Statement on Monetary Policy

FEBRUARY 2023

RESERVE BANK OF AUSTRALIA

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Contents

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Overview

Global inflation is still very high but looks to have peaked. Global goods inflation is starting to decline, as supply chains improve and other upstream cost pressures ease; global energy prices have also stopped rising. However, services inflation remains high in many advanced economies, driven by resilient demand and rising labour costs. Most central banks have continued raising policy interest rates in order to return inflation to target. As tighter policy takes hold on demand, services inflation should also begin to ease.

China's approach to containing COVID-19 was reversed abruptly in mid-December. The disruptions from the last phase of restrictions in November and the wave of illness in the following month led to weak activity in the December quarter. Since then, though, the Chinese economy has recovered quickly. Together with the Chinese authorities' shift to a more growth-focused policy stance, the earlier opening of the Chinese economy has brought forward its recovery from what had previously been expected. This has added to growth in global demand in the near term, especially for some industrial commodities, and so is supporting Australia's terms of trade and national income.

As is the case elsewhere, inflation in Australia is too high and is broadly based. CPI inflation reached 7.8 per cent over the year to the December quarter. Trimmed mean inflation was 6.9 per cent over the same period, which was higher than had been expected. The easing in global goods price pressures is not yet evident in retail prices here; consumer durables price inflation picked up in the December quarter, especially for clothing and vehicles. Services inflation also reached very high rates, with the prices of market services 7 per cent higher over the year. Rental markets are tight and growth in rents has been picking up.

Inflation is likely to have peaked around the end of 2022 and is forecast to return to the target range over coming years. The central forecast is for CPI inflation to decline to 4¾ per cent over 2023 and to around 3 per cent by mid-2025. The easing in global price pressures already underway is expected to flow through to domestic prices over time. In addition, slower growth in domestic demand and a moderation in labour market conditions are expected to reduce domestic inflationary pressures. The inflation forecasts have been revised up a little in the short term in light of recent stronger outcomes, but further out inflation is expected to be a touch lower than previously forecast. This reflects recent policy changes that have reduced the size of the expected increases in domestic electricity prices over 2023.

Growth in activity has moderated since the first half of 2022 and the outlook continues to be for slower GDP growth this year and next, at around 1½ per cent. Some of this moderation occurred as the strong recovery from the pandemic mostly ran its course. The effects of higher interest rates, the rapidly increasing cost of living and declining real wealth are all expected to weigh on demand in the period ahead. Offsetting this to some extent, the elevated terms of trade will boost national income. The large pipeline of investment projects is also supportive of growth. However, despite some easing in supply chain issues, ongoing capacity constraints – especially those arising from the lack of availability of skilled labour – are expected to limit the pace at which some of these projects can be delivered.

The labour market remains tight. The unemployment rate has remained around 3½ per cent in recent months – around the lowest rate in nearly 50 years. Broader measures of labour underutilisation are also around multi-decade lows. Job ads and vacancy rates remain very high, though they have turned down a little in recent months; still, many firms report difficulty finding suitable labour. Demand for labour remains strong, supporting growth in employment in recent months. Labour supply has expanded to meet some of this strength in demand, with the participation rate around its historical high. Increased net arrivals from overseas over the second half of last year, following the reopening of the international border, has also boosted growth in the working-age population.

Wages growth has picked up, particularly in the private sector, consistent with the tight labour market. Aggregate wages growth is expected to pick up further over the course of 2023, with growth in the Wage Price Index forecast to peak at around 4¼ per cent late in the year. As growth in the economy slows, labour market conditions are expected to ease, and wages growth to slow a little. The unemployment rate is expected to start picking up from around the middle of 2023, reaching 4½ per cent by mid-2025.

Growth in household spending moderated over the second half of 2022. Spending related to overseas travel rose sharply, but other categories (such as discretionary goods) were softer as the recovery from the pandemic mostly ran its course. The tight labour market and resulting strong growth in labour incomes has to date supported solid growth in nominal household spending. However, real growth in consumption has been much slower, reflecting strong growth in prices; the volume of retail sales declined in the December quarter.

Over the period ahead, high inflation is expected to continue to weigh on growth in real household incomes and consumption. Rising interest rates are expected to add to this effect by reducing real disposable incomes for some households. Declines in net wealth, driven by lower housing prices, are also expected to dampen household spending. Housing prices have continued to decline across most of the country over recent months.

These competing forces influencing household spending represent a considerable uncertainty surrounding the outlook. Consumption growth could turn out to be either stronger or weaker than expected, depending on how these factors net out. It is not clear how far households will be willing to reduce current saving rates or draw down on extra savings accumulated during the pandemic to cushion consumption from the effects of declining real incomes; these accumulated buffers represent a larger share of household income in Australia than in some other economies, but some households have little to no buffer and will instead need to cut back on spending.

The forecast decline in inflation is subject to a number of uncertainties. Although goods inflation is expected to ease in line with the easing of global cost pressures, the timing and pace of this could differ from the expected trajectory. If global goods prices reverse some of their recent increases, goods inflation in Australia could decline further and faster than currently envisaged. Working in the other direction, given the current tightness in the labour market, there are upside risks to wages growth, which would boost domestically sourced inflation. Price- and wage-setting behaviour could become more sensitive to strong demand and high inflation, given that households and firms may be more attentive to rising costs when inflation is high for a time. Longer term inflation expectations remain anchored, but it is possible they could move higher. If that were to occur, it would make the task of bringing inflation down harder.

Global growth slowed during 2022. Some of this reflected the end of the bounce-back from the pandemic. However, as in Australia, high inflation and energy prices have weighed on demand more recently. Growth in Australia's major trading partners is expected to remain well below the historical average over 2023 and 2024. Some downside risks to growth in the major global economies have abated of late, including those stemming from China's previous approach to containing COVID-19. Overall, though, the global outlook remains uncertain, with there being plausible scenarios for both stronger and weaker growth and inflation.

The cumulative effect of the highly synchronised tightening in monetary policy has caused global financial conditions to tighten over the past year, reducing demand in the global economy; this is expected to be the main drag on global growth in the period ahead. Many central banks have begun to slow the pace of interest rate increases as signs of moderation in growth and inflation emerge, and a few have paused rate rises or signalled they will soon do so. In Australia, tighter financial conditions have seen banks' funding costs increase and growth in credit ease. The Australian dollar has appreciated slightly on a trade-weighted basis over recent months.

Over recent meetings, the Reserve Bank Board has continued to take action to ensure inflation returns to the target range over time, and raised interest rates by 25 basis points at each of its meetings in December and February. This has been necessary to achieve a better balance of supply and demand in the Australian economy, and prevent high inflation from becoming entrenched. The Board is seeking to return inflation to the 2–3 per cent target range while keeping the economy on an even keel. However, the path to achieving a soft landing remains narrow. There are considerable uncertainties surrounding the outlook, and so around the level of interest rates needed to achieve the Board's objectives. Maintaining a steady pace of increases over several months has given the Board the time to assess the flow of incoming data and any shifts to the outlook that it may imply.

Longer term inflation expectations and wages growth in Australia have so far remained consistent with the inflation target. It is important this remains the case. That said, domestically sourced inflation and wages growth are both picking up. Given the importance of avoiding a price-wage spiral, the Board will continue to pay close attention to both the price-setting behaviour of firms and the evolution of labour costs in the period ahead. It will be closely monitoring how quickly declines in global costs are passed through to prices by businesses in Australia.

The Board is mindful that a considerable adjustment to interest rates has already been made and that monetary policy affects activity and inflation with a lag and through different channels. The effects on the cash flows of the roughly one-third of households with mortgages generally comes through faster than the effect on the broader economy and inflation. The effects on households are also uneven. Some households have substantial savings buffers or are benefiting from the tight labour market and faster wages growth. Others, though, are experiencing a painful squeeze on their budgets due to higher interest rates and the rising cost of living. In addition, some households may moderate their spending in response to the decline in housing prices. In light of these competing forces, the Board is closely monitoring household spending and saving behaviour, and their contribution to domestic demand pressures.

The Board's priority is to return inflation to target. High inflation makes life difficult for people and damages the functioning of the economy. And if high inflation were to become entrenched in people's expectations, it would be very costly to reduce later. The Board expects that further increases in interest rates will be needed to ensure that the current period of high inflation is only temporary. In assessing how much further interest rates need to increase, the Board will be paying close attention to developments in the global economy, trends in household spending and the outlook for inflation and the labour market. It remains resolute in its determination to return inflation to target and will do what is necessary to achieve this.

1. The International Environment

Globally, inflation was very high in 2022 but appears to have peaked around the end of the year. Energy prices have eased from their mid-2022 peaks. In addition, inflation in the prices of many traded goods has slowed from its earlier, rapid pace as the global supply and demand for these goods has become more balanced. However, inflation in consumer services – which has been driven by strong demand and strong wages growth – is still too high for overall inflation to be consistent with central banks' targets. Wages growth appears to be slowing, but it is still around its fastest pace in at least a decade.

Global growth moderated over 2022, and is forecast to remain well below its historical average over the next two years, constrained by higher interest rates in most economies. The impact of rate rises on global growth and inflation is likely to build through 2023. Nonetheless, the near-term outlook has improved a little over recent months after China dropped most of its COVID-19 restrictions earlier than expected, inflation showed clearer signs of peaking and global gas prices declined.

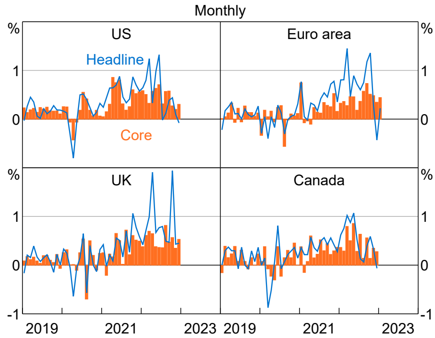
Central banks in many countries have slowed the pace of increase in policy rates, noting early signs of a moderation in the growth of economic activity and the rate of inflation and citing the risk of over-tightening given the lags in the transmission of monetary policy. Market participants' expectations for the path of policy rates in most advanced economies over the next 12 months are little changed since three months ago, but expectations for interest rates beyond the end of 2023 have declined slightly. Medium and longer term government bond yields have also declined, corporate bond spreads have narrowed and equity prices have increased. The US dollar has depreciated on a trade-weighted (TWI) basis alongside declines in US Government bond yields relative to those of other major advanced economies and more positive risk sentiment since the start of the year.

Globally, inflation remains too high, but is now moderating

Year-ended inflation remains high and well in excess of central banks' targets in most advanced economies. However, both headline and core inflation have moderated over recent months, suggesting that inflation may have peaked late in 2022 (Graph 1.1). Inflation in high-income Asian economies has also moderated from well-above target levels, although it never reached the high levels seen in other advanced economies.

Graph 1.1

Consumer Price Inflation



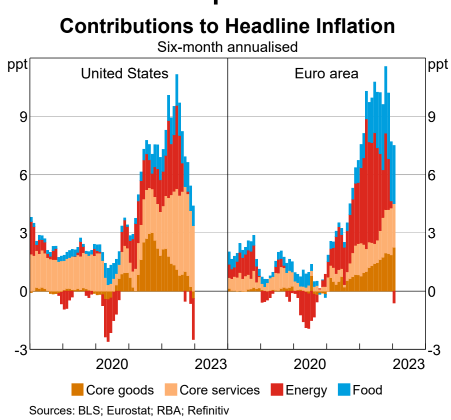
Sources: RBA; Refinitiv

Much of the recent moderation in inflation has occurred because energy prices have declined over recent months (Graph 1.2). The fall in petrol prices late last year resulted from slowing global growth and the gradual resolution of supply disruptions brought about by embargoes on imports of Russian oil. Global gas prices have also retraced much of their mid-2022 increase, as unseasonably warm weather during the European winter has reduced demand there. Lower energy demand has in turn reduced pressure on thermal coal markets and on electricity prices in Europe. Despite these developments, global energy prices remain high in historical terms. Food price inflation also remains high, but agricultural commodities prices (such as wheat) have declined slightly over recent months (Graph 1.3).

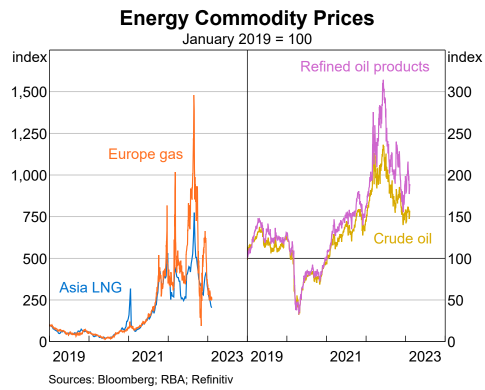
Importantly, there has also been a clear easing in core inflation in most advanced economies. This has been driven by a fall in core goods inflation – at least outside of the euro area – as strong investment in global manufacturing over recent years has helped to increase the supply of goods at the same time as the growth of global demand has eased. Inventories have been rebuilt, backlogs of work have declined and reported delivery times have shortened (Graph 1.4). Shipping costs – which have contributed significantly to rising final prices of goods in recent years – have fallen sharply and are now back around pre-pandemic levels. The improvement in the global supply of goods was temporarily disrupted by the spread of COVID-19 in China, which impaired the ability of firms based in China to produce and deliver. This was evident in the official Purchasing Managers' Index (PMI) measure of delivery times, which lengthened in November and December before resolving in January.

By contrast, services prices continue to rise quickly and are now the main driver of overall inflation in advanced economies. Housing services inflation has been a key component of this and is yet to show signs of easing. That said, advertised rents have decreased in recent months in the United States, and this should

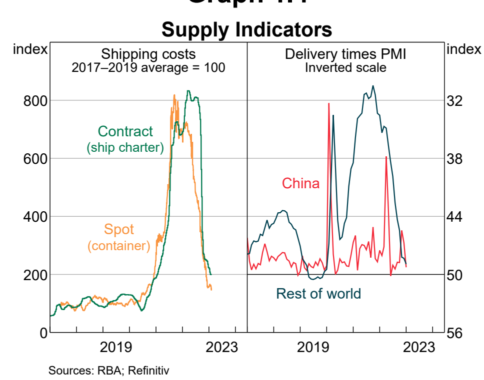
Graph 1.2



Graph 1.3



Graph 1.4



result in inflation of rents moderating over the second half of 2023. Inflation in other services remains strong but is no longer increasing. The outlook for inflation in these prices depends significantly on the evolution of wages.

Wages growth is very strong, but has peaked in some countries

Wages growth remains around its fastest pace in at least a decade across a range of advanced economies. However, it is no longer rising in most economies and has started to moderate in the United States and Canada, especially in retail, hospitality and other services industries where it had previously been very strong (Graph 1.5). In the United States, the slowdown is also evident in advertised wages, which have historically provided an early indication of future wages growth. These early signs of moderation are consistent with a modest reduction in labour demand across economies, as seen in declining (though still high) job vacancies (Graph 1.6).

Growth in advanced economies has slowed further

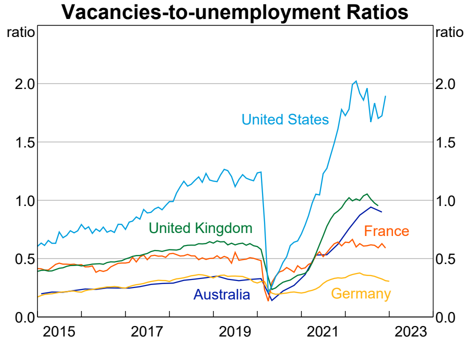
GDP growth in advanced economies was modest over the second half of 2022, well below the strong outcomes seen in 2021 (Graph 1.7).

The slowing in growth was broadly in line with the projections made by forecasters in mid-last year. Growth in North America and high-income east Asia has been stronger than in Europe; GDP was broadly flat in the euro area in the December quarter.

Consumption has continued to grow in most advanced economies, albeit at a more moderate pace than previously, despite high prices reducing real disposable incomes (Graph 1.8). Spending on services has continued to recover, while the level of goods spending has either stabilised or fallen only moderately. Evidence from central banks' liaison suggests that consumers are, however, increasingly trading down to lower priced products and are more

Graph 1.6

Vacancies-to-unemployment Ratios

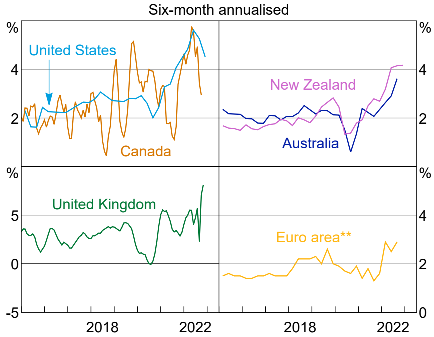


Sources: RBA; Refinitiv

Graph 1.5

Wages Growth*

Six-month annualised



* Labour cost indices used where available; average earnings for Canada and the United Kingdom (compositionally controlled for the United Kingdom prior to April 2022 and for Canada throughout).

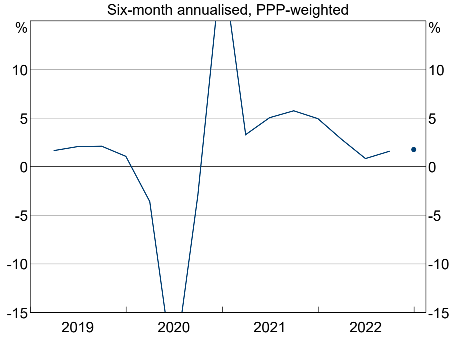
** Year-ended.

Sources: BoE; RBA; Refinitiv; Statistics Canada

Graph 1.7

Advanced Economies – GDP Growth*

Six-month annualised, PPP-weighted



* Trough is -21 per cent in the June quarter of 2020 and peak is 21 per cent in the December quarter of 2020; forecasts are used for December quarter of 2022 where actual data are unavailable.

Sources: CEIC Data; Consensus Economics; RBA; Refinitiv actively seeking the best prices as real incomes are squeezed.

With consumption growing more quickly than income, household saving rates have declined further across advanced economies, and particularly in the United States. In the United States and Canada, saving rates have declined across most income groups; survey data suggest that the falls have been largest for the lowest income households. Outside the United States, consumption could be supported by further declines in saving rates, which remain above or around pre-pandemic averages. In addition, households still have large savings buffers accumulated in 2020 and 2021, which could support consumption growth for some time.

The demand for housing has continued to weaken considerably in the second half of 2022 in response to sharp rises in interest rates. In the United States and the United Kingdom, housing starts fell by over 15 per cent over the second half of the year. Housing prices have also fallen significantly in several advanced economies and stopped growing in others. By contrast, growth in business investment has only slowed moderately. Investment intentions have declined over recent months but are only a little lower than the historical average.

Weaker goods demand in advanced economies and a slowing in the pace of inventory rebuilding has resulted in falling export volumes from east Asia (Graph 1.9). Exports from China and several other east Asian economies have declined significantly in recent months, unwinding part of the very strong growth recorded in the two years prior. The decline in exports in the region has been concentrated in electronic equipment.

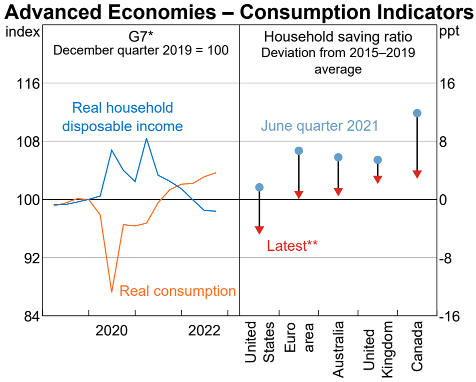
Employment growth has also moderated in most advanced economies (Graph 1.10). However, it is still stronger than growth in the working-age population in many of these economies and surveyed measures of hiring intentions remain high. Unemployment rates remain near generational lows, but indicators of labour market tightness – such as vacancy rates and other survey measures – have declined from the historical highs of mid-2022.

Chinese authorities have lifted most COVID-19 restrictions …

COVID-19 has spread quickly throughout China since November. Confirmed cases escalated most notably from mid-December, after the authorities abruptly removed most COVID-19 restrictions, and hospitalisations and deaths

Graph 1.8

Advanced Economies – Consumption Indicators

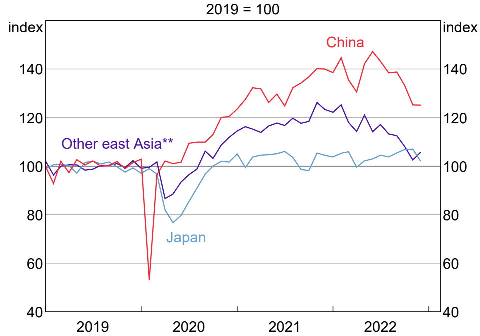


* PPP-weighted.
** September quarter 2022 for euro area, Australia, United Kingdom and Canada; December 2022 for United States.
Sources: ABS; RBA; Refinitiv

Graph 1.9

East Asia – Export Volumes*

2019 = 100



* Deflated using US import price deflator by country.
** PPP-weighted average of South Korea, Taiwan, Singapore and Hong Kong.
Sources: CEIC Data; RBA; Refinitiv

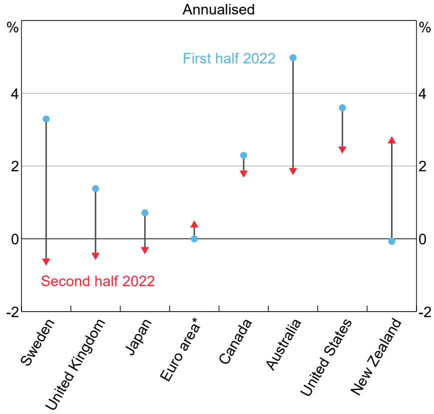
have increased sharply from low levels as a result.

The initial imposition of restrictions in November to contain the spread of COVID-19, and then disruptions caused by widespread sickness in December, contributed to Chinese GDP remaining flat in the December quarter. There was a large fall in household consumption, with spending on services particularly weak (Graph 1.11). Exports also declined in the quarter, but manufacturing and infrastructure investment continued to increase.

Graph 1.10

Employment Growth

Annualised



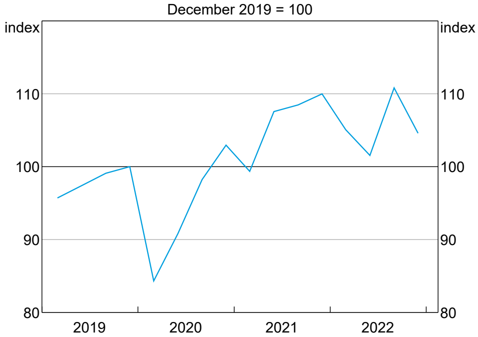
* Second half 2022 rate is imputed from a sample of euro area countries.

Sources: RBA; Refinitiv

Graph 1.11

China – Real Household Consumption*

December 2019 = 100



* Urban households only.

Sources: CEIC Data; RBA

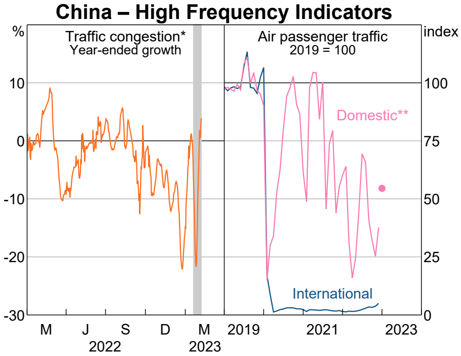
High-frequency activity indicators imply Chinese economic activity bounced back sharply in January. Population mobility, as measured by traffic congestion, picked up to be comparable with early-2022 levels in a number of cities before the (pre-pandemic) normal Lunar New Year decline (Graph 1.12). Indicators of service consumption over the Lunar New Year period were also significantly higher than in 2022. Domestic air passenger traffic picked up in December, and timely indicators show this accelerated into January, and the number of people dining out is likewise recovering from the COVID-19 disruptions. International travel has shown early signs of lifting following the removal of quarantine rules for inbound travellers.

… and are focused on supporting growth, including in the property sector

Statements from the Central Economic Work Conference in December – the conference where China's leaders meet to set the economic policy agenda – indicate that authorities are placing more emphasis on stimulating growth than over the past few years, when containing COVID-19, reducing leverage in the property sector and limiting other financial risks were given more prominence. Indications that this is

Graph 1.12

China – High Frequency Indicators



* Smoothed; holiday adjusted in 2022; shaded area represents Lunar New Year holiday period in 2023.

** Dot represents estimate for January using high frequency data.

Sources: CEIC Data; RBA; WIND Information flowing into a more supportive regulatory policy stance are already emerging. The People's Bank of China (PBC) has also instructed banks to expand lending, and some local governments have received an advanced quota of special purpose bonds.

Given the importance of the property sector for economic activity in China, authorities are also moving to provide more support to the sector in response to continued weakness in residential investment, new housing sales and housing prices (Graph 1.13). A range of restrictions have been relaxed, including on developers' access to pre-sales funds and their ability to raise equity finance and offshore debt. In addition, banks have been encouraged to lend to the sector. To this end, the PBC has expanded its re-lending program to encourage lending to some developers, and it has directed policy banks to extend new lines of credit. There has also been a raft of measures from both the national and provincial governments to encourage households to buy homes in cities with falling housing prices. Official commentary suggests that further policies will be rolled out to support home buyer demand in 2023.

Prices of property developers' equity and bonds have increased sharply as authorities have announced further support to the sector. This is particularly evident for developers with less leverage that have already received some form of policy support (Graph 1.14). While market pricing suggests the announced measures have reduced the likelihood of further developer defaults, many developers remain highly leveraged and subject to considerable financial pressure.

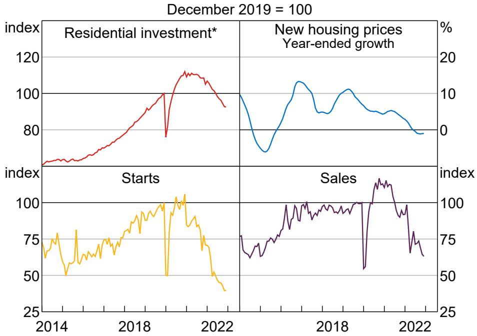
The improved outlook for Chinese growth has lifted bulk commodity prices …

The increased emphasis on supporting economic growth in China has driven a sharp rebound in the iron ore price. The iron ore price has risen by 50 per cent over recent months, as markets assessed that the shift in policy priorities in China would result in more infrastructure spending and property construction than previously anticipated (Table 1.1). Base metals prices rose in anticipation of the change in COVID-19 restrictions and policies boosting industrial and construction demand. The reopening of the Chinese economy has improved the outlook for coal demand, although the price of thermal coal declined sharply in January in response to reduced energy demand in Europe. Notably, the Chinese authorities have permitted the resumption of Chinese purchases of Australian coal, after a pause in imports since 2020 – at which time,

Graph 1.13

China – Residential Property Indicators

December 2019 = 100



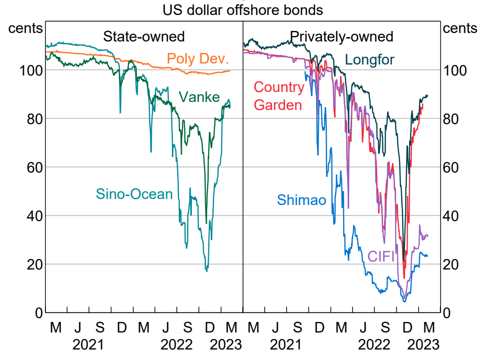
* Nominal developer fixed asset investment.

