Statement on Monetary Policy

MAY 2020

RESERVE BANK OF AUSTRALIA

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Contents

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Overview

Combating the spread of COVID-19 has required severe restrictions on economic activity in many countries. The result has been a large and near-simultaneous contraction across the global economy. Heightened uncertainty about the future has exacerbated the contraction, both directly through weaker investment and consumer spending and via tighter financial conditions. In Australia, output is expected to contract significantly over the first half of 2020, mostly in the June quarter. While the exact size of the contraction is still uncertain, a decline in GDP of around 10 per cent from peak to trough is expected.

The contractions in output in many other economies are likely to be at least as large as that in Australia; the size and timing of these declines depend both on the duration of the containment measures and on how stringent these measures have needed to be. March quarter GDP data for a number of economies show significant contractions, even though in many cases the lockdowns only began in the last few weeks of the quarter.

China is in the process of recovery, having been hit by the COVID-19 pandemic earlier than other countries. Although output contracted by nearly 10 per cent in the March quarter as a whole, industrial production staged a substantial recovery in the month of March and fixed asset investment spending also increased. In contrast, retail spending remained weak, suggesting that households have been slow to venture out and resume earlier spending patterns once the lockdowns have ended.

In many other economies, the most intense phase of the contraction is likely to occur in the June quarter. Gradual recoveries should follow in the second half of the year, supported by the easing of restrictions and the significant expansion in both fiscal and monetary policies. Central banks have provided support to businesses and households, and addressed the financial market disruptions that arose in March.

The contraction in activity has affected labour markets severely. Large and rapid increases in unemployment are occurring in many countries. Official unemployment rates, including in Australia, will not capture the full extent of the decline in labour demand. Lockdowns, school closures and other restrictions on activity have meant that many workers who have been laid off will not be actively searching for another job for a time and therefore not be counted as unemployed, while other workers will have left the labour force. In addition, many firms have cut the hours of their employees rather than laying them off entirely. More of the labour market adjustment is likely to occur through hours worked rather than job losses in economies with more comprehensive wage subsidy programs. And by preserving employment relationships over the period of lockdowns, these programs should also hasten the subsequent recoveries in activity and employment.

In Australia, although there is expected to be a large increase in the unemployment rate – perhaps peaking at around 10 per cent – the increase would have been much larger were it

not for the JobKeeper wage subsidy program. Total hours worked are likely to contract by around 20 per cent over the first half of 2020. This is larger than the decline in output partly because many of the most-affected industries are quite labour-intensive.

A shock of this size and uncertain effect has been difficult for financial markets to price. Globally, risk premiums widened in late February and into March. The resulting very sharp increase in volatility induced investors to reduce leverage and raise cash. A widespread sell-off of even relatively safe assets such as government bonds ensued, which contributed to severe market dysfunction, including in Australia. Government bond yields increased despite the worsening economic outlook. The dysfunction in the US Treasury market was especially consequential because of its role as a pricing benchmark for other markets. US dollar funding and foreign exchange markets were also severely disrupted for a time.

Central banks around the world, including in Australia, moved swiftly to implement comprehensive policy packages in response to the deterioration in the economic outlook and the market dysfunction. These included reductions in policy rates, large-scale market operations and purchase programs for government bonds and other securities, the provision of term funding to banks and the establishment of foreign exchange swap lines. These measures complemented fiscal stimulus aimed at supporting incomes and the flow of funding to households and businesses.

These various policy measures – and a slowing in the rates of new infections in many countries – contributed to an easing in financial conditions in April. Market functioning has improved and central bank bond purchases and market operations have been scaled back accordingly. Earlier tightness in money markets has also eased, and corporate bond issuance has rebounded in major markets. Following very sharp declines in March, equity prices have since recovered around half the losses, but remain volatile, while exchange rates have reversed some of the sharp movements of February and March. Financial conditions more broadly remain quite fragile, however, consistent with the uncertain economic outlook.

In Australia, the Reserve Bank Board held an unscheduled meeting on 18 March, at which it agreed to implement a comprehensive package of measures to support the economy and promote functioning of key financial markets. The package had four elements:

1. A reduction in the cash rate to 25 basis points. This followed an earlier reduction of 25 basis points at the scheduled March meeting. The Board also announced that it will not increase the cash rate target until progress is being made towards full employment and it is confident that inflation will be sustainably within the 2–3 per cent target band. Given the outlook for the Australian economy, this means that the cash rate is unlikely to be increased for an extended period of time.
2. A target for the three-year Australian Government bond yield of around 0.25 per cent. The Board chose to implement the target at the three-year horizon as it influences funding rates across much of the Australian economy. It is also consistent with the Board's expectation that the cash rate will remain at its current level for some years. The three-year bond yield target extends and complements the Reserve Bank's practice to target the cash rate, which forms the anchor point for the risk-free term structure. To achieve this target, as well as to address dislocation in the government bond market, the Bank has conducted purchases of Australian Government Securities (AGS) and semi-government securities (semis) across the yield curve in the secondary market.

3. A Term Funding Facility for the banking system, with particular support for credit to small and medium-sized businesses. The Reserve Bank is providing a three-year funding facility to authorised deposit-taking institutions (ADIs) at a fixed rate of 0.25 per cent. ADIs can obtain initial funding of up to 3 per cent of their existing outstanding credit. They have access to additional funding if they increase lending to business, especially to small and medium-sized businesses. The facility is for at least $90 billion. The Australian Government has developed a complementary program of support for the non-bank financial sector, small lenders and the securitisation market, implemented by the Australian Office of Financial Management.
4. The remuneration of exchange settlement balances at the Reserve Bank at 10 basis points, rather than zero as would have been the case under the previous arrangements. This mitigates the cost to the banking system associated with the large increase in banks' settlement balances at the Reserve Bank that has occurred as a result of these policy actions.

In addition, the Bank has provided substantial liquidity to the financial system through its daily open market operations. This has included the provision of liquidity at three and six-month horizons on a frequent basis. Furthermore, at its May meeting, the Board decided to broaden the range of eligible collateral for these operations to include Australian dollar securities issued by non-bank corporations with an investment grade credit rating. This will assist with the smooth functioning of Australia's capital markets.

These measures complement each other and work to lower funding costs across the economy and support the provision of credit, especially to small and medium-sized businesses. Importantly, the package of measures is part of a substantial, coordinated and unprecedented fiscal and monetary policy response to the COVID-19 outbreak.

So far, this package of measures has been working broadly as expected.

The target for the three-year government bond yield was achieved quickly, and the yield has remained around 25 basis points subsequently. To achieve the target and to support market functioning, the Bank has purchased $50 billion of AGS and semis in the secondary market. Market functioning in both the AGS and semis bond markets has improved significantly. Issuance by Commonwealth and state governments has picked up. Reflecting the improvement in market functioning and the achievement of the three-year yield target, the Bank has scaled back the frequency and size of its operations. Nevertheless, the Bank is prepared to scale up these purchases again if necessary to achieve the yield target and ensure that government bond markets remain functional.

By the beginning of April, $50 billion of additional liquidity had been provided to the banking system through open market operations and the average residual maturity of the Bank's repo book had increased noticeably. Since then, the size of the Bank's daily market operations has declined in response to improved market conditions, reflecting the large amount of liquidity already in the system and reduced demand from the banking system as a whole. In response to the very large rise in cash balances in the banking system, as expected, the cash rate has declined below 25 basis points. It is currently trading at a rate of 14 basis points, and market pricing indicates it will remain around this level for some time.

Borrowing rates for businesses and households have declined to record low levels in response to the package of policy measures. The cost of funding for banks has also declined to very low

levels. Lenders are beginning to draw down on their Term Funding Facility allowances, with some of the larger institutions expected to do so in coming months. These developments will provide support to the economy in the period ahead.

As the spread of the virus is contained and public health measures are relaxed, both the domestic and global economies will begin to recover. Governments in Australia and elsewhere have introduced very significant fiscal stimulus, supported by further monetary policy accommodation. These policy initiatives will support incomes over this challenging period and be instrumental to the recovery. The initial stages of these recoveries could start quite soon, as activities that were previously restricted become possible again. But a full recovery will take time. Many households and businesses have reduced spending in response to declines in income and wealth, and heightened uncertainty. This may take a while to reverse, especially if there are lingering concerns about control of the virus. In addition, some workers who have been laid off will take time to find other employment, especially if their previous jobs were in industries facing lower ongoing demand.

Beyond the next few months, the speed and timing of the economic recovery is very uncertain. It therefore makes sense to think in terms of plausible scenarios. The path of the recovery will depend crucially on how successful countries are in containing the spread of the virus, and thus how long containment measures need to be in place. In a number of countries, including Australia, some restrictions are beginning to be lifted. A plausible baseline scenario for the outlook in Australia involves the relaxation of domestic activity restrictions over coming months, with most of these restrictions lifted by the end of the September quarter; restrictions on large public gatherings and international travel could remain in force for longer than this.

Under this baseline scenario, activity and employment begin to recover in the second half of the year. After an initial surge of retail spending in March, as households prepared for the period of self-isolation and social distancing, household consumption is expected to contract by around 15 per cent before recovering over the next couple of years. Much of the decline is expected to be concentrated in services, such as travel and entertainment, most affected by activity restrictions. Travel restrictions have also induced a sharp decline in tourism-related and education service exports, and it is not clear how quickly these will recover.

The uncertainty about future demand prospects will also curtail business investment intentions. In addition, mining investment is likely to be weaker than previously expected, as some large proposed LNG projects have been delayed given low oil and LNG prices. More positively, though, drought conditions have been easing in recent months. Activity restrictions have limited turnover in the established housing market, and uncertainty about future job prospects and income is likely to dampen demand for housing. Slower population growth is also expected to translate into less demand for new construction.

The pace of recovery in the labour market is uncertain. Much will depend on how well employment relationships can be preserved over the period of restrictions – including through the use of the JobKeeper Payment – or restored quickly as activity recovers. Longer-run behavioural responses to the pandemic could involve lasting shifts in industrial structure; achieving a rapid recovery in the face of these shifts will also place a premium on the flexibility and adaptability in the labour market. Under the baseline scenario, unemployment begins to gradually decline from later this year. However, it is expected to remain elevated for some time.

Turning to inflation, inflation pressures had picked up a little in the March quarter. Inflation was 2.2 per cent over the year to the March quarter, and 1¾ per cent in underlying terms. However, oil prices have fallen dramatically in response to lower global demand and limited storage capacity. Recently announced production cuts globally have not been enough to offset this. As a result of this and the temporary removal of childcare fees, year-ended headline inflation is expected to turn negative in the June quarter, for the first time since the early 1960s. Trimmed mean inflation is also expected to be lower (but still positive) in the June quarter, to be around 1½ per cent over the year. Declines (or delayed increases) in a number of administered prices will also contribute to inflation remaining low in the near term. From this low point, inflation is likely to increase gradually, but in this baseline scenario it is likely to remain below 2 per cent for some time, for a number of reasons. The ongoing spare capacity in the labour market is likely to result in a period of slower growth in wages and thus labour costs. Growth in rents is also likely to remain weak: demand for housing will be lower, while some properties previously used as short-term holiday accommodation are now being offered for long-term rental.

Other scenarios for the recovery phase can readily be envisaged. Given the relatively rapid decline in the number of new COVID-19 cases in Australia, it is possible to contemplate an upside scenario where most domestic restrictions on activity are relaxed a little sooner and the economy recovers somewhat faster than in the baseline scenario. The greater is public confidence in positive health outcomes, the more likely it is that the easing in restrictions on activity spurs a recovery in spending; better health outcomes elsewhere in the world would reinforce this positive dynamic. In such a scenario, the unemployment rate could return to around 5 per cent in a couple of years and the level of GDP would return to a path that is close to that implied in the forecasts published in the February *Statement on Monetary Policy*.

Alternatively, if the lifting of restrictions is delayed or the restrictions need to be reimposed or household and business confidence remains low, the outcomes would be even more challenging than those in the baseline scenario. The unemployment rate would drift down much more gradually and the level of output would remain around its trough for several quarters and recover only slowly. A longer downturn would involve more job losses and business failures, and therefore more lasting damage to economic performance.

In the context of these extraordinary times and consistent with its broad mandate to promote the economic welfare of the people of Australia, the Reserve Bank will continue to play its role in building the bridge to the time when the recovery takes place. It will maintain its efforts to keep funding costs low in Australia and credit available to households and businesses. The Board will not increase the cash rate target until progress is being made towards full employment and it is confident that inflation will be sustainably within the 2–3 per cent target band. The Board is committed to do what it can to support jobs, incomes and businesses during this difficult period and to make sure that Australia is well placed for the expected recovery.

1. International Economic Conditions

Global economic conditions have deteriorated significantly since the February *Statement on Monetary Policy*. Around the world, the COVID-19 pandemic has led to social distancing measures of various degrees to slow the spread of the virus, which has necessarily constrained economic activity. Monetary and fiscal authorities have implemented extensive and timely supporting policies. In the short term, these measures will provide support by offsetting some of the income that is being lost because of the public health measures. They will also help economies recover faster when these measures are eventually relaxed. The speed of the recovery in each economy is highly uncertain and will depend on how quickly the virus is contained so that activity restrictions can be relaxed, and on how persistent behavioural changes are as a result of the pandemic.

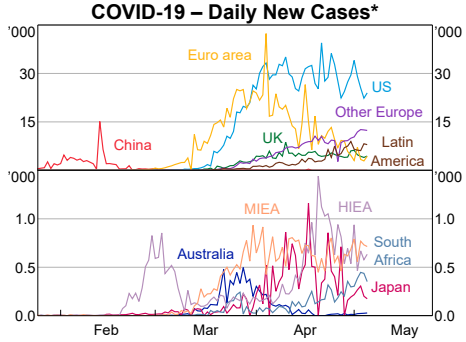
The COVID-19 pandemic has led governments to impose varying degrees of social distancing policies

Despite efforts to control the spread of the virus that causes COVID-19, the virus still spread globally. New infections in China peaked in the first half of February, and the virus had reached a number of other Asian economies by the end of February. By mid March, a global pandemic was declared by the World Health Organization as new infections rose rapidly in some parts of Asia, Europe and North America (Graph 1.1). To contain the spread of the virus, many governments imposed a number of public health measures, particularly travel restrictions, quarantine, testing, tracing and social distancing; the extent of these restrictions has varied across jurisdictions.

Some countries have had more success in limiting the number of new cases than others. South Korea imposed travel restrictions earlier than most, and conducted extensive testing, tracing and quarantining. However, in some other economies that had early success in slowing the spread of the virus, including Japan and Singapore, infections have increased since late March, which has led to the introduction of stricter containment measures. In Europe, new cases peaked shortly after the rollout of strict social distancing measures in mid March and some countries have recently begun to relax some containment measures. By April, the epicentre of the pandemic had shifted to the United States. Although strict social distancing policies were introduced in most US states, they have recently been partially relaxed in some.

Graph 1.1

COVID-19 – Daily New Cases*



* Euro area includes France, Germany, Italy and Spain; other Europe includes Turkey, Russia and Poland; Latin America includes Brazil and Mexico; HIEA includes South Korea, Singapore and Taiwan; MIEA includes Indonesia, Malaysia, Thailand, Philippines and Vietnam

Sources: Johns Hopkins CSSE; RBA

Many emerging economies, where new cases have grown rapidly since mid March, face greater challenges in dealing with the pandemic. Healthcare capacity in many of these countries is more limited than in most advanced economies (Graph 1.2). The risk of a large caseload is also greater in those economies with higher population densities and higher shares of informal employment, which can make social distancing measures harder to implement. In some emerging economies, like India and South Africa, strict country-wide containment measures have been implemented, while in others, like Indonesia, the measures are more localised.

In China, where new infections are now low and manageable, authorities have begun relaxing restrictions on domestic movements. However, after a recent rise in cases from international arrivals, China has imposed very tight controls at its border, forbidden entry for almost all foreigners, and placed restrictions on areas at risk of another outbreak.

Social distancing is driving a significant contraction in global economic activity

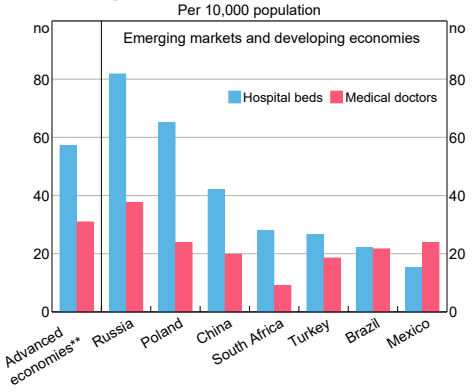
The public health response to the pandemic necessarily involves significant constraints on economic activity. In the United States, the euro area and the United Kingdom, around one-third of economic activity has been affected by the lockdowns (Graph 1.3); the level of quarterly GDP is estimated to be around 2 to 3 per cent lower for every week these lockdowns are in place. Elsewhere, the economic effect is estimated to be smaller because containment measures have been more targeted. The effects of local lockdowns will be compounded by:

- general economic uncertainty and expectations of future income loss
- weak global demand given the synchronised nature of this downturn
- widespread supply chain disruptions
- tighter financial conditions
- the sharp fall in commodity prices, especially for oil, weighing on business investment in some sectors; lower oil prices are unlikely to support near-term economic activity in net oil-importing economies because of the restrictions on activity.

Graph 1.2

Hospital Beds and Medical Doctors*

Per 10,000 population

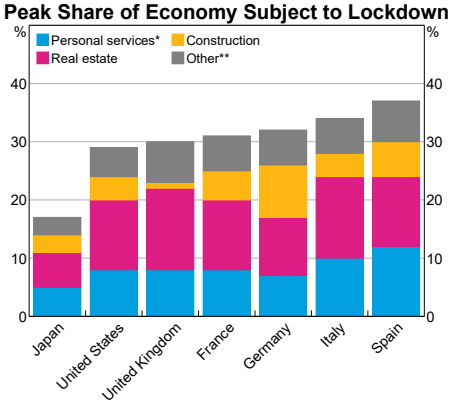


* Latest available data for each economy
** Simple average of Canada, France, Germany, Italy, Japan, United Kingdom and the United States

Sources: RBA; WHO

Graph 1.3

Peak Share of Economy Subject to Lockdown



* Includes accommodation & food services and wholesale & retail trade
** Includes art, entertainment, recreation and other services

Sources: OECD; RBA

The duration of the lockdowns and how quickly they are eased will affect the size of the economic contraction and the speed of the subsequent recovery. Most lockdowns were initially for less than a month but have been extended in many cases to around six to eight weeks. Many restrictions, including border controls, may remain for an extended period. Containment measures have started to be gradually relaxed in many countries.

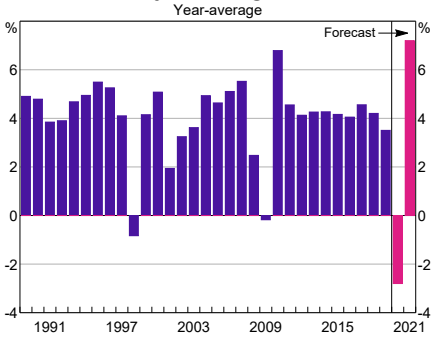
Apart from China, where the recovery is already underway, the contraction in activity is expected to be concentrated in the June quarter. In the major advanced economies, GDP is expected to contract in 2020 by 3 to 7 per cent in year-average terms with peak-to-trough declines in GDP of 10 to 15 per cent. For economies in the Asian region that have so far used targeted containment measures, the decline in domestic activity is expected to be smaller, but weaker external demand will slow growth in the region. In year-average terms, the GDP of Australia's major trading partners is expected to contract by around 3 per cent in 2020 (Graph 1.4).

In China, supply constraints are beginning to ease, and demand will become increasingly important as the main factor determining the pace of recovery. Weaker external demand will weigh on China's recovery, but authorities have stated that fiscal and monetary policy will be more accommodative in the coming months. Fiscal and monetary policy measures are also expected to replace some of the lost spending in advanced economies and aid the recovery in the second half of 2020. However, the level of GDP is likely to remain below its pre-COVID-19 trajectory because of severed employment and supplier relationships due to job losses, business failures, lower private investment, and voluntary social distancing. In year-average terms, the GDP of Australia's major trading partners is expected to expand by 7 to 8 per cent in 2021 (Graph 1.4).

Graph 1.4

Australia's Major Trading Partner Growth

Year-average



Sources: ABS; CEIC Data; Oxford Economics' Global Economic Model; RBA; Refinitiv

The risks to the global outlook are skewed to the downside. In some countries, limited testing, less extensive containment measures or premature relaxation of restrictions could lead to another surge in new cases and a reintroduction of restrictions, which will lead to a more protracted contraction. The negative effects of such a scenario would have longer lasting effects as more businesses close, people experience longer spells of unemployment and lower investment lowers future productive capacity.

Unemployment rates in advanced economies are expected to increase significantly and are likely to take longer than GDP to return to their pre-COVID-19 levels. More of the labour market adjustment is likely to take place through reduced hours worked and earnings in economies that have expanded or created wage subsidy programs. This includes many euro area economies, the United Kingdom, Canada and New Zealand. In Germany, which has a long track record with such programs, the unemployment rate is expected to increase by less than 1 percentage point, while Spain's central bank expects the unemployment rate to increase by 4 to 8 percentage points in 2020. However, in economies where such programs are being introduced for the first time, new job losses are still expected to be relatively high. For example, the Office for Budget Responsibility expects the

UK unemployment rate to increase by 6 percentage points in the June quarter.

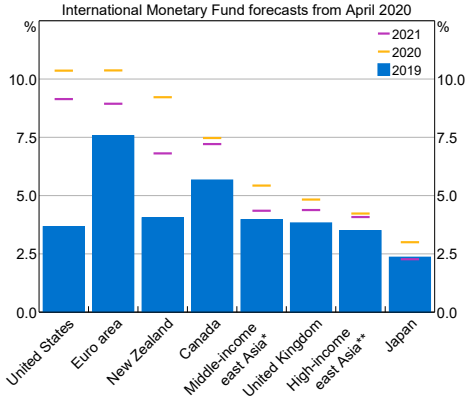
In economies with less comprehensive wage subsidy programs, such as the United States, more of the adjustment is expect to occur through job losses. The Congressional Budget Office expects the US unemployment rate to peak at 16 per cent in the September quarter and average around 11.5 and 10 per cent in 2020 and 2021, respectively. The International Monetary Fund (IMF) expects the increase in the US unemployment rate to be the largest of the advanced economies and the increase in unemployment in economies with wage subsidies to be smaller but still sizeable (Graph 1.5).

Global inflation is expected to be subdued. In the short term, weaker demand and very low oil prices will reduce inflation despite the disruptions to global supply chains and the temporary upward price pressures on staple goods. In the medium term, spare capacity in the labour market will lead to ongoing downward pressure on inflation. Inflation is likely to remain below most central bank targets for an extended period.

Graph 1.5

Unemployment Rates and Forecasts

International Monetary Fund forecasts from April 2020



* Includes Indonesia, Malaysia, Philippines and Thailand
** Includes Hong Kong, South Korea and Taiwan
Sources: IMF; RBA

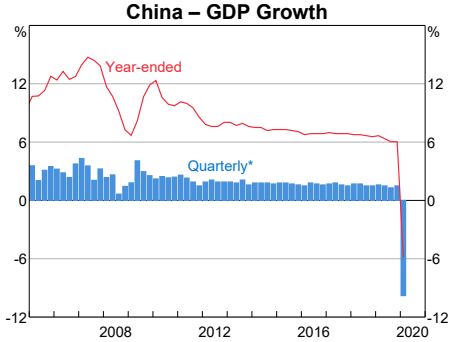
In China, economic activity in many sectors is approaching usual levels

The tight restrictions imposed to contain COVID-19 cases resulted in a contraction of 9.8 per cent in Chinese GDP in the March quarter (Graph 1.6). Business shutdowns caused both industrial production and fixed asset investment to fall to levels last recorded in the mid 2010s. The contraction in consumer demand was reflected in a sharp fall in retail sales. Some capital-intensive industries, such as steel-making, fared better than other sectors because they were less affected by labour supply disruptions and production was supported by expectations of future higher infrastructure spending. Following the easing of restrictions, industrial production recovered strongly in March to be only 3.5 per cent lower than at the end of 2019 and fixed asset investment picked up a little, but retail sales remained weak.

Property sales effectively ceased during the shutdown and were slow to recover (Graph 1.7). The extended suspension of property sales could put further financial pressure on developers because they have recently relied more on pre-sales for funding. Residential real estate investment, starts and completions increased in March after contracting sharply in January and February.

Graph 1.6

China – GDP Growth



* Seasonally adjusted; RBA estimates prior to December quarter 2010
Sources: CEIC Data; RBA

Production disruptions led to a sharp fall in exports in February, but as disruptions and logistical challenges in transporting goods eased, exports began to recover, particularly to Asia. The decrease in imports was more muted, which is likely to reflect both disruptions to the domestic production of commodities, and ongoing activity in downstream industries (such as steel production).

Weak demand and supply disruptions have had a limited short-term effect on inflation in China (Graph 1.8). Core inflation has fallen over the past year to around 1¼ per cent owing to slower growth in economic activity. Disruptions to transportation caused some food prices to rise in February. But as transportation returned to normal and authorities continued to release pork reserves in March, headline consumer price inflation declined. Producer prices declined in February and March because of lower oil prices and weaker domestic demand.

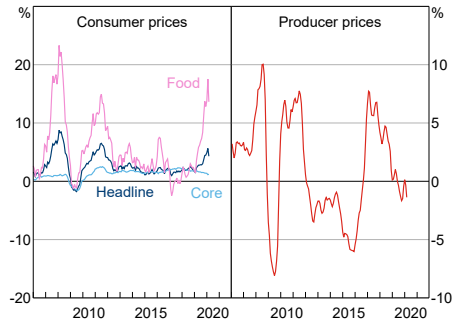
China's recovery is expected to gather pace as the balance shifts from containment measures to policies that support growth. Higher-frequency data suggest that activity generally rose to around 90 per cent of normal levels by the end of April (Graph 1.9). While many businesses have re-opened, capacity utilisation remains below pre-outbreak levels because of widespread workforce shortages (with many migrant workers yet to return to urban areas), continued lockdown measures in some cities, and the weak recovery in demand. Economic activity is expected to rebound in the June quarter and recover further in the second half of the year as businesses gradually return to normal levels of production and the economy continues to receive policy support.

China's fiscal response was initially focussed on improving business liquidity. To help local governments provide more fiscal support, the interim quota for local government bond issuance was raised by CNY 1 trillion to be around 85 per cent of total 2019 issuance. The People's Bank of China has also provided further

Graph 1.8

China – Inflation*

Year-ended



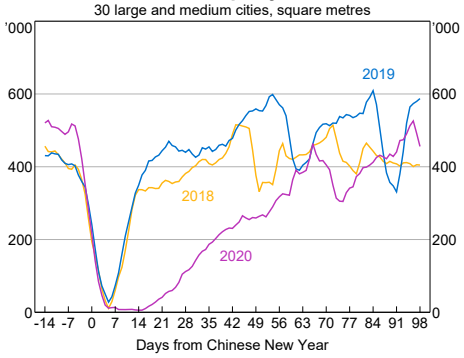
* Seasonally adjusted by the RBA

Sources: CEIC Data; RBA

Graph 1.7

China – Property Sales*

30 large and medium cities, square metres

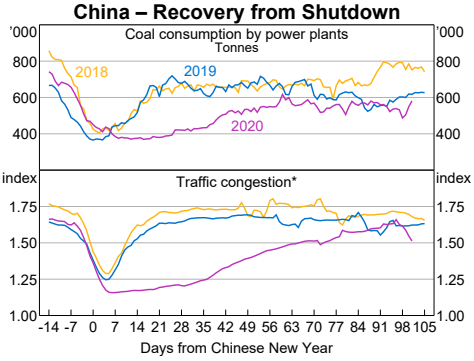


* Seven-day moving average

Sources: RBA; WIND

Graph 1.9

China – Recovery from Shutdown



* Seven-day moving average

Sources: RBA; WIND

monetary support to the economy (see 'International Financial Conditions' chapter).

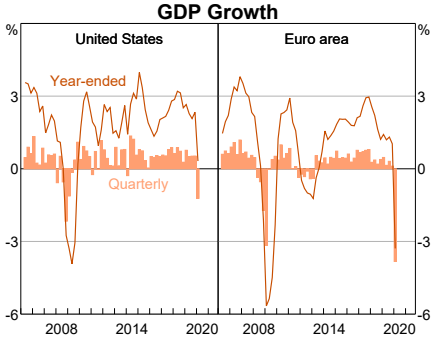
The strict containment measures have sharply curtailed activity in the advanced economies

It is already clear that there was a simultaneous contraction in economic activity in the advanced economies in March and April that was unprecedented in terms of its speed and combined size. Some of the contraction appears to have begun before the government-mandated lockdowns as households took health precautions and reduced discretionary consumption. The deterioration in labour market conditions has been extremely swift and will have exacerbated the direct effects of the public health measures on spending.

GDP contracted by 1.2 per cent in the United States and by 3.8 per cent in the euro area in the March quarter, even though the containment measures had only been in place for a couple of weeks at the end of the quarter (Graph 1.10). The fall in GDP was largest in France despite Spain and Italy being hit hardest by the virus. Surveyed business conditions in the major advanced economies declined further in April after sharp falls in March that were consistent with the contraction in overall output. The deterioration in business conditions has been the sharpest in the services sector, which is most affected by social distancing measures (Graph 1.11). Surveyed future business conditions have also deteriorated, suggesting that firms expect weak business conditions to persist over the next year.

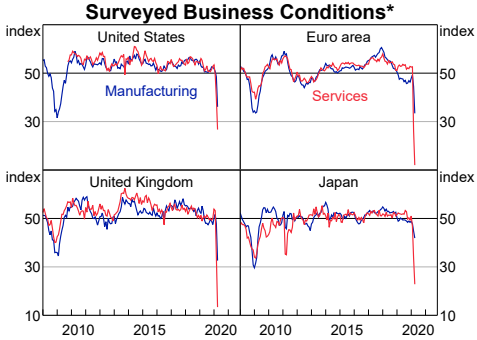
Consumer confidence and retail sales in the major advanced economies have declined sharply since March (Graph 1.12). Consumption of essentials, such as food and beverages, and online shopping have increased, but this has been far outweighed by very large falls in most other categories. Discretionary and high-value categories of consumption have been especially weak. Motor vehicle sales have collapsed to their weakest level in over 30 years in the United States and the euro area.

Graph 1.10
GDP Growth



Source: Refinitiv

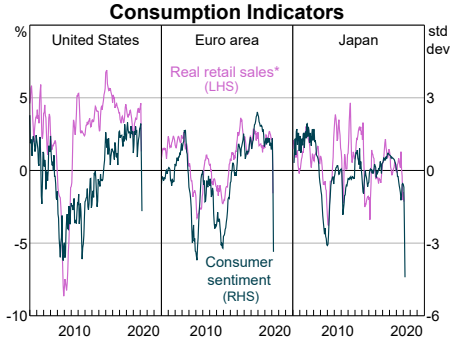
Graph 1.11
Surveyed Business Conditions*



* Purchasing Managers' Index; below 50 indicates that activity is contracting

Sources: Markit; RBA

Graph 1.12
Consumption Indicators



* Year-ended growth; smoothed; consumption index for Japan

Sources: CEIC Data; RBA; Refinitiv

Industrial production declined sharply in March in the United States and Japan. The decline in manufacturing output was mostly due to the sharp reduction in demand for non-essential items and production disruptions; the industrial sector was deemed to be essential in these countries so was not subject to strict lockdown measures. Investment intentions have declined sharply in the United States and lower oil prices are expected to exacerbate the decline in energy-sector investment.

