

Statement on Monetary Policy

NOVEMBER 2022



RESERVE BANK OF AUSTRALIA

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Contents

Overview	1
1. The International Environment	5
2. Domestic Economic Conditions	21
Box A: Insights from Liaison	31
3. Domestic Financial Conditions	37
4. Inflation	53
Box B: The Introduction of a Monthly CPI Indicator for Australia	63
5. Economic Outlook	67
Box C: What Explains Recent Inflation Forecast Errors?	76

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Overview

Inflation remains high in all major advanced economies except Japan. While pressures from supply chain disruptions and elevated commodity prices have eased, core inflation has not yet shown clear signs of moderating. Services inflation – which tends to be quite persistent – has risen in many economies. Labour markets remain tight, although employment growth has slowed and leading indicators of labour demand have come off a little.

Growth in the global economy is expected to slow significantly in the year ahead, to rates well below those seen prior to the pandemic. The post-pandemic recovery in services consumption has largely run its course in most advanced economies, and central banks are increasing policy interest rates rapidly in order to combat high inflation. High energy prices are also likely to continue to weigh on growth, especially in Europe. Growth in China is expected to remain modest, given a range of significant headwinds including a weak property sector and the authorities' approach to managing COVID-19 outbreaks.

In Australia, inflation is likewise very high and broadly based, and the labour market is tight. Growth in activity appears to have remained solid in the September quarter. Inflation is expected to peak around the end of the year and then decline over the forecast period towards the 2 to 3 per cent target range as upstream cost pressures ease and higher interest rates slow demand in the economy. Similarly, over the forecast period, GDP growth is expected to slow and the unemployment rate to increase a little.

Headline CPI inflation was 7.3 per cent over the year to the September quarter, the highest rate in over three decades. It is expected to reach around 8 per cent by the end of 2022. Measures of underlying inflation are also high, with trimmed mean inflation at 6.1 per cent over the year to the September quarter; it, too, is forecast to peak around year-end, at about 6½ per cent. From there, headline and underlying inflation are both expected to decline to about 3¼ per cent by the end of 2024, and continue declining in the following year. Higher electricity and gas prices are likely to slow the return of inflation to the target range.

Strong demand and ongoing pass-through of upstream cost pressures continue to boost inflation in groceries, consumer durables and market services. Housing costs are also adding to inflationary pressures. Prices for newly built dwellings continue to rise rapidly, with the annual rate above 20 per cent. Upstream materials cost pressures have been a factor; more broadly, however, the construction industry has faced shortages of materials and labour, as well as disruptions associated with bad weather. This has limited the pace at which the large pipeline of existing projects can be worked down. Rent inflation nationally has been subdued, but it is clearly picking up and is expected to increase further given low vacancy rates and the strong increases in advertised rents.

The labour market is very tight. At 3½ per cent, the unemployment rate remains around the lowest rate in nearly 50 years. Broader measures of labour underutilisation are also at very low

rates compared with historical experience. The employment-to-population ratio and the participation rate are both near historical highs. Firms are finding it difficult to fill jobs. While job vacancies and advertisements remain at very high levels, in recent months this strong demand for labour has translated into relatively little additional employment as spare capacity in the labour market has largely been absorbed. The unemployment rate is expected to remain around 3½ per cent until mid-2023, before increasing to around 4¼ per cent by the end of 2024, as economic growth slows.

Wages growth has picked up in recent months, reflecting the tight labour market as well as high inflation and the flow-through of the Fair Work Commission decision in June on minimum and award wage rates. Growth in the Wage Price Index (WPI) is forecast to pick up further, from 2.6 per cent over the year to the June quarter, to around 3¾ per cent by mid-2023 and 4 per cent by mid-2024. Broader measures of wages growth are expected to increase at a faster pace, as firms use bonus payments and other non-base remuneration to attract and retain staff.

The Australian economy is growing solidly. The earlier rapid bounce-back in spending from pandemic-related restrictions is largely complete, and growth in consumer spending remained solid into the September quarter. Most retailers report that demand remains strong. Incomes are being supported by the tight labour market and, at a national level, the record level of the terms of trade.

GDP growth is expected to be 3 per cent over 2022, before slowing to 1½ per cent over 2023 and 2024. The forecast slowdown reflects the combined effects of higher interest rates and lower real wages and wealth on private domestic demand, as well as the slowing global economy.

There are many uncertainties surrounding these forecasts that make the path to achieving the

Board's objective of returning inflation to target while keeping the domestic economy on an even keel a narrow one. The main uncertainties around domestic demand centre on the outlook for consumption. Consumption is being influenced by a range of competing drivers that could result in a materially different outcome from the central forecast. So far, consumer spending has been supported by past gains in incomes, asset prices and accumulated saving during the pandemic. Labour income growth is likely to remain solid given the tight labour market and rising wages growth. However, these sources of support are being counteracted by high inflation, rising interest rates and falling housing prices. Demand for housing finance has eased as the housing market has cooled, and housing credit growth is slowing.

The trajectory of inflation is also uncertain due to the ongoing evolution of supply shocks. Some factors that have boosted inflation over the past year are reversing, though it will take some time before the effects flow through to prices paid by consumers. Spot shipping costs and other upstream price pressures stemming from pandemic-related disruptions to supply chains are unwinding quickly. Much of the initial surge in commodity prices in response to Russia's invasion of Ukraine has also reversed. However, energy prices remain much higher than they were at the beginning of the year. The effect of this on domestic electricity and gas prices is expected to be much greater than had been envisaged earlier in the year, and a further significant lift in utilities prices is now expected in 2023. How far and how quickly this flows through to retail bills, and how large the second-round effects on businesses' costs and prices will be, is hard to predict. On top of these largely global factors, inflation in Australia has also been boosted by flooding and other bad weather, which has damaged crops and so increased food prices. The most recent round of flooding

looks set to prolong the effect on food prices to at least the end of the year.

A more medium-term risk to the inflation outlook relates to the persistence of domestic inflationary pressures and the possibility that price- and wage-setting behaviour could shift. After initially being predominantly driven by supply shocks, inflation is now spreading to more persistent non-discretionary items. This follows an apparent increase in firms' willingness to pass on upstream cost pressures to consumers. The longer these domestic pressures persist and inflation stays high, the more this could lead workers to make larger wage claims, especially in a tight labour market. This could in turn be reinforced by firms' pricing decisions to pass on higher costs. If this were to occur, domestic demand would likely need to slow by more than currently forecast for inflation to return to target, with implications for the path of monetary policy.

These domestic risks will play out in a context of slowing global growth. Just how far global growth slows depends in part on how much major central banks need to tighten monetary policy. In the current environment of persistently high inflation, major central banks are raising policy rates quickly and some have indicated that policy will need to be restrictive for some time. Such a simultaneous tightening in policy could slow activity by more than expected. In addition, tight financial conditions could expose previously unrecognised vulnerabilities in the global economy.

Global financial conditions have already tightened noticeably and volatility has increased in a range of markets. Longer term government bond yields have increased further in recent months, taking real yields to their highest levels in roughly a decade. Conditions in corporate bond markets have also tightened significantly and equity prices have declined since the start of the year. The US dollar has appreciated considerably over 2022, including against the

Australian dollar. On a trade-weighted basis, though, the Australian dollar is at roughly the same level as at the beginning of the year.

The Chinese economy is facing its own particular headwinds and growth is expected to remain modest there, with risks skewed to the downside. Domestic spending is likely to be constrained by the ongoing disruptions from the authorities' COVID-19 control measures; following the National Congress of the Chinese Communist Party held last month, indications are that this policy approach will continue for the foreseeable future. The weak property sector is also dragging on growth, despite still-accommodative monetary policy and other policy measures intended to support activity directly. Financial distress among property developers has continued, and equity prices more broadly have declined sharply in both mainland China and Hong Kong.

Over the past three months, the Reserve Bank Board has continued the process of lifting interest rates from the very low levels reached during the pandemic. It has lifted interest rates materially since this process began in May. This has been necessary to achieve a better balance of supply and demand in the Australian economy, which is needed to return inflation to target.

Inflation in Australia is currently too high. Price stability is a prerequisite for a strong economy and a sustained period of full employment. The Board's priority is therefore to return inflation to target. While some of the current high inflation can be expected to reverse as supply chain pressures and input costs ease, this alone would not be sufficient to return inflation to target. Domestic demand pressures are also playing a role in the current high inflation. The task of bringing inflation down has been made more difficult by the escalating price pressures in the domestic electricity and gas markets and another round of floods that has damaged the domestic food supply.

So far, medium-term inflation expectations and wages growth have remained consistent with the inflation target and it is important that this remains the case. 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.

The Board has been mindful that policy operates with a lag and that the full effect of higher rates is yet to be felt in mortgage payments and household budgets, at the same time that higher inflation is eroding real incomes. It is also mindful that global growth is slowing and that other central banks are raising interest rates quickly and simultaneously, which could weigh on global growth – and so reduce inflation – by more than their individual effects would normally imply. The Board is closely monitoring household spending and the global economy to assess their implications for domestic demand pressures.

Following a sequence of increases of 50 basis points, in October and November the Board increased the cash rate target in increments of 25 basis points. In doing so, the Board recognised that interest rates had already been increased significantly in a short period of time and that the full effect of those increases lies ahead. In an uncertain environment, slowing the

adjustment of policy allows time to assess the effects of the increases to date and the evolving economic outlook. Drawing out policy adjustments also helps to keep public attention focused for a longer period on the Board's resolve to return inflation to target. While some other central banks have been increasing policy by larger increments, the Reserve Bank Board meets more frequently than policymaking bodies in these central banks. This gives the Board more opportunities to adjust its policy stance.

The Board is focused on returning inflation to target and establishing a more sustainable balance of demand and supply in the Australian economy. To achieve this, the Board expects that interest rates will need to increase further. But monetary policy is not on a pre-set path. The size and timing of future interest rate increases will continue to be determined by the incoming data and the Board's assessment of the outlook for inflation and the labour market. If in future the Board judges that it needs to increase the cash rate in larger steps to secure the return of inflation to target, it will do so. Similarly, if the situation requires the Board to hold the cash rate steady for a period, it will do so. The Board is resolute in its determination to return inflation to target and will do what is needed to achieve this. ✎

1. The International Environment

Global inflation has persisted around multi-decade highs. Core measures of inflation show little sign of moderating as yet, consistent with very low unemployment rates and rapid wages growth in advanced economies. However, headline inflation may have peaked in many economies as a result of recent falls in oil prices and an easing of supply constraints in goods and shipping markets. Recent decisions by European governments to subsidise the cost of energy consumption and ration its use have also reduced the risk of further large increases in European consumer energy prices.

Central banks have increased policy rates further in response to persistently high inflation. Globally, monetary policy has tightened rapidly across a wide range of central banks this year and market participants have revised up their expectations for further tightening over coming months. Government bond yields have risen significantly, credit spreads have widened and equity prices have declined. Volatility in global financial markets has also increased, particularly for bond markets. In late September and early October, bond market volatility in the United Kingdom was amplified by the selling of long-dated government bonds and other assets by pension liability-driven investment funds to cover margin calls. To restore market functioning and preserve financial stability, the Bank of England (BoE) undertook temporary bond purchases. Meanwhile, the US dollar has appreciated significantly against most currencies this year. Some central banks have intervened to slow the depreciation of their currencies.

Most economies are experiencing significant headwinds to growth. In advanced economies, tighter monetary policy has contributed to economic growth moderating. Demand for housing has slowed most noticeably, while the moderation in growth in consumer spending, business investment and hiring intentions has so far been modest. Tighter monetary policy is expected to contribute to very weak GDP growth in the United States over coming quarters. European economies are also grappling with substantial increases in energy prices and a need to ration energy demand; as a result, GDP is now forecast to contract in the next few quarters, despite the recent provision of significant fiscal support. While the Chinese economy has recovered from its April/May COVID-19-related lockdowns, growth is forecast to be relatively subdued in the year ahead, given significant headwinds from the authorities' efforts to suppress the virus as well as considerable stress in the property market.

Global inflation remains high

Inflation remains high and well above central banks' targets in most economies, underpinned by strong demand, insufficient supply and large increases in the prices of energy and food commodities over the past year (Graph 1.1). While headline inflation appears to have peaked in most advanced economies outside Europe, core inflation is yet to show any clear signs of easing (Graph 1.2).

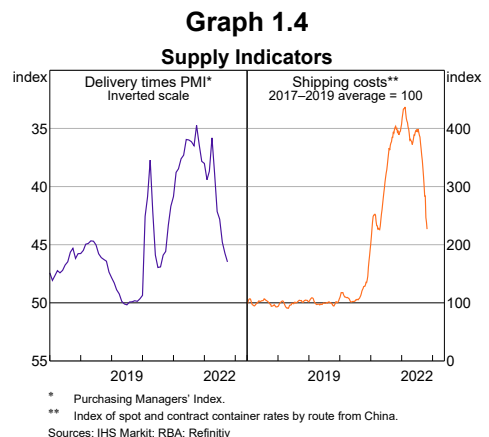
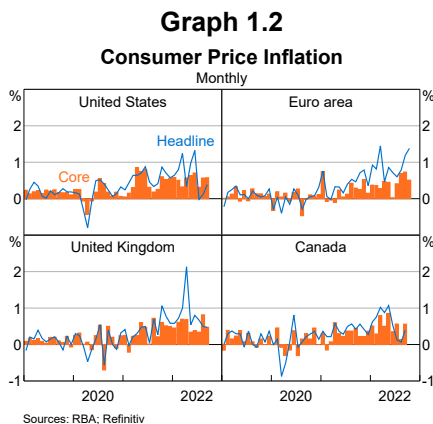
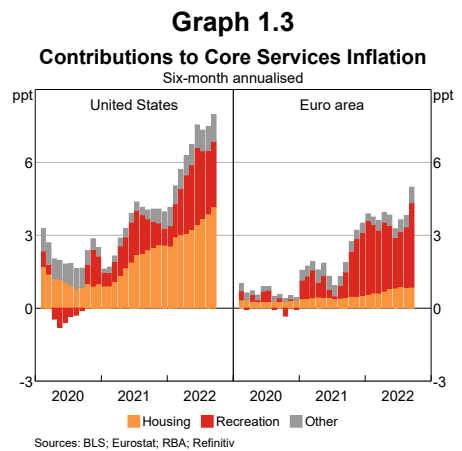
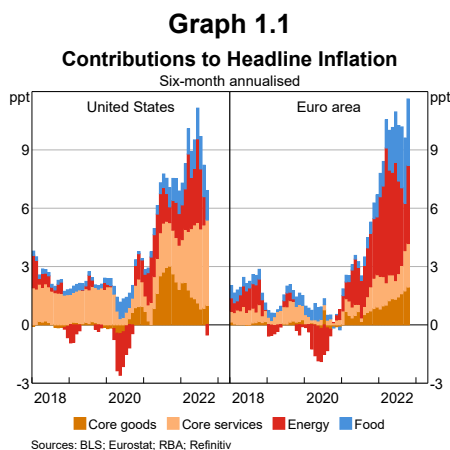
Core consumer price inflation has been underpinned by a rise in services inflation (Graph 1.3). This, in turn, is being driven by

strong demand and wages growth, along with increases in other input costs. The increase in services inflation has been broadly based across categories, but has been particularly strong in discretionary services like air travel and recreation. The increase in housing services inflation is notable because it has substantial weight in many countries' consumer price indices, particularly the United States, and because rental inflation tends to be more persistent than most other price pressures.

By contrast, goods inflation has moderated in a number of economies as supply-demand imbalances in goods markets unwind. Supplier delivery times have shortened, backlogs of work have declined and inventories have mostly

recovered to more normal levels (Graph 1.4). Along with lower oil prices, this has contributed to a decline in shipping costs and a moderation in input costs more generally. Goods inflation in the euro area, however, is yet to show signs of moderation because of the sharp rise in energy costs as well as transport and supply bottlenecks that are in part associated with Russia's invasion of Ukraine.

Headline inflation looks to have peaked in many advanced and emerging economies outside Europe due to falling fuel prices (Graph 1.1). While food price inflation remains strong, a substantial decline in the prices of most agricultural commodities and transport costs over recent months should see it start to



moderate. Given these trends, professional forecasters are expecting inflation to decrease by 2–5 percentage points in 2023, but to still be above central bank targets in most advanced economies over this period. The moderation in inflation in European economies is expected to be more gradual than in other economies because of persistent pressure on electricity prices. However, European governments have recently announced several fiscal support packages, including price subsidies for consumers that will limit the contribution of rising gas prices to headline inflation compared with earlier expectations (see below).

Consumer inflation expectations for the year ahead remain high, though they have moderated a little as fuel prices have fallen and headline inflation has eased. Medium-term expectations are still broadly consistent with central banks achieving their targets. However, the dispersion of households' expectations – which has historically been an early indicator of future shifts in inflation expectations more generally – has increased.

Fiscal support in Europe has increased, mostly to alleviate the energy crisis

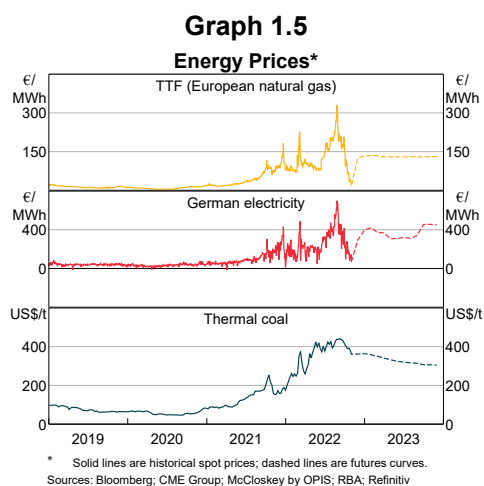
European gas prices reached record highs in August, peaking at over 10 times pre-pandemic levels (Graph 1.5). This occurred as it became clear that Russian gas supplies to Europe would be cut further, to just 20 per cent of 2021 levels, with little prospect of this reversing. In turn, higher gas prices pushed European electricity prices to extreme levels, while also supporting a substantial lift in thermal coal prices around the world. This has led some energy-intensive businesses in Europe to stop or decrease production, while raising the prospect that energy will need to be rationed over the winter.

Governments in the European Union and the United Kingdom responded by announcing large fiscal support packages in September, of between 3½ and 4½ per cent of GDP. In the

United Kingdom and Germany, this included caps on the electricity and gas prices paid by households and businesses, with any costs in excess of this borne by the government. EU governments have also announced targeted support for the incomes of vulnerable groups and have committed to devise schemes to reduce energy consumption by at least 10 per cent. EU governments will fund these measures primarily by imposing windfall taxes on the profits of non-gas electricity generators; however, large debt issuance will also be needed.

In addition, the UK Government recently announced permanent tax cuts worth ½ per cent of GDP, starting from April 2023. The current proposal is only one-third of the initial announcement, which was scaled back to alleviate significant concerns in financial markets about its impact on inflation and the cost of government borrowing.

Together, these policies mean the overall fiscal stance in Europe now seems to be neutral to stimulatory for the coming year (Graph 1.6). This is in contrast to trends in the United States and elsewhere – and to earlier expectations for Europe – where a fiscal consolidation is under way as the COVID-19-related expansion in public deficits reverses.



The agreement to implement measures to ration energy demand in Europe, combined with successful efforts to meet EU targets of increasing gas storage in Europe to at least 90 per cent of capacity, has reduced immediate demand for gas. This has alleviated pressures on spot prices in European (and, in turn, Asian) gas markets. However, prices are still two to four times higher than a few years ago and futures prices have fallen by much less than spot prices. Likewise, European thermal coal prices have declined by one-third since the beginning of September because the newly introduced tax on coal-fired generation would have made some producers unprofitable. These developments, and the way the cap on energy prices in the United Kingdom is being implemented, mean that consumer energy price inflation in Europe is likely to be significantly lower than otherwise in the near term. However, the additional fiscal stimulus, given current strong aggregate demand, could mean that core inflation is higher in the medium term.

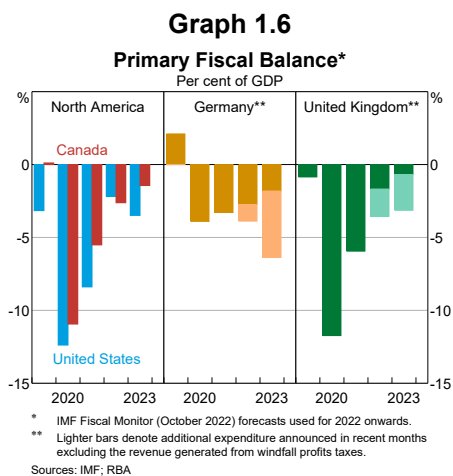
Central banks have continued to quickly raise policy rates

Central banks in most advanced economies have continued to increase their policy rates rapidly to address high inflation and mitigate the

risk that it becomes embedded in wage- and price-setting behaviour (Graph 1.7). Several advanced economy central banks have signalled that it is likely their policy rates will need to be raised further to return inflation to target, with some noting the need for policy rates to reach restrictive levels and remain there for some time. Most central banks have continued to allow their holdings of assets purchased under quantitative easing programs to decline gradually through the process of bond maturities. The BoE, however, commenced the sales of bonds purchased under its earlier programs at the start of November, around a month later than initially planned in light of the dysfunction in government bond markets in the United Kingdom (see below). The Bank of Japan (BoJ) is now the only major central bank that is adding to its bond holdings.

Market participants have markedly revised up their expectations for further increases in policy rates by most advanced economy central banks (Graph 1.8). These revisions were in response to evidence of persistently high inflation and tight labour markets in many economies. Market pricing is consistent with the expectation that policy rates will reach a peak in the first half of 2023 and then decline from the second half of the year onwards. Movements and projections by central banks have included the following:

- The US Federal Reserve (Fed) increased the target range for its policy rate by a cumulative 150 basis points to 3.75–4 per cent at its September and November meetings. Policymakers have emphasised that ongoing increases will be required to attain a stance of monetary policy that is sufficiently restrictive to return inflation to the Fed’s target in a timely way. There is significant uncertainty around the level of interest rates that will be needed to achieve that.
- The European Central Bank (ECB) raised its key policy rates by a cumulative 150 basis



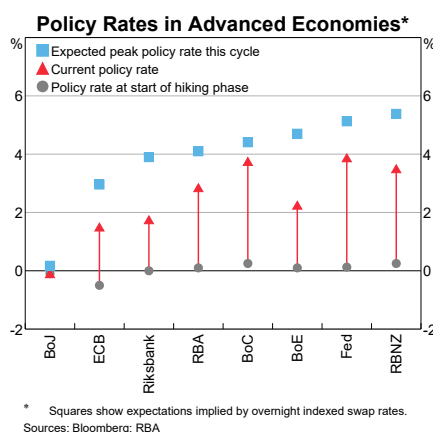
points at its meetings in September and October. The ECB expects to raise rates further, but with the future rate path dependent on the evolving outlook for inflation and the economy.

- The Bank of Canada (BoC) increased its policy rate by 75 basis points and 50 basis points to 3.75 per cent at its September and October meetings, respectively. The BoC has stated that it expects the policy rate will need to rise further, although the extent of future increases will depend on how inflation and demand respond to higher interest rates.
- The BoE increased its policy rate by a cumulative 100 basis points to 2.25 per cent at its August and September meetings. After the UK Government announced a new fiscal stimulus package in late September, the market-implied policy rate path increased significantly, primarily reflecting expectations that the BoE would need to tighten monetary policy even further to offset the inflationary impact of the stimulus. Policy rate expectations declined after the UK Government reversed most of the measures but remain higher than their level at the time of the August *Statement*.
- The Reserve Bank of New Zealand (RBNZ) increased its policy rate by a cumulative 100 basis points to 3.5 per cent at its August and October meetings. The RBNZ said that it remains appropriate to continue to tighten monetary policy rapidly until it is confident that inflation will return to its 1–3 per cent target. Market pricing implies a peak policy rate of over 5 per cent by mid-2023.
- Among other advanced economies, Sveriges Riksbank increased its policy rate by 100 basis points to 1.75 per cent since August, Norges Bank increased its policy rate by 100 basis points to 2.25 per cent, and the Swiss National Bank increased its policy rate

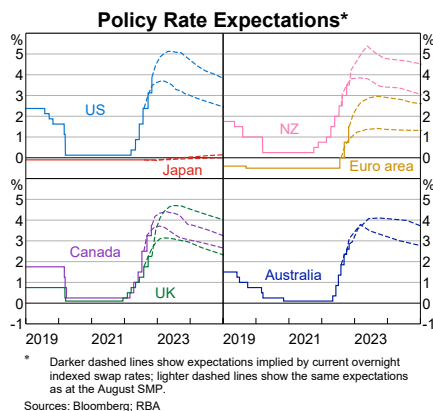
by 75 basis points to 0.50 per cent. The Bank of Korea (BoK) raised its policy rate by a cumulative 75 basis points since August to 3.0 per cent. The BoK reverted back to a 50 basis point increase at its October meeting, following a 25 basis point rate increase at its previous meeting, in response to increased inflationary pressures.

Meanwhile, and in contrast to other advanced economy central banks, the BoJ continues to signal that it will keep its accommodative policy settings in place until it sees evidence that inflation remains sustainably at or above its target level.

Graph 1.7



Graph 1.8



Central banks in most emerging market economies have also raised policy rates further since the August *Statement* to address high inflation; for some economies, currency depreciation against the US dollar has added to inflationary pressures. Most central banks in Asia are widely expected to continue to raise rates well into 2023, while central banks in Latin America – which started raising their policy rates around mid-2021 – are widely expected to reach their peak in the next few months if they have not already done so (Graph 1.9). In contrast to other emerging markets, the central bank of Turkey has lowered its policy rate by 350 basis points since the August *Statement*, citing a slowdown in growth from weak foreign demand even though inflation in Turkey reached 83 per cent in September.

Higher interest rates are showing signs of slowing the global economy ...

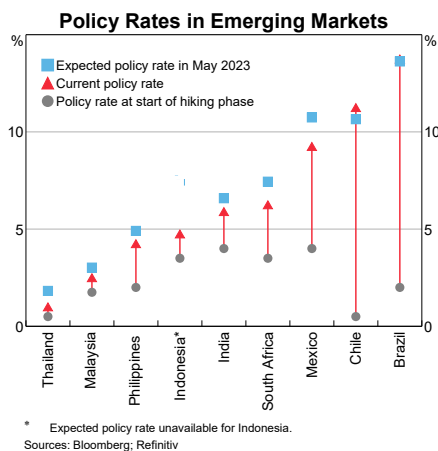
The pace of economic growth in advanced economies has moderated as rising interest rates and high energy prices dampen demand, and capacity constraints limit growth in real output. Growth in domestic demand was modest in the September quarter (Graph 1.10). The slowing in global demand growth, along with tepid demand from China, has seen growth

in exports from east-Asian countries soften over recent months, particularly in the IT sector.