Sources: CEIC Data; RBA

Graph 1.14

Chinese Developer Bond Prices

US dollar offshore bonds



Source: Bloomberg

Table 1.1: Commodity Price Growth[a]

SDR terms; percentage change

	Since previous *Statement*	Over the past year
Bulk commodities	3	–12
– Iron ore	49	–14
– Coking coal	5	–18
– Thermal coal	–34	2
LNG – Asia spot price	–41	–22
Rural	–6	–7
Base metals	9	–9
Gold	10	8
Brent crude oil[b]	–13	–10
RBA ICP	–1	5
– Using spot prices for bulk commodities	–4	–8

(a) Prices from the RBA Index of Commodity Prices (ICP); bulk commodity prices are spot prices.

(b) In US dollars.

Sources: Bloomberg; McCloskey by OPIS; Refinitiv; RBA

China was the second largest destination for Australian thermal coal.

… and led to a repricing of assets

Chinese equity prices and government bond yields increased sharply following the unexpectedly rapid removal of policies aimed at suppressing COVID-19 and a stronger focus by authorities on stimulating growth (Graph 1.15). The PBC eased monetary policy a little further in late November when it announced a 25 basis point cut to the reserve requirement ratio for most banks, citing a need to maintain sufficient liquidity and reduce banks' funding costs. Business credit growth has increased over recent months, as authorities have encouraged banks to increase lending for infrastructure investment projects and provide additional support to property developers. However, household credit growth remains very soft, reflecting ongoing weakness in the property market.

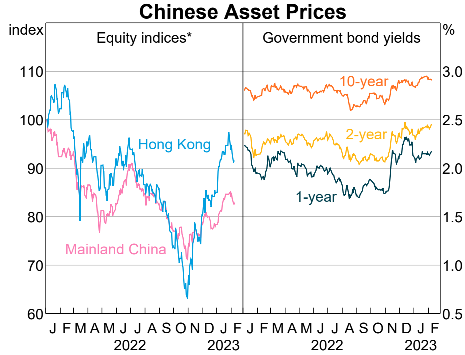
Consistent with the improved growth outlook in China and the broad-based depreciation of the US dollar, the Chinese renminbi appreciated against the US dollar after reaching its lowest level since 2007 in late October.

Global growth forecasts for 2023 remain subdued

Forecasts for overall GDP growth in Australia's major trading partners in 2023 and 2024 are unchanged compared with three months ago, at around 3½ per cent (Graph 1.16). This is well below average growth in the decade prior to the pandemic. Forecasts for growth in the three

Graph 1.15

Chinese Asset Prices



* Indexed to 3 January 2022 = 100.

Sources: Bloomberg; CEIC Data

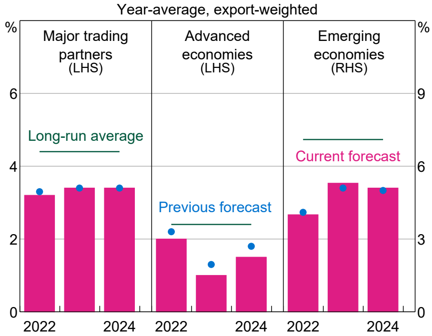
largest economies – the United States, the euro area and China – have all been revised up, though there have been offsetting downward revisions to the outlook in other Asian economies reflecting the effects of slowing global trade. Nonetheless, the risks around the outlook are more balanced than has been the case for some time.

The decision by Chinese authorities to remove COVID-19 restrictions brought forward the expected recovery in consumption growth in China and has removed some downside risk. Lower energy prices and the initial decline of global inflation have also helped improve the outlook and reduce the risks facing the US and European economies. The main drag on global growth is still expected to be the synchronised tightening of monetary policy in advanced economies over the past year; the impact of higher interest rates on demand is expected to build over 2023, reflecting lags in the transmission of monetary policy to economic activity. The consensus of market economists is for mild contractions in GDP in the United States and euro area, with a somewhat more prolonged recession expected in the United Kingdom. Unemployment rates are also expected to rise but to remain fairly low in the broader historical context.

Graph 1.16

GDP Growth

Year-average, export-weighted



Sources: ABS; CEIC Data; Consensus Economics; RBA; Refinitiv

Risks to the global outlook are broadly balanced, with plausible scenarios for both stronger and weaker growth and inflation than is currently expected. The key uncertainties are:

- *The Chinese economy's near-term path out of the COVID-19 suppression phase is highly uncertain.* Economies have typically seen strong rebounds in household consumption after ceasing restrictions. This could also be true in China if households choose to spend more than expected of the considerable household savings they have accumulated over recent years. In addition, the recovery could be strengthened by a more supportive economic policy stance. However, if health outcomes are worse than expected, consumers may be more hesitant to spend. It is also possible that factors such as prolonged weakness in the property sector could weigh on the economy by more or for longer than currently envisaged.
- *It is uncertain how the rise in interest rates and still high energy prices will affect growth in other economies.* The effects of rapid monetary policy tightening are not yet fully reflected in economic outcomes given lags in the transmission of monetary policy (which are typically 12–18 months). Both the overall effect and the lags could turn out to be more or less than expected. The impact of policy tightening could be amplified because it has occurred simultaneously across many economies. On the other hand, household and corporate balance sheets are in better shape than in previous episodes when monetary policy has been tightened quickly, which could lead to a more muted response. Given that estimates of the neutral policy rate are highly uncertain, it is also not clear at which point policy becomes contractionary. This uncertainty about the potency and timing of monetary policy effects creates an environment where there is substantial risk of tightening either too

much or not enough to bring inflation back in line with central banks' targets.

- *It is not clear how responsive inflation will be to slowing demand and rising supply.* Inflation has tended to exceed forecasts over the past year. If this has occurred because of lingering factors related to the pandemic, inflation could continue to surprise on the upside in the year ahead. This could also occur if medium to longer term inflation expectations rise or if the pass-through of high energy prices to retail prices is larger than expected. On the other hand, if surprisingly high inflation outcomes simply reflect prices being more sensitive to the balance between demand and supply than previously believed, inflation could decline faster than expected as demand eases and supply expands.

Central banks have raised policy rates further, but some have slowed the pace of tightening

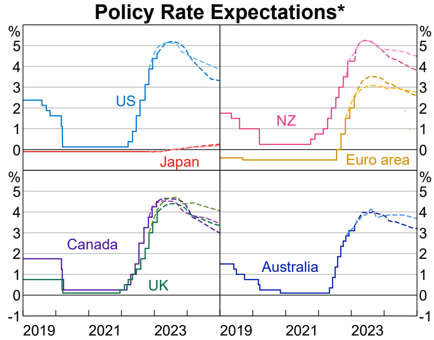
Central banks in most economies have increased their policy rates further to address high inflation and mitigate the risk it becomes embedded in price- and wage-setting behaviours. Market participants' expectations for further increases in policy rates have been little changed for most advanced economy central banks over the past three months or so (Graph 1.17). Market pricing is consistent with the expectation that policy rates will reach a peak in the first half of 2023 and then decline a little in the second half of the year (Graph 1.18). While most advanced economy central banks have begun slowing the pace of increases as their policy rates have reached or neared restrictive levels, several have signalled that their policy rates will need to be raised further and remain at restrictive levels for some time to return inflation to target.

Movements and projections by central banks have included the following:

- The US Federal Reserve (Fed) increased the target range for its policy rate by 25 basis points to 4.5–4.75 per cent at its February meeting. This followed an increase of 50 basis points at the December meeting, and increases of 75 basis points at the previous four meetings. While policymakers anticipate that further increases will be required to return inflation to the Fed's target over time, Chair Powell indicated that it was appropriate to move in smaller increments as the policy rate entered restrictive territory. Fed projections of the level of the policy rate required to achieve its inflation target were revised up at the

Graph 1.17

Policy Rate Expectations*

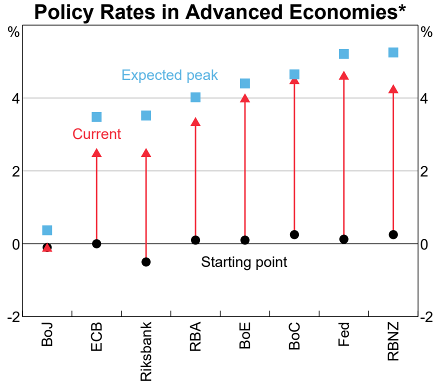


* Darker dashed lines show expectations implied by current overnight indexed swap rates; lighter dashed lines show the same expectations as at the November SMP.

Sources: Bloomberg; RBA

Graph 1.18

Policy Rates in Advanced Economies*



* Squares show expectations implied by overnight indexed swap rates.

Sources: Bloomberg; RBA

December meeting to a median of 5.1 per cent.

- The European Central Bank (ECB) raised its policy rates by 50 basis points at its February meeting, bringing its key policy rate to 2.5 per cent, following an increase of 50 basis points at its December meeting, and increases of 75 basis points at the previous two meetings. The ECB stated that it intends to raise interest rates by another 50 basis points at its March meeting and will then evaluate the subsequent path of monetary policy needed to return inflation to target.
- The Bank of England (BoE) increased its policy rate by 50 basis points at its February meeting to 4 per cent, following a 75 basis point increase at its December meeting and a 50 basis point increase at its November meeting. Policymakers believe inflation has peaked, and expect it to decrease sharply in the second half of 2023, as the United Kingdom experiences an expected prolonged recession. The BoE expects inflation to be below target in 2024 and 2025.
- The Bank of Canada (BoC) increased its policy rate by 25 basis points at its January meeting to 4.5 per cent, following a 50 basis point increase at its December meeting. The BoC has stated that if economic developments evolve in line with its forecasts, it expects to hold the policy rate at its current level while it assesses the impact of the cumulative increases to date. The BoC noted it is prepared to raise the policy rate further if this is needed to return inflation to target.
- The Reserve Bank of New Zealand (RBNZ) increased its policy rate by 75 basis points to 4.25 per cent at its November meeting. The RBNZ said that monetary policy will need to tighten further in order to be confident that inflation will return to its 1–3 per cent target range, and forecasts the New Zealand economy to enter recession in 2023.
- Among other advanced economies, Sveriges Riksbank increased its policy rate by 75 basis points to 2.5 per cent at its November meeting, the Swiss National Bank increased its policy rate by 50 basis points to 1 per cent at its December meeting, and Norges Bank and the Bank of Korea each raised their policy rate by a cumulative 50 basis points since November to 2.75 per cent and 3.5 per cent, respectively. While Norges Bank did not increase its policy rate at its most recent meeting in January, it indicated that a further increase is likely at its next meeting in March.

In contrast to other advanced economy central banks, the Bank of Japan (BoJ) has left its key policy rate unchanged at –0.1 per cent and communicated that it will retain its approach to providing monetary policy stimulus until inflation remains sustainably above its 2 per cent target. At its December meeting, the BoJ announced it would increase its regular monthly purchases of Japanese Government Bonds (JGBs) while allowing yields on 10-year JGBs to trade in a wider band of ±0.5 per cent. The BoJ noted that the changes were made to improve bond market functioning, which had deteriorated under the previous target band of ±0.25 per cent. At its January meeting, the BoJ modified the terms of an existing lending facility with the aim of providing further support to market functioning and the formation of the yield curve.

Most central banks have continued to reduce their holdings of assets purchased under quantitative easing programs via bond maturation or through active sales (Graph 1.19). The BoC and the Riksbank are allowing bonds to mature without reinvestment, while the Fed has continued to reinvest part of the proceeds from maturities. From March 2023, the ECB will start the process of quantitative tightening by no longer fully reinvesting the principal payments from maturing securities. The BoE has been selling short- and medium-term bonds purchased under earlier quantitative easing programs and recently announced it would begin selling long-maturity gilts as part of its ongoing quantitative tightening operations. The BoE had delayed these sales for a time due to dysfunction in government bond markets in September and October 2022; the BoE has recently completed the sale of £19 billion of government bonds purchased under a temporary program to address this dysfunction. Also, the RBNZ is selling assets purchased under its quantitative easing program to New Zealand Debt Management, the issuer of New Zealand Government bonds. The BoJ is now the only major central bank that is still adding to its bond holdings.

Central banks have continued to wind down term funding schemes that were established or expanded during the pandemic (Graph 1.20). Most funding provided under the Fed, BoJ and Riksbank term funding schemes has already been repaid. Lending under the RBA's Term Funding Facility is due to mature between April 2023 and June 2024, while a significant proportion of remaining lending under the ECB's term funding scheme is expected to mature or be repaid over the first half of 2023. Most lending under the BoE and RBNZ's term funding schemes is not due to mature until 2024 or later.

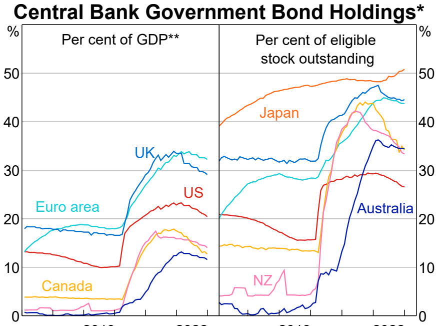
Central banks in most emerging market economies have also raised policy rates further since three months ago (Graph 1.21). Inflation has continued to remain above target in most economies, although the recent appreciation of many emerging market exchange rates has eased some concerns around inflationary pressures and portfolio flows into these markets have increased over recent months (Graph 1.22). Most central banks in Asia are expected to raise rates further this year, with an exception being the central bank of Malaysia, which held the policy rate steady in January. Central banks in Latin America – which started raising policy rates earlier than others (around mid-2021) – are now at or near their expected peaks. The central banks of Brazil and Chile each held rates steady at their most recent meetings.

Medium and longer term government bond yields have declined in most advanced economies

Medium and longer term government bond yields have declined in most advanced

Graph 1.19

Central Bank Government Bond Holdings*



* Central government debt only for all countries except the euro area. Holdings data for euro area only include bonds held as part of asset purchase programs; holdings data for the United Kingdom does not include purchases for financial stability purposes; holdings for other central banks also include bonds held for operational or liquidity purposes.

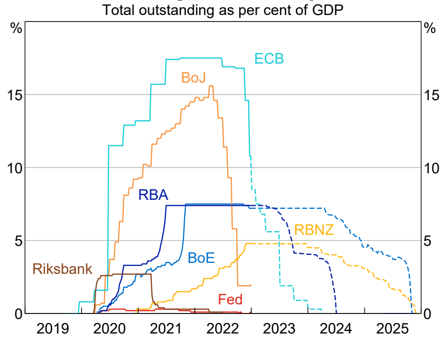
** Four-quarter rolling sum. Japan (not shown) is currently at 98 per cent of GDP.

Sources: Central banks; debt management offices; RBA; Refinitiv

Graph 1.20

Term Funding Scheme Projections*

Total outstanding as per cent of GDP



* Only includes schemes created in response to COVID-19 pandemic. Projected repayments and/or maturities are represented by dashed lines. Projections for the ECB are from the December 2022 ECB Survey of Monetary Analysts. Projections for the BoE, RBA and RBNZ are based on the assumption all funding is held until maturity.

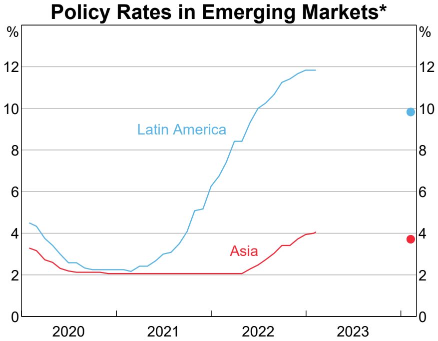
Source: Central banks

economies in recent months, though they remain around their highest levels since the early 2010s (Graph 1.23). This decline in yields partly reflects expectations that most central banks will reduce policy rates from their expected peaks more quickly than anticipated because longer term inflationary pressures appear to have eased a little sooner than forecast. Consistent with this, longer term real yields and market-implied inflation expectations have eased. Longer term expectations remain in the 2–2½ per cent range in most advanced economies (Graph 1.24). Yields on JGBs increased sharply following the BoJ's decision to widen the target band on 10-year bonds under its yield curve control policy, but then declined following the BoJ's January meeting.

Emerging market sovereign bond yields have also declined since late last year (Graph 1.25). Spreads between US-dollar-denominated emerging market sovereign bonds and US Treasuries have narrowed alongside an improvement in risk sentiment and a broad-based depreciation of the US dollar. Emerging market sovereign bond issuance has also picked up since the start of the year.

Graph 1.21

Policy Rates in Emerging Markets*



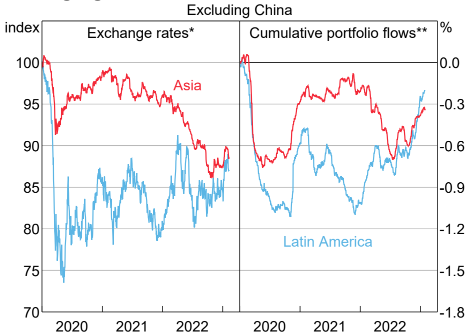
* Simple average across economies; solid lines show actual, dots show one-year market-implied policy rate.

Sources: Bloomberg; RBA; Refinitiv

Graph 1.22

Emerging Market External Financial Conditions

Excluding China



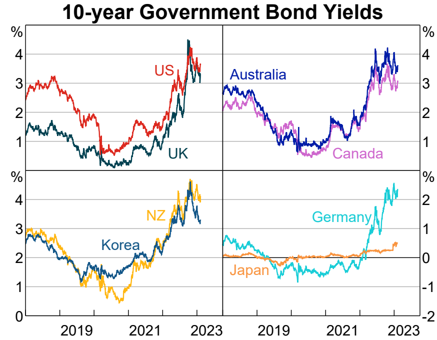
* Against the US dollar; 1 January 2020 = 100.

** Per cent of GDP; includes bond and equity flows.

Sources: Bloomberg; IIF; RBA; Refinitiv

Graph 1.23

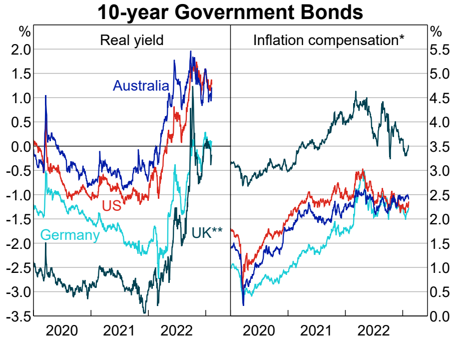
10-year Government Bond Yields



Sources: Bloomberg; Yieldbroker

Graph 1.24

10-year Government Bonds



* Spread between yields on nominal and inflation-linked bonds.

** UK inflation-indexed bonds are linked to Retail Prices Index (RPI) inflation, which is currently 2.9 percentage points higher than CPI inflation. RPI inflation is typically higher than CPI inflation because of differences in calculation methods and the inclusion of owner-occupied housing costs in the RPI.

Sources: Bloomberg; RBA; Yieldbroker

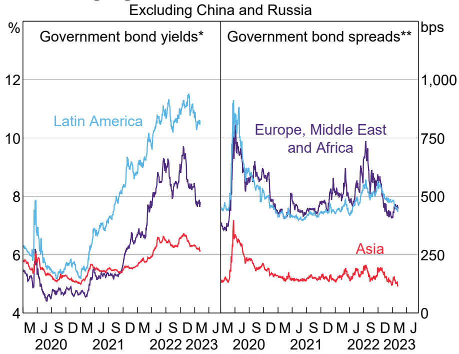
Private sector financial conditions have eased a little

Conditions in corporate bond markets have eased in recent months, with corporate bond yields declining by more than government bond yields (Graph 1.26). This narrowing in credit spreads partly reflects an easing of concerns about the impact of monetary policy tightening on the economy, particularly for sub-investment grade firms. Corporate default rates to date have remained at low levels relative to history. By contrast, financial conditions for households have continued to tighten in response to higher policy rates (see 'Box A: Mortgage Interest Payments in Advanced Economies – One Channel of Monetary Policy').

Graph 1.25

Emerging Market Government Bonds

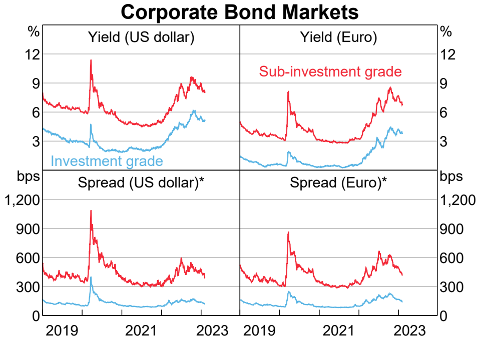
Excluding China and Russia



* Local currency bonds, weighted by market value.
** US-dollar-denominated bonds; spreads to equivalent US Treasury.
Sources: JPMorgan; RBA

Graph 1.26

Corporate Bond Markets



* Spread to equivalent maturity government bond yield.
Source: ICE Data is used with permission

Equity prices in most major markets have increased in recent months (Graph 1.27). This in part reflects the decline in government bond yields over the same period, which increases the present valuations of future company earnings. More positive sentiment about the outlook for global growth also played a role. Measures of equity price volatility have declined further to be around their lowest levels since the onset of the pandemic. Equity issuance has remained subdued since early 2022 in both the United States and Europe.

The US dollar has depreciated from multi-decade highs

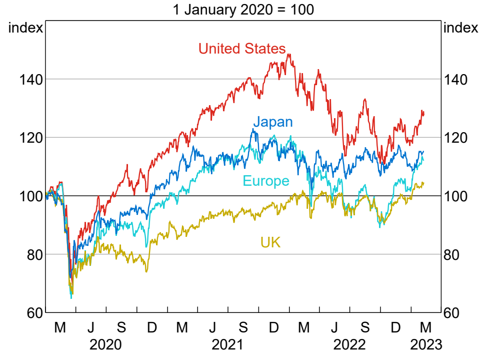
The US dollar has depreciated by around 6 per cent on a TWI basis since early November alongside a decline in shorter term US Government bond yields relative to those of other major advanced economies (Graph 1.28). This is consistent with the moderation in inflation in the United States and a tempering of expectations about how restrictive the US policy rate will need to be. Meanwhile, government bond yields in Europe and Japan have increased. Despite the recent depreciation, the US dollar remains around 4 per cent higher than its level at the beginning of 2022.

The Japanese yen has appreciated by around 6 per cent on a TWI basis over recent months

Graph 1.27

Equity Prices

1 January 2020 = 100



Source: Bloomberg

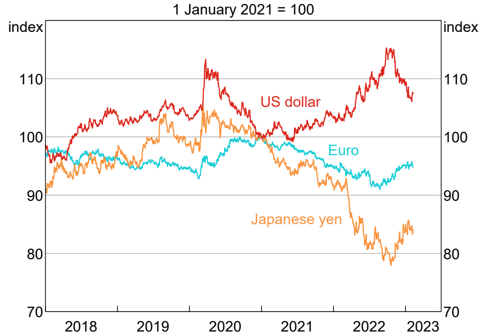
alongside a narrowing in yield differentials between JGBs and US Government bonds. In particular, the Japanese yen appreciated sharply following the BOJ's unexpected decision to widen the target band for 10-year JGB yields in December. The euro has also appreciated a little on a TWI basis over recent months, consistent with an increase in yields on German Government bonds relative to other those in other major advanced economies. The reduction in gas prices following a mild winter in Europe appears to have also alleviated some concerns among market participants about the outlook for growth there.

The currencies of commodity-exporting economies have been mixed. The Canadian dollar and Norwegian krone have depreciated, consistent with lower oil prices. Meanwhile, the New Zealand dollar is little changed, and the Australian dollar has appreciated slightly, supported by the reopening of the Chinese economy and higher prices for some key commodity exports (see chapter on 'Domestic Financial Conditions' for developments in the Australian dollar). ✣

Graph 1.28

Trade-weighted Exchange Rates

1 January 2021 = 100



Source: Bloomberg

Box A

Mortgage Interest Payments in Advanced Economies – One Channel of Monetary Policy

Changes in monetary policy affect the economy through several channels, including by: changing the incentives for saving and investment; influencing the exchange rate, other asset prices and wealth; and altering household cash flows.[1] The strength and speed of each channel depends on a range of factors that differ across economies. One such factor is the structure of the mortgage market, which affects the pass-through of policy rate changes to the interest rates faced by indebted households. This part of the cash flow channel is faster in Australia compared with most other advanced economies. Despite this, there is no evidence that the overall potency of monetary policy is any stronger in Australia than elsewhere.

Key differences in international mortgage markets

The share of fixed-rate mortgage lending and the term of these loans both influence the *speed and size* of the pass-through of policy rate increases to the interest rates faced by households with existing debt. All else equal, the proportion of outstanding mortgage holders who will face a change in their interest repayments soon after a change in the central bank policy rate will be higher in economies with a higher share of variable-rate loans. For economies with a larger fixed-rate lending share, the speed of the pass-through to households with existing debt will be determined by typical loan terms and the extent to which changes in central policy rates affect longer term interest rates in the economy. Interest rates on loans with very long fixed-rate terms tend to be less sensitive to changes in the short-term interest rates targeted by central banks than loans with shorter fixed-rate terms. Other aspects of mortgage lending, including the size of outstanding household debt and the income, wealth and cash buffers of borrowers influence the *overall strength* of transmission of increases in central bank policy rates to households with a mortgage and the economy more generally.

The share of outstanding mortgages with variable rates is notably higher in Australia than in many comparable advanced economies (Graph A.1). Furthermore, Australian mortgages with fixed rates generally have shorter fixed-rate periods of around two years; this compares with five years in the United Kingdom and Canada, and 30 years in the United States (Graph A.2). However, during the COVID-19 pandemic, the share of mortgages with fixed interest rates roughly doubled in Australia (peaking at almost 40 per cent in early 2022) as the pricing of fixed-rate loans became more favourable relative to variable rates.[2] The share of new housing lending taken out at fixed-rate terms of more than two years also increased briefly during the pandemic, but this trend was reversed by early 2022.

Monetary policy pass-through to outstanding mortgage rates is quicker in Australia compared with most other advanced economies

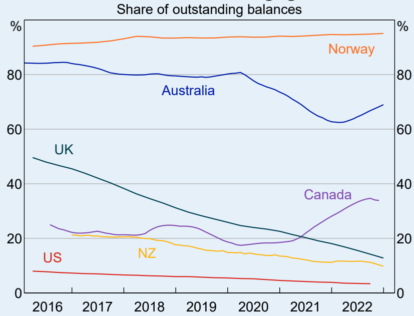
The pass-through of recent policy rate increases to mortgage interest rates has been faster and larger in economies with a higher share of variable-rate housing loans. Since the start of the most recent monetary policy tightening phase, Australia's policy rate has increased by 325 basis points. The policy rate in most advanced economies selected for comparison has increased by more than Australia over this period (Graph A.3).[3] Despite this, the average interest rate on outstanding mortgages in Australia has increased by more than in comparable economies with a lower share of variable-rate loans (Graph A.4). This is also the case in Norway, which has an even higher share of variable-rate lending than Australia.