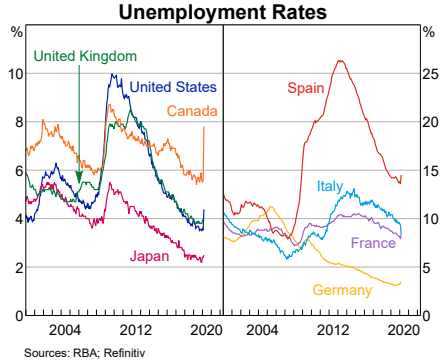
Labour market conditions have deteriorated rapidly. Total initial claims for unemployment in the United States since mid March have exceeded 30 million, or 21 per cent of the labour force; this is far higher than during any US recession since at least the late 1960s. Unemployment claims have also increased very sharply in other advanced economies. Large uptake has been reported for government-sponsored wage subsidy schemes in many European economies. In Germany, applications for support rose sharply in April and exceed the peak number of applications during the global financial crisis.

Published unemployment rates do not yet fully reflect the effect of containment efforts (Graph 1.13). Recent published unemployment rates for March were measured before the lockdowns went into effect in a number of economies, including the United States (4.4 per cent, up by nearly a percentage point from February) and Japan (2.5 per cent, little changed from the previous month). The March unemployment rate in Canada (7.8 per cent, up by 2.2 percentage points since February) was measured in the initial stages of the lockdown. Unemployment rose sharply in Spain because the lockdowns were very strict, the large tourism sector was effectively shut and a high share of workers are typically on short-term contracts. Italian unemployment fell sharply despite the country's longer and stricter lockdown; the number of people actively looking for work fell sharply and the government also placed restrictions on employment terminations in March and April.

Fiscal policy has been used aggressively to support activity

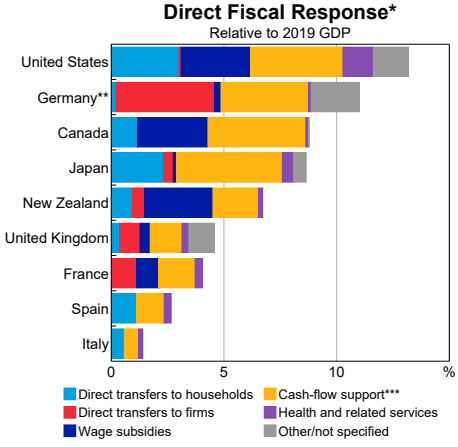
Governments in advanced economies have quickly responded with very large and targeted fiscal packages (Graph 1.14). The objective has been to fund the healthcare response and to preserve some level of income, business viability and employment relationships, so that activity can resume quickly when the containment measures are wound back.

Graph 1.13



Sources: RBA; Refinitiv

Graph 1.14



* Excludes loan guarantees
** Not specified includes wage support
*** Includes loans for firms, and deferred tax and debt payments
Sources: National sources; RBA

The household and business fiscal support measures include:

- expanding existing automatic stabilisers by increasing their size and duration, e.g. an additional US$600 per week in unemployment benefits in the United States and additional compensation for loss of employment of C$2,000 per month for four months in Canada
- direct payments to individuals, for example a one-time payment in the United States of US$1,200 for those with annual earnings under US$75,000, and ¥100,000 for every resident in Japan
- direct funding for small businesses and self-employed individuals, for example a €50 billion package in Germany and £10,000 to £25,000 for eligible small UK businesses
- business incentives to maintain employment, including funding to help cover wages and other expenses, e.g. loans that can be turned into grants for small US businesses that spend 75 per cent of the loan on employee compensation; a 75 per cent wage subsidy for small businesses in Canada; 80 per cent wage subsidy in the United Kingdom; and expanded wage-employment subsidy programs that pay significant part of wages in Germany, France and Spain
- deferring tax payments, direct loans and substantial loan guarantees (see 'International Financial Conditions' chapter)
- pausing certain contractual obligations, which would reduce payments by affected individuals and firms for a period of time, including freezing or postponing payments for rent, utilities and mortgages.

The direct fiscal support will contribute to a significant increase in government debt levels; at the same time, tax revenue will be lower and the call on the existing automatic stabilisers will raise spending until the recovery is well under way. Governments will be issuing debt in an environment with very low interest rates, high demand for safe assets, and weak private investment. The IMF estimates that advanced economies' debt-to-GDP ratio will increase by over 17 percentage points in 2020, primarily as a result of the direct fiscal response to COVID-19 (Graph 1.15).

Domestic outbreaks and a decline in external demand have affected economic activity in east Asia

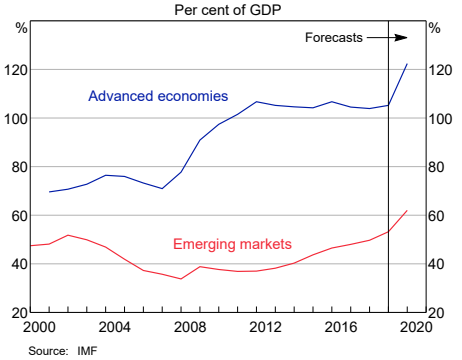
The spread of COVID-19 to east Asia's other major trading partners has kept external demand conditions weak into the June quarter despite the recovery in China. New export orders continued to decline in April for most of the region (Graph 1.16). Inbound tourism has virtually ceased due to global travel restrictions; tourism makes up a significant proportion of activity in many economies in the region, especially Thailand.

Consumer sentiment, business confidence and conditions in the region's manufacturing sector have declined sharply since the COVID-19 outbreak. The deterioration in conditions started in February because the region was affected by its large trade exposure

Graph 1.15

General Government Gross Debt

Per cent of GDP

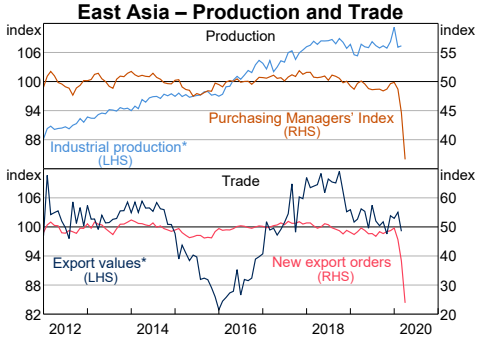


Source: IMF

to China and its earlier implementation of measures to contain local outbreaks. As a result, activity contracted in some economies in the region in the March quarter. In South Korea, weaker household consumption was the main driver of the 1.4 per cent contraction in GDP, reflecting both voluntary and mandated social distancing. Larger contractions are expected in the June quarter in the region; most economies have tightened their public health measures and external demand has deteriorated further. Furthermore, the easing in supply chain disruptions related to China is being offset by supply chain disruptions originating elsewhere. Supplier delivery times across economies have lengthened significantly since February (Graph 1.17).

Graph 1.16

East Asia – Production and Trade

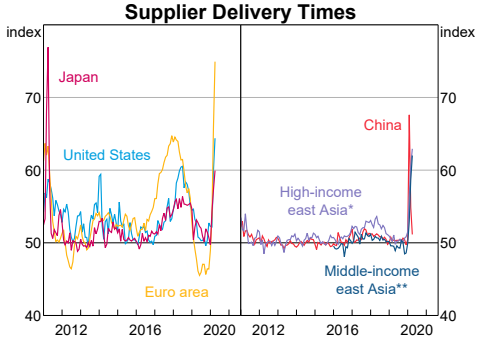


* Average since 2012 = 100

Sources: CEIC Data; Markit; RBA

Graph 1.17

Supplier Delivery Times



* Hong Kong, Singapore, South Korea and Taiwan

** Indonesia, Malaysia, Philippines, Thailand and Vietnam

Sources: Markit; RBA

Most economies in the region have introduced sizeable fiscal packages, with the largest package in Singapore (Graph 1.18). South Korea has announced fiscal measures to maintain employment, assist small businesses and support key industries that have been most affected by the decline in external demand. In Indonesia, a cap on deficits introduced after the Asian Financial Crisis has been temporarily lifted to enable the government to respond to the crisis. Many governments are also providing loan guarantees and moratoria on loan repayments. The monetary policy response in the east Asian region has been more muted than in the major advanced economies (see 'International Financial Conditions' chapter).

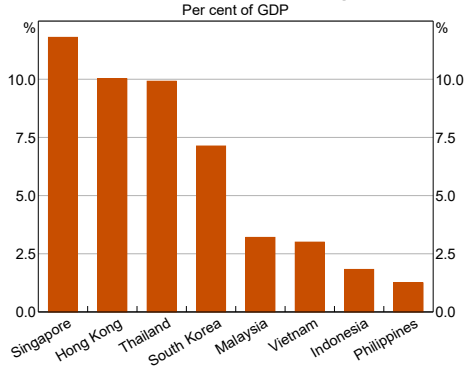
Many emerging and developing economies have more limited capacity to respond to COVID-19

The economic and health effects of COVID-19 may ultimately be more severe in some of the emerging economies. Because of the more limited social safety nets in these economies, the very poor are likely to need to continue working. These economies are also more vulnerable to a tightening in external financing conditions, abrupt exchange rate depreciations and weak external demand (see

Graph 1.18

East Asia – Direct Fiscal Response*

Per cent of GDP



* Excludes loan guarantees, loan moratoriums and other unspecified fiscal support

Sources: IMF; National sources; RBA; UBS

'International Financial Conditions' chapter). These issues will be compounded by lower commodity prices for commodity-exporting countries.

Moreover, many emerging market economies are facing the COVID-19 crisis from a weaker starting point. Growth had slowed markedly in some of the larger emerging market economies in recent years and some, including Brazil and Russia, had recently exited prolonged recessions. The IMF forecasts that GDP in emerging market and developing economies (excluding China and India) will contract by 2.9 per cent in 2020. This would be the biggest decline in emerging market GDP since at least 1980.

COVID-19 is expected to lead to a sharp contraction in Indian GDP

India entered into a widespread lockdown in late March. This, combined with weaker external demand, is expected to lead to a large contraction in Indian GDP in the first half of 2020. The unemployment rate appears to have risen sharply to around 25 per cent as a result of the shutdown (Graph 1.19). There are also widespread reports of harvest delays. Growth is expected to rebound in the second half of 2020 as the Indian authorities relax their restrictions and provide a range of fiscal and monetary support. Fiscal policy has been targeted at vulnerable individuals in the form of food assistance and cash transfers, as well as support for business. The Reserve Bank of India has taken a number of steps to provide cheaper financing to the private sector and eased regulatory requirements for banks among other measures.

Oil prices have fallen sharply

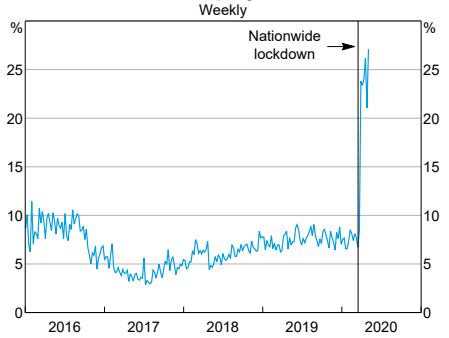
The price of Brent crude oil reached its lowest level since the early 2000s in April (Graph 1.20). The COVID-19 pandemic has significantly reduced global oil demand, and the collapse in earlier OPEC+ negotiations resulted in key oil producers pledging to increase supply. In an attempt to stabilise the market, OPEC+ members met for an emergency meeting in April and agreed to cut production by about 10 per cent of global supply over the next couple of months. Since then, there have been large moves in oil prices around concerns that the production cuts would be insufficient to stabilise prices given the significant drop in demand. More recently, oil prices have increased in part because some countries have started to ease restrictions. In the United States, oil inventories have increased and reports that crude storage facilities are reaching capacity contributed to the large moves in some benchmark oil prices in late April, with prices implied by some futures contracts briefly turning negative.

The recent sharp fall in oil prices has implications for Australian LNG exporters. The bulk of Australia's LNG exports are sold via long-term contracts that are priced with reference to oil prices with a lag; as a result, recent falls in oil prices are expected to reduce significantly the average price received by LNG exporters from the June quarter. For LNG exports sold in the spot market, prices have declined since mid December 2019 (Graph 1.21). Lower prices have also meant that some LNG projects in Australia

Graph 1.19

India – Unemployment Rate

Weekly



Sources: CMIE; RBA

are now unlikely to go ahead within previously expected timeframes.

Iron ore prices have held up, while most other commodity prices have fallen

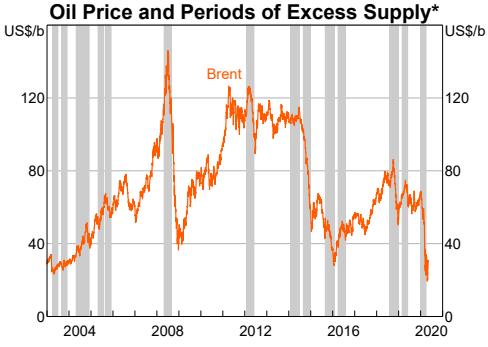
The iron ore price has been relatively stable over recent months, despite the outbreak of COVID-19 (Graph 1.22, Table 1.1). Chinese demand for imported iron ore has remained fairly strong, reflecting some disruptions to domestic production, the gradual resumption of domestic economic activity and rebuilding of inventories in anticipation of government stimulus, which could boost demand for steel. At the same time, iron ore supply had declined because of weather-related supply disruptions in Australia and Brazil, which together account for around three quarters of global iron ore exports.

Coal prices have declined over the past month, largely driven by lower demand, especially for coking coal, outside China. Some steel producers, including India, which accounts for 15 per cent of global coking coal imports, have scaled back production as part of domestic containment measures. At the same time, the recovery in Australian supply of coking coal following weather-related disruptions, as well as the partial lifting of Mongolia's ban on coal exports to China, have weighed on prices.

Base metal prices have also fallen in recent months as a result of lower expected demand and disrupted global supply chains (Graph 1.23). The price of copper, which has a range of industrial uses, has declined by around 10 per cent since the previous *Statement*. In contrast, the price of gold, which many investors view as a relatively safe asset, has increased by around 10 per cent. The COVID-19 pandemic has weighed on some rural commodity prices, with wool and sugar prices falling the most over the past couple of months.

Graph 1.20

Oil Price and Periods of Excess Supply*

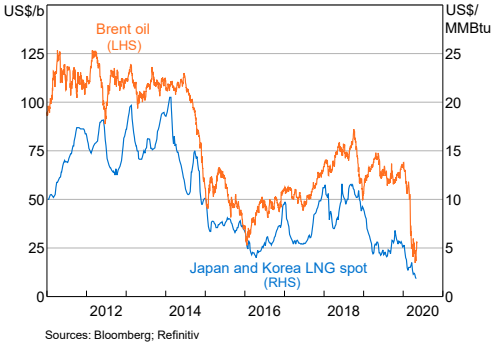


* Shaded periods indicate supply exceeding demand for three consecutive months or more

Sources: EIA; RBA

Graph 1.21

Oil and LNG Prices

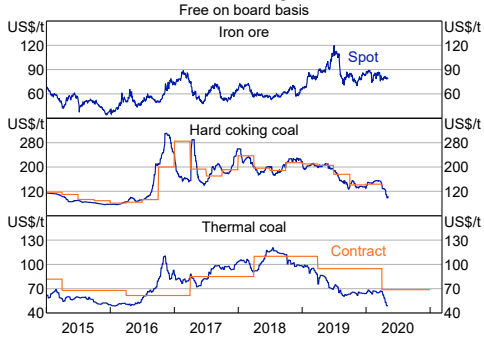


Sources: Bloomberg; Refinitiv

Graph 1.22

Bulk Commodity Prices

Free on board basis



Sources: Bloomberg; Department of Industry, Innovation and Science; IHS Markit; RBA

Table 1.1: Commodity Price Changes[(a)]

Per cent

	Since previous *Statement*	Over the past year
Bulk commodities	–6	–24
– Iron ore	5	–8
– Coking coal	–28	–48
– Thermal coal	–22	–42
Rural	–7	–5
Base metals	–12	–16
Gold	9	33
Brent crude oil[(b)]	–50	–61
RBA ICP	–2	–9
– Using spot prices for bulk commodities	–5	–14

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

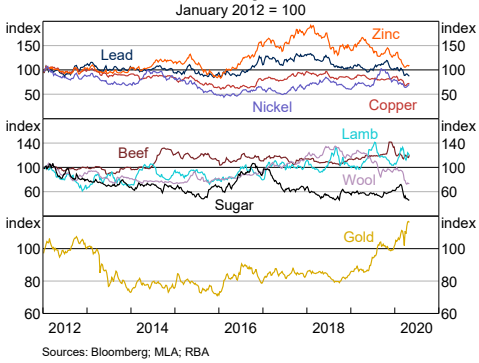
(b) In US dollars

Sources: Bloomberg; IHS Markit; RBA

Graph 1.23

Commodity Prices

January 2012 = 100



Sources: Bloomberg; MLA; RBA

2. International Financial Conditions

Since the onset of COVID-19, financial markets have been highly volatile and key financial markets have experienced periods of severe dysfunction. This reflects the significant deterioration in the economic outlook and a sharp rise in uncertainty, which among other things led to a substantial increase in demand for cash over other assets. Central banks and governments have responded forcefully to these developments, which has helped to reverse much of the tightening in financial conditions and dysfunction in key markets, notably sovereign bond, repurchase (repo) and foreign exchange swap markets. Even so, conditions are yet to fully normalise in those markets. Financial conditions in other markets – such as those in which corporations and emerging market governments raise funding – experienced an even more severe tightening, although these have also eased slightly of late in response to various policy measures (Graph 2.1). The uncertain depth and severity of the economic disruptions associated with COVID-19 mean there is a risk of further tightening in the cost or availability of finance.

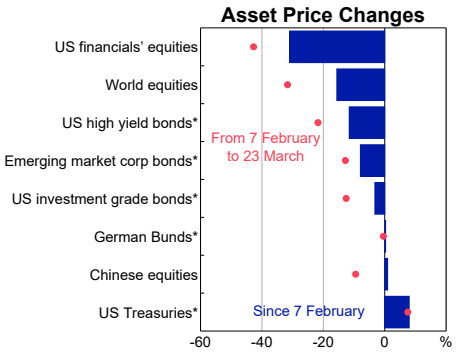
Central banks have responded forcefully to limit the tightening in financial conditions

Central banks in advanced economies have provided an unprecedented level of monetary policy stimulus to limit the tightening in financial market conditions and address dysfunction in critical markets (Table 2.1). In many cases, central banks have coordinated with governments to implement complementary packages of measures. Many central banks have entered new territory in terms of the scale, scope and nature of their responses. The range of programs implemented by the US Federal Reserve (Fed) has been particularly extensive, exceeding the size and scope of measures put in place during the global financial crisis, with a number of these programs underwritten by the US Treasury.

Measures have aimed to achieve one or more objectives:

1. Lower risk-free rates by reducing policy rates, strengthening forward guidance and purchasing sovereign bonds. The pace of asset purchases has far exceeded that seen in the global financial crisis and European sovereign debt crisis (Graph 2.2). In some cases, these purchase programs have been expanded to include securities issued by state and local governments.

Graph 2.1



* Increase represents lower yield

Sources: Bloomberg; ICE Data is used with permission

Table 2.1: Policy Responses by Central Banks in Advanced Economies[(a)]

Central bank	Policy rate	Sovereign debt purchases[(b)]	State and local gov debt purchases	Private sector asset purchases	Expanded liquidity operations[(c)]	Expanded lending facilities[(d)]	FX swap line
Fed	1.625% → 0.125%	As required (currently $8bn/day)	✓	✓	✓	✓	✓
ECB	–0.5%	€870bn	✓	✓	✓	✓	✓
BoJ	–0.1%	Upper limit removed	✗	✓	✓	✓	✓
BoE	0.75% → 0.10%	£200bn	✗	✓	✓	✓	✓
BoC	1.75% → 0.25%	As required (min. CAD$5bn/ week)	✓	✓	✓	✓	✓
RBNZ	1.00% → 0.25%	NZD$30bn	✓	✗	✓	✓	✓
Riksbank	0%	SEK300bn	✓	✓	✓	✓	✓
Norges Bank	1.50% → 0.25%	✗	✗	✗	✓	✗	✓
RBA	0.75% → 0.25%	As required (yield curve target)	✓	✗	✓	✓	✓

(a) Includes policies implemented or modified since 3 March.

(b) Some figures include private sector asset purchases; purchases by the Fed, BoJ, BoC and RBA are open-ended; figures on a per annum basis unless otherwise indicated.

(c) Includes decreases in cost and/or increases in availability of short-term liquidity through changes to the size, terms and price of open market operations and standing facilities.

(d) Includes new or expanded term funding schemes and purchases of bank loans to certain corporations; also includes facilities that provide loans secured by corporate bonds.

2. Alleviate market dysfunction and meet demands for cash, particularly US dollars. Purchases of public and private sector assets have helped to alleviate dysfunction in many markets. Moreover, central banks have increased access to liquidity through expanded open market operations (including against a wider range of collateral), bilateral foreign currency swap lines, and other programs.
3. Increase the availability and/or reduce the price of credit to borrowers in the private sector, either:
    - Indirectly, by providing stable, low-cost funding to financial intermediaries through expanded term lending facilities. These measures have sought to encourage lending to the real economy, including by linking funding allowances and/or borrowing rates to the quantity of lending (see 'Box A: Term Funding Schemes').
    - Directly, by providing credit to private sector entities, usually by purchasing – or committing to purchase – marketable securities. In most cases, the central bank has been partly or wholly indemnified against potential losses by national governments.
    - By easing prudential policies and providing guidance to ensure that capital, liquidity and other regulatory requirements do not unduly constrain the ability of financial institutions to

provide credit or serve as intermediaries in markets.

More recently, as conditions in short-term funding markets and sovereign bond markets have improved, some central banks have been able to reduce the extent of operations aimed at injecting liquidity and supporting market functioning. They have emphasised, however, a willingness to adjust operations as necessary to ensure ample liquidity and support market functioning in response to changing conditions. Meanwhile, other programs, including those aimed at credit easing, have only just become operational so it is too early to assess their effectiveness.

After a period of severe dysfunction in sovereign bond markets, conditions have improved

Government bond markets were severely dysfunctional in March. Widespread sales of government bonds by a range of investors to raise cash resulted in sharp increases in yields. These sales reflected an increased demand for cash to meet redemptions and margin calls, as well as for precautionary reasons. The unwinding of leveraged 'relative value' positions also contributed to the selling. These trades aimed to profit from small yield differences between more liquid and less liquid bonds, or between cash bonds and futures; as these trades were unwound, the yield differences between economically similar exposures widened in some cases. The ability of financial intermediaries to manage the heavy volume of sales was limited by leverage and capital constraints, and split site arrangements amplified the disruptions for some market participants. The market dysfunction led to increased volatility in government bond yields, which further discouraged intermediation by some intermediaries.

The dislocations in the market for US Treasuries in particular were unprecedented, and contributed to stresses in a wide range of markets globally. The deterioration in liquidity was reflected in higher costs of transacting in this market. This was evident, for example, by a widening in the spread between the price to buy and sell bonds (bid-ask spreads) (Graph 2.3). Also, measures of market 'depth' – the volume of bonds that could be bought and sold at the best bid and offer prices – declined sharply.

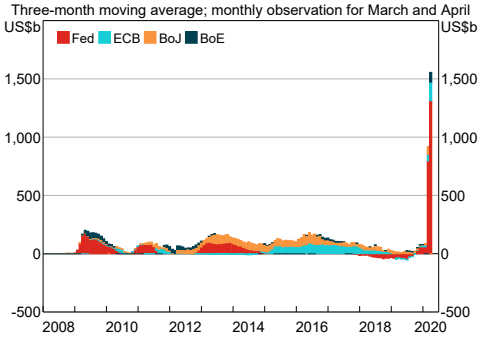
Actions of the Fed and other central banks, particularly significant purchases of government bonds and other assets, have since helped to improve market functioning and put downward pressure on government bond yields. Expanded liquidity operations have also helped to improve market functioning. Consistent with this, indicators of liquidity conditions have improved noticeably in a range of markets.

Since mid March, government bond yields have declined in most advanced economies, helping to keep funding costs low for borrowers (Graph 2.4). Yields have declined the most where central banks have significantly lowered policy rates, strengthened forward guidance, and expanded government bond purchases. Working in the offsetting direction has been expectations of significantly higher issuance of government securities to fund large fiscal deficits.

Graph 2.2

Central Bank Net Asset Purchases

Three-month moving average; monthly observation for March and April



* Excludes minor operational transactions

Sources: Bloomberg; central banks; RBA; Refinitiv

For some countries, the extent of central bank bond purchases is expected to be of a similar magnitude to the increased issuance of sovereign debt arising from larger fiscal deficits. Despite those purchases, the need to finance large fiscal deficits has led to renewed market concerns around debt sustainability in some economies that have high sovereign debt burdens and do not issue their own currencies, most notably Italy. Reflecting those concerns, spreads on Italian government bonds relative to those on German bunds widened noticeably in March and have remained volatile since (Graph 2.5). In response, the European Central Bank (ECB) removed limits on the share of bonds of any country it may hold for its pandemic-related asset purchase program. Some European heads of government and members of the ECB's Governing Council have called for greater fiscal burden-sharing across the euro area, though there is not unanimous support for risk-sharing of this nature.

Corporate funding conditions have tightened, particularly for higher-risk borrowers

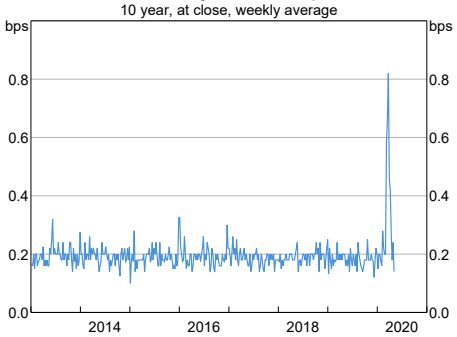
Non-financial corporations experienced a particularly sharp tightening in financial conditions in March as investors grew concerned about the ability of firms to continue to service or roll over debt. Corporate borrowing costs increased sharply and, for a period, lower-quality borrowers were generally unable to issue new debt (Graph 2.6). Companies facing large reductions in income, high fixed costs, and/or high degrees of leverage were most affected. At the same time, many corporations drew on pre-existing credit lines as a source of funding. Higher-quality borrowers issued record volumes of debt, despite increased borrowing costs (Graph 2.7).

Funding conditions for corporations have since eased somewhat following policy responses by central banks and governments, and as the growth in new COVID-19 cases has slowed. Policy measures have included new or expanded corporate bond purchase programs

Graph 2.3

US Treasury Bid-ask Spread

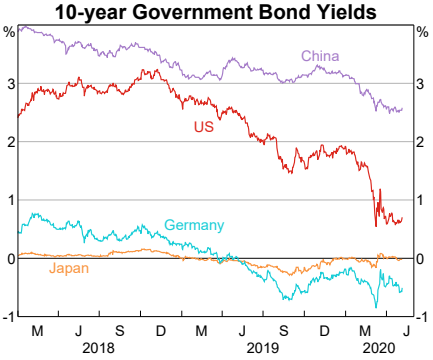
10 year, at close, weekly average



Source: Refinitiv

Graph 2.4

10-year Government Bond Yields

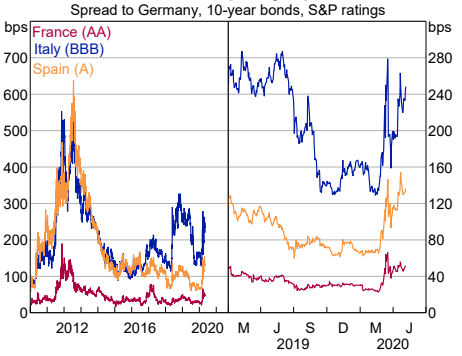


Source: Bloomberg

Graph 2.5

Euro Area Periphery Spreads

Spread to Germany, 10-year bonds, S&P ratings

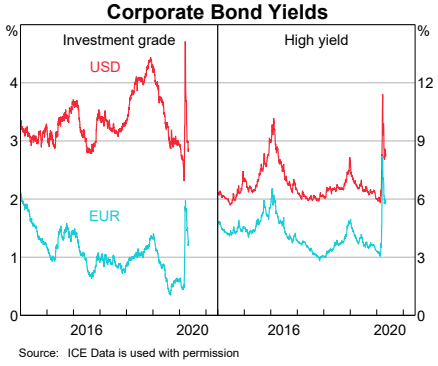


Source: Bloomberg

in primary and secondary markets, loans to support issuance in corporate bond or securitisation markets, government-guaranteed loans, and measures to support credit to small- and medium-sized businesses through the banking sector (see 'Box A: Term Funding Schemes'). Some central banks are also purchasing debt securities issued by state and local governments to alleviate dysfunction and/or lower borrowing costs in those markets. In the United States, the Fed has announced its purchases will also include exchange traded funds (ETFs) that hold corporate debt, including some sub-investment grade debt. The Fed will also purchase sub-investment grade debt that was previously rated investment grade (so-called 'fallen angels') and some syndicated loans. Following the Fed's announcement, flows into corporate bond ETFs have increased and primary issuance conditions for sub-investment grade borrowers have improved. In the euro area, the ECB has announced that fallen angels will remain eligible collateral for the ECB's open market operations. This is expected to help ensure that banks have access to sufficient liquidity, and prevent fire sales of corporate bonds (and a resulting widening in spreads) in the event of widespread downgrades.

Graph 2.6

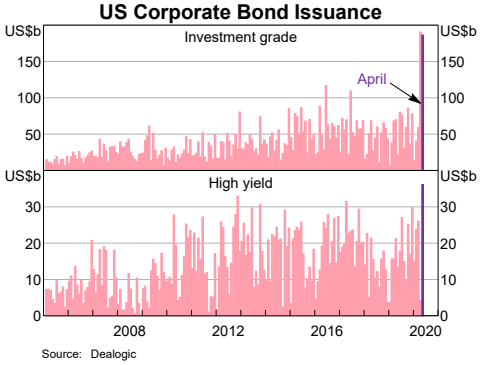
Corporate Bond Yields



Source: ICE Data is used with permission

Graph 2.7

US Corporate Bond Issuance



Source: Dealogic

Equity prices have rebounded somewhat but remain volatile

Equity prices declined by more than 30 per cent in late February and March amid extreme volatility (Table 2.2). Large increases in COVID-19 infections and strict containment measures imposed by governments to control the spread of the virus prompted substantial downward revisions to expected corporate earnings. Heightened risk aversion and demand for cash contributed to investors reallocating portfolios away from risky assets. Sharp falls in oil and other commodity prices weighed heavily on equity prices in some sectors.

In the United States, large and rapid declines in equity prices triggered circuit-breakers to temporarily halt trading on a number of occasions. Volatility rose to levels not seen since the global financial crisis, with equity markets recording some of their biggest daily moves in history (Graph 2.8). The S&P 500 index recorded a 12 per cent fall on 16 March – the largest daily decline since 1987 – in addition to several daily rebounds of almost 10 per cent. Similar outsized moves were seen in many advanced and emerging market economies. For instance in Europe, the Euro Stoxx index recorded the largest daily decline in its history. In response to the very high volatility, financial regulators and market operators in the United Kingdom, Europe, and some emerging markets imposed temporary bans on short selling.