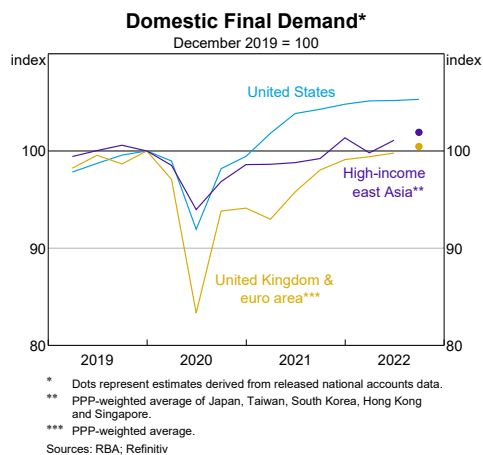
The clearest sign of slowing has been in the housing sector, which tends to be more interest-sensitive than other sectors. Residential investment contracted in some countries in the September quarter and home building approvals are significantly lower than their 2021 peaks in a number of advanced economies (Graph 1.11). Housing prices and housing turnover have also begun to fall in several economies and have plateaued in others. Energy-intensive industrial production has slowed more sharply than other sectors, given the extraordinary increase in such firms' energy costs.

Growth in other domestic expenditure has moderated but so far remains positive in the face of rising interest rates and falling real wages. Consumption growth, which has been supported by a continued recovery in services consumption from the COVID-19 lows, has more than offset a modest decline in goods consumption; high-frequency indicators for spending on hotels and flights suggest this recovery has continued in October. In the United States and Germany, this has involved household saving rates falling below their pre-pandemic norms.

Graph 1.9



Graph 1.10



Investment intentions have also moderated to around historical averages (Graph 1.12).

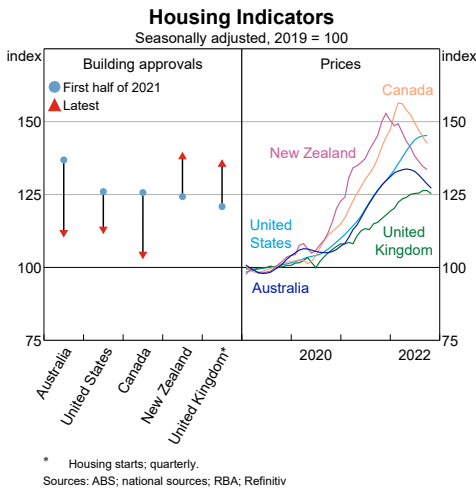
... and the tightness in labour markets has started to ease

The strong economic recovery from the pandemic has resulted in very tight labour markets, and unemployment rates remain around generational lows in many advanced economies (Graph 1.13). This is despite high rates of labour force participation; the United States and the United Kingdom are notable exceptions, however, as their participation rates are still below pre-pandemic levels.

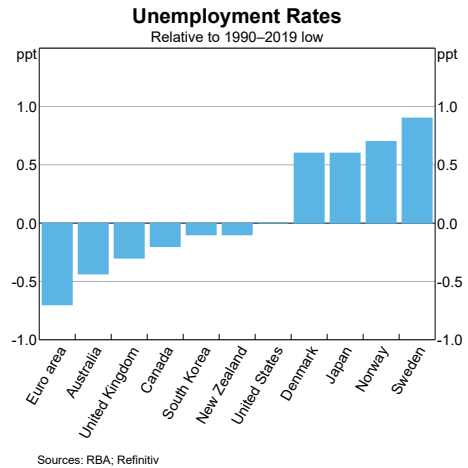
Employment growth, however, has moderated in almost all advanced economies, and employment is now declining in the euro area, Canada and Sweden. Vacancy rates and hiring intentions have also come off a little from their recent highs, but remain well above historical norms (Graph 1.14). Information from surveys and central banks' liaison indicates that it has become slightly easier to fill vacancies and that staff turnover has started to decrease.

Tight labour markets have contributed to nominal wages growth increasing to around its highest level in over a decade in most advanced economies (Graph 1.15). Broader measures of

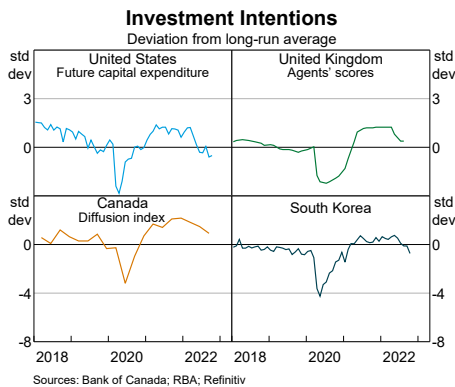
Graph 1.11



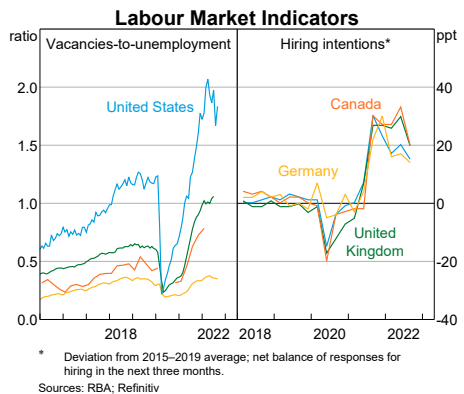
Graph 1.13



Graph 1.12



Graph 1.14



wages growth that capture additional remuneration like bonuses, overtime and promotions have typically increased more strongly than other measures. There are, however, some signs from central banks' liaison and other wages data that wages growth may have peaked in a few countries.

The Chinese economy has recovered from earlier lockdowns but faces significant headwinds ...

The Chinese economy grew by 4 per cent in the September quarter, reversing the 2¾ per cent contraction in the June quarter that resulted from strict measures to contain the spread of COVID-19. The improvement was led by a rebound in household consumption, particularly of non-essential services and discretionary goods. Industrial production retraced earlier falls, led by a sharp increase in automobile production (in part because of fiscal incentives for the purchase of new vehicles) (Graph 1.16). However, economic activity continues to be disrupted by the repeated imposition of mobility restrictions to contain COVID-19 cases in various parts of the country.

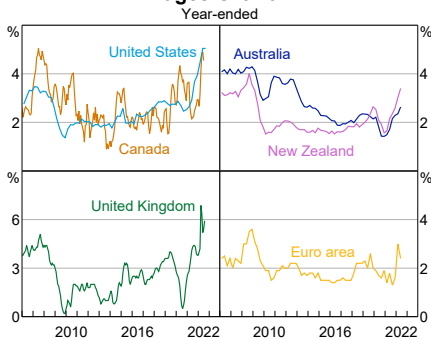
Chinese authorities have responded to the ongoing headwinds facing the economy by announcing a wide range of fiscal support

measures. These include a variety of tax rebates or deferrals and consumption vouchers; together, these have resulted in the 2022 budget deficit significantly exceeding that in 2021, even with a further three months in the year still to go (Graph 1.17). In addition, government investment has increased strongly, most notably for infrastructure. Local governments had largely issued their full 2022 quota of CNY3.65 trillion in special bonds (which are typically used for infrastructure projects) by the end of June, and have subsequently issued most of the additional CNY500 billion made available in September. The central authorities have encouraged local governments to use these funds as quickly as possible.

Statements from the 20th National Congress of the Chinese Communist Party, held in mid-October, reinforced the trajectory of economic policymaking that has emerged in the past few years. As anticipated, Xi Jinping was returned as General Secretary to the Party, and his report reiterated existing commitments to develop the domestic economy, support innovation in science and technology, address demographic challenges and skills shortages, improve environmental outcomes, reduce inequality and improve access to social services. The report also highlighted a number of challenges facing China, including 'unbalanced and inadequate'

Graph 1.15

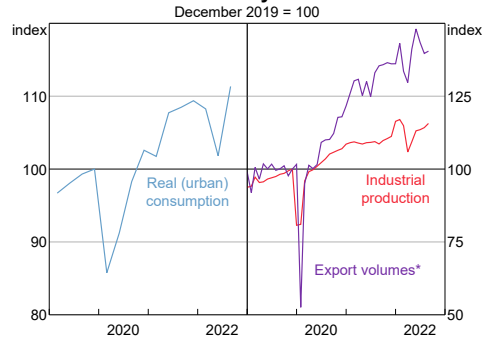
Wages Growth*



* 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).
Sources: BoE; RBA; Refinitiv; Statistics Canada

Graph 1.16

China – Activity Indicators



* Deflated using US price deflator for imports from China.
Sources: CEIC Data; RBA

domestic development and increased challenges abroad, and emphasised a desire to increase the resilience of China's economy.

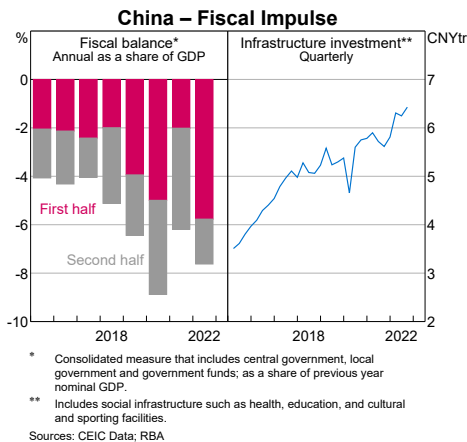
... and stress in the property sector remains a significant concern

Residential property sales are around their lowest level since 2015 (excluding the initial 2020 lockdown period), and have not yet recovered after a sharp fall during the April/May 2022 lockdowns (Graph 1.18). Liaison contacts attribute this weakness to several factors, including: ongoing concerns around the outlook for household incomes; adverse demographic factors; authorities' stated desire to discourage speculation; and households' concerns that developers may not complete construction. Authorities have sought to stimulate demand by reducing the cost of financing purchases in various ways, and relaxing restrictions on the ability of households to purchase properties; more recently, the authorities have also provided funding to a range of entities to support the completion of stalled projects and urged banks to increase lending to the property sector. Some stalled developments have since restarted and sales have increased modestly. However, sales remain at low levels and housing starts remained depressed in September, reaching the

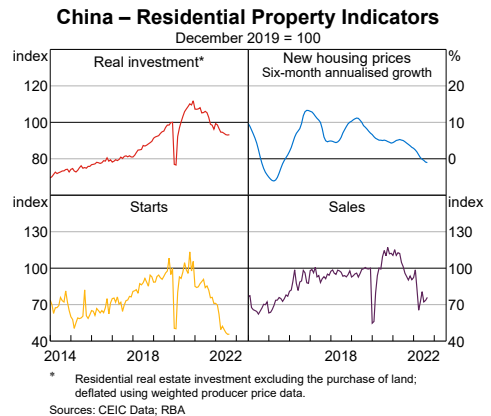
lowest levels in more than a decade. Weakness in the residential property sector will weigh on demand for steel, and so Australian iron ore; estimates suggest that this sector accounts for around one-fifth of Chinese steel demand.

Weakness in the property market has continued to add to financial pressures for property developers, including some more highly rated developers. Equity and bond market pricing suggest the scale of support measures announced by the authorities so far appears to have been insufficient to restore confidence in the health of the property sector. Indeed, equity and bond prices of many large developers, including some that are state-owned, continue to indicate severe financial distress (Graph 1.19).

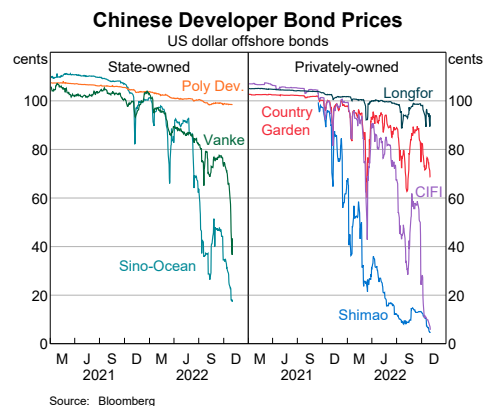
Graph 1.17



Graph 1.18



Graph 1.19

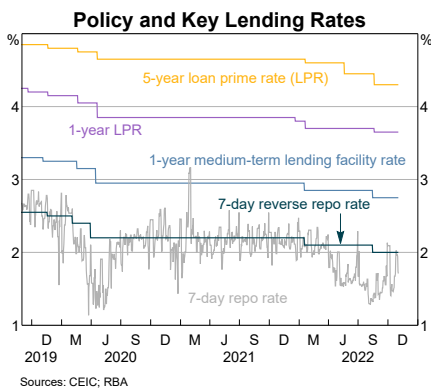


Chinese authorities have eased policy further

Broader financial conditions outside of the property sector remain accommodative, although volatility in financial markets has increased in recent weeks. The People’s Bank of China (PBC) eased monetary policy further in August, lowering its key policy rates by 10 basis points. The five-year loan prime rate (LPR) – a key mortgage reference rate that is an average of lending rates reported by banks – declined by 15 basis points (Graph 1.20). The policy easing followed continued weakness in household credit growth, particularly in mortgage-related lending. Growth in lending to corporations has picked up a little as authorities have continued to encourage banks to lend to certain sectors, including property and manufacturing.

Equity prices in China have declined further amid a weaker economic outlook, while Chinese Government bond yields have been little changed since the previous *Statement* and remain slightly above their recent lows. Some Chinese banks have also lowered their deposit rates for the first time since 2015 following the cut to loan prime rates, which should support bank margins.

Graph 1.20



GDP is forecast to contract over coming quarters in some economies

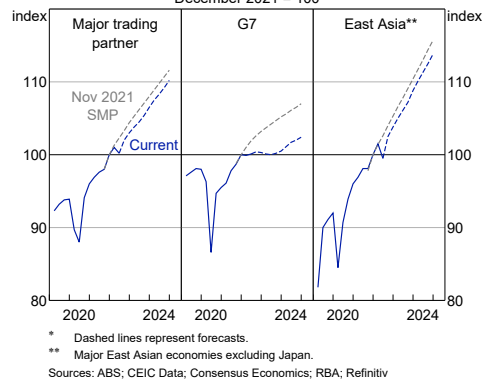
Forecasts for GDP growth in advanced economies over the next couple of years have been lowered further because of stubbornly high inflation and resulting expectations that financial conditions will have to tighten by more than previously assumed (Graph 1.21).^[1] GDP is expected to contract in the euro area (most notably in Germany) and the United Kingdom in coming quarters, and to be little changed in the United States over the next year. Large downward revisions to forecasts for the German and UK economies reflect their greater exposure to high gas prices and an expectation that recent fiscal announcements are unlikely to offset this fully.

Forecasts for growth in China in 2023 have also been revised down over recent months, as sustained weakness in the property sector added to the headwinds from Chinese authorities’ approach to managing COVID-19. While growth in 2023 is expected to be much stronger than in 2022 (conditional on there not being a repeat of lockdowns as disruptive as Shanghai’s experience this year), Chinese GDP is still expected to remain well below its earlier trajectory. Forecasts for growth in other Asian economies have also been revised lower, in

Graph 1.21

GDP Level Forecasts*

December 2021 = 100



anticipation that weaker demand from China and advanced economies will weigh on manufacturing and that monetary tightening will constrain domestic demand.

Overall growth in Australia's trading partners is expected to be slightly below 3½ per cent in 2022 and 2023 – well below its pre-pandemic decade average of 4½ per cent. The forecast for 2023 is almost ½ percentage point lower than it was around the start of this year.

The uncertainties surrounding the global outlook continue to be large, and are skewed to the downside. The key uncertainties are:

- *Inflation could stay persistently high, even as growth slows, necessitating a larger monetary policy tightening than currently envisaged.* This could occur if recent high inflation outcomes cause price- and wage-setting behaviour to adjust in a way that is inconsistent with inflation returning to central banks' targets. Alternatively, inflation could be more persistent if supply capacity is more limited than currently assumed because of structural changes arising from the pandemic or ongoing weakness in productivity growth. On the other hand, it is also possible that an improving supply-demand balance leads to a faster-than-expected reduction in inflation, after having boosted inflation over the past year.
- *Global growth could be less resilient to various headwinds.* One factor that may cause growth to slow by more than expected is if households are more responsive to the sizeable and widespread global monetary tightening, given an environment of high household debt and a decline in housing prices from what had been very elevated levels. More broadly, a further escalation of Russia's war against Ukraine could cause growth to be materially weaker. On the other hand, growth could be stronger than expected if households are comfortable

spending more of the excess savings accumulated during the pandemic.

- *The Chinese economy could grow more slowly than forecast given risks associated with the authorities' approach to controlling COVID-19 and stress in the property market.* Growth could be particularly weak if China's continued attempts to suppress the virus fail to contain outbreaks quickly, causing a repeat of the economic drag observed during the April/May outbreaks. China's efforts to suppress the virus could also have more pervasive or lingering effects than assumed. It is also possible that weakness in the property market will weigh more heavily on overall activity than currently envisaged. On the other hand, the variety of policy measures announced by authorities over recent months could prove to be more effective than currently assumed.

Many commodity prices have eased in response to the weaker global outlook

Concerns around the outlook for global growth and continued weakness in the Chinese property sector has seen many commodity prices ease over recent months (Graph 1.22; Table 1.1). Prices for a number of commodities have now retraced the sharp rise that occurred following Russia's invasion of Ukraine, and iron ore prices are back to their level just prior to the onset of the pandemic. However, wheat prices have increased significantly since early September, amid uncertainty about Russia's commitment to a deal that allows for Ukrainian seaborne exports, as well as deteriorating weather conditions in Argentina and the United States. The price of crude oil has also been supported over the past month by political decisions, including an announced reduction in supply by OPEC+ countries and expectations of a further tightening in supply when the EU's ban on Russian imports takes effect in early December.

Table 1.1: Commodity Price Growth^(a)

SDR terms; percentage change

	Since previous Statement	Over the past year
Bulk commodities	3	23
– Iron ore	–23	–4
– Coking coal	66	–16
– Thermal coal	–1	163
LNG – Asia spot price	–24	10
Rural	5	3
Base metals	–2	–8
Gold	–5	0
Brent crude oil ^(b)	–1	16
RBA ICP	–3	17
– Using spot prices for bulk commodities	–2	14

(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

Government bond yields have risen and become increasingly volatile

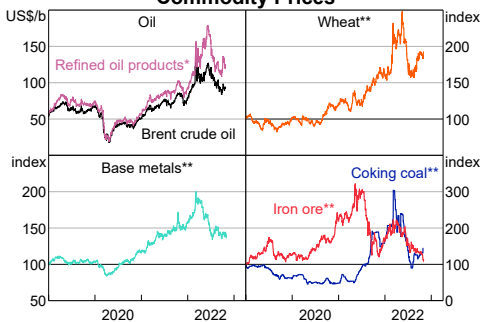
Government bond yields have risen significantly in most advanced economies over recent months, reflecting expectations that central banks will raise policy rates faster and to a greater extent than earlier anticipated in response to persistently high inflation (Graph 1.23). Consistent with expectations of tighter central bank monetary policy, real yields

have increased significantly in most advanced economies to be around their highest levels since the early-to-mid-2010s (Graph 1.24). However, the recent increase in real yields may in part reflect an increase in term and liquidity premia for inflation-linked bonds, which is likely to have risen alongside the increase in volatility in government bond markets, especially the United Kingdom (see below).

Volatility in government bond yields has increased notably and recently reached levels comparable to those in March 2020, which was

Graph 1.22

Commodity Prices



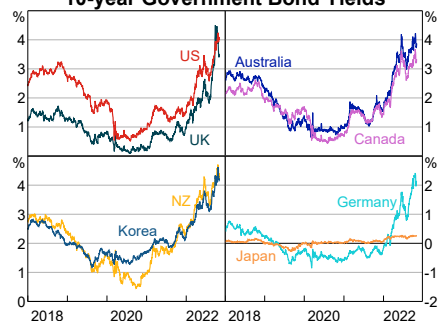
* Based on wholesale petroleum and diesel prices; weighted by the typical share of output from one barrel of crude.

** January 2019 = 100; indexed to US dollar prices.

Sources: Bloomberg; McCloskey by OPIS; RBA

Graph 1.23

10-year Government Bond Yields



Sources: Bloomberg; Yieldbroker

a period of severe dysfunction in government bond markets (Graph 1.25). Liquidity conditions have deteriorated noticeably in some markets, including the US Treasury market. Long-term government bond yields in the United Kingdom have been particularly volatile following the government’s announcement of a debt-financed fiscal package in late September. The large increase in yields following the announcement resulted in a significant increase in margin calls associated with the interest rate hedging activity of pension funds, which increased the risk of asset ‘fire sales’ and further volatility. In response, the BoE announced a temporary program of up to £65 billion worth of government bond purchases to restore market functioning and address material risks to financial stability; it also purchased index-linked government bonds for the first time under the program. BoE purchases under this program totalled approximately £19 billion. South Korean authorities have also recently conducted government bond purchases in response to volatility in the domestic bond market.

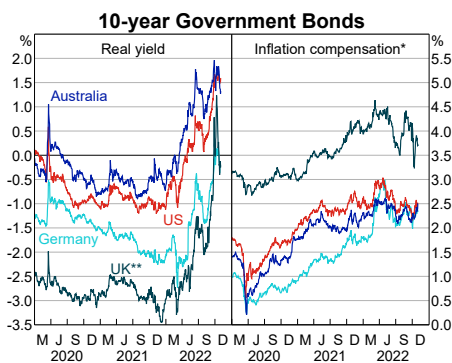
Emerging market government bond yields have risen and become more volatile in recent months, driven in part by expectations of higher domestic policy rates and higher yields in

advanced economies. In August, Bank Indonesia announced an ‘operation twist’ program to sell short-term government bonds and buy longer term bonds. The program is aimed at raising short-term bond yields, thereby attracting capital inflows and supporting the rupiah, while preventing longer term yields from rising significantly.

Private sector financial conditions have tightened significantly this year

Conditions in corporate bond markets have tightened in recent months (Graph 1.26). Corporate bond yields have risen substantially and by more than government bond yields. The widening in credit spreads mainly reflect concerns about the impact of monetary policy tightening on the economy, especially for lower rated firms. Corporate bond issuance has declined since the start of the year in advanced economies, particularly for sub-investment grade bonds. This follows high levels of issuance in 2020 and 2021, during which time many firms extended the maturity of their outstanding debt to 2023 and beyond. In South Korea, yields in corporate bond and short-term money markets increased sharply following the default of a large property developer in late September. South Korean authorities have announced a package of measures to stabilise market conditions,

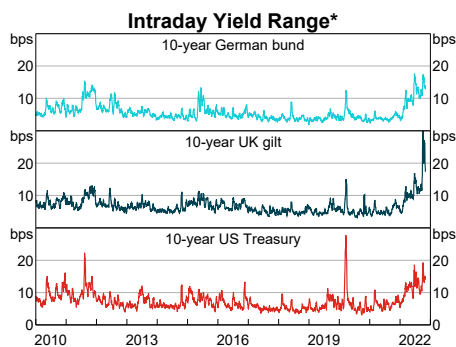
Graph 1.24



* Spread between yields on nominal and inflation-linked bonds.
 ** UK inflation-indexed bonds are linked to Retail Prices Index (RPI) inflation, which is currently 2.5 percentage points higher than CPI inflation. RPI inflation is typically higher than CPI inflation because of differences in their calculation method and the inclusion of owner-occupied housing costs in the RPI.

Sources: Bloomberg; RBA; Yieldbroker

Graph 1.25



* Ten day moving average.
 Source: Bloomberg

including purchases of corporate bonds and commercial paper.

Equity prices in most major markets have declined in recent months and are now around 20 per cent lower than at the start of the year in the United States and Europe (Graph 1.27). This mainly reflects higher interest rates, which lowers the present valuations of future company earnings; the communication services, consumer discretionary and technology sectors have seen the largest declines. The decline in equity prices also reflect concerns around the effect on profits from further expected monetary policy tightening and a weaker outlook for global growth. Equity issuance has remained subdued since early 2022 in both the United States and Europe.

The US dollar has appreciated significantly this year ...

The US dollar has appreciated further against the currencies of most economies over recent months and measures of volatility in foreign exchange markets increased notably (Graph 1.28). The US dollar has appreciated around 11 per cent since the beginning of the year on a trade-weighted (TWI) basis, alongside an increase in short-term US government bond yields relative to those of other major economies

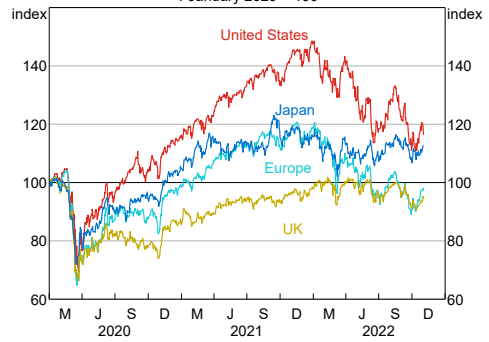
and increased volatility in international financial markets over recent months.

In September, there was a sharp depreciation in the British pound associated with the announcement of a new fiscal package in the mini budget. While this move has now been reversed, the pound remains around 6 per cent lower on a TWI basis over the year to date, having depreciated over a number of months amid concerns about the economic outlook in the United Kingdom.

The Japanese yen has depreciated significantly this year alongside a widening in yield differentials between Japanese Government bonds and those of other major advanced economies as the BoJ continues to maintain

Graph 1.27

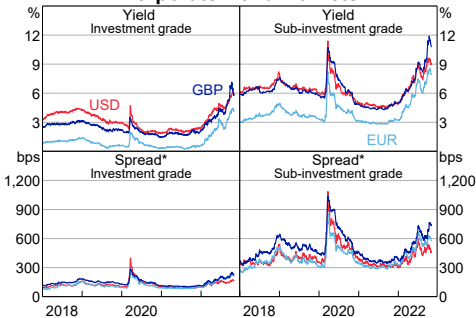
Equity Prices
1 January 2020 = 100



Source: Bloomberg

Graph 1.26

Corporate Bond Markets

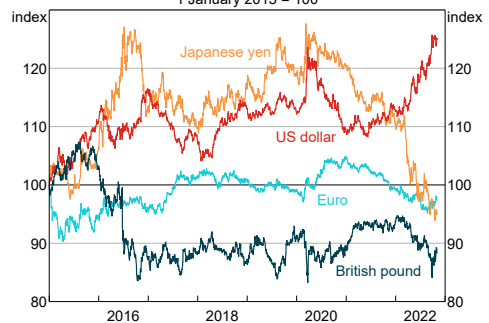


* Spread to equivalent maturity government bond yield.