The transmission of monetary policy to outstanding mortgage rates also depends on the average term of outstanding fixed-rate loans. In countries like Australia and New Zealand, most fixed-rate mortgages will reprice at new market rates within two years. By contrast, new mortgages in the United

Graph A.1

Variable-rate Mortgages

Share of outstanding balances

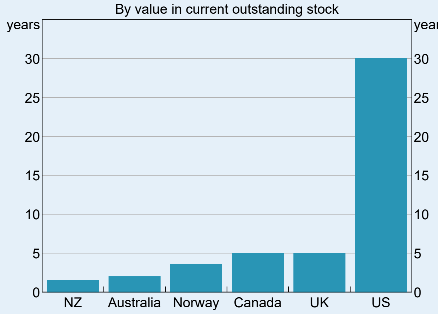


Sources: APRA; central banks; Federal Housing Finance Agency; RBA

Graph A.2

Most Common Fixed-rate Loan Term*

By value in current outstanding stock



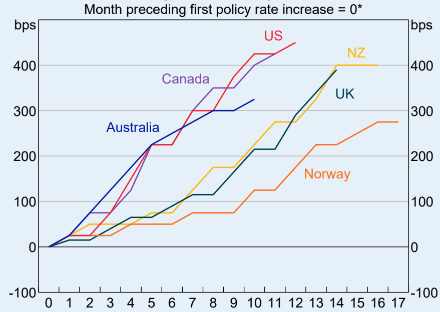
* Figures for Australia, New Zealand and Norway are an estimated weighted average residual maturity. Figures for Canada, the United Kingdom and the United States capture the most common fixed-rate loan term at origination.

Sources: APRA; central banks; Federal Housing Finance Agency; RBA

Graph A.3

Changes in Policy Rates

Month preceding first policy rate increase = 0*



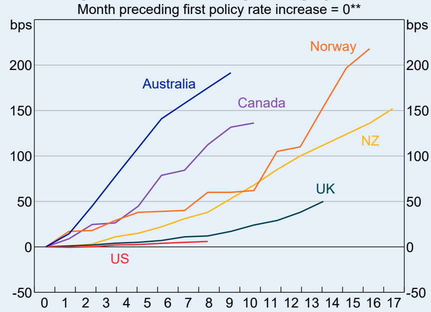
* Cumulative basis point increase in the policy rate relative to the month immediately preceding first policy rate increase since the onset of the pandemic.

Sources: APRA; central banks; RBA

Graph A.4

Changes in Outstanding Mortgage Rates*

Month preceding first policy rate increase = 0**



* Data for US to September, Canada to November, and remainder to December.

** Cumulative basis point increase in the average outstanding mortgage rate relative to the month immediately preceding first policy rate increase since the onset of the pandemic.

Sources: APRA; central banks; RBA

States are typically taken out for fixed terms of 30 years, by which time households are likely to have fully repaid their debt or refinanced it on more favourable terms.

The relatively quick and large increase in outstanding mortgage rates in Australia compared with other advanced economies does not imply that the overall potency of monetary policy is stronger in Australia than elsewhere.[4] This is because there are other important channels for the transmission of monetary policy beyond the cash-flow channel and the strength of these is likely to vary across economies.

Cross-country analysis of the overall strength of monetary policy that includes Australia is limited, but the available evidence suggests that the effect of Australian monetary policy on activity and inflation is similar to that in other comparable advanced economies. For example, Georgiadis estimates that a tightening of Australian monetary policy has a similar effect on output and prices as that in other countries.[5] Estimates from the major central banks' macroeconomic models are also broadly similar to those of the RBA's MARTIN and dynamic stochastic general equilibrium (DSGE) models.[6]

Endnotes

[1] See RBA (2023), 'The Transmission of Monetary Policy', Explainer. Available at <https://www.rba.gov.au/education/resources/explainers/the-transmission-of-monetary-policy.html>

[2] This contrasts with the experience in Canada where variable rates decreased relative to fixed rates and the share of variable-rate mortgage lending increased.

[3] The chosen sample includes major advanced economies with comparable national mortgage markets that experienced a significant increase in policy rates during the post-pandemic tightening cycle.

[4] While Graph A.3 shows a swift move in Australian mortgage rates, households on variable interest rates do not typically face actual increases in their payments for two to three months given notice periods and the time taken for lenders to adjust rates following a change in the policy rate.

[5] Georgiadis G (2014), 'Towards an Explanation of Cross-country Asymmetries in Monetary Transmission', *Journal of Macroeconomics*, 39, pp 66–84.

[6] MARTIN is the Reserve Bank's main macroeconomic model of the Australian economy. The Bank also uses a more heavily structured DSGE model in its analysis. See Ballantyne A, T Cusbert, R Evans, R Guttmann, J Hambur, A Hamilton, E Kendall, R McCririck, G Nodari and D Rees (2019), 'MARTIN Has Its Place: A Macroeconometric Model of the Australian Economy', RBA Research Discussion Paper No 2019-07. Similar estimates to those from Bank models are contained in: Angelini E, N Bokan, K Christoffel, M Ciccarelli and S Zimic (2019), 'Introducing ECB-BASE: The Blueprint of the New ECB Semi-structural Model for the Euro Area', ECB Working Paper No 2315; Brayton F, T Laubach and D Reifschneider (2014), 'The FRB/US Model: A Tool for Macroeconomic Policy Analysis', FEDS Notes, April; Corbo V and I Strid (2020), 'MAJA: A Two-country DSGE Model for Sweden and Its Main Trading Partners', Sveriges Riksbank Working Paper Series No 391; Corrigan P, H Desgagnes, J Dorich, V Lepetyuk, W Miyamoto and Y Zhang (2021), 'TOTEM III: The Bank of Canada's Main DSGE Model for Projection and Policy Analysis', Bank of Canada Technical Report No 119; del Negro M (2018), 'The NY Fed DSGE', Presentation to the Seventh BIS Research Network Meeting on 'Pushing the Frontier of Central Banks' Macro-modelling', Basel, 8 March; Gervais O and M-A Gosselin (2014), 'Analyzing and Forecasting the Canadian Economy through the LENS Model', Bank of Canada Technical Report No 102; Iversen J (2018), 'Ramses II – The Core Macro Model at Sveriges Riksbank', Presentation to the Seventh

BIS Research Network Meeting on 'Pushing the Frontier of Central Banks' Macro-modelling', Basel, 8 March; Monti F (2018), 'The Bank of England's Forecasting Platform', Presentation to the Seventh BIS Research Network Meeting on 'Pushing the Frontier of Central Banks' Macro-modelling', Basel, 8 March. Available at <https://www.rba.gov.au/publications/rdp/2019/2019-07/full.html>

2. Domestic Economic Conditions

The Australian economy expanded strongly over 2022. After the initial impetus from reopening in early 2022 had passed, activity continued to grow at a solid pace over the second half of the year. The strong expansion supported large gains in employment, and measures of spare capacity in the labour market have been broadly steady at around multi-decade lows. Labour demand is strong, though it has moderated a little in recent months. Some of the demand for labour has been met by a sharp recovery in net arrivals from overseas, which is helping to alleviate shortages in some areas. Even so, the labour market remains tight and many firms continue to find it challenging to hire workers. The strong labour market continues to support growth in household incomes, as more people have jobs and others are receiving higher wages. At the same time, rising interest rates and living costs are reducing real spending power. Along with further declines in housing prices, this is weighing heavily on consumer sentiment and demand to purchase new housing. Timely indicators suggest consumption growth has slowed in recent months.

Strong labour demand continues to support growth in employment

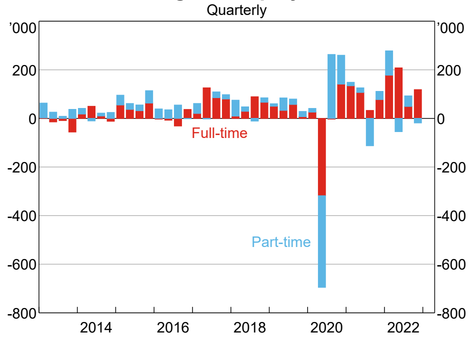
Employment continued to increase in the second half of 2022, though not as rapidly as in the first half of the year when the economy was reopening (Graph 2.1). Monthly employment growth averaged 29,000 over the last three months of 2022, compared with 21,000 in the 12 months prior to the onset of the COVID-19 pandemic, driven by full-time employment. Employment data for the June and September quarters were recently revised up.

Job advertisements and vacancies remain at high levels despite having moderated in recent months (Graph 2.2). This is consistent with strong employment intentions reported by firms in the Bank's liaison program and business surveys.

Graph 2.1

Change in Employment

Quarterly

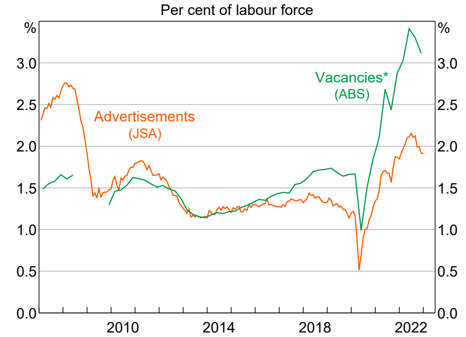


Sources: ABS; RBA

Graph 2.2

Job Vacancies and Advertisements

Per cent of labour force



* The survey was suspended between May 2008 and November 2009.

Sources: ABS; Jobs and Skills Australia (JSA); RBA

Labour supply has risen to meet some of this strength in demand …

Strong demand for labour has encouraged more people to enter the labour force over the past year, with the participation rate and employment-to-population ratio both around record highs. Much of this increase has been driven by young people and females; youth participation is around its highest rate in recent decades, while female participation rates are also around record highs (Graph 2.3).

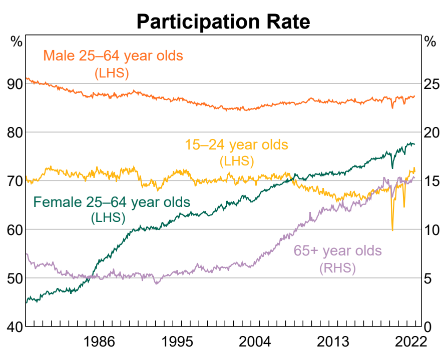
In the second half of 2022, higher labour supply was also supported by a strong pick-up in net arrivals from overseas. An increase in the arrival of international students and low levels of departures have seen the working-age population grow faster than before the pandemic (Graph 2.4). The return of working holiday makers has also helped to alleviate labour shortages in some areas.

Average hours worked has increased to be around pre-pandemic levels in recent months (Graph 2.5). This largely reflects the uptake of full-time hours by more workers in a tight labour market, as well as workers taking less sick leave. In line with the strength in employment growth, total hours worked has grown strongly.

… but the labour market remains tight

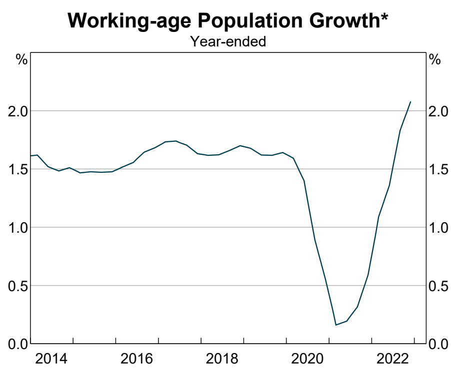
Spare capacity in the labour market is at multi-decade lows. The unemployment rate remained around 3½ per cent in late 2022 – its lowest level in nearly 50 years, with youth unemployment around its lowest level in over 40 years (Graph 2.6). In December, the unemployment rate was below 4 per cent across all states for the first time in the history of the (monthly) data (Graph 2.7). Broader measures of underutilisation have also declined to multi-decade lows as firms have responded to high demand by increasing the hours of existing staff; many previously part-time employees have shifted into full-time work.

Graph 2.3



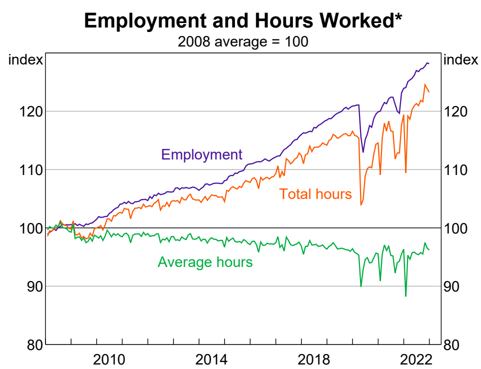
Sources: ABS; RBA

Graph 2.4



* Population aged 15 years and over.
Sources: ABS; RBA

Graph 2.5



* Seasonally adjusted.
Sources: ABS; RBA

Finding suitable labour remains a challenge for many firms and the tightness in the labour market is underpinning wages growth. There are almost as many vacancies as there are unemployed people and the proportion of firms in business surveys that report finding suitable labour as a significant constraint remains very high (Graph 2.8). Job mobility continues to be higher than in the years preceding the pandemic, and is around the levels seen prior to the global financial crisis, driven by people wanting a better job or a change. A small but growing number of contacts in the Bank's liaison program have reported some easing in labour shortages, partly reflecting the recent increase in net arrivals from overseas.

Economic activity grew solidly in the September quarter

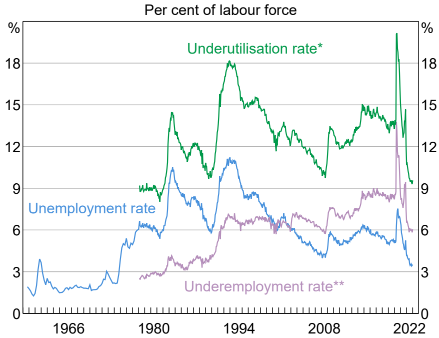
The Australian economy grew by 0.6 per cent in the September quarter (Graph 2.9). Growth in household consumption was strong, underpinned by the ongoing rebound in spending on international travel and other discretionary services. The household saving ratio declined further as a result, to be closer to, but still slightly above, the average levels that prevailed prior to the pandemic (Graph 2.10).

GDP growth was boosted by strength in exports in the September quarter, reflecting strong growth in services and rural exports. Dwelling and business investment also rebounded modestly, reflecting an easing of materials

Graph 2.6

Labour Underutilisation

Per cent of labour force



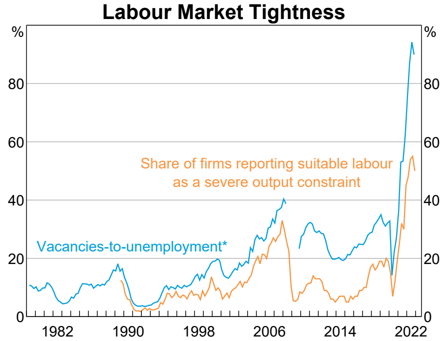
* Sum of the unemployment and underemployment rates.

** Employed people who want, and are available, to work more hours.

Source: ABS

Graph 2.8

Labour Market Tightness

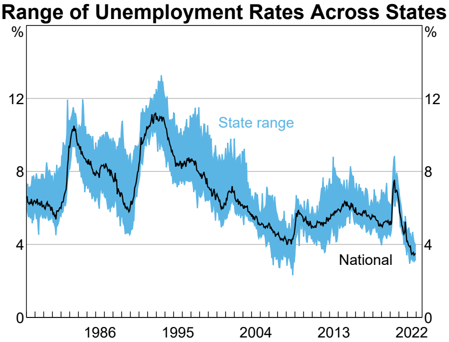


* The ABS vacancies survey was suspended between May 2008 and November 2009.

Sources: ABS; NAB; RBA

Graph 2.7

Range of Unemployment Rates Across States

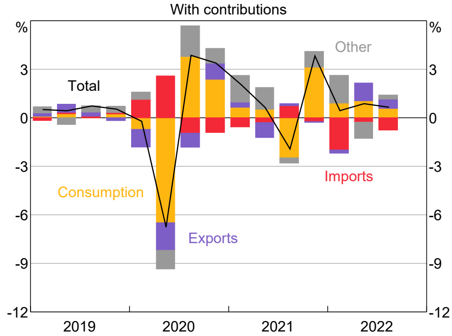


Sources: ABS; RBA

Graph 2.9

Quarterly GDP Growth

With contributions



Sources: ABS; RBA

shortages and fewer weather-related disruptions. Strong demand for overseas travel by Australians and the filling of order backlogs resulted in strong growth in imports.

In nominal terms, domestic final demand continued to grow strongly in the September quarter, underpinned by solid growth in real demand and strong growth in domestic prices. Total nominal demand in the economy remained elevated, having grown well above its pre-pandemic trend rate over the year (Graph 2.11). Growth in nominal GDP was more subdued in the quarter. This reflected a 6.6 per cent decline in the terms of trade, albeit from historically high levels, due to an increase in import prices and a decline in commodity export prices.

Household spending growth has moderated …

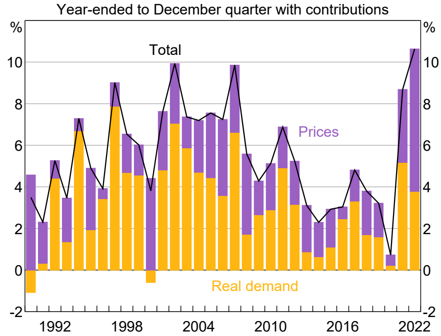
Household consumption increased by 1.1 per cent in the September quarter (Graph 2.12). This was a slower pace than earlier in the year, but higher than the pre-pandemic average. The solid growth in the quarter reflected a continued recovery in international travel. Australians' spending overseas rose sharply, with travel imports increasing by around 65 per cent, to be around 60 per cent of pre-pandemic levels. Spending overseas underpinned strength in consumption of discretionary services – such as transport, and hotels, cafes and restaurants – which increased by 3.4 per cent in the quarter.

A range of timely indicators suggest that growth in real household spending continued to moderate in the December quarter. Growth in retail sales values slowed, with declines in household goods, department stores, and clothing and footwear (Graph 2.13). Retail prices increased strongly and the volume of retail sales declined in the quarter. This weakness was concentrated in discretionary goods categories and was partially offset by solid growth in spending on food and at cafes and restaurants.

Graph 2.11

Nominal Domestic Demand Growth*

Year-ended to December quarter with contributions



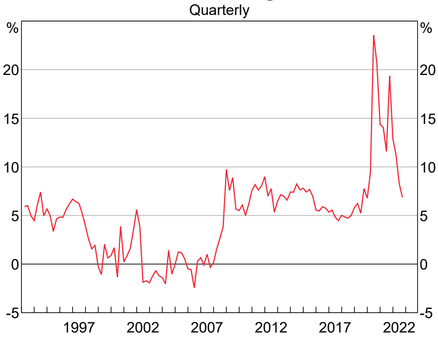
* Estimates for December quarter 2022.

Sources: ABS; RBA

Graph 2.10

Household Saving Ratio*

Quarterly



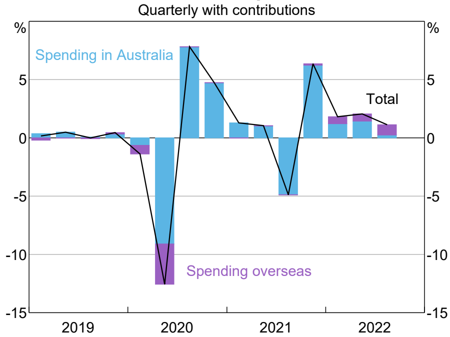
* Saving as a share of disposable income; net of depreciation.

Sources: ABS; RBA

Graph 2.12

Household Consumption Growth*

Quarterly with contributions



* Household consumption in the national accounts measures spending by Australian residents.

Sources: ABS; RBA

These data are consistent with information from the Bank's liaison program that spending continued to moderate in the December quarter (see 'Box B: Insights from Liaison'). Following strong growth in the September quarter, trade data suggest that spending by Australians overseas was broadly steady in the December quarter.

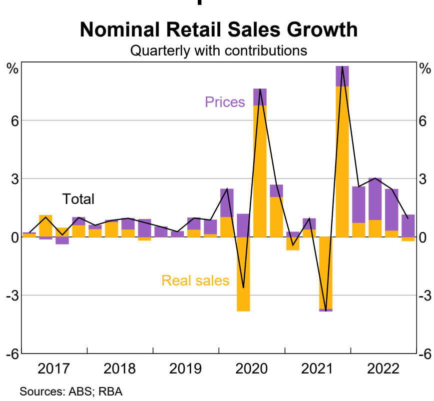
… and there are several headwinds slowing household spending

Nominal household disposable income grew by 1.6 per cent in the September quarter, driven by growth in labour income. The tight labour market has especially benefited lower income households. The latest available data (which are for the year to August 2022) suggest that earnings growth has been faster for lower income than higher income individuals. The low unemployment rate also means that a greater number of lower income people now have a job. Lower income households tend to spend more of each extra dollar of income than higher income households, which should support aggregate consumer spending. Many households also built up large financial buffers during the pandemic period, including through offset accounts. Additional savings accumulated by households since the beginning of the pandemic are estimated to amount to close to $300 billion, equivalent to around 20 per cent of annual disposable income.

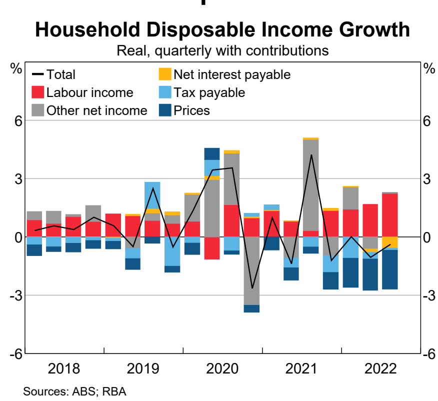
However, there are a number of headwinds for consumption growth. Inflation remains high, with strong growth in prices in the September quarter causing real household disposable income to decline by ½ per cent, to be 2½ per cent lower over the year (Graph 2.14). Real household net wealth also decreased by around 4 per cent in the quarter, driven by lower housing prices, which will be a further drag on consumption growth in the period ahead. Alongside inflationary pressures, higher net interest payments are expected to put increasing pressure on household budgets as cash rate increases are passed through to lending rates and fixed-rate loans expire (see chapter on 'Domestic Financial Conditions').

The pressure on household budgets from higher interest rates and inflation have contributed to a sharp decline in consumer sentiment, which is around the lows observed at the onset of the pandemic and during the global financial crisis (Graph 2.15). The decrease in sentiment has been most pronounced for the one-third of households with a mortgage.

Graph 2.13



Graph 2.14



The outlook for business investment remains positive

Business investment increased by around 4 per cent over the year to the September quarter (Graph 2.16). Non-residential construction investment grew alongside increased project commencements as constraints on materials availability eased a little, though building work done remains below pre-pandemic levels. Investment in machinery and equipment also increased, supported by the agricultural, mining, and transport, postal and warehousing industries.

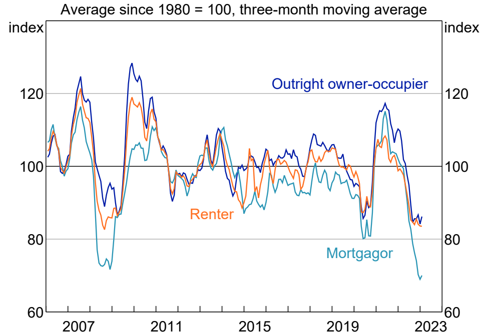
Survey measures of business sentiment have softened in recent months (Graph 2.17). Business conditions and capacity utilisation have declined, but remain well above their long-run averages.

Survey measures of investment intentions and information from liaison point to a positive outlook for business investment. The September quarter ABS Capital Expenditure Survey showed that investment intentions for the 2022/23 financial year remain higher than the 2021/22 financial year outcome, though this may partly reflect higher input costs (Graph 2.18). Most firms are reportedly continuing to pursue investment projects; however, information from the Bank's liaison program suggests that some firms anticipate project delays resulting from cost increases and difficulties securing labour.

Graph 2.15

Consumer Sentiment by Housing Tenure

Average since 1980 = 100, three-month moving average

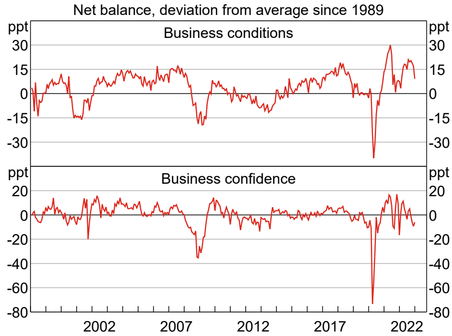


Sources: RBA; Westpac–Melbourne Institute

Graph 2.17

Business Sentiment

Net balance, deviation from average since 1989

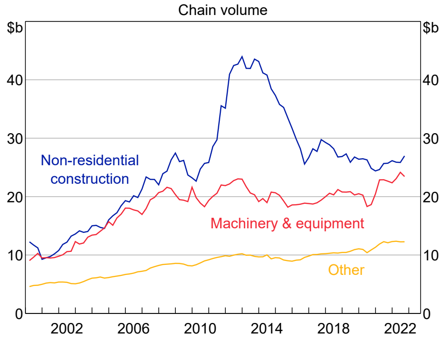


Sources: NAB; RBA

Graph 2.16

Private Business Investment

Chain volume

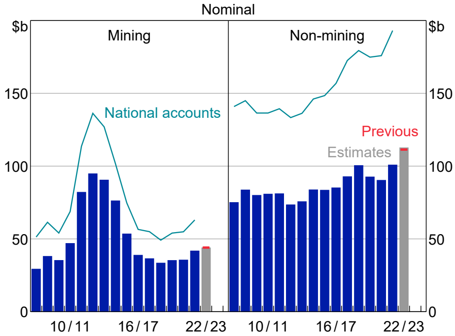


Sources: ABS; RBA

Graph 2.18

Capital Expenditure Intentions*

Nominal



* Estimates are firms' expected capital expenditure; adjusted for past average differences between expected and realised spending.

Sources: ABS; RBA

Residential construction continues to face capacity constraints

Dwelling investment increased modestly in the September quarter of 2022, but remained 4 per cent lower than a year earlier (Graph 2.19). The increase reflected an easing of constraints on supply of materials and fewer adverse weather events compared with previous quarters. Dwelling investment increased in the higher density sector across most states and also in the detached sector, particularly in New South Wales and Victoria.

However, capacity constraints – particularly those arising from labour availability – continue to limit the pace at which work can be done. Builders in the Bank's liaison program have noted that detached dwelling completion times have lengthened significantly since 2020. These delays, along with substantial increases in construction costs, have contributed to reduced cash flow for some firms and increased insolvencies in the construction industry over the past year.