Table 2.2: Changes in International Share Prices

Per cent, since February

	Peak to trough	Trough to current	Peak to current	Largest daily decrease	Largest daily increase
United States	−34	27	−16	−12	9
Euro area	−38	20	−25	−12	9
United Kingdom	−34	17	−22	−11	9
Japan	−31	19	−18	−6	8
Australia	−37	18	−25	−10	7
China	−16	11	−7	−8	3
World	**−33**	**23**	**−17**	**−9**	**8**

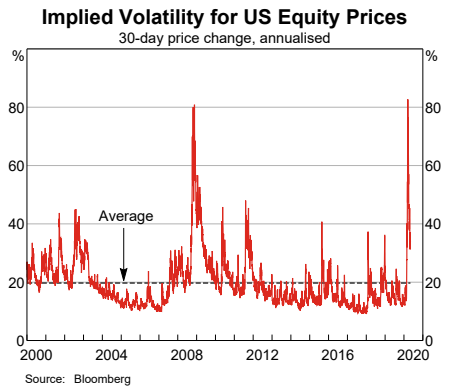
Source: Bloomberg

While equity prices overall have since increased significantly from their recent lows, they remain well below the earlier highs recorded in February (Graph 2.9). The partial recovery in equity prices is consistent with expectations of a strong rebound in economic activity, in line with consensus estimates for corporate profits in 2021. Volatility has eased but remains elevated by historical standards.

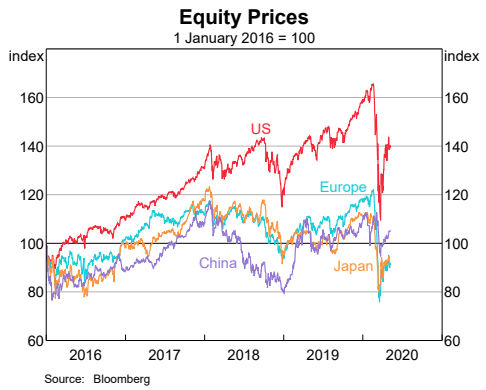
Bank profitability will decline but there have been few signs of systemic stress in banking systems

Bank equity prices have declined sharply, reflecting expectations of rising loan losses and lower revenues more generally (Graph 2.10). US banks' provisions for future loan losses have increased significantly to levels last seen in 2009, which has contributed to sharp falls in March quarter earnings. Bank profits in advanced economies are also expected to be affected by weaker economic conditions eventually weighing on demand for credit and a prolonged period of low interest rates compressing net interest margins. In some countries, declines in equity prices could reflect expectations of capital raisings that will dilute the stakes of existing shareholders. This is particularly relevant in Europe, where many banks remain vulnerable given weak profitability over a number of years and the fact that banks hold significant amounts of European sovereign debt.

Graph 2.8



Graph 2.9



In contrast to equity prices, credit spreads on bank debt have not widened by more than comparable non-bank securities, and large banks have continued to issue unsecured bonds at modest yields. This suggests that investors are not anticipating solvency problems for large banks in advanced economies. It is consistent with the fact that banks generally entered this crisis with robust capital and liquidity buffers and are likely to benefit from policy support if needed given their critical economic role.

Bank lending in some countries has increased notably in recent months, which has helped to offset some of the recent tightening in funding conditions for corporations (Graph 2.11). This partly reflects increased lending arising from corporations drawing down on standing credit lines. Additionally, fiscal support for businesses (especially small- and medium-sized enterprises) has been channelled through banks in some countries. Policies implemented by central banks and other regulators, including new term funding facilities, regulatory relief and lowering of countercyclical capital buffers, have sought to ensure that these channels remain open and supportive of financial conditions. In order to preserve capital levels, and in recognition of the substantial public support being provided to banks, regulators in some jurisdictions have also placed limits on the ability of banks to distribute dividends, conduct share buy-backs and pay executive bonuses.

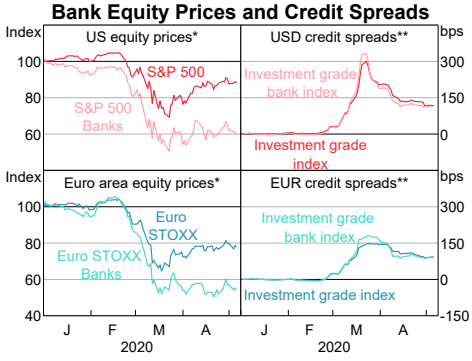
Conditions in short-term US dollar funding markets tightened sharply

In March, funding in short-term US dollar money markets became much more expensive and/or difficult to obtain for many borrowers. That was most evident for instruments involving greater credit risk, such as unsecured commercial paper (CP), or that are issued at longer terms (Graph 2.12). In addition, US dollars became more expensive to borrow in the foreign exchange swap market, which is an important source of US dollar funding for non-US entities.

The tightening in US dollar funding conditions reflected a confluence of factors. First, demand for liquidity increased globally, both for precautionary purposes and to meet contractual obligations such as margin calls and redemptions. That included increased demand for US dollars, reflecting the large role the dollar plays in international trade and finance. At the same time, the supply of US dollars declined, particularly for terms beyond overnight, as lenders of US dollars sought to reduce their exposures or shore up their own liquidity needs. For instance, a spike in investor redemptions resulted in 'prime' US money market funds favouring financial CP with very short maturities

Graph 2.10

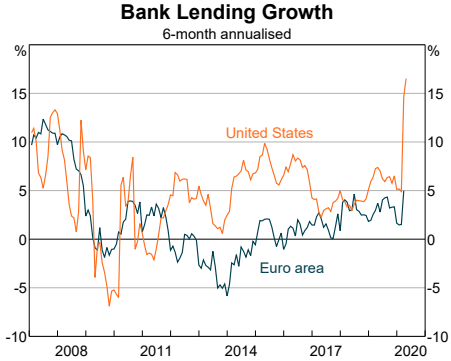
Bank Equity Prices and Credit Spreads



* 1 January 2020 = 100
** Change since 1 January 2020
Sources: Bloomberg; ICE Data is used with permission

Graph 2.11

Bank Lending Growth



Sources: ECB; Federal Reserve

(one week or less) compared with longer-term CP issued by the same financial entities; this was one factor contributing to the sharp increase in three month US LIBOR rates. Finally, financial institutions were unable or unwilling to bridge these gaps in their capacity as intermediaries in markets, reflecting both regulatory constraints that limit the scope of banks to (profitably) expand balance sheets and increased difficulty in pricing risk amid heightened uncertainty.

In response, the Fed expanded the supply of liquidity via a range of operations. These included its open market operations and asset purchases, a new facility to help banks purchase assets sold by money market funds, and facilities to purchase CP to ensure that firms could continue to roll over their debt as it matured. In addition, the Fed improved access to US dollar liquidity by activating, expanding and lowering the cost of existing swap lines with central banks, introducing new swap lines with other central banks, and by introducing a new US dollar repo facility for other foreign monetary authorities.

These measures have helped to ease US dollar funding conditions, and the Fed has subsequently been able to decrease the size of its repo operations (Graph 2.13). The cost of funding in US dollars in foreign exchange swap markets has also declined.

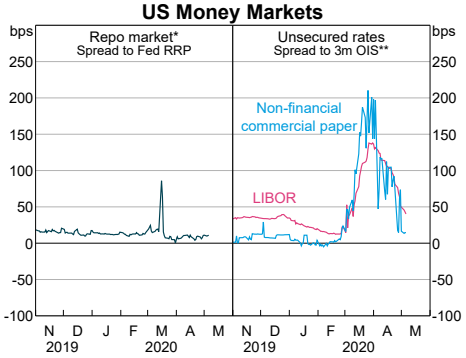
Foreign exchange markets experienced sharp movements

Foreign exchange markets were highly volatile in March, with spot and swap markets experiencing periods of dysfunction. From around the start of March through to mid March, the US dollar appreciated rapidly alongside a sharp rise in uncertainty and increased demand for US dollar liquidity (Graph 2.14). Significant flows in foreign exchange markets accompanied large movements in underlying asset markets, alongside a deterioration in overall market functioning (see 'Box B: Recent Developments in Foreign Exchange Markets').

The exchange rates of both advanced and emerging economies depreciated against the US dollar over this period, with particularly large moves for those that have a significant exposure to commodity exports such as oil and gas (Graph 2.15). In particular, the Norwegian krone depreciated by more than exchange rates of other advanced economies reflecting its greater exposure to oil prices. A number of emerging market exchange rates also depreciated sharply reflecting a range of vulnerabilities that have become more apparent in the current environment (see below). In contrast, moves in

Graph 2.12

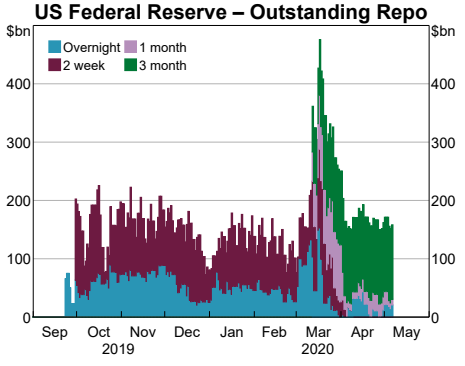
US Money Markets



* General collateral overnight repo; spread to Fed's reverse repurchase facility (RRP)
** Overnight indexed swaps
Sources: Bloomberg; Refinitiv

Graph 2.13

US Federal Reserve – Outstanding Repo



Source: Federal Reserve Bank of New York

the Japanese yen and Swiss franc were quite modest against the US dollar, and both have appreciated (as often occurs in periods of heightened risk aversion) on a nominal trade-weighted basis (TWI) since the start of March.

Since the introduction of large-scale monetary and fiscal policy measures, including policies to increase the supply of US dollars, strains in foreign exchange market functioning have eased somewhat and measures of volatility have declined. The exchange rates of advanced economies have appreciated against the US dollar and a number of emerging market exchange rates also appear to have stabilised, although most exchange rates still remain noticeably lower (vis-à-vis the US dollar) than at the start of the year.

Some emerging market economies experienced a sudden outflow of foreign capital

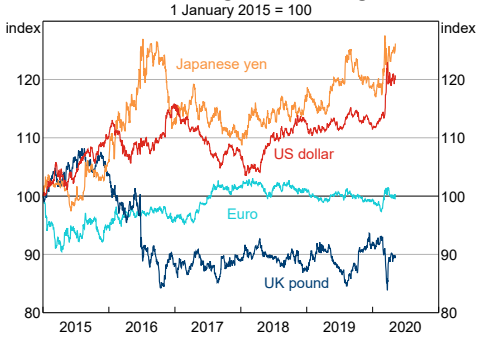
Financial conditions in a wide range of emerging market economies (EMEs) tightened notably following the onset of the COVID-19 pandemic. Government bond yields rose significantly, equity prices declined, and exchange rates depreciated sharply alongside substantial portfolio outflows from equities and bonds.

The tightening in conditions partly reflected broader concerns about the impact of COVID-19 on global economic growth, as well as concerns that some EMEs may experience more severe health and economic impacts from the virus (see 'International Economic Conditions' chapter). For commodity exporters, a decline in their terms of trade also contributed to the tightening. In addition, some EMEs were particularly vulnerable to the tightening in global financial conditions that occurred in March, given their high levels of external financing and/or foreign currency debt, much of which is unhedged (Graph 2.16; Graph 2.17). Concerns remain about the ability of some countries to finance growing fiscal deficits should capital flows remain volatile.

Graph 2.14

Nominal Trade-weighted Exchange Rates

1 January 2015 = 100

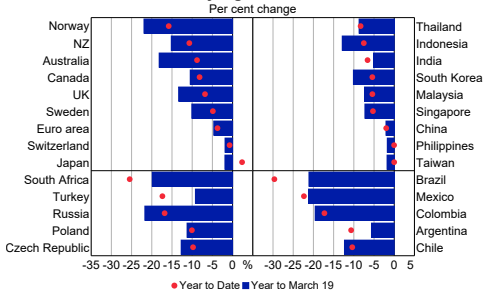


Sources: Bank of England; BIS; Bloomberg; Board of Governors of the Federal Reserve System

Graph 2.15

Currency Against US Dollar

Per cent change

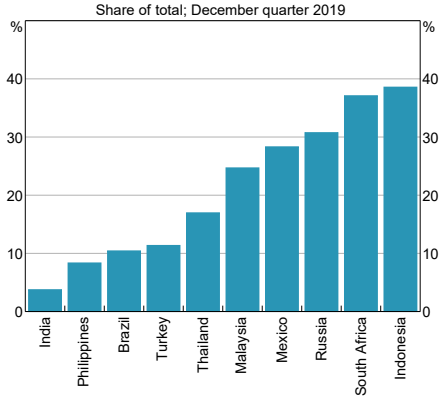


Sources: Bloomberg; RBA

Graph 2.16

Foreign Ownership of Public Debt*

Share of total; December quarter 2019



* Central government debt securities denominated in local currencies

Sources: Arslanalp and Tsuda (2014); IMF

Financial market conditions in emerging Asia have generally been more resilient than in other regions, although the experience has varied somewhat across individual economies (Graph 2.18). In particular, the depreciation of exchange rates has been more modest in Asia than in other emerging markets. This is likely to reflect a number of factors, including the relatively high buffers of foreign exchange reserves generally held by Asian economies, low rates of foreign ownership of local currency debt, more fiscal space and faster underlying economic growth.

Recently, there has been some improvement in conditions across emerging financial markets underpinned by significant monetary and fiscal stimulus in advanced economies. Also, emerging market central banks have reduced policy rates, intervened in foreign exchange markets to help stabilise their exchange rates and conducted asset purchases. Despite this, the exchange rates of more vulnerable EMEs, such as Argentina, Brazil, Turkey and South Africa, have seen further depreciations against the US dollar.

Bilateral and multilateral measures have been implemented to support EMEs and further international support is likely to be required. To improve access to US dollar liquidity, the Fed has expanded its US dollar swap line facilities to include a number of emerging market central banks (including Brazil and Mexico), and introduced a repurchase facility for others where US Treasury holdings can be exchanged for US dollars on a rolling overnight basis. In addition, over 100 EMEs and low income countries are engaged in discussions with international organisations about accessing emergency financing facilities. The International Monetary Fund has sought to increase the size of its existing emergency lending facilities and established a new Short-term Liquidity Line. The G20 has also endorsed a temporary suspension of debt service payments for the poorest countries and called on private sector creditors to participate in the initiative.

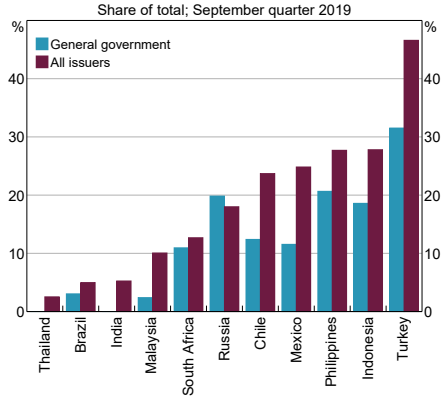
Financial conditions in China have remained broadly accommodative

Financial conditions have been relatively resilient in China in recent months, notwithstanding a temporary tightening during the early stages of the COVID-19 outbreak (Graph 2.19). Sovereign bond yields have fallen notably and money market conditions have been benign. Credit has continued to flow, with growth in total social financing picking up in March as bank lending

Graph 2.17

Debt in US Dollars

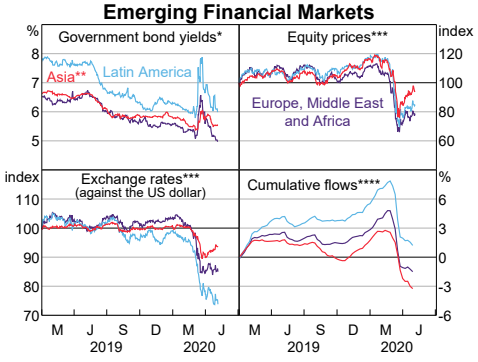
Share of total; September quarter 2019



Source: BIS

Graph 2.18

Emerging Financial Markets



* Local currency bonds, weighted by market value
** Excluding China
*** 1 Jan 2019 = 100
**** Per cent of assets under management; includes flows to bond and equity funds

Sources: Bloomberg; EPFR Global; IMF; JPMorgan; MSCI; RBA

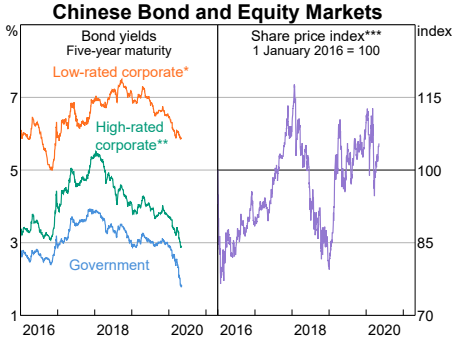
to businesses accelerated and corporate bond issuance rose (Graph 2.20). The price of credit has also been relatively stable, even for riskier borrowers. Missed bond repayments have remained low as a share of outstanding issuance. This resilience suggests that the policies enacted during the early stages of the outbreak to avoid a sharp tightening in credit conditions have been fairly successful so far. The fact that the number of new COVID-19 cases in China has fallen to very low levels is likely to have also supported conditions.

More recently, the balance of policy has shifted from containment of the virus to supporting economic growth. Reflecting this, the People's Bank of China (PBC) has expanded existing policies and introduced a raft of new measures to support the flow of credit, especially to smaller firms. For instance, the PBC announced targeted reductions in the reserve requirement ratio, cut the interest rate offered on excess reserves and reduced the interest rates on its short- and medium-term lending operations. Subsequently, the one- and five-year Loan Prime Rates, the reference rates for lending by Chinese banks, declined by 20 and 10 basis points respectively in April (Graph 2.21). In addition, the State Council announced that the PBC's existing re-lending facility would be increased by CNY1 trillion (around 1 per cent of GDP; this facility supplies funds to banks to provide concessional loans to affected businesses). The State Council also said it would support financial institutions to issue CNY300 billion (around 0.3 per cent of GDP) of bonds to provide credit for smaller firms.

The Chinese renminbi has remained fairly stable over the past few months, having depreciated only slightly against the US dollar. This pattern of renminbi stability was also observed in the crises of 2008 and the late 1990s. The exchange rate appears to have been supported by the PBC via its setting of the daily fixing rate and sales of foreign exchange reserves (though the stock of reserves remain around US$3 trillion). The

Graph 2.19

Chinese Bond and Equity Markets

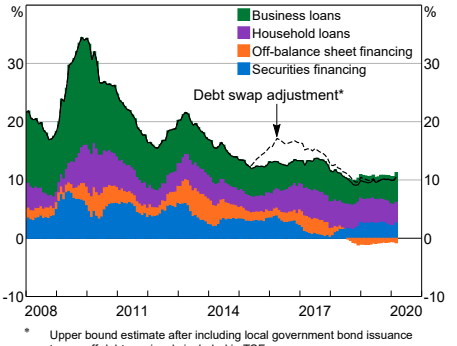


* Based on domestically rated AA- corporate bonds
** Based on domestically rated AAA corporate bonds
*** CSI 300
Sources: Bloomberg; CEIC Data

Graph 2.20

China – Total Social Financing Growth

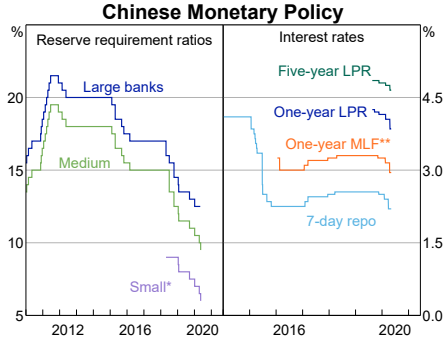
Year-ended with contributions



* Upper bound estimate after including local government bond issuance to pay off debt previously included in TSF
Sources: CEIC Data; RBA

Graph 2.21

Chinese Monetary Policy



* Not published prior to April 2018. Note this rate is a guideline and does not apply to all small banks.
** Medium-term lending facility
Sources: CEIC Data; RBA

resumption of more balanced capital flows appears to have also contributed.

The Australian dollar depreciated sharply to its lowest level since the early 2000s

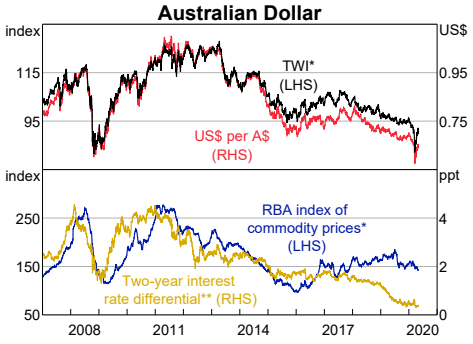
The Australian dollar depreciated sharply through to mid March, reaching its lowest level since the early 2000s (Graph 2.22). The depreciation was broad based, but was particularly noticeable against the US dollar, at one point depreciating by about 15 per cent since the previous *Statement* and reaching an intraday low of about US$0.55 (Graph 2.23). Since then, the Australian dollar has appreciated by more than other advanced economy exchange rates and is back up to around $US0.64. Even so, the Australian dollar has depreciated by 9 per cent over the year to date against the US dollar, and by 6 per cent on a TWI basis.

In early March, the broad-based deterioration in foreign exchange market functioning extended to the market for Australian dollars. Market conditions have since become more orderly, but remain more strained than in the period prior to the pandemic (see 'Box B: Recent Developments in Foreign Exchange Markets').

The recent sharp moves in the Australian dollar occurred alongside an increase and subsequent easing in financial market volatility and risk aversion globally. These factors have been associated with the fall and then rebound in the value of the Australian dollar at a time when changes in other longer-term influences on the value of the exchange rate – the decline in Australia's interest rate differential with other major advanced economies and in the prices of Australia' major export commodities – have been modest by comparison.

In response to tightening conditions in US dollar funding markets, the Reserve Bank and the Fed established a temporary reciprocal swap line of $US60 billion. Under this agreement, US dollars are made available to Australian market participants through a weekly auction conducted by the Reserve Bank, where bidders post eligible Australian dollar-denominated securities to the Reserve Bank in return. Auctions for US dollars have attracted relatively little interest so far, consistent with modest demand for US dollar funding by Australian entities.

Graph 2.22

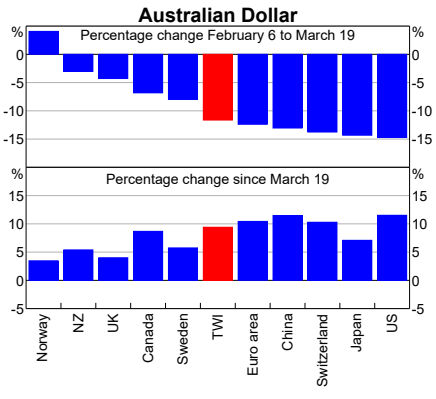


* Indexed to 1 January 2016 = 100

** Spread to equally weighted nominal yields in Germany, Japan, the United Kingdom and the United States

Sources: Bloomberg; RBA

Graph 2.23



Sources: Bloomberg; RBA

Box A: Term Funding Schemes

What are term funding schemes?

Term funding schemes involve central banks providing low-cost, long-term funding to banks (or other financial intermediaries). Such schemes were used in the years following the global financial crisis by central banks including the Bank of Japan, the European Central Bank and the Bank of England, as they sought to impart further stimulus at a time when policy rates were near the effective lower bound and the supply of credit had contracted. More recently, these schemes have been used by central banks including the Swedish Riksbank, the Reserve Bank of New Zealand and the Reserve Bank of Australia in response to challenges arising from COVID-19. Term funding schemes are distinct from regular liquidity operations in that they tend to involve lending for several years and provide explicit incentives to bolster the supply of credit. They also differ from operations that some central banks have used to extend credit directly to businesses and households (such as purchasing corporate bonds or securitised loans) because they operate indirectly via the banking system. Funding is secured with collateral to mitigate financial risks to the central bank.

How do term funding schemes support monetary policy objectives?

Term funding schemes support monetary policy objectives in two key ways.

First, by offering low-cost funding to financial institutions, they reduce banks' funding costs and so help to reduce interest rates for borrowers. This stimulus is particularly important when policy rates are close to the effective lower bound. Bank lending rates tend to be less responsive to a decline in the policy rate when interest rates are already very low.[1] This is because the margin banks earn between the rate of interest charged on loans and that paid on deposits becomes compressed. As policy rates approach zero, banks' capacity to lower lending rates is limited by the fact that they are unwilling or unable to lower their deposit rates below zero. Banks may also be reluctant to extend loans at very low returns. Moreover, a decline in profitability will make it more difficult for banks to maintain capital to support additional lending or absorb losses on non-performing loans. By directly lowering bank funding costs, and providing banks with access to low-cost funding for an extended and known period, term funding schemes help to reduce interest rates paid by borrowers and support the supply of credit to the private sector at low interest rates. Term funding schemes can also indirectly lower bank funding costs by reducing the demand, and hence the cost, of other sources of funding. This indirect effect benefits all banks, regardless of whether they draw upon funding from the central bank. These schemes are also treated as stable funding for the purposes of the Liquidity Coverage Ratio and Net Stable Funding Ratio regulatory requirements in some countries, including Australia. This can reduce liquidity pressures even if institutions do not draw on funds.

Second, term funding schemes encourage the supply of credit to the private sector via

the rules of the scheme. A key feature of such schemes is that the quantity of funding available to a financial institution (its funding allowance) is related to its lending to the private sector. In some cases, the funding allowance depends on the *change* in an institution's net lending over a specified time period. That is, those banks that expand their lending to households and/or businesses can access more low-cost funding. The Reserve Bank's Term Funding Facility (TFF) provides one dollar of additional funding to a bank for every dollar increase in credit outstanding to large businesses, and five dollars of additional funding for every dollar increase in credit outstanding to small and medium enterprises (SMEs). Some central bank schemes have a further incentive by reducing the rate of interest on the facility if lending growth exceeds given thresholds. Others, including the TFF, apply a fixed rate of interest. The interest rate of 0.25 per cent on funds borrowed under the TFF complements the Reserve Bank's yield curve target and its forward guidance on the cash rate, helping to ensure funding costs remain low throughout the economy. Elsewhere, some schemes impose penalties on banks that shrink their net lending by charging a progressively higher rate of interest on the funding. Over time, schemes have tended to make greater use of incentives that 'reward' desirable behaviour (such as increasing lending), rather than those that penalise undesirable behaviour on the part of the participants (such as decreasing lending).

Term funding schemes often aim to encourage lending to specific segments of the economy that face particularly tight financial conditions. They do so by providing larger funding allowances for growth in specific types of loans. For instance, allowances under the ECB's schemes reward lending to businesses but do not reward new mortgage lending. Sometimes, there is an additional funding allowance that is a multiple of the growth in lending to specific sectors. As noted, the Reserve Bank's TFF provides a multiple of additional funding to banks that increase lending to SMEs. Relative to larger businesses, SMEs often face greater difficulties in obtaining finance.[2]

The schemes introduced by several central banks since the outbreak of COVID-19 have focussed on encouraging lending to businesses, especially SMEs. In this way, these schemes have complemented government guarantees of bank loans to SMEs. In some cases the schemes have been directly linked to loans extended with those guarantees.

Have term funding schemes been effective?

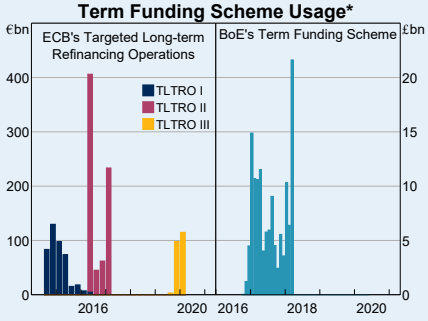
It is too early to assess the effects of term funding schemes introduced in response to COVID-19. However, central banks have generally judged earlier term funding schemes to have been effective in achieving their aims. For instance, the BoE assessed that its scheme in 2016 (which followed an earlier scheme introduced in 2012) increased pass through of its policy rate reductions to lending rates for households and businesses.[3] This was achieved without a significant decline in bank profitability or a reduction in other forms of credit. The BoE estimated that bank funding costs were lower than what they would have been in the absence of the Term Funding Scheme, owing to both the direct and indirect effects of the scheme.

The ECB's Targeted Longer-term Refinancing Operations (TLTROs) were judged to be effective in supporting lending volumes.

These operations have extended nearly €1.4 trillion in lending since 2014 (including the renewal of funding as new schemes have been progressively introduced) (Graph A.1).The ECB noted that the TLTROs appeared to have significantly reduced funding costs, and that these were passed through to households and businesses. The programs were particularly effective in euro area countries experiencing tight financial conditions, with banks that participated in the program reducing their lending rates by more than non-participating banks. A number of empirical studies have found that the TLTROs contributed to faster lending growth and the transmission of lower lending rates to companies.[4]

Graph A.1

Term Funding Scheme Usage*



* Quarterly drawings for the ECB's operations, monthly drawings for the BoE's term funding scheme.