Source: ICE Data is used with permission

Graph 1.28

Trade-weighted Exchange Rates
1 January 2015 = 100



Sources: Bloomberg; Board of Governors of the Federal Reserve System

accommodative monetary policy. The currencies of commodity-exporting economies have also depreciated in recent months alongside declines in the prices of international risk assets and a range of commodity prices amid concerns about the global growth outlook.

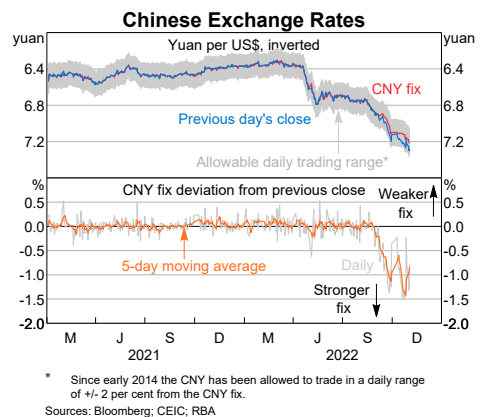
... and some central banks have taken measures to support their currency

Increased volatility in foreign exchange markets and sharp depreciations of some currencies has prompted foreign exchange intervention from some central banks. In September, the Japanese Ministry of Finance directed the BoJ to intervene in the foreign exchange market to support the yen for the first time since 1998, to address ‘a rapid and one-sided’ move in the foreign exchange market. Following a further depreciation of the yen through October, Japanese authorities confirmed that they had intervened again during the month. Central banks in several other economies have also intervened to support their currencies, including in South Korea, Chile, India, Indonesia, the Philippines and Thailand.

The Chinese renminbi has depreciated sharply against the US dollar since the previous *Statement* and is now around its lowest level since 2007. The PBC has implemented several measures to reduce the pace of renminbi

depreciation. Since late August, the PBC has consistently set a stronger ‘CNY fix’ – the midpoint of the permitted daily trading range – for the renminbi than expected by surveyed market participants, and has reportedly asked state banks to sell US dollars into the market (Graph 1.29). The PBC also cut the reserve requirement ratio on foreign exchange deposits in September following an earlier cut in April, and reinstated a reserve requirement ratio of 20 per cent on banks’ forward sales of foreign exchange. These measures are aimed at reducing depreciation pressure on the renminbi by increasing the amount of foreign currency available onshore and making it more expensive to short the renminbi. ❖

Graph 1.29



Endnotes

- [1] Forecasts for all countries other than China are based on those from Consensus Economics. Forecasts for Chinese economic growth are independently derived.

2. Domestic Economic Conditions

The Australian economy had substantial momentum over the first half of 2022 and timely indicators suggest growth held up into the September quarter. The labour market is currently very tight. Employment growth has been minimal since the middle of the year as many firms are finding it challenging to hire workers. Labour demand is strong, although there are signs it is easing slightly. Some parts of the economy have faced disruptions from adverse weather events and shortages of materials, but this has not weighed materially on investment intentions or perceptions of business conditions. While strong labour market conditions are supporting household incomes, household budgets are under increasing pressure from rising prices and higher interest rates. Housing prices have continued to decline since their peak in April this year.

The labour market is tight and employment growth has slowed

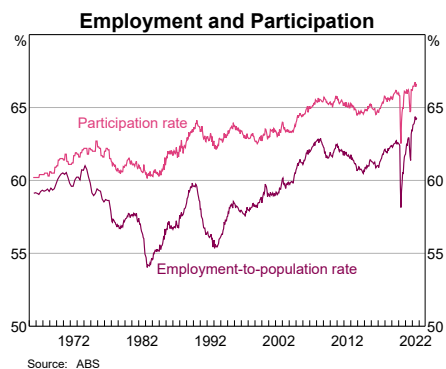
The labour market remains tight. The employment-to-population ratio and the participation rate are near record highs (Graph 2.1). The number of employed people in Australia is 4½ per cent higher than in February 2020, driven entirely by full-time employment. However, there was almost no employment growth in the September quarter.

Spare capacity in the labour market is at multi-decade lows. The unemployment rate has remained around 3½ per cent in recent months, while the heads-based underutilisation rate has been little changed at around 9½ per cent. Medium- and long-term unemployment rates

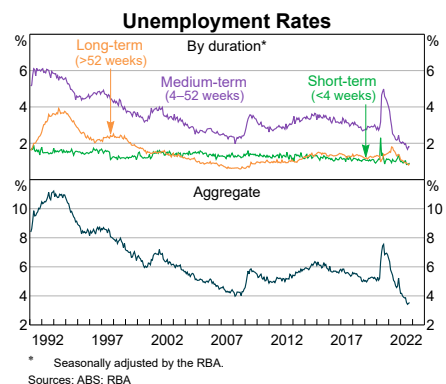
have also remained steady (Graph 2.2). The medium-term unemployment rate, which is more representative of cyclical unemployment and so tends to be the most relevant for wages growth, is around its lowest level since the series began in 1991.

Hours-based measures of underutilisation are also at historically low levels as strong labour demand over the past year has been met

Graph 2.1



Graph 2.2



through an increase in hours of existing workers, including via part-time workers moving into full-time employment and a greater number of people holding multiple jobs. However, average hours worked have remained below their mid-2021 level amid elevated rates of sick leave and annual leave (Graph 2.3). Only a small number of firms in the Bank's liaison program have reported increasing headcount or the hours of existing staff to deal with high levels of sick leave this year. At the margin, the recent reduction in sick leave could alleviate some of the labour shortage pressures being experienced by firms.

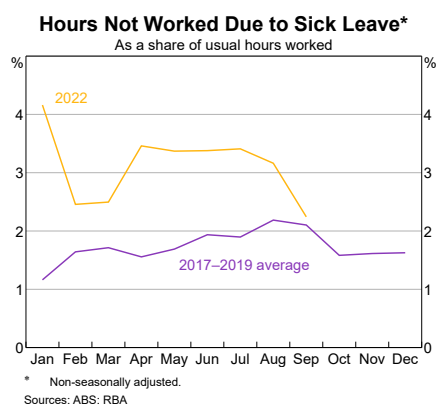
Indicators of labour demand have started to moderate in recent months but remain at high levels

Most measures of job advertisements and vacancies have stabilised or declined a little in recent months and fewer firms in the Bank's liaison program plan to increase their headcount. Nonetheless, there are roughly as many vacancies as there are unemployed people and more than half of all firms in business surveys report that finding suitable labour is a significant constraint on activity (Graph 2.4). As a result, there is likely to be less scope for further growth in employment in the period ahead.

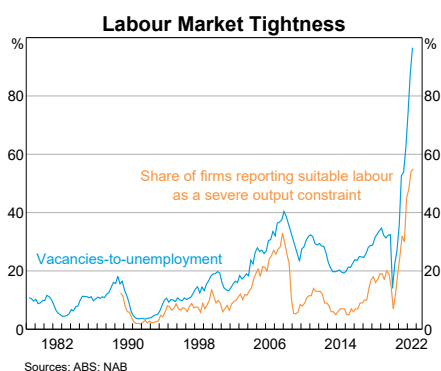
Job vacancies remain particularly high in industries most reliant on migrants for their workforce, such as accommodation & food services. While overseas arrivals and departures have increased since the reopening of the international border, the number of international students in the country remains well below pre-pandemic levels. Liaison suggests that the border reopening has not materially improved labour availability to date, in part because of delays in visa processing.

Job mobility remains higher than in the years preceding the pandemic, and is around the levels seen prior to the global financial crisis. The pick-up in job mobility since the onset of the pandemic continues to be driven by people wanting a better job or a change; the number of workers switching jobs for this reason has increased much faster than the number who report planning to do so, suggesting that some workers are taking advantage of attractive job offers even though they had not been actively looking for a new role. Changes in mobility have been mixed across industries. Job mobility in health care and professional services has declined after being elevated for most of the pandemic, while the job mobility rate in some business services has increased notably (Graph 2.5).

Graph 2.3



Graph 2.4



Economic activity had strong momentum in the June quarter

The Australian economy grew by 0.9 per cent in the June quarter and by 3.6 per cent over the year. In the quarter, growth in household consumption was strong as spending on discretionary services, such as hotels & restaurants and overseas travel, continued to recover from the restrictions and international border closures that were in place during the pandemic (Graph 2.6). Household spending on goods was little changed in the June quarter but remained at an elevated level. Strong growth in consumption saw the household saving ratio decline further to be closer to, but still above, the levels that prevailed prior to the pandemic (Graph 2.7).

Growth in GDP was also boosted by a rebound in exports, following earlier production disruptions in the resources sector. By contrast, construction activity declined because of ongoing material and labour shortages, illness-related absences and weather-related disruptions. Public demand was broadly flat in the June quarter, but remained at a high level as a share of GDP.

The terms of trade rose strongly to a historical high, providing a substantial boost to national income –mainly in the form of higher profits for

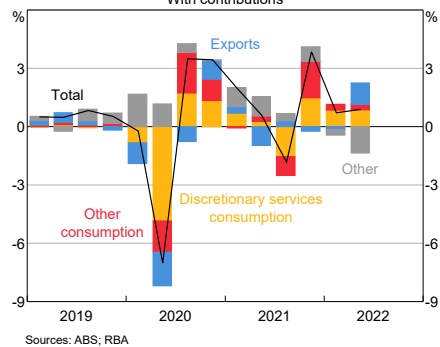
companies in the resources sector and higher tax revenue. Nominal GDP increased by 12 per cent over the year, close to its fastest growth rate in over 30 years, underpinned by the record terms of trade, strong growth in domestic prices and solid growth in the real economy (Graph 2.8).

Household spending has grown solidly in recent months

A range of timely data sources suggest that growth in real household consumption was solid in the September quarter, but has slowed a little from the strong pace recorded around the middle of the year. Household spending growth was supported by continued recovery in

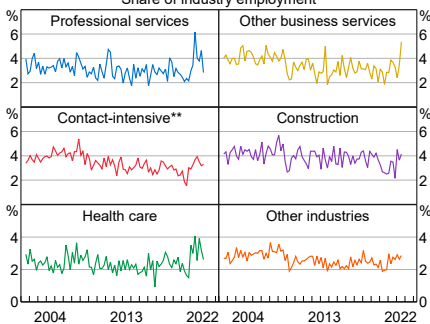
Graph 2.6

Quarterly GDP Growth
With contributions



Graph 2.5

Job Mobility by Industry*
Share of industry employment



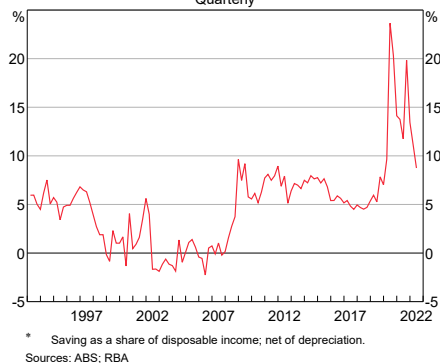
* Based on the industry of new job.

** Includes accommodation & food services, arts & recreation and retail trade.

Sources: ABS; RBA

Graph 2.7

Household Saving Ratio*
Quarterly



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

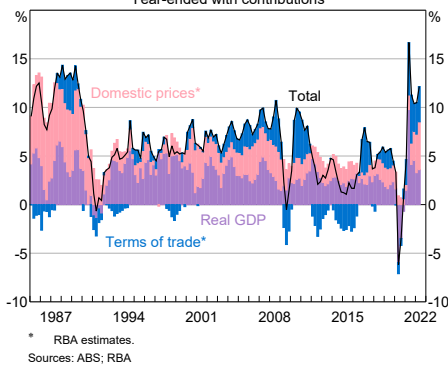
Sources: ABS; RBA

spending on discretionary services, such as hospitality and travel. Retail sales values grew by 2.3 per cent in the quarter, underpinned by a further recovery in spending at cafes & restaurants and at department stores. A significant share of this increase reflected strong growth in retail prices, though volumes are estimated to have also risen (Graph 2.9).

These data are consistent with information from retailers in the Bank’s liaison program that suggests spending growth slowed a little recently (see ‘Box A: Insights from Liaison’). Liaison contacts suggest that retail sales values continued to grow in October.

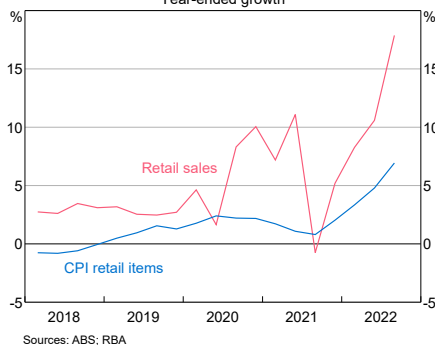
Graph 2.8

Nominal GDP Growth
Year-ended with contributions



Graph 2.9

Nominal Retail Sales and Prices
Year-ended growth



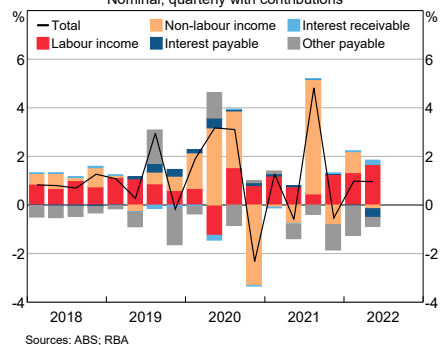
Headwinds to household spending are strengthening

Nominal household disposable income (after taxes and interest payments) grew by 1 per cent in the June quarter despite a small increase in net interest payments by households. In aggregate, the value of household interest payments is larger than the value of interest receipts as the household sector holds more interest-bearing debt than interest-earning assets. Net interest payments will therefore continue to weigh on household disposable income growth in the quarters ahead, as cash rate increases since May 2022 are passed through to lending rates and fixed-rate loans expire (see chapter on ‘Domestic Financial Conditions’).

Household budgets are also under increasing pressure from rising prices. Rising consumer prices continued to outpace growth in overall household disposable income, leading to a decline in real (inflation-adjusted) disposable income in the June quarter (Graph 2.11). Real household net wealth also decreased by around 5 per cent in the quarter – the largest quarterly fall since 2008 – as both housing and financial wealth declined. Nevertheless, real household net wealth remained around 20 per cent above its pre-pandemic level, while real household disposable income was 7 per cent higher.

Graph 2.10

Household Disposable Income Growth
Nominal, quarterly with contributions



These pressures on household budgets from rising costs of living and increased interest rates 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. These factors are expected to weigh on household consumption in the period ahead (see chapter on 'Economic Outlook').

The labour share of income has been relatively stable outside the mining sector

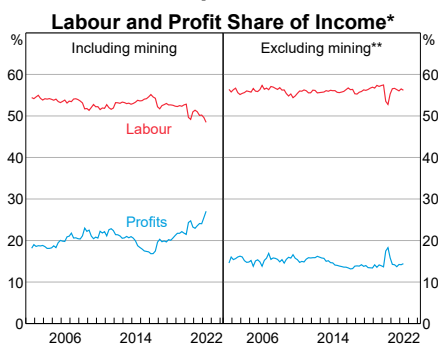
Despite solid growth in labour income, the labour share of income in the national accounts has declined in recent years. However, this is largely attributable to strong growth in mining profits, which has been driven by increases in the terms of trade. Excluding mining, the labour share of income has been little changed over the past decade, aside from during the pandemic when government subsidies temporarily boosted profits (Graph 2.12). Mining profits are expected to decrease over coming years as the terms of trade reverts to lower levels.

The outlook for business investment remains positive

Business investment was little changed in the June quarter. Growth in machinery and equipment investment remained elevated, as firms responded to strong demand (Graph 2.13). By contrast, non-residential construction investment declined as capacity constraints and adverse weather limited the pace at which work could be completed.

Survey measures of capacity utilisation and investment intentions point to a positive outlook for business investment. Non-mining capacity utilisation and business conditions

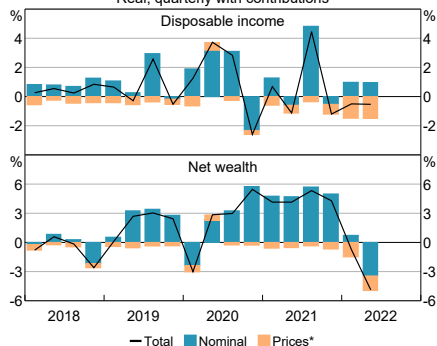
Graph 2.12



* Shares do not sum to 100 per cent due to the exclusion of gross mixed income, and the gross operating surplus of public corporations, financial corporations, general government and dwellings.
 ** Excluding mining sector profits and mining sector labour income.
 Sources: ABS; RBA

Graph 2.11

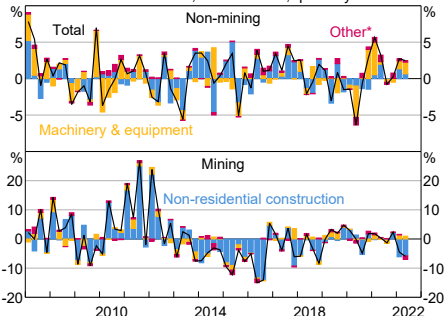
Growth in Household Income and Wealth



* Consumption deflator.
 Sources: ABS; RBA

Graph 2.13

Private Business Investment Growth



* Includes cultivated biological resources (mainly livestock, vineyards and orchards), computer software, research & development, mineral exploration and artistic originals.
 Sources: ABS; RBA

remain elevated; capacity utilisation was around its highest level in over three decades in September. Business confidence is around its long-run average, and liaison suggests that firms are generally optimistic about the longer term outlook for demand.

The ABS Capital Expenditure Survey showed that, in aggregate, firms increased their expectations for investment in the 2022/23 financial year, though this may partly reflect elevated input costs (Graph 2.14). Non-mining firms expected to increase investment in machinery and equipment, but revised their intentions for non-residential construction investment slightly lower compared with the previous survey, as capacity constraints and ongoing wet weather are expected to hamper the pace of construction work. Mining firms reduced investment intentions for the current financial year. Liaison suggests that planned investment by the mining industry will largely be to maintain production rather than to expand capacity. Mining firms are also returning much of the earnings arising from elevated commodity prices to investors, rather than reinvesting profits.

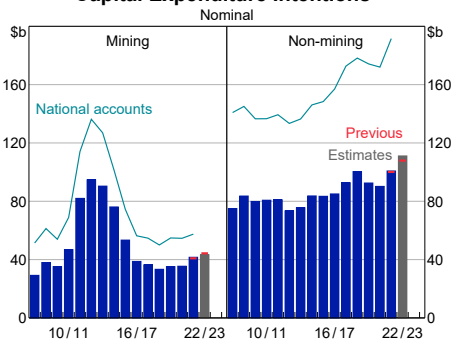
Residential construction activity is continuing to face capacity constraints

A number of factors have combined to slow the pace of residential construction since the start of 2022, including ongoing shortages of labour and materials, adverse weather conditions and illness-related absenteeism (Graph 2.15). The decline in activity in the June quarter was largest for the detached housing sector, reflecting that firms in this sector tend to be smaller project home builders and are more sensitive to supply chain issues affecting the availability of labour and materials. Consistent with this, average completion times rose by about a month in 2021/22. These delays, in combination with higher material costs, have reduced cash flows and contributed to rising insolvencies in the construction sector.

Demand for new detached housing has fallen considerably since the start of the year, due to rising interest rates, higher prices for land and construction alongside falling established home prices, and poor buyer sentiment arising from construction delays. Consistent with this, building approvals, new greenfield land sales and new home orders have all declined. Information from the Bank's liaison program suggests that demand for off-the-plan apartments has also softened of late. Nevertheless, the pipeline of work to be done remains

Graph 2.14

Capital Expenditure Intentions*

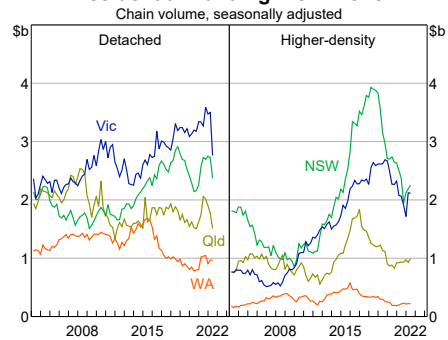


* Estimates are firms' expected capital expenditure; adjusted for past average differences between expected and realised spending.

Sources: ABS; RBA

Graph 2.15

Residential Building Work Done



Sources: ABS; RBA

Table 2.1: Housing price growth

Percentage change, seasonally adjusted

	October	September	August	July	Year-ended	Five-year growth
Sydney	-1.5	-1.7	-1.9	-1.9	-8.6	10
Melbourne	-1.0	-0.9	-1.0	-1.1	-5.6	4
Brisbane	-1.8	-1.3	-1.2	-0.5	8.4	36
Adelaide	-0.3	0.0	0.1	0.6	16.5	47
Perth	0.0	-0.1	0.1	0.5	4.0	18
Darwin	-0.5	-0.0	1.2	0.5	4.9	13
Canberra	-1.0	-1.5	-1.8	-1.3	1.0	44
Hobart	-1.1	-1.2	-1.4	-0.9	-1.0	52
Capital cities	-1.2	-1.2	-1.3	-1.1	-3.1	13
Regional	-1.3	-1.0	-1.1	-0.5	6.6	37
National	-1.1	-1.2	-1.2	-0.9	-0.9	18

Sources: CoreLogic, RBA

elevated, reflecting the delays associated with constructing the large number of dwellings approved during the pandemic (Graph 2.16).

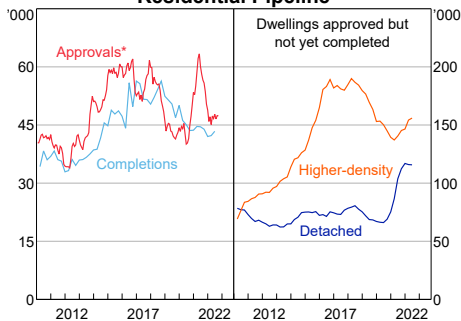
Housing prices have declined further ...

National housing prices declined in October, to be 5 per cent lower than the peak in April, alongside rising interest rates and a deterioration in market sentiment; nevertheless, prices are still around 20 per cent higher than at the onset of the pandemic (Table 2.1). Prices have declined across most market segments

and geographic areas over recent months and – as is typical of housing price cycles in Australia – especially so in the most expensive segments of the Sydney, Melbourne and Brisbane markets (Graph 2.17). Auction clearance rates and turnover in most capital cities have declined since the beginning of the year, and survey expectations of housing price growth remain low.

Graph 2.16

Residential Pipeline

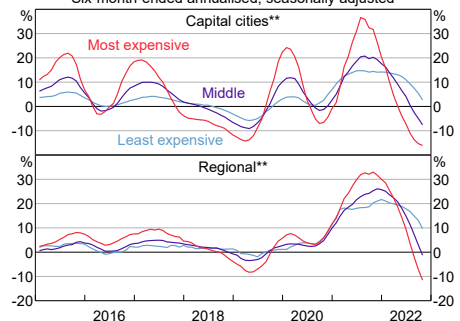


* Rolling three-month sum.
Sources: ABS; RBA

Graph 2.17

Housing Price Growth by Dwelling Value*

Six-month-ended annualised, seasonally adjusted



* Least expensive (5th–25th percentiles), middle (25th–75th percentiles), most expensive (75th–95th percentiles).

** Capital cities price indexes are for the eight capital cities and regional prices are for the rest of Australia.

Sources: CoreLogic; RBA

... and the rental market is very tight

Rental vacancy rates have declined in most capital cities and regional areas since the beginning of the year (Graph 2.18). Declines have been largest in Melbourne and Sydney, particularly in the inner and middle suburbs of Sydney, to be around their longer 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; CPI rent inflation, which measures rent increases for all leases, has risen in recent months. Recent flooding is expected to place short-term pressure on rental markets and temporary accommodation in flood-affected communities.

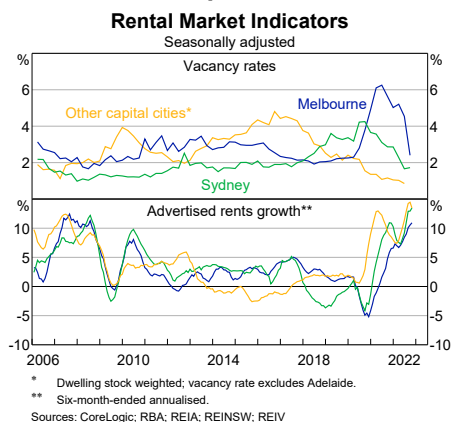
Despite the tightness in the rental market and rising rents, average household size has declined to a low level relative to the past quarter-century (Graph 2.19). This suggests the demand for additional space during the pandemic has endured so far, which in turn could be contributing to tight conditions in the rental market. The increase in net immigration following the reopening of the international border is also likely to increase rental demand, particularly in Sydney and Melbourne.

Public consumption remains elevated

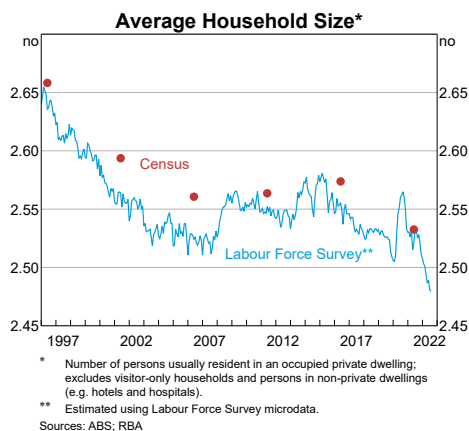
In the June quarter, a sharp decline in real public consumption offset growth in public investment, as the previous quarter's high level of spending in response to the floods and the pandemic was unwound. Public consumption nonetheless remains at a high level compared with the pre-pandemic period as a share of nominal GDP, supported by public spending programs such as the National Disability Insurance Scheme (Graph 2.20). A strong pipeline of infrastructure projects is expected to support public investment going forward, though labour shortages and elevated capacity utilisation in the construction sector are expected to hamper the pace of work.