Demand to purchase new detached housing has fallen considerably in recent months. This reflects a range of factors, including rising interest rates, higher prices for land and construction, falling established home prices (making them a more attractive alternative to building a new home) and poor buyer sentiment stemming from construction delays. Building approvals – along with leading indicators of approvals, such as new greenfield land sales and new home orders – have all continued to decline.

Information from the Bank's liaison program suggests that demand for off-the-plan apartments has declined, particularly for first home buyers. Demand for new higher density housing from investors has also decreased, even though unit rental yields have risen since the start of the year and immigration is expected to support rental demand. Nevertheless, the pipeline of work to be done remains elevated, reflecting the large number of dwellings approved during the pandemic that have not yet been completed due to construction delays (Graph 2.20). This is expected to support construction activity for some time.

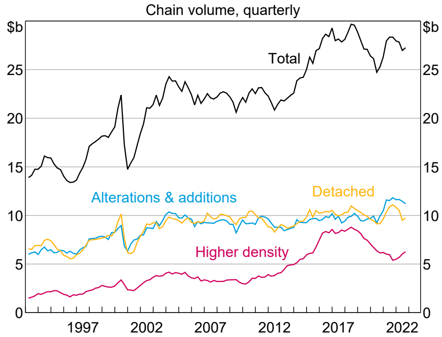
Housing prices have declined further …

National housing prices have declined by 8 per cent since their peak in April 2022, alongside rising interest rates and poor market sentiment. Price declines have been broadly based across most market segments and geographic areas, though the pace of decline has varied (Table 2.1; Graph 2.21). Housing market turnover has also declined in most capital cities over the past year. While survey measures of housing price expectations and

Graph 2.19

Private Dwelling Investment

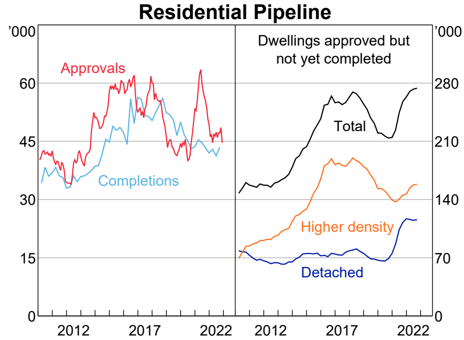
Chain volume, quarterly



Sources: ABS; RBA

Graph 2.20

Residential Pipeline



Sources: ABS; RBA

Table 2.1: Growth in Housing Prices

Percentage change, seasonally adjusted

	January	December	November	Since recent peak	Year-ended	Since Feb 2020
Sydney	–1.1	–1.2	–1.3	–14	–14	9
Melbourne	–1.2	–1.1	–0.9	–9	–9	1
Brisbane	–1.5	–1.8	–2.0	–10	–5	28
Adelaide	–0.7	–0.6	–0.5	–2	7	42
Perth	–0.4	–0.1	–0.0	–0	3	25
Darwin	–0.1	–0.4	0.4	–1	4	32
Canberra	–0.9	–0.8	–1.2	–8	–6	27
Hobart	–1.6	–1.6	–1.8	–10	–9	23
Capital cities	–1.1	–1.1	–1.1	–9	–9	12
Regional	–1.0	–1.2	–1.1	–6	–2	33
National	–1.1	–1.1	–1.2	–8	–7	16

Sources: CoreLogic, RBA

auction clearance rates have stabilised in recent months, these remain well below the levels seen at the start of 2022.

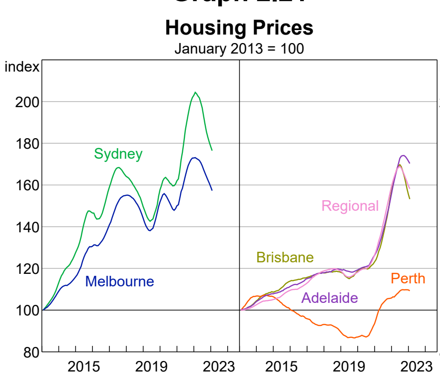
… and the rental market is very tight

Rental vacancy rates have declined in most capital cities and regional areas over the past year (Graph 2.22). Declines have been largest in Melbourne and Sydney, where vacancy rates are now around long-run average levels. In other capital cities, vacancy rates are at or around historical lows. Growth in advertised rents (for new leases) has been strong as a result, although the pace of growth has eased in recent months, particularly in regional areas (Graph 2.23). Rents have grown more strongly for units than houses, and rental yields for units have increased across most states recently.

Public consumption remains elevated

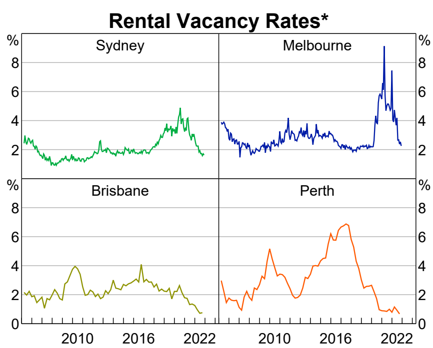
Public demand was little changed in the September quarter; a decline in public

Graph 2.21



Sources: CoreLogic; RBA

Graph 2.22



* Data is monthly for Sydney and Melbourne, and quarterly for Brisbane and Perth.

Sources: RBA; REIA; REINSW; REIV

investment was offset by an increase in public consumption. Continued assistance for those affected by floods in Queensland and New South Wales supported public consumption, which remains at a high level compared with the pre-pandemic period as a share of nominal GDP (Graph 2.24). Public spending programs such as the National Disability Insurance Scheme also supported public consumption. A strong pipeline of infrastructure projects is expected to support public investment going forward, though ongoing labour and materials shortages may limit the pace at which work can be completed.

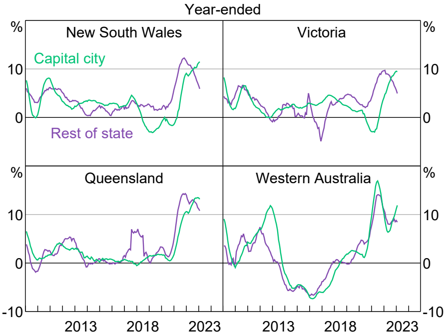
Services trade continued to drive growth in exports and imports

Export and import volumes have increased substantially since early 2022, driven by services trade, as students and tourists took advantage of the removal of travel restrictions (Graph 2.25). Across both inbound and outbound passengers, the number of those travelling for the purpose of visiting friends and relatives has recovered the fastest, though there has also been a sizeable increase in holidaymakers and students travelling to Australia (Graph 2.26). Despite the strong growth, travel services remain well below pre-pandemic levels.

Graph 2.23

Advertised Rents Growth*

Year-ended



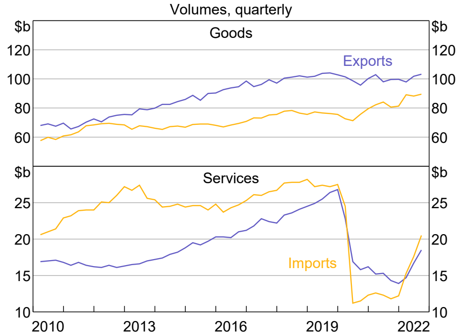
* Hedonic; seasonally adjusted.

Sources: CoreLogic; RBA

Graph 2.25

Trade in Goods and Services

Volumes, quarterly

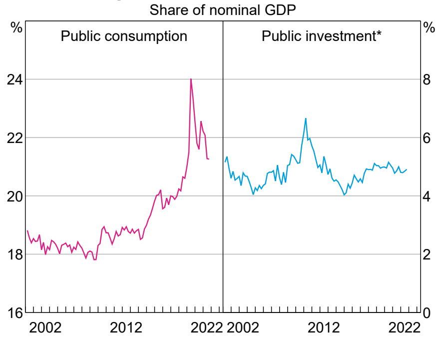


Sources: ABS; RBA

Graph 2.24

Components of Public Demand

Share of nominal GDP



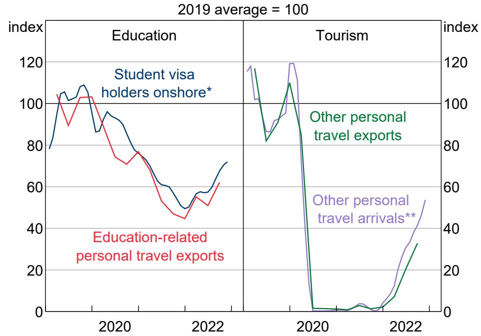
* Adjusted for second-hand asset transfers between public and other sectors.

Sources: ABS; RBA

Graph 2.26

Personal Travel Exports and Movements

2019 average = 100



* Three-month moving average.

** Includes holidaymakers and those visiting friends and relatives; three-month moving average.

Sources: ABS; Department of Education; Department of Home Affairs

Rural exports have increased strongly since early 2022, driven by ongoing favourable weather conditions and tight global supply. Consecutive record winter crops of wheat, combined with elevated prices due to persistent dry conditions in other major exporting nations and the war in Ukraine, have contributed to the historically high values seen in recent months. Despite devastating flooding in some areas of the eastern states, near-record production in other parts of the country has supported elevated levels of rural exports.

Resource export volumes were volatile over 2022 as weather and maintenance sporadically impacted production. Wet weather on the east coast was particularly disruptive for coal exports, while maintenance and industrial action led to a sharp fall in LNG exports in the September quarter. Partial data for the December quarter showed that bulk commodity exports increased. Information from liaison suggests bulk resource exports will not be impeded by record flooding in the Kimberley region.

Import volumes and values grew solidly in the September quarter, and continued to outpace growth in domestic final demand over 2022 as travel imports recovered. In the December quarter, import values declined due to declining oil prices and falling freight rates. The trade surplus increased in the December quarter, as export values rose and import values declined.

Box B

Insights from Liaison

This Box summarises information collected by five teams based in Adelaide, Brisbane, Melbourne, Perth and Sydney during discussions with around 200 businesses, industry bodies, government agencies and community organisations over the period from the beginning of November 2022 to early February 2023. Further information on the Reserve Bank's liaison program is provided in the September 2022 *Bulletin* article 'The Reserve Bank's Liaison Program Turns 21'.

Information from the Bank's liaison contacts indicates that growth in the private sector economy has moderated over the past three months. Firms report that conditions remain generally favourable. Activity continues to be elevated for many firms and investment intentions are around their long-run average. The labour market remains tight, but there is evidence that labour availability has improved a little over recent months.

The tenor of firms' comments suggests that upstream cost pressures are easing. Firms' non-labour cost pressures have lessened following a decline in global demand and the gradual normalisation of supply chains. While many contacts expect their energy costs to increase over the year ahead, recent declines in wholesale electricity and gas futures prices mean increases may not be as large as previously expected. Alongside these developments, some goods-related firms implemented fewer and smaller price increases over recent months than earlier in 2022 and expect price growth to slow further over coming quarters. By contrast, labour cost pressures generally increased as wages growth picked up over the December quarter. Firms surveyed in the liaison program expect wages growth to stabilise around 4 per cent in coming quarters. A key concern for most firms is around how household spending will evolve over coming months in response to the higher cost of living and interest rates, and the related implications for the broader economy.

Household sector

Household spending has held up well given the higher cost of living

Retail contacts report that the level of sales remain elevated, consistent with the strong labour market; in real terms, household spending has been relatively flat over the past few months. A few retailers noted that their sales over Black Friday, Christmas and Boxing Day were stronger than the year before when lockdowns were being lifted. However, several others indicated that sales growth was not as strong as they expected or that demand had plateaued or declined in recent months following the sharp increase in the cost of living over 2022. Retail contacts generally remain reasonably optimistic about the outlook for the first half of 2023.

Demand for domestic travel remains at or above pre-pandemic levels, largely driven by leisure travel. Business travel has not fully recovered. Households' spending on other services has been mixed. Spending on entertainment and hospitality is reported by some contacts to have continued to grow over recent months. By contrast, domestic university student numbers were lower in 2022 compared with 2021, which contacts attributed to people choosing to work rather than study given the strong labour market. Operators of health care, child care and early education noted that they have been unable to expand their services to fully meet demand due to capacity constraints.

Firms are navigating a number of uncertainties around the outlook for household spending. Tourism operators are generally optimistic about the year ahead, but remain concerned that ongoing labour shortages and airline capacity constraints will limit their ability to meet demand. Operators in some parts of the country faced disruptions during the peak holiday season due to flooding; the historic flooding in the Kimberley also presents a risk to activities in the surrounding areas, including tourism, over coming quarters. Retailers have highlighted the uncertainty around the outlook for demand in coming months as consumers continue to rebalance their spending back towards services and as rising interest rates and higher living costs erode consumers' spending power. A number of retailers are observing more value-conscious behaviour among consumers.

Community service providers are finding it challenging to meet demand

Liaison contacts in community organisations have noted strong growth in demand for their services, particularly for financial stress relief, financial counselling, food bank and housing assistance. Those seeking assistance are primarily renters, who tend to be lower income households. Contacts partly attribute this increase in demand to increased living costs from high inflation and the frequency of increases in some income-support payments; some groups are also still finding it challenging to gain employment. These pressures are noted to come at a time when many are still dealing with recent natural disasters and the ongoing financial and social effects of the pandemic. In the context of these drivers of demand, high staff turnover, lower volunteer rates and a significant decline in donations are all said to be making it very difficult for community service organisations to meet demand.

Business sector

Investment plans are little changed despite higher costs

Most firms spoken to plan to maintain investment around their long-run average over the period ahead (Graph B.1). Projects in the renewables and transport & storage industries, as well as activity associated with infrastructure investment, are supporting the pipeline of non-mining business investment. Many firms also report ongoing elevated spending on information technology related to digitisation projects and cybersecurity enhancements. The investment intentions of mining firms are around their long-run average. Some mining firms plan to increase their capital expenditure over the coming year, though others intend to invest to sustain their operations rather than to expand production.

Firms have noted some risks to their investment plans over coming years, including concerns about difficulties or delays to securing machinery, equipment and labour, even though global supply chains have improved. Most firms are continuing with their investment plans, despite the cost of these projects now being higher than was initially expected. Some contacts have noted that cost inflation is causing delays as the business case for some projects is reviewed or contracts renegotiated. While most firms reported that the cost of debt has increased in line with the increases in the cash rate, finance remains readily available. Financial conditions in the construction and fossil fuel-exposed industries remain tighter than other industries. Increased insolvencies, low margins and expectations of further housing price declines are all contributing to tight financial conditions for construction firms.

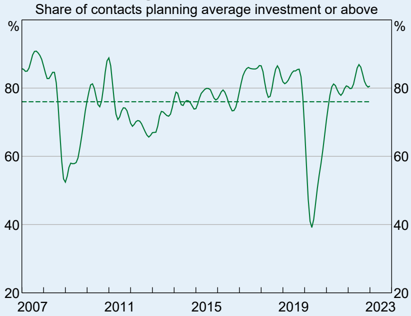
The pipeline of housing construction activity remains very large, though new demand has declined sharply

A high level of construction activity is being supported by an elevated backlog of work, stemming from the earlier period of strong demand (partly due to fiscal and monetary policy support during the pandemic) and supply constraints. Shortages in trade labour persist and are delaying the completion of projects. While shortages of materials are still being reported, over recent months a number of firms noted that obtaining materials had become easier and that cost inflation is abating.

Graph B.1

Non-mining Investment Intentions*

Share of contacts planning average investment or above



* Over the year ahead; solid line is a 13-month Henderson trend; dashed line is the series average.

Source: RBA

Contacts report that higher interest rates and prices for land and construction have led to a sharp fall in sales of new detached housing and off-the-plan apartments as well as an increase in cancellations over the past few months. The low levels of sales were also attributed to a decline in customer sentiment due to lengthy build times and expectations of further established house price declines, making new homes more expensive in relative terms. That said, some contacts are optimistic about the medium-term outlook for housing construction due to the expected recovery in population growth.

Goods and services exports are expected to increase over the period ahead

The number of international students recovered further in the second half of 2022, with the pace of this recovery exceeding some contacts' expectations. Tourism contacts have noted that international tourism is gradually picking up, supported by the recovery in airline capacity; at this stage, contacts do not expect international tourism to fully recover until at least 2024. The outlook for Australia's agricultural exports remains positive, supported by high winter crop yields in some states, although colder-than-normal weather, flooding and labour constraints have impacted production and exports over recent months in some regions.

Information from mining contacts suggests that bulk commodity exports will remain broadly steady in the near term, before increasing moderately over coming years. Current investment to expand the production of battery-related minerals, in response to strong prices, will support exports of non-bulk commodities in the period ahead.

Hiring intentions remain elevated, though labour demand has moderated

Based on firms spoken to in liaison, around half are looking to expand headcount, which is a decline from the peak in 2022 (Graph B.2). Most other businesses now expect headcount to remain stable over the year ahead. Hiring intentions remain strongest for firms in the household and business services and transport & storage industries.

Acquiring additional labour remains difficult for most firms, and this is common across locations, industries and occupations. In addition to increasing wages to retain staff (see below), some firms are responding to labour shortages by changing their hiring practices to fill vacant roles – for example, by hiring additional junior staff or staff with less experience or training than would have previously been required. However, a small but growing number of firms have noted an improvement in labour availability over recent months, with some firms also reporting lower turnover rates of late. The majority of firms now report that illness-related absenteeism is no longer a significant issue, or has at least improved from its peak in mid-2022.

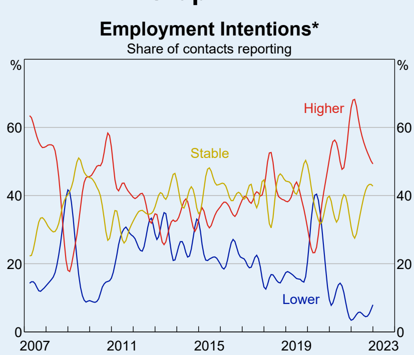
Costs and prices

Private sector wages growth strengthened in the December quarter

Firms reported that year-ended growth in private sector base wages increased further in recent months to be around 4¼ per cent in the December quarter. This compares with an average increase of around 3½ per cent reported by firms in the September quarter. Firms across a broad range of industries have reported stronger wage increases in recent months, typically attributing this to ongoing labour market tightness and higher inflation outcomes.

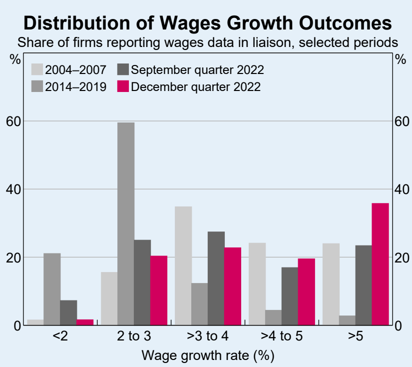
Around one-third of private sector firms reported wage increases above 5 per cent in the December quarter (Graph B.3). This is in contrast to the years leading up to the pandemic when very few firms reported wages growth above 5 per cent. Firms have also continued to report the use of various non-base wage measures to attract and retain staff.

Graph B.2



* Over the year ahead; smoothed with 13-month Henderson trend.
Source: RBA

Graph B.3



Source: RBA

Firms increasingly expect some stabilisation in wages growth in coming quarters. Nevertheless, many firms note that the outlook for wages growth is uncertain and will depend on future Fair Work Commission decisions, inflation outcomes and how labour market conditions evolve over the period ahead.

Other costs are expected to increase further but at a slower pace

Many contacts have reported a slowing in the pace of input cost increases, partly due to improved availability of imported goods and lower freight costs following the slowing in global demand. The easing of cost pressures has broadened over recent months, in particular for non-food retailers. However, many firms report they are still adjusting to the higher costs for materials, energy and freight. Almost all firms note considerable uncertainty about the outlook for their non-labour costs and remain concerned about the risk of freight delays for imported goods.

Elevated wholesale energy prices continue to be passed through to retail prices

Wholesale electricity and gas prices declined in response to the announcement of the temporary price caps on domestic gas and thermal coal in the Energy Price Relief Plan on 9 December 2022 (Graph B.4). Futures markets now suggest that wholesale electricity and gas prices will be lower in 2023 and 2024 than previously expected, though they remain elevated compared to this time last year. Contacts have noted that further supply disruptions – such as bad weather delaying coal production or transport, or unexpected outages at electricity generators – may still lead to spikes in wholesale electricity and gas prices.

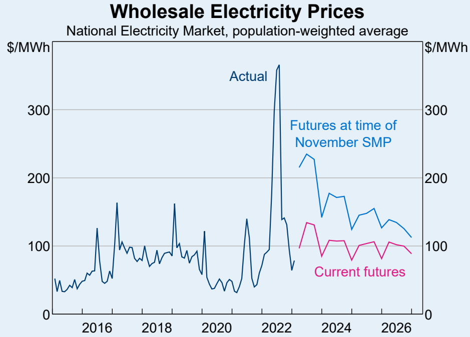
Firms on the east coast continue to report large increases in their energy costs where prices are variable or contracts have been renewed. Some contacts have been less exposed to rising energy prices because of pre-existing long-term contracts, hedging arrangements or access to cheaper renewable energy. Energy costs are expected to increase further in the period ahead as contracts are renewed.

Firms expect to increase prices further in response to costs, albeit at a slower pace than in 2022

Over recent months, price increases have remained widespread among liaison contacts. Firms for which labour is a large share of their costs, such as tourism and hospitality businesses, continue to pass through higher wages to their prices. Many manufacturing and construction firms expect to increase their prices further over coming months to incorporate ongoing cost increases and to maintain margins. Wholesalers and retailers have lifted prices for some fresh fruits and vegetables in response to the recent floods, but these price rises have been small relative to increases earlier in 2022.

Graph B.4

Wholesale Electricity Prices



Sources: ABS; AEMO; ASX; RBA; Refinitiv

By contrast, some non-food retailers that have a higher share of imported goods have reported they now expect smaller price increases over coming months than originally planned. Some firms have also reported increased discounting or that they are no longer passing through cost increases. Contacts note they are increasingly taking into account their competitors' behaviour and the risk of a more pronounced softening in demand, which could weigh on price increases.

3. Domestic Financial Conditions

Since the previous *Statement*, the Reserve Bank has increased the cash rate by 50 basis points to 3.35 per cent and Australian financial conditions have tightened further.

Yields on Australian Government Securities (AGS) have been volatile but have declined over the past three months in line with developments in global bond markets. Short-term money market rates have risen in response to the tightening in monetary policy. Current market pricing implies expectations of an increase in the cash rate to around 4 per cent by mid-2023.

Banks' funding costs increased over 2022, driven by actual and expected increases in the cash rate and the associated increases in market yields. Banks in turn lifted lending rates through the year, although average outstanding variable rates have increased by less than the rise in the cash rate. Most of the largest housing lenders have announced they will pass on the February cash rate increase in full to reference rates for variable-rate housing and business borrowers. Scheduled mortgage payments have increased and will increase further over coming months as more fixed-rate loans roll off onto higher mortgage rates. Meanwhile, commitments for new housing loans have fallen and housing credit growth has eased, consistent with higher interest rates, declining housing prices and lower turnover. Business credit growth has declined from high levels.

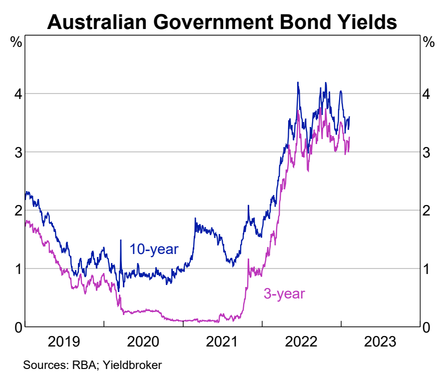
The Australian dollar has appreciated noticeably against the US dollar over recent months alongside a broad-based depreciation of the US dollar and an increase in yields on Australian Government bonds relative to US Treasury bonds. The Australian dollar has also been supported by the reopening of the Chinese economy, including through higher prices for some key commodity exports.

AGS yields have declined

Yields on 10-year AGS are around 35 basis points lower than they were three months ago, having traded in an 80 basis point range (Graph 3.1).

Movements in long-term AGS yields have generally followed international markets. Yields declined in November and early December as lower-than-expected US inflation data saw market participants revise down their expectations of the peak in global policy rates, and US Treasury yields declined. Yields then rose sharply in late December after the Bank of Japan (BoJ) unexpectedly increased the upper bound of its tolerance band for 10-year Japanese Government bond yields by 25 basis points (and also

Graph 3.1



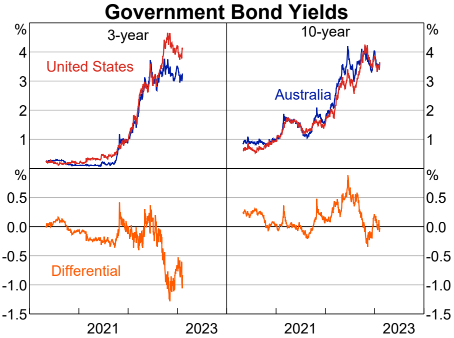
lowered the lower bound by 25 basis points). In early 2023, yields fell again alongside a moderation in European inflation rates, weaker-than-expected US economic data and slightly weaker-than-expected local employment data, before rising a little following higher-than-expected Australian CPI data, stronger-than-expected US employment data and the Reserve Bank Board decision in February.

The differential between yields on 10-year AGS and US Treasuries has risen over the past three months, to be back to around zero (Graph 3.2). This reflects AGS yields rising by more than US Treasury yields following the BoJ policy adjustment, the local CPI data and the Board's February decision. The differential between short-term Australian and US yields has also risen but remains negative, reflecting market participants' expectations that the US monetary policy rate will be higher for longer than the cash rate in Australia.

Movements in longer term AGS yields continue to be largely driven by movements in real yields, which reflect real policy rate expectations and term premia (Graph 3.3). By contrast, break-even inflation rates have remained stable and well anchored, implying that market participants expect the monetary policy tightening to date and in prospect to be sufficient to keep inflation around the target range over the medium term.

Graph 3.2

Government Bond Yields



Sources: Bloomberg; RBA; Yieldbroker

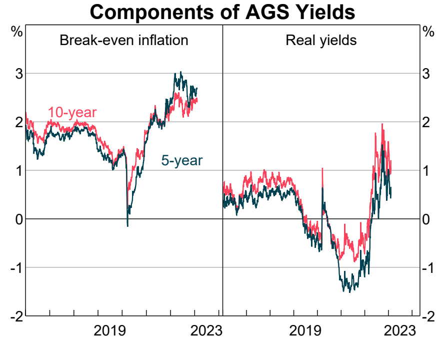
The spread between yields on semi-government securities (semis) and AGS yields has declined, reflecting a narrowing in the spread between swap rates and AGS yields from the highs observed in early November (semis yields tend to closely track swap rates) (Graph 3.4; Graph 3.5). Ongoing strong demand from domestic banks to hold semis as part of their high-quality liquid assets portfolios has also supported the decline in semis spreads.

