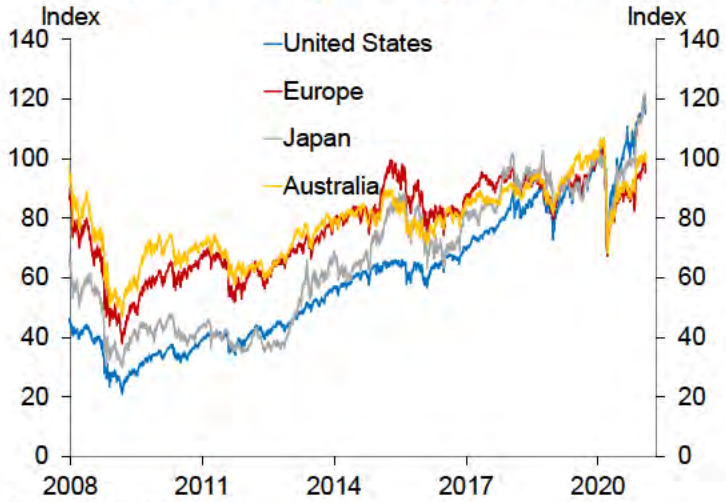


Figure 7: Long-term equity returns



Note: 1/1/2020=100

Figure 8: Drivers of 2020 US equity returns

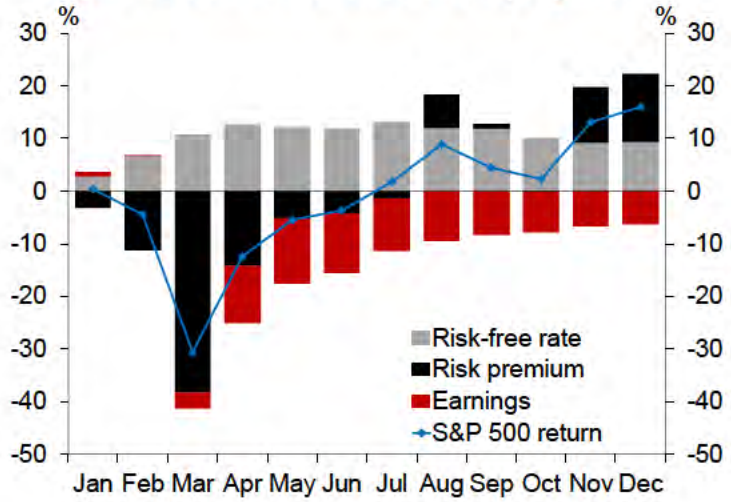


Figure 9: US equities real earnings per share (100 = 1/1/2020)

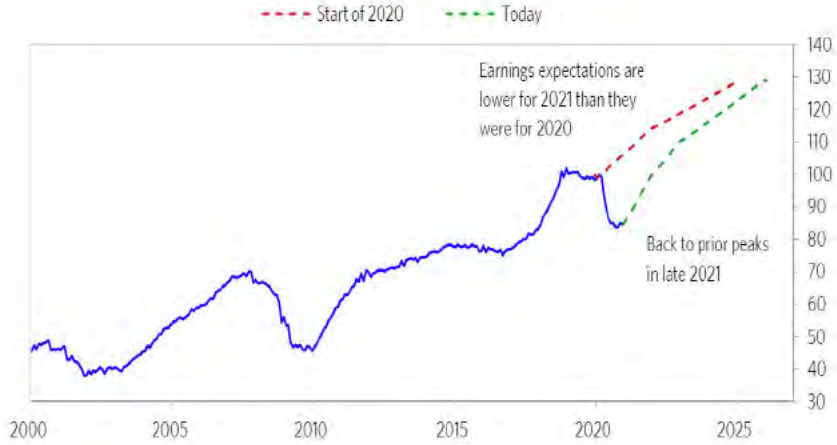


Figure 10: US implied volatility indices

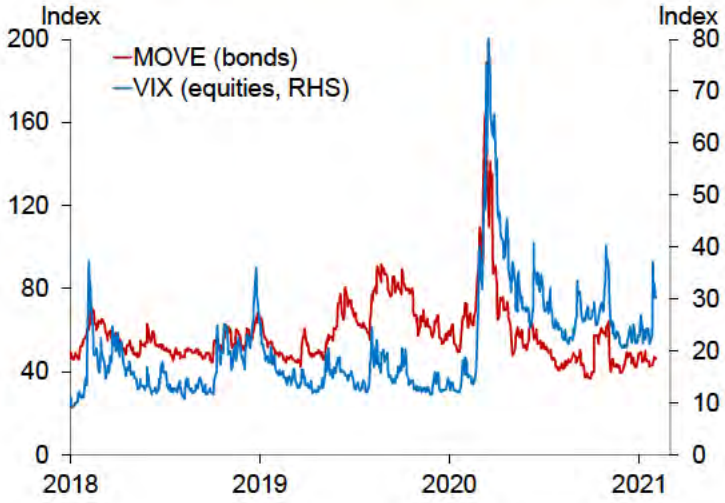


Figure 11: Drivers of US equity market volatility