The Australian Government Budget October 2022–23 revealed a large upgrade to expected receipts over the next two years, owing to higher commodity prices and the stronger-than-expected labour market. The upgrade to receipts is expected to reduce the budget deficit relative to the estimates in the March Budget (Graph 2.21). Additional funding for aged care and payments to reduce the cost of child care were mostly offset by policies that increase tax revenue.

Graph 2.18



Graph 2.19

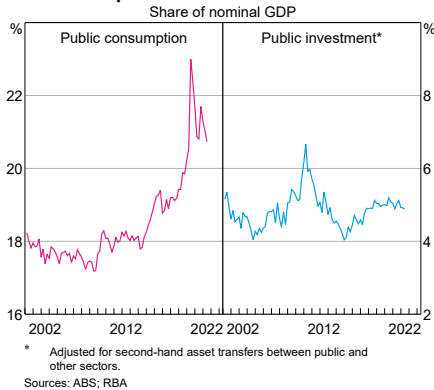


Exports remain at a high level ...

Export values remained at a high level in the September quarter (Graph 2.22). Rural export values have continued to increase, reflecting strong domestic production and high prices amid tight global supply. Resource exports have been hampered by weather and maintenance disruptions after minimal disruptions in the June quarter. Combined with a sharp increase in import values due to strong demand for overseas travel and the filling of goods order backlogs, this has seen the trade surplus decline in the September quarter.

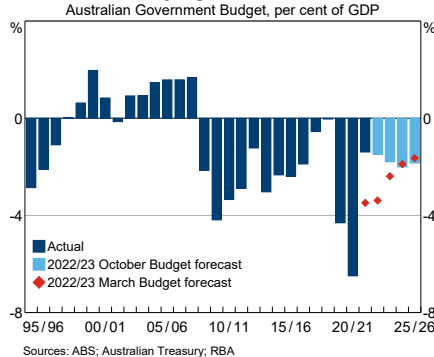
Graph 2.20

Components of Public Demand



Graph 2.21

Underlying Cash Balance



... while services trade continued to grow

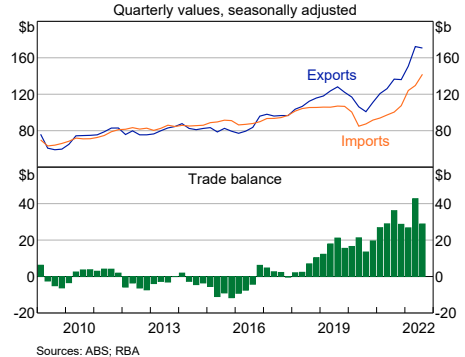
Trade in services continued to recover following the reopening of the international border for vaccinated travellers in late February. Both travel exports and imports rose in the June quarter, reaching 40 per cent of their pre-pandemic levels.

Partial data suggest imports increased in the September quarter, reflecting the strong demand for travel services. Short-term resident returns (an indicator for travel services imports) has grown rapidly over 2022 to date.

On the exports side, the number of visitors to Australia has recovered more slowly (Graph 2.23). Visa lodgement data suggest that foreign demand for education is strong, but student arrivals have been partially constrained by delays in visa processing following the reopening of borders. It will take at least two years for the number of international students in Australia – and so services exports – to recover to pre-pandemic levels. ✎

Graph 2.22

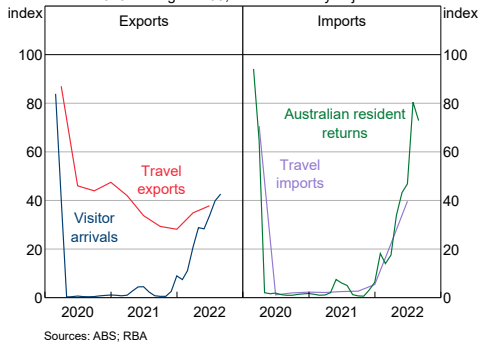
Trade in Goods and Services



Graph 2.23

Travel Services Trade

2019 average = 100, non-seasonally adjusted



Box A

Insights from Liaison

This Box summarises information collected by five teams based in Adelaide, Brisbane, Melbourne, Perth and Sydney during discussions with around 250 businesses, industry bodies, government agencies and community organisations over the period from the beginning of August to the end of October. 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'.

The Bank's liaison contacts continued to report strong demand for goods and services over the past three months. Conditions in the labour market remain very tight and wages growth has picked up further. Most firms continue to operate at or very close to full capacity and investment intentions remain at or above average levels for most industries; cost increases and ongoing input shortages present a risk to their plans. However, there are signs that firms are starting to see turning points in a range of economic conditions. While retail demand remains elevated, it seems to have plateaued in real terms and sales of new homes have declined. Hiring intentions have eased from very high levels and wages growth is expected to pick up further in coming quarters. A small but growing number of goods-related firms have reported an easing in their non-labour cost pressures recently. While most firms intend to increase prices further in coming months, these increases are generally expected to be smaller than those of late.

Household sector

Consumption remains buoyant but growth has slowed recently

Retail contacts generally described conditions as remaining buoyant but with some slowing in growth in nominal sales in recent months. A few contacts observed that some customers appear to be buying cheaper brands or shopping around more than they were earlier in the year. Sales at cafes & restaurants outside of CBDs were reported to be back around pre-pandemic levels. The recent increase in nominal retail sales appears to be mainly driven by price increases rather than higher volumes (see below).

Many tourism contacts reported that spending on domestic tourism has recovered to be at or above pre-pandemic levels, largely driven by leisure travel. Some contacts noted that business travel has been slower to recover. Domestic demand for university education continues to be low, in part because strong labour demand is encouraging more participation in the labour market.

Firms expressed mixed views around the outlook for household spending. Hospitality

sector contacts were generally optimistic. While some retailers noted concerns that low consumer sentiment could translate into reduced spending on durable goods, other retailers suggested that favourable labour market conditions should continue to support demand for at least the next three to six months. Tourism contacts conveyed concerns that Australians may start to travel overseas in greater numbers before international tourism picks up sufficiently to make up the shortfall in the domestic sector.

Higher cost of living has lifted demand for community services

Community service providers reported an increase in demand for financial assistance due to higher cost-of-living pressures. Those seeking assistance are primarily households that rent, although there has been a pick-up in recent home buyers contacting community service providers. Affected households were said to have reduced their consumption of fuel, utilities, food and medicines, and in some cases sought financing to cover their expenses. The sector's capacity to meet higher demand for services is being constrained by funding limitations and labour shortages, with the sector also experiencing high turnover rates and a lower level of volunteers relative to before the pandemic.

Business sector

Investment intentions remain at or above average

Most firms reported that finance remains readily available, which has supported ongoing plans for investment; however, financing conditions have been more difficult in the construction and fossil fuel-exposed

industries for some time. Various supply constraints and uncertainty about costs for delivering projects are a concern for firms and these issues have made project feasibility estimation more difficult. In this context, some firms noted downside risks to the outlook for the volume of their investment.

Investment intentions in the transport & storage and wholesale & retail trade industries have declined from a high level over recent months. Investment plans among mining and mining-associated firms vary – some miners plan to increase their capital expenditure over the coming year, while others plan to prioritise sustaining investment rather than investment that supports expanding production.

Housing construction continues to face headwinds from a range of supply-side factors

Residential construction work remains at a high level, with many builders and developers reporting a substantial pipeline of construction activity still to be worked through. Challenges to obtaining tradespeople in a timely fashion persist and contacts noted that availability of labour remains a significant constraint on the ability to get work done. Bad weather on the east coast of Australia has also disrupted construction activity. Some firms reported that construction materials had become somewhat easier to obtain in recent months, but overall obtaining materials remains more difficult and expensive than was the case pre-pandemic.

Sales of new homes for construction have fallen alongside rising interest rates and the reduction in fiscal support for home building. As a result, the outlook for residential construction firms' output is expected to be

lower from mid-2023, once the existing order book is worked through.

The outlook for exports is mixed

The number of international students and other visitor arrivals has continued to recover in recent months, and international student commencements have picked up at a faster pace than expected by some contacts. However, contacts remain concerned that the outlook for global economic conditions may hinder the recovery in international tourism. Bulk commodity exports have been affected by planned and unplanned maintenance over recent months. The third La Niña event on the east coast is also seen as a risk to the outlook for production and export volumes for commodities.

Employment intentions remain very strong but appear to have eased a little

Hiring intentions remain elevated but are not quite as high as they were a few months ago. Based on firms spoken to in liaison, the share of firms that intend to increase headcount over coming months declined from around 70 per cent a few months ago to around 55 per cent in October. However, very few firms plan to reduce headcount. Hiring intentions in the quarter were strongest in the business services and transport & storage industries.

Difficulties obtaining appropriate candidates continue to be widespread across location, industry and occupations. Some of the positions noted to be difficult to fill were those in information technology, human resources, accounting, construction-related trades and in the rural sector. Some noted that labour availability had improved a little recently; however, for many firms – including those whose staff work in close proximity,

such as manufacturers – illness-related absenteeism remained a challenge.

Costs and prices

Private sector wages growth has continued to pick up

Firms reported that year-ended growth in base wages had increased to be a little above 3½ per cent, although with a wide range of outcomes across firms and industries.^[1] This compares with an average increase of around 3 per cent reported by firms in the three months prior. The increase over recent months reflects firms' responses to strong labour demand, the award wage increases announced by the Fair Work Commission and higher inflation outcomes.

Around one-quarter of firms reported wages growth over the past year of more than 5 per cent. This is in contrast to the years leading up to the pandemic when very few firms reported wages growth above 5 per cent. The strongest reported wages outcomes at an industry level continued to be among firms in the construction and business services industries (Graph A.1). Wage freezes and wage declines have become rare over the past year.

Many firms continued to report the use of non-base wage measures to attract and retain staff but have found that larger base wage increases have also been needed.

Liaison contacts across a wide range of industries indicated that they expect a further pick-up in wages growth in coming quarters. Around two-thirds of firms over the past three months expect wages growth of between 3–5 per cent and around 10 per cent of firms expect growth of more than 5 per cent. Around one in four contacts expect wages to grow more slowly over the

coming year than over the previous 12 months. Most of these contacts are at firms that had wages growth of more than 5 per cent over the past year, and around half still expect wages growth at their firm to be above its historical average over the next year.

Other cost pressures remain elevated but have started to ease

While non-labour cost pressures remain elevated, some contacts noted that the prices of materials and freight had stabilised or even declined a little recently. Retail contacts reported that wholesalers continued to seek to renegotiate higher prices for their goods, and that higher input costs remained a challenge for manufacturers. Construction firms reported further large increases in subcontractor rates recently, but also that the rate of increase for the cost of materials had slowed following some improvement in supply chains.

Firms are highly uncertain about how their non-labour costs will evolve over the coming year. On the one hand, goods-related firms said global demand could weaken, which should reduce upwards pressure on costs. On the other hand, most firms do not expect

shipping times and reliability, or the availability of materials, to fully normalise for several quarters yet and some reported that the recent AUD/USD depreciation, if sustained, will add to the cost of imported goods. Energy costs are expected to increase further in the period ahead as higher wholesale electricity and gas prices continue to be passed through to end-users' energy prices. Firms also remain concerned about the prospect of supply chain issues persisting.

Previous cost increases are still being passed through to prices

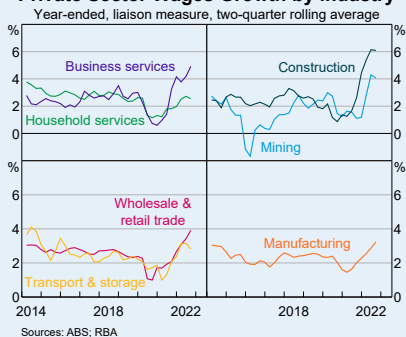
Price increases have remained widespread over recent months. Home builders continued to report that they had increased their prices for new sales. Higher costs from wage increases had also been passed through to prices paid by customers at cafés and restaurants, where labour is a comparatively large share of costs. Most other retailers also reported that they had increased prices in the three months to October.

Many firms currently expect to increase prices further over coming months, including in the professional services and construction industries and at cafes & restaurants. By contrast, some other retailers reported they had reduced the size of price increases planned for coming months relative to a few months ago, while others reported increased discounting.

The key messages from the Bank's liaison program on prices and wages have been in line with those from the latest earnings reports and related investor conference calls by listed Australian companies in their six-monthly reporting season (Graph A.2).^[2]

Graph A.1

Private Sector Wages Growth by Industry



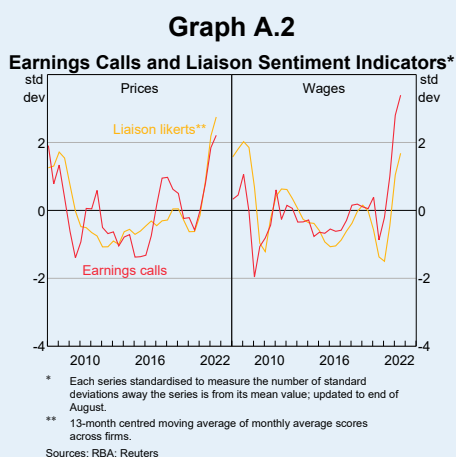
Recent flooding is expected to increase food prices over coming months

Recent flooding in south-eastern Australia has been disastrous for many households and businesses. Contacts expect significant personal losses to property and motor vehicles in affected areas, and there has been an increase in demand for financial assistance and counselling from rural households.

The full extent of crop and livestock losses is still being assessed and damages continue to increase as water progresses along river systems. The areas flooded in New South

Wales, Tasmania and Victoria in October together account for a non-trivial proportion of agricultural output. Affected products include broadacre crops, fruits & vegetables and dairy. Contacts have noted that there has been significant disruption and damage, but that not all agricultural production in affected areas has been entirely destroyed. These supply shocks to fresh food will push up prices for some goods at retailers; however, liaison contacts expect the inflationary impact of the latest floods to be smaller than those earlier in the year in Queensland and northern New South Wales.

Some firms stated that very strong farming output in South Australia and Western Australia this year should partially offset potential lower production on the east coast. However, firms across several industries – including commodity exporters, utilities producers and construction firms – have expressed concern about further supply shocks that could arise from the third consecutive La Niña event on their production and economy-wide costs and prices. ↴



Endnotes

- [1] Liaison estimates are the trimmed mean of firms' reported wages growth, rescaled to have the same mean as the private Wage Price Index.
- [2] This indicator measures the frequency with which a topic is mentioned in earnings calls from Australian-listed companies, which take place following the release of financial results.

3. Domestic Financial Conditions

Australian financial conditions have tightened further in recent months as the Reserve Bank has continued to increase the cash rate.

Yields on Australian Government Securities (AGS) have continued to be volatile in recent months, mirroring large moves in global bond yields. Yields rose sharply over August and September as persistently high inflation increased expectations for further rapid monetary policy tightening by most central banks; fiscal developments in the United Kingdom also contributed to the increase in volatility. Overall, AGS yields are now back to around their June peaks. Money market rates have continued to rise, with market participants expecting further policy tightening in the near term. Current market pricing implies expectations of an increase in the cash rate to a little over 3 per cent by the end of 2022 and around 4 per cent by mid-2023. Bond markets have continued to function reasonably well, with some minor deterioration in late September during heightened volatility arising from developments in the United Kingdom.

Banks' funding costs have increased alongside the rise in market yields and increases in the cash rate. Up to October, lenders have passed on the cash rate increases in full to reference rates for variable-rate housing and business borrowers. When this *Statement* was finalised, the largest housing lenders had announced they will likewise pass on the November increase in full. Scheduled payments on housing loans have increased and, given the normal lags, will continue to do so over the coming months. Commitments for new housing loans have

declined considerably, consistent with higher interest rates, falling housing prices and lower turnover in the housing market. Though housing credit growth has declined, business credit has grown strongly, particularly borrowing by medium- and large-sized firms.

The Australian dollar has depreciated over recent months and volatility has increased in foreign exchange markets. These developments have occurred alongside the decline in yields on Australian Government bonds relative to those of the major advanced economies, a further broad-based appreciation of the US dollar, and declines in the prices of international risk assets and several commodities amid concerns about the global growth outlook.

AGS yields have been volatile

Yields on AGS have been volatile, with both three- and 10-year bonds trading in a 100 basis point range since the previous *Statement* (Graph 3.1). Yields have risen considerably since August, to be back around their peaks in June. AGS yields declined for a time in response to the Board's October announcement to raise the cash rate by less than the market expected. Yields also declined a little in response to the Board's November announcement to increase the cash rate by 25 basis points.

Movements in long-term AGS yields over the past three months have generally followed moves in yields in international markets (Graph 3.2). Yields rose in response to high and persistent inflation in advanced economies, which led to expectations that central banks

would need to increase policy rates faster and to a higher level than expected at the time of the previous *Statement*. Also contributing was a sharp rise in UK Government bond yields in response to the government’s ‘mini budget’, which raised market expectations for substantial additional UK bond issuance and higher policy rates. There was a temporary retracement in AGS yields in response to subsequent bond purchases by the Bank of England that helped to address dysfunction in UK bond markets, and to following developments in UK fiscal policy. The Reserve Bank’s decision to increase the cash rate by 25 basis points at the October meeting also contributed to lower AGS yields for a time, as many market participants had expected an increase of 50 basis points and so re-evaluated the expected path of the cash rate. AGS yields also fell a little in response to the Reserve Bank’s decision at the November meeting to increase the cash rate by 25 basis points, which was viewed as reducing the likelihood of larger increases in future. Nonetheless, AGS yields remain much higher than at the previous *Statement*, and are around their recent peaks in June.

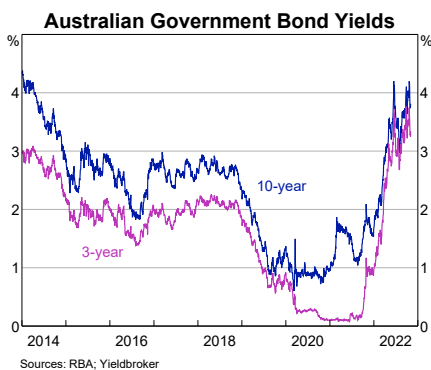
The differential between yields on 10-year AGS and US Treasuries has declined considerably to be around –25 basis points, from around 90 basis points in June (which had been its highest level since 2014). The decline in the

differential has been more pronounced in shorter term yields, with the differential between three-year AGS and US Treasuries around –120 basis points. This reflects market participants’ expectation that US interest rates will be higher for longer than Australian interest rates, given the outlook for higher inflation and wages growth in the United States.

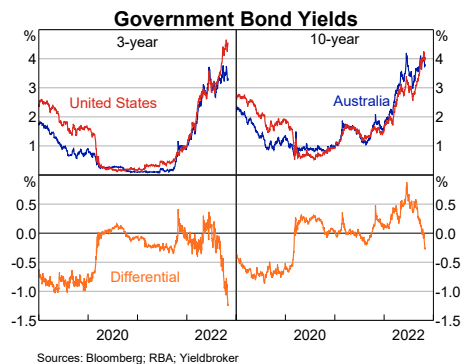
The increase in longer term AGS yields has been largely driven by higher real yields as evidenced by similar moves in inflation-linked bond markets, and reflects expectations for further increases in policy rates. Market measures of longer term inflation expectations (which capture both inflation expectations and risk premia) remain stable and well anchored, suggesting that the anticipated monetary tightening is expected to be sufficient to keep inflation around the target range over the medium term. Shorter term AGS yields have also increased, reflecting higher real yields, while inflation compensation at shorter tenors has declined (Graph 3.3).

Yields on semi-government securities (semis) have increased further than AGS yields, reflecting an increase in risk premia and a considerable widening in swap spreads during a period of rising volatility in bond markets globally.

Graph 3.1



Graph 3.2



Government bond issuance continues to be slower than last year

Bond issuance by the Australian Office of Financial Management (AOFM) continues to be a little slower than 2021, reflecting improvement in the Australian Government’s underlying fiscal position (Graph 3.4). Consistent with this, the AOFM announced guidance for its 2022/23 fiscal year issuance of around \$95 billion – a decrease of around \$30 billion on previous guidance.

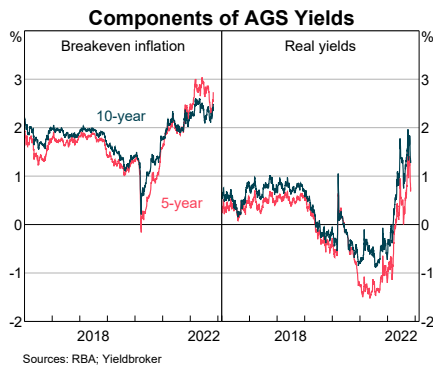
Most measures suggest bond markets have functioned reasonably well

Market contacts reported that liquidity decreased a little around the period of

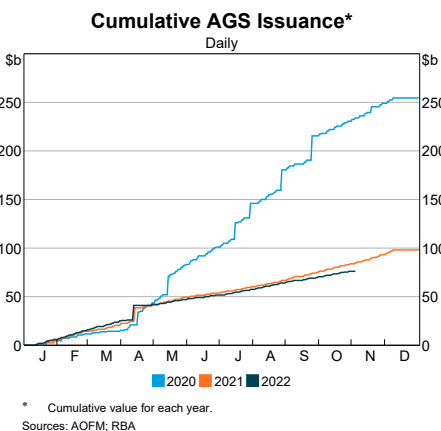
heightened volatility in UK bond markets in late September and early October. Nonetheless, bid-offer spreads for longer term AGS and semis remain around their lowest levels in recent years, despite increased volatility in yields in recent months (Graph 3.5). By contrast, market liaison suggests that there are some strains in the swap market, with flows particularly one-sided and the spread between swap rates and AGS yields has been at its highest level in a decade.

Demand to borrow AGS from the Bank has remained high but stable in recent months (Graph 3.6). Market participants borrowed an average of a little under \$6 billion of bonds per day from the Bank over this period. Demand remains focused on bonds with residual maturities of two to three years, particularly those where the stock available in private markets is more limited because of 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 is supporting the functioning of government bond markets.

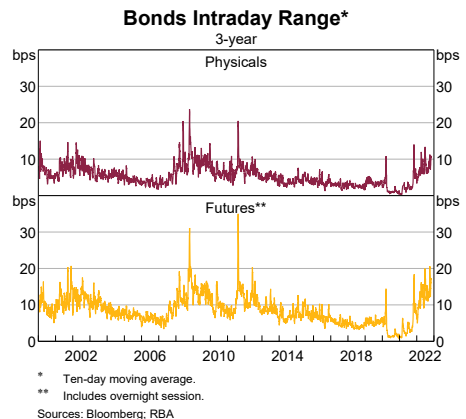
Graph 3.3



Graph 3.4



Graph 3.5



Cash rate expectations are little changed for the near term but have increased for later in 2023

Market expectations for the level of the cash rate through to early 2023 have been little changed in recent months. Expectations initially increased through August and September, alongside expectations for higher inflation globally in the near term and consequently policy rate rises in advanced economies, including Australia. However, this upward move was retraced following the Board’s lower-than-expected increase in the cash rate in October. Following the increase in the cash rate target to 2.85 per cent in early November, prices for overnight indexed swap (OIS) contracts imply that market participants expect the cash rate to be increased in December to finish the year around 3.1 per cent, similar to most market economists’ cash rate expectations. Market expectations for the cash rate through mid-to-late 2023 have increased over the past three months, to reach a peak of around 4 per cent (Graph 3.7).

In recent months, transaction volumes in the cash market have picked up. As a result, the cash rate was determined by market transactions on most days. The cash rate has increased in line

with the cash rate target since August, remaining 4 basis points below the target.

Money market rates have continued to rise

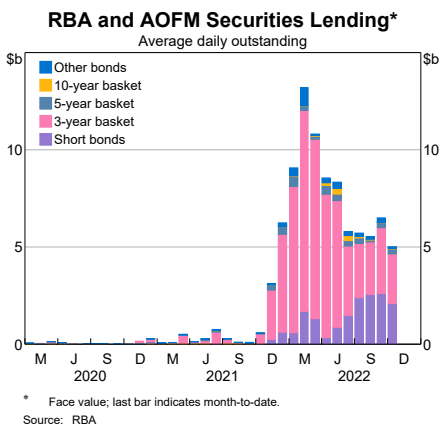
Short-term money market rates have increased over recent months, including bank bill swap rates (BBSW), consistent with the increase in the cash rate and market expectations for further increases (Graph 3.8). The cost of Australian dollar funding from offshore short-term issuance (via the foreign exchange swap market) 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 has increased a little in recent months, but remains low relative to pre-pandemic activity, reflecting large Exchange Settlement balances.

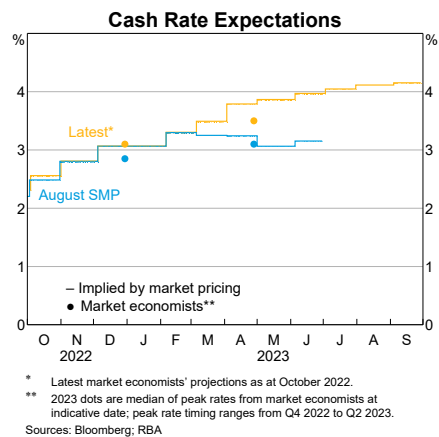
The Bank’s balance sheet remains large but will decline over the next few years

The Bank’s balance sheet has been little changed at around \$620 billion over the past few months (Graph 3.9; Graph 3.10). This follows

Graph 3.6

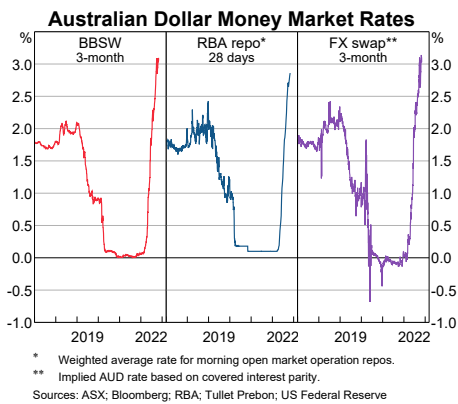


Graph 3.7



a large expansion in 2020 and 2021, reflecting the policy measures introduced by the Bank in response to the COVID-19 pandemic. Since the previous *Statement*, the composition of assets has changed, with higher bond yields leading to a decline in the market value of the Bank’s bond holdings, while a depreciation in the exchange rate increased the Australian dollar value of gold and foreign exchange. The Bank’s balance sheet will decline over the coming years as Term Funding Facility (TFF) funding matures between early-to-mid 2023 and mid-2024. Also, the maturity of the Bank’s government bond holdings will contribute to a decline in the Bank’s balance sheet over a number of years.