Australian Government bond issuance over 2022 was similar to the year before

Bond issuance by the Australian Office of Financial Management (AOFM) in 2022 was similar to 2021 (Graph 3.6). In early January 2023, the AOFM lowered its 2022/23 fiscal year

Graph 3.3

Components of AGS Yields

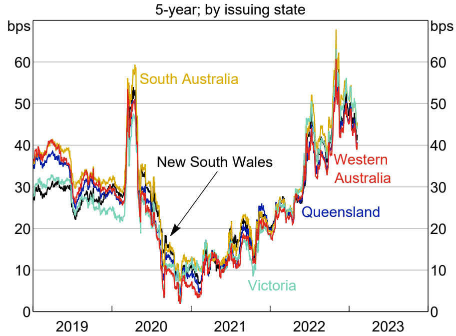


Sources: RBA; Yieldbroker

Graph 3.4

Semi-government Bond Spreads to AGS

5-year; by issuing state



Sources: RBA; Yieldbroker

issuance guidance by $10 billion, to around $85 billion, of which around $48 billion has already been issued. Semis issuance was relatively low in October and early-November 2022 reflecting the volatility in swap markets over that period. However, it picked up at the end of 2022 and has remained strong into early 2023 as the swap market stabilised and alongside strong demand from domestic banks.

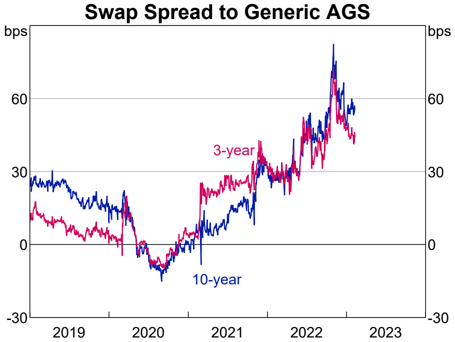
Bond markets are functioning well

Bond markets continue to function well. Bid-offer spreads on AGS and semis remain around their lowest levels in recent years, and volatility has declined following a period of heightened volatility caused by dislocations in the UK gilt market in late September and early-October 2022 (Graph 3.7).

Demand to borrow AGS from the Reserve Bank has remained elevated, with an average of around $7 billion of bonds per day borrowed over recent months (Graph 3.8). Demand remains focused on bonds with a residual maturity of one to two years, and particularly those where the stock available in private markets is limited due to the Bank's earlier purchases. Bond dealers borrow these bonds to help settle their own transactions and the transactions of their clients. By lending these bonds back into the market for short periods, the Bank supports the functioning of government bond markets.

Graph 3.5

Swap Spread to Generic AGS



Sources: Bloomberg; RBA

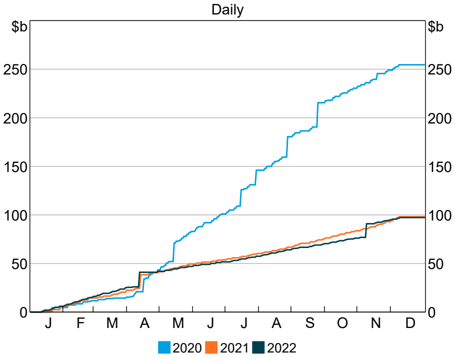
Expectations for the peak in the cash rate have declined a little in recent months

Market pricing suggests that expectations for the level of the cash rate in the near term are little changed. However, the implied expectation for the peak in the cash rate has declined a little since the last *Statement*. Prices for overnight indexed swap (OIS) contracts imply that market participants expect the cash rate to be increased further over 2023, reaching a peak of around 4 per cent. This is broadly similar to the cash rate

Graph 3.6

Cumulative AGS Issuance*

Daily



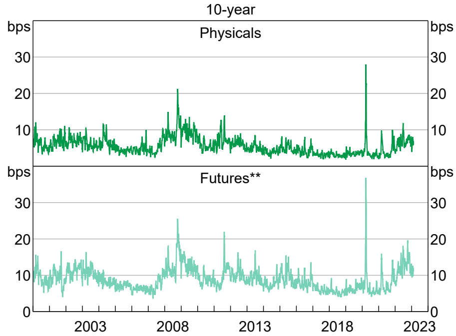
* Cumulative value for each year.

Sources: AOFM; RBA

Graph 3.7

Bonds Intraday Range*

10-year



* Ten-day moving average.

** Include overnight session.

Sources: Bloomberg; RBA

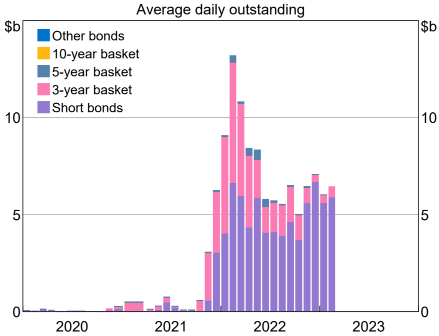
expectations of most market economists, with the median forecast suggesting a cash rate of around 3.85 per cent by mid-2023 (Graph 3.9).

Transaction volumes in the cash market have declined in recent months, though the cash rate has continued to be determined by market transactions on the majority of days. The cash rate was 4 basis points below the cash rate target for most of 2022; however, recently this spread has narrowed slightly, with the cash rate at 3 basis points below the cash rate target over 2023 to date.

Graph 3.8

RBA and AOFM Securities Lending*

Average daily outstanding

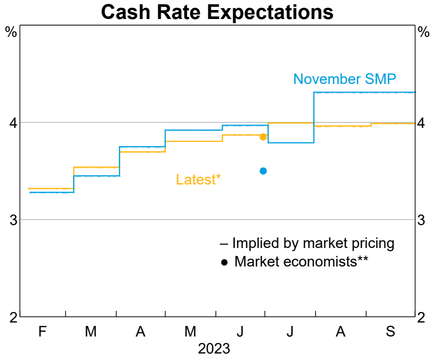


* Face value; last bar indicates month-to-date.

Source: RBA

Graph 3.9

Cash Rate Expectations



* Latest market economists' projections as at February 2023.

** 2023 dots are median of peak rates from market economists at indicative date; peak rate timing ranges mostly from March Quarter 2023 to September Quarter 2023.

Sources: Bloomberg; RBA

Money market rates have continued to rise

Short-term money market rates have continued to increase, including bank bill swap rates (BBSW), consistent with the tightening in monetary policy (Graph 3.10). The cost of Australian dollar funding from offshore short-term issuance (via the foreign exchange swap market) has also moved higher over the past three months.

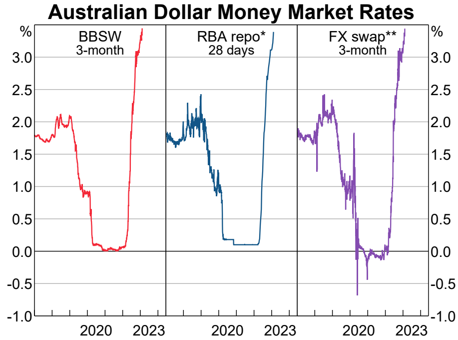
Repurchase agreement (repo) rates at the Bank's regular open market liquidity operations (OMO) have also increased, with the OMO hurdle rate continuing to be set at term-matched OIS plus a modest spread. Demand for short-term liquidity obtained at OMO remains low by historical standards, although volumes increased a little for borrowing over the end of 2022.

The Bank's balance sheet remains large but will decline noticeably over the course of this year

The Bank's balance sheet remains large by historical standards, reflecting the monetary policy measures introduced in response to the COVID-19 pandemic (Graph 3.11; Graph 3.12). Since the previous *Statement*, the size of the balance sheet has been little changed at around $626 billion. On the liabilities side, Exchange Settlement balances rose and government

Graph 3.10

Australian Dollar Money Market Rates



* Weighted average rate for morning open market operation repos.

** Implied AUD rate based on covered interest parity.

Sources: ASX; Bloomberg; RBA; Tullet Prebon; US Federal Reserve deposits declined, owing to an increase in net government spending and the maturity of the November 2022 AGS. The Bank's balance sheet will decline over the coming years as funding provided to banks under the Term Funding Facility (TFF) and the Bank's government bond holdings mature. Over the course of 2023, $84 billion of TFF funding and $14 billion of the Bank's bond holdings will mature.

Bank bond issuance continues to be strong

Bank bond issuance was high in 2022 (Graph 3.13). Banks raised $140 billion in bond markets over the year, evenly split between domestic and offshore markets, with an average tenor of 4.2 years. Covered bond issuance was $42 billion in 2022 – the highest level since the introduction of covered bonds in 2011. Some of this issuance reflected a preference among some investors for secured rather than unsecured debt during a time of somewhat heightened financial market volatility. More recently, banks raised $18 billion in January, which is historically a month of both strong issuance and a high level of maturities to be funded.

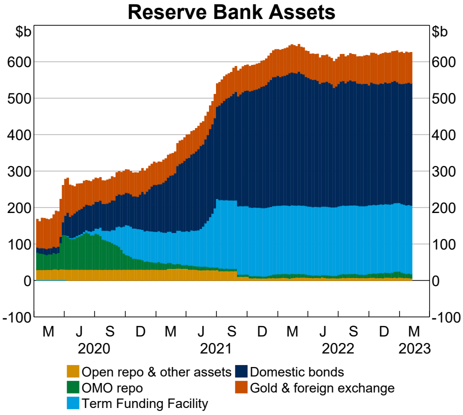
Yields on three-year bank bonds have been within a range of 4–5 per cent since early 2022, having increased sharply from historical lows (Graph 3.14). Movements in recent months have largely tracked the swap rate (a reference rate for the pricing of fixed-income securities). As a result, the spread to the swap rate has been steady at around 60 basis points, a little above the average of years prior to the pandemic.

Issuance of RMBS by non-banks increased and spreads widened

Issuance of residential mortgage backed securities (RMBS) in 2022 was higher than in most of the past 15 years (Graph 3.15). Non-bank lenders, which are more dependent on wholesale funding than banks, accounted for

Graph 3.11

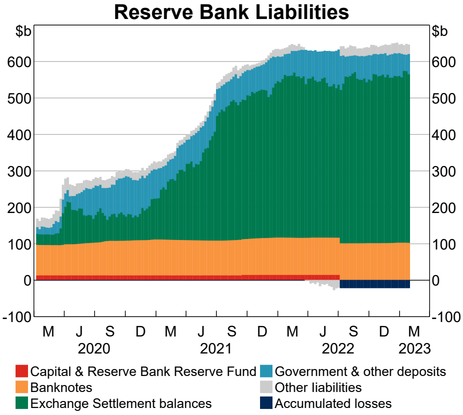
Reserve Bank Assets



Source: RBA

Graph 3.12

Reserve Bank Liabilities

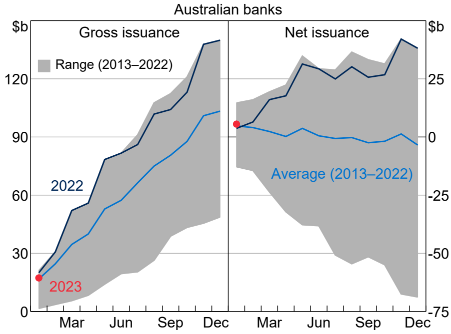


Source: RBA

Graph 3.13

Cumulative Bank Bond Issuance

Australian banks



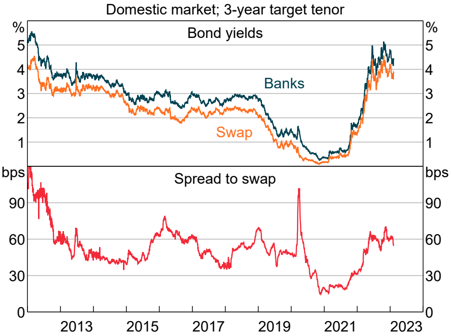
Sources: Bloomberg; Private Placement Monitor; RBA

$28 billion of the $36 billion issued. This is similar to the previous two years but represents a higher share of issuance than was typical before the pandemic. Spreads on RMBS rose over 2022 from historically low levels to be slightly above the pre-pandemic average, making it more costly to issue mortgages, particularly for non-bank lenders. Similarly, liaison with banks suggests this spread widening has made RMBS issuance less appealing for banks compared with senior unsecured and covered bond issuance.

Graph 3.14

Major Banks' Bond Pricing

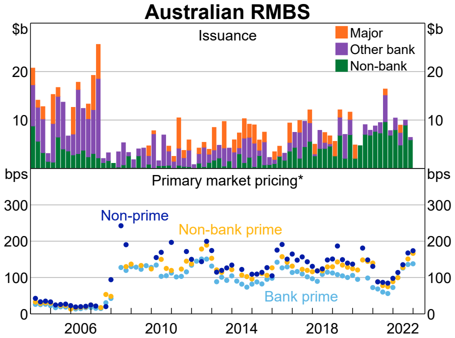
Domestic market; 3-year target tenor



Sources: Bloomberg; RBA

Graph 3.15

Australian RMBS



* Face-value weighted quarterly average of the primary market spread to bank bill swap rate for AAA-rated notes. Non-resident RMBS pricing not included.

Sources: Bloomberg; KangaNews; RBA

Banks' wholesale funding costs have increased

Banks' overall funding costs rose from historical lows over 2022 underpinned by higher BBSW rates (Graph 3.16). In turn, BBSW rates were driven by both actual and expected increases in the cash rate. Much of banks' wholesale debt and deposit costs are linked to BBSW rates either directly or through banks' hedging practices. This includes banks swapping foreign-currency denominated and fixed-rate liabilities into floating-rate exposures that reference BBSW. The increased cost of new long-term debt is also adding to funding costs as banks' issued a large amount of bonds over the past year, as noted above.

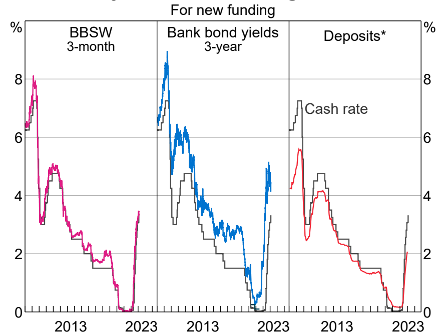
Banks' deposit rates have risen, but by less than the cash rate overall

Banks' deposit funding costs also increased over 2022, but by less than the cash rate in aggregate. This divergence was underpinned by limited pass-through to some interest-bearing at-call deposit accounts (Graph 3.17). By contrast, average rates on new term deposits increased by more than the cash rate, in line with larger movements in BBSW and longer term swap rates, which are the key benchmarks used to price these products. At-call deposits (including

Graph 3.16

Major Banks' Funding Costs

For new funding



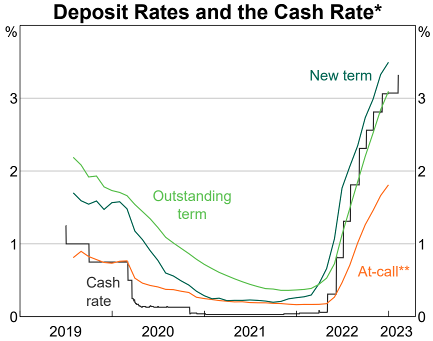
* RBA estimates to December 2022; excludes deposits in housing loan offset accounts.

Sources: AFMA; APRA; ASX; Bloomberg; major banks' websites; RBA; Refinitiv loan offset balances) account for around 80 per cent of banks' deposits on average. This includes around 15 per cent of at-call balances on which banks pay no interest to depositors, although banks often hedge such deposits so their effective cost to banks increases with BBSW rates. Banks have passed on larger rate increases to wholesale depositors than households. This different treatment is likely, in part, to reflect wholesale depositors having a wider range of market-based alternatives in which to place cash.

The total stock of deposits rose over 2022, driven by term deposits (Graph 3.18). Depositors have shifted into term deposits as the spread between new term deposit rates and at-call rates has increased. Rising term deposit pricing partly reflects banks seeking to take advantage of the favourable treatment in liquidity ratios of term deposits compared with at-call deposits. The focus on liquidity ratios increased over the year as banks sought term funding to replace Committed Liquidity Facility allowances, which were reduced to zero on 1 January 2023. Banks are also preparing for TFF maturities, beginning in April 2023. In addition, in an environment of rising interest rates depositors tend to demand a higher return for locking away funds for a period of time.

Graph 3.17

Deposit Rates and the Cash Rate*



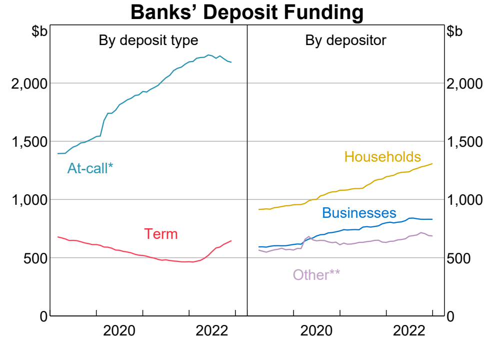
* Deposit rates to December 2022, cash rate to 8 February 2023.
** Excludes deposits in housing loan offset accounts; includes non-interest bearing deposits.
Sources: APRA; RBA

Growth in total credit has decreased

Total credit growth has decreased in recent months, but remains elevated relative to recent years (Graph 3.19; Table 3.1). Business credit growth has declined from its recent peak and housing credit growth has also eased further in recent months. By contrast, growth in personal credit (4 per cent of total credit) increased slightly over the quarter, largely driven by increases in outstanding credit card balances and consistent with strong nominal consumption growth.

Graph 3.18

Banks' Deposit Funding

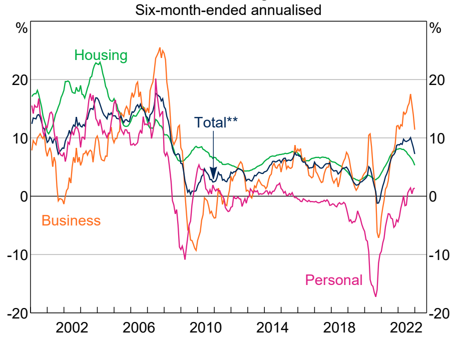


* Includes deposits in housing loan offset accounts and non-interest bearing deposits.
** Includes deposits from the government and financial institutions, including superannuation funds.
Sources: APRA; RBA

Graph 3.19

Credit Growth by Sector*

Six-month-ended annualised



* Seasonally adjusted and break-adjusted; including securitisation.
** Includes housing, personal and business credit.
Sources: ABS; APRA; RBA

Table 3.1: Growth in Financial Aggregates

Percentage change[a]

	Three-month annualised		Six-month annualised	
	Sep 22	Dec 22	Jun 22	Dec 22
Total credit	9.1	5.4	9.4	7.2
– Household	5.8	4.4	7.0	5.1
– Housing	5.8	4.8	7.6	5.3
– Owner-occupier	6.5	5.5	7.8	6.0
– Investor	4.9	3.3	7.0	4.1
– Personal	4.0	–1.1	–1.5	1.4
– Business	15.6	7.3	14.4	11.4
Broad money	3.1	9.0	7.2	6.0

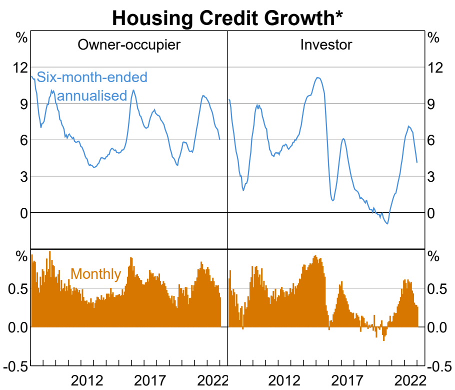
(a) Seasonally adjusted and break-adjusted.

Sources: ABS; APRA; RBA

Demand for new housing loans declined sharply while refinancing activity reached new highs

Housing credit growth declined in December to 5.3 per cent on a six-month-ended annualised basis (Graph 3.20). Housing credit growth is expected to decline further, as commitments for new housing loans have fallen of late. Commitments are now around 30 per cent below their peak in January 2022, consistent with higher interest rates, lower housing turnover and declines in housing prices.

Graph 3.20



* Seasonally adjusted and break-adjusted.

Sources: APRA; RBA

Commitments for external refinancing – that is, switching to a new lender – remain very high (Graph 3.21). Borrowers with variable-rate loans have been seeking better deals on their mortgages as interest rates and the cost of living increase. At the same time, many fixed-rate loans taken out during the pandemic have been reaching the end of their terms and many of these borrowers have been shopping around for the best possible rates, which often entails switching to a new loan at a different lender. Borrowers who negotiate a lower rate on their existing loan with their current lender are not captured in the external refinancing data but are reflected in the average interest rate on outstanding loans (see below).

Variable housing loan interest rates have increased further

Housing lenders have passed on cash rate increases up to December in full to their reference rates for variable-rate loans (Graph 3.22). At the time this *Statement* was finalised, most of the largest housing lenders had announced they would also pass through the February increase in the cash rate in full to their housing reference rates.

Table 3.2: Average Outstanding Housing Rates
December 2022

	Interest rate in Dec 2022 Per cent	Change since Apr 2022 Basis points	Change since Feb 2020 Basis points
Cash rate	3.10	300	235
Variable-rate loans			
– Owner-occupier	5.49	263	192
– Investor	5.85	264	188
– All variable-rate loans	5.61	263	190
Fixed-rate loans			
– Owner-occupier	2.48	25	–124
– Investor	2.78	19	–123
– All fixed-rate loans	2.58	23	–127
Loans by repayment type[(a)]			
– Principal-and-interest	4.58	190	96
– Interest-only	5.25	202	103

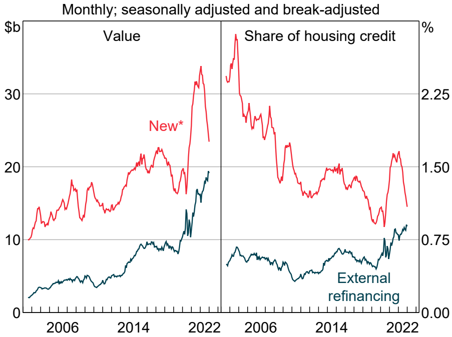
(a) Weighted average across variable- and fixed-rate loans.
Sources: APRA; RBA

Very few borrowers pay the reference rate, however, and instead are offered products at a discount relative to these reference rates.[1] These discounts have tended to increase since last May. Indeed, the rate on outstanding variable-rate loans has increased by around 35 basis points less than the cumulative increase in standard variable reference rates (and hence the cash rate) up to December (the latest available data) (Table 3.2). Much of this difference reflects borrowers securing lower variable interest rates by refinancing their loans with another lender or renegotiating the terms of their loans with their current lender.

Graph 3.21

Housing Loan Commitments

Monthly; seasonally adjusted and break-adjusted



* Excludes refinancing.
Sources: ABS; APRA; RBA

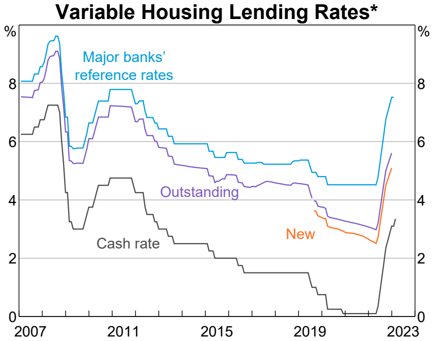
The average outstanding variable rate is now around 2013 levels, which coincides with the last time the cash rate was above 3 per cent (Graph 3.22). Interest rates on new variable-rate loans remain around 50 basis points lower than rates on outstanding variable-rate loans.

Fixed-rate housing loans are repricing at higher rates

The average rate on all outstanding fixed-rate loans has edged only slightly higher in recent months (Graph 3.23). While there has been a gradual roll-off of existing fixed-rate loans, relatively few borrowers are taking out new fixed-rate loans at higher rates. Currently, just under one-third of total housing credit is on a fixed interest rate. Over the next year, around half of all those fixed-rate loans outstanding will reach the end of their terms and transition to new interest rates. Since most of these loans were issued around record low rates during the pandemic, and rates have risen since that time, expiring fixed-rate loans are expected to continue to reprice at significantly higher interest rates. See 'Box A: Mortgage Interest Payments in Advanced Economies – One Channel of Monetary Policy', which compares the pass-through of policy rates to mortgages in Australia with pass-through in other advanced economies.

Graph 3.22

Variable Housing Lending Rates*

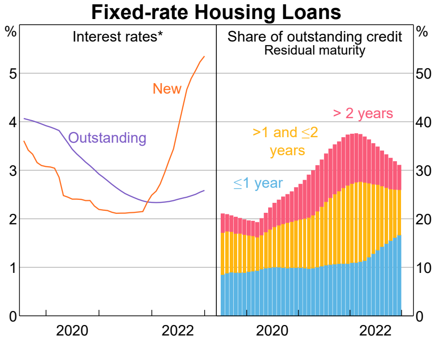


* Reference rates to end January 2023; new and outstanding rates to end December 2022. Series break for new and outstanding loans in July 2019.

Sources: APRA; banks' websites; CANSTAR; Perpetual; RBA; Securitisation System

Graph 3.23

Fixed-rate Housing Loans



* Weighted average across all fixed-rate terms.

Sources: APRA; RBA

Housing loan payments have increased and will increase further over coming months

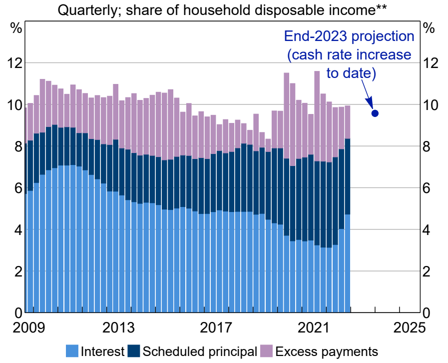
Scheduled mortgage payments increased further over the December quarter to reach around 8¼ per cent of household disposable income.[2] Interest payments have increased by 1¾ percentage points of disposable income since the Bank started increasing the cash rate in May 2022, while total scheduled payments have increased by slightly less than this (because scheduled principal payments decline as interest rates rise).

Scheduled mortgage payments are expected to increase further over coming months, as lenders typically take a few months to adjust borrowers' mortgage payments following a cash rate increase, and borrowers with fixed-rate loans will continue to roll off onto higher rates. Scheduled mortgage payments are projected to reach between 9½ and 9¾ per cent of household disposable income by the end of 2023, based on cash rate increases to date. Scheduled mortgage payments are projected to reach levels similar to total payments (principal, interest and excess payments) made by households through 2022.

Graph 3.24

Housing Mortgage Payments*

Quarterly; share of household disposable income**



* Dot shows scheduled payments projection assuming full pass-through to variable-rate loans and fixed-rate loans roll off to variable-rate mortgages.

