

Australian Money Markets through the COVID-19 Pandemic

Ahmet Aziz, Calebe de Roure, Paul Hutchinson and Samuel Nightingale^[*]



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Abstract

Money markets are used by banks and other entities to borrow and lend funds for short terms, and are central to the implementation and transmission of monetary policy in Australia. It is important that these markets function effectively in all economic conditions, including during the uncertain times of the COVID-19 pandemic. This article examines how the various money markets – including the cash, repo, bank bills, FX swaps and Treasury Notes markets – responded to events of the past two years. Ultimately it finds that Australian money markets have generally functioned well over this time. Short-term funding has remained readily available from these markets, as the RBA has substantially increased the supply of Exchange Settlement balances and investors have continued to desire safe and liquid investments. Over the past two years, money market rates have declined significantly as a result of the decreases in the cash rate target and the increased supply of Australian dollars in these markets.

Introduction

Money markets are an integral part of the Australian financial system. In normal times, they are deep and liquid markets where Australian dollars can be borrowed or invested for short terms, generally 12 months or less. Money markets provide banks and other entities with access to short-term funding and offer investors liquid, short-term instruments that are issued by highly rated counterparties. Well-

functioning money markets provide liquidity to other financial markets and support an efficient payments system.

Money markets are also central to the implementation and transmission of monetary policy in Australia (Domestic Markets Department 2019; DeBelle 2021). The Reserve Bank of Australia (RBA) sets a target for the cash rate – that is, the interest rate on overnight loans of Exchange

Settlement (ES) balances between banks.^[1] The cash rate is a key determinant of other short-term interest rates and is, in turn, passed through to the whole structure of interest rates in the financial system.

This article examines how Australian money markets – covering cash, repo, bank bills, FX swaps and Treasury Notes – have performed since the onset of the COVID-19 pandemic in March 2020. It considers how this period of heightened economic uncertainty and the RBA’s policy response have affected the cost and availability of short-term funding in these markets.

The pandemic and the RBA’s policy response

In the very initial stages of the pandemic, interest rates in some Australian money markets rose as liquidity conditions deteriorated. Borrowers’ demand for liquidity rose, for precautionary purposes and to meet immediate needs, while investors reduced the money lent into these markets to meet their own liquidity needs (RBA 2020). However, pressures in Australian money markets were contained and the rise in money market rates was short-lived, due largely to the actions of the RBA.

During 2020, the RBA adopted a package of policies to support the Australian economy in the face of significant disruption caused by COVID-19, including:^[2]

- a cumulative 65 basis point cut in the cash rate target to 0.10 per cent and a reduction in the rate at which ES balances are remunerated to zero
- a target for the yield on three-year Australian Government bonds
- government bond purchases to address dislocations in the government bond market and achieve the yield target, and later in 2020 a bond purchase program to lower yields on longer-term government bonds
- a Term Funding Facility (TFF) to provide low-cost three-year repo funding to the banking system, with incentives to lend to businesses,

particularly small- and medium-sized enterprises

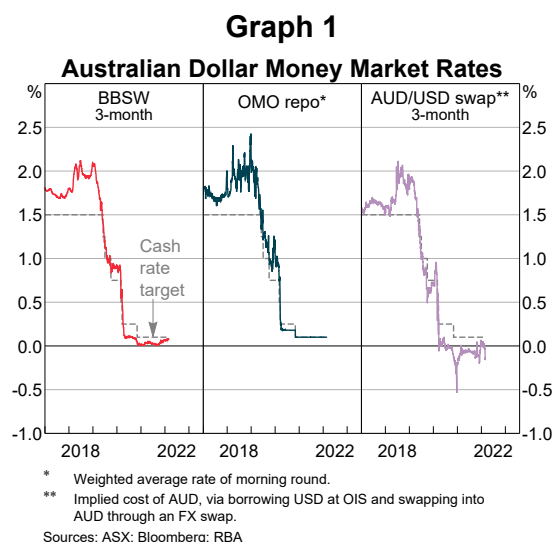
- an increase in the amount of lending under regular open market operations (OMO) and over longer terms, to support liquidity in the banking system.