Sources: Bank of England; Bloomberg; European Central Bank

Table A1: Term Funding Schemes[(a)]

Banco de Mexico	
Scheme	Financing facility (April 2020 – current)
Maturity	1.5 – 2 years
Interest rate	Policy rate (600 bps)
Initial allowance	n/a
Additional allowance	1 x net increase in lending to SMEs and households affected by COVID-19
Price incentive	n/a
Bank of England	
Scheme	Funding for Lending Scheme (2012 –2018)
Maturity	4 years
Interest rate	Policy rate[(b)] plus fee (50 to 200 bps)
Initial allowance	5% of stock of outstanding loans
Additional allowance	1 x net increase in lending (excl. SMEs) + 5 x net increase in lending to SMEs
Price incentive	Banks that contract stock of loans pay penalty fee which increases linearly up to a maximum fee of 150bps
Scheme	Term Funding Scheme (2016 –2018)
Maturity	4 years
Interest rate	Policy rate plus fee (25 to 75 bps)
Initial allowance	5% of stock of outstanding loans
Additional allowance	1 x net increase in lending
Price incentive	Banks that contract stock of loans pay penalty fee which increases linearly up to a maximum of 25bps
Scheme	Term Funding Scheme with Additional Incentives for SMEs (April 2020 – current)
Maturity	4 years
Interest rate	Policy rate plus fee (10 to 35 bps)
Initial allowance	5% of stock of outstanding loans; later increased to 10%
Additional allowance	1 x net increase in household and business lending (excl. SMEs) + 5 x net increase in lending to SMEs
Price incentive	Banks that contract stock of loans pay penalty fee which increases linearly up to a maximum of 25bps
Bank of Japan	
Scheme	Loan Support Program I (2010 – current)
Maturity	1 – 4 years
Interest rate	Uncollateralised overnight call rate; later fixed at 10 bps (6 to 10 bps)
Initial allowance	n/a
Additional allowance	1 x net increase in lending to firms that 'strengthen the foundations for economic growth'
Price incentive	n/a
Scheme	Loan Support Program II (2012 – current)

Maturity	1 – 4 years
Interest rate	Uncollateralised overnight call rate; later fixed at 10 bps (7 to 10 bps)
Initial allowance	n/a
Additional allowance	1 x net increase in lending to businesses and households
Price incentive	n/a
European Central Bank	
Scheme	Targeted Longer-Term Refinancing Operations I (2014 – 2016)
Maturity	4 years
Interest rate	Initially fixed at prevailing main refinancing rate plus a spread of 10 bps; spread later removed (0 to 15 bps)
Initial allowance	7% of stock of loans to non-financial private sector, excluding mortgages
Additional allowance	3 x net increase in lending in excess of a benchmark
Price incentive	n/a
Scheme	Targeted Longer-Term Refinancing Operations II (2016 –2017)
Maturity	4 years
Interest rate	Fixed at prevailing main refinancing rate (0 to –40 bps)
Initial allowance	30% of eligible stock of loans less any existing TLTRO outstanding
Additional allowance	n/a
Price incentive	Discount applied if banks exceed a net lending benchmark. Discount increases linearly until interest rate reaches prevailing ECB deposit rate
Scheme	Targeted Longer-Term Refinancing Operations III (2019 – current)
Maturity	2 – 3 years
Interest rate	Initially variable with main refinancing rate plus 10 bps; later lowered to be 50 bps below prevailing main refinancing rate (10 to –100 bps)
Initial allowance	30% of eligible stock of loans less any existing TLTRO outstanding; later raised to 50% of eligible stock of loans less any existing TLTRO outstanding
Additional allowance	n/a
Price incentive	Discount applied if banks exceed a net lending benchmark. Initially linearly increasing discount up to 40 bps. Later adjusted to a fixed discount of 50bps
Monetary Authority of Singapore	
Scheme	MAS SGD Facility for ESG Loans (April 2020 – current)
Maturity	2 years
Interest rate	10 bps
Initial allowance	n/a
Additional allowance	Linked to lending under government SME loan scheme
Price incentive	n/a
Reserve Bank of Australia	
Scheme	Term Funding Facility (April 2020 – current)
Maturity	3 years
Interest rate	25 bps

Initial allowance	3% of total credit outstanding
Additional allowance	1 x increase in credit outstanding to large businesses + 5 x increase in credit outstanding to SMEs
Price incentive	n/a
Reserve Bank of India	
Scheme	Targeted Longer-Term Repo Operations (April 2020 – current)
Maturity	Up to 3 years
Interest rate	Prevailing policy rate plus fee (440 to 640 bps)
Initial allowance	Depending on bid amount
Additional allowance	n/a
Price incentive	Banks that do not invest the funds in private securities as specified (at least 50% invested in SMEs and micro-finance institutions) must pay a penalty fee of 200 bps
Reserve Bank of New Zealand	
Scheme	Term Lending Facility (April 2020 – current)
Maturity	3 years
Interest rate	25 bps
Initial allowance	n/a
Additional allowance	1 x outstanding loans under Government's Business Finance Guarantee Scheme
Price incentive	n/a
Riksbank	
Scheme	Program for onward lending to companies (April 2020 – current)
Maturity	2 years
Interest rate	Policy rate (0 to 20 bps)
Initial allowance	Depending on bid amount; highest allocation is SEK12.5bn
Additional allowance	n/a
Price incentive	Maximum penalty fee of 20 bps applied if funds are not lent to non-financial companies
US Federal Reserve	
Scheme	'Paycheck Protection Program' Liquidity Facility (April 2020 – current)
Maturity	2 years
Interest rate	35 bps
Initial allowance	n/a
Additional allowance	1 x amount of Paycheck Protection Program loans extended
Price incentive	n/a

(a) The terms of these programs were often modified after their introduction to ease conditions further.

(b) The Funding for Lending Scheme lent short-dated government securities, which could then be used to borrow money from markets at rates close to the expected path of the policy rate.

Sources: Central banks

Endnotes

[1] For example, see Borio C and L Gambacorta (2017), 'Monetary policy and bank lending in a low interest rate environment: diminishing effectiveness?', Bank for International Settlements Working Paper No 612.

[2] Connolly E and J Bank (2018), 'Access to Small Business Finance', RBA *Bulletin*, September, viewed 29 April 2020. Available at <https://www.rba.gov.au/publications/bulletin/2018/sep/access-to-small-business-finance.html>

[3] Bank of England (2018), 'The Term Funding Scheme: design, operation and impact', *Bank of England Quarterly Bulletin*, December, and Bank of England (2012), 'The Funding for Lending Scheme', *Bank of England Quarterly Bulletin*, December.

[4] Andreeva D and M Garcia-Posada (2020), 'The impact of the ECB's targeted long-term refinancing operations on banks' lending policies: the role of competition', European Central Bank Working Paper Series No 2364, andAndrade P, C Cahn, H Fraisse and J-S Mesonnier, 'Can the provision of long-term liquidity help to avoid a credit crunch? Evidence from the Eurosystem's LTRO', *Journal of the European Economic Association*.

Box B: Recent Developments in Foreign Exchange Markets

Since the outbreak of COVID-19, there have been periods of severe market dysfunction and illiquidity in a number of key financial markets, including those for foreign exchange. There were large and rapid changes in the major foreign exchange markets in mid March, along with periods of dysfunction in trading conditions. The Australian dollar depreciated to its lowest level since the early 2000s. Central banks responded forcefully to the deterioration in overall financial market conditions and introduced a range of policies to support market functioning, including in foreign exchange markets. This Box reviews these developments in the spot and swap markets with a focus on the Australian experience.

Foreign exchange spot markets

The deterioration in conditions in global foreign exchange markets in March was particularly notable in the spot market, which saw a sharp widening in bid-ask spreads and a decline in market depth (i.e., the volume that can be traded with little-to-no price impact). Significant price moves across various global asset classes were associated with large foreign exchange flows, including rebalancing and hedging flows from 'real money' asset managers. Large flows were also observed around the time of daily fixings (notably the 4pm London fix), when benchmark reference exchange rates are calculated.[1] Some market participants brought forward transactions ahead of the usual month-end fixing in an effort to reduce a concentration of flows at peak times.

More generally, volatility and large volumes of transactions occurred at a time when intermediaries were constrained in their ability to warehouse risk. Internalisation rates declined for many market makers (reflecting a reduced willingness to hold open market positions) because volatility increased the risk that these intermediaries would be unable to profitably match opposing customer flows. Operational issues arising from lockdowns and working-from-home arrangements in key financial centres may have also contributed to the reduction in intermediaries' internalisation rates.

Disruptions to the functioning of foreign exchange spot markets extended to the market for Australian dollars, with bid-ask spreads widening to their highest level in years. As is common during periods of dysfunction, market participants noted that liquidity conditions in March were especially poor early in the Australian trading day but improved once Japanese markets opened.[2] The average daily trading range for the exchange rate also rose to its highest level in many years. Sharp moves over a short period of time were observed on a number of occasions (Graph B.1). For example, on 9 March the Australian dollar depreciated from US$0.65 to US$0.63 within a couple of minutes. In a similarly brief period on 19 March, it depreciated sharply again, from US$0.57 to around US$0.55, reaching its lowest level since the early 2000s in the process. Conditions in the spot market have improved since mid March, but are yet to fully normalise.

This recent period of market dysfunction bore some resemblance to the dislocations seen during the global financial crisis (GFC), but there were also differences. During the GFC, disorderly market conditions were sustained for long periods of time, reflecting persistently imbalanced flows which severely impeded price discovery. Over the most recent period, although there were a number of episodes where liquidity conditions were significantly disrupted, imbalances in order flow tended to be less pronounced and shorter in duration.

As often occurs during periods of heightened global risk aversion, there was considerable demand in the spot market for US dollars and the Japanese yen around mid March, at the same time that there was a broad-based depreciation in the Australian dollar. When compared with previous periods of financial market stress, the depreciation in the Australian dollar was initially comparable to that of the 2008 financial crisis (Graph B.2).

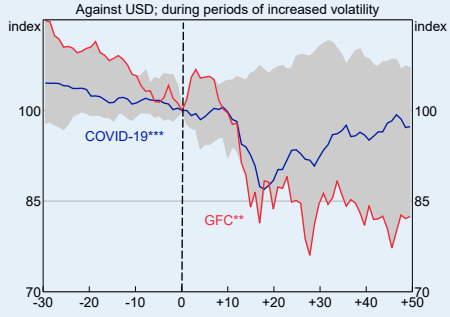
In recent months, movements in the Australian dollar have broadly followed those observed in global equity markets – depreciating in the March selloff, and appreciating in the subsequent rebound (Graph B.3). Similar co-movement was observed at times during the GFC. This partly reflects the dynamic hedging practices of Australian asset managers as they attempt to maintain pre-set hedging ratios on their foreign asset portfolios. For example, as US equity prices decline, asset managers would need to sell Australian dollars to maintain a constant hedging ratio.

Over this period, changes in other longer-term influences on the Australian dollar have been modest. This includes the declines in Australia's yield differential with other advanced economies and bulk commodity prices. By contrast, these variables recorded

Graph B.2

Australian Dollar*

Against USD; during periods of increased volatility



* Days before and after the VIX index deviates by more than 10 percentage points from its 60-day moving average; shaded range shows maximum and minimum of previous episodes

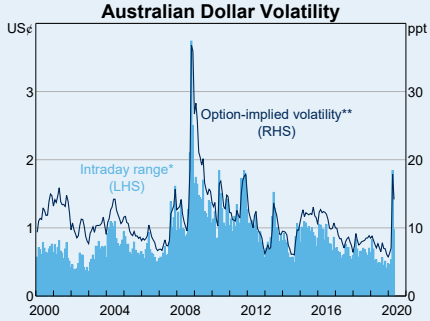
** Day zero is 17 September 2008

*** Day zero is 24 February 2020

Sources: Bloomberg; RBA

Graph B.1

Australian Dollar Volatility



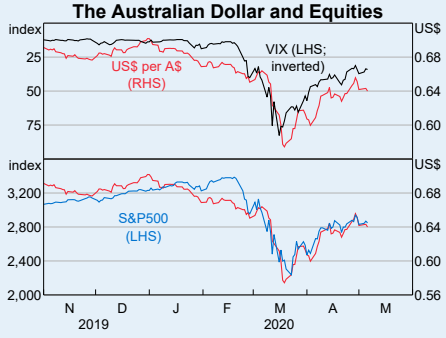
* Monthly average of daily intraday range

** Monthly average of volatility implied by one-month options

Sources: Bloomberg; RBA

Graph B.3

The Australian Dollar and Equities



Source: Bloomberg

large declines during the 2008 financial crisis (Graph B.4).

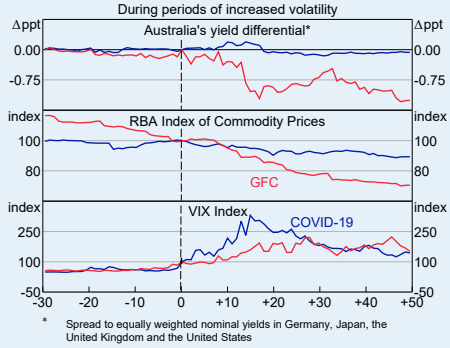
Foreign exchange swap markets

Stressed conditions in March were also evident in the market for foreign exchange swaps. These markets are important as many non-US financial institutions fund their holdings of US dollar assets through the foreign exchange swap market. Strains here could be seen in the sharp increase in the cost of borrowing US dollars in the G3 foreign exchange swap market, as compared to rates available in US onshore markets (Graph B.5). This difference between ('offshore') borrowing rates implied in the swap market and those available onshore is known as the 'basis'.[3] For example, the basis derived from interbank rates on 3-month foreign exchange swaps in which Japanese yen were swapped for US dollars (i.e., where yen served as collateral for US dollar borrowing) widened by around 100 basis points in mid March. While the basis derived from interbank rates has since retraced the March widening in G3 foreign exchange swap markets (as US LIBOR has fallen), other measures of the basis, such as those that are derived from overnight indexed swap markets (therefore abstracting from interbank rates), continue to point to somewhat strained market conditions for non-US institutions seeking to borrow US dollars through the swap market.

Tightness in US wholesale bank funding markets also had potential implications for Australian banks' offshore funding costs. Australian banks regularly choose to acquire some of their funding from US wholesale debt markets and swap it back into Australian dollars; both of these markets – the wholesale debt and foreign exchange swap market – influence the overall cost of this funding. The sharp rise in unsecured US dollar money market rates in March (more than imbalances in the swap market per-se) increased the implied cost of obtaining Australian dollars through offshore funding markets (Graph B.6).[4] Australian banks refrained from raising new funding through this offshore channel around the same time that it became considerably more expensive than onshore funding (see below).

Graph B.4

Determinants of the Australian Dollar

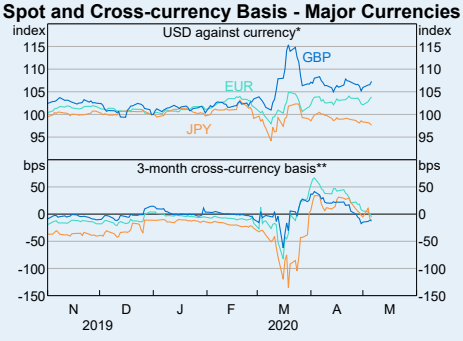


* Spread to equally weighted nominal yields in Germany, Japan, the United Kingdom and the United States

Sources: Bloomberg; RBA

Graph B.5

Spot and Cross-currency Basis - Major Currencies



* 1 January 2020 = 100

** Implied by USD LIBOR

Sources: Bloomberg; RBA

The establishment of US dollar swap arrangements with the Federal Reserve

Conditions in global foreign exchange markets improved in response to policies introduced by a number of central banks over the second half of March. A key contribution was made by the coordinated action between the Federal Reserve and fourteen other central banks, including the Reserve Bank of Australia, to enhance the provision of liquidity through US dollar swap lines. The amount of US dollars borrowed through these facilities increased quickly to around US$450 billion, with particularly strong take up by institutions in Europe and Japan that have an ongoing need to borrow US dollars (Graph B.7). The Federal Reserve has also made US dollars available to other central banks on an overnight basis in exchange for US Treasuries through a new repo facility. Nevertheless, the total value of US dollars extended to non-US based entities through swap lines over this period remained below that observed during the 2008 financial crisis (almost US$600 billion). Since the introduction of these policy measures, the cost of borrowing US dollars in swap markets has declined and measures of swap market functioning have begun to normalise.

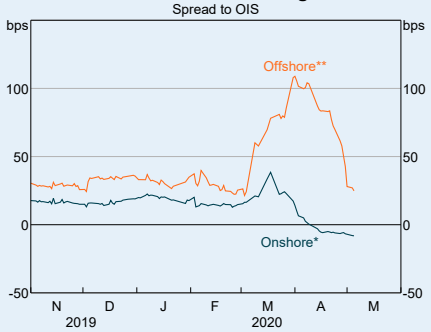
The Reserve Bank and the Fed established a temporary US$60 billion swap line to provide US dollars in exchange for Australian dollars.[5] US dollars are made available to Australian market participants through a weekly auction conducted by the Reserve Bank in the form of US dollar repurchase agreements (repos), which are provided against Australian dollar-denominated securities.

Use of the swap line in Australia has been very modest so far. A little over US$1 billion has been taken up; in each auction up to US$10 billion was made available. This is in contrast to the significant usage elsewhere, most notably in Europe and Japan. There are a number of reasons for this difference. Australian banks typically obtain funding from US debt markets to supplement their domestic funding sources. This reflects a choice to diversify their funding base rather than a need to fund US dollar assets. As a result, Australian banks do not require access to US dollar funding when markets are disrupted, unlike some banks and other financial institutions in Europe and Japan

Graph B.6

AUD Three-month Funding Costs

Spread to OIS



* Three-month BBSW

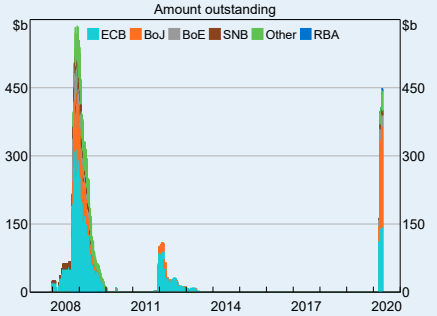
** Implied AUD cost via USD LIBOR funding and cross-currency swap

Sources: Bloomberg; RBA

Graph B.7

Select Central Banks' US Dollar Swap Facilities

Amount outstanding



Source: Federal Reserve Bank of New York

which need to roll US dollar borrowings to fund portfolios of US dollar assets. Hedging arrangements have also resulted in Australian banks benefiting from an additional supply of US dollars, as they receive US dollar payments when the Australian dollar depreciates.[6]

More generally, given their strong liquidity position, low domestic borrowing costs and only modest growth of assets, the large Australian banks have not needed to increase their net funding in wholesale markets abroad.

Endnotes

[1] The fixing convention is a result of foreign exchange markets trading in a continuous 24-hour cycle, and so unlike securities markets, do not have an obvious end of day reference rate.

[2] See Australian Foreign Exchange Committee (2020), 'Australian Foreign Exchange Committee Meeting Minutes', Sydney, 26 March. Available at <https://afxc.rba.gov.au/meetings/afxc/2020/afxc-minutes-2020-03-26.html>.

[3] For more details on the use of cross-currency basis swaps, see Kent (2018), 'US Monetary Policy and Australian Financial Conditions', Speech The Bloomberg Address, Sydney, 10 April. Available at <https://www.rba.gov.au/speeches/2018/sp-ag-2018-12-10.html#r7>.

[4] The OIS-implied and LIBOR-implied bases diverged notably in the AUD/USD swap market in March and April, when the OIS-implied basis turned negative (implying it was cheaper to obtain Australian dollars through swap markets than onshore) while the LIBOR-implied basis turned strongly positive (implying it was more expensive to borrow Australian dollars through the swap market than through onshore borrowing). This unusual divergence can be almost fully explained by the severe tightening in US LIBOR and financial commercial paper markets.

[5] For more information about the swap arrangement, see RBA (2020), 'Reserve Bank of Australia and US Federal Reserve Announce Swap Arrangement', Media Release No 2020-09, 20 March. Available at <https://www.rba.gov.au/media-releases/2020/mr-20-09.html>.

[6] See Bellrose, K and Norman D (2019) 'The Nature of Australian Banks' Offshore Funding' RBA *Bulletin*, December, viewed 23 April 2020. Available at <https://www.rba.gov.au/publications/bulletin/2019/dec/the-nature-of-australian-banks-offshore-funding.html>. See Berger-Thomson, L and Chapman B (2017), 'Foreign Currency Exposure and Hedging in Australia', RBA *Bulletin*, December, viewed 23 April 2020. Available at <https://www.rba.gov.au/publications/bulletin/2017/dec/8.html>.

3. Domestic Economic Conditions

The outbreak of COVID-19 infections and the measures implemented to contain the spread of the virus have significantly affected the Australian economy. The economy will record a severe contraction in the June quarter, but is expected to start recovering as containment measures are progressively lifted (see discussion in the 'Economic Outlook' chapter).

Containment measures introduced by the Australian and state governments have limited the spread of the virus. But these measures, including travel restrictions and social distancing rules, coupled with individuals and businesses taking their own precautionary actions, have significantly reduced domestic activity since mid March. Relatedly, there has been a marked increase in economic uncertainty and a sharp decline in household and business confidence about the near-term prospects for the Australian economy. Notwithstanding this, the low levels of COVID-19 cases in recent weeks and the increase in the capacity of the Australian health system to respond to outbreaks should provide confidence that containment measures can be eased progressively over coming months.

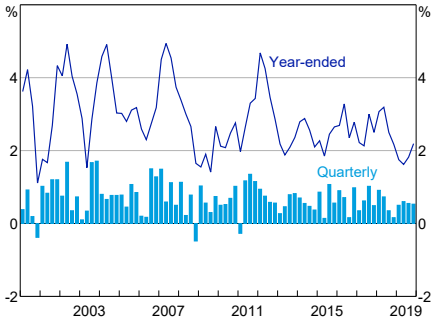
Substantial support from fiscal and monetary policy is helping to offset declines in household and business incomes and maintain employment through the contraction period, which should in turn aid the recovery. Both Australian and state governments have introduced sizeable fiscal packages, which are now being implemented and will operate alongside other measures that are assisting households and businesses manage their debt and rent obligations. The Reserve Bank has eased monetary policy by lowering the cash rate and introducing a target for the 3-year Australian Government bond yield, which has lowered borrowing costs in the economy. The Bank has also introduced the Term Funding Facility (TFF), which provides an incentive to banks to lend to small- and medium-sized firms.

The domestic economy entered the outbreak period with growth improving gradually

Before the widespread outbreak of the coronavirus, the Australian economy had grown by 0.5 per cent in the December quarter and by 2.2 per cent over 2019 (Graph 3.1). The bushfires had only a limited impact on nationwide economic activity in the December quarter and, at the end of 2019, year-ended growth was ½ percentage point above its mid-2019 trough. Public consumption and exports had been the main sources of expenditure growth over 2019, while private demand had been weak.

Graph 3.1

GDP Growth



Source: ABS

Table 3.1: Demand and Output Growth

Per cent

	December quarter 2019	September quarter 2019	Year to December quarter 2019	Share of GDP
GDP	0.5	0.6	2.2	100
Domestic Final Demand	0.1	0.4	1.3	97
– Consumption	0.4	0.1	1.2	55
– Dwelling investment	–3.4	–1.2	–9.7	5
– Mining investment	5.0	–4.8	3.2	3
– Non-mining investment	–2.4	–0.0	–2.4	9
– Public consumption	0.7	1.1	5.3	19
– Public investment	–1.3	4.4	2.5	5
Change in inventories[(a)]	0.2	0.2	–0.1	n/a
Exports	0.0	0.5	3.4	25
Imports	–0.5	0.3	–1.5	21
Mining activity[(b)]	1.2	0.5	5.7	15
Non-mining activity[(b)]	0.4	0.6	1.7	85
Farm GDP	0.4	–3.3	–2.2	2
Non-farm GDP	0.5	0.6	2.3	98
Nominal GDP	–0.3	1.2	4.1	n/a
Terms of trade	–5.3	0.2	–0.6	n/a

(a) Contribution to GDP growth

(b) RBA estimates

Sources: ABS; RBA

Most of the regular economic data for Australia pre-date the implementation of stricter containment measures. Higher-frequency products released by the ABS, along with additional information from other agencies, market sources and the Bank's liaison program have enabled more timely assessments of current economic conditions and have helped inform our view about the outlook for the Australian economy.

The earliest economic effects of the outbreak were from travel restrictions reducing travel and education exports

Restrictions on travel to contain the spread of the virus have been in place since February and have been progressively tightened. International border restrictions were introduced on 1 February for arrivals from China and, in early March, were broadened to cover arrivals from Iran, South Korea and Italy. On 20 March, Australia's borders were closed to all non-residents. These measures had the largest impact on the tourism and education sectors, leading to significantly lower service exports; service imports also declined as Australian residents deferred or cancelled travel overseas.

Travel restrictions resulted in a sharp reduction in visitors arriving in Australia to study, which was already evident by February (Graph 3.2). Consequently, there will be a large decline in education exports over the first half of the year. A significant share of Chinese students who had intended to study in Australia remained outside

the country, and some students from other countries have withdrawn from their studies voluntarily or had their exchange programs suspended or cancelled. Domestic containment measures are also expected to decrease spending by international students remaining in Australia.

Domestic activity declined over recent months as containment measures were introduced …

As the number of cases of the virus in Australia increased in March, Australian and state governments imposed social distancing and other containment measures (Graph 3.3). People were encouraged to stay at home as much as possible, limit contact with people outside of their own household, and only venture out if they needed to. The restrictions included: limitations on movement across most state and territory borders; closure of a large number of businesses (such as indoor sporting facilities, entertainment activities, pubs, clubs and dining facilities); public social gatherings being restricted to two persons; and households being instructed to limit visitors. There was a shift to remote schooling across the country and a significant increase in working from home. At the time of publication, there had been a modest easing in some restrictions but most of these restrictions remain in place.

The containment measures substantially reduced the movement of people and vehicles and, in doing so, have been effective in slowing the spread of the virus. Foot traffic at public transport stops and stations across Australia fell by around 60 per cent over March, although movement around grocery stores and pharmacies did not decline as much (Graph 3.4). Foot traffic remained subdued through April. It appears that individuals and businesses voluntarily adjusted their behaviours to some extent ahead of more formal government restrictions. Similarly, high-frequency data for restaurants suggest that the number of seated diners also declined significantly in the week preceding the formal closure of in-house dining at cafes and restaurants on 23 March, while some parts of the retail sector saw a strong boost in sales in March as households prepared for containment (see below).

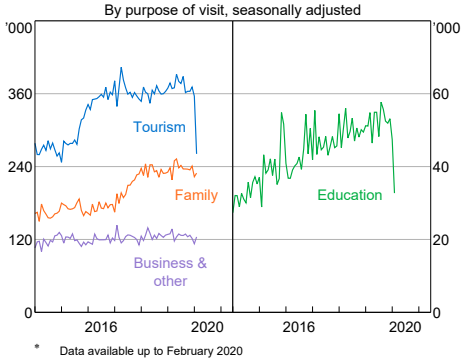
… leading to a large decline in employment

A range of sources confirm that the containment measures introduced from mid March led to an immediate and large rise in job losses and a significant reduction in the hours worked by many who retained their jobs. Weekly

Graph 3.2

Short-term Visitor Arrivals*

By purpose of visit, seasonally adjusted



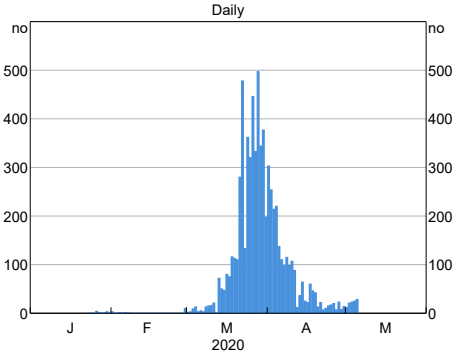
* Data available up to February 2020

Sources: ABS; RBA

Graph 3.3

New Confirmed COVID-19 Cases in Australia

Daily



Sources: Department of Health; Johns Hopkins CSSE; RBA

ABS payroll data showed that the number of paid employee jobs fell by 7½ per cent between 14 March and 18 April, though the pace of decline in jobs has eased since the JobKeeper Payment was announced (Graph 3.5).[1] The rate of job loss was largest for younger people and in industries most affected by government restrictions, such as accommodation & food services and arts & recreation. These payroll data, which are now published by the ABS with support from the Australian Taxation Office, complement the Labour Force Survey and greatly improve our ability to monitor the labour market.

Alongside the decline in employment, businesses have also made other changes to their workforce in response to the new restrictions and weaker demand. According to an ABS survey of around 1,200 businesses, around one-quarter of businesses that were still operating had reduced the hours of their staff in the final two weeks of March, while a smaller share of businesses had increased work hours over that period.

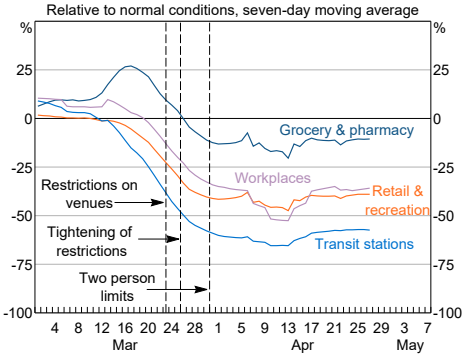
Household surveys tell a similar story of a deterioration in labour market conditions from late March. The Roy Morgan survey measures of unemployment and underemployment have risen sharply. Of the respondents in the Westpac–Melbourne Institute survey, 7 per cent had lost their jobs and 14 per cent had been stood down without pay over the month leading up to the 6–11 April survey period. Workers in hospitality, recreation and other household services were most adversely affected. A recent ABS survey of households showed that, of those who remained in a paid job, the share who had worked zero hours (an indicator of being stood down by their employer) rose from 3 per cent to 13 per cent over late March/early April, while others remained at work but had their hours reduced. The same households were re-interviewed a fortnight later, and stand-downs and reductions to working hours for these households had generally continued into the first half of April.

The Australian Government has introduced the JobKeeper Payment of $1,500 per fortnight, which was passed into legislation in early April. This wage subsidy will encourage firms to retain workers and provide a wage floor for eligible employees; it will increase wages in the near term for lower-paid workers and limit income declines for those who have had their hours reduced or been stood down. Around one-quarter of employees could receive a temporary increase to their earnings if they are covered by

Graph 3.4

Australian Foot Traffic*

Relative to normal conditions, seven-day moving average



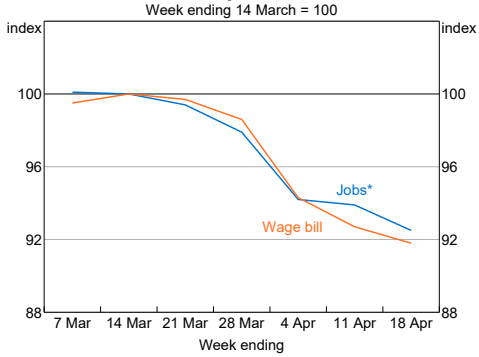
* Normal conditions are defined as the median value for foot traffic for the corresponding week day during 3 January to 6 February 2020; the application of restrictions has varied by state and territory

Sources: Google LLC (2020), 'Google COVID-19 Community Mobility Reports', available at https://www.google.com/covid19/mobility/ viewed on 7 May 2020; RBA

Graph 3.5

Payrolls

Week ending 14 March = 100



* Number of jobs where a payment was made during the reference week

Source: ABS

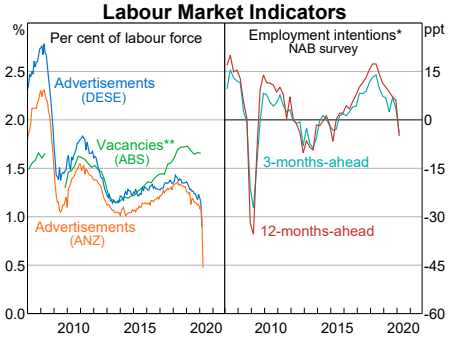
the program. The legislation also includes temporary changes to the *Fair Work Act 2009* to give employers more flexibility to vary employees' working arrangements. As of 6 May, more than 760,000 businesses had enrolled in the program, estimated to cover around 5 million workers. In the most recent ABS survey of businesses, around 45 per cent of firms reported that the announcement of the JobKeeper Payment had influenced their decision to continue to employ staff, and 60 per cent of surveyed firms had registered for the scheme or were intending to do so.

The March labour force data did not show a discernible impact of the containment measures on the labour market because the survey of households references the period 1–14 March. The April Labour Force Survey, which references the period 29 March and 11 April, will provide a comprehensive assessment of labour market conditions after social distancing and other containment measures were introduced.

Forward-looking indicators of labour demand confirm that labour market conditions will remain very weak for the next few months (Graph 3.6). Job advertisements have fallen very sharply, while information from the liaison program and surveys show business hiring intentions over the period ahead are very weak.

Graph 3.6

Labour Market Indicators



* Net balance for the following period; deviation from average; 12-months-ahead measure seasonally adjusted by the RBA

** Survey was suspended between May 2008 and November 2009

Sources: ABS; ANZ; Department of Education, Skills and Employment (DESE); NAB; RBA

Containment measures are affecting industries differently

While all industries are being affected by the containment measures, the extent varies widely. The household services sector, which has contributed the most to employment growth over recent years and has the largest share of casual workers, has been the most affected (Graph 3.7). Under the ban on public gatherings, activity in some parts of the arts & recreation industry has effectively stopped. Activity in the accommodation & food services industry has also been significantly curtailed because of the ban on international and (in some states) domestic travel, and the bans on public gatherings; an increase in takeaway and online ordering and delivery options has not been sufficient to offset this. The ABS payroll data suggest that around 1 in 3 jobs in accommodation & food services and more than 1 in 4 jobs in the arts & recreation industry have been lost (or stood down without pay) since mid March (Graph 3.8). In combination, these industries account for around one-fifth of casual workers. Around one quarter of employees in these industries are casuals and have been in their jobs for less than 12 months and therefore would not be eligible to receive the JobKeeper Payment.