** Estimated scheduled payments using credit foncier model.

Sources: ABS; APRA; RBA

Borrowers continued to make payments into their offset and redraw accounts in the December quarter. These net payments over 2022 were less than during 2020 and 2021. Households have accumulated a stock of around $120 billion in mortgage offset and redraw accounts since the start of the pandemic, which is around 7¾ per cent of annual household disposable income. Higher income borrowers hold a greater share of these buffers, but lower income borrowers in aggregate continued to contribute to their offset or redraw accounts over 2022. Higher interest rates and other cost-of-living pressures are likely to constrain some borrowers' ability to add further to these buffers. As required housing loan payments increase further in the period ahead, some borrowers may need to reduce non-essential spending, save less overall and/or draw down on accumulated savings to service their mortgages.

Interest rates on business loans are also rising

Interest rates on outstanding variable-rate business loans have increased over recent months, reflecting pass-through of increases in the cash rate and three-month BBSW (which is the standard benchmark rate used to price loans to medium and large businesses). The interest rate on the average fixed-rate loan has increased more slowly, because changes in interest rates only affect outstanding fixed-rate credit as loan terms expire.

Growth in business debt has slowed

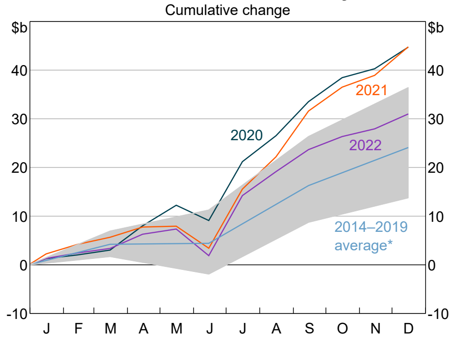
Growth in business debt has declined in recent months, although it remains above the average of the last decade. This decline reflects that growth in business credit has eased from its recent peak and that non-financial corporate bond issuance has been low.

Lending to property services and finance firms contributed about half the growth in business credit over the past year, although credit growth to these industries has eased in recent months. Slower growth in lending to the property services industry reflects a lower volume of commercial property transactions, while lending to finance firms has slowed alongside lower demand for housing finance. Businesses in goods-related industries are also making less use of revolving credit facilities as liquidity challenges abate alongside easing supply chain disruptions. Commitments for new business loans have decreased in recent months, which suggests the growth of business credit is likely to decline further.

Graph 3.25

Offset and Redraw Account Payments

Cumulative change



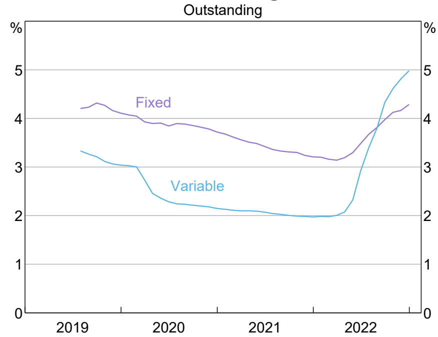
* Available data prior to 2020 is quarterly.

Sources: APRA; RBA

Graph 3.26

Business Lending Rates

Outstanding



Sources: APRA; RBA

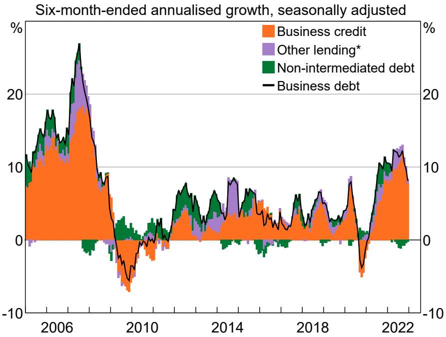
Corporate bond issuance was low in 2022

In contrast to bank bond issuance, non-financial corporate bond issuance in 2022 was at its lowest level in recent years (Graph 3.28). Most issuance was in offshore markets and by non-financial companies in sectors other than resources. Market liaison suggests that after strong issuance in 2021, some companies had no pressing need for funds, while others used bank finance given this was available on more favourable terms than was the case for bond markets.

Graph 3.27

Business Debt

Six-month-ended annualised growth, seasonally adjusted



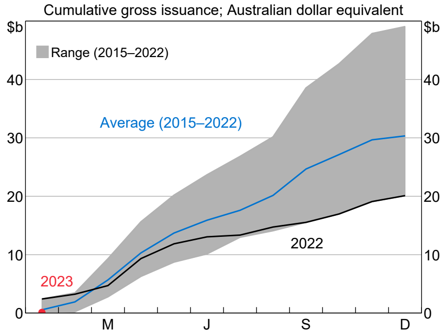
* Lending to large businesses by institutions that do not report to APRA.

Sources: APRA; Bloomberg; RBA; Refinitiv

Graph 3.28

Non-financial Corporate Bond Issuance

Cumulative gross issuance; Australian dollar equivalent



Sources: Bloomberg; Private Placement Monitor; RBA

Australian equity prices have risen noticeably of late

The ASX 200 index has risen 7 per cent over the year to date. This follows a period of volatility though little net change through 2022 on a total returns basis (Graph 3.29). The result over 2022 as a whole was better than for US and international equity markets, which fell by around 18 and 6 per cent, respectively.

The relative strength of the Australian market over the past year or so reflects the larger weighting of the resources sector. Equity prices in the resources sector increased by around 13 per cent over 2022, driven by a nearly 40 per cent increase in the energy sector, as the war in Ukraine led to higher energy prices (Graph 3.30). Resources have continued to outperform recently as key commodity prices have strengthened in line with the more positive outlook in China.

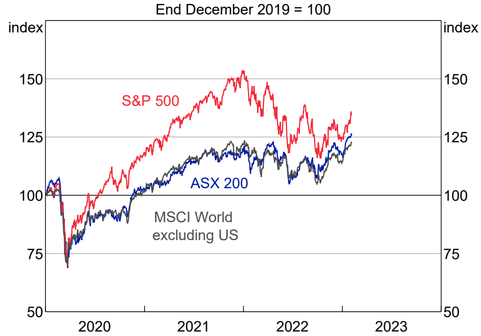
The ASX 200 price-to-earnings ratio fell in 2022

The price-to-earnings ratio for the ASX 200 – a popular measure of stock valuations comparing current share prices to projected earnings – fell to be a little below its long-term average in 2022 (Graph 3.31). The decline last year reflected an increase in aggregate earnings expected by market participants amid little change in share

Graph 3.29

Total Return Indices

End December 2019 = 100



Source: Bloomberg

prices over the year. This continues a trend to lower ratios across most sectors over the past few years. The ratio is now well below its long-term average for the resources sector, where analysts' earnings forecasts have increased substantially against a comparatively more modest increase in share prices.

Mergers and acquisitions activity was above average in 2022

Mergers and acquisitions (M&A) activity was above average in 2022, although it was around 40 per cent below 2021's record level and slowed in the second half of the year (Graph 3.32). There were over 900 deals announced with a total value of around $200 billion during 2022. These include: the takeover of Australia's Origin Energy by a consortium led by Canadian company Brookfield Asset Management; the takeover of American IT company Switch by a consortium including Australian fund manager IFM Investors; and the acquisition of a controlling stake in the Chicago Skyway by Atlas Arteria (an Australian operator of private toll roads).

Equity raisings declined in 2022

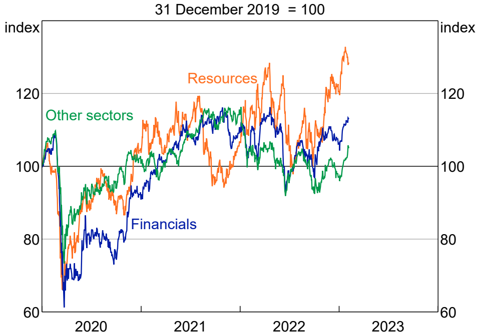
Listed companies raised around $35 billion in equity over 2022 (Graph 3.33). This was slightly lower than the average over the past decade and represents a return to more typical levels of equity raising after the elevated period around the pandemic. By contrast, buybacks were at record levels in 2022. Companies returned $20 billion to shareholders, with about two-thirds of this completed by financial companies. Buybacks included Westpac's $3.5 billion off-market buyback in February and Qantas's $400 million buyback in August.

Around $1.1 billion was raised through initial public offerings (IPOs) in 2022 (Graph 3.34). This was the lowest annual value raised from IPOs in the past two decades. While the value of IPOs was very low, their number was broadly in line with pre-pandemic levels. The resources sector

Graph 3.30

Australian Share Prices

31 December 2019 = 100

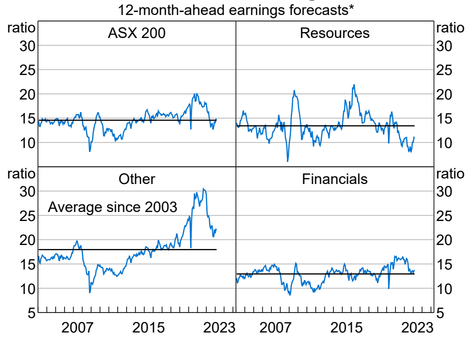


Source: Bloomberg

Graph 3.31

ASX 200 Price-to-earnings Ratios

12-month-ahead earnings forecasts*



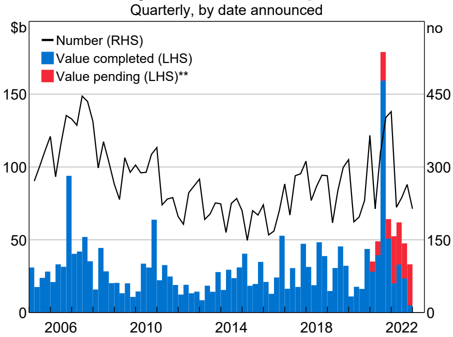
* Earnings forecasts obtained from IBES aggregates.

Sources: RBA; Refinitiv

Graph 3.32

M&A by Australian Companies*

Quarterly, by date announced



* Does not include BHP Limited's acquisition of BHP Plc.

** Includes transactions announced in the past two years but not completed.

Sources: RBA; Refinitiv

had the most new listings by number, with 68 companies raising $680 million, mostly smaller miners. By contrast, there were just three listings completed by financial companies.

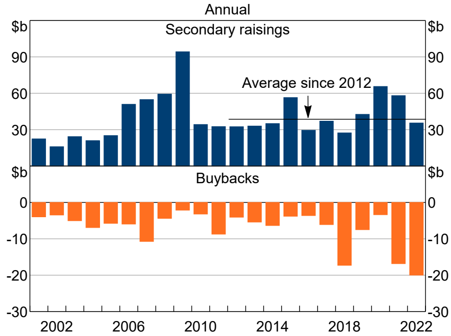
The Australian dollar has appreciated

The Australian dollar has appreciated 7 per cent against the US dollar since early November, to be around US$0.69. This has occurred alongside a broad-based depreciation of the US dollar, partly reflecting a moderation in inflation in the United States and a tempering of market expectations about how restrictive the US policy rate will need to be (see chapter on 'The International Environment'). The appreciation is also consistent with an increase in yield differentials between Australian Government bonds and US Treasury bonds, while the yield differential against government bonds of other major advanced economies has declined (Graph 3.35). The reopening of the Chinese economy has also provided support for the Australian dollar, including through higher prices for some key commodity exports. Despite this, the RBA Index of Commodity Prices is little changed since early November, with higher prices for iron ore, coking coal and base metals offset by a decline in the prices of energy-related commodities.

Despite the 7 per cent appreciation against the US dollar, the Australian dollar is only around 1 per cent higher on a trade-weighted (TWI) basis since early November. This largely reflects the 1 per cent appreciation of the Australian dollar against the Chinese renminbi, which has the highest weight in the TWI, and the fact that the Australian dollar has depreciated against some currencies, including the Japanese yen and South Korean won (Graph 3.36).[3]

Graph 3.33

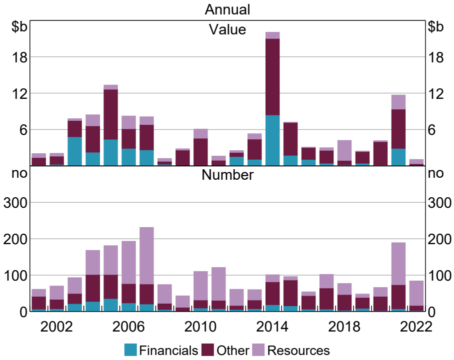
Australian Equity Raisings*



* All listed companies.
Sources: ASX; RBA

Graph 3.34

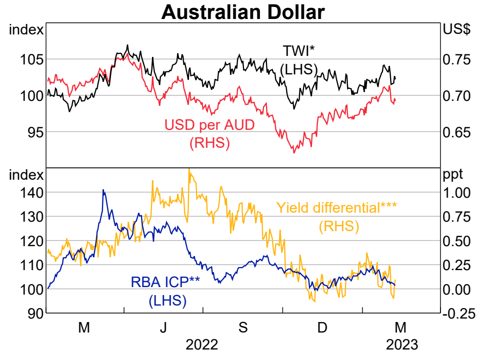
IPOs in Australia



Sources: ASX; RBA

Graph 3.35

Australian Dollar



* Trade-weighted index, 3 January 2022 = 100.
** Index of Commodity Prices (USD terms), 3 January 2022 = 100.
*** Three-year Australian sovereign yield less yields of the United States, Japan and Germany, weighted by GDP.
Sources: Bloomberg; RBA; Yieldbroker

Australia's financial account balance returned to a small surplus in the September quarter

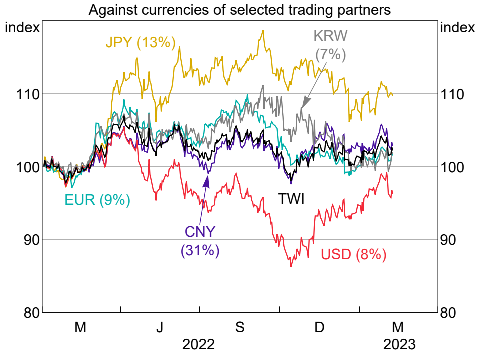
Australia experienced a net capital inflow in the September quarter. This resulted in the financial account balance returning to a small surplus, after being in deficit for more than three years. The net inflow of capital was associated with foreign direct equity investment into Australia, driven by reinvested earnings, as well as banking sector transactions involving financial derivatives (Graph 3.37). There was a record value of financial derivative assets and liabilities settled in the September quarter, reflecting an increase in the market value of derivative contracts associated with heightened volatility in foreign exchange and bond markets.

Australia's net foreign liability position was little changed over the September quarter at around 35 per cent of GDP (Graph 3.38). The net income deficit – the net payments made to service the net foreign liability position – widened considerably to a record high level of around 5½ per cent of GDP, which contributed to the current account balance shifting back to a deficit. This was largely driven by increased dividend payments to non-residents on their Australian equity holdings, reflecting high operating profits and significant foreign investment in the resource sector.

Graph 3.36

Australian Dollar*

Against currencies of selected trading partners



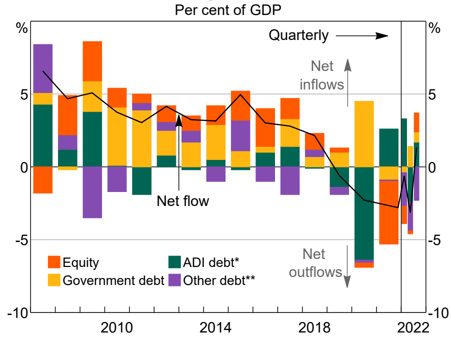
* Indexed to 3 January 2022 = 100, TWI weights in parentheses.

Sources: Bloomberg; RBA

Graph 3.37

Net Capital Flows

Per cent of GDP



* Includes derivative settlement, adjusted for the US dollar swap facility in 2008–2009 and 2020.

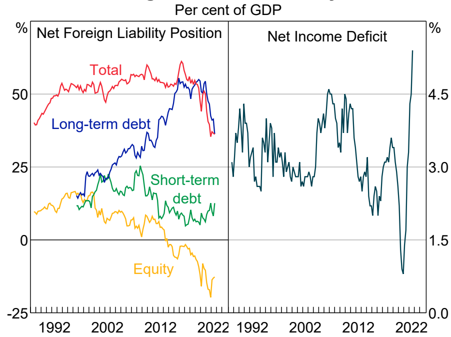
** Includes public corporations and private sector.

Sources: ABS; RBA

Graph 3.38

Net Foreign Position and Payments

Per cent of GDP



Sources: ABS; RBA

Endnotes

[1] See RBA (2019), 'Box D: The Distribution of Variable Housing Interest Rates', *Statement on Monetary Policy*, November. Available at <https://www.rba.gov.au/publications/smp/2019/nov/box-d-the-distribution-of-variable-housing-interest-rates.html>

[2] Data on housing loan payments are now available in Statistical Table E13.

[3] The weights for the Australian dollar TWI were updated in December 2022 based on the composition of Australia's merchandise goods and services trade for the 2021/22 financial year. For more information, see RBA (2022), 'Weights for the TWI', 20 December. Available at <https://www.rba.gov.au/statistics/frequency/weights-twi.html>

4. Inflation

Inflation remains high and broadly based but is likely to have peaked at the end of 2022. Goods price inflation remained high in the December quarter as non-labour cost pressures continued to be passed through to consumers. The easing in global goods price pressures is not yet evident in retail prices in Australia. Domestic services inflation picked up further in the quarter, reflecting higher input costs and strong demand conditions, while rent inflation increased further in response to tight rental market conditions. Measures of short-term inflation expectations have declined a little but remain high, consistent with the high inflation environment. Most measures of medium- and long-term inflation expectations remain anchored to the inflation target.

Labour cost growth was strong in the September quarter and has continued to pick up in recent months according to a range of timely indicators. The recent strengthening in wages outcomes reflects the tight labour market, as well as high inflation and the pass-through of the Fair Work Commission (FWC) decision in June on minimum and award wage rates. Broader measures of income picked up strongly as employers used bonuses and other non-wage payments to attract and retain staff. Aggregate wages growth is expected to pick up further in the period ahead.

Inflation remains high and broadly based

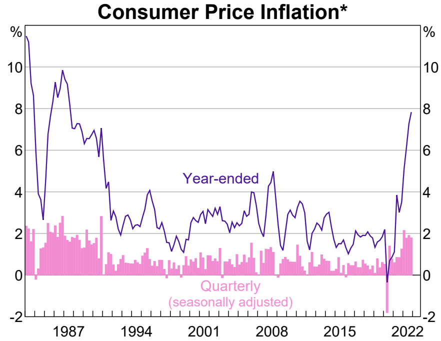
The Consumer Price Index (CPI) increased by 1.9 per cent in the December quarter and by 7.8 per cent over the year. This is the highest year-ended CPI inflation since 1990 (and since 1987 excluding interest charges) and is expected to be the peak in the current cycle (Graph 4.1; Table 4.1).

Inflation continues to be broadly based. A wide range of items have contributed to the strong inflation outcomes over the past year (Graph 4.2). Around three-quarters of prices in the CPI basket continued to grow faster than 3 per cent in annualised terms in the December quarter (Graph 4.3).

Measures of underlying inflation (which remove the effect of irregular or temporary price changes) were also high in the December quarter. Trimmed mean inflation was 1.7 per cent in the quarter and 6.9 per cent over the year – the highest annual rate since 1988 (Graph 4.4; Table 4.1).

Graph 4.1

Consumer Price Inflation*



* Excludes interest charges prior to the September quarter of 1998; adjusted for the tax changes of 1999–2000.

Sources: ABS; RBA

Table 4.1: Measures of Consumer Price Inflation

Per cent

	Quarterly(a)		Year-ended(b)	
	December quarter 2022	September quarter 2022	December quarter 2022	September quarter 2022
Consumer Price Index	1.9	1.8	7.8	7.3
Seasonally adjusted CPI	1.8	1.9	–	–
– Tradables	1.7	1.4	8.7	8.7
– Tradables (excl. volatile items)(c)	2.3	1.8	8.1	6.9
– Non-tradables	1.8	2.0	7.4	6.5
Selected underlying measures				
Trimmed mean	1.7	1.9	6.9	6.1
Weighted median	1.6	1.4	5.8	4.9
CPI excl. volatile items(c)	2.0	2.0	7.6	6.7

(a) Except for the headline CPI, quarterly changes are based on seasonally adjusted data; those not published by the ABS are calculated by the RBA using seasonal factors published by the ABS.

(b) Year-ended changes are based on non-seasonally adjusted data, except for the trimmed mean and weighted median.

(c) Volatile items are fruit, vegetables and automotive fuel.

Sources: ABS; RBA

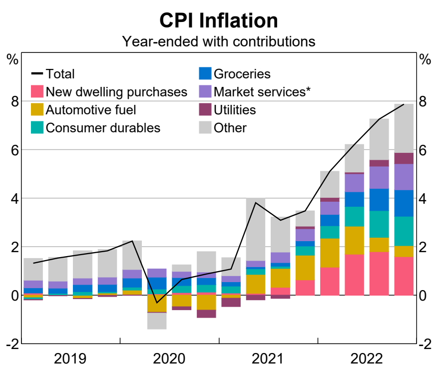
Fuel prices increased in the December quarter

Fuel prices increased by 2 per cent in the December quarter and by 13 per cent over the year (Graph 4.5). The end of the temporary reduction in the fuel excise was largely offset by lower global oil prices. Since the start of the year, fuel prices have been broadly similar to the average level observed in the December quarter.

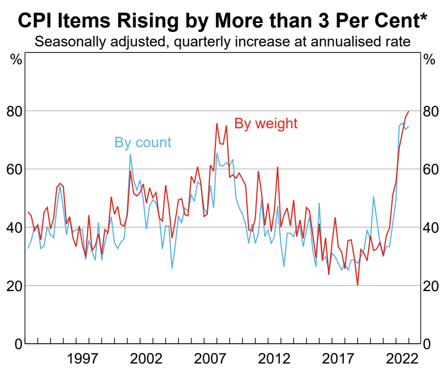
Pass-through of upstream cost pressures amid strong demand continued to drive strong goods price inflation

Upstream cost pressures amid strong demand continued to boost prices across a number of goods-related sectors in the December quarter. Some of these cost pressures, such as shipping rates and many commodity prices, eased

Graph 4.2



Graph 4.3



materially in the second half of 2022, but for most goods it will take time before this affects prices paid by Australian consumers; this is in contrast with a number of other advanced economies where core goods inflation is declining.

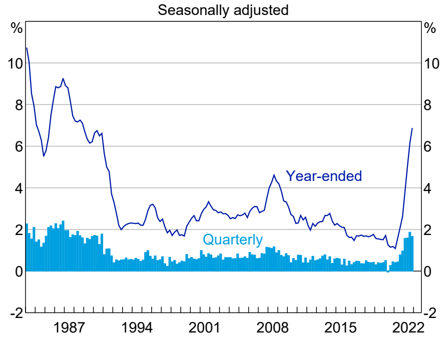
New dwelling cost inflation eased to 1.7 per cent in the quarter, well below the quarterly outcomes of above 5 per cent seen in the first half of 2022; prices were about 18 per cent higher over the year to end 2022. The easing in new dwelling inflation reflects improvements in the supply of building materials and weaker demand following the rise in interest rates. Prices for building materials increased by 2 per cent in the December quarter and 14 per cent over the year, which is slower than the pace of increases seen in previous quarters (Graph 4.6).

Consumer durables inflation picked up strongly in the quarter to be 7 per cent higher over the year, reflecting the continued pass-through of upstream cost pressures (Graph 4.7). Price increases were broadly based across consumer durables categories but were particularly strong for clothing and footwear (despite being partially offset by promotional activity during the Black Friday and Cyber Monday sales period in November) and motor vehicles (driven by price rises for luxury vehicles). Prices increased only marginally for audio, visual and computing equipment in the quarter (Graph 4.8).

Graph 4.4

Trimmed Mean Inflation*

Seasonally adjusted

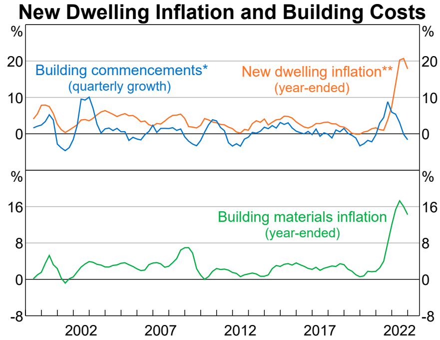


* Excludes interest charges prior to the September quarter of 1998 and deposit & loan facilities; adjusted for the tax changes of 1999–2000.

Sources: ABS; RBA

Graph 4.6

New Dwelling Inflation and Building Costs



* Six-quarter average lagged by one quarter.

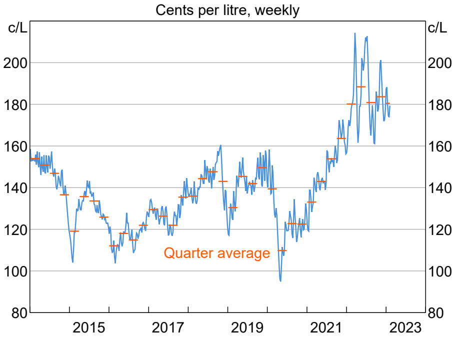
** Adjusted for the tax changes of 1999–2000.

Sources: ABS; RBA

Graph 4.5

Unleaded Petrol Prices

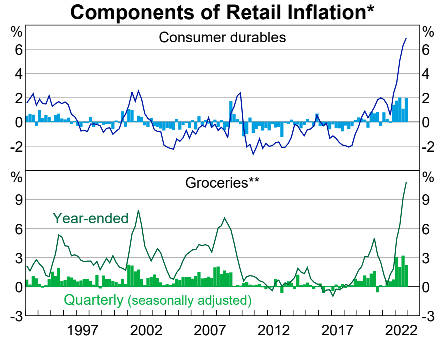
Cents per litre, weekly



Sources: Australian Institute of Petroleum; RBA

Graph 4.7

Components of Retail Inflation*



* Adjusted for the tax changes of 1999–2000.

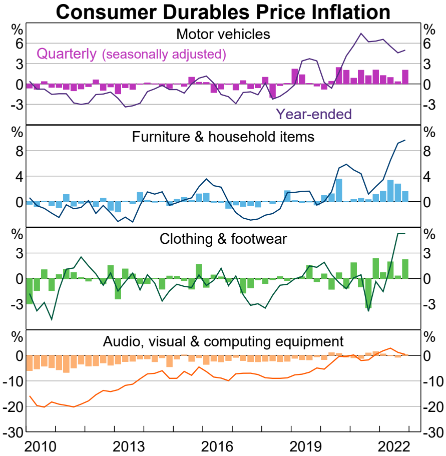
** Excludes fruit & vegetables.

Sources: ABS; RBA

Grocery prices (excluding fruit and vegetables) increased by 2.2 per cent in the December quarter as supermarkets continued passing through supplier cost increases; prices were around 11 per cent higher than the same time a year ago – the highest annual rate of growth since 1983. The prices of most food items increased strongly in the quarter, with the largest increases seen in dairy and related products due to higher wholesale costs (Graph 4.9). Liaison suggests that grocery prices are likely to increase further in the near term, though at a more moderate pace than in recent quarters.