These policies have supported the availability of short-term funding across Australian money markets throughout the pandemic. Interest rates across money markets declined noticeably, making it significantly cheaper for borrowers to secure short-term funding (Graph 1). While much of the decline can be explained by the reductions in the cash rate target and the remuneration on ES balances, money market rates fell by more. This reflects the significant increase in the supply of liquidity in these markets, particularly as a result of the considerable increase in the level of ES balances due to the RBA’s actions (Graph 2).

The below discussion considers key Australian money markets in turn, examining how they have performed through the pandemic to this point.

Cash market

The cash market facilitates the settlement of payments between banks and transmits the monetary policy decisions of the RBA to the wider economy. It is the market for unsecured overnight loans between banks. Banks borrow in the cash market to ensure their ES balances remain positive; they lend excess balances to earn a higher interest



rate than if they had retained the funds. The cash rate is the weighted average interest rate on these loans (Hing, Kelly and Olivan 2016). It is the primary anchor for other short-term interest rates and hence the wider structure of interest rates in the financial system. It is also an important benchmark, used as the reference rate in many other transactions.

Prior to March 2020, the cash rate was the sole operational target of monetary policy in Australia. The RBA closely managed the level of ES balances, maintaining surplus balances at around \$2 billion to \$3 billion, such that demand and supply in the cash market were roughly equal at the cash rate target.

However, since the onset of the pandemic, ES balances have increased significantly, to over \$400 billion, owing to the RBA’s policy actions. As a result, most banks have ample liquidity to settle their payments and little need to borrow more. The drop in demand has caused activity in the cash market to fall (Graph 3).^[3] Nonetheless, a few banks continue to borrow in the cash market. This partly reflects the uneven distribution of ES balances – since the onset of the pandemic, around 90 per cent of the increase in balances has gone to 10 per cent of banks (Graph 4). Furthermore, there has been an increase in the size of payment flows between banks, such that large daily changes in individual banks’ ES balances have become more frequent. There are many banks with high ES balances willing to lend and the cash market has remained a reliable source of funding for those

banks that need to borrow to ensure their ES balances remain positive.

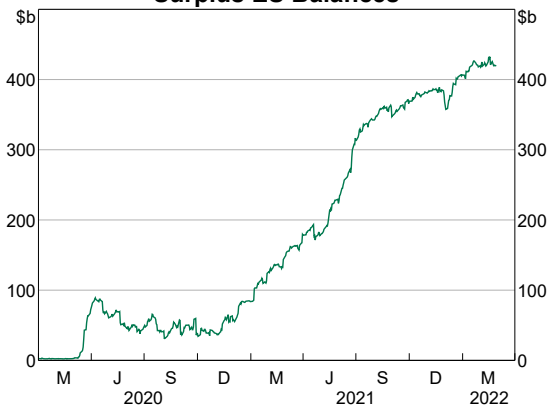
As was expected, the fall in demand and increase in supply in the cash market saw the actual cash rate decline to trade below the cash rate target but above the remuneration rate paid by the RBA on ES balances. The remuneration rate paid on ES balances acts as a floor for the cash rate. The actual cash rate has traded a little above this throughout the pandemic, reflecting a small credit premium and operational costs of transacting in the cash market (Debelle 2021). The decline in the cash rate below the target represents an additional easing in financial conditions.