In contrast, there has been much less of a decline in employment in the health care & social assistance industry (which accounts for around 14 per cent of workers). Employment in the industry has been supported by increased anticipated demand for hospital care and the increase in government spending on health services; this increase in demand for health care workers is likely to persist for some time. Employment in child care will be supported by the government's decision to make child care services free until 28 June 2020. However, there has been a slowing in activity in some other parts of the healthcare industry as a result of a decline in household demand and the various

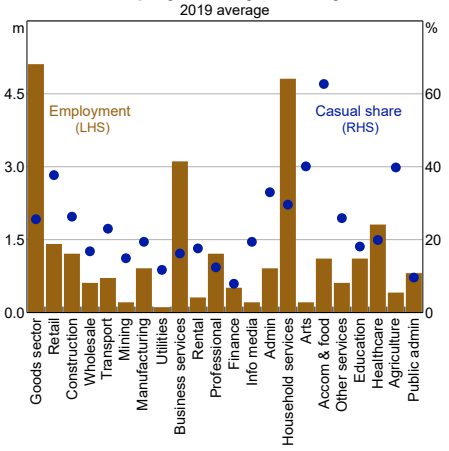
containment measures, which included a temporary halt to elective treatments and restrictions on services provided by dentists and allied health professionals. The partial lifting of restrictions for some of these services from 25 April will enable some activity to pick up again, as will the increased prevalence of telehealth as a way of delivering some of these services.

Higher education providers expect large falls in revenue in 2020 because of lower international student enrolments. Information from liaison suggests that this has negatively affected planned capital spending and hiring intentions. The Higher Education Relief Package announced on 12 April guarantees $18 billion in funding in 2020 for all higher education providers currently allocated Commonwealth-supported places, regardless of actual enrolments, and also provides regulatory relief and subsidies for some short courses. Elsewhere in the education industry, many primary and secondary education employees have been able to work and teach remotely; some schools are already in the process of returning to on-campus learning, or will do so in coming weeks. To date, there has been little decline in overall employment in the education industry.

Graph 3.7

Employment by Industry

2019 average

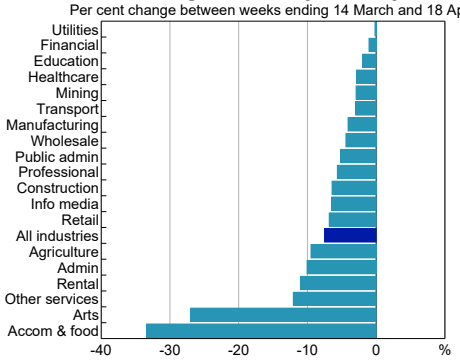


Sources: ABS; RBA

Graph 3.8

Change in Jobs by Industry*

Per cent change between weeks ending 14 March and 18 April



* Number of jobs where a payment was made during the reference week

Source: ABS

Employment in the manufacturing and construction industries appears to have been less directly affected by containment measures because most businesses in these industries have not been required to close. However, the economic slowdown has still had large indirect effects on many employers in these industries. Recent survey measures of conditions in these industries have declined very sharply, and firms have reported large declines in demand. While the existing pipeline of construction projects has supported construction employment to date, this pipeline is expected to decrease as some future projects are delayed. On the other hand, some parts of the manufacturing sector have experienced significant increases in demand, such as producers of food & beverages, pharmaceuticals, essential household goods (such as personal health and hygiene products) and personal protective equipment. Employment in the mining sector has been less affected by containment measures than some other industries, and has been supported by the relative resilience of resource exports.

The payroll data suggest that the number of paid jobs in retail has been less adversely affected than jobs in some other industries. Although there have been widespread reports

of retailers that have stood down or made employees redundant, other retailers have increased their hiring substantially. The increase in demand for some retailers and retailers increasing the range of products available for online purchasing is likely to have supported employment in retail, as well as employment in the wholesale and transport sectors.

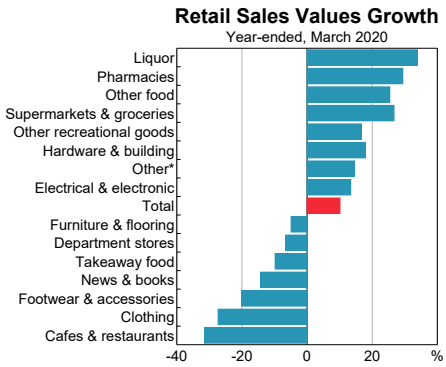
Although employees in the business services sector have more capacity to work from home, payroll data suggest that there has been a 5½ per cent reduction in paid jobs in the professional, scientific & technical industry, reflecting some decline in demand. Liaison suggests that demand for labour hire and recruitment services has declined significantly as firms put recruitment on hold and reduce their use of casual workers, while engineering and architecture firms have reported growing concerns around the future pipeline of work as projects are being deferred. Productivity is also likely to be lower as business service firms and their employees adapt to new working arrangements.

The pattern of retail spending has shifted markedly since February

Retail sales volumes grew by 0.7 per cent in the March quarter and by 1.1 per cent over the year. Following relatively weak growth in January and February, retail sales values increased by 8½ per cent in March, the largest increase in the history of the series and similar in size to the increase recorded just prior to the introduction of the goods and services tax. The increase in retail sales values in March was driven by widespread precautionary and preparatory purchases at supermarkets & other grocery stores, liquor retailers and pharmacies (Graph 3.9). Purchases of home entertainment and other recreational items, and items related to setting up home offices were also strong in the month. By contrast, sales at cafes & restaurants and sales of clothing and footwear fell, consistent with the introduction of social distancing restrictions in mid March. Liaison with retailers suggests that there were further declines in April. Motor vehicle sales fell sharply in April, to be close to their lowest level in 20 years (Graph 3.10).

In April, measures of consumer sentiment fell to their lowest levels since the 1990s recession (Graph 3.11). Sentiment about economic conditions and personal finances fell significantly, consistent with reported job losses and increased uncertainty about the outlook. Weekly measures of sentiment reversed some of their declines following the announcements of the fiscal and monetary measures to support activity. An alternative measure of sentiment

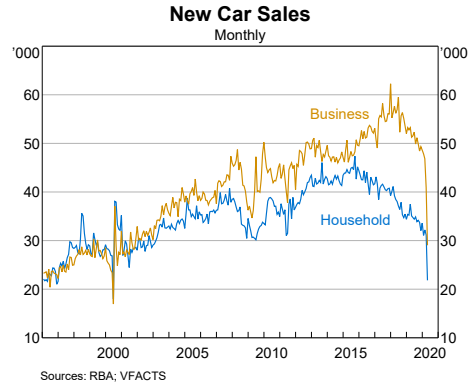
Graph 3.9



* Includes stationery, flower and non-store based retailing

Sources: ABS; RBA

Graph 3.10



Sources: RBA; VFACTS

based on text analysis of newspaper articles also fell to a record low in March, then improved a little in April (Graph 3.12). As with other sentiment indicators, news sentiment is a timely indicator and is correlated with other key economic variables, such as GDP growth and the unemployment rate.

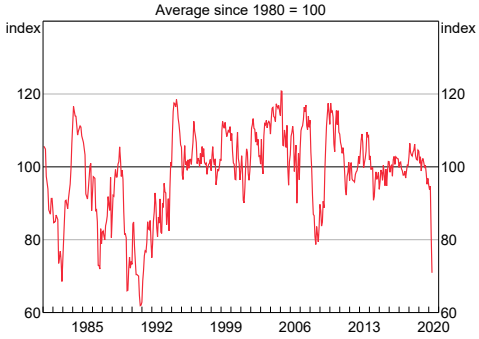
Government policies are supporting household incomes

Government policies will help to offset the effect of the COVID-19 outbreak on household income, for example, through the JobKeeper Payment and the Coronavirus Supplement that is available to most recipients of income support payments, including JobSeeker. Information from the recent household survey conducted by the ABS indicates that around half of households who had received the Economic Support Payment of $750 had saved most of the payment, while some others had used the payment to pay household bills. Other measures will also provide relief to households by easing pressures around rent and debt obligations and by allowing early access to superannuation. The temporary deferral of mortgage repayments by some households and the decline in interest rates are also expected to provide a small boost to household cash flow. Household income is still expected to decline in the March and June quarters mainly because of expected falls in labour and in unincorporated business income.

Graph 3.11

Consumer Sentiment*

Average since 1980 = 100



* Mean of Westpac–Melbourne Institute and ANZ–Roy Morgan surveys' deviations from average

Sources: ANZ–Roy Morgan; RBA; Westpac–Melbourne Institute

Established housing market conditions have softened since mid March …

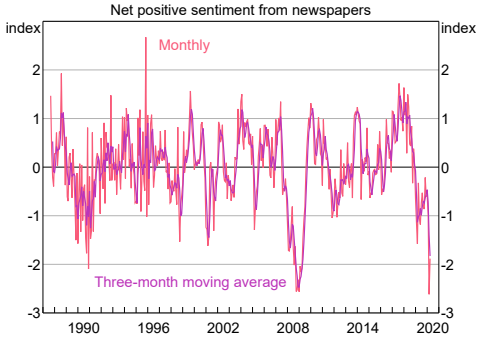
Housing price growth moderated further in April in Sydney and Brisbane and prices were flat in Melbourne and Perth (Table 3.2). Survey information suggests expectations for housing price growth over the next year have fallen sharply, with over half of respondents now expecting prices to decline, compared with around 10 per cent over the first three months of the year (Graph 3.13).

Following the ban on public (in-person) auctions and open houses in late March, timely indicators

Graph 3.12

News Sentiment Indicator

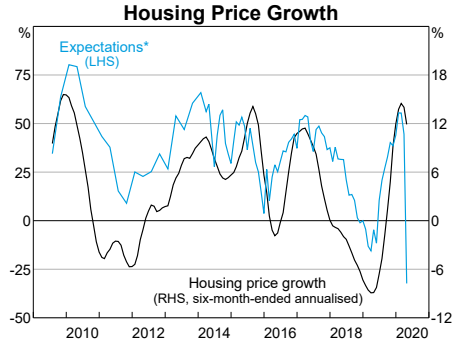
Net positive sentiment from newspapers



Sources: Dow Jones DNA; RBA

Graph 3.13

Housing Price Growth



* Share of survey respondents expecting an increase in prices over the coming year less share of respondents expecting a decrease in prices

Sources: CoreLogic; RBA; Westpac–Melbourne Institute

Table 3.2: Growth in Housing Prices[(a)]

Percentage change, hedonic

	April	March	February	January	Year-ended	Past five years
Sydney	0.6	1.0	1.7	1.4	14.3	22
Melbourne	0.0	0.3	1.3	1.4	12.4	29
Brisbane	0.4	0.6	0.6	0.5	3.8	10
Adelaide	0.3	0.4	0.2	0.3	1.5	11
Perth	0.0	0.2	0.3	0.2	−2.5	−18
Darwin	1.3	1.4	−1.0	0.1	−2.7	−28
Canberra	−0.2	0.7	0.6	0.5	4.3	22
Hobart	−0.1	−0.5	0.7	0.7	5.0	44
Capital cities	0.2	0.5	1.1	1.1	9.7	17
Regions	0.5	0.5	0.5	0.5	3.2	13
Australia	0.3	0.5	1.0	1.0	8.3	16

(a) Seasonally adjusted by the RBA

Sources: CoreLogic; RBA

such as new listings and auction volumes declined sharply in April (Graph 3.14). Auction clearance rates in Sydney and Melbourne declined alongside a sharp increase in auction withdrawal rates (Graph 3.15). Constraints around open houses are expected to be partially unwound in the near term and this should provide some support to activity in housing markets; however, the economic downturn, uncertainty and social distancing are expected to continue to weigh on transaction volumes in coming months.

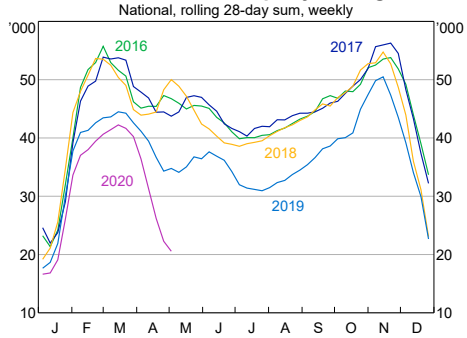
Information from liaison suggests that rental market conditions have deteriorated markedly since mid March. Rental listings have increased, partly because properties previously offered on the short-term accommodation market are now being offered on the longer-term rental market.

A number of state and territory governments have announced tax relief for landlords and rental support in cases where tenants are facing financial stress. These are in addition to the previously announced six-month moratorium on evictions for both residential and commercial tenants. These policy measures should help reduce the number of tenancy agreements that are terminated over coming months. Liaison suggests that the number of existing residential leases that have been subject to rent discounts or deferrals increased in April; to date the declines in rents are relatively modest, but are expected to have a sizeable impact on overall rents if they continue. Increased supply alongside weaker demand, partly because of

Graph 3.14

New Residential Property Listings*

National, rolling 28-day sum, weekly



* Properties advertised for sale across multiple sources or multiple times in the same 28-day period are only counted once

Source: CoreLogic

fewer foreign students and long-staying foreign visitors, are also likely to have put upward pressure on the vacancy rate in April, putting further downward pressure on rents.

… which is likely to prolong the downturn in dwelling investment

Residential building approvals decreased in March. Information from liaison about the earlier stages in the development process suggests demand for new dwellings has deteriorated significantly (Graph 3.16). Residential construction firms in the AIG Performance of Construction Index indicated that new business had declined sharply over recent months. Greenfield lot sales declined a little in Sydney in the March quarter and remained flat in Melbourne; cancellation rates had also edged up in these cities. Nationally, lot sales increased a little in the March quarter, but remained relatively low and are expected to decline over the year ahead. These indicators suggest continued weakness in dwelling investment in the near term. Liaison contacts have also cited concerns about increased settlement failures. There is also the risk that COVID-19 cases could occur at construction sites and lead to temporary site closures.

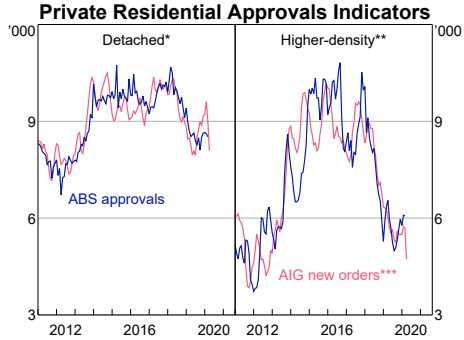
Business sentiment has sharply deteriorated, as has the outlook for non-mining business investment

Survey measures of business conditions have fallen sharply since mid March as a result of the COVID-19 outbreak (Graph 3.17). The fall in reported conditions has been broad based across most states and industries. According to recent ABS surveys of businesses, the most commonly cited expected impacts of the virus were reduced cash flow and reduced local demand (Graph 3.18).

Surveyed business confidence is at its lowest level since the series began in the late 1980s; historically, periods of low business confidence

Graph 3.16

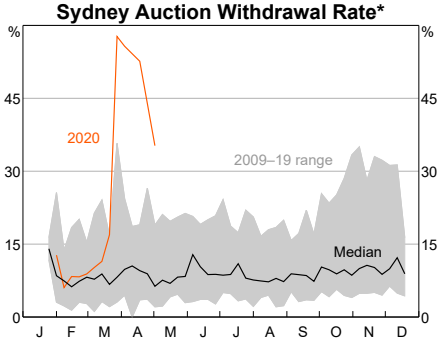
Private Residential Approvals Indicators



* Monthly approvals and three-month moving average of AIG new orders
** Three-month moving average of approvals and six-month moving average of AIG new orders
*** Rescaled to have the same mean and variance as ABS approvals
Sources: ABS; AIG; RBA

Graph 3.15

Sydney Auction Withdrawal Rate*

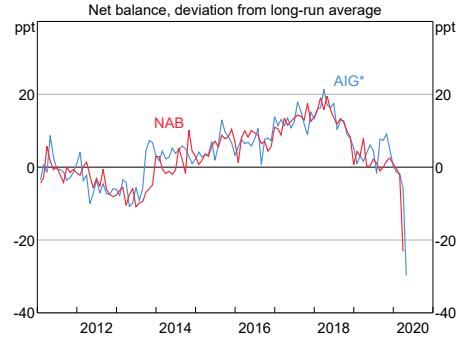


* Ratio of withdrawn auctions to total reported auctions for a given week
Sources: APM; RBA

Graph 3.17

Business Conditions

Net balance, deviation from long-run average



* Adjusted to match the mean and standard deviation of the NAB series over the corresponding time period
Sources: AIG; NAB; RBA

and profit growth have coincided with weak non-mining investment (Graph 3.19). Information from the Bank's liaison program also indicates that many firms are deferring or cancelling non-essential planned capital expenditure in response to the deterioration in the Australian economic environment. In February and early March, delays were reported for some building materials and machinery & equipment being imported from China, following the restrictions put in place there in response to the initial outbreak of COVID-19. More recent indications from liaison suggest the earlier concerns about supply disruptions to imported goods are receding, both because Chinese economic activity has picked up and domestic demand has weakened.

The near-term investment outlook for non-mining firms is particularly weak for machinery & equipment expenditure, which is relatively more sensitive to near-term economic conditions. An indication of this is the sharp drop in car sales to businesses in April. In contrast, construction activity on existing infrastructure and non-residential building projects appears to have been relatively unaffected to date, although increased uncertainty regarding the economic outlook is likely to slow the planning for, and commencement of, future private projects.

Mining activity has been fairly resilient

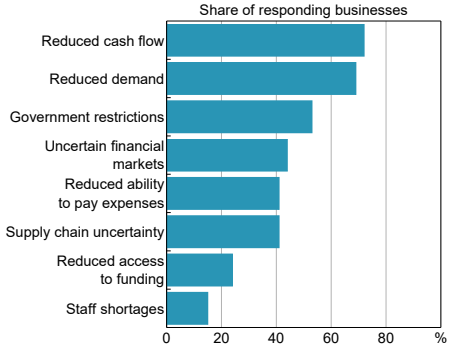
The outbreak of COVID-19 has had a relatively limited impact on mining activity to date. Liaison information, company announcements and partial trade data suggest that resource export volumes have been largely unaffected. As well, iron ore exports look to have recovered from earlier cyclone-related disruptions. Chinese demand for imported bulk commodities has mostly remained strong despite the outbreak of COVID-19, in part because of disruptions to Chinese domestic mining production. Reports also indicate that Chinese buyers have sought to rebuild their inventories of bulk commodities in anticipation of further stimulus measures from the Chinese Government, which could support steel-intensive construction activity. In Australia, work on major iron ore and coal investment projects is expected to continue, given most of these projects are required to sustain current production levels.

Although low oil prices will reduce the revenues of liquefied natural gas (LNG) producers, LNG export volumes are unlikely to decline materially; over 80 per cent of Australian LNG exports are produced under long-term supply contracts, and there are also significant costs to producers of stopping and restarting production. However, the outlook for LNG

Graph 3.18

Expected Adverse Impacts of COVID-19

Share of responding businesses

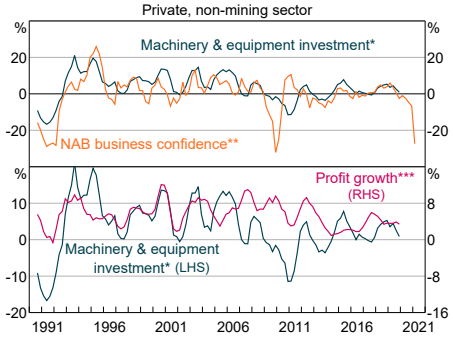


Sources: ABS; RBA

Graph 3.19

Business Confidence, Profits and Investment

Private, non-mining sector



* Nominal; year-average growth
** Three-month rolling average; lagged by four quarters
*** Gross operating surplus; year-average growth

Sources: ABS; NAB; RBA

investment has deteriorated, and final investment decisions have been delayed on some large LNG projects that had been expected to commence construction during 2020.

Interstate travel restrictions could in principle limit the availability of specialised labour and disrupt mining activity in the near term. To date, however, liaison information and company announcements suggest that these restrictions have not significantly affected the availability of specialised labour, and some producers have adjusted accommodation and transport arrangements, including by relocating workers, to reduce the risk of disruption.

Drought conditions have been easing

Since the start of the year, rainfall was average or above-average across most of Australia, including in important agricultural regions such as the Murray–Darling Basin (Figure 3.1). This has improved soil moisture and provided a favourable start to the winter cropping season. The Bureau of Meteorology indicates that wetter-than-average conditions are likely to continue until at least August. Consistent with this improvement in conditions, the Australian Bureau of Agricultural and Resource Economics and Sciences forecasts that farm production will increase by around 4 per cent in 2020/21; an increase in crop production is expected to offset a decline in livestock-related production as farmers rebuild their herds and flocks. This more favourable outlook is reflected in a sharp increase in the share of farmers who expect better conditions over the next year (Graph 3.20).

Policy measures will support household and business incomes

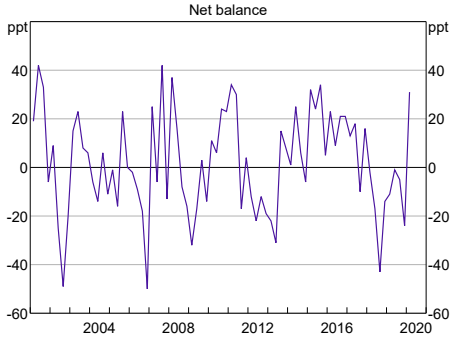
Australian and state governments have announced a range of measures to support the economy. These policies should facilitate labour market adjustment, reduce the financial stress of households and businesses and provide a safety net for households, helping them maintain spending on essential items and meet other obligations. However, it is unlikely these policies will boost spending by much in the near term while restrictions on activity are in place to contain the spread of the virus. In addition, in March, the Reserve Bank implemented a comprehensive package of policy measures to support the Australian economy, which is discussed in the 'Domestic Financial Markets' chapter.

The Australian Government has announced three packages of policies focused on providing support to households and business. When announced, the cost to the budget of these packages was estimated to be $66 billion in 2019/20 (3.3 per cent of annual GDP) and $126 billion in 2020/21 (6.3 per cent of annual GDP) (Graph 3.21). The states and territories have also announced a number of spending packages, costed to be at least $19 billion, just under 1 per cent of annual GDP. These state measures have been predominantly targeted at small- and medium-sized businesses in the form of waivers on payroll tax and government fees and charges. Many states have also included measures to support households and specific industries.

Graph 3.20

Rural Confidence*

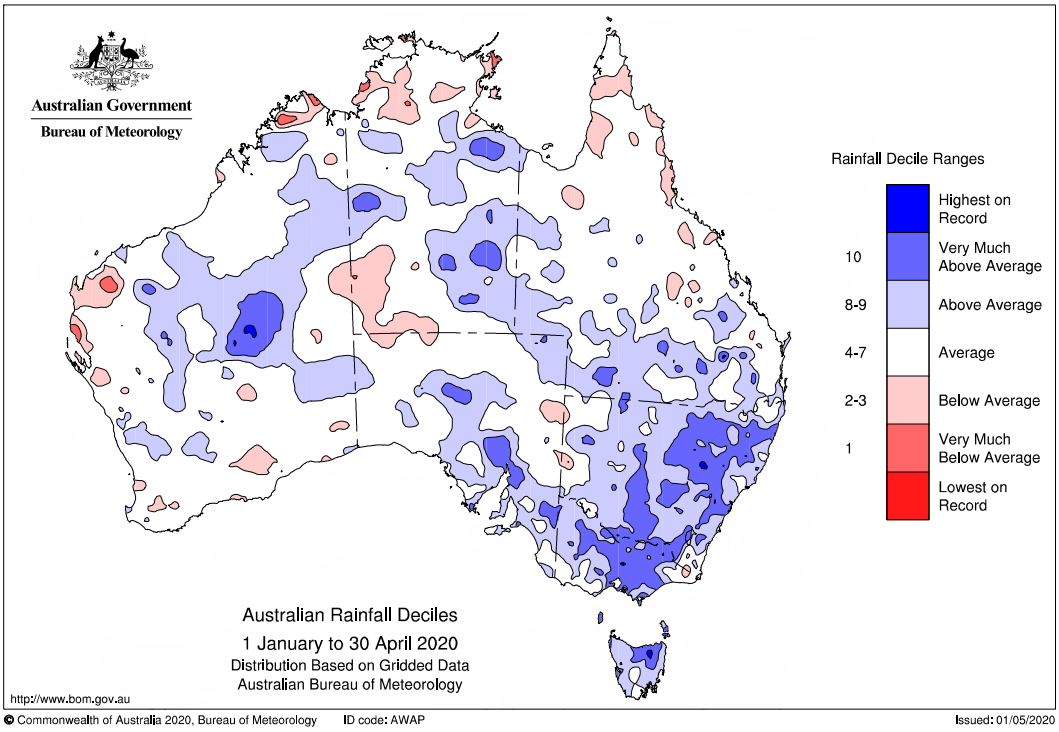
Net balance



* Per cent of surveyed farmers expecting conditions in the agricultural economy to improve over the next year minus the per cent expecting conditions to worsen

Source: Rabobank

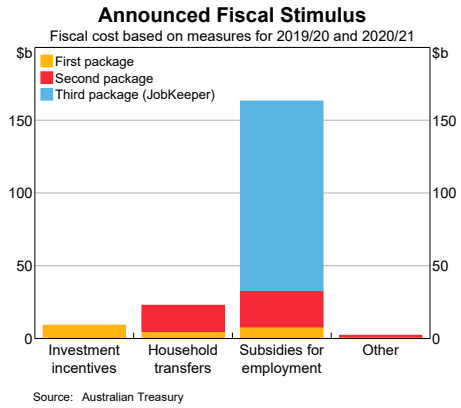
Figure 3.1 : Australian Rainfall Deciles



Note: This figure is licenced under the Creative Commons Attribution Australia Licence <https://creativecommons.org/licenses/by/3.0/au/legalcode>

For individuals, the Economic Support Payments and the Coronavirus Supplement will boost income in the near term and assist many households with smoothing their consumption. The expanded eligibility of existing programs should ensure that newly unemployed or unwell households are able to access these payments quickly. This will reduce the likelihood such households will default on mortgage payments or have to sell housing or financial assets under financial stress, possibly at a loss, which would have flow-on implications for asset markets. The JobKeeper Payment will also help offset losses to incomes and maintain attachment to workplaces, which should support the recovery in activity and incomes. Wage subsidies for apprentices and trainees are intended to have a similar effect. Agreements to defer rent and loan payments will also help lower the risk of financial stress for many households and, through this, support their other consumption; however, it could result in lower income for owners of rental properties and some of these owners could come under financial pressure.

Graph 3.21



For businesses, similar permitted delays in rent and loan payments, along with the JobKeeper Payment should help them to manage their fixed costs over coming months. Relief from many state taxes, fees and charges, combined with low-cost debt programs in a range of forms and financial assistance to specific industries, are expected to reduce the number of business failures. The three-year commitment to the Term Funding Facility (TFF) established by the RBA should support business credit.

Spending to support mental health and social support services is also providing essential assistance for households and businesses through this difficult time.

The amount of debt outstanding by federal and state governments will increase significantly because of increased spending related to the stimulus measures and health expenditure, increased unemployment benefits and lower revenues. That said, net government debt outstanding is low in Australia relative to other advanced economies. Federal government revenues will be lower because of lower taxes being paid by households and businesses, while state government revenues will be affected by lower stamp duty because of lower turnover in housing markets and the waiver of payroll and land taxes. Lower GST revenues will affect both federal and state governments.

Endnotes

[1] In this release, a job is only classified as a 'job' if it is being paid; as such, the net job losses over the period include employees who had been stood down without pay, but would not include those stood down with pay. For example, those on JobKeeper or paid leave.

4. Domestic Financial Conditions

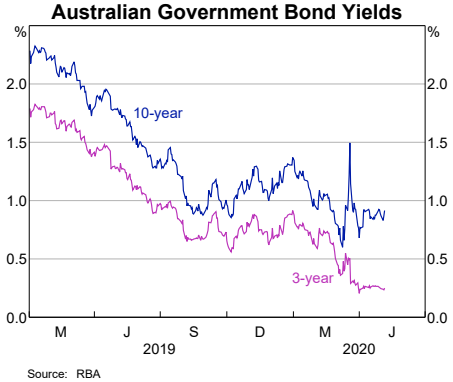
Following the outbreak of COVID-19, financial conditions in Australia – as in other economies – tightened in late February and through March, with a very sharp rise in volatility. There were also periods of dysfunction across a number of financial markets. In response, in March, the Reserve Bank Board lowered the cash rate by a cumulative 50 basis points and implemented a comprehensive package of policy measures to lower funding costs across the economy and support the supply of credit to households and businesses. This helped to ease financial market conditions and improve market functioning, although conditions remain difficult, in corporate wholesale funding markets in particular. The policy measures have reduced Australian banks' funding costs and housing and business interest rates, which have all reached historic lows. Lenders have also taken steps to ease loan payment burdens for households and businesses whose incomes are affected by the COVID-19 disruptions. While finance extended to the household and business sector continued to grow up until March, the demand for funding is expected to decline in response to the economic impacts associated with COVID-19. After a period of sharp declines and extreme volatility, Australian equity prices have increased over recent weeks but remain well below their February peak.

Financial conditions tightened and government bond markets became impaired as COVID-19 spread

With the growing realisation from late February through early March of the pervasiveness of COVID-19 and the implementation of strong containment measures, the outlook for economic activity worsened dramatically and investors sought to move away from risky assets and into risk-free government bonds. That contributed to a sharp decline in the price of risky assets, including equities, and an increase in the prices of government bonds (i.e. a fall in their yields; Graph 4.1). However, the fall in risky asset prices and sharp increase in volatility led to a range of investors needing to raise cash to reduce leverage and meet margin calls, and many investors chose to sell relatively liquid government bonds to do this. Among those selling were investors with leveraged positions that had been directed at trading the bond futures basis, which involves arbitraging small yield differences between cash bonds and futures, as well as between on- and off-the-run bonds (that is, Australian government bonds that are in the highly liquid futures baskets and those that are not).[1]

Graph 4.1

Australian Government Bond Yields



Source: RBA

Bond dealers absorbed these sales of government bonds through this period, but their capacity to undertake further bond trades became stretched as their own balance sheets began to run up against internal risk limits. As a result, dealers' ability to undertake further bond trades and assist the process of price discovery deteriorated, contributing to impaired market liquidity and increasing the cost of transacting in these critical markets. The result was a rise in government bond yields, even as the outlook for economic activity and inflation was worsening. These dynamics played out in Australia and around the world, including in US Treasury markets. Given the critical role that risk-free government bond yields play as financial benchmarks, stress in these markets was transmitted to markets for other financial securities and contributed to the tightening in financial conditions. The effect of the stresses in US Treasury markets was particularly widespread, given their role as a benchmark for a broad range of markets globally.