Graph 4.8

Consumer Durables Price Inflation

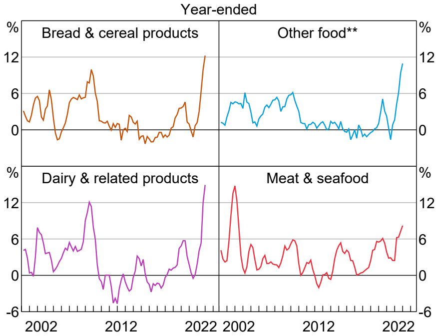


Sources: ABS; RBA

Graph 4.9

Food Price Inflation*

Year-ended



* Adjusted for the tax changes of 1999–2000.

** Includes products such as eggs, jams, oils, snacks, etc.

Sources: ABS; RBA

The prices of fruit and vegetables declined by 6 per cent in the December quarter in seasonally adjusted terms but remained 8½ per cent higher over the year. The decline in the quarter primarily reflects an easing of the effects of unfavourable weather conditions experienced earlier in 2022. The flooding in parts of Victoria and New South Wales in late 2022 had a smaller impact on fresh produce supply conditions than was expected a few months ago.

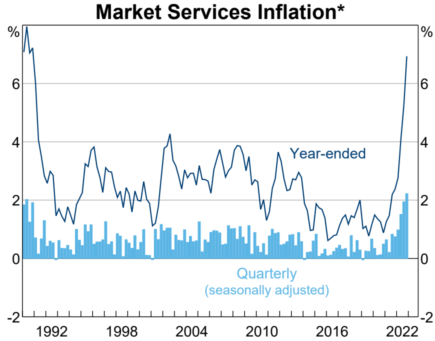
Services inflation picked up further

Cost pressures and strong demand have contributed to large price increases for many services in recent quarters. Market services inflation, which covers a little over one-fifth of the CPI basket, was above 2 per cent in the quarter and 7 per cent over the year – the strongest outcomes since 1990 (Graph 4.10). The prices of these services are generally among the most sensitive to domestic labour costs, although increases in non-labour costs such as materials and transport have been an important factor driving higher prices in recent quarters, in particular for cafes and restaurants.

Prices for domestic and international holiday travel and accommodation increased by 27 per cent in the month of December – a sharp increase that reflected very strong demand for travel over the summer holidays. Airfares drove a

Graph 4.10

Market Services Inflation*



* Adjusted for the tax changes of 1999–2000.

Sources: ABS; RBA

large portion of the increase, reflecting high fuel prices and reduced capacity, with accommodation prices also increasing substantially. Prices of meals out and takeaway increased by 2 per cent in the quarter as firms passed through increases in input costs, including the effect of minimum and award wage increases (Graph 4.11). Prices for insurance and financial services also increased strongly in the December quarter and over the year.

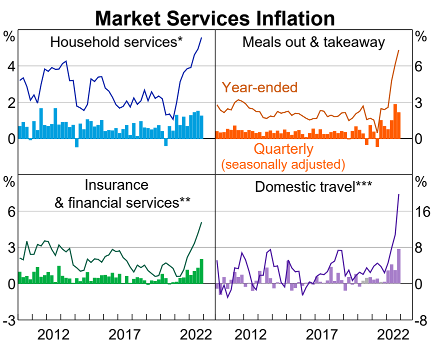
Rents increased by 1.2 per cent in the December quarter and by 4 per cent over the year, reflecting tight rental market conditions across the country. The regular indexation of rent subsidy payments provided some offset to a higher increase in underlying prices. In the absence of this offset, rents would have increased by 1.5 per cent – a little stronger than the previous quarterly outcome. In monthly terms, rent inflation was fairly stable in the second half of 2022. Rents were strong across all cities, with increases in Sydney and Brisbane particularly large in the December quarter (Graph 4.12). Strong current rental market conditions across the country, as reflected in high advertised rents and historically low vacancy rates, are likely to contribute to a further pick-up in CPI rent growth in the year ahead.

Electricity prices rose strongly as state government rebates were unwound

Electricity prices increased by 7 per cent in the December quarter in seasonally adjusted terms due to the unwinding of rebates in Western Australia and the ACT, though rebates in Queensland and Tasmania continued to subtract from measured prices (Graph 4.13). Gas prices, which were not affected by government rebates, increased by about 2 per cent in the quarter to be more than 17 per cent higher over the year. Electricity and gas prices are expected to increase further in 2023, largely due to higher wholesale costs recorded over the past year; however, over this year and next, increases in wholesale costs are expected to be dampened by the Australian Government's Energy Price Relief Plan (see chapter on 'Economic Outlook').

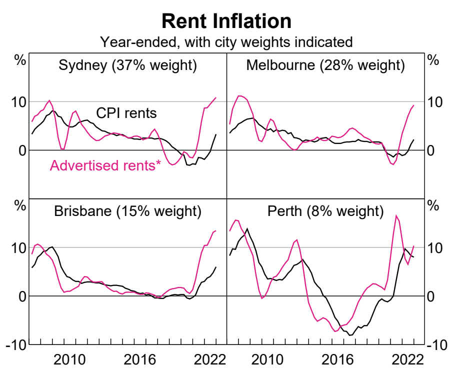
In the CPI basket, 'administered prices' are (at least partly) regulated or relate to goods and services for which the public sector is a significant provider – such as health, education and child care, as well as utilities. Inflation for administered prices (excluding utilities) remains around pre-pandemic trends, having increased by 4 per cent over the year to the December quarter. Child care prices increased by 4 per cent in the quarter in seasonally adjusted terms due to the pass-through of higher labour costs and reduced take up of the 'Before and After School

Graph 4.11



* Includes home cleaning, vehicle repairs, hairdressing, veterinary services, sports and leisure services.
** Excludes deposit & loans to June quarter of 2011.
*** Imputed using headline CPI in the June and September quarters of 2020 and September quarter of 2021.
Sources: ABS; RBA

Graph 4.12



* Hedonic three-month average.
Sources: ABS; CoreLogic; RBA

Care' vouchers in Sydney; however, prices remained lower over the year due to the effects of the increase in the subsidy rate introduced in early 2022 for families with more than one child (Graph 4.14). Prices for medical and hospital services increased by 2.4 per cent in the quarter in seasonally adjusted terms, reflecting increased gap payments for GP consultations and a rise in private health insurance premiums; some funds delayed their usual premium increase from April to November in 2022.

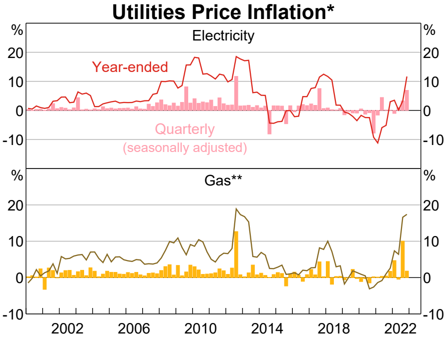
The monthly CPI indicator points to elevated inflationary pressures

The ABS released data for the month of December alongside the regular quarterly CPI release. The monthly CPI indicator also points to inflationary pressures remaining high and broadly based, with the year-ended rate of the monthly indicator for headline inflation (including or excluding volatile items) increasing to over 8 per cent in December (Graph 4.15). The monthly data were mixed over the quarter – inflation had moderated noticeably in October and November but was very strong in December. Movements in the monthly CPI indicator over October to December were driven by price increases across many CPI components, including market services, retail items, rents and utilities – as was the case for the quarterly CPI.

Short-term inflation expectations are high, but measures of longer term inflation expectations mostly remain consistent with the inflation target

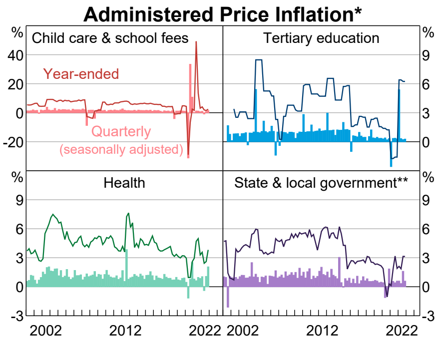
Measures of short-term inflation expectations have declined a little in recent months but remain at relatively high levels (Graph 4.16). This is consistent with the higher cost of living that households are experiencing and general reports in the media of high inflation. The available evidence suggests that longer term inflation expectations remain anchored to the inflation target at this stage, although financial market measures have increased a little in recent

Graph 4.13



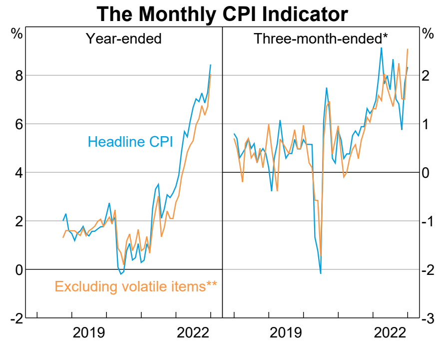
* Adjusted for the tax changes of 1999–2000.
** Includes other household fuels.
Sources: ABS; RBA

Graph 4.14



* Adjusted for the tax changes of 1999–2000.
** Includes urban transport fares, property rates & charges and other services in respect of motor vehicles.
Sources: ABS; RBA

Graph 4.15



* Headline CPI is seasonally adjusted.
** Volatile items are automotive fuel and fruit & vegetables.
Sources: ABS; RBA

months (Graph 4.17). Long-term expectations of union officials remain around 3½ per cent – the highest level since 2009.

Inflation expectations can influence firms' and households' wage negotiations and price-setting behaviour. Firms across a broad range of industries report that higher headline inflation outcomes are contributing to higher wage expectations, though most firms citing inflation as a factor generally expect wages growth in the year ahead to be less than current headline inflation rates. This is in part because some of the recent strength in inflation is seen as temporary. Over recent months, firms in a number of industries, particularly market services, have reported that higher labour costs are contributing to price increases; for some of these firms, labour is the most significant component of their costs.

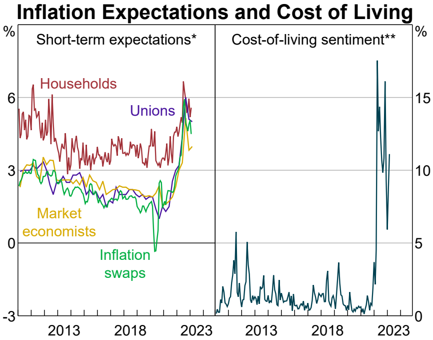
Wages growth was strong in the September quarter …

The Wage Price Index (WPI) grew by 1 per cent in the September quarter and 3.1 per cent in year-ended terms (Graph 4.18). This was the highest rate of year-ended wages growth since 2013, reflecting tightness in the labour market, high inflation outcomes and the implementation of the FWC's award and minimum wage increases. Wages growth was strongest in the private sector, which picked up to 1.2 per cent in the quarter and 3.4 per cent over the year; the quarterly outcome was one of the strongest in the history of the series. By contrast, public sector wage growth continued to weigh on aggregate outcomes, increasing by 2.4 per cent over the year.

Broader measures of labour income were also strong in the September quarter. Growth in measures of wages that include bonuses increased at a faster pace than base wages, consistent with reports that employers have been using bonuses to attract or retain staff amid the tight labour market and to compensate for cost-of-living pressures. Compensation of employees (COE) – the broadest measure of economy-wide labour costs, which also includes headcount and hours worked – rose by 10 per cent over the year, its fastest pace in over a decade (Graph 4.19). Average earnings per hour grew strongly but continued to be affected by volatility in average hours worked; sick leave was higher and more variable than usual in 2022, reflecting the waves of COVID-19 cases that occurred during the year. Consistent with the signal from the WPI, growth in private sector COE was much stronger than public sector COE.

Graph 4.16

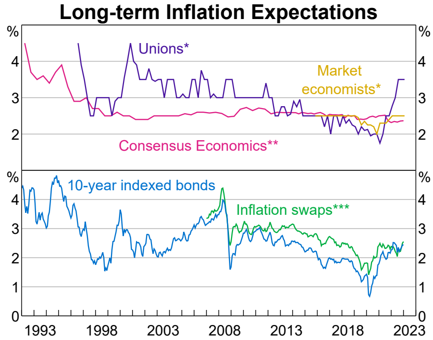
Inflation Expectations and Cost of Living



* Over the next year.
** Percentage of financial news articles mentioning 'cost of living'.
Sources: Australian Council of Trade Unions; Bloomberg; Dow Jones Factiva; Melbourne Institute of Applied Economic and Social Research; RBA; Workplace Research Centre

Graph 4.17

Long-term Inflation Expectations



* Average over the next 5–10 years.
** Average over 6–10 years in the future.
*** 5-years to 10-years forward.
Sources: Australian Council of Trade Unions; Bloomberg; Consensus Economics; RBA; Workplace Research Centre; Yieldbroker

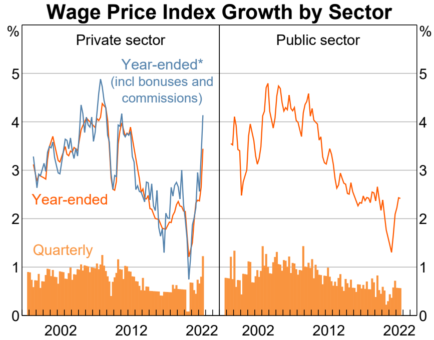
In the private sector, wage increases were more common than usual and the average size of increases was also larger than it has been in over a decade (Graph 4.20). Nearly 40 per cent of jobs (by expenditure weight) recorded a wage change in the quarter; this was above previous September quarters, which typically have a larger share of jobs receiving wage increases than other quarters due to the timing of end-of-financial year salary reviews. The average size of wage increases for those jobs that experienced a wage change picked up to 4.2 per cent.

Increases to award and minimum wages announced by the FWC in June mostly took effect in the September quarter, with the majority of award jobs receiving a 4.6 per cent increase. This supported growth in wages across all pay-setting methods to varying degrees (Graph 4.21); this is consistent with estimates that around one-third of jobs are directly or indirectly linked to awards. As a result, the share of jobs receiving wage increases above 4 per cent picked up significantly across all methods of setting pay (Graph 4.22). The tight labour market also supported wages growth for individual arrangements. Wages growth in private enterprise bargaining agreements (EBAs) picked up in the quarter, while growth in public EBAs was broadly in line with previous September quarters.

Wages growth increased in most industries over the year, supported by the tight labour market

Graph 4.18

Wage Price Index Growth by Sector

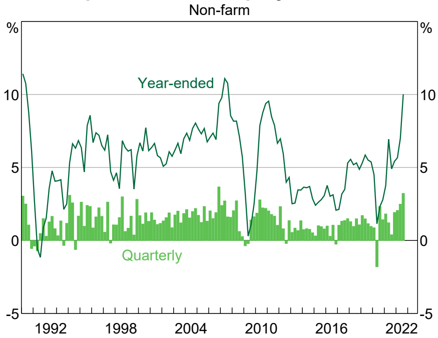


* Non-seasonally adjusted.
Source: ABS

Graph 4.19

Compensation of Employees Growth

Non-farm

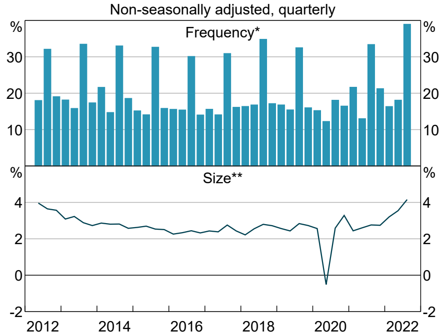


Source: ABS

Graph 4.20

Wage Changes in the Private Sector

Non-seasonally adjusted, quarterly

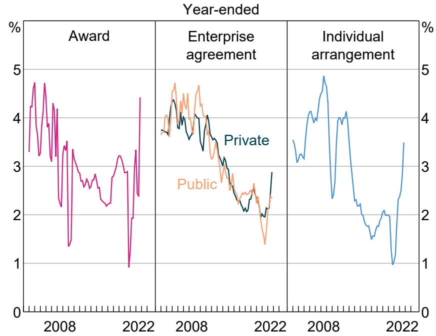


* Share of jobs that experienced a wage change in the quarter.
** Average percentage wage change, conditional on a wage change having occurred in the quarter.
Sources: ABS; RBA

Graph 4.21

Wages Growth by Pay-setting Method*

Year-ended



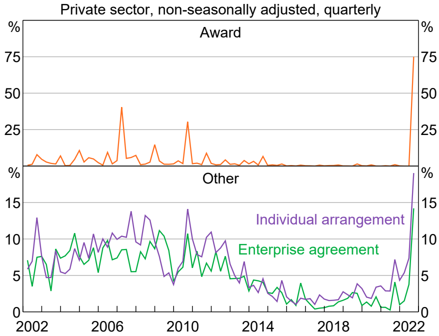
* Excludes bonuses and commissions.
Sources: ABS; RBA

(Graph 4.23). Wages growth was strongest in the retail trade industry, which had two award wage increases in the year; this outcome reflects the high share of jobs in that industry that are either on awards or that are covered by enterprise agreements or individual arrangements linked to the award wage increase. Lower skill jobs experienced stronger wages growth in the September quarter than higher skill jobs, consistent with the prevalence of award wage reliance in these jobs (Graph 4.24).

Graph 4.22

Wage Changes Above 4 Per Cent*

Private sector, non-seasonally adjusted, quarterly



* As a share of all jobs by method of setting pay.

Sources: ABS; RBA

… and is expected to pick up further over coming quarters

Timely indicators of wages growth suggest that wages increased further in the December quarter (Graph 4.25). Firms in the liaison program continue to report that the increase in wages growth was driven by strong demand, the need to attract and retain staff, and higher inflation outcomes (see 'Box B: Insights from Liaison'). Wages growth in enterprise agreements remains moderate; average annual wage increases in newly lodged agreements were 3.1 per cent in the December quarter, slightly higher than the September quarter at 2.9 per cent (Graph 4.26).

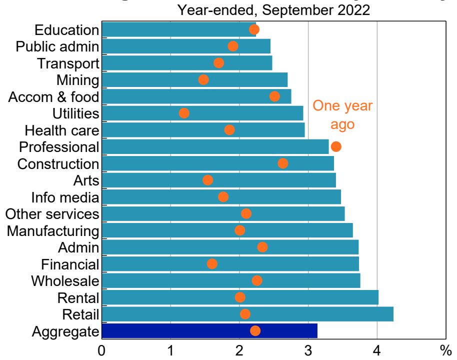
Wages growth is expected to pick up further in the period ahead. Market economists and unions expect wages growth to be 3½ to 4 per cent over the next year (Graph 4.27). Firms surveyed in the liaison program expect wages growth to stabilise around 4 per cent in coming quarters.

Changes to the wages policies of several state governments should also flow through to wages growth over the coming period. New enterprise agreements were recently approved for nurses, teachers and police officers in Queensland, with pay rises of 4 per cent in both 2022 and 2023 and 3 per cent in 2024. The Western

Graph 4.23

Wage Price Index Growth by Industry*

Year-ended, September 2022



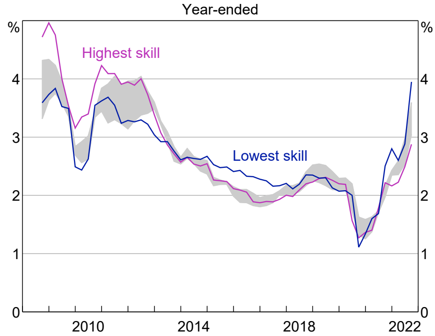
* Non-seasonally adjusted; excluding bonuses and commissions.

Source: ABS

Graph 4.24

Wages Growth by Skill Level*

Year-ended



* The 'highest' and 'lowest' skill categories are ABS occupational skill levels 1 and 5 respectively; grey range denotes wages growth for skill levels 2–4.

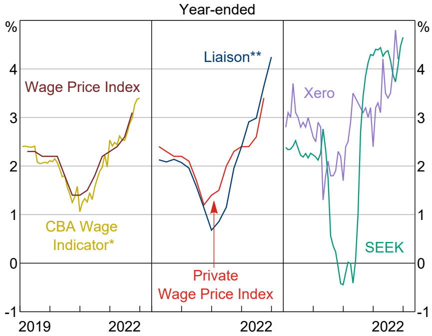
Sources: ABS; RBA

Australian Government reached agreement with several employee groups on its proposed wage increases of between 3 and 6 per cent each year for the next two years. The Tasmanian Government increased its public sector wages offer to 3.5 per cent in the first year and 3 per cent in the next two years, which has been accepted by a number of groups.

Graph 4.25

Timely Measures of Wages Growth

Year-ended



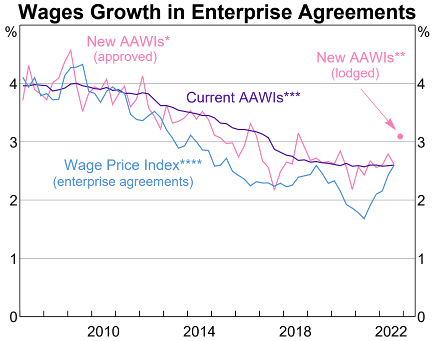
* Changes in base wages based on a sample of CBA retail banking transactions.

** Private sector; trimmed mean; rescaled to have the same mean as the private Wage Price Index.

Sources: ABS; CBA; RBA; SEEK; Xero Small Business Insights

Graph 4.26

Wages Growth in Enterprise Agreements



* Quantifiable average annualised wage increases (AAWIs) in new FWC-approved and federally-registered enterprise agreements.

** AAWIs in enterprise agreements submitted but not yet approved.

*** AAWIs in the total stock of nominally current, FWC-approved and federally-registered enterprise agreements.

**** Year-ended growth; excludes bonuses and commissions.

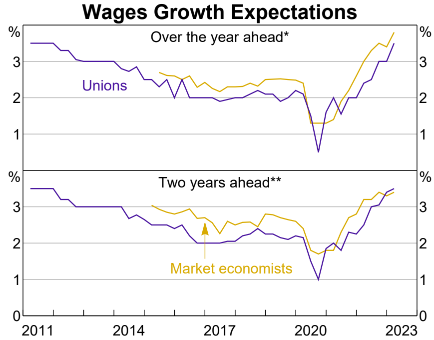
Sources: ABS; Department of Employment and Workplace Relations; FWC; RBA

Real incomes continued to decline in the September quarter

Real (inflation-adjusted) labour incomes continued to decline in the September quarter, as consumer prices rose more quickly than labour income over the year. The rise in inflation has been broadly based across the income distribution and household types (Graph 4.28). While a rising cost of living puts pressures on household budgets across the economy, lower income households typically have the most constrained budgets as they spend a greater proportion on essential items and have lower financial buffers. Some of these households will have had their real income supported by the tight labour market, the FWC award wage decision and the indexation of social security payments to inflation (Graph 4.29).

Graph 4.27

Wages Growth Expectations



* The current calendar year for union expectations.

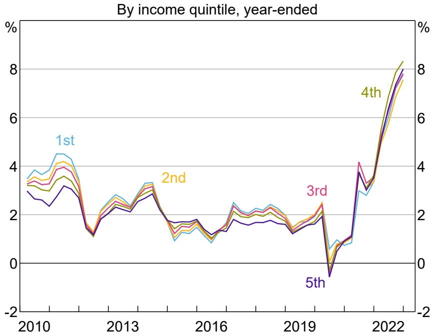
** The next calendar year for union expectations.

Sources: Australian Council of Trade Unions; RBA; Workplace Research Centre

Graph 4.28

Consumer Price Inflation*

By income quintile, year-ended



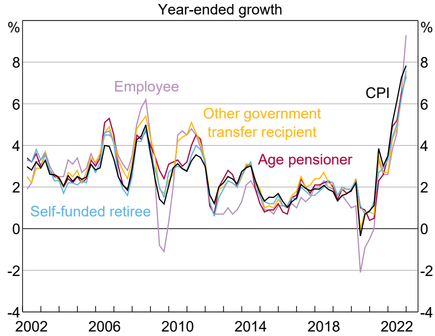
* Measures of inflation based on upper-level differences in consumption patterns by income quintile; estimated with the 2015/16 Household Expenditure Survey.

Sources: ABS; RBA

Graph 4.29

Selected Living Cost Indexes by Household Type*

Year-ended growth



* The living cost indexes include mortgage interest payments (which are not included in the CPI) but exclude the construction costs of new dwellings (which are included in the CPI); other financial and insurance items also differ between the indexes.

Source: ABS

Box C

Supply and Demand Drivers of Inflation in Australia

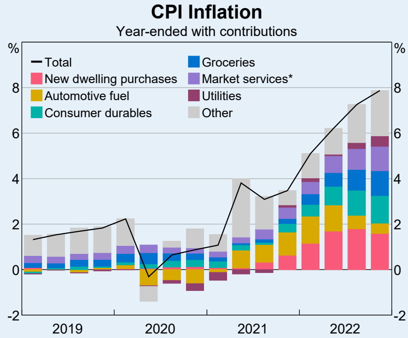
Inflation has increased substantially over the past year. Because monetary policy primarily affects the economy by influencing demand, it is important to understand how much of the increase in inflation reflects supply-side factors versus demand-side factors, in order to determine how policy should respond. A central bank may 'look through' the price effects of a supply shock if it is expected to be short lived and inflation expectations remain anchored. Similar to the experience of other advanced economies, model-based estimates suggest that supply-side factors have been the biggest driver of the increase in inflation in Australia over the past year. These supply-side factors have been persistent, leading to an extended period of inflation being above the inflation target and concerns that inflation expectations could become de-anchored. Shifts in demand have also played an important role in the recent inflationary episode.

Supply shocks have accounted for at least half of the increase in inflation …

High inflation outcomes in Australia reflect a range of developments, including: supply issues related to the war in Ukraine; other global supply disruptions resulting from the COVID-19 pandemic; and domestic supply disruptions from poor weather. Strong domestic and global demand has also played a role, reflecting the rapid economic recovery following the significant fiscal and monetary policy responses to the pandemic and the faster-than-expected development of effective vaccines. As a result, the increase in inflation has been broadly based across many goods and services in the CPI (Graph C.1).

Economic models can be used to estimate how much supply-side and demand-side factors have added to inflation, although the results can depend on the model used. One approach, following Shapiro,[1] is to attribute changes in prices to shifts in demand if quantities move in the same direction in that period, and to shifts in supply if quantities move in the opposite direction (price changes are defined as 'ambiguous' if the change in price or quantity is relatively small). This assumes that all of the price change for a particular class of expenditure stems from a shift in demand or a shift in supply, but not both at the same time. Mindful of this limitation, this model suggests that supply-side factors have been responsible for around half of the increase in inflation in other advanced economies. The results for Australia are similar, with supply-side factors

Graph C.1



* Excludes domestic travel and telecommunications.
Sources: ABS; RBA

accounting for around half of the increase in inflation over the year to September 2022 (Graph C.2).[2]

Alternative model approaches also suggest that supply-side factors have contributed significantly to the increase in inflation in Australia and other advanced economies.[3] A structural model of the Australian economy – which allows for a more flexible attribution of shocks and better accounts for relationships between sectors and the role of past shocks – suggests that supply shocks account for around three-quarters of the pick-up in inflation (Graph C.3).[4] Supply shocks in the tradables sectors (both imports and domestically produced tradables) and the housing sector account for a large share of the pick-up in inflation to date.