Repo market

The repo market plays an important role in Australian financial markets, promoting liquidity in

Graph 2

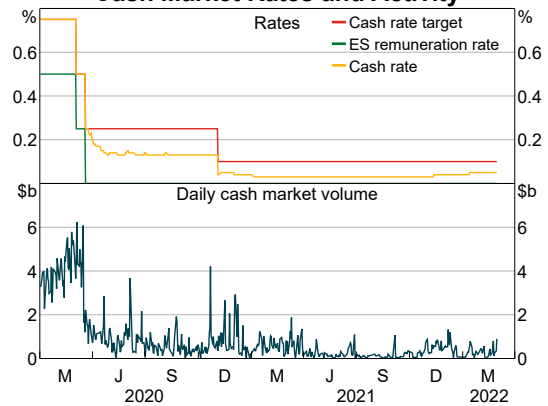
Surplus ES Balances



Source: RBA

Graph 3

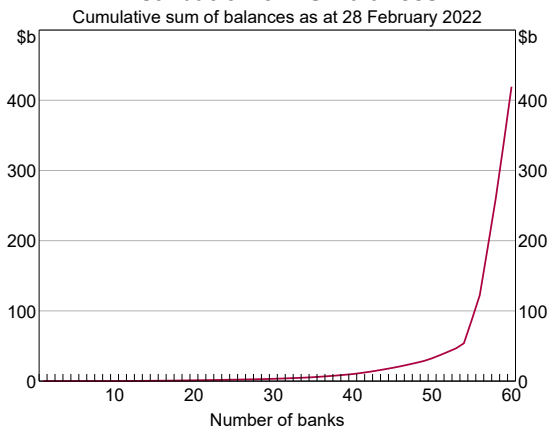
Cash Market Rates and Activity



Source: RBA

Graph 4

Distribution of ES Balances



Source: RBA

securities markets and supporting efficiency in the financial system.^[4] Participants use repos to finance holdings of securities, borrow securities, arbitrage price differentials in other markets, manage cash flows and raise short-term funding. Because repos are collateralised, they provide investors with a lower risk alternative to unsecured money markets.^[5] Banks tend to act as intermediaries in the repo market, borrowing and lending similar amounts of cash in aggregate. Accordingly, the repo market is not a key net funding market for banks and accounts for a very small share of banks’ balance sheet funding.

The RBA has historically used the repo market to implement monetary policy.^[6] Prior to the pandemic, the RBA conducted regular OMO to provide just enough ES balances to match demand at the cash rate target. However, with ES balances increasing significantly, the nature of OMO has changed over the past two years. At the onset of the pandemic, demand for OMO repo funding rose substantially, reflecting financial institutions’ precautionary demand for liquidity amid heightened economic uncertainty and bond dealers’ need to fund their growing inventory of bonds purchased from investors who were liquidating positions. In response, the RBA substantially increased the amount it lent via OMO and lengthened the terms of this lending. Since then, the demand for OMO funding has declined significantly because of the substantial increase in liquidity in the banking system that resulted from the RBA’s other policies – particularly the TFF and the bond purchase program. OMO now complements these other policies by providing short-term funding to financial institutions where demand remains (Dowling 2021).

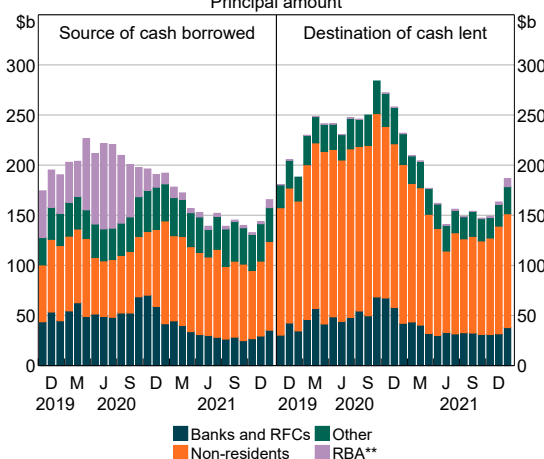
The total amount that banks have borrowed from the private repo market has remained steady throughout the pandemic, in contrast to their borrowing from the RBA (Graph 5, left panel). This suggests that the sharp increase in borrowing from the RBA early in the pandemic was a complement to, rather than substitute for, borrowing from other sources. That is, banks were able to meet their increased liquidity needs (alongside their clients’ demand for repo funding) by drawing on the

additional liquidity made available by the RBA. As demand for liquidity subsequently receded, banks curbed their borrowing from the RBA while continuing to borrow more cheaply from the private market.