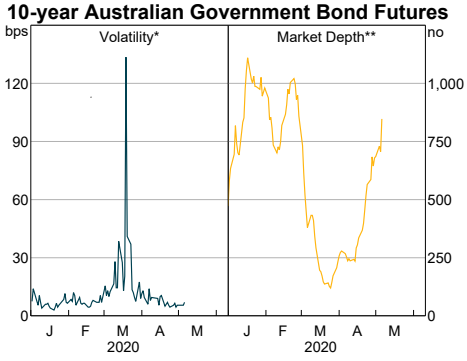
The impairment in government bond markets was evident in a sharp rise in the volatility of yields as well as an associated widening in bid-offer spreads (that is, the difference between the prices offered by market makers to buy and to sell bonds (Graph 4.2; Graph 4.3). Measures of market 'depth' – the volume of bonds that can be bought and sold at the best bid and offer prices – also declined sharply, indicating that it was becoming harder to buy or sell bonds without having a marked effect on their prices. As noted above, the extreme volatility seen in markets had prompted certain leveraged traders to significantly reduce their activity, and these types of traders, in normal circumstances, contribute to the liquidity seen in government bond markets. Accordingly, the bond-futures basis for both 3-year and 10-year AGS increased sharply.

The Reserve Bank is implementing a comprehensive package of policy measures to support the Australian economy

Against this background, over March, the Bank announced a comprehensive package of policy measures to support the Australian economy in the face of the significant disruption to economic activity associated with the COVID-19 outbreak. The package included measures to address the broad-based tightening in financial conditions and significant dislocations in government bond markets. It was aimed at lowering funding costs across the economy and supporting the provision of credit,

Graph 4.2

10-year Australian Government Bond Futures

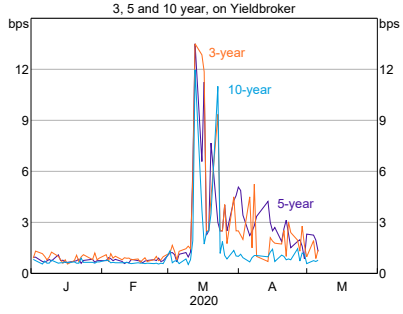


* Intraday range of yield
** Number of top-of-book contracts, 5 day moving average
Source: Bloomberg

Graph 4.3

AGS Bid-Offer Spreads*

3, 5 and 10 year, on Yieldbroker



* Yields with residual maturity between 2.5 and 3.5, 4.5 and 5.5, and 9.5 and 10.5 years
Sources: RBA; Yieldbroker

especially to small and medium-sized businesses. The policy package comprised:

- a cumulative 50 basis point cut in the cash rate to 0.25 per cent
- a target for the yield on 3-year Australian Government Securities (AGS) of around 0.25 per cent
- purchases of government bonds in secondary markets to achieve the yield target and address dislocations in government bond markets
- the Term Funding Facility (TFF) for the banking system, under which authorised deposit-taking institutions (ADIs) have access to funding from the Reserve Bank for three years at 25 basis points, with additional funding available if ADIs increase lending to businesses, especially small and medium-sized businesses
- an increase in the amount and maturity of daily reverse repurchase (repo) operations, to support liquidity in the financial system
- exchange settlement (ES) balances at the Reserve Bank to be remunerated at 10 basis points, rather than zero, to mitigate the cost to the banking system associated with the large increase in banks' ES balances resulting from the above measures
- establishment of a swap line with the US Federal Reserve, to provide up to US$60 billion of US dollar liquidity to market participants in Australia.

The Bank purchased bonds to support the target for the 3-year AGS yield as well as to address market impairment

The Bank commenced government bond purchases in the secondary market on 20 March to support the target for yields on 3-year AGS of around 25 basis points. It also purchased AGS and securities issued by the state and territory central borrowing authorities (known as semi-government securities or semis) to address the impairment in those markets. These purchases have been conducted via a competitive reverse auction process, where the Bank announces which bonds it intends to purchase and the total amount, and asks market participants to submit offers to sell those bonds over a five-minute window.

To date, the Bank has purchased around $50 billion of AGS and semis (in face value) (Table 4.1). The purchases have been spread across maturities of 1 to 10 years. Auctions have been well subscribed, with most bonds having been bought at a higher yield (lower price) compared with prevailing mid-market yields (prices) – that is, at a yield a little above the middle of the bid-ask spread – indicating that the Bank's bond purchases have helped to balance the supply and demand in these markets. In particular, the Bank's bond purchases have helped to alleviate the capacity constraints on bond dealers' balance sheets.

3-year AGS yields declined to the target of around 25 basis points

Immediately following the 19 March policy announcement, the yield on 3-year AGS fell from around 60 basis points to 30 basis points (Graph 4.1). Since then it has declined further, supported by the Bank's bond purchases, and has been consistent with the target of around 25 basis points.

Meanwhile, the yield on 10-year AGS has declined over recent months, consistent with the decline in the Reserve Bank's policy rate and the weaker outlook for economic activity and inflation. The sharp but very short-lived spike in the 10-year yield in mid March reflected low levels of liquidity in government bond markets at that time, as discussed above, and only a limited volume of trades occurred at these higher yields. The yields on 10-year AGS are now above those on 10-year US Treasuries for the first time in two years, following the substantial

Table 4.1: RBA Bond Purchases

20 March to 6 May 2020

	Face value $m
Total AGS	**40,250**
Remaining maturity ≤ 3 years	12,329
Remaining maturity 3 to 6 years	8,942
Remaining maturity 6 to 10 years	18,979
Total Semis	**11,098**
Remaining maturity ≤ 6 years	4,598
Remaining maturity 6 to 10 years	6,500

Source: RBA

decline in US Treasury yields over the past couple of months associated with the US Federal Reserve's policy easing (Graph 4.4).

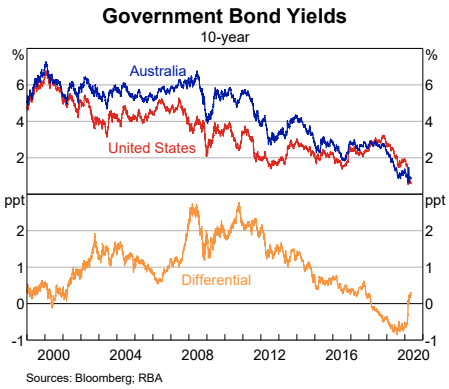
Conditions in government bond markets have improved

In Australia, the Bank's bond purchases have contributed to a significant improvement in market conditions for government bonds. A slight easing in uncertainty, as the rate of spread of COVID-19 slowed, has also played a role. The improvements here have also been observed in other advanced economies.

Much, though not all, of the sharp increase in bid-offer spreads on AGS in the first half of March has been unwound as volatility has declined. The large increase at that time in the bond-futures basis for both 3-year and 10-year AGS has also been largely unwound and market depth has increased from its lows in mid March.

Conditions in the semi-government bond markets have also improved over recent weeks. In particular, bid-offer spreads on semis have declined from their March peaks, although liaison suggests that there is not consistent depth nor breadth of investor interest across maturities (Graph 4.5). Spreads of semis to AGS have also narrowed, to be in line with levels observed over the past few years. Given the decline in AGS yields over recent months, yields on semis are now lower than prior to the outbreak of COVID-19. It should be noted, however, that the Reserve Bank's bond purchases are not directed towards achieving any particular yield or spread for semis.

Graph 4.4



The Bank has adjusted its bond purchases in response to market conditions

The Bank's initial daily auctions in March entailed purchases of $4-5 billion worth of bonds. The extent of the Bank's purchases of government bonds has since been scaled back in response to the achievement of the yield target for 3-year AGS and the improvement in market conditions.

The frequency of auctions has been reduced to several times a week and the amount purchased at individual auctions has also declined (Graph 4.6). Nevertheless, the Bank is prepared to scale-up these purchases again if necessary to achieve the yield target for 3-year AGS and to ensure that government bond markets remain functional.

The Bank increased the liquidity provided to financial institutions

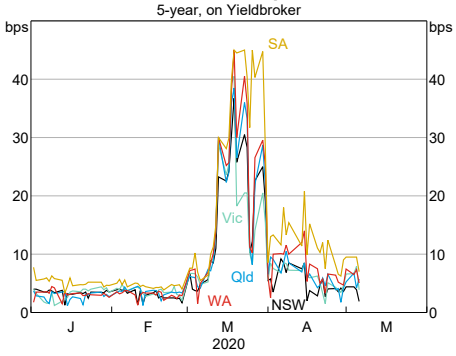
Another important element of the Bank's package of policy measures was to substantially increase the amount and maturity of its daily market operations, in response to the increased demand for liquidity in mid March. These operations provide liquidity to financial institutions via repo operations, in which financial institutions bid for cash in exchange for high-quality collateral over terms determined by the Bank. By the beginning of April, $50 billion of additional liquidity had been provided through repos and the average residual maturity of the Bank's repo book had increased to around 70 days, compared with an average of around one month in recent years. Over April, the size of the Bank's daily market operations declined in response to improved market conditions, reflecting the large amount of liquidity already in the system and reduced demand from the banking system as a whole.[2] The system cash provided as part of the bond purchases and the commencement of the TFF also supported market conditions.

In early May, to assist with the smooth functioning of Australian capital markets the Bank broadened the range of eligible collateral for its daily market operations to include Australian dollar securities issued by non-bank corporations with an investment grade credit rating.

Graph 4.5

Semi Bid-Offer Spreads*

5-year, on Yieldbroker

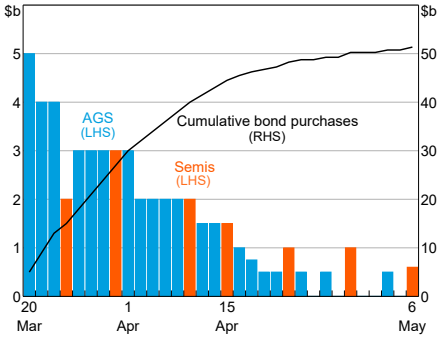


* Yields with residual maturity between 4.5 and 5.5 years

Sources: RBA; Yieldbroker

Graph 4.6

RBA Bond Purchases*



* Face value

Sources: RBA; Yieldbroker

Cash balances in the banking system have increased significantly

The various policy measures announced as part of the March package have contributed to an increase in the Reserve Bank's assets of around $80 billion since February (Graph 4.7). This change largely reflects (the cash value of) the outright purchases of government bonds, as well as an increase in securities held under repo given the increased provision of liquidity in the daily open market operations.[3] The initial draws on the TFF have also made a modest contribution. The increase in assets has been accompanied on the liabilities side by a rise in institutions' balances held in Exchange Settlement (ES) accounts. Balances held in ES accounts are currently around $70 billion higher

than in February, given the usual other flows that affect the Reserve Bank's balance sheet (which include government receipts and payments, including from debt issuance, as well as the sale and return of bank notes and other Reserve Bank transactions).

As a result, the cash rate has declined further and activity in the overnight cash market has declined significantly

In response to the very large rise in cash balances in the banking system, as expected, the cash rate has declined below 25 basis points. It is currently trading at a rate of 14 basis points. This decline has been consistent with the experience of other central banks that have pursued programs that significantly increased cash reserves in the banking system. For many years in Australia, there had been a very strong market convention for overnight cash market transactions to be conducted at the target cash rate.[4] However, given the very high level of ES balances, with most banks' balances well above holdings sufficient for usual payment activities, market participants have now begun to trade below 25 basis points when lending cash overnight.[5] In line with ample system liquidity, activity in the overnight cash market has dropped substantially (Graph 4.8). Indeed, very recently activity dropped on one day below the thresholds required to calculate the published cash rate from actual transactions. In accordance with the published fall-back procedures, the published cash rate on that day was recorded as the last cash rate published based on sufficient transactions (which was from the previous day).[6]

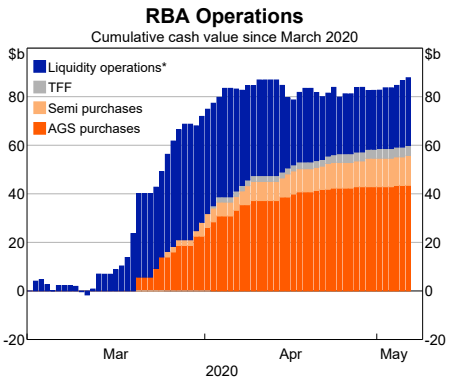
Investors expect the cash rate to remain around its current level for some time

Investors' expectations for the actual cash rate declined below 25 basis points following the Reserve Bank policy announcements on 19 March, consistent with the expected drift lower in the cash rate as described above and the large volume of surplus ES balances in the system (Graph 4.9). Financial market prices covering the year ahead imply that participants expect the cash rate to remain little changed from current levels.

Spreads of money market rates are low

The spread of 3-month bank bill swap rates (BBSW) to overnight indexed swap rates (OIS) increased noticeably in early March, although not to the levels reached in 2018-19 and it remained well below the levels reached during the global financial crisis. This rise in spreads occurred as liquidity conditions deteriorated in

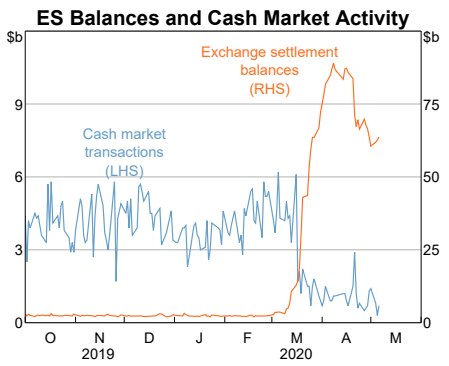
Graph 4.7



* Liquidity injections net of drains and maturities; mainly contracted in OMOs and FX swaps

Source: RBA

Graph 4.8



Source: RBA

the face of escalating concerns about the economic effects of the COVID-19 outbreak (Graph 4.10). Spreads then declined in the weeks following the Board's policy announcement on 19 March. Traded volumes in the BBSW market remained around recent levels throughout this period, although redemptions increased as a share of activity, as investor demand for liquidity increased. Nevertheless, banks have sustained issuance throughout this period as a whole, and the amount of bank bills outstanding is around its level of recent years (Graph 4.11). Ample alternative sources of liquidity for the large banks resulting from the Bank's policy measures, as well as renewed investor demand for liquid bank bills as market functioning has improved and uncertainty eased, has helped to place downward pressure on the BBSW rate in recent weeks. 3-month BBSW has been trading around the level of 3-month OIS rates for the first time in almost a decade.

Repo rates at the Bank's daily open market operations also increased relative to OIS in early March, before declining noticeably following the substantial increase in liquidity provided through these operations. Repo rates are currently a few basis points above OIS. Rates for obtaining Australian dollars in the foreign exchange swap market had risen sharply in early March, but this increase has since unwound.

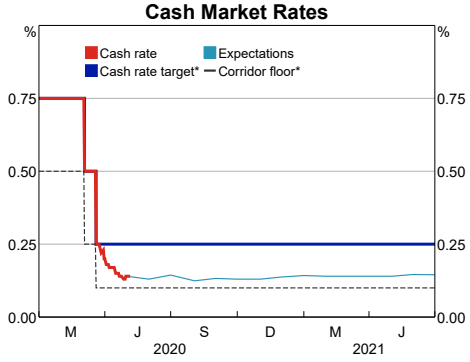
Australian banks have not needed to access US dollar markets to raise funds, due to sizeable issuance around the start of the year. Also, they have access to other, more attractively priced sources of funding, including the TFF.

The TFF is easing pressure on funding costs for ADIs and reducing the need for banks to issue bonds

ADIs have access to three-year funding through the Reserve Bank's TFF at a fixed rate of 25 basis points. This is substantially lower than ADIs' marginal cost of funding around that same maturity. For example, for the major banks the estimated cost of sourcing three-year unsecured

Graph 4.9

Cash Market Rates



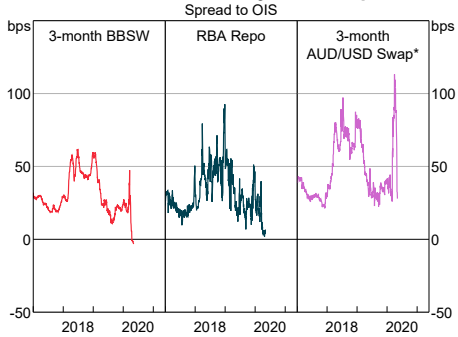
* Assumes unchanged future policy settings

Sources: RBA; Tullet Prebon (Australia) Pty Ltd

Graph 4.10

Australian Dollar Money Market Spreads

Spread to OIS



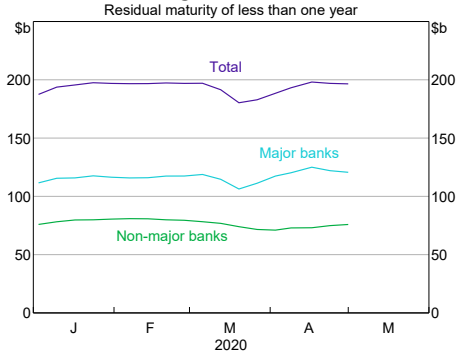
* Implied AUD cost via USD LIBOR funding and Cross-currency Swap

Sources: ASX; Bloomberg; RBA

Graph 4.11

Outstanding Stock of Bank Bills*

Residual maturity of less than one year



* Includes bank accepted bills and negotiable certificates of deposit lodged in Austraclear

Sources: Austraclear; RBA

funding in domestic wholesale debt markets is currently around 1 per cent.

For the banking system as a whole, the initial TFF allocation is sufficient to replace almost all of ADIs' maturing bond funding over the next six months. So far, ADIs have only drawn down around $4 billion, representing 3½ per cent of their aggregate TFF allowances. The size of the facility has increased from $90 billion at its inception to $115 billion in May. This reflects growth of ADIs' lending to business, which increases their allowances under the facility.

While some ADIs are expected to increasingly draw upon their TFF allowances as existing funding matures, term funding needs more generally have been low. Indeed, Australian banks have issued just $8.3 billion of bonds since the end of January, well below issuance over the past few years (Graph 4.12). Local branches of non-resident banks have accounted for more than half of this issuance. Issuance by the major banks in the domestic market was particularly low, with $0.5 billion issued. This is likely to have reflected several factors. As discussed, the TFF has reduced the need for banks to access funding markets. Moreover, strong liquidity positions, helped by strong deposit inflows, and slow balance sheet growth mean that the major banks do not need to issue bonds for some time.

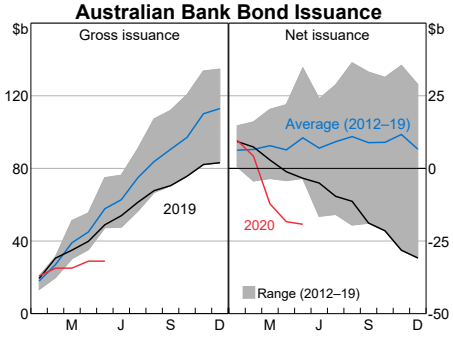
Asset-backed securities markets have been supported by investment from the Government

Issuance of asset-backed securities (ABS) was robust at $1.5 billion in February (Graph 4.13). Since the end of February, however, only one deal has been issued. A number of other residential mortgage-backed securities (RMBS) deals scheduled to be issued in March did not proceed.

On 19 March, the Government announced that the Australian Office of Financial Management (AOFM) will invest up to $15 billion in the warehousing and securitisation market, with the aim of reducing funding costs for small ADIs as well as non-ADIs, who cannot access support through the TFF. The AOFM invested in its first deal in late March and expressed support for upcoming deals with a particular focus on mezzanine tranches. In addition, the AOFM noted that unfavourable market conditions have resulted in distorted pricing in the secondary market for ABS. As a result, it will also purchase existing securities from investors who commit to supporting activity in the primary market.

Graph 4.12

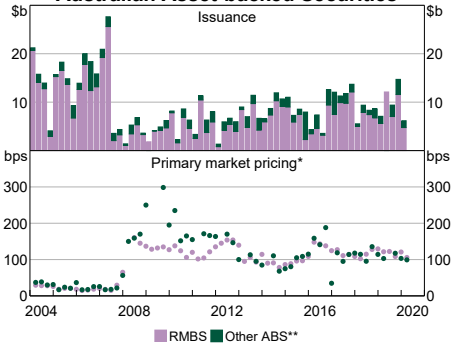
Australian Bank Bond Issuance



Sources: Bloomberg; Private Placement Monitor; RBA

Graph 4.13

Australian Asset-backed Securities



* Face-value weighted quarterly average of the primary market spread to bank bill swap rate for AAA rated notes

** Includes ABS backed by business loans, commercial mortgages, personal loans and car loans

Sources: Bloomberg; KangaNews; RBA

Australian bond markets have been accessed by Kangaroo bond issuers

High-quality non-resident issuers continued to access Australia's debt markets throughout recent months. Since the end of January, $6.5 billion in Kangaroo bonds have been issued in Australia, which is only slightly below the average quarterly issuance over the past decade. Kangaroo bonds are issued in the Australian market by non-resident entities and are denominated in Australian dollars. Approximately half of the issuance was AAA-rated covered bonds issued by Canadian banks, which priced at spreads much wider than other covered bonds issued in the Kangaroo market over recent years (Graph 4.14).

Banks' overall funding costs have declined to historically low levels …

Banks' (non-equity) funding costs are estimated to have declined to historically low levels despite the financial market turbulence since February. Much of the major banks' wholesale debt and deposit costs are ultimately linked (either directly or via hedging) to BBSW rates, which have declined by around 65-70 basis points since the end of February.

Banks have passed through a large share of the recent reductions in the cash rate to retail deposit rates (Graph 4.15). Since May 2019, the major banks are estimated to have lowered the interest rates on at-call retail deposits by an average of 85 to 100 basis points. Several lenders, including the major banks, announced a rise in rates on selected term deposits following the second reduction in the cash rate in March. Notwithstanding this, rates on most new term deposits have fallen substantially over the past year, by around 100 basis points on average. The interest rates on many transaction accounts, which are usually close to zero, have been little changed.

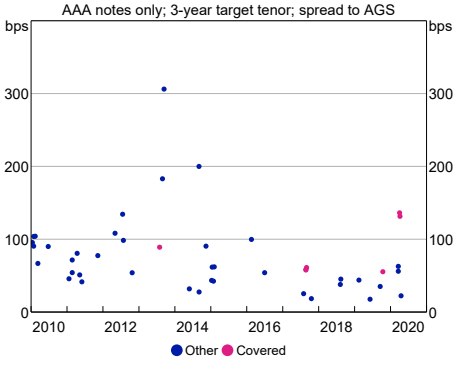
… even though secondary market spreads on bank bonds have widened

Bank bond spreads in secondary markets increased substantially from late February as concerns about the COVID-19 outbreak escalated (Graph 4.16). Spreads declined after the announcement of the various policy responses to the shock in mid March. While spreads remain wider than levels seen in recent years, yields remain low, aided by the decline in yields on 3-year AGS to around 25 basis points. Even so, yields in secondary long-term bond markets do not directly affect bank funding costs because the cost to the banks of a bond is determined at issuance in the primary market.

Graph 4.14

Kangaroo Bond Primary Market Pricing*

AAA notes only; 3-year target tenor; spread to AGS



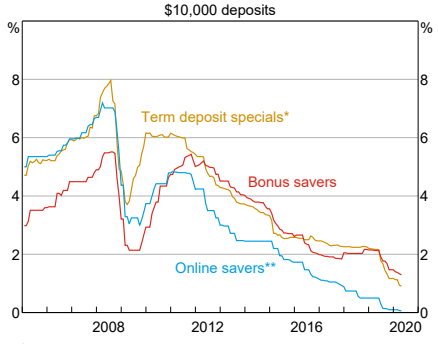
* Excludes spreads that are negative and issuance under $100 million

Sources: Bloomberg; RBA

Graph 4.15

Major Banks' Retail Deposit Rates

$10,000 deposits



* Average of selected terms

** Excludes temporary bonus rates

Sources: Major banks' websites; RBA

Most banks have ample liquidity, including through the Reserve Bank's policy measures, and so they do not need to access bond markets again for a time.

Banks have lowered interest rates for business loans considerably …

Banks have lowered interest rates on small business loans by up to 100 basis points since early March (Graph 4.17). Around 20 basis points of this was announced after the 25 basis point reduction in the cash rate target on 4 March, and a further 80 basis points reduction followed the announcement of the comprehensive package of policy measures on 19 March, including a further 25 basis point cut to the cash rate target. Major banks also lowered interest rates on unsecured loans to small and medium-sized businesses by up to 650 basis points following the government's announcement of the SME Loan Guarantee Scheme (see below). More generally, interest rates on business loans have declined further to be at historically low levels.

… and several initiatives have been announced to support lending to business, especially small and medium enterprises

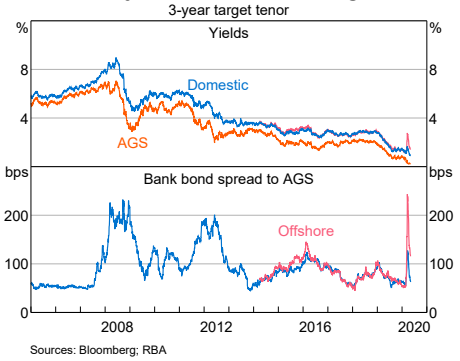
The Reserve Bank, Government, and commercial banks have announced various complementary initiatives aimed at supporting lending to businesses, especially small and medium enterprises (SMEs), in the period ahead:

- ADIs will be able to access at least $90 billion of funding at a fixed rate of 0.25 per cent for three years through the TFF. Additional funding will be available from the Reserve Bank equal to the amount of any net increase in an ADI's lending to large businesses and five times the amount of any increase in their lending to SMEs.
- The Government announced a complementary $40 billion SME Loan Guarantee Scheme, which provides lenders a 50 per cent guarantee on new unsecured loans of up to $250,000 to SMEs that use the funds for working capital.
- The Australian Banking Association announced that small business customers that experience financial hardship due to COVID-19 can request a deferral of payments on their loans for up to six months. Individual banks have also announced additional measures to support small business customers, such as deferrals on credit card payments and temporary increases in overdraft facilities.

Graph 4.16

Major Banks' Bond Pricing

3-year target tenor

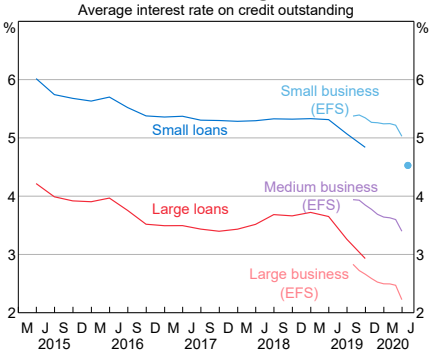


Sources: Bloomberg; RBA

Graph 4.17

Business Lending Rates*

Average interest rate on credit outstanding



* EFS data are to March 2020; dot represents average of announced changes to interest rates on small business loans taking effect in April

Sources: APRA; banks' websites; RBA

Business credit growth increased sharply in March

Lending to businesses increased sharply in March (Graph 4.18). This follows an increase in commitments for new loans in the few months prior to the COVID-19 outbreak and is consistent with businesses drawing on existing credit lines in late March. The application by many businesses to defer loan repayments, the implementation of the Reserve Bank's TFF and the Government's previously announced initiatives, will provide some support to business credit in the coming months. However, businesses that are under significant pressure from the impacts of COVID-19 are likely to be reluctant to take on new loans for some time.

Credit limits available under revolving credit facilities increased in March and the portion of these limits that has been drawn down also increased (Graph 4.19). There may be further increases in credit limits available through revolving credit facilities as businesses arrange such facilities with their lenders. Indeed, a number of ASX-listed companies announced the arrangement of such facilities.

Reports from banks suggest that approximately 20 per cent of SME borrowers have requested, or have automatically been given, deferrals on their loan payments for up to six months. Many have also been provided with an option to extend the maturity of their loans. The bulk of these deferrals started in April. All else equal, this would boost growth in business credit over the next six months by about 4 per cent on a six-month-ended annualised basis. Loans extended under the Government's $40 billion SME loan guarantee scheme will also have a six month payment deferral period.

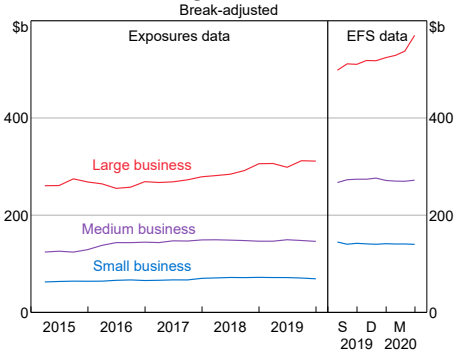
To date, 42 lenders have signed up to the Government's SME loan guarantee scheme, which was announced in late March. The extent to which this scheme supports credit will likely become evident from the April data (available in May); the first release of APRA's new data collection for the SME loan guarantee scheme, which captured lending up to 17 April, suggested that there was a modest take-up to date.

The strong growth in business lending in March contributed to an increase in growth in the broader measure of business debt (Graph 4.20). The volume of syndicated lending remained around recent levels in March. Non-intermediated debt fell in March, reflecting the fact that Australian non-financial businesses have issued few bonds since February.

Graph 4.18

Lending to Business*

Break-adjusted



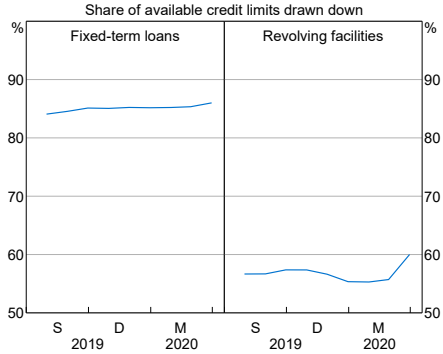
* Exposures data capture credit exposures on the balance sheets of banks allowed by APRA to use an internal ratings-based approach for credit risk management; EFS data are based on reporting of banks and finance companies that have $2 billion or more of business credit

Sources: APRA; RBA

Graph 4.19

Business Credit Limits

Share of available credit limits drawn down



Sources: APRA; RBA

Some non-financial corporations have been able to access offshore funding markets

There has been impairment in secondary markets for non-financial corporate bonds as the COVID-19 outbreak has escalated. Bid-ask spreads have widened and trading has been difficult. These difficulties began around the same time as they arose in other fixed-income markets. However, conditions in Australian non-financial corporate bond markets have been slower to recover than in markets for government bonds and bonds issued by financial institutions, as is generally the case. Nevertheless, a few Australian companies have accessed offshore markets of late (Graph 4.21). In April, $3.5 billion of bonds were issued in offshore markets by several large and well-rated corporations across a range of industries.

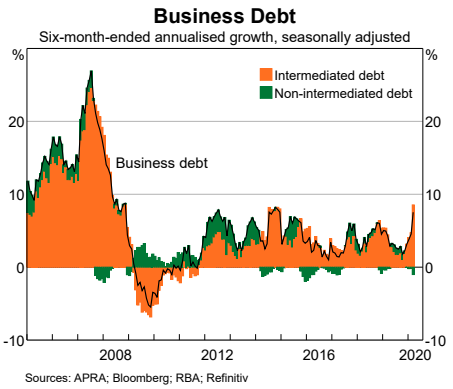
Lenders have lowered housing interest rates …

A large share of the 125 basis points of monetary policy easing since May 2019 has flowed through to the mortgage interest rates paid by households (Graph 4.22; Table 4.2). Standard variable rates (SVRs) have declined by around 90 basis points since May 2019. Interest rates on outstanding variable-rate housing loans have declined by around 100 basis points over that period, reflecting the decline in SVRs, as well as the downward drift due to ongoing competition for new high-quality borrowers and households continuing to switch from interest-only to lower-rate principal-and-interest loans.