Graph 3.8

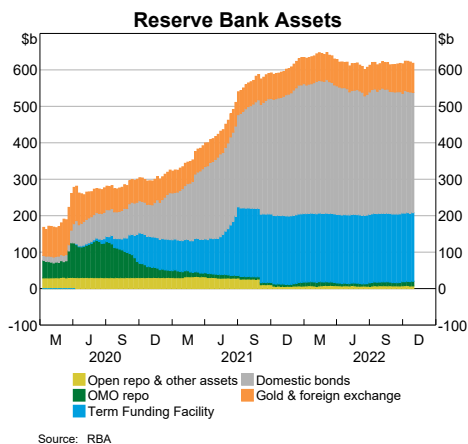


Bank bond issuance slowed in recent months

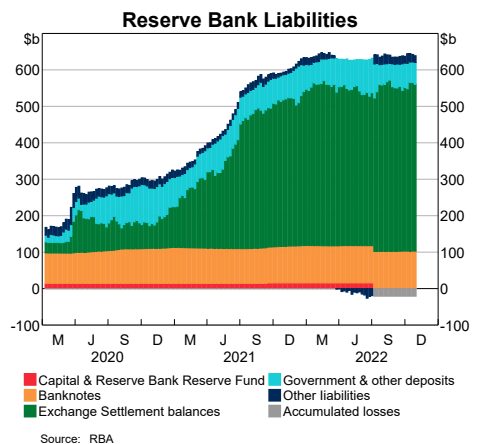
Bank bond issuance has slowed in recent months but remains high over the year to date, following strong issuance earlier in the year (Graph 3.11). Banks raised \$27 billion in bond markets during the three months to the end of October, with an average tenor of around five years – a little lower than the average of recent years. Covered bond issuance remained relatively high at \$5.5 billion over this time. Year-to-date issuance of covered bonds is at the second highest level since their introduction in 2011. Some of this recent issuance may have reflected a preference for secured products, which can be easier to issue during times of financial market volatility.

Bank bond yields remain around their levels of three months ago, after increasing sharply in the earlier part of the year. Yields on three-year bonds are currently around 5 per cent – the highest level since 2012 (Graph 3.12). Movements in recent months have been broadly in line with those in the swap rate (a reference rate for the pricing of fixed-income securities), with the spread to the swap rate little changed in net terms over the past three months.

Graph 3.9



Graph 3.10

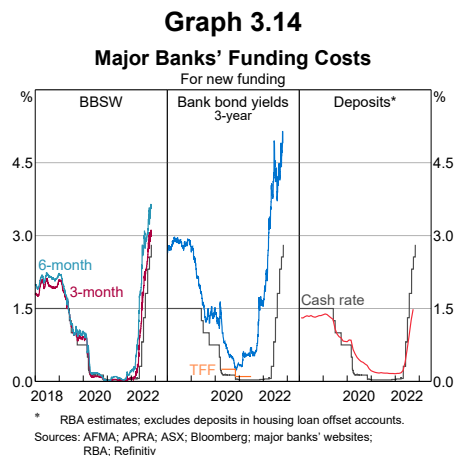
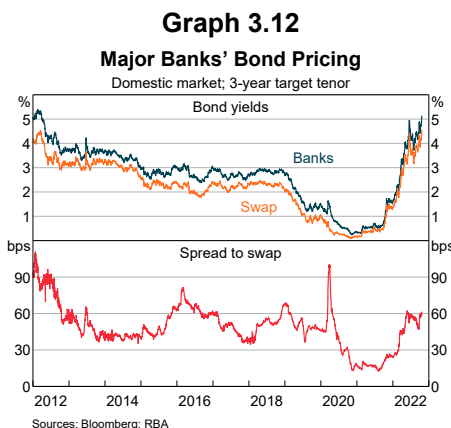
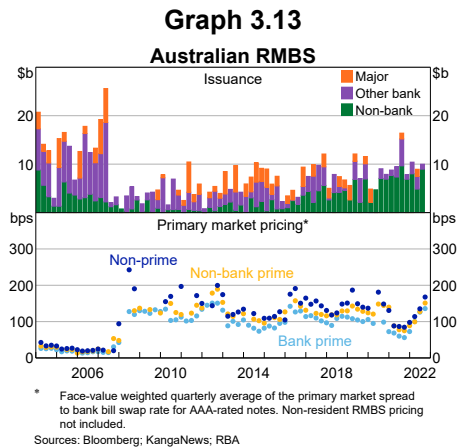
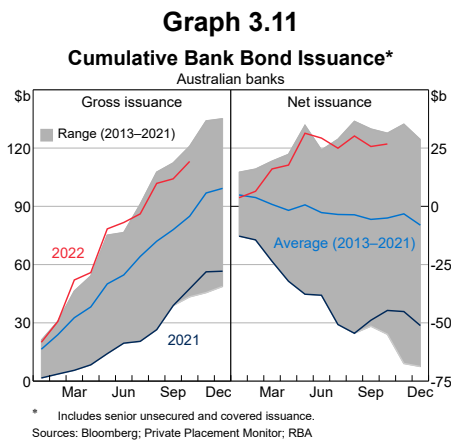


Issuance of RMBS by non-banks has increased and spreads have widened

Issuance of residential mortgage backed securities (RMBS) have remained robust in recent months. Non-banks, which have increased issuance in recent months, accounted for \$9 billion of the \$10 billion issued in the September quarter – the highest share since the June quarter of 2020; they then accounted for all the issuance in October (Graph 3.13). Spreads on RMBS widened further. Market liaison with banks confirmed that wider spreads in RMBS markets made issuance less appealing for them compared with senior unsecured and covered bond issuance.

Banks' funding costs have increased considerably

Banks' overall funding costs have continued to increase in recent months, and are now higher than they were before the pandemic. These increases have been underpinned by rising BBSW rates, reflecting actual and prospective increases in the cash rate (Graph 3.14). Much of banks' wholesale debt and deposit costs are linked to BBSW rates directly or through hedging. For example, banks can use interest-rate swaps to hedge a portion of their fixed-rate liabilities to better match the floating rates earned on a large share of their assets. The cost of these hedges is closely linked to BBSW rates.



Average deposit rates have risen, but by less than the cash rate

Average rates paid on at-call and new term deposits have increased over recent months (Graph 3.15). These increases are contributing to higher funding costs, as deposits make up around 60 per cent of banks' funding. The average rate on at-call deposits – which account for the bulk of deposits – has increased by less than the cash rate. By contrast, average rates on new term deposits have 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. In line with higher average deposit rates, since February the share of major banks' deposits paying low interest rates (between 0 and 25 basis points) has fallen to around 15 per cent; a similar share to before the pandemic (Graph 3.16). These low-rate deposits include some at-call savings accounts offered to retail customers, which only pay a 'bonus' rate of interest when certain conditions are met; otherwise, the rate is typically less than 50 basis points. Interest rates on transaction accounts have also generally remained low (or in some cases at zero per cent).

The stock of deposits has continued to grow over recent months, underpinned by increases

in the volume of term deposits (Graph 3.17). Term deposits have become more attractive of late as, on average, the rates on new term deposits have increased more quickly than the rates paid on at-call deposits. This increasing spread partly reflects that some banks have sought to attract funds into term deposits through higher rates due to their more favourable treatment for banks' liquidity ratios than at-call deposits. In addition, depositors tend to demand a higher rate in return for locking away funds for a period of time. This spread was compressed during the pandemic as interest rates fell close to zero.

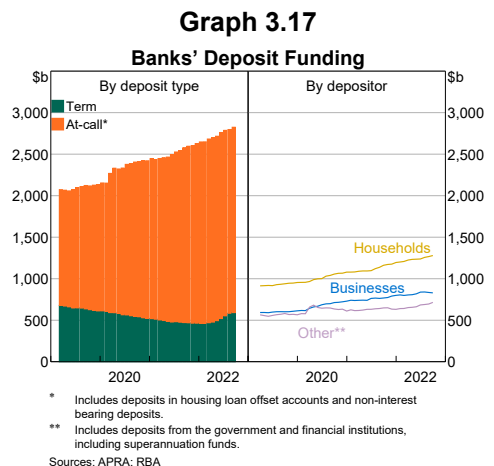
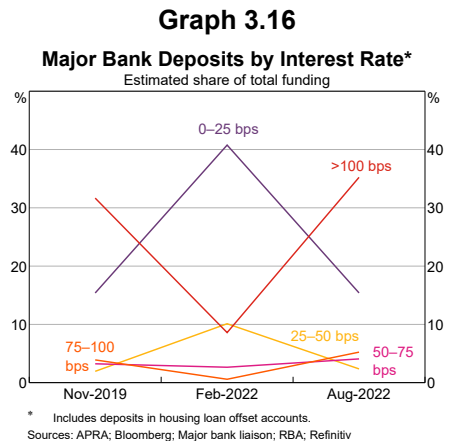
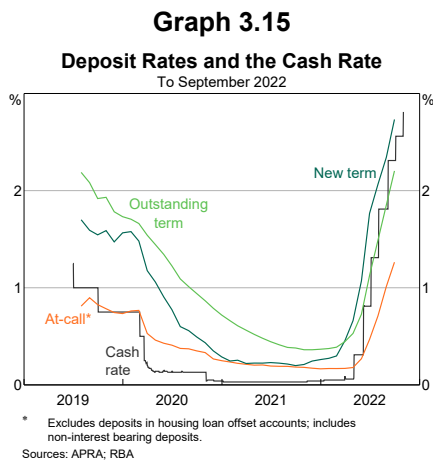


Table 3.1: Growth in Financial AggregatesPercentage change^(a)

	Three-month annualised		Six-month annualised	
	Jun 22	Sep 22	Mar 22	Sep 22
Total credit	11.0	9.4	8.7	10.2
– Household	7.0	5.8	7.3	6.4
– Housing	7.5	5.9	8.0	6.7
– Owner-occupier	7.6	6.5	8.6	7.1
– Investor	7.3	4.9	6.7	6.1
– Personal	0.4	2.2	–1.0	1.3
– Business	19.7	16.4	11.4	18.1
Broad money	9.7	2.5	9.0	6.0

(a) Seasonally adjusted and break-adjusted.

Sources: ABS; APRA; RBA

Growth in total credit remained strong

Total credit growth on a six-month-ended annualised basis has increased further in recent months, and remains at around its fastest pace in more than a decade (Graph 3.18; Table 3.1). The increase in total credit growth has reflected strong growth in business credit. By contrast, growth in housing credit has declined. Personal credit, which accounts for only 4 per cent of total credit, grew slightly over the September quarter, after consistently falling since 2015 (in part because consumers shifted to using debit cards rather than credit cards). This growth in personal credit has largely reflected increases in outstanding credit card balances, consistent with strong nominal consumption growth, and follows a sharp decline in credit card spending during the pandemic.

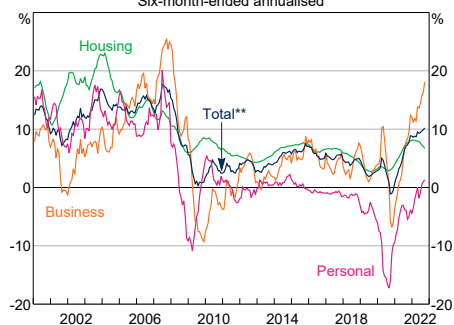
Demand for new housing loans has declined sharply but refinancing activity has reached new highs

Housing credit growth declined in September to 6¾ per cent on a six-month-ended annualised basis (Graph 3.19). Both owner-occupier and investor credit growth have declined in recent months. Housing credit growth is expected to decline further, as commitments for new

housing loans have continued to fall.

Commitments are now 25 per cent below their peak in January 2022. The large decline in housing commitments in recent months follows further increases in interest rates and noticeable declines in housing prices and turnover (Graph 3.20).

By contrast, commitments for external refinancing (switching to a new housing lender) have reached record high levels. Borrowers with variable-rate loans are searching for a better deal on their mortgage as interest rates and the cost of living increase. At the same time, a higher

Graph 3.18**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

number of borrowers who took out fixed-rate loans during the pandemic have reached the end of their fixed-rate period and are shopping around for a new loan. These data do not capture borrowers negotiating a lower rate with their current lender, which has also increased.

Interest rates on housing loans have risen further

Housing lenders have passed on the cash rate increases up to October in full to their reference rates for variable-rate loans (Graph 3.21). At the time this *Statement* was finalised, the largest housing lenders had announced they would pass through the November increase in the cash

rate in full to their housing reference rates. Most borrowers pay a lot less than the reference rate, as lenders offer discounts.^[1]

Data to the end of September (the latest available data) show that the average variable rate on outstanding housing loans is around the level of early 2014. Although standard reference rates have so far moved in line with the cash rate this year, the average outstanding rate has risen by a little less than the cumulative increase in the cash rate (Table 3.2). This mostly reflects existing borrowers refinancing or renegotiating the terms of their existing loan to take advantage of the larger discounts available for new variable-rate loans. Interest rates on new variable-rate loans remain around 50 basis points lower than on outstanding loans.

Fixed rates on new loans have increased rapidly over the past year alongside the rise in swap rates (the pricing benchmark for these loans). Given new fixed rates are on average higher than new variable rates, the share of new lending at fixed rates has declined to be well below pre-pandemic levels. By contrast, the average rate paid on outstanding fixed-rate loans has edged up only a little in recent months, as existing fixed-rate loans gradually expire and relatively few borrowers take out new fixed-rate loans (Graph 3.22).

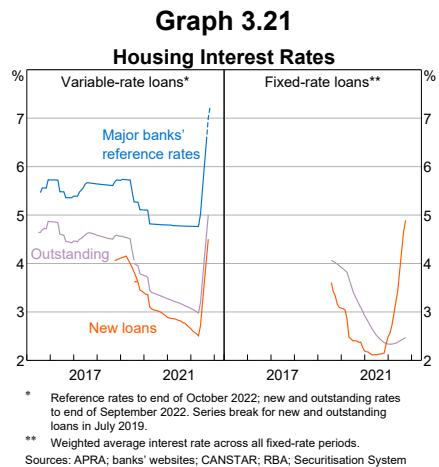
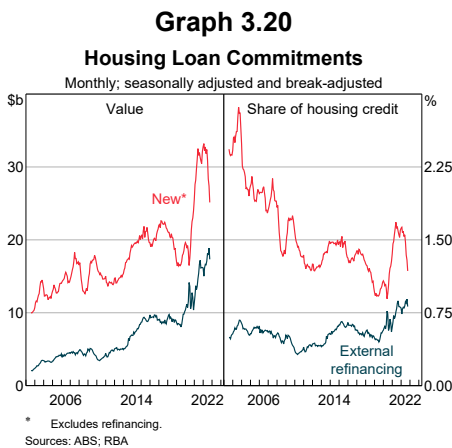
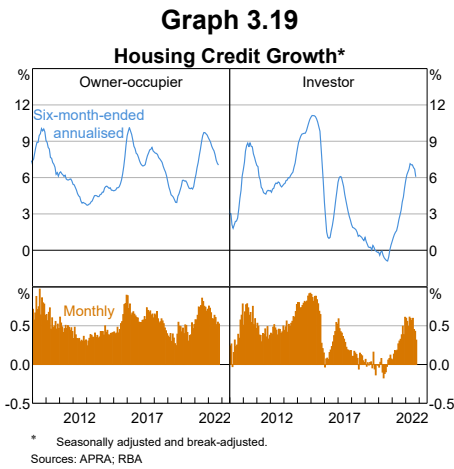


Table 3.2: Average Outstanding Housing Rates

September 2022

	Interest rate in Sep 2022 Per cent	Change since Apr 2022 Basis points	Change since Feb 2020 Basis points
Cash rate	2.35	225	160
Variable-rate loans			
– Owner-occupier	4.88	202	131
– Investor	5.25	204	128
– All variable-rate loans	5.00	202	129
Fixed-rate loans			
– Owner-occupier	2.36	13	–136
– Investor	2.69	9	–132
– All fixed-rate loans	2.47	12	–138
Loans by repayment type^(a)			
– Principal-and-interest	4.07	140	45
– Interest-only	4.74	150	51

(a) Weighted average across variable- and fixed-rate loans.

Sources: APRA, RBA

Housing loan payments will increase further over coming months

Total scheduled payments on housing loans increased slightly in the September quarter, as increases in the cash rate were passed through to variable-rate borrowers (Graph 3.23).

Borrowers who took out fixed-rate loans during the pandemic at low interest rates are facing higher loan payments as their fixed-rate period expires and they roll off onto a new, higher

interest rate. Recent increases in the cash rate will result in loan payments increasing further over the coming months, as it typically takes one to two months for a cash rate increase to fully flow through to payments on variable-rate housing loans. Total scheduled payments on housing loans are projected to increase to around 9¼ per cent of household disposable income by the end of 2023, based on cash rate increases to date and maturing fixed-rate loans rolling into higher interest rate loans.^[2]

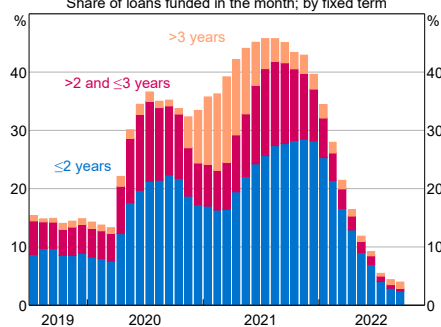
Net payments into offset and redraw accounts over the year to date are slightly below those in 2021. Net payments slowed in the September quarter, though in aggregate households continued to accumulate funds in these accounts. Since early 2020, mortgage borrowers have paid \$113 billion into offset and redraw accounts – about 7 per cent of household disposable income.

As at September, owner-occupiers with variable-rate loans had a median buffer of around 1⅓ years of scheduled payments. However, as discussed in the October *Financial Stability*

Graph 3.22

Fixed-rate Housing Loans

Share of loans funded in the month; by fixed term



Sources: APRA, RBA

Review, these buffers are unevenly distributed. A small group of variable-rate borrowers with low incomes, small liquidity buffers and high debt are most vulnerable to payment difficulties (and therefore needing to reduce their consumption) – including those with relatively new loans and less housing equity.

Interest rates on business loans have also risen

Interest rates on variable-rate business loans have increased over recent months in line with the cash rate and three-month BBSW (which is the benchmark for most loans to medium- and large-sized businesses) (Graph 3.24). All of the major banks and a number of smaller banks have passed on the cash rate increases up to September in full to their published small business indicator rates. Outstanding interest rates on fixed-rate loans have also risen as higher rates gradually flow through to the stock of fixed-rate loans.

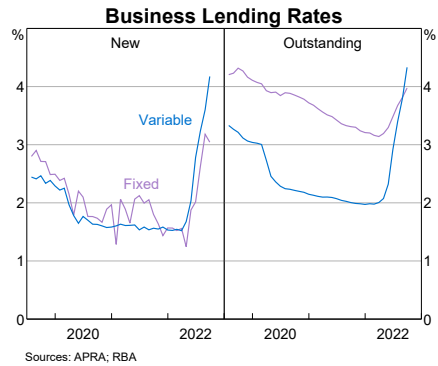
Growth in business debt has been very strong

Growth in business debt remains well above the average of recent years. This has reflected strong growth in business credit, which on a six-month-

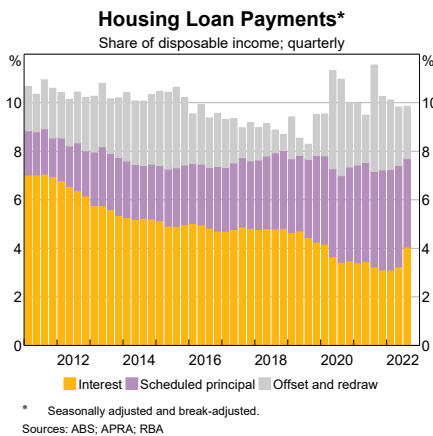
ended annualised basis has increased to its fastest pace in more than a decade (Graph 3.25).

Lending to the property services and finance industries has contributed about half of the growth in business credit over the past year. Lenders have financed a large pipeline of commercial property transactions, predominantly for existing properties. More broadly, strong economic conditions and the lags associated with financing elevated merger and acquisition (M&A) activity over the past year have contributed to growth in business credit. Businesses have also drawn down on their existing credit facilities in order to manage liquidity challenges arising from supply chain disruptions.

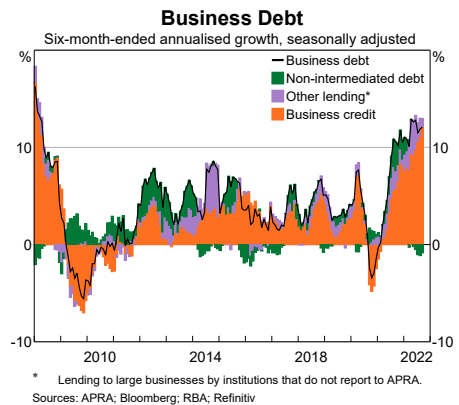
Graph 3.24



Graph 3.23



Graph 3.25



By contrast, non-financial corporate bond issuance over the year to date is well below the average of recent years (Graph 3.26). In the three months to the end of October, 16 non-financial corporate bonds were issued, totalling \$3.6 billion, most of which were in offshore markets. This pace of issuance is in line with activity since around May, and so does not appear to reflect issuers' reluctance to issue in the face of recent global bond market volatility.

Australian equity prices are back to their mid-August peak

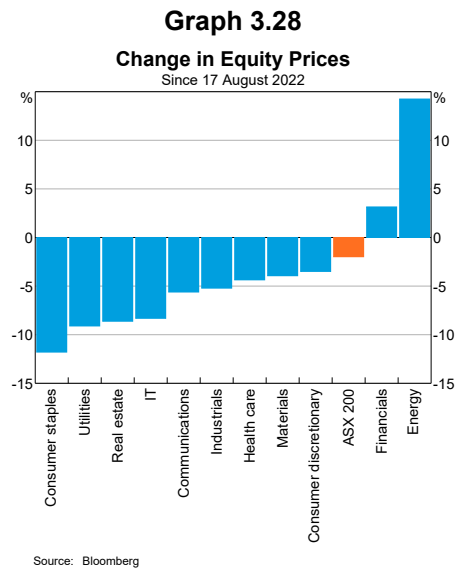
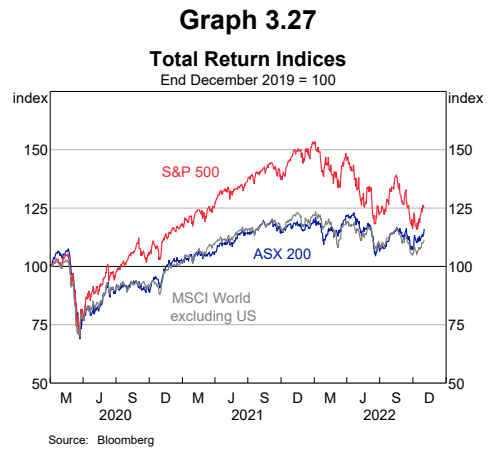
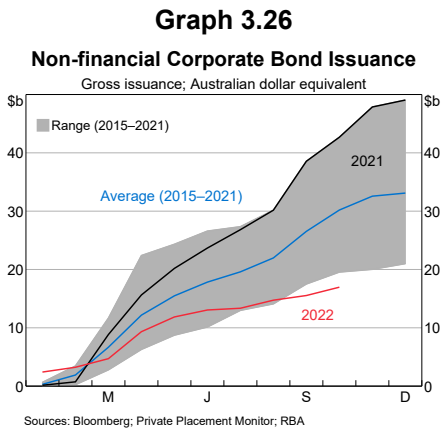
The ASX 200 index has experienced a recent rally to take it back to around its mid-August peak on a total-return basis, outperforming US and other advanced economy markets over recent months (Graph 3.27). Australian equity prices had fallen in September, reflecting investor concerns that global interest rates might increase by more than previously expected, as well as concerns around global growth and the outlook for corporate profits.

Since the mid-August peak, the energy sector posted the largest increase in equity prices, as oil prices rebounded from late September (Graph 3.28). After performing strongly earlier in the year, stocks in the materials sector have declined in recent months, in line with the price of iron ore. The real estate sector has also fallen

in recent months, reflecting concerns about the sensitivity of the sector to interest rate rises.

Merger and acquisition activity has decreased

Announced M&A deals have declined from the high level of activity in 2021 (Graph 3.29). While it is uncertain what share of these deals will be completed, the total value of deals over the year to date at around \$153 billion is slightly above pre-pandemic levels.



Profits and dividends of Australian companies remained around record highs

Underlying profits of ASX 200 companies increased in the first half of 2022 relative to the same period a year earlier (Graph 3.30). Around two-thirds of ASX 200 companies reported earnings growth, despite higher cost pressures being commonly cited as a challenge. The energy and materials sectors reported record profits due to elevated commodity prices. Overall, earnings were slightly better than analysts' expectations. Nevertheless, due to uncertainty about the macroeconomic outlook, many ASX 200 companies have downgraded or removed earnings guidance for the upcoming financial year.

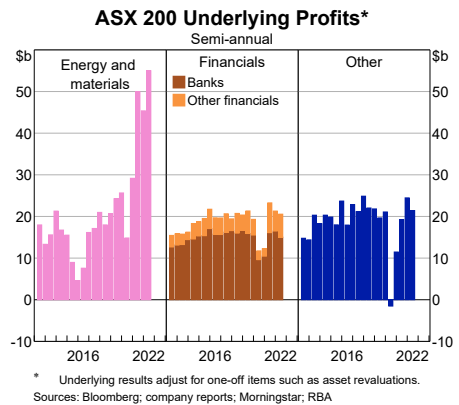
Dividends announced in the second half of 2022 rose in comparison to the first half of the year, but were slightly lower than the same period a year earlier (Graph 3.31). The three major miners again represented a large share of total dividends, with \$27 billion announced. Outside these companies, dividends increased to be slightly above their pre-pandemic high.