Since the onset of the pandemic, repo rates have declined sharply (Graph 6). Rates in the private repo market were, on average, around 20–40 basis points above the cash rate prior to the pandemic but are now a few basis points below the cash rate. This is largely due to the substantial rise in banking-system liquidity, which has increased the supply of cash that banks are willing to lend under repo while lowering their demand to borrow cash. The decline in OMO rates has been less pronounced than that for private market rates, reflecting a change in how OMO are being conducted. Prior to the pandemic, in order to maintain a targeted amount of system liquidity, OMO were conducted as competitive auctions under which rates would vary with changes in demand. In the current setting of high system liquidity, OMO now provide repo funding at or above a predefined hurdle rate that is set above prevailing market rates (Kent 2020a; Kent 2022). As a result of this change, and the diminished role of OMO in overall repo funding, the OMO rate no longer acts as an anchor for private repo market rates.

The spread earned by banks and other repo dealers in intermediating repo funding has remained little

Graph 5
Outstanding Repo Positions*
Principal amount



* Positions of reporting institutions.
** Excludes TFF and open repo.
Sources: APRA; RBA

changed over the past two years at about 5 basis points, around the level prevailing prior to the pandemic. They earn this spread by borrowing funds under repo from the private market and the RBA, and lending these funds on to their non-bank clients at a higher rate.

Liquidity in the repo market has remained robust throughout the pandemic. Repo dealers have been able to source plenty of funding and the cost of this funding has fallen. Dealers have, in turn, passed these lower interest rates on to their clients. As such, clients have been able to source a lot of cash at low interest rates when needed. This ongoing liquidity, particularly during the height of economic uncertainty and resulting illiquidity in many other markets, was in part due to the RBA's various policy measures that provided additional liquidity to the banking system.

Bank bill market

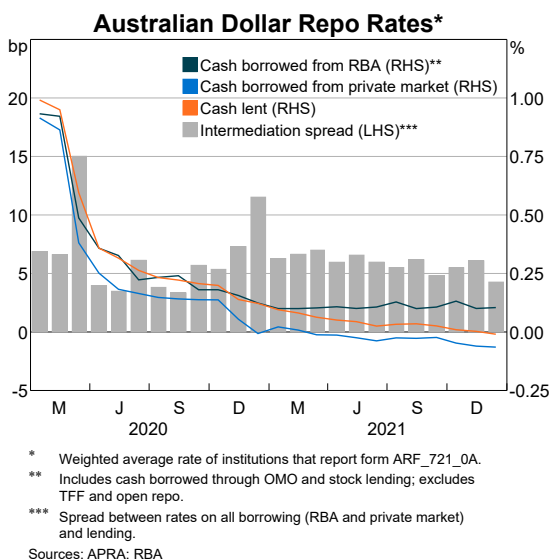
The domestic bank bill market (including negotiable certificates of deposit) is a key short-term funding market for Australian banks, accounting for around 15 per cent of their overall wholesale funding.^[7] Yields on bank bills issued by highly rated 'prime banks' provide a key interest rate benchmark – the bank bill swap rate (BBSW) – for a wide range of financial instruments and contractual obligations.^[8] Much of banks' other wholesale debt (including in foreign currencies) and deposits are

also linked to BBSW either directly or as part of their interest rate hedging practices (Black and Titkov 2019). This underlines the importance of the bank bill market for financial conditions in the wider economy.