Most lenders reduced standard variable rates (SVRs) on housing loans by 25 basis points following the 25 basis point reduction in the cash rate in early March. Only a few lenders decreased SVRs following the second 25 basis point cash rate reduction in mid March. Some lenders have also increased interest rates for new loans with high loan-to-valuation ratios and are scrutinising the loan serviceability of borrowers whose employment prospects have been adversely affected by COVID-19. In response to more difficult funding conditions, some non-ADI lenders have announced higher interest rates for new loans.

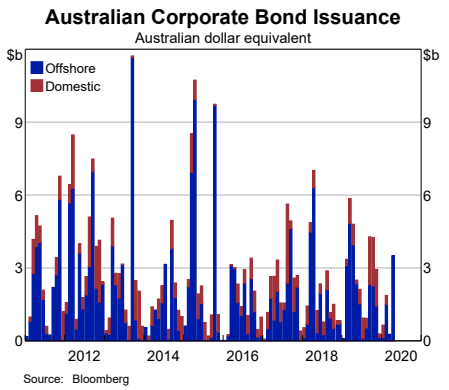
Rates for new fixed-rate housing loans have declined to historically low levels (Graph 4.23). A number of banks, including the major banks, announced substantial reductions in interest rates for new fixed-rate loans following the announcement of the Bank's comprehensive package of policy measures in mid March. Over the past year, the major banks have reduced their advertised 3-year fixed lending rates for owner-occupiers by around 150 basis points. The reduction in fixed interest rates is consistent

Graph 4.20



Sources: APRA; Bloomberg; RBA; Refinitiv

Graph 4.21



Source: Bloomberg

Table 4.2: Average Outstanding Housing Rates

March 2020

	Interest rate Per cent	Change since May 2019 Basis points
Variable rate loans		
– Owner-occupier	3.31	–93
– Investor	3.69	–112
All variable-rate loans	3.45	–100
Fixed-rate loans		
– Owner-occupier	3.68	–
– Investor	3.98	–
By repayment type[(a)]		
– Principal-and-interest	3.40	–86
– Interest-only	4.02	–83

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

Sources: APRA; RBA; Securitisation System

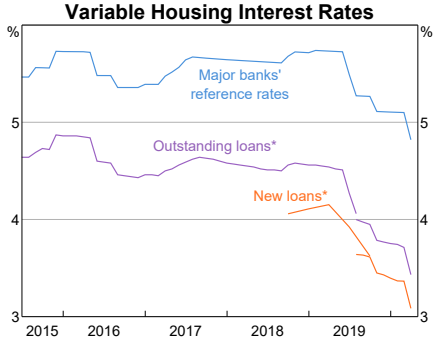
with the decline in fixed interest rates derived from interest rate swaps (the benchmark for pricing fixed-rate loans) and, more recently, the low-cost term funding available via the TFF. Accordingly, the differential between interest rates on new variable-rate loans and fixed-rate loans has widened; on average, new 3-year fixed rates are now around 20-30 basis points below new variable rates.

… and eased loan payment burdens for borrowers

Lenders have announced that customers can defer housing loan payments by up to six months in an effort to support borrowers' cash flows. Two major banks have also announced that customers' scheduled loan payments will be reduced to the minimum required amount; customers of those banks that want to maintain their scheduled loan payments will need to contact their bank to arrange this.

Graph 4.22

Variable Housing Interest Rates



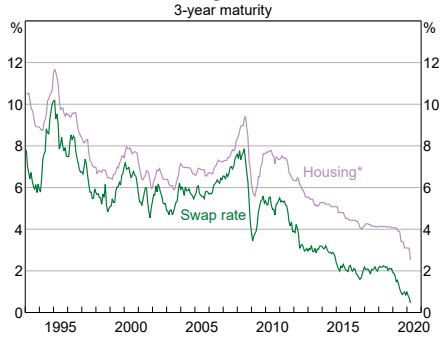
* Series break in July 2019; thereafter, data based on EFS collection

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

Graph 4.23

Fixed Housing Interest Rates

3-year maturity



* Available to owner-occupiers

Sources: Banks' websites; Bloomberg; CANSTAR; RBA

In March, housing loan payments remained around the levels of recent months (Graph 4.24). The recently announced reductions in housing loan interest rates are likely to have flowed through to borrowers in April. Major banks have reported that around 9 per cent of borrowers have applied to defer their loan payments for up to six months, with effect from April. By itself, this would tend to push up housing credit growth by around ½ percentage point in year-ended terms over the next six months. Bank liaison indicates that some households have been accessing funds in available redraw or offset accounts to help support their cash flows. This will also reduce total loan repayments and contribute to stronger credit growth.[7] At the same time, and working in the other direction, bank liaison suggests that at this stage, on balance, borrowers have been making additional payments. They may be doing this for precautionary reasons or merely because their other opportunities for spending have been curtailed.

Demand for mortgages is expected to decline

Housing loan commitments (excluding refinancing) have been little changed in recent months, but remain above the May 2019 trough (Graph 4.25). More timely indicators of housing market activity, including auction clearance rates and housing turnover, suggest that commitments will decline in coming months. This would also be consistent with the sharp decline in economic activity and incomes.

Notwithstanding the recent decline in commitments, borrowers appear to be taking advantage of the very low level of housing interest rates. Housing loan commitments for refinancing have increased sharply since mid 2019. This largely reflects refinancing by owner-occupiers, though refinancing by investors has also risen over this period.

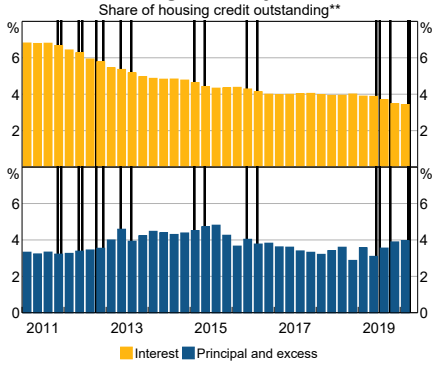
Total credit growth increased in March, but is likely to decline in the period ahead

Total credit growth jumped to 5¼ per cent on a six-month-ended annualised basis in March, up from 3½ per cent in February (Graph 4.26; Table 4.3). The increase was driven by the strong growth in lending to businesses, which increased by 10¾ per cent on a six-month-ended annualised basis, up from 5½ per cent in the month prior. The sharp increase in broad money indicates that businesses increased their holdings of deposits at the same time. Growth in housing credit extended to owner-occupiers has remained steady at around 5½ per cent on a six-

Graph 4.24

Housing Loan Payments*

Share of housing credit outstanding**



* Seasonally adjusted and break-adjusted; vertical lines show cash rate cuts

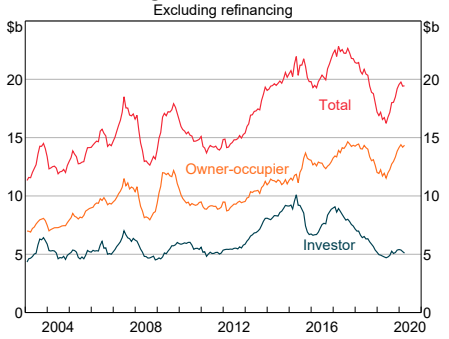
** Annualised quarterly observations

Sources: APRA; RBA

Graph 4.25

Housing Loan Commitments*

Excluding refinancing



* Seasonally adjusted

Sources: ABS; RBA

Table 4.3: Financial Aggregates

Percentage change[(a)]

	Three-month annualised		Six-month annualised	
	Dec 2019	Mar 2020	Sep 2019	Mar 2020
Total credit	2.8	7.7	2.0	5.2
– Household	2.8	2.3	2.1	2.6
– Housing	3.6	3.6	2.7	3.6
– Owner-occupier	5.7	5.6	4.7	5.7
– Investor	–0.1	0.0	–0.6	–0.1
– Personal	–6.2	–9.5	–5.1	–7.9
– Business	2.7	19.3	2.1	10.7
Broad money	4.7	14.7	3.1	9.6

(a) Seasonally-adjusted and break-adjusted

Sources: ABS; APRA; RBA

month-ended annualised basis in recent months, up from 4½ per cent in mid 2019. The stock of investor housing credit was little changed, after declining for much of 2019. Personal credit declined by 8 per cent on a six-month-ended annualised basis in March. This was a faster rate of decline from that seen in recent years and is consistent with the decline in economic activity after measures were introduced to contain the virus.

In the coming months, the sharp decline in economic activity and difficulties facing many businesses and households in sectors most affected by measures to contain COVID-19 are likely to dampen the overall demand for credit.

Australian equity prices declined sharply and have been extremely volatile

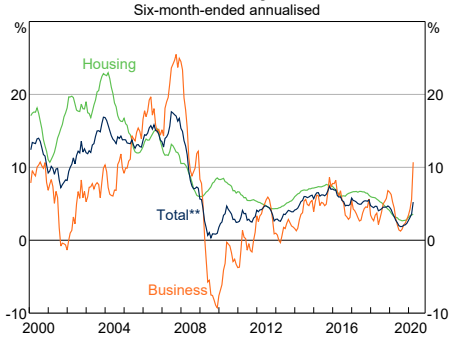
The ASX 200 is around 25 per cent below its mid February peak as a result of the COVID-19 shock. Australian share prices fell very sharply from mid February, as the COVID-19 pandemic escalated, before recovering somewhat since late March (Graph 4.27). Australian equity prices have moved broadly in line with those overseas. Average absolute daily market volatility in March surpassed the levels seen during the Global Financial Crisis (Graph 4.28). It has since declined but remains elevated.

Financial companies underperformed the broader market, including because of guidance from the Australian Prudential Regulation Authority (APRA) that banks' and insurers' dividend policies should be consistent with their financial situation (Graph 4.29). Prices in the resources sector have declined by around 20 per cent, following a drop in global oil prices and weakening demand. Prices in the 'other' sector are also around 20 per cent below their level in mid February. Equity prices of firms in

Graph 4.26

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

the industrials and consumer discretionary industries continued to weigh on the 'other' sector as social distancing rules have led to businesses temporarily or permanently closing down (Graph 4.30). Government regulations specifying that property owners should also share the impact of COVID-19 with their tenants has added to further falls in the real estate sector.

Listed companies' earnings increased over the year to the December-half, although uncertainty about the future is high

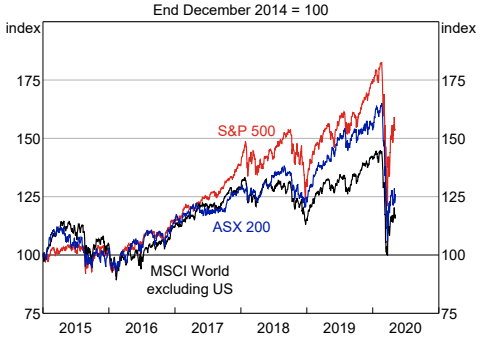
Profits for the December-half were generally higher than a year ago, driven by profits from the resources and the 'other' sector (Graph 4.31).

Uncertainty about the effects of the COVID-19 outbreak was commonly cited as a reason for lower expected earnings for the remainder of 2019/20 in half-year results and trading updates. More recently, many firms have chosen to withdraw their guidance on earnings and have cancelled or postponed interim and future dividends in response to the COVID-19 crisis. Many have also taken out additional bank facilities, and some have completed capital raisings, at significant discounts to their current price. Analysts have

Graph 4.27

Total Return Indices

End December 2014 = 100

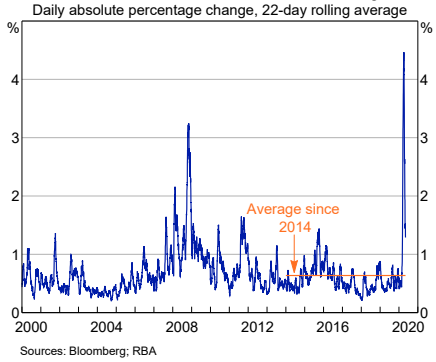


Source: Refinitiv

Graph 4.28

Australian Share Market Volatility

Daily absolute percentage change, 22-day rolling average

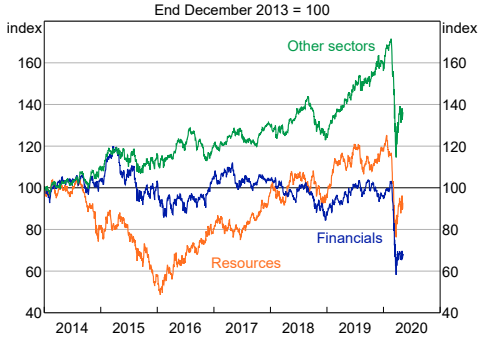


Sources: Bloomberg; RBA

Graph 4.29

Australian Share Prices

End December 2013 = 100

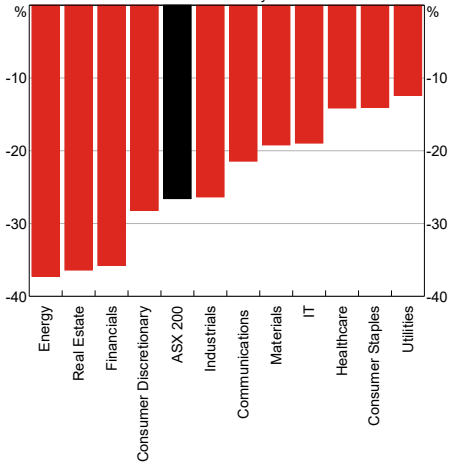


Source: Bloomberg

Graph 4.30

Change in Equity Prices by Sector

Since 19 February 2020



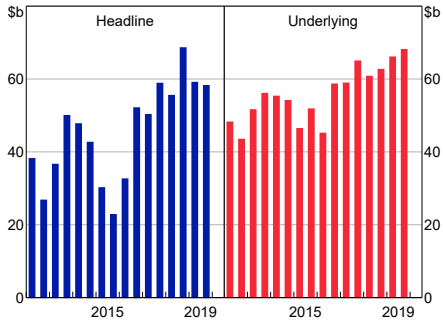
Source: Bloomberg

downgraded future earnings expectations across resources and non-resources sectors.

Graph 4.31

ASX 200 Profits*

Semi-annual



* Results for companies with reporting dates in the half are rolled forward

Sources: Bloomberg; Company reports; Morningstar; RBA

Endnotes

[1] The bond futures basis measures the difference between the yield on a bond futures contract and the current yield on the bonds underlying the contract, plus the cost of financing the bonds via repo until the futures expiry. In a well-functioning market, arbitrage between these two activities should largely eliminate this basis.

[2] Liquidity operations also declined in the second half of April as no new Australian dollar-denominated foreign exchange swaps were contracted and existing positions expired. This was consistent with the substantial rise in liquidity through other parts of the program.

[3] The cash value of a bond (that is, the price paid) will be greater than the face value of the bond when the bond's coupon rate is above the bond's yield.

[4] This was supported by the Reserve Bank conducting open market operations to achieve a level of ES balances it assessed that financial institutions would need to meet their end-of-day settlement requirements. It was also supported by the Reserve Bank's corridor system for the cash rate: the Reserve Bank stands ready to lend cash overnight to financial institutions at an interest rate that is 25 basis points above the target cash rate and to pay interest on ES balances held with the Reserve Bank overnight at a rate that was 25 basis points below the target cash rate. Now the rate paid on balances held overnight is 15 basis points below the target cash rate.

[5] The 10 basis points of interest paid by the Reserve Bank on surplus ES balances provides a lower bound for the cash rate given that banks have no incentive to lend cash overnight on an unsecured basis at a rate below this.

[6] See https://www.rba.gov.au/mkt-operations/resources/cash-rate-methodology/expert-judgement.html Available at <https://www.rba.gov.au/mkt-operations/resources/cash-rate-methodology/expert-judgement.html>.

[7] Around 60 per cent of customers have less than six months of funds available in redraw or offset accounts to meet future scheduled payments.

5. Inflation

Inflation increased a little over the year to the March quarter …

Headline inflation increased to 2.2 per cent over the year to March, despite a large fall in automotive fuel prices in the quarter (Table 5.1; Graph 5.1). Trimmed mean inflation was 0.5 per cent in the quarter and 1.8 per cent over the year (Graph 5.2). The March quarter outcomes were slightly higher than forecast in the February *Statement on Monetary Policy*. As expected, the summer bushfires did not have a major impact on CPI inflation in the March quarter. However, the various international travel bans in place from January and social distancing measures in place from mid March did affect some parts of the CPI basket during the quarter. In particular, there were strong price increases for products subject to COVID-19-related stockpiling behaviour such as rice, pasta and personal care products.

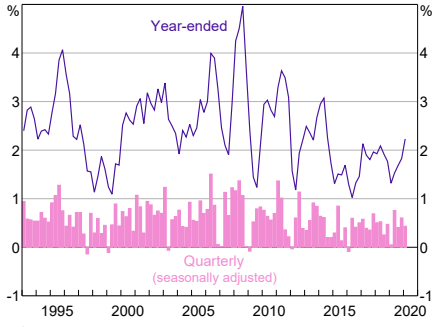
… but inflation will be lower in the near term due to COVID-19

The outbreak of COVID-19 and the related containment measures will reduce inflation in the near term. A sharp drop in demand for some goods and services will lead to lower inflation for many components of the CPI such as fuel and rents. A number of government policies will lead to temporarily lower prices for some services, most notably child care has been made temporarily free (see 'Outlook' chapter for more details). At the same time, supply chain disruptions, the slightly lower exchange rate and increased demand for essential goods during the containment period will put upward pressure on some prices.

There will be practical challenges to measuring inflation during the containment period. Typically, the ABS collects prices using a combination of in-person price collection, telephone interviews, online price collection and administered data sources. Following the

Graph 5.1

Consumer Price Inflation*

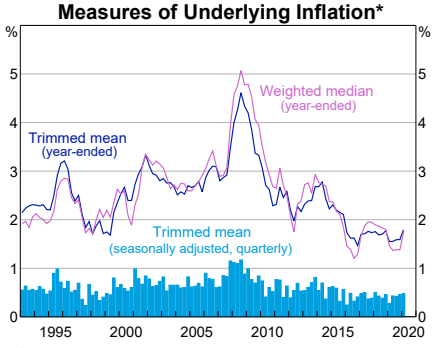


* Excludes interest charges prior to the September quarter 1998; adjusted for the tax changes of 1999–2000

Sources: ABS; RBA

Graph 5.2

Measures of Underlying Inflation*



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

Sources: ABS; RBA

Table 5.1: Measures of Consumer Price Inflation

Per cent

	Quarterly[(a)]		Year-ended[(b)]	
	March quarter 2020	December quarter 2019	March quarter 2020	December quarter 2019
Consumer Price Index	0.3	0.7	2.2	1.8
Seasonally adjusted CPI	0.4	0.6	–	–
– Tradables	0.1	0.5	2.1	1.7
– Tradables (excl volatile items)[(c)]	0.6	–0.1	1.6	1.3
– Non-tradables	0.6	0.7	2.3	2.0
Selected underlying measures				
Trimmed mean	0.5	0.5	1.8	1.6
Weighted median	0.5	0.4	1.7	1.3
CPI excl volatile items[(c)]	0.6	0.4	2.1	1.7

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

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

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

Sources: ABS; RBA

introduction of social distancing measures in mid March, the ABS stopped collecting prices in person and has shifted, where possible, to collecting prices using online data and telephone interviews.[1] However, only a small number of prices will be affected by this change as less than two per cent of the CPI basket was previously collected in person. In addition to challenges in data collection, social distancing measures could result in some items no longer being transacted for some time, which means there is no 'price' to measure. Items for which prices are likely to be unavailable include international airfares and some sporting and cultural events. The ABS will construct price estimates for any items where prices cannot be collected, using prices for similar products where possible, or by imputation methods.[2]

COVID-19 containment measures are also affecting consumer spending patterns. For example, travel restrictions are likely to result in consumers spending more on home entertainment and groceries instead of purchasing international holidays and dining out. Because the CPI is based on a fixed basket of goods and services (representing the things that households typically buy), the weights applied to the most affected categories will not reflect these large changes in spending patterns. This may mean care will need to be taken when interpreting the trends in aggregate CPI measures.

Oil price declines are putting downward pressure on fuel prices

The sharp decline in oil prices earlier in the year led to a 6 per cent decline in automotive fuel prices in the March quarter (Graph 5.3). These declines have continued into the June quarter as COVID-19 containment measures have suppressed global demand for oil. At current levels, automotive fuel prices are expected to subtract one percentage point from headline CPI in the June quarter. If the decline in oil prices is sustained, lower fuel prices may put downward pressure on prices more broadly by reducing businesses' transport costs.

New government policies to support households will reduce inflation

A number of recent government policy decisions in response to the COVID-19 pandemic will have a significant impact on consumer prices over the coming year. The most significant of these for the CPI is the introduction of free child care services from early April to end June. Preschool fees have also been temporarily waived in New South Wales and Victoria. These changes are expected to reduce CPI inflation by around 1½ percentage points in the June quarter, followed by a large rebound in prices once the policies end.

A number of state governments have announced price freezes for state-administered charges until 2021. These freezes, along with delays in the finalisation of government budgets, are likely to lead to property rates, motor vehicle-related charges and public transport fares remaining steady throughout most of the year.

Private health insurance premiums had been scheduled to increase by 2.9 per cent in April. However, most private health insurers have deferred these increases for at least six months, which will lead to lower medical & hospital services inflation in the June quarter.

Housing inflation increased a little in March but could slow in coming quarters

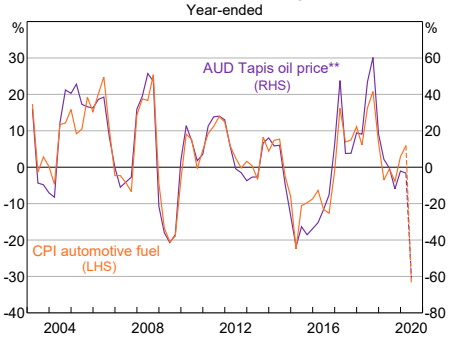
Housing-related inflation increased a little in the March quarter but remained around historical lows. Rent inflation remained around its lowest rate since the series began, although leading indicators such as newly advertised rents had started to increase in early 2020 (Graph 5.4). However, from mid March, the supply of rental properties started to increase; the introduction of travel restrictions encouraged some landlords who were previously supplying short-term holiday accommodation to instead put their properties on the longer-term rental market. The deterioration in labour market conditions during March is likely to have reduced demand for rental properties. State governments have introduced new mechanisms to enable tenants who have become unemployed or lost income due to COVID-19 to negotiate rent reductions. Information from liaison contacts in the real estate industry suggests that rents have already been reduced for a small number of tenants. Rent reductions for existing tenancies will directly reduce measured rent inflation because the CPI captures rents paid on the stock of existing rental properties.

New dwelling prices rose for the second consecutive quarter in March. Increased

Graph 5.3

Fuel and Australian Dollar Tapis Oil Prices*

Year-ended



* June quarter 2020 figures are estimates constructed using prices for April and early May

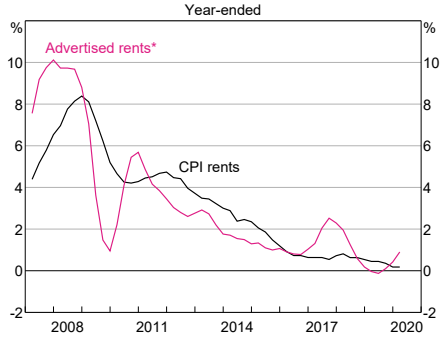
** Australian dollars per barrel

Sources: ABS; RBA

Graph 5.4

Rent Inflation

Year-ended



* Capital cities; hedonic three-month average

Sources: ABS; CoreLogic; RBA

demand for new housing in early 2020 had allowed builders to pass on higher input costs to base prices, while bonus offers and purchase incentives had become less prevalent (Graph 5.5). Going forward, increased import prices due to supply disruptions in other economies and the recent depreciation of the exchange rate could lead to further increases in building material costs over the next couple of quarters. However, leading indicators suggest that demand for newly built dwellings is likely to remain weak for some time; this will limit the degree to which builders can pass higher input costs through to final prices.

Utilities prices increased modestly in the March quarter, driven by a rise in electricity prices as a result of a scheduled increase in the Victorian Default Offer (Graph 5.6). The Victorian Default Offer, which covers all standing offer customers in Victoria, was increased by 7.8 per cent in January. Market offer electricity prices in Victoria also increased in the quarter. Despite these increases, utilities inflation has been subdued for the past year and is likely to remain low for some time. Wholesale electricity prices have declined in most states since early 2019 because renewable energy projects have increased generation capacity. Wholesale gas prices have also fallen in recent months alongside lower international prices. The Australian Capital Territory, Northern Territory, Tasmanian and Western Australian governments have also announced utility-price freezes until 2021 and additional utilities rebates have been introduced in several states.

Market services inflation was little changed in the March quarter

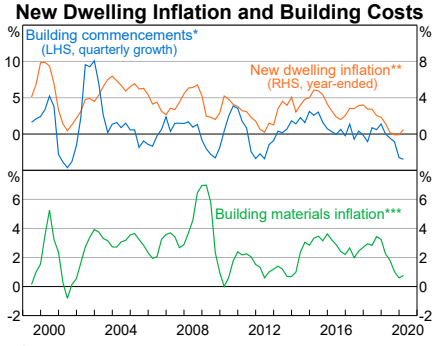
Market services inflation, which includes household services such as hairdressing, as well as financial services and meals out & takeaway, was steady in the March quarter (Graph 5.7). Low labour cost growth has constrained market services inflation in recent years; labour costs account for around two-fifths of final prices for market services. Early evidence from other advanced economies suggests that market services inflation is likely to remain subdued for some time as social distancing measures suppress demand for household services and meals out & take away.

The impact of COVID-19 on retail prices will be mixed

Retail prices increased in the March quarter. Prices for non-durable household goods such as toilet paper and cleaning products rose strongly;

Graph 5.5

New Dwelling Inflation and Building Costs

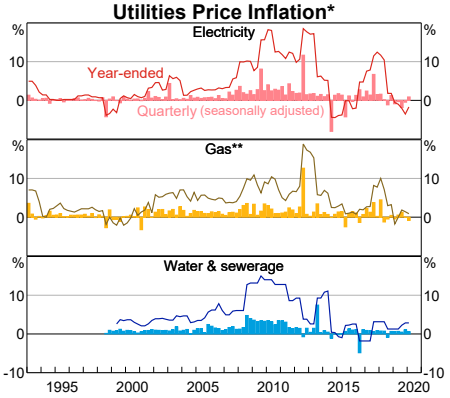


* Volumes; six-quarter average lagged by one quarter; detached only prior to 2017; thereafter attached included with a 20 per cent weight
** Adjusted for the tax changes of 1999–2000
*** Year-ended change in producer prices for inputs to house construction

Sources: ABS; RBA

Graph 5.6

Utilities Price Inflation*



* Adjusted for the tax changes of 1999–2000
** Includes other household fuels

Sources: ABS; RBA

some supermarkets stopped discounting on the back of increased demand for these items as households prepared for an anticipated period of social distancing. In contrast, prices for motor vehicles and furniture declined (Graph 5.8). Motor vehicle prices typically rise in the March quarter as new models are introduced at higher prices. However, fewer new models were introduced this year, resulting in measured price falls.

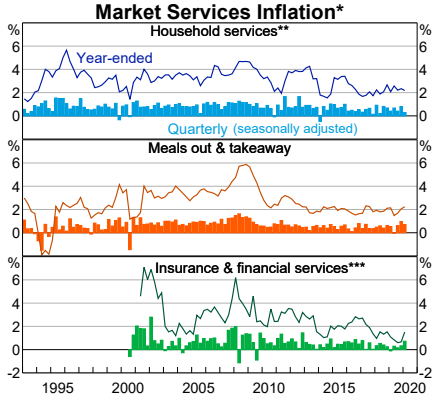
Food prices increased in the March quarter owing to supply disruptions from the drought and bushfires, and strong demand from consumer stockpiling late in the quarter (Graph 5.9). Price rises were particularly noticeable for cereal products, such as pasta and rice. Meat prices remained high in the quarter as improved rainfall conditions early in the quarter induced some farmers to restock, reducing the supply of meat. Liaison reports indicate that supply chain disruptions put some upward pressure on prices for food towards the end of the March quarter. Most food sold in Australia is produced domestically, however, so international supply chain disruptions resulting from COVID-19 containment measures are likely to add only a little to ongoing food price pressures.

Inflation expectations have declined since the outbreak of COVID-19

Wage- and price-setting behaviour can be affected by expectations about the future rate of inflation. Both unions and market economists have revised down their inflation expectations for the remainder of 2020, with unions expecting inflation to remain well below 2 per cent in June 2021 (Graph 5.10). The share of households expecting prices to rise over the next year is now at its lowest level since 2008. Long-term survey-based measures of inflation expectations are little changed around 2-2½ per cent and remain consistent with the Bank's medium-term inflation target.

Graph 5.7

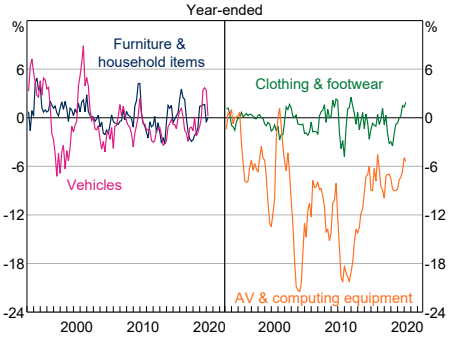
Market Services Inflation*



* Adjusted for the tax changes of 1999–2000
** Includes home cleaning, vehicle repairs, hairdressing, veterinary services, sports and leisure services
*** Excludes deposit & loans to June quarter 2011
Sources: ABS; RBA

Graph 5.8

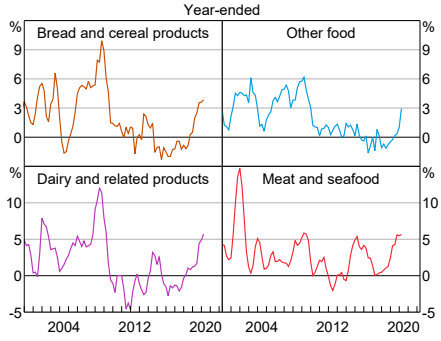
Consumer Durables Price Inflation*



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

Graph 5.9

Food Price Inflation*



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

Both short- and long-term market-based measures of inflation expectations have declined since the widespread outbreak of COVID-19 in early 2020; however, it is difficult to interpret the magnitude of these declines because functioning in these markets has been significantly impaired recently.

Wages growth was subdued ahead of COVID-19

The wage price index (WPI) grew by 2.2 per cent over 2019. Wages growth was lower in most industries than it had been one year earlier. Liaison evidence had continued to suggest that there was little upward pressure on wages into early 2020, with businesses reluctant to add to their permanent cost base. In lieu of increasing wages growth, some businesses were using bonuses or other allowances to retain staff and reward performance. Consistent with this, broader measures of wages had been growing at a faster pace than the WPI (Graph 5.11).

Early evidence suggests that wages growth will slow due to COVID-19

Survey evidence and payroll data show that the containment measures associated with the COVID-19 pandemic have led many businesses to reduce their labour costs. A lot of the adjustment to date has been through a reduction in hours and the number of employees (see 'Domestic Economic Conditions' chapter).

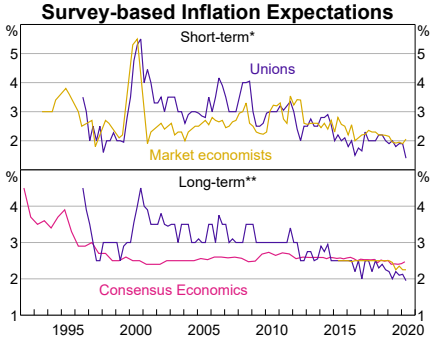
Temporary changes have been made to the *Fair Work Act 2009* to support the JobKeeper wage subsidy program by allowing employers to reduce the hours and to vary the work locations and responsibilities of employees receiving the JobKeeper Payment. Similar provisions have also been inserted into some modern awards by the Fair Work Commission (FWC).