The Australian dollar has depreciated

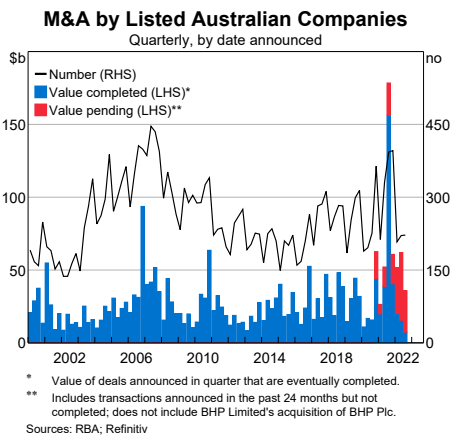
The Australian dollar has depreciated by about 2 per cent on a trade-weighted (TWI) basis since

early August, and is around 8 per cent lower against the US dollar over the same period. This is consistent with the decline in yield differentials between Australian Government bonds and those of the major advanced economies. The currency depreciated to a year-to-date low of around US\$0.62 in mid-October, alongside broad US dollar strength and declines in international risk asset prices amid concerns about the outlook for global growth (see chapter on 'The International Environment'). It has since retraced some of this move to be slightly below US\$0.64. The RBA Index of Commodity Prices (ICP) has declined over recent months to be around levels seen earlier this year, with higher coal prices partly offsetting declines

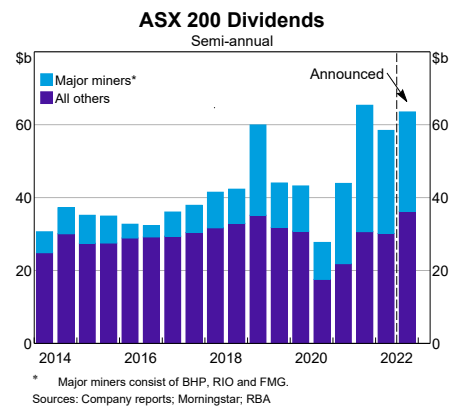
Graph 3.30



Graph 3.29



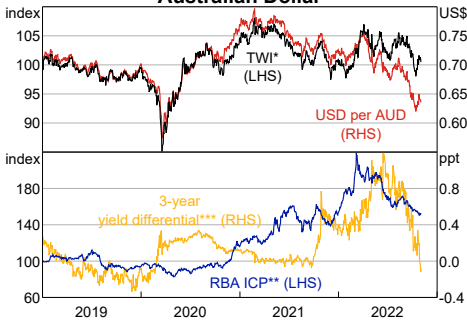
Graph 3.31



in the prices of iron ore and base metals (Graph 3.32). Consistent with developments in international financial markets, measures of volatility have increased for the Australian dollar. Despite having depreciated by around 12 per cent against the US dollar over the year to date, the Australian dollar is around its levels at the beginning of 2022 on a TWI basis. The difference largely reflects the appreciation against the Japanese yen earlier in the year, although the Australian dollar also remains higher against several other currencies, including the South Korean won, the British pound and the New Zealand dollar (Graph 3.33).

Graph 3.32

Australian Dollar

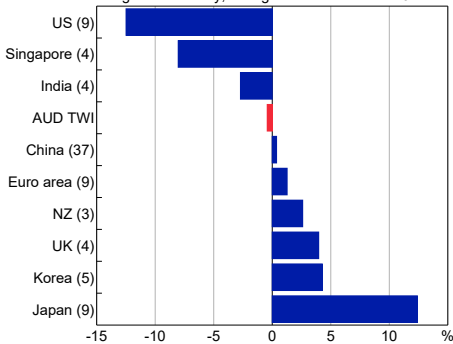


* Trade-weighted index, 1 January 2019 = 100.
 ** Index of commodity prices (USD terms), 1 January 2019 = 100.
 *** Australian sovereign yield less yields of the United States, Japan and Germany, weighted by GDP.
 Sources: Bloomberg; RBA; Yieldbroker

Graph 3.33

Australian Dollar

Against currency; change since the start of 2022*



* TWI weights in parentheses.
 Sources: Bloomberg; RBA

Australia’s financial account deficit widened in the June quarter

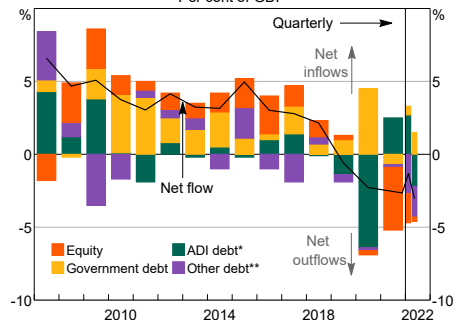
Australia has continued to be a net exporter of capital with the financial account deficit widening in the June quarter; this is consistent with the widening of the current account surplus and the record trade surplus. The net outflow of capital was associated with issuance of loans by Australian banks to non-residents and a withdrawal of foreign deposits from both the Australian banking sector and the Reserve Bank, which in part reflected higher interest rates overseas relative to those in Australia (Graph 3.34).

Australia’s net foreign liability position as a share of GDP decreased slightly over the June quarter, and remains around its lowest level since the 1980s (Graph 3.35). The net foreign liability position is around 36 per cent of GDP, having peaked at about 60 per cent in 2016. Underlying this decline is the increase in Australia’s net foreign equity asset position. This has been driven by valuation effects associated with foreign equities outperforming Australian equities over several years, as well as the accumulation of foreign equity assets, including by Australia’s superannuation funds that have increased the share of foreign equities in their portfolios.^[3] The net income deficit – the net

Graph 3.34

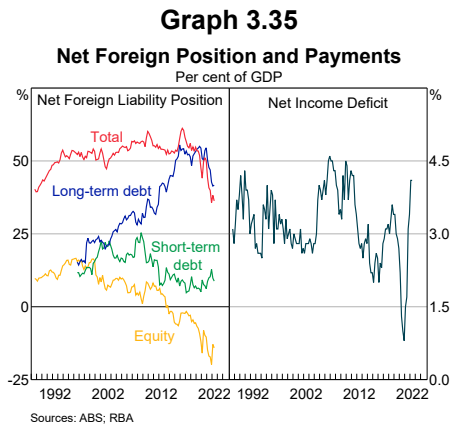
Net Capital Flows

Per cent of GDP



* Adjusted for the US dollar swap facility in 2008–2009 and 2020.
 ** Includes public corporations and private sector.
 Sources: ABS; RBA

payments made to service the net foreign liability position – was little changed over the quarter, but has increased over the year, reflecting higher commodity prices flowing through to an increase in dividend payments and direct investment income payments to non-residents. ↘



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] See RBA (2022), 'Household and Business Finances in Australia', *Financial Stability Review*, October. Available at <<https://www.rba.gov.au/publications/fsr/2022/oct/household-business-finances-in-australia.html>>
- [3] For more information on the significant shift in Australia's balance of payments over recent years, see Adams N and T Atkin (2022), 'The Significant Shift in Australia's Balance of Payments', RBA *Bulletin*, March. Available at <<https://www.rba.gov.au/publications/bulletin/2022/mar/the-significant-shift-in-australias-balance-of-payments.html>>

4. Inflation

Inflation is high and broadly based. Strong demand and ongoing supply issues boosted goods price inflation in the September quarter, as non-labour cost pressures continued to be passed through to consumers. Some of these upstream cost pressures have eased in recent months, but it will take some time before this affects the prices paid by consumers. Higher input costs and strong demand have also contributed to a pick-up in services inflation in recent quarters, while rent inflation has picked up in response to tight rental market conditions. Short-term measures of inflation expectations remain high, consistent with the high inflation environment. Most medium- and long-term measures remain anchored to the inflation target, suggesting the current high inflation is expected to be relatively short lived.

Labour cost growth has continued to strengthen according to a range of timely indicators, with broader measures of earnings growing faster than base wages. The recent strengthening in wages outcomes reflects the tight labour market, as well as high inflation and the flowthrough of the Fair Work Commission decision in June on minimum and award wage rates. However, aggregate wages growth remains moderate so far and wage growth expectations generally remain consistent with the inflation target. The Wage Price Index (WPI) for the June quarter of 2022 confirmed that wage pressures were continuing to build gradually.

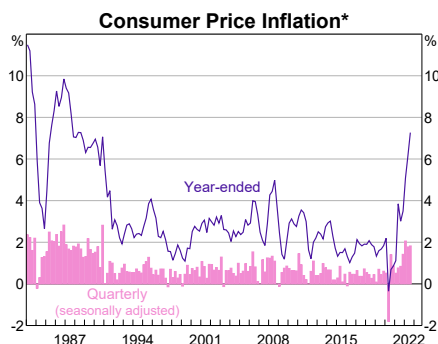
Inflation in the September quarter was high and broadly based

The Consumer Price Index (CPI) increased by 1.8 per cent in the September quarter and by 7.3 per cent over the year – the highest year-ended CPI inflation since 1988 (excluding interest charges) (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 grew faster than 3 per cent in annualised terms in the September quarter (Graph 4.3).

Measures of inflation that remove the effect of irregular or temporary price changes also indicate that underlying inflation was high in the September quarter. Trimmed mean inflation was 1.8 per cent in the September quarter (after being revised up from 1.5 per cent to 1.6 per cent in the June quarter) and 6.1 per cent

Graph 4.1



* 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)	
	September quarter 2022	June quarter 2022	September quarter 2022	June quarter 2022
Consumer Price Index	1.8	1.8	7.3	6.1
Seasonally adjusted CPI	1.8	1.8	–	–
– Tradables	1.3	2.3	8.7	8.0
– Tradables (excl. volatile items) ^(c)	1.7	1.7	6.9	5.1
– Non-tradables	2.0	1.5	6.5	5.3
Selected underlying measures				
Trimmed mean	1.8	1.6	6.1	4.9
Weighted median	1.4	1.4	5.0	4.3
CPI excl. volatile items ^(c)	1.9	1.6	6.7	5.3

(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

over the year; these are the strongest outcomes since 1990 (Graph 4.4; Table 4.1).

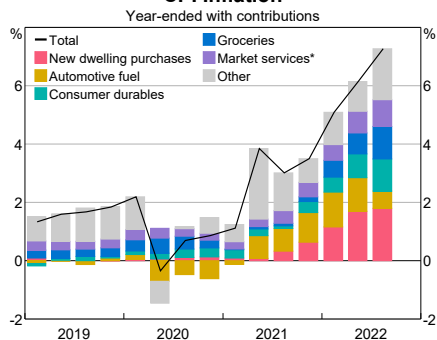
Fuel prices declined in the quarter

Fuel prices decreased by 4 per cent in the September quarter, subtracting about 0.2 percentage points from headline inflation (Graph 4.5). This was primarily due to lower

global oil prices, reflecting concerns about the outlook for the global economy. Fuel prices have picked up again in recent weeks, largely reflecting the unwinding of the temporary reduction in the fuel excise.

Graph 4.2

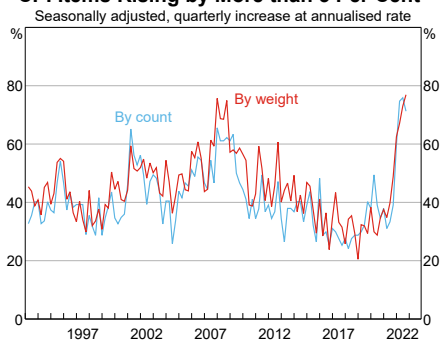
CPI Inflation



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

Graph 4.3

CPI Items Rising by More than 3 Per Cent*



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

The pass-through of upstream cost pressures continued to drive strong goods price inflation

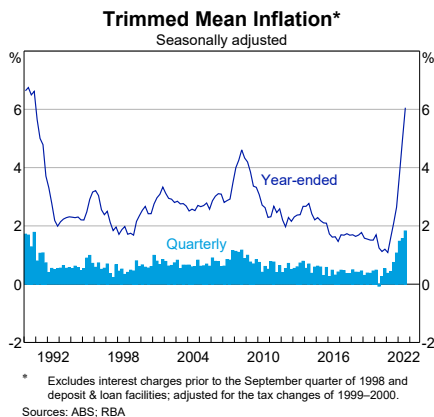
The pass-through of upstream cost pressures, including higher materials and transport costs, continued to boost prices across a number of goods-related sectors in the September quarter. Some of these cost pressures, such as shipping rates and many commodity prices, have fallen in recent months; however, for most goods it will take some time before these declines materially affect prices paid by Australian consumers.

New dwelling inflation eased in the quarter but remained high, with prices increasing by nearly 4 per cent in the September quarter to be 21 per cent higher over the year. Sustained

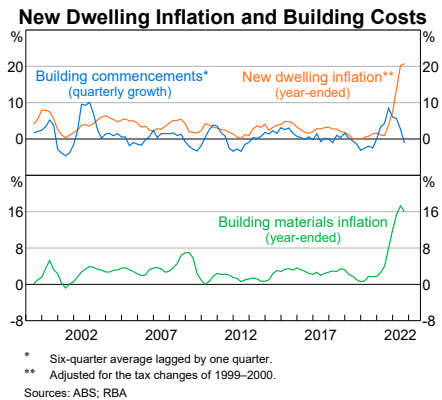
strong demand for housing construction has enabled builders to pass through increased costs for labour and building materials; prices for building materials increased by about 3 per cent in the September quarter and 16 per cent over the year (Graph 4.6).

Consumer durables inflation eased in the quarter but was 6.3 per cent over the year – the highest annual rate since 1988 (Graph 4.7). The easing in the quarter was driven by broadly flat outcomes for the prices of clothing & footwear, audio, visual & computing equipment and motor vehicles; however, prices continued to increase strongly for many other household goods such as furniture and furnishings (Graph 4.8).

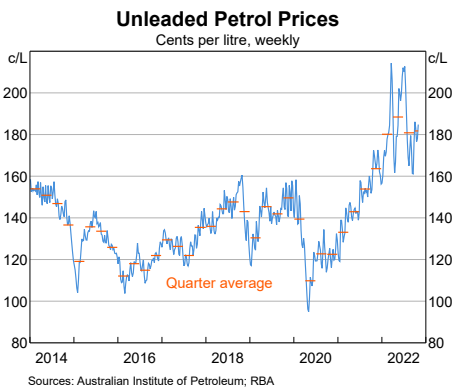
Graph 4.4



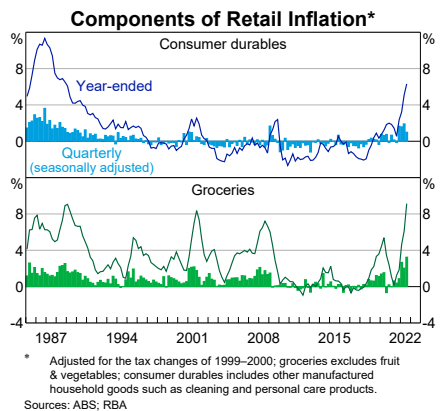
Graph 4.6



Graph 4.5

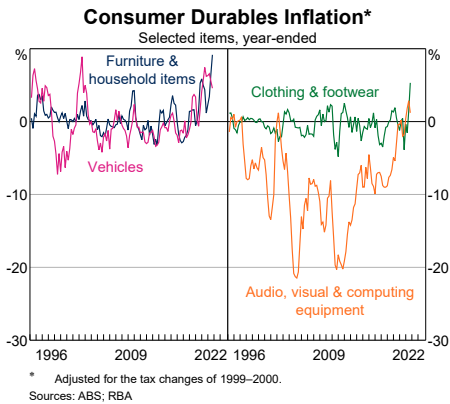


Graph 4.7



Grocery prices (excluding fruit & vegetables) increased very strongly in the September quarter as supermarkets continued to pass through supplier cost increases. Prices were around 9 per cent higher than a year ago – the highest rate of annual grocery price inflation since 1983. The prices of most food items increased strongly; for instance, prices for dairy and related products increased by 7 per cent, reflecting higher wholesale costs (Graph 4.9). Food retailers in the Bank’s liaison program reported that suppliers have been requesting price increases more often than usual this year and that supermarkets have become more willing to accept these due to their understanding of supplier conditions.

Graph 4.8

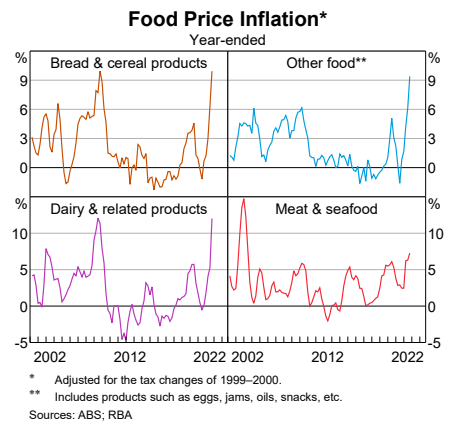


The prices of fruit & vegetables increased by 5 per cent in the quarter in seasonally adjusted terms and by 16 per cent over the year. This primarily reflected the effects of heavy rainfall and flooding in key growing areas in early 2022, which affected the availability of many items. Higher input costs, such as for transport and fertiliser, also contributed to price rises. The recent flooding in parts of Victoria and New South Wales is expected to affect food prices in the months ahead.

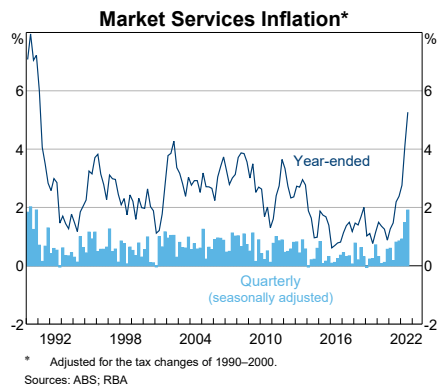
Inflationary pressures increased for many services

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, picked up strongly in the September quarter to be 5.3 per cent higher over the year – the fastest annual increase since 1991 (Graph 4.10). The prices of these services are generally among the most sensitive to domestic labour costs; however, increases in non-labour costs such as food and transport have also been an important factor in recent quarters, particularly for cafes and restaurants. Prices of meals out & takeaway increased very strongly in the quarter, reflecting both underlying price increases due to higher labour

Graph 4.9



Graph 4.10



and non-labour input costs and the unwinding of some state government initiatives that had been weighing on prices in recent quarters, such as the NSW ‘Dine & Discover’ voucher scheme (Graph 4.11). Prices for domestic holiday travel & accommodation also increased strongly, reflecting robust demand and higher airfare prices owing to temporary capacity restrictions and increases in jet fuel prices. State government voucher schemes – such as the ‘Victorian Dining Program’ and the NSW ‘Stay’ and ‘Parents’ vouchers – weighed on prices for a number of market services components; in the absence of these vouchers, price increases would have been a little stronger in the quarter.

Rents – accounting for around 6 per cent of the CPI basket – increased by 1.3 per cent in the September quarter, reflecting historically low vacancy rates across the country. Rents in Sydney and Melbourne recorded their largest quarterly increase in 10 years, while rents in other capital cities continued to record relatively strong rises. The gap between CPI rents (covering the entire rental stock) and advertised rents for new tenants remains large by historical standards (Graph 4.12); this gap is expected to narrow as CPI rent growth increases further over the year ahead, supported by low vacancy rates and tight rental market conditions, although the

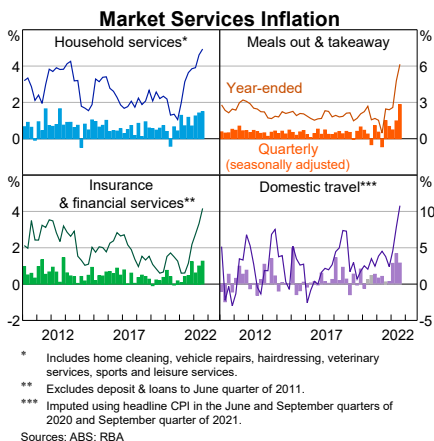
timing and extent of this pick-up remains uncertain.

State government rebates delayed the effect of sharp utility price increases

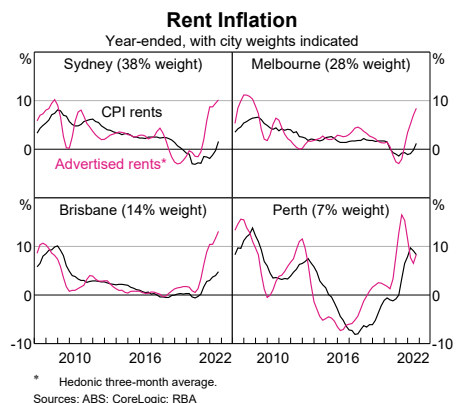
The increase in wholesale gas and electricity prices from earlier in the year began to affect retail prices in the September quarter – though electricity rebates from some state governments have delayed much of this effect on the CPI until the December quarter. Measured electricity prices in the CPI increased by 3 per cent in the quarter; by contrast, underlying electricity prices (excluding the effect of rebates) increased by 15½ per cent (Graph 4.13). Gas prices, where no significant rebates were provided, increased by 10 per cent in the quarter to be nearly 17 per cent higher over the year. Although wholesale electricity and gas prices have reversed much of the sharp spikes seen around the middle of this year, futures markets indicate that in the year ahead they are likely to remain around double the levels observed in 2021. This is expected to result in further strong increases in retail electricity and gas prices in 2023 (see chapter on ‘Economic Outlook’).

Administered inflation (excluding utilities) remains around pre-pandemic trends, having increased by around 3 per cent over the year to the September quarter. State and local govern-

Graph 4.11



Graph 4.12



ment charges were about 3 per cent higher over the year. Child care prices rose a little in the quarter but were lower over the year due to the effects of the increase in the subsidy rate for families with more than one child and the NSW 'Before and After School Care' voucher (Graph 4.14). Prices for health-related products and services increased by 2½ per cent over the year, broadly in line with pre-pandemic trends.

The monthly CPI indicator points to elevated inflationary pressures

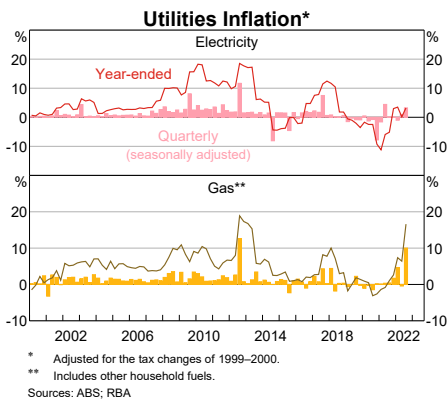
The ABS released its new monthly CPI indicator for the month of September alongside the regular quarterly CPI release, which included the first publication of the monthly trimmed mean

measure (see 'Box B: The Introduction of a Monthly CPI Indicator for Australia'). The monthly CPI indicator points to inflationary pressures remaining elevated and broadly based through the September quarter (Graph 4.15). Movements in the monthly CPI indicator over July to September were driven by price increases across many CPI components, including groceries, consumer durables and new dwelling construction – as was the case for the quarterly CPI.

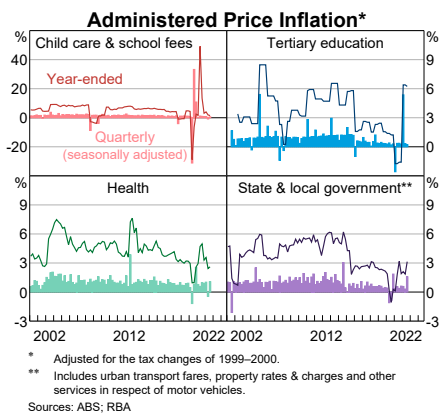
Short-term inflation expectations are high, but longer-term inflation expectations mostly remain consistent with the inflation target

Measures of short-term inflation expectations remain at relatively high levels (Graph 4.16). This is consistent with the higher cost of living that households are experiencing, the Reserve Bank's public commentary that inflation will increase further in the near term 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 (Graph 4.17). Most medium- and long-term measures, including those from financial markets, remain within the inflation target range, suggesting that the current high inflation is expected to be relatively short lived. Long-term expectations of union officials remain

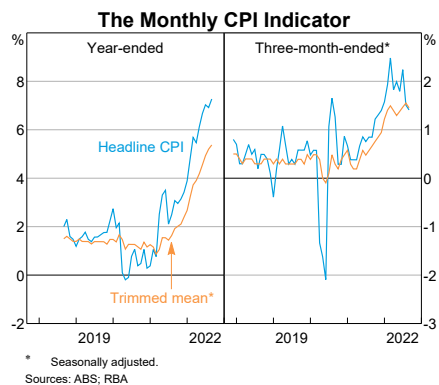
Graph 4.13



Graph 4.14



Graph 4.15



around 3½ per cent – the highest level since 2009.

Inflation expectations can influence firms’ and households’ wage negotiations and price-setting behaviour. There has been an increase in the number of liaison contacts suggesting that higher headline inflation outcomes are contributing to higher wage expectations over recent months, though most firms citing inflation as a factor generally expect wages growth over coming quarters to be less than current headline inflation rates. This is in part because some of the recent strength in inflation is seen as temporary. Reports of higher labour costs contributing to price increases have so far been largely contained to a few specific sectors, such as professional and household services, residential construction and for some retail firms; for some of these firms, labour is the most significant component of their costs.

Timely information suggests that wages growth has increased

Wages growth continued to strengthen in the September quarter according to a broad range of indicators (Graph 4.18). Many firms in liaison have reported that the increase in wages growth has been driven by strong labour demand and the tight labour market, high inflation outcomes

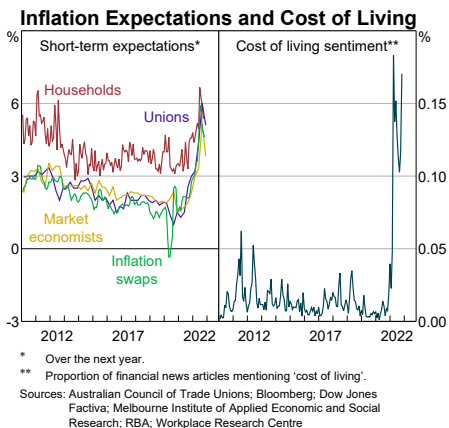
and the flowthrough of the award wage increases of 4.6–5.2 per cent announced by the FWC in June. New and timely data on wage outcomes for enterprise agreements from the FWC suggests that there has been an average wage increase of 2.9 per cent in newly lodged enterprise agreements in the September quarter so far, which is slightly higher than the 2.8 per cent increase in approved agreements in the June quarter (Graph 4.19).