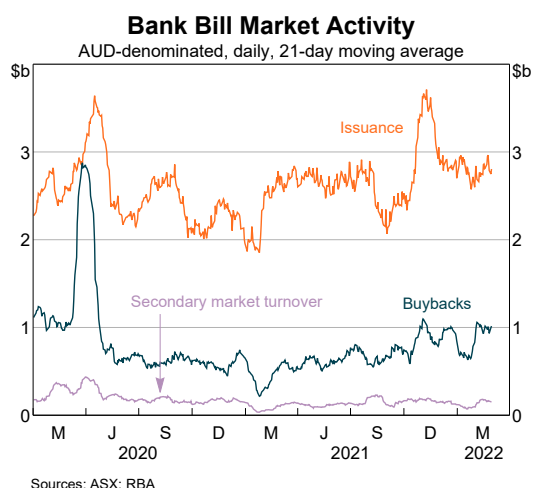
For the most part, the bank bill market has functioned well through the pandemic, providing banks with a reliable source of short-term funding. While at the onset of the pandemic there was a spike in buyback activity, where holders of bank bills sourced liquidity by selling their securities back to issuers, demand for bank bills quickly recovered (Graph 7). Outside of that period, demand for bank bills from superannuation funds and asset managers has remained stable. To a large extent, this reflects the mandates of some funds, which require a certain proportion of their investment portfolios to be held in short-term liquid securities.

On the supply side, banks' need to raise short-term funding in the bank bill market declined during the pandemic, owing to both liquidity provided by the RBA's policies and an increase in deposits with banks (Garner and Suthakar 2021). Despite this, issuing banks have sought to meet the ongoing demand for bank bills to maintain relationships with investors and ensure that the bank bill market remains a consistent source of funding in the future. Issuance was initially concentrated in shorter tenors amid high demand for shorter-dated investments in a period of heightened uncertainty. More recently, the maturity profile of issuance has returned to that prevailing before the pandemic.

Graph 6



Graph 7



The stock of domestic bank bills outstanding has remained relatively stable throughout the pandemic (Graph 8). By contrast, over 2020 Australian banks reduced offshore bill issuance to around half the levels seen prior to the pandemic. This was in response to the banks' lower funding needs and a period of dislocation experienced in the US commercial paper market (Boyarchenko *et al* 2021). Offshore issuance has since rebounded as Australian banks now seek to take advantage of favourable issuance conditions in offshore markets.

In March and April 2020, the spread between BBSW and overnight indexed swap (OIS) rates initially widened as investors sold some of the bills they were holding back to the issuing banks (Graph 9). Subsequently, spreads narrowed sharply, reflecting banks' reduced needs for short-term funding amid ample liquidity in the financial system and the rebound in investor demand. Given the importance of BBSW as a reference rate, the narrowing of spreads contributed to a decline in the broader cost of wholesale funding. Early in the pandemic, spreads between yields on bank bills issued by non-prime and prime banks widened amid heightened uncertainty. As market conditions subsequently improved, the non-prime to prime spread narrowed to historically low levels as investor demand for the higher-yielding non-prime bills increased.

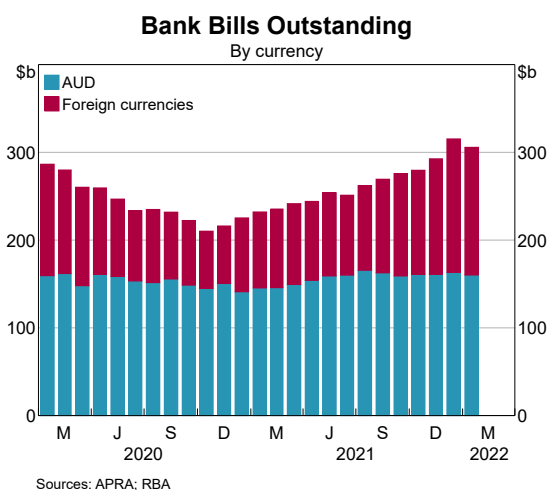
FX swap market

Another key short-term funding market for Australian banks is the foreign exchange (FX) swap market. Banks obtain funding in this market by first issuing short-term debt in a foreign currency (such as US dollars) and then swapping that foreign currency back into Australian dollars using an 'FX swap'. The use of an FX swap allows banks to access offshore funding markets without incurring foreign exchange risk.