The JobKeeper program will support employee earnings by reducing job losses. The program also provides a wage floor for eligible employees that will increase income in the near term for lower-paid employees and limit the decline in income for those who have had their hours reduced or been stood down.[3] In the most-affected industries, a little over half of employees would have their usual wage income more than replaced under the JobKeeper program (Graph 5.12).

The ABS payroll data show that the decline in total weekly wages paid to all employees was a similar magnitude to the decline in jobs since mid March. As a result, average weekly earnings declined only a little over the period. But compositional effects are likely to mask any

Graph 5.10

Survey-based Inflation Expectations



* Over the year ahead

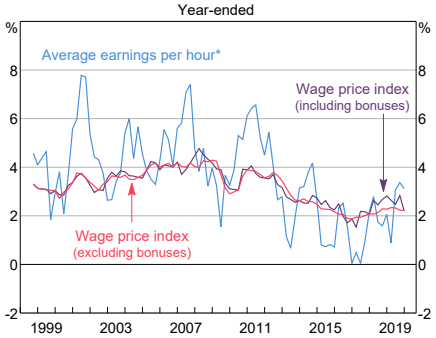
** Average over the next five to ten years for market economists and unions; average over six to ten years in the future for Consensus

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

Graph 5.11

Labour Income Growth

Year-ended



* Non-farm

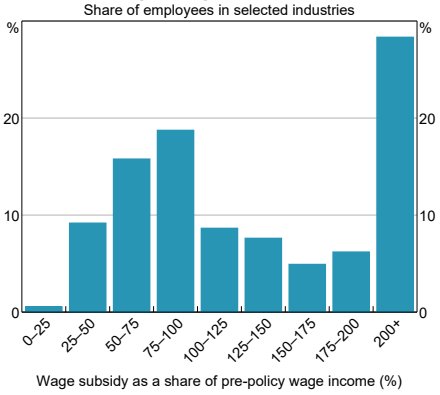
Source: ABS

decline in average weekly wages of those who remained in work because job losses have been more prevalent in lower-paid industries such as accommodation & food services and arts & recreation. In some industries such as finance, weekly wages have declined much more than jobs, suggesting more of the adjustment has come through a reduction in either hours worked or wages than through job losses (Graph 5.13).

Graph 5.12

JobKeeper Replacement Rates*

Share of employees in selected industries



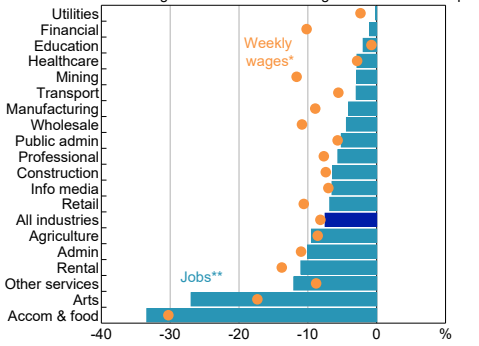
* Selected industries are store-based retail (excl food and fuel), arts & recreation, accommodation & food services and other services

Sources: HILDA 18; RBA

Graph 5.13

Jobs and Weekly Wages by Industry

Per cent change between weeks ending 14 March and 18 April



* Total value of wages for all employees during the reference week

** Number of jobs where a payment was made during the reference week

Source: ABS

Liaison information suggests a widespread increase in wage freezes across businesses affected by COVID-19. The Australian Government deferred agreed pay increases scheduled in the 12 months from 14 April by 6 months for Australian Public Service employees; there will be some catch up in wages growth for affected employees at the end of the deferral period. There have also been some reports of wage cuts, with very senior staff being more affected. So far, wage cuts are mostly temporary and do not appear to be widespread.

The industries most affected by COVID-19 and related social distancing have a relatively high share of employees paid according to awards and collective agreements. Wages growth in these industries has been supported in recent years by FWC award wage decisions that have delivered above-average wages growth. As a result, the gap in wage rates between enterprise agreements and the relevant award has compressed for many employees and some businesses have shifted away from enterprise agreements to the award, or explicitly tied future wage increases to FWC decisions.

The uncertainty around the COVID-19 pandemic has meant that FWC has delayed its annual wage determination for 2019/20 until June. A key input to the FWC's deliberations is the evidence on the effects of minimum wages on employment. In recent decisions, the FWC's assessment has been that modest changes to award wages have not had a noticeable adverse effect on employment. However, during the economic slowdown in 2009, the Australian Fair Pay Commission (the predecessor to the FWC) decided to freeze the federal award wage rates, citing a reduction in the ability of employers to offer sufficient work during that period.

Endnotes

[1] The ABS released a note on the impact of COVID-19 on the CPI in the March quarter CPI release: <abs.gov.au/ausstats/abs@.nsf/Latestproducts/6401.0Main%20Features4March%202020?opendocument&tabname=Summary&prodno=6401.0&issue=March%202020&num=&view=>

[2] Where there are no similar products available, the ABS has two main options for estimating prices. It could estimate a quarterly price change for each category based on historical price changes in that category. Alternatively, an estimate could be constructed using a weighted average of all available prices in the CPI in the quarter. Using the average of all other prices ensures that any missing categories do not affect measured headline inflation. The ABS is yet to announce which approach it will adopt.

[3] The JobKeeper wage subsidy introduces a range of definitional complications for measures of wages growth and it is as yet unclear how the wage subsidy will be treated in the WPI. These decisions will have a material effect on measured wages growth, and may mean that measures reflect changes in the business costs of wages or wages as income, but obscure changes to agreed hourly wages while the JobKeeper program is in place.

6. Economic Outlook

The outlook for the Australian and global economies is being driven by the COVID-19 pandemic. The necessary social distancing restrictions and other containment measures that have been in place to control the virus have resulted in a significant contraction in economic activity, but economic conditions will improve as the pandemic is brought under control and containment measures are relaxed.

Global GDP is expected to fall sharply in the first half of 2020. The declines in the March quarter were driven by a contraction in Chinese and euro area activity as well as the rollout of containment measures elsewhere late in the quarter. A further fall in global GDP is expected in the June quarter, with many countries expected to record quarterly declines in GDP. The global outlook is discussed in more detail in the 'International Economic Conditions' chapter.

The Australian economy is expected to record a contraction in GDP of around 10 per cent over the first half of 2020; total hours worked are expected to decline by around 20 per cent and the unemployment rate is forecast to rise to around 10 per cent in the June quarter. Headline inflation is expected to be negative in the June quarter largely as a result of lower fuel prices and free child care; underlying inflation is expected to decline notably.

Beyond the first half of 2020, the outlook for the domestic economy depends on how long social distancing remains in place and its effects on economic activity. Other factors include how long uncertainty and diminished confidence weigh on households' and businesses' spending, hiring and investment plans. The initial phase of the recovery is likely to be primarily driven by the easing in restrictions, which will lead to an improvement in employment outcomes as businesses re-open, as well as a pick-up in household spending. In the latter part of the forecast period, business investment decisions will more strongly shape the recovery. It is difficult to be precise about the magnitude and timing of these effects, so it makes sense to think in terms of scenarios.

A plausible baseline scenario is that the various restrictions are progressively relaxed in coming months and are mostly removed by the end of September, except for some restrictions such as international travel. If this occurs, and the spread of the virus in Australia remains limited, GDP growth is likely to turn around in the September quarter and the recovery would strengthen from there.

A stronger economic recovery is possible, however, if further gains in controlling the virus are achieved in the near term, allowing most containment measures to be phased out over coming months and with more limited damage to business and household confidence and balance sheets. In this scenario, much of the near-term decline in GDP growth and the rise in the unemployment rate would be reversed over the next few years.

On the other hand, it is also possible that the outbreak persists for longer than expected or flares up again, which would see mandated

restrictions on domestic activity eased more gradually, international travel restrictions in place well into next year, and prolonged precautionary behaviour. In this scenario, the recovery in GDP would be delayed and there would be more lasting effects on household and business balance sheets, as well as damage to employment and supplier relationships as jobs are lost and businesses fail.

Domestic output and employment have fallen significantly

The peak-to-trough decline in GDP is expected to be around 10 per cent, mostly concentrated in the June quarter. The decline in activity in the June quarter is expected to be the largest in the history of the quarterly national accounts. The initial contraction in activity has been driven by necessary public health measures rather than the economic and financial developments that are typically involved in sparking economic downturns, so the speed and shape of the recovery could differ from the experience in the past.

The near-term outlook assumes that, despite the relaxation of some measures, many domestic containment measures remain in place for much of the June quarter. International border closures are likely to be in place for an extended period. These assumptions are consistent with the available information at the time of publication. Based on these assumptions and the available evidence from a broad range of indicators, likely economic outcomes for the first half of 2020 are coming into focus.

Household consumption is forecast to decline by around 15 per cent in the June quarter. Reduced spending due to social distancing measures accounts for over half the decline; the decline in international travel also subtracts from consumption, although much of its effect on GDP is offset by lower imports. Because of social distancing restrictions and precautionary behaviour, household consumption is expected to decline by more than household income, which will be supplemented by increased social assistance payments, and the saving rate is expected to increase sharply.

Dwelling investment and business investment are also expected to contract in the June quarter. The fall in non-mining machinery & equipment investment is expected to be particularly sharp, as firms seek to preserve cash flow in response to the actual and expected falls in private demand.

Almost all the fiscal stimulus that has been announced to date is in the form of transfers to households and businesses which will not contribute directly to public demand in the national accounts. Nevertheless, public demand is expected to grow quite strongly in the June quarter, driven by a temporary expansion of some government services such as health and aged care. These expenses are expected to boost public consumption. The level of public investment is expected to be broadly steady in the near term. Beyond the June quarter, the outlook for public demand is broadly unchanged from the February *Statement on Monetary Policy*; a formal update of spending intentions by state and federal governments will be undertaken when the delayed budgets are released in October.

Service exports are expected to have dropped sharply in the March quarter, and again in the June quarter, as a result of successive waves of travel restrictions. To date, there have been no reports of material disruptions to resource exports as a result of COVID-19. The large drop in domestic demand is also expected to see a large decline in import volumes.

It is estimated that total hours worked will decline by around 20 per cent in the June quarter. Some of this adjustment will happen through people losing their jobs, but a significant part of the adjustment will happen through people retaining their jobs, but working

fewer hours. Hours worked are likely to have declined across all industries, but the decline will be most acute in hospitality, entertainment and tourism-related industries and for casual workers. The decline in hours worked is likely to be larger than the decline in output during the next six months. This is because output in higher productivity industries such as mining and utilities is expected to be relatively less affected. However, there is much uncertainty around productivity outcomes in other areas of the economy, given the shift to working remotely.

The total hours lost during the June quarter will be associated with both large-scale job losses and a large decline in the average hours worked of other workers (Graph 6.1). The introduction of the JobKeeper Payment has significantly reduced the number of job losses that would otherwise have occurred, but employment is still expected to fall by 8 per cent in the June quarter (or by around 1 million workers). This is expected to see a sharp increase in the unemployment rate to around 10 per cent and a sizeable decline in the participation rate. If realised, this would be the highest rate of unemployment since 1994. It is possible that there will be a larger measured decline in the participation rate and a smaller increase in the unemployment rate than is currently expected. This is because more of the recently dismissed workers may not be actively searching for work – a requirement to be counted as unemployed in the labour force data – given the weak labour market and the temporary suspension of requirements to look for work to receive JobSeeker Payments.

Headline CPI is expected to fall by around 2¼ per cent in the June quarter and headline inflation is expected to be negative in year-ended terms for the first time since the early 1960s. This is mainly driven by the large fall in oil prices in the quarter-to-date and the introduction of temporarily free child care. There will also be a deferral or reduction in some price increases. These factors will more than offset any price rises that stem from the recent exchange rate depreciation or supply disruptions. In underlying terms, inflation is also expected to be much lower in the quarter.

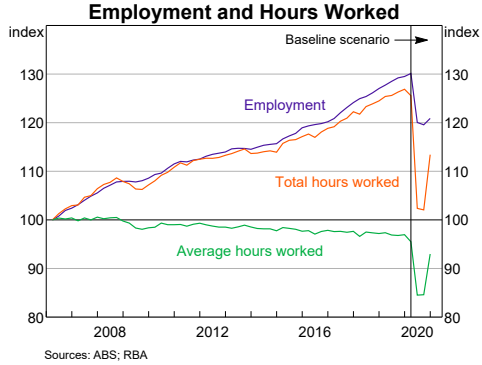
The pace of recovery beyond the June quarter is especially uncertain

The outlook beyond the June quarter will be shaped by the extent to which activity and the labour market continue to be affected by social distancing and other containment restrictions, which in turn will be determined by what is necessary to manage the health aspects of the current crisis. Other factors that will be important are the responses of households and businesses to changes in the economic environment, and the effectiveness of policy support. It is quite plausible that the current economic disruption will have some long-lasting effects, not only because it will take some time to restore workforces and re-establish businesses but also because it could also affect mindsets and the behaviours of consumers and businesses. This could result in structural change in the economy. Changes in the financial position of households and businesses could also have long-lasting effects.

To explore the consequences of a range of plausible health outcomes and the associated policy responses, we have considered three scenarios for the domestic recovery. A baseline

Graph 6.1

Employment and Hours Worked



Sources: ABS; RBA

scenario for a gradual recovery, described in some detail below, is based on a plausible path for health outcomes and, relatedly, government-mandated restrictions, as well as existing economic policy measures. Upside and downside scenarios are then described to illustrate how the recovery paths could look in the near term under different plausible assumptions about the outbreak and related activity restrictions, and behavioural responses of households and businesses.

In all scenarios we assume that current fiscal policy settings remain in place in accordance with public guidance. However, the extent of the stimulus provided by the JobKeeper Payment – which is the largest component of the fiscal response – and other assistance payments will depend on outcomes for business cash flow and employment in each scenario. The scenarios are also conditioned on a set of technical assumptions, as usual. The cash rate and other elements of the Bank's monetary stimulus package are assumed to remain around current settings. The exchange rate is assumed to be constant at its current level, which is around 2 per cent lower than where it was at the time of the February *Statement*. The Brent crude oil price is assumed to be constant at US$35 per barrel, based on futures pricing; this is 35 per cent lower than at the time of the February *Statement*. Growth in the population aged 15 years and over is assumed to slow considerably over the next year owing to the closure of borders, before picking up to be 1½ per cent over the year to mid 2022. However, in the upside scenario, population growth is expected to pick up sooner than this.

Comparisons with others' economic forecasts are difficult to interpret due to large differences in underlying assumptions for the duration of restrictions, as well as differences in technical assumptions. That said, outcomes for GDP growth, unemployment and inflation in the 'gradual recovery' baseline scenario are broadly in line with the average market forecasts for these variables in 2020 and 2021. (Graph 6.2). The ranges of market forecasts demonstrates the extremely high degree of uncertainty about the economic outlook.

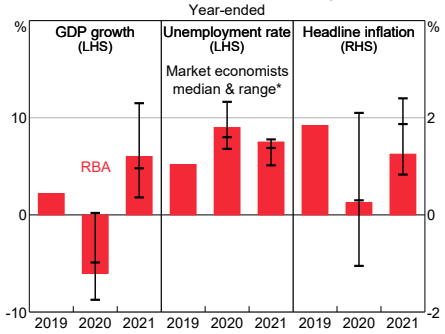
Scenario 1: baseline – 'gradual recovery'

This scenario assumes that most of the current domestic containment measures remain in place for most of the June quarter. Most of the restrictions are assumed to have been lifted by the end of the September quarter, aside from the limits on very large public events and gatherings, which are assumed to remain in place for longer. International border closures are assumed to be in place until the end of the year, consistent with recent statements from the Australian Government.

In this scenario, GDP growth is expected to start recovering in the second half of 2020, led by consumption, although the very large contraction in the March and June quarters would still result in a year-ended decline over 2020 (Table 6.1; Graph 6.3). Growth would then be stronger over 2021 as business and dwelling investment gradually recovered, although the level of GDP by mid 2022 would still be below the level expected at the time of the February *Statement*. Under these conditions, the unemployment rate is expected to decline

Graph 6.2

RBA Baseline Forecast Comparison



* RBA survey of market economists collected 29 April to 6 May

Sources: ABS; RBA

Table 6.1: Output Growth and Inflation Baseline Forecasts[(a),(b)]

Per cent

	Year-ended					
	Dec 2019	June 2020	Dec 2020	June 2021	Dec 2021	June 2022
GDP growth	2.2	–8	–6	7	6	5
(previous)	(2)	(2)	(2¾)	(3)	(3)	(3)
Unemployment rate[(c)]	5.2	10	9	8½	7½	6½
(previous)	(5.2)	(5¼)	(5)	(5)	(4¾)	(4¾)
CPI inflation	1.8	–1	¼	2¾	1¼	1½
(previous)	(1.8)	(1¾)	(1¾)	(1¾)	(2)	(2)
Trimmed mean inflation	1.6	1½	1¼	1¼	1¼	1½
(previous)	(1.6)	(1¾)	(1¾)	(1¾)	(2)	(2)
	Year-average					
	2019	**2019/20**	**2020**	**2020/21**	**2021**	**2021/22**
GDP growth	1.8	–1	–5	–3	4	6
(previous)	(1¾)	(2)	(2¼)	(2¾)	(3)	(3)

(a) The cash rate is assumed to remain at its current level, with other elements of the Bank's monetary stimulus package, including the 0.25 per cent target for the 3-year government bond yield, assumed to remain consistent with current settings. Other technical assumptions include the TWI at 57, A$ at US$0.64 and Brent crude oil price at US$35 per barrel; shaded regions are historical data; figures in parentheses show the corresponding forecasts in the February 2020 *Statement on Monetary Policy*.

(b) Rounding varies: Activity to the nearest whole number; unemployment to the nearest half point; wages and prices to the nearest quarter point

(c) Average rate in the quarter

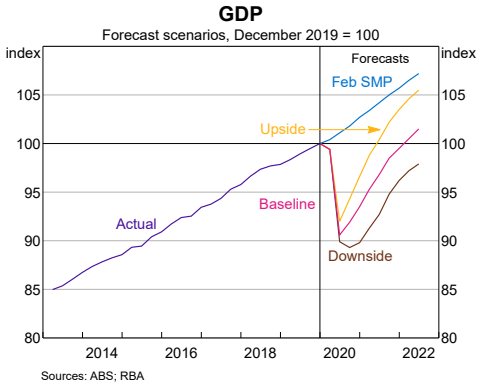
Sources: ABS; RBA

substantially from its June 2020 peak of around 10 per cent but to remain above its pre-COVID-19 level in two years' time (Graph 6.4). In underlying terms, inflation is expected to remain below 2 per cent over the next couple of years.

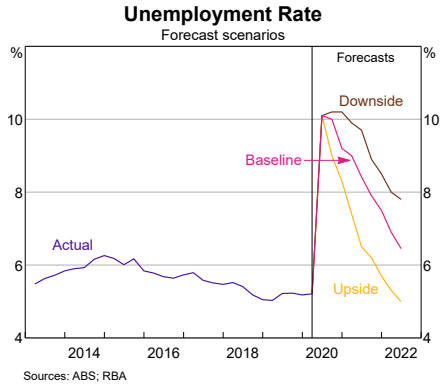
Labour market

The JobKeeper Payment ensures that more workers remain attached to their job, even if on significantly reduced hours than otherwise. Nonetheless, there is still expected to be a sharp increase in labour market underutilisation in the

Graph 6.3



Graph 6.4



near term, which is likely to take a few years to unwind. This is because businesses are likely to delay rehiring workers until the uncertainty around the outlook has subsided. Any post-outbreak reconfiguration of the industrial composition of the economy will take time due to the transition and possible retraining of workers. It will also take time for businesses to find suitable workers from the pool of unemployed, and for workers who had previously withdrawn from the labour force to return.

In this scenario, businesses would be expected to begin gradually hiring workers after restrictions are lifted, although average hours worked are expected to pick up more sharply as existing workers start to resume normal working arrangements. The unemployment rate is expected to decline significantly, but still be above its pre-COVID-19 level in mid 2022. The level of employment is also expected to be lower in mid 2022 than previously forecast because both the employment-to-population ratio and population growth are expected to be lower over the next few years.

The decline in the unemployment rate in this scenario is expected to be quicker than in most previous recoveries because the downturn has been driven by health-related restrictions not economic factors, and will therefore be short-lived. Further, the industries that will experience the largest number of job losses over this period typically have higher rates of labour turnover, so the process of recruiting may take less time than in other industries. However, there are risks to the downside. In particular, there is a material risk that the sharp increase in unemployment expected over the first half of 2020 will have a more pronounced scarring effect on the labour force than is currently anticipated. A slower-than-expected decline in the unemployment rate could create an adverse feedback loop whereby a slower pick-up in private demand could cause further knock-on effects to the labour market.

Consumption, household income and saving

The effect of unwinding social distancing measures on consumption is expected to occur over several quarters. This goes beyond the time the actual measures are in place because some types of consumption are likely to take time to recover and some households may continue to maintain social distance beyond what is mandated. Further out, higher unemployment and lower income and wealth will weigh on consumption and the level of consumption is expected to remain well below that forecast in the previous *Statement* over coming years.

Following a sharp decline in the June quarter, household income is expected to recover gradually. Fiscal policies will provide support for household income. The outlook for labour income would have been much weaker in the absence of the JobKeeper Payment. Increased social assistance payments, such as the Economic Support Payments and Coronavirus Supplement, will also support income. Growth in households' tax and interest payments is also expected to ease. Some additional measures – such as the temporary withdrawal of superannuation and policies to allow the deferral of mortgage payments by some households – will contribute to households' cash flows but will have a limited impact on measured income in the national accounts. Income from unincorporated businesses is forecast to decline, as are other non-labour household income components such as financial and rental income.

The saving rate is expected to unwind its near-term spike as restrictions are lifted and more normal consumption patterns resume.

Dwelling investment

The deterioration in established housing market conditions is expected to prolong the decline in

dwelling investment. Dwelling investment is expected to be significantly lower over most of the forecast period than forecast in the previous *Statement*. The trough in construction activity is now projected to occur in early 2021, half a year later than previously expected. The near-term downgrade to activity incorporates information from liaison citing significantly weaker demand for new dwellings.

Business investment

After falling sharply in the June quarter, business investment is expected to remain subdued over the remainder of 2020, as many businesses cut back on discretionary capital expenditure in response to a sharp fall in private demand. Taken together with the sluggish growth prior to the outbreak of COVID-19, non-mining business investment is not expected to recover to its pre-outbreak levels by the end of the forecast period.

It is likely that non-mining business investment will lag the recovery in other components of private demand. This reflects the assumption that firms will first use up spare capacity as demand picks up, as well as the typical lags in the approval and planning of construction projects. In the near term, the fall in non-mining investment is expected to be led by machinery & equipment investment, consistent with information from liaison that firms intend to defer or cancel planned discretionary investment to preserve cash in response to weaker demand and heightened uncertainty. Non-residential building and infrastructure activity is expected to hold up in the next couple of quarters, reflecting the substantial pipeline of work yet to be done and relatively limited evidence to date of disruptions to the supply of labour and materials in the construction industry. However, construction activity is expected to fall later in the year, consistent with liaison information that indicates that many projects that have not yet commenced have been put on hold or cancelled.

Mining investment is expected to remain relatively resilient in the near term. Work on replacement iron ore and coal mines is expected to be only modestly affected by workforce impacts, although some minor delays have been factored in. Further out, though, some large liquefied natural gas (LNG) projects are assumed not to commence within the forecast period due to the collapse in oil prices; long-term LNG supply contracts are typically priced off an oil reference price.

External sector

In this scenario, service exports are an important driver of the trade outlook. International travel restrictions have materially reduced Australia's exports of education, tourism and transport services, which together comprise around 16 per cent of total exports. Assuming international travel restrictions are gradually lifted from the start of 2021, education exports could increase fairly quickly at the start of the 2021 academic year. By contrast, other tourism and transport exports are likely to pick up more gradually, reflecting lingering caution on the part of travellers and potentially continued quarantine requirements.

The level of resource export volumes is lower than previously expected over the remainder of the forecast period, reflecting expectations of a small reduction in LNG production and weaker global demand for iron ore and coal. The outlook for manufactured exports is expected to be lower in the near term because of reduced global demand, although further out the depreciation of the Australian dollar should provide support. Rural exports are expected to be higher throughout the forecast period compared with the February *Statement*, reflecting an easing in drought conditions since the start of the year.

The sharp decline and subsequent recovery in domestic demand will be the primary driver of import volumes, although the depreciation of the exchange rate is also likely to weigh on import demand throughout the forecast period.

The terms of trade are forecast to decline more sharply over 2020 than was expected at the time of the February *Statement,* largely as a result of lower global demand for bulk commodities (Graph 6.5). The downward revision also reflects the considerably lower oil price assumption because Australia is a small net exporter of oil and gas; export prices for LNG are assumed to be significantly lower at end of the forecast period, based on current pricing of longer-dated oil futures contracts.

Wages and inflation

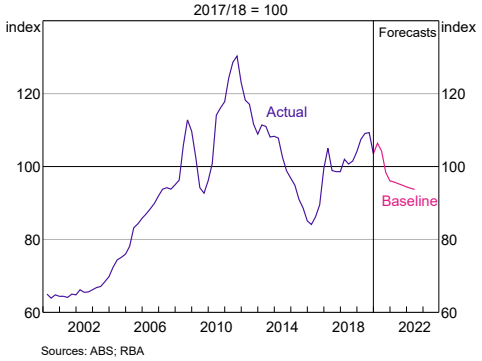
Wages growth is expected to be lower over the next year. As has been the case during other downturns, it is likely that businesses will make most of the adjustment to their labour costs through reducing both hours worked and the number of employees. However, it is also expected that many businesses and employees will agree to wage freezes and, to a lesser extent, to some cuts to hourly wages. Bonuses are also likely to be reduced. Wages growth is expected to gradually pick up over 2021; how quickly this happens will depend on whether there are catch-up increases in wages after a period of lower outcomes, but also on award wage determinations and how much spare capacity there is in the labour market. The degree of spare capacity is a key area of uncertainty and it will depend on a range of factors, including the extent of underemployment and the number of discouraged people that have left the labour market. If those available workers are not able to be matched to jobs during the recovery phase, there may also be an increase in the number of long-term unemployed or structural unemployment in the economy.

The inflation forecast takes into account the weak domestic demand conditions but also the supply disruptions to production that will increase inflationary pressures; the deflationary effects from the spare capacity in the labour market and in the economy more generally are expected to be the dominating influence. Underlying inflation is expected to remain below 2 per cent over the forecast period (Graph 6.6). In this scenario, inflation expectations remain anchored to pre-existing levels; however, this will depend on how business and household inflation expectations respond to the large relative price adjustments over the period ahead. The extent of the recovery in consumer demand will also determine whether businesses will be able to pass on higher import prices to consumers from the depreciation in the exchange rate.

Graph 6.5

Terms of Trade

2017/18 = 100



Sources: ABS; RBA

Scenario 2: faster recovery

A stronger economic recovery would be possible if further gains in controlling the virus were achieved in the near term and most containment measures were phased out over coming months. This, alongside the considerable policy support already in place, would help limit near-term damage to business and household balance sheets, and help drive a more rapid recovery in the economy. An important precondition for this scenario is that

households and businesses expect a sustained economic recovery to build over coming months, underpinned by a high degree of confidence in the ongoing management of health outcomes.

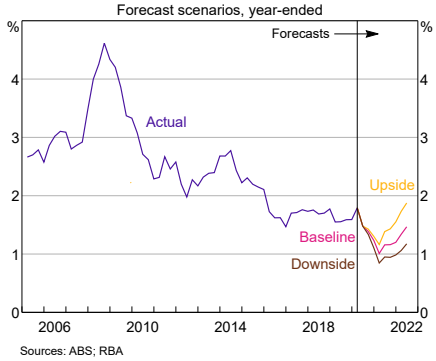
In this scenario, much of the near-term decline in GDP could be reversed over 2020–21 as consumption and employment growth rebound. By the end of the forecast period, the level of GDP could still be a little below the level expected at the time of the February *Statement*. Some of this difference can be explained by lower business investment because it tends to lag other components of private demand during recoveries, in part due to lags in planning and construction. In addition, given the assumed ongoing low level of the oil price, work on the currently postponed large LNG projects is not expected to commence within the forecast period.

In this scenario, the labour market begins its recovery as soon as the containment measures are phased out. Because of the better health outcomes and policy stimulus in place, the rebound in consumer demand and reduced uncertainty about the outlook would allow businesses to rehire workers and resume investment plans quickly. The hours of existing workers would also increase in response to rising demand, and the unemployment rate would be expected to move from a peak of around 10 per cent to be around its pre-COVID-19 level by mid 2022. The stronger recovery would enable some catch-up in wages growth. Similarly, the stronger recovery would be consistent with a faster pick-up in inflation over the next few years, albeit from a low starting point.

Graph 6.6

Trimmed Mean Inflation

Forecast scenarios, year-ended



Sources: ABS; RBA

Scenario 3: slower recovery

Alternatively, if the lifting of restrictions is delayed, the restrictions need to be reimposed or household and business confidence remains low, the outcomes would be even more challenging than those in the baseline scenario. For this scenario, we assume that many restrictions remain in place until closer to the end of 2020 and international travel restrictions are in place well into next year. In this scenario it is likely that household and business confidence would remain subdued for longer and income and spending would take longer to recover, notwithstanding the policy stimulus in place. Under this downside scenario, domestic activity would be expected to remain close to its June quarter trough for the rest of the year. A greater share of households would be likely to continue to engage in distancing activities beyond what is required because they remained concerned about the virus. Damage to consumer and business balance sheets and weak expectations for the outlook would mean consumption and investment would pick up slowly even after the restrictions are lifted. Employment growth would be much slower, and the unemployment rate would remain close to its peak well in to 2021.

There may also be some negative effects on the longer-term outlook for commercial property. A number of contacts in the Bank's liaison program have indicated that valuations of commercial property assets are expected to decline over the period ahead because of lost rental income and lower expectations of future

rental growth. In turn, lower valuations may affect the viability of future projects, in combination with many firms expecting to reduce their long-term floor space requirements. This is likely to be most pronounced in the office and retail sectors, given the large-scale shift to working from home and the acceleration in the shift towards online retailing.

A slower economic recovery would have ongoing adverse consequences for the labour market. The longer the economy remains weak, the more employment relationships are severed and the more households and firms will suffer severe financial stress. This would slow the recovery further and increase the chance that workers need to take jobs that are poor matches for their skills. Slow recovery and poor skill-matching are particularly likely if the economy's industrial structure changes significantly to adapt to the post-outbreak realities. The longer someone is unemployed, the more difficult it is for them to find employment because of a loss (or a perceived loss) in skills or because they become discouraged and exit the labour force. Past experience also suggests that workers who first enter the labour market during a downturn are especially affected and can suffer long-term income and employment consequences. And with lower investment as well as poor skill-matching, the economy's productive potential could also be damaged over a longer period. A slower recovery in economic activity would be consistent with inflation remaining low for longer. A more protracted period of low inflation outcomes could also lead businesses and consumers to adjust down their inflation expectations, which would make the subsequent pick-up in inflation more gradual.

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