The pick-up in wages growth over recent quarters has been broadly based. In liaison, firms in most industries have reported higher-than-average wages growth. In the September

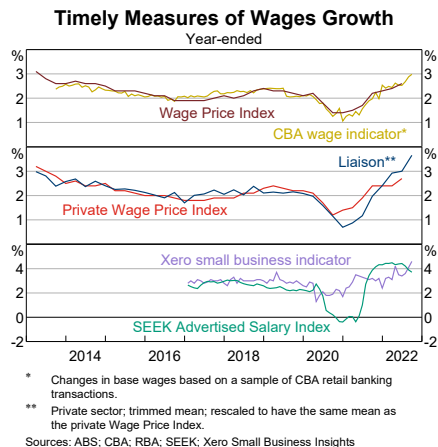
Graph 4.17



Graph 4.16



Graph 4.18



quarter, over 45 per cent of firms reported realised wage increases of 3–5 per cent; a further 25 per cent reported increases above 5 per cent – well above the pre-pandemic average of around 5 per cent of firms.

Wages growth is expected to rise further over the coming year

Liaison reports and surveys of wages growth expectations point to a further lift in wages growth over coming quarters, though these expectations generally remain consistent with the inflation target. The majority of firms in the Bank’s liaison program expect stable or higher wages growth over the coming year, although the share of firms expecting slower wages growth over the next year lifted to around 25 per cent in the September quarter (see ‘Box A: Insights from Liaison’). Market economists and unions expect wages growth to rise to around 3.5 per cent over the next couple of years (Graph 4.20).

Recent public sector wage announcements by the federal government and several state governments are likely to support a further pick-up in wages growth over the next year. The Australian Government recently announced a

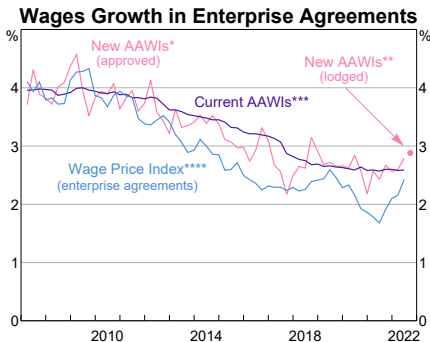
wage increase of 3 per cent for public sector wages. The Western Australian Government revised its wage policy upwards, offering a wage increase of 3–6 per cent per annum for the next two years, with larger increases for lower paid workers; this is alongside a lump-sum payment to assist with cost-of-living pressures.

Wages pressures continued to build in the June quarter

The WPI grew by 0.7 per cent in the June quarter and 2.6 per cent in year-ended terms. Private sector wages growth picked up to 2.7 per cent over the year, while public sector wages growth was more muted and continued to weigh on overall outcomes (Graph 4.21). Wages growth was strongest over the past year in the construction industry (3.4 per cent), in line with liaison messages about labour cost pressures in the sector.

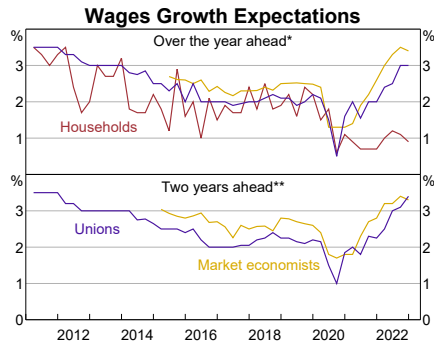
Wages growth was strongest for jobs where wages are set by individual arrangement, reaching 2.8 per cent in the June quarter (Graph 4.22). Average wages growth in enterprise agreements has been broadly steady around 2.4 per cent. Growth in wages set by awards shows a similar trend, but is expected to pick up in the September quarter as the most

Graph 4.19



* Quantifiable average annualised wage increases (AAWIs) in new FWC-approved and federally-registered enterprise agreements.
 ** AAWIs in enterprise agreements submitted but not yet approved; quarterly average to date.
 *** 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

Graph 4.20



* The current calendar year for union expectations.
 ** The next calendar year for union expectations.
 Sources: Australian Council of Trade Unions; Melbourne Institute of Applied Economic and Social Research; RBA; Workplace Research Centre

recent FWC decision begins to flow through to workers' wages.

The pick-up in wages growth is broadening. The share of jobs that have received a wage increase over the past year has increased to around 80 per cent – the highest level since 2012. For jobs that received a wage change, the share of changes above 4 per cent has risen in recent quarters and is around its 2014 level (Graph 4.23). The share of changes between 0–2 per cent has continued to decline. Wage increases have been particularly strong at the bottom end of the skill distribution (Graph 4.24).

Broader measures of labour costs have grown at stronger rates than base wages, as firms use bonuses and other payments to attract and

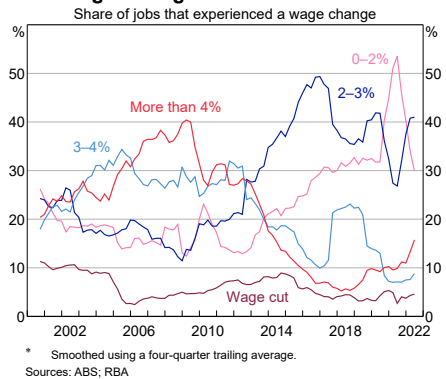
retain staff in a tight labour market and to ease cost-of-living pressures for workers. The WPI including bonuses and commissions was 3.3 per cent in the June quarter. Around one-third of jobs by expenditure weight received a bonus payment over the past 12 months – the highest share since 2009 – though this may also reflect bonuses and commissions related to firm-wide performance and sales (Graph 4.25). Growth in the national accounts measure of average earnings per hour has also risen, although it remains affected by volatility in average hours worked due to workers taking paid leave.

Graph 4.21



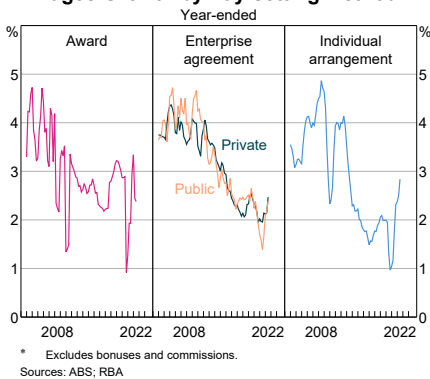
Graph 4.23

Wage Changes of Different Sizes*



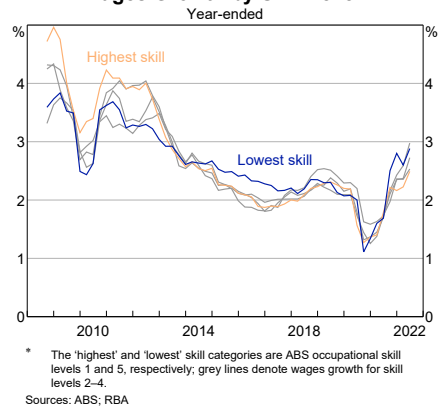
Graph 4.22

Wages Growth by Pay-setting Method*



Graph 4.24

Wages Growth by Skill Level*

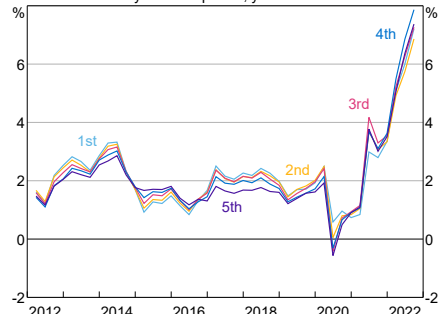


Real incomes continued to decline

Real (inflation-adjusted) incomes continued to decline in the June quarter, as consumer prices rose more quickly than labour income. The rise in inflation has been broadly based across the income distribution and household types (Graph 4.26; Graph 4.27). Nonetheless, cost-of-living pressures will fall unevenly across households, as those with lower incomes spend a greater proportion on essential items. However, some of these households will have their real income supported by the FWC award wage decision and the indexation of social security payments to inflation. Broader measures of labour income imply less of a decline in household purchasing power than implied by growth in base wages. ✂

Graph 4.26

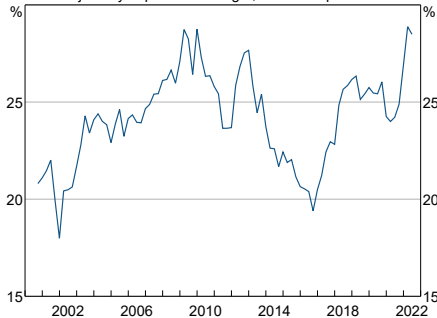
Consumer Price Inflation* By income quintile, year-ended



* 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 4.25

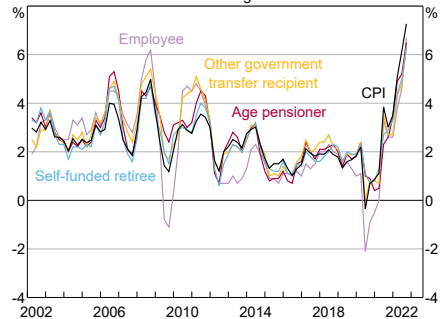
Jobs Receiving a Bonus or Commission* Share of jobs by expenditure weight, within the past 12 months



* Includes bonuses and commissions linked to firm-wide performance and sales; series can be volatile due to small sample sizes.
Sources: ABS; RBA

Graph 4.27

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 B

The Introduction of a Monthly CPI Indicator for Australia

In September, the Australian Bureau of Statistics (ABS) started publishing a monthly Consumer Price Index (CPI) indicator for Australia.^[1] Going forward, it will typically be published around four weeks after the end of the reference month and will include updated prices for around two-thirds of the CPI basket each month. As part of developing the new series, the ABS has compiled and released data back to late 2017. These data suggest that the monthly CPI indicator provides a reasonable guide to the quarterly CPI outcome and is a welcome step towards a timelier read on inflation in Australia. However, due to the lack of monthly price collections for many CPI items and the more limited outputs in the monthly release, the quarterly CPI is likely to remain the principal measure of CPI inflation in Australia for the foreseeable future.

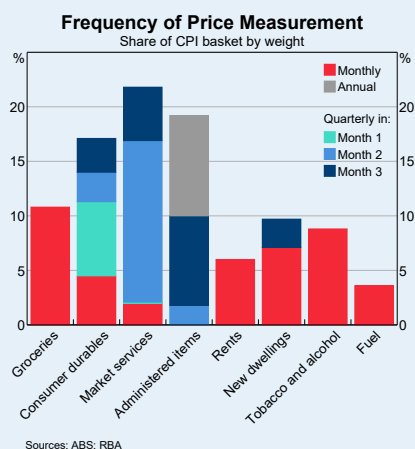
The new indicator leverages the ABS's existing data collection

The monthly CPI indicator includes updated prices for around two-thirds of the CPI basket each month, using existing data sources from the quarterly CPI release. The ABS currently collects monthly price data for 43 per cent (by weight) of the CPI basket – including most food items, alcohol, tobacco, fuel, holiday travel and accommodation, new dwellings and rents (the acquisition of monthly rents data is a recent development) (Graph B.1). Prices for around 47 per cent of the CPI basket are updated once a quarter and these are included in the monthly CPI in the month they are collected. Consumer

durables account for most items priced in the first month of each quarter, while market services tend to have their prices updated in the second month. Items across a range of categories are priced in the final month of the quarter and include many administered prices – these are services for which prices are at least partly regulated or where the public sector is a significant provider, such as child care and utilities. Prices for the remaining 10 per cent of the basket – including property rates, education fees and private health insurance – are updated annually, which reflects the typical repricing frequency for these items.

Given the volatility in the monthly data, the ABS recommends using either year-ended or three-month-ended growth rates to understand trends in the monthly CPI indicator. It has cautioned against using the month-on-month changes to make

Graph B.1



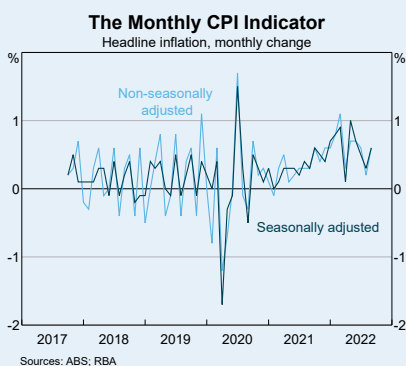
assessments about inflation. This is because monthly movements can be volatile due to differences in the coverage of prices used to compile the indicator each month (Graph B.2). Where prices are not collected in a particular month, prices collected in previous months will be ‘carried forward’ – this means that each month zero price movement is assumed for around one-third of items (by weight) in the CPI basket.

The new monthly CPI indicator release includes only a small subset of the breakdowns and details that have long been provided with the quarterly CPI. Data are only published at the national level and include aggregate headline CPI, trimmed mean, each of the 11 CPI groups (e.g. clothing & footwear, health etc) and some selected expenditure classes (e.g. automotive fuel, new dwelling costs, rents, domestic and international travel, and some food categories). Aside from the aggregate headline CPI and trimmed mean, the data are only available in non-seasonally adjusted format.

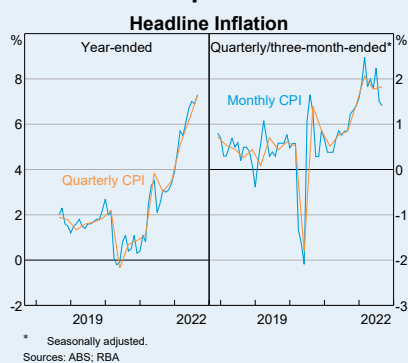
The monthly CPI indicator follows similar trends to the quarterly CPI ...

The monthly CPI indicator and the quarterly CPI series move similarly over time, for both headline CPI (including and excluding volatile items) and trimmed mean inflation (Graph B.3; Graph B.4). Changes in the monthly component level measures are also similar to the changes in the corresponding quarterly measures (Graph B.5). While the monthly and quarterly series align closely in most cases, they are not identical. This is because, when prices are collected less frequently than monthly, the monthly CPI indicator assigns price changes to the month they are collected, whereas in the quarterly CPI series price changes are allocated across the entire quarter. When prices are collected only in the second or third month of the quarter, these data will not be used to revise the previous months in the quarter for the monthly CPI. For this reason, the average of the index in the three months for the monthly CPI indicator will not equal the index of the quarterly CPI; the differences in these series do not appear to be biased in one direction.

Graph B.2



Graph B.3



... although its accuracy in predicting quarterly CPI outcomes has varied over time

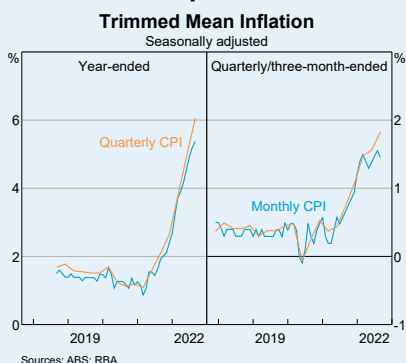
The monthly CPI indicator provides a timelier read on inflation in Australia than has been available to date and – using the back data provided by the ABS – has been a good indicator of material turning points in consumer prices over the past few years. Data for the first two months in the quarter – which will be available prior to each quarterly CPI release – has generally provided a reasonable guide to the eventual quarterly outcome for both headline CPI and trimmed mean measures (Graph B.6). Since the start of 2021, the indicator has marginally outperformed market economists’ nowcasts (i.e. their expectations immediately prior to

the release of the quarterly CPI) on average; however, it generally performed worse in the years leading up to the pandemic (Graph B.7).

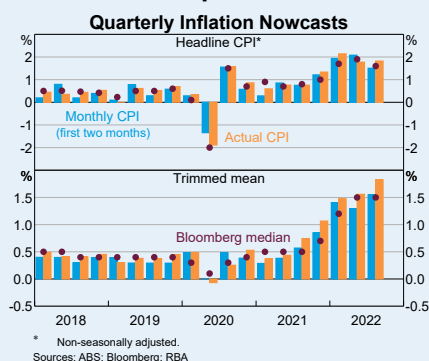
The ABS will continue to enhance the monthly indicator

The ABS will engage with stakeholders to prioritise future enhancements of the monthly CPI indicator. For example, it plans to further expand the number of items measured on a monthly basis, largely through further use of administrative and web-scraped data. These changes will also be implemented in the quarterly CPI when they are available. The ABS has noted that the monthly CPI indicator may be routinely

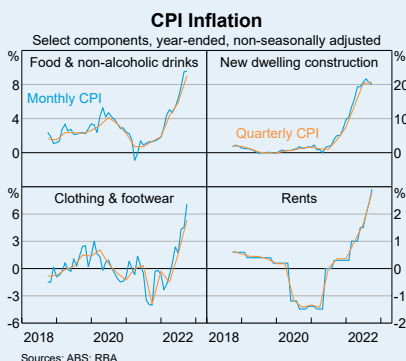
Graph B.4



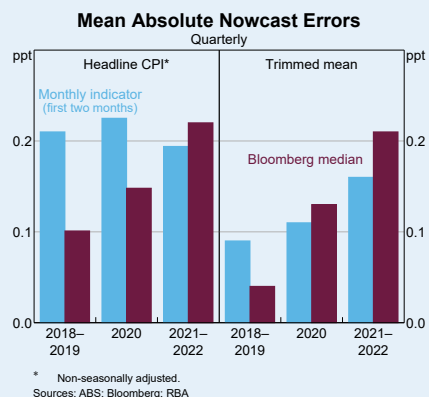
Graph B.6



Graph B.5



Graph B.7



revised as it continues to develop the series; the quarterly CPI is not routinely revised. ✖

Endnotes

- [1] See ABS (2022), 'Introducing a Monthly Consumer Price Index (CPI) Indicator for Australia', Information Paper, 29 September.

5. Economic Outlook

The prospects of a significant slowing in the global economy have intensified over the past three months, fuelled by persistently high inflation and rising policy rates, the energy crisis in Europe, and the various headwinds affecting China's recovery. Overall growth in Australia's trading partners is expected to be a bit below 3½ per cent in 2022 and then again in 2023 – well below its pre-pandemic decade average of 4½ per cent. The outlook is highly uncertain because of the scale of the challenges to the global economy at present (see chapter on 'The International Environment').

The Australian economy is forecast to grow solidly over the second half of 2022, before slowing next year as higher consumer prices, rising interest rates and declining housing prices weigh on growth. GDP growth is forecast to be 3 per cent over 2022 and then 1½ per cent over 2023 and 2024 (Table 5.1). The labour market is very tight; the unemployment rate is forecast to remain around 3½ per cent until mid-2023, before rising as a result of slower growth in activity.

Headline consumer price inflation is expected to peak around 8 per cent at the end of 2022, before starting to decline in early 2023; this compares with a forecast peak of 7¾ per cent in the August *Statement*. The upward revision to the near-term peak reflects stronger-than-expected pass-through of upstream cost pressures, as well as estimates of the impact on food prices of the recent flooding in the eastern states. The outlook for headline inflation beyond this has also been revised higher, reflecting larger increases in retail prices for electricity and

gas in 2023 than previously assumed. Inflation is still expected to decline towards the top of the target band over coming years. The effect of high inflation and cost-of-living pressures on wage- and price-setting behaviour is a material risk to the inflation outlook.

A key source of uncertainty for the domestic growth outlook relates to the competing forces affecting household spending. Household incomes have been sustained by strong labour demand, which has supported employment and hours worked; this strong labour demand will ultimately lead to stronger wages growth. Household balance sheets are in generally good shape, underpinned by a high level of savings in recent years. However, high inflation and rising interest rates are raising the cost of living and will weigh on households' income and spending in real terms. Household consumption will also be dampened by wealth effects as housing and other asset prices continue to weaken. Other important sources of uncertainty include the outlook for global growth and the possible knock-on effects of a sharper-than-expected downturn in a major economy.

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 cash rate that peaks at around 3½ per cent in mid-2023 before easing back to around 3 per cent by the end of 2024. The exchange rate is assumed to be unchanged at its current level, which has depreciated a little from its level in August. Petrol prices are assumed to be broadly unchanged around their

Table 5.1: Output Growth and Inflation Forecasts^(a)

Per cent

	Year-ended					
	June 2022	Dec 2022	June 2023	Dec 2023	June 2024	Dec 2024
GDP growth	3.6	3	2	1½	1½	1½
(previous)		(3¼)	(2¼)	(1¾)	(1¾)	(1¾)
Unemployment rate ^(b)	3.8	3½	3½	3¾	4	4¼
(previous)		(3¼)	(3½)	(3½)	(3¾)	(4)
CPI inflation	6.1	8	6¼	4¾	4¼	3¼
(previous)		(7¾)	(6¼)	(4¼)	(3½)	(3)
Trimmed mean inflation	4.9	6½	5½	3¾	3½	3¼
(previous)		(6)	(5)	(3¾)	(3¼)	(3)
Year-average						
	2021/22	2022	2022/23	2023	2023/24	2024
GDP growth	3.9	4	3½	2	1½	1½
(previous)		(4)	(3½)	(2¼)	(1¾)	(1¾)

(a) Forecasts finalised 2 November. 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 August *Statement* in parenthesis): TWI at 62 (63); A\$ at US\$0.64 (US\$0.69); Brent crude oil price at US\$89/bbl (US\$94/bbl). The assumed rate of population growth is broadly in line with the profile set out in the Australian Government Budget 2022–23. 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

recent level. Population growth projections have been revised slightly higher compared with three months ago and largely reflect assumptions used in the Australian Government Budget 2022–23. The forecasts are also based on the assumption that any future waves of COVID-19 variants will have a limited effect on the economy, with few restrictions on economic activity required and the labour market adjustment occurring mainly through a reduction in hours worked.

Inflation is forecast to peak at 8 per cent, a little higher than a few months ago

Inflation is 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 (see 'Box C: What

Explains Recent Inflation Forecast Errors?').

Strong domestic demand, a tight labour market, flood-related disruptions and capacity constraints in some sectors are also contributing to the upward pressure on prices. While upstream pressures are easing globally, earlier increases in input costs are expected to contribute to inflationary pressures in the near term.

Headline inflation is expected to peak around 8 per cent at the end of 2022, a little higher than expected previously (Graph 5.1). The decline in petrol prices in recent months has been offset by stronger-than-anticipated pass-through of upstream cost pressures, and expectations of increases in food prices over coming months due to recent flooding in the eastern states. Expectations for above-average rainfall, consistent with the ongoing La Niña event, have

also increased the likelihood of further supply disruptions affecting costs and prices for a range of goods in late 2022 and early 2023.

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 in recent months but will mostly affect measured prices in the CPI in the December quarter; this is because state government subsidies effectively delayed the price increase for households. Information from government agencies suggests that price increases in 2023 are likely to be larger than previously assumed; wholesale prices remain around double the levels seen in 2021 and network costs are also expected to rise. As a result, retail gas and electricity prices are projected to rise by 20–30 per cent in 2023. Overall, these changes have resulted in inflation being higher than previously expected in the second half of the forecast period.

Inflationary pressures have broadened significantly since late 2021. Faster rates of price inflation have spread beyond consumer durables and the prices of newly constructed homes to items such as groceries and market services. Grocery inflation has been elevated and this is expected to be sustained in the near term as requests from suppliers to increase prices continue to be implemented in supermarkets.

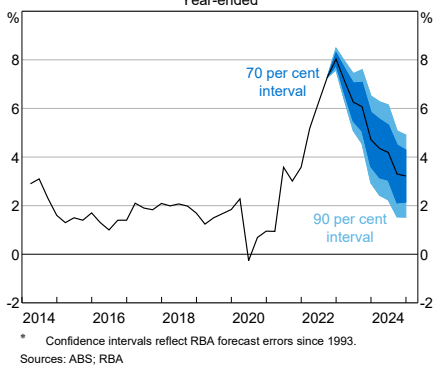
Price increases for new dwelling construction have been very large and building costs continue to grow strongly, albeit at a slower pace than earlier in the year. As a result, price increases are likely to persist in the near term before easing later in the forecast period as cost pressures and demand for new housing moderate. 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 outlook for underlying inflation is a little higher than three months ago, and is expected to peak at 6½ per cent in late 2022 before declining gradually towards the top of the inflation target range by the end of 2024 (Graph 5.2). Information from liaison and business surveys indicate that some upstream costs are starting to ease. From early 2023, underlying inflation is forecast to moderate as the global imbalance between supply and demand for goods continues to be resolved and commodity prices either stabilise at a high level or decline. Higher interest rates globally are helping to moderate demand pressures. While underlying inflation is expected to moderate over 2023 and 2024, second-round effects from higher energy prices are forecast to keep underlying inflation a little higher than previously expected toward the end of the forecast period. Domestic labour cost growth is expected to pick up over the coming year and remain high over the forecast period.

GDP is expected to grow solidly over 2022, before slowing next year

The Australian economy is forecast to grow solidly over the second half of 2022, as growth in household spending on services remains firm alongside a further pick-up in education and travel services exports. GDP growth is then forecast to slow in early 2023, as the recovery in

Graph 5.1
Headline Inflation Forecast*
Year-ended



household spending from pandemic-related restrictions is expected to have mostly run its course (Graph 5.3). Recent large declines in household real wealth, largely reflecting declining housing prices, and disposable income are also expected to contribute to a substantial slowing in consumption growth from early next year. The slowing in GDP growth over 2023 also reflects weaker dwelling investment and a stabilisation of public demand at high levels after recent strong growth.

Consumption growth is forecast to slow because of rising prices and higher interest rates

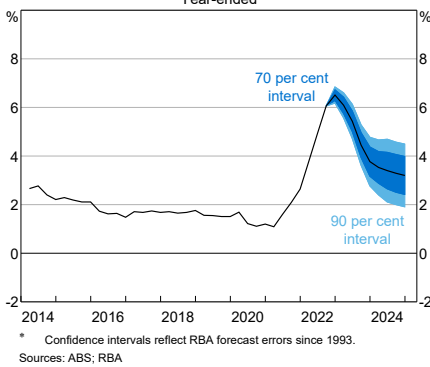
Growth in household spending is expected to remain solid in the second half of 2022 as spending on discretionary services, such as hospitality and travel, continues to rebound. Consumption growth is then expected to ease significantly. While strong labour market conditions are expected to continue to support household income over this period, consumption will be tempered by rising consumer prices and higher net interest expenses on household debt. Lower net household wealth, mainly due to lower housing prices, is also expected to weigh on consumption.

The household saving ratio is projected to continue to decline over the forecast period, to be below its average level prior to the pandemic.