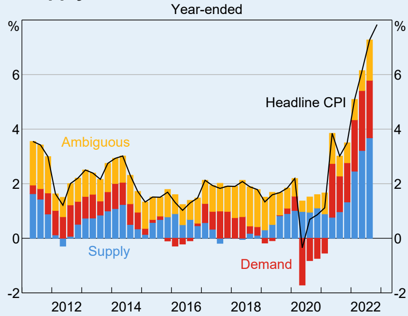
… and demand has also played an important role

While supply-side factors have been a significant driver of high inflation outcomes over the past year, the results above show that demand-side factors have also been important. Following the strong recovery from the pandemic – aided by substantial policy support and the development of effective vaccines for COVID-19 – demand for many goods and services exceeded supply capacity, resulting in large increases in prices. ✠

Graph C.2

Supply and Demand Drivers of Inflation*

Year-ended



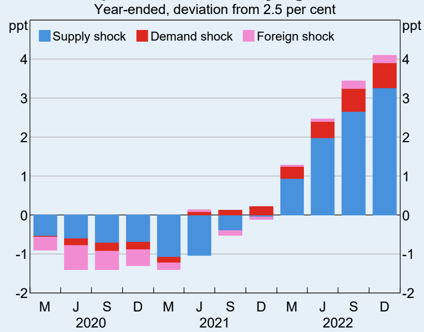
* Based on the methodology of Shapiro (2022); 'ambiguous' indicates the contribution from components where the change in prices or quantities is within 25 per cent of the expected change and the contribution from unmodelled components due to data limitations; this analysis uses data from the Australian National Accounts release (data for the December quarter of 2022 will be published in early March).

Sources: ABS; RBA

Graph C.3

Decomposition of Underlying Inflation*

Year-ended, deviation from 2.5 per cent



* Demand includes monetary policy, investment and consumption shocks; foreign includes foreign demand and cost shocks; supply includes mark-up, technology and labour supply shocks; supply will capture some overseas cost shocks.

Sources: ABS; RBA

Endnotes

[1] See Shapiro A (2022), 'How Much Do Supply and Demand Drive Inflation?', FRBSF Economic Letter, Federal Reserve Bank of San Francisco, 21 June. See also Gonçalves E and G Koester (2022), 'The Role of Demand and Supply in Underlying Inflation – Decomposing HICPX Inflation into Components', ECB *Economic Bulletin*, July; Chen Y and T Tombe (2022), 'The Rise (and Fall?) of Inflation in Canada: A Detailed Analysis of its Post-Pandemic Experience', SSRN Scholarly Paper No 4215492, September.

[2] This analysis uses data from the Australian National Accounts: National Income, Expenditure and Product release. Data for the December quarter of 2022 will be published in early March.

[3] See Del Negro M, A Gleich, S Goyal, A Johnson and A Tambalotti (2022), 'Drivers of Inflation: The

New York Fed DSGE Model's Perspective', *Liberty Street Economics*, Federal Reserve Bank of New York, 1 March; di Giovanni J, S Kalemli-Özcan, A Silva and M Yildirim (2022), 'Global Supply Chain Pressures, International Trade, and Inflation', ECB Forum on Central Banking, Sintra, 27–29 June; Eickmeier S and B Hofmann (2022), 'What Drives Inflation? Disentangling Demand and Supply Factors', BIS Working Paper No 1047.

[4] The model used for this analysis is outlined in Gibbs C, J Hambur and G Nodari (2018), 'DSGE Reno: Adding a Housing Block to a Small Open Economy Model', RBA Research Discussion Paper No 2018-04. Available at <https://www.rba.gov.au/publications/rdp/2018/2018-04.html>

5. Economic Outlook

Global growth is forecast to remain well below its historical average over the next two years. Real incomes have declined as the cost of living has escalated, in part due to Europe's energy crisis. The highly synchronised global monetary policy tightening is also expected to weigh on demand. While the central forecast for growth in Australia's major trading partners is unchanged, the balance of risks has improved (with plausible scenarios for higher or lower inflation and growth over the next few years). In particular, the Chinese authorities' decision in December to lift most COVID-19 restrictions sooner than had been expected, inflation showing clearer signs of peaking and lower global gas prices have reduced some of the downside risks to the global outlook (see chapter on 'The International Environment').

Economic growth in Australia is forecast to slow this year as rising interest rates, the higher cost of living and declining real wealth weigh on growth. The outlook for GDP growth is little changed from three months ago (Table 5.1). While the incoming data on domestic demand for the second half of 2022 was a little weaker than expected, the overall implications for the growth outlook have been broadly offset by stronger population growth, which is being driven by higher net overseas arrivals. GDP growth is expected to have been 2¾ per cent over 2022 and to be 1½ per cent over both 2023 and 2024. Domestic activity is forecast to pick up a little from late 2024 onwards as the drag on growth from the earlier monetary policy tightening starts to wane and inflation moderates. The labour market is very tight; the recent pick-up in net arrivals following the reopening of the international border has supported robust growth in employment and is helping to alleviate shortages in some areas. The unemployment rate is forecast to remain around 3½ per cent until mid-2023, before rising as growth in output slows.

Headline consumer price inflation was 7.8 per cent over 2022. Inflation is forecast to decline to around the top of the 2–3 per cent target band over coming years. The easing in global price pressures already underway is expected to flow through to domestic prices over time. In addition, slower growth in domestic demand and a moderation in labour market conditions are expected to reduce domestic inflationary pressures. Inflation could turn out to be higher than expected if the high inflation environment leads to greater feedback between wages and prices than has been typical in the inflation targeting era. On the other hand, inflation could be lower than expected if the easing in goods inflation is faster or more widespread than anticipated.

A key source of uncertainty for the domestic activity outlook relates to the competing forces affecting household spending. Aggregate household incomes have been sustained by strong labour demand, which has supported employment and hours worked and has led to stronger wages growth. Household balance sheets – in aggregate – are in good shape, underpinned by a high level of savings in recent years, although some households (especially those with limited spare income, high debt and low savings) are finding it hard to adjust to higher interest rates and higher inflation. High inflation and rising interest rates are also weighing on aggregate household disposable income and spending in real terms. Household consumption will also be dampened by wealth effects due to the decline in housing prices.

The forecasts are based on some technical assumptions. The path for the cash rate reflects expectations derived from surveys of professional economists and financial market pricing, with an assumed peak in the cash rate of around 3¾ per cent in the second half of 2023 before declining to around 3 per cent by mid-2025. The exchange rate is assumed to be unchanged at its current level, which has appreciated a little over the past three months. Petrol prices are assumed to be broadly unchanged around their recent level. Population growth projections have been revised higher following a stronger-than-expected pick-up in net overseas arrivals; annual population growth over coming years is assumed to be around 1½ per cent, broadly in line with its pre-pandemic average.

Inflation in Australia is expected to have peaked

Consumer price inflation in Australia remains high and broadly based. Global factors – including pandemic-related disruptions to supply chains and Russia's invasion of Ukraine – have accounted for much of the increase in inflation over the past year. That said, strong domestic demand, a tight labour market, flood-related disruptions and capacity constraints in some sectors have also contributed to the upward pressure on prices. Headline consumer price inflation was 7.8 per cent over 2022; this is expected to be the peak in the current cycle (Graph 5.1).

Energy prices are expected to add significantly to inflationary pressures over coming years. Retail prices for electricity and gas have increased by 10–15 per cent since mid-2022, with most of the effects of the increase in electricity prices on the CPI occurring in the December quarter because of the timing of state government subsidies. Recent announcements from major energy retailers suggest that gas price increases in early 2023 will be larger than expected a few months ago. Later in the forecast period, energy price increases are likely to be smaller than previously assumed, reflecting the expected impact of the Australian Government's Energy Price Relief Plan.

Goods price inflation is forecast to moderate in the period ahead, consistent with (but a little later than) the experience overseas. Information from liaison and business surveys indicates that upstream cost pressures are easing, reflecting the ongoing resolution of the global imbalance between supply and demand for goods and lower commodity prices. Inflation has eased materially for new dwellings and this is expected to broaden to other goods over time. Grocery price inflation remains high, but information from liaison indicates that firms expect the pace of price increases to moderate over the coming year.

Services inflation is forecast to remain high. Domestic labour cost growth is expected to pick up strongly over the coming year and remain high over the forecast period, adding to cost pressures for labour-intensive market services. Rental price inflation has picked up and is expected to increase further over coming quarters as the impact of low vacancy rates on higher advertised rents over the past year or so works its way through the stock of outstanding rental agreements.

The near-term outlook for underlying inflation has been revised higher as a result of the stronger-than-expected December quarter underlying inflation outcome and an upward revision to labour costs (discussed below) (Graph 5.2). Later in the forecast period, the outlook for underlying inflation has been revised

Table 5.1: Output Growth and Inflation Forecasts[(a)]

Per cent

	Year-ended					
	Dec 2022	June 2023	Dec 2023	June 2024	Dec 2024	June 2025
GDP growth	2¾	2¼	1½	1½	1½	1¾
(previous)	(3)	(2)	(1½)	(1½)	(1½)	(n/a)
Unemployment rate(b)	3.5	3½	3¾	4	4¼	4½
(previous)	(3½)	(3½)	(3¾)	(4)	(4¼)	(n/a)
CPI inflation	7.8	6¾	4¾	3½	3¼	3
(previous)	(8)	(6¼)	(4¾)	(4¼)	(3¼)	(n/a)
Trimmed mean inflation	6.9	6¼	4¼	3¼	3	3
(previous)	(6½)	(5½)	(3¾)	(3½)	(3¼)	(n/a)
	Year-average					
	2022	**2022/23**	**2023**	**2023/24**	**2024**	**2024/25**
GDP growth	3¾	3½	2¼	1½	1½	1¾
(previous)	(4)	(3½)	(2)	(1½)	(1½)	(n/a)

(a) Forecasts finalised 8 February. The forecasts are conditioned on a path for the cash rate broadly in line with expectations derived from surveys of professional economists and financial market pricing. Other forecast assumptions (assumptions as of November *Statement* in parenthesis): TWI at 62 (62); A$ at US$0.69 (US$0.64); Brent crude oil price at US$82bbl (US$89bbl). The rate of population growth is assumed to be in line with its pre-pandemic average. Forecasts are rounded to the nearest quarter point. Shading indicates historical data, shown to the first decimal point.

(b) Average rate in the quarter.

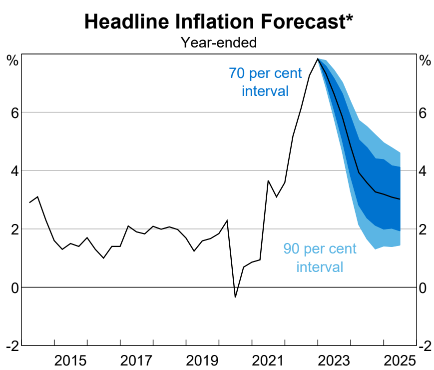
Sources: ABS; RBA

down slightly, reflecting downward revisions to energy price increases in 2023/24.

Underlying inflation is forecast to decline significantly over coming years to be around the top of the inflation target range by mid-2025.

There is a high degree of uncertainty around the speed and extent of downward pressure on inflation from goods prices (which could come through sooner and swifter than expected) and domestic price pressures (which may be

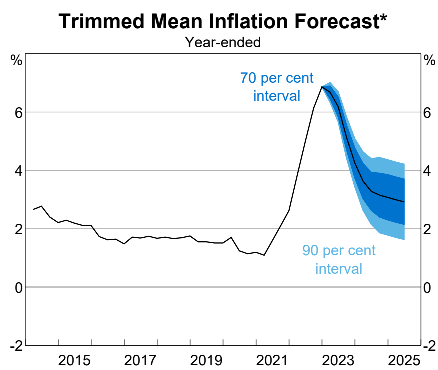
Graph 5.1



* Confidence intervals reflect RBA forecast errors since 1993.

Sources: ABS; RBA

Graph 5.2



* Confidence intervals reflect RBA forecast errors since 1993.

Sources: ABS; RBA

stronger than anticipated); these risks are discussed further below in the section on 'Key domestic uncertainties'.

Economic growth is expected to slow this year

GDP growth is expected to have slowed during 2022 to be around 2¾ per cent over the year – a little slower than expected three months ago – as the initial bounce-back from pandemic-related restrictions has mostly run its course (Graph 5.3). Economic growth is forecast to slow further this year, with recent declines in household real wealth and real disposable income expected to weigh on consumption growth over 2023. Export volumes are forecast to grow strongly, driven by the ongoing rebound in tourism and education-related travel, including from the resumption of visitors from China following the removal of the requirement to quarantine on return. GDP growth is forecast to slow to 1½ per cent over 2023, and to remain around that rate before picking up slightly towards the end of the forecast period in mid-2025.

Consumption growth is expected to slow due to rising prices and higher interest rates

Consumption growth is expected to slow over 2023 (Graph 5.4). While strong labour market outcomes and population growth are forecast to continue to support aggregate household income over this period, higher consumer prices and net interest expenses will weigh on spending. Lower household net wealth, driven by lower housing prices, is also expected to weigh on consumption. Further out, consumption growth is forecast to increase gradually towards its pre-pandemic average owing to the waning effects of earlier interest rate rises, the recovery of household wealth and tax cuts supporting disposable incomes.

The household saving ratio is forecast to continue to decline over the next year, before increasing to around its pre-pandemic average.

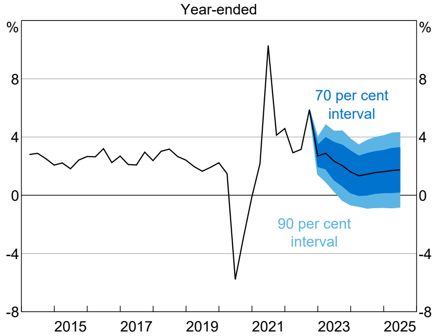
The outlook for business investment remains positive

The outlook for investment remains positive. A large pipeline of projects is expected to support activity over 2023. While the recent flow of data and information from liaison indicates that materials shortages and related supply chain issues have eased a little, labour shortages remain a constraint on activity and are limiting

Graph 5.3

GDP Growth Forecast*

Year-ended



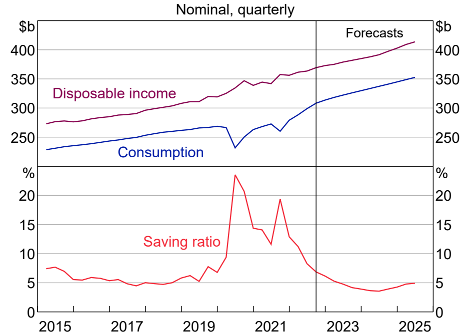
* Confidence intervals reflect RBA forecast errors since 1993.

Sources: ABS; RBA

Graph 5.4

Household Consumption and Income

Nominal, quarterly



Sources: ABS; RBA

the pace at which the pipeline of work can be worked through.

New dwelling investment is forecast to decline once the backlog of dwelling construction is worked through, consistent with the weak demand for new detached dwellings observed in the December quarter. Information from liaison with developers suggests that investor demand for higher density dwelling investment has also decreased, even though unit rental yields have risen since the start of 2022. Stronger immigration is forecast to boost rental demand in the medium term, but this is expected to be partially mitigated by an increase in average household size from current low levels. Higher density housing supply is expected to respond to these pressures with a lag due to the long planning and construction lead times; after gaining planning approvals and pre-sales to commence a project, the average apartment building takes more than two years to build.

Non-mining machinery and equipment investment is expected to increase over the forecast period, aided in the near term by the easing of supply chain pressures. Information from the ABS Capital Expenditure Survey suggests that firms' nominal investment intentions remain at or above average levels, though this partly reflects the higher cost of undertaking a given volume of investment.

Mining investment is forecast to be broadly unchanged over coming years. While expansionary iron ore and LNG projects are expected to go ahead over 2023, the vast majority of mining investment is intended to replace ageing structures and equipment.

Public demand is forecast to remain at a high level

A decline in pandemic-related spending is forecast to weigh on public consumption throughout most of 2023. Public investment is forecast to grow over coming years. The existing pipeline of public engineering work is anticipated to support a high level of public capital expenditure for several years. The speed of the rollout will continue to be affected by capacity constraints in the construction sector, particularly in the near term.

The ongoing recovery in travel will support services exports and imports

Export volumes are forecast to grow strongly over the next year, driven by services exports, as travel recovers to be back around pre-pandemic norms by 2024. Travel services are expected to recover a little faster than previously forecast, following the removal of the requirement for travellers from China to quarantine upon their return.

Coal and iron ore exports increased in late 2022, based on partial indicators, and resource exports are expected to remain broadly flat over 2023. Resource exports are already close to capacity and so any effects from the brighter outlook for China will mostly come through prices. Additional iron ore production capacity is due for completion in 2024, which will support a modest increase in export volumes.

Rural export volumes increased strongly over 2022 and are expected to remain elevated in the near term. Following three successive La Niña events and above-average rainfall – which has supported record crop production – long-range climate forecasts suggest rainfall and growing conditions will return to neutral levels in the first half of 2023.

Import volumes are forecast to increase a little faster than domestic demand over the next year as Australians increase overseas travel.

The terms of trade are expected to increase in the March quarter due to higher bulk commodity prices after declining slightly in the December quarter of 2022 (Graph 5.5). The terms of trade are expected to remain at a historically high level, but decline over the remainder of the forecast period, as commodity export prices decline from elevated levels.

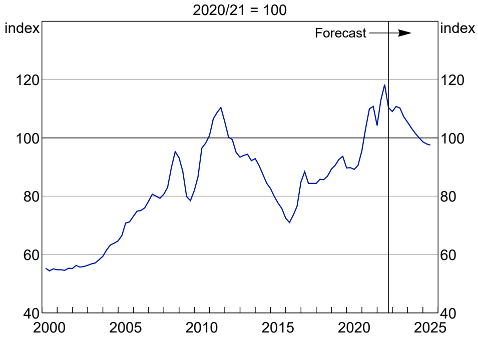
The unemployment rate is forecast to increase as economic growth slows

A broad range of measures suggest that the labour market is very tight. The unemployment rate is forecast to remain around 3½ per cent until mid-2023 (Graph 5.6); broader measures of labour underutilisation are also anticipated to remain around their lowest levels in decades as firms have increased the hours of workers in response to strong demand. With subdued economic growth expected through 2023 and 2024, the unemployment rate is forecast to gradually increase and reach 4½ per cent by mid-2025.

Graph 5.5

Terms of Trade

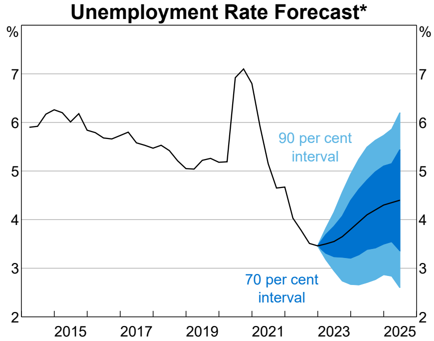
2020/21 = 100



Sources: ABS; RBA

Graph 5.6

Unemployment Rate Forecast*



* Confidence intervals reflect RBA forecast errors since 1993.

Sources: ABS; RBA

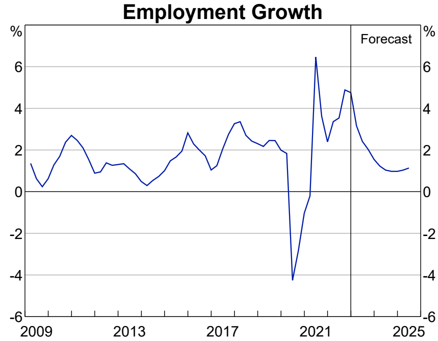
Demand for labour moderated over the second half of 2022 but remains strong. The pick-up in net arrivals since the reopening of the international border has supported employment growth. This should help to alleviate labour shortages in some industries over time, while also adding to aggregate demand in the economy. Growth in employment is forecast to ease over 2023 alongside slower growth in activity (Graph 5.7). Participation in the labour force is expected to be sustained around historically high levels over the next couple of years. Structural trends – such as higher female and older worker participation – are expected to be offset by the cyclical slowing in the labour market in the second half of the forecast period.

Wages growth is expected to pick up further

Aggregate wages growth picked up in late 2022 and is expected to strengthen further in the period ahead. Firms in the Bank's liaison program report this has largely been driven by strong labour demand in a tight labour market, elevated staff turnover, higher inflation outcomes and pass-through to wages from the Fair Work Commission's decision announced in June. Consistent with the multi-year duration of agreements, wages growth in public and private enterprise agreements is forecast to be below

Graph 5.7

Employment Growth



Sources: ABS; RBA

outcomes for other bargaining streams, and so weigh on near-term aggregate wages growth.

Growth in the Wage Price Index (WPI) – a measure of changes in base wage rates for a given quantity and quality of labour – is forecast to reach 4¼ per cent in late 2023 before declining to 3¾ per cent in mid-2025 (Graph 5.8). The near term outlook is higher than a few months ago, reflecting the stronger-than-expected September quarter WPI outcome and ongoing strength in timely indicators of wages growth. WPI growth is expected to ease in the second half of the forecast period as the unemployment rate rises and labour market capacity constraints become less binding. However, the expected easing in wages growth remains relatively modest, reflecting inertia in the wage-setting process, ongoing cost-of-living pressures and a still relatively tight labour market. The effect of high inflation and cost-of-living pressures on price- and wage-setting behaviour is a material risk to the outlook (see 'Key domestic uncertainties' below).

Broader measures of labour income growth are expected to increase at a faster rate than the WPI over the forecast period as employers use bonus payments to retain or attract staff, more hours are worked at overtime rates and job turnover rates remain high. These broader measures imply less of a decline in real incomes than suggested by the WPI measure (Graph 5.9).

Key domestic uncertainties

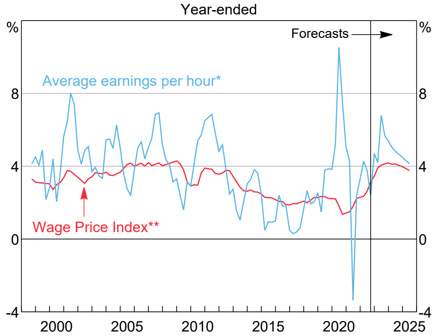
The outlook for household consumption is clouded by competing forces

Momentum in household consumption growth could be sustained for longer than expected. The effect of the recent falls in housing wealth on consumption may be cushioned by the substantial equity built by most homeowners as a result of the large run up in housing prices over the past few years. Also, many households built savings buffers during the pandemic. If households are more willing to spend from these liquid savings than from other forms of wealth, spending could be stronger than anticipated for a time. This would be reflected in a larger fall in the household savings ratio, as has occurred in the United States. Mortgage holders continued to add to savings buffers in offset and redraw facilities in the second half of 2022 despite higher interest rates, which could also suggest the recent growth in household spending could be sustained for longer than anticipated. Stronger-than-expected growth in domestic demand would see domestic inflationary pressures build further.

Graph 5.8

Wages and Earnings Growth

Year-ended



* Non-farm; includes social contributions.

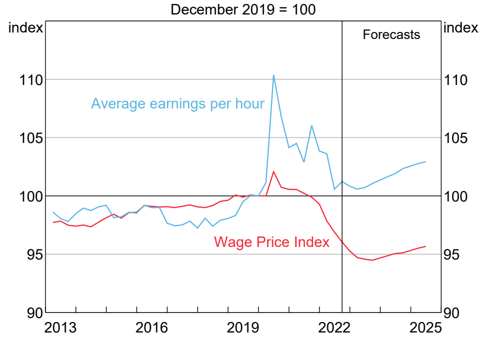
** Excluding bonuses and commissions.

Sources: ABS; RBA

Graph 5.9

Real Labour Income*

December 2019 = 100



* Deflated using the headline Consumer Price Index.

Sources: ABS; RBA

On the other hand, a significant further decline in real disposable incomes for the average household could weigh on consumption growth by more than expected, particularly in combination with declining household wealth. Higher prices are putting pressure on household budgets and could weigh on consumption by more than expected, particularly for low-income households that typically have lower savings buffers. Many households are well placed to absorb higher interest rate costs without significant spending cuts. However, interest rates have risen quickly and some households with low savings buffers and high debt relative to incomes will have to adjust their spending sharply. Consumption growth could also be weaker than anticipated in response to larger-than-expected falls in housing prices or other asset prices, or because of larger-than-expected spending responses to those declines.

A high-inflation environment could shift wage- and price-setting behaviour and raise inflation expectations

Inflation in Australia and internationally is high and expected to continue weighing on real incomes. The composition of inflation in Australia is also expected to shift, with higher inflation expected in more persistent and non-discretionary items, such as rents, in coming years. Information from liaison indicates that higher inflation outcomes are a factor in current wage negotiations; this is likely to contribute to a pick-up in wages growth in the period ahead.

Beyond this expected response, inflationary pressures can change how businesses and households behave. People tend to pay closer attention to changes in costs and prices in a high-inflation environment, which can increase the pass-through of inflation to wages and vice versa. A tight labour market and resilient demand conditions would support this feedback. The forecast for wages growth seeks to centralise some of this risk to the wages outlook, but it is possible that feedback could be even stronger than expected. Stronger feedback between wages and prices would result in persistently higher inflation throughout the forecast period, which could lead to inflation expectations becoming de-anchored.

Goods prices could decline significantly and weigh on inflation outcomes

The inflation forecasts presented above assume that goods prices stabilise at a high level rather than decline over coming years. The global imbalance between the supply and demand for goods continues to improve. Shipping costs have largely retraced their pandemic increase and goods inflation has eased in most advanced economies – for example, prices have declined in recent months in the United States, with some private sector analysts predicting outright declines in goods consumer prices in 2023. Large or widespread declines in goods prices would moderate inflation outcomes by more than currently expected. One way this could occur is if the simultaneous tightening of monetary policy across many economies affects demand by more than the sum of individual-economy effects would imply. For example, if prices for consumer durables reversed one-third of the price increases recorded since the onset of the pandemic, year-ended headline inflation would be around ¾ percentage point lower than the current forecast.

Energy and other supply shocks could lead to different outcomes for inflation and growth

The risks from energy and other supply-side shocks that have affected the economy over recent years have diminished, but this could change quickly. Vaccine-resistant variants of COVID-19 remain a significant risk with serious consequences for health and economic activity. The end of China's 'dynamic clearing' approach to COVID-19 lowers the risk of further supply chain issues in the future; however, China's demand for energy commodities will increase as domestic demand strengthens. Some analysts believe this could lead to large increases in energy prices over coming months. The Australian Government's Energy Price Relief Plan should limit the extent to which further shocks in global energy prices transmit to domestic retail electricity and gas prices. However, it is possible that the declines in global energy prices and the effects of domestic policy have a smaller impact on domestic energy prices than currently expected, reflecting the complexities of the sector and the costs of and potential for complications in the transition to greater use of renewable energy.