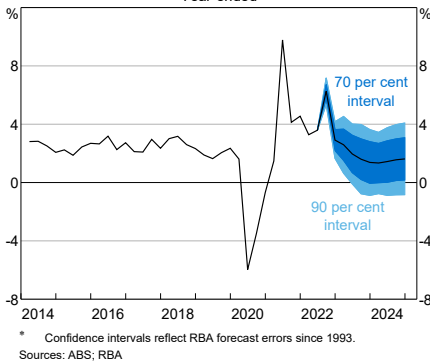
The outlook for business investment remains positive

A large pipeline of residential and non-residential projects is expected to sustain construction activity into 2023. While the recent flow of data and information from the Bank's liaison program indicate that there has been an easing in materials shortages and related supply chain issues, labour shortages remain a

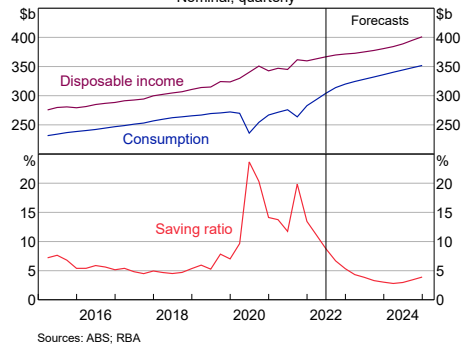
Graph 5.2
Trimmed Mean Inflation Forecast*



Graph 5.3
GDP Growth Forecast*



Graph 5.4
Household Consumption and Income



significant constraint on investment. Construction timelines have been pushed out further; capacity constraints, rising costs and adverse weather (including the recent flooding in the eastern states) are expected to restrain growth across the construction industry in the near term. Rising insolvencies in the residential construction sector could further limit the pace at which this existing pipeline can be worked through.

Further out, a decline in the demand for new dwellings is expected to weigh on dwelling investment, despite an increase in population growth. In particular, expectations for further increases in interest rates, rising construction costs and continued housing price declines reduce the incentive to build new dwellings. Prospects for higher density residential projects are brighter than for detached dwellings – particularly in Sydney and Melbourne, where vacancy rates have declined following the reopening of the international border.

Investment in machinery and equipment is forecast to increase. Information from the ABS Capital Expenditure Survey and the Bank's liaison program 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. The recent easing of supply chain pressures, which had previously prevented the delivery of some machinery and equipment, is also expected to support investment in the near term.

Mining investment is forecast to increase a little over coming years, supported by investment in new iron ore and LNG capacity. Shortages of skilled labour and some materials, along with adverse weather conditions, are expected to weigh on investment growth in the near term. High commodity prices and recent strong growth in profits for Australia's bulk commodity producers have not resulted in a material change of investment plans to date, in part

because the peak level of prices was not expected to be sustained.

Public demand is forecast to remain at a high level

Public consumption is expected to increase over the second half of 2022, partly reflecting state and federal government responses to the recent flood damage. Further out, public consumption is expected to stabilise at a high level.

Underlying growth due to public spending programs such as the National Disability Insurance Scheme is expected to be broadly offset by the unwinding of temporary spending measures introduced during the pandemic.

Public investment is expected to grow over the forecast period. The existing pipeline of public engineering work is anticipated to support a high level of public capital expenditure for several years, but the speed of the rollout may be constrained by labour and materials shortages, particularly in the near term.

The ongoing recovery in travel will support services exports and imports

Exports are expected to grow strongly over coming years. Weather and maintenance issues have weighed on resource production in the September quarter, but resource exports are expected to recover by early 2023. Travel and education exports are expected to continue to grow strongly as tourists and students take advantage of the reopened international border. Rural export volumes rose strongly in the September quarter and are expected to remain robust, despite a material impact from recent flooding in some agricultural areas in the December quarter. Optimal growing conditions associated with higher rainfall are expected to continue in Australia as part of the third La Niña event, though there are risks to production in some areas from flooding. Strong demand for grains is also expected to continue, reflecting disruptions to global supply.

Import volumes are expected to increase a little faster than domestic demand over the next year as Australians travel overseas in greater numbers following the reopening of the international border. The recent depreciation of the exchange rate is expected to have a dampening effect on import growth over the forecast period compared with what was expected three months ago, though this should be partly offset by an easing in global goods price inflation.

After reaching a record high level in the June quarter, the terms of trade are expected to have fallen in the September quarter, reflecting both a decline in commodity prices and an increase in import prices (Graph 5.5). The terms of trade are projected to decline further over the forecast period as commodity prices continue to decline from high levels.

The unemployment rate is forecast to increase as economic growth slows ...

A broad range of measures suggest the labour market is the tightest it has been in decades. The unemployment rate is forecast to remain around 3½ per cent until mid-2023; broader measures of labour underutilisation are also anticipated to be around their lowest levels in many years as firms increase the hours of workers in response to strong labour demand. As economic growth slows in 2023, the unemployment rate is

forecast to rise gradually to 4¼ per cent by the end of 2024 (Graph 5.6).

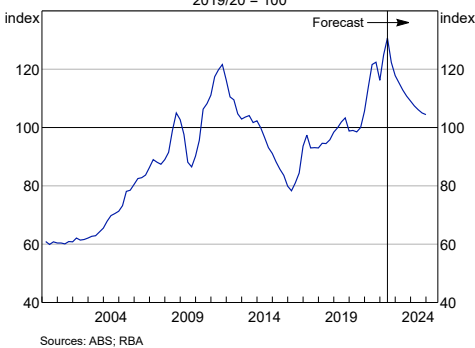
While employment growth has moderated, demand for labour remains strong and firms continue to find it difficult to achieve their desired increases in headcount. Employment growth is forecast to soften throughout the forecast period amid a tight labour market in the near term and slowing growth in activity from 2023 (Graph 5.7). Following the reopening of the border, immigration could help alleviate labour shortages in some industries, while also adding to aggregate demand in the economy. Participation in the labour force is expected to be sustained around historically high levels over the forecast period. The longer term trend towards increased participation among females and older Australians is expected to offset cyclical softness in labour market conditions in the second half of the forecast period.

... but the pick-up in wages growth is expected to continue

Aggregate wages growth has picked up further over recent months and this is expected to continue in the period ahead. Firms in the Bank’s liaison program report that this has been largely driven by strong labour demand in a tight labour market, elevated staff turnover, higher inflation outcomes and pass-through to award

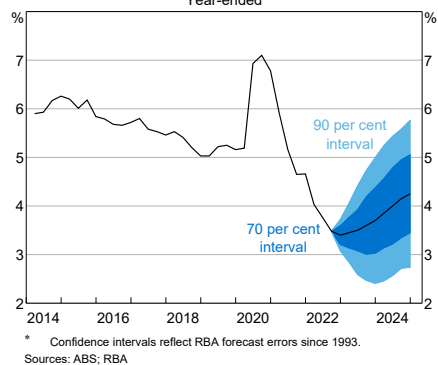
Graph 5.5

Terms of Trade
2019/20 = 100



Graph 5.6

Unemployment Rate Forecast*
Year-ended



wages from the Fair Work Commission decision in June. Aggregate wages growth outcomes are expected to be restrained by more muted wages growth in public and private enterprise agreements, particularly in the near term, consistent with the multi-year duration of agreements.

Growth in the Wage Price Index (WPI) – a measure of changes in base wage rates for a given quantity and quality of labour – is expected to pick up to around 3¾ per cent by mid-2023 and 4 per cent by mid-2024 (Graph 5.8). WPI growth is expected to stabilise in the second half of the forecast period, as the unemployment rate rises and labour market capacity becomes less binding. However, wages growth is expected to continue increasing modestly over this period, 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, job turnover rates remain high and workers are more willing

to move jobs for higher pay. These broader measures imply less of a decline in real incomes than suggested by the WPI measure (Graph 5.9).

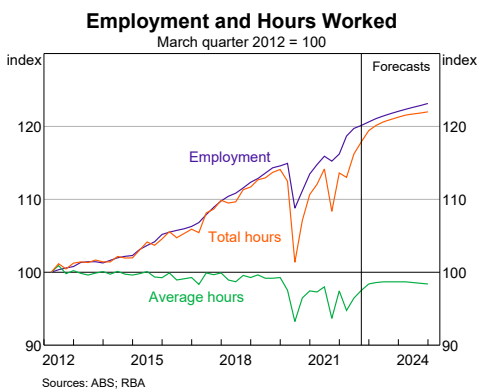
Key domestic uncertainties

Global factors could weigh on activity in Australia

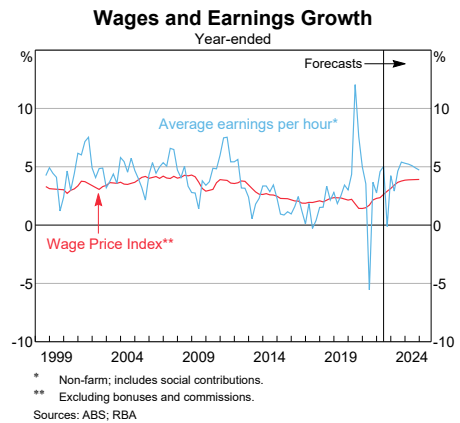
The outlook for global growth is weak and highly uncertain, with risks skewed to the downside. If these downside risks materialise, it could cause economic activity in Australia to be weaker than projected in the base case.

A prominent example is the challenges facing China. A sharper-than-expected slowing in the

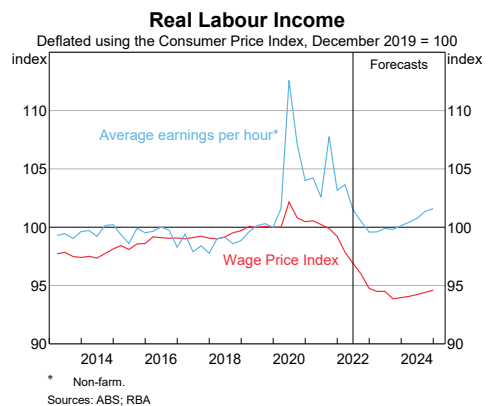
Graph 5.7



Graph 5.8



Graph 5.9



Chinese property market would likely reduce demand for Australia's iron ore and lower the terms of trade, with flow-on impacts to domestic demand. More broadly, if consumption in China is weaker than expected (perhaps because COVID-19 outbreaks are more disruptive than assumed), it would weigh on growth in the Asian region more generally and both directly and indirectly reduce demand for Australia's commodity and non-commodity exports.

A larger-than-expected slowing in growth in advanced economies could also weigh on Australian growth, particularly if coupled with a further increase in energy prices in Europe. The US and European economies are not large trading partners of Australia, but developments there can still have a material influence on our economy through transmission to global financial markets and household and business sentiment.

High inflation and cost-of-living pressures could shift wage- and price-setting behaviour and raise inflation expectations

Inflation in Australia and internationally is high and expected to result in further declines in 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. Cost-of-living pressures are changing how governments, businesses and households respond to changes in prices. In a tight labour market, the pass-through of temporarily high inflation to wages may be larger than when there is more labour market slack. The forecast for wages growth seeks to centralise some of this risk to the wages outlook. Higher wage outcomes would alleviate downside risks to consumption at the expense of higher inflation outcomes. Information from the liaison program 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. If wage outcomes turn out stronger than expected and employers pass these and other increased costs on to consumers, it could result in inflation remaining elevated for longer than currently anticipated.

Higher expectations of future inflation could lead to a broadening of second-round price increases by firms, leading to higher actual inflation. Moreover, retailers have indicated in liaison that they are now more willing to pass on input cost pressures to prices rather than accepting lower margins. To date, longer term measures of inflation expectations remain well anchored, but it is not assured that this will continue.

The outlook for household consumption is clouded by competing forces

Household incomes have been sustained by robust labour demand, which could in turn result in sustained momentum in household consumption. Further, many households have built up savings buffers during the pandemic; if households are more willing to spend from these liquid savings than from other forms of wealth, spending could also be stronger than anticipated for a time. Stronger-than-expected growth in domestic demand would see domestic inflationary pressures build further.

On the other hand, a significant further decline in real disposable incomes for the average household could weigh on consumption growth by more than forecast. While many households are well placed to absorb higher interest costs without significant spending cuts, some households have low savings buffers and high debt relative to incomes, and so their spending may fall more sharply than others. The additional pressure on household budgets from rising prices could exacerbate these downside risks to consumption, particularly for lower income households. 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. The magnitude of the decline of housing prices arising from higher interest rates is uncertain, especially given the high level of prices relative to incomes.

Energy and other supply shocks could boost inflation and lower growth

The various energy price shocks and other supply-side issues facing the economy could intensify or persist for longer than expected, leading to higher inflation outcomes and lower output growth. The third La Niña event in as many years has increased the risk of further supply shocks in the near term, particularly for sectors that tend to be most affected by heavy rain such as home building, food and coal

production. The potential for gas prices in Europe to be higher than anticipated – if the European winter is especially cold or Russia's war with Ukraine escalates – could also push global energy prices higher and add to upward pressure on Australian electricity prices.

On the other hand, global supply chain constraints are easing and there is much less upside risk from this source than has been the case for some time. Global prices of some goods could decline significantly in the period ahead, which would moderate inflation outcomes by more than expected, particularly if the simultaneous tightening of monetary policy across many economies affects demand by more than the sum of individual-economy effects would imply. ❖

Box C

What Explains Recent Inflation Forecast Errors?

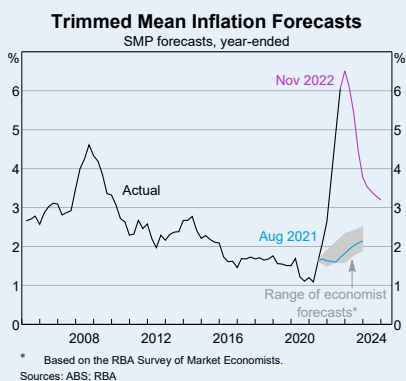
Inflation in Australia over the past year or so has been significantly higher than the Bank and other forecasters expected a year ago. Underlying inflation over the year to the June quarter of 2021 was 1.6 per cent, and in the August 2021 *Statement* inflation was projected to remain at around 1½ per cent to September 2022. Instead, as inflation rose the Bank materially upgraded inflation forecasts in each subsequent *Statement* and by September 2022 underlying inflation had risen to 6.1 per cent. None of the market economists the Bank surveys nor any market-based measures predicted the extent of the pick-up in inflation (Graph C.1).

Australia's experience was broadly similar to that internationally, though the pick-up in inflation occurred later than in many peer countries. Inflation in advanced economies over the past year has exceeded the average of forecasters' expectations by around 5–8 percentage points (Graph C.2). A year ago, there was a widespread view among

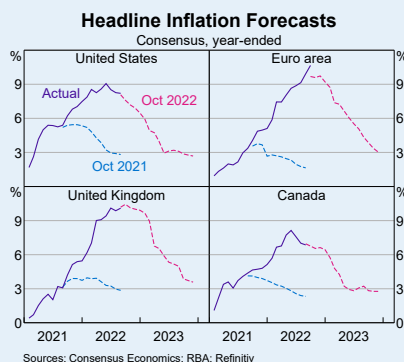
market participants (and the Federal Reserve) that the increase in US inflation that began in mid-2021 would prove temporary, with inflation forecast to return to just above the Federal Reserve's target by late 2022. For other economies, forecasters similarly expected inflation to drift down in 2022 to be broadly consistent with central bank targets. While a few economists predicted a rise in inflation in early 2021 owing to pandemic disruptions and strong policy stimulus, the magnitude of the increase was broadly underestimated.

The pick-up in inflation in Australia was initially concentrated in a small number of goods (new dwellings and then consumer durables) and some of these pressures were expected to be transitory. However, inflationary pressures broadened over time as a combination of factors raised inflation by more than expected. As one of the largest economic shocks in a century, the inflationary effects of the pandemic-driven imbalance between supply and demand for

Graph C.1



Graph C.2



goods both globally and domestically played an important role in the forecast miss. Other unforecastable shocks – such as the effects of Russia’s invasion of Ukraine and the Australian east coast floods – also contributed. The Bank’s inflation models (like most forecasting models) underestimated inflation over the past year as it is difficult for forecasting frameworks to capture the signal from unprecedented events; to address this, upward adjustments based on liaison, surveys and international experience have increasingly been incorporated into the forecasts (discussed further below).

Unpredictable shocks contributed to the strength in inflation

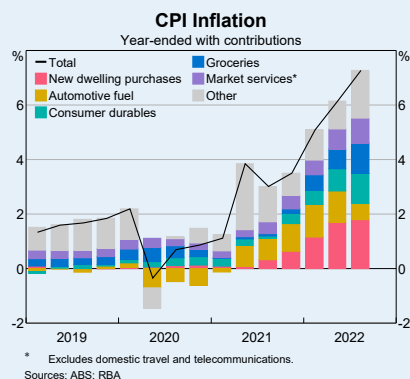
Russia’s invasion of Ukraine, the timing and extent of flooding on Australia’s east coast, domestic energy market pressures and other disruptive events were unpredictable or seemed too unlikely to include in the central forecasts. These events have led to large increases in fuel, energy and food prices and have prolonged cost pressures that initially stemmed from supply chain disruptions (Graph C.3). The European Central Bank and the Bank of Canada have assessed that higher energy prices explain around half to three-quarters of their forecast misses.^[1] In Australia, fuel prices contributed 1.2 percentage points to year-ended headline inflation by the June quarter of 2022 and directly accounted for around 15 per cent of the revisions to headline inflation forecasts by that time; however, fuel prices have since eased a little. Australian retail energy prices were shielded from international developments for a time, but large unexpected increases in wholesale costs earlier in 2022 are now expected to directly contribute around ½ percentage

point to domestic consumer prices over the year to June 2023. Australia’s east coast floods and the effects of Russia’s invasion on rural commodity prices and transport costs have also driven retail food prices higher.

The global imbalance between supply and demand for goods has been more persistent than expected

The global imbalance between supply and demand for goods has persisted for longer than anticipated by most forecasters and central banks, reflecting ongoing COVID-19-related disruptions to supply, shipping congestion, shifts in consumption patterns and stronger-than-expected demand. Consumer demand exceeded expectations in many advanced economies in the first year of the pandemic, reflecting strong fiscal and monetary stimulus; demand for consumer goods then stayed surprisingly strong as restrictions eased. The pandemic and related restrictions also interrupted production and distribution. Even without these production disruptions, supply chains would have struggled to accommodate the sudden and substantial surge in demand for goods seen in many economies.

Graph C.3



Research has indicated that supply shocks (including Russia's invasion of Ukraine) were responsible for at least half the increase in inflation in other advanced economies; preliminary modelling suggests that this has also been the case in Australia.^[2] These shocks have had a persistent effect on inflation. It is also possible that multiple supply shocks have had a compounding effect on inflation.

Moreover, international evidence suggests that both the magnitude and pace of firms' pass-through of input cost pressures has increased recently.^[3] It has long been known that inflation is more responsive to supply and demand imbalances at very low levels of unemployment (i.e. that the Phillips curve is non-linear). However, as there has been little experience of such low levels of spare capacity for several decades, this effect is difficult to quantify.^[4]

Inflation in Australia picked up later than in many other countries and retailers here were initially slow to pass through higher upstream costs to final prices. Many Australian firms delayed raising prices while cost pressures were still expected to be transitory and margins were supported by hedging practices and pandemic-related fiscal support. Concerns about the outlook for demand following the Delta-variant lockdowns may have also contributed. The price-setting behaviour of firms appeared to change in late 2021 and early 2022 as global imbalances continued, with price increases led by consumer durables. Reports of price increases by retailers broadened and retailers decided to pass through any further cost increases in full; firms appeared to be more willing to raise prices in an environment of widespread price increases.

Domestic capacity constraints have been more binding than expected

GDP increased by 3½ per cent over the year to June 2022, which was somewhat weaker than the forecast at the time of the August 2021 *Statement* (though the forecast miss on activity was small compared with that on inflation) (Graph C.4). Dwelling and business investment were weaker than expected, despite very strong demand, in part reflecting that capacity constraints were more binding than had previously been anticipated.

The inflationary effects of binding sectoral capacity constraints were underappreciated, and inflation increased rapidly in some sectors. Typically, the aggregate output gap is most relevant for the assessment of the implications for inflation – however, because of their highly uneven nature in this episode, the shocks in specific sectors mattered.^[5] This was most evident in the construction sector, where capacity constraints combined with higher materials costs and measurement impacts from the HomeBuilder program led to new dwelling inflation reaching 21 per cent over the year to the September quarter of 2022. Stronger-than-expected new dwelling inflation (compared with the model-based forecasts) accounted for around one-quarter of the miss on headline inflation.

Consumption bounced back quickly following the easing of restrictions relating to the Delta outbreak in late 2021. While the bounce-back was anticipated based on experience from lockdowns earlier in the pandemic, this particular recovery was still a little stronger than expected. Inflationary pressures from strong household demand began to materialise in some items as households returned to more normal

patterns of services consumption. Market services inflation increased to be around its strongest rate in around three decades; price increases were particularly strong for household services such as hair dressing, and there was underlying strength in meals out & takeaway prices.

The Bank also underestimated the underlying momentum in the labour market, which was partly obscured by the effects of lockdowns in the second half of 2021. The unemployment rate has declined at a much faster pace than previously anticipated to reach levels last observed in the mid-1970s (Graph C.5). Government support packages and accommodative monetary policy avoided labour market scarring during the early stages of the pandemic and the Delta lockdowns, and provided the momentum for future employment growth. Models suggest that the direct contribution of this to the forecast miss on inflation has been relatively small so far, as wages measures are yet to pick up significantly (though broader measures of labour costs and unit labour costs have started to increase) and flow through to inflation with a lag. Nonetheless, the impact on sectoral supply constraints from the difficulties in obtaining labour has

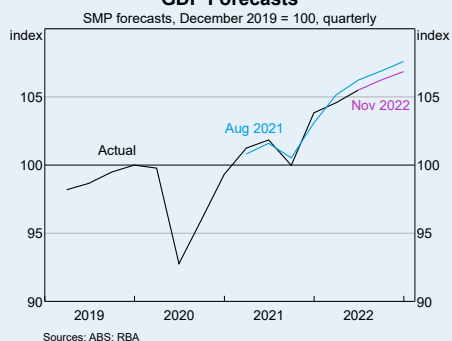
contributed to inflation by running up against strong demand.

Model-based forecasts underestimated inflation and upward adjustments based on other information were incorporated into the forecasts

The Bank draws on a suite of econometric models as part of the forecasting process.^[6] Each of these models materially underestimated inflation over the past year (Graph C.6). Most of these models are designed to capture demand-driven inflationary pressures in the economy, which have been the most important drivers of inflation over recent decades. These models (like most forecasting models) were not well equipped to capture supply-driven inflation, the signal from global inflation surprises, a change in firms' pricing behaviour or shocks that are highly uneven across sectors. This is because it is difficult to capture the inflation signal from unusual drivers or unprecedented events in a forecasting framework, which relies on the statistical relationships that prevailed on average in the past.

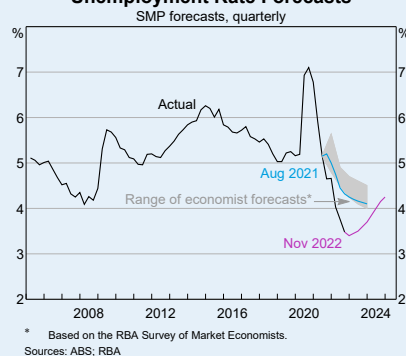
Graph C.4

GDP Forecasts



Graph C.5

Unemployment Rate Forecasts



For example, a number of the models attempted to capture global supply-side inflationary pressures through import prices, but the predicted effect was much more muted than what eventuated. This was because the estimated transmission of import prices to trimmed mean inflation in

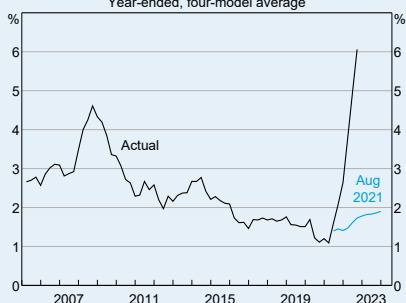
our models was very low (1–5 per cent of the increase in import prices, and only 15 per cent even in the model for tradables price inflation). These average historical estimates reflect that previous supply shocks tended to be small, short lived and narrowly based. As a result, firms tended to absorb these in margins. The large supply shock component to the recent import price increases is unprecedented during the inflation-targeting period on which the models are estimated.

To address these shortcomings, upward adjustments informed by liaison, surveys and international experience have increasingly been incorporated into the forecasts and more weight has been placed on sectoral models. This reduced forecast errors over the past year compared with a fully model-based approach, but did not eliminate them. ❖

Graph C.6

Trimmed Mean Inflation Model Forecast

Year-ended, four-model average



Sources: ABS; RBA

Endnotes

- [1] See Chahad M, A Hofmann-Drahonsky, B Meunier, A Page and M Tirpák (2022), ‘What Explains Recent Errors in the Inflation Projections of Eurosystem and ECB Staff?’, *ECB Economic Bulletin*, Issue 3/2022; Bank of Canada (2022), *Monetary Policy Report*, July.
- [2] See Shapiro A (2022), ‘How Much Do Supply and Demand Drive Inflation?’, FRBSF Economic Letter, Federal Reserve Bank of San Francisco, 21 June; 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 Yıldırım (2022), ‘Global Supply Chain Pressures, International Trade, and Inflation’, *ECB Forum on Central Banking*, June.
- [3] See Amiti M, S Heise, F Karahan and A Sahin (2022), ‘Pass-Through of Wages and Import Prices Has Increased in the Post-COVID Period’, *Liberty*

Street Economics, Federal Reserve Bank of New York, 23 August; Bank for International Settlements (2022), ‘Inflation: A look Under the Hood’, *Annual Economic Report*, June.

- [4] See Gopinath G (2022), ‘How Will the Pandemic and War Shape Future Monetary Policy?’, *Jackson Hole Symposium*, 26 August.
- [5] See di Giovanni et al, n 2.
- [6] Comprehensive econometric models – including single-equation aggregate inflation models, sectoral models and the full system economic model (MARTIN) – are used to underpin our forecasts, develop alternative scenarios and perform sensitivity analysis. See Cassidy N, E Rankin, M Read and C Seibold (2019), ‘Explaining Low Inflation Using Models’, *RBA Bulletin*, June. Available at <<https://www.rba.gov.au/publications/bulletin/2019/jun/explaining-low-inflation-using-models.html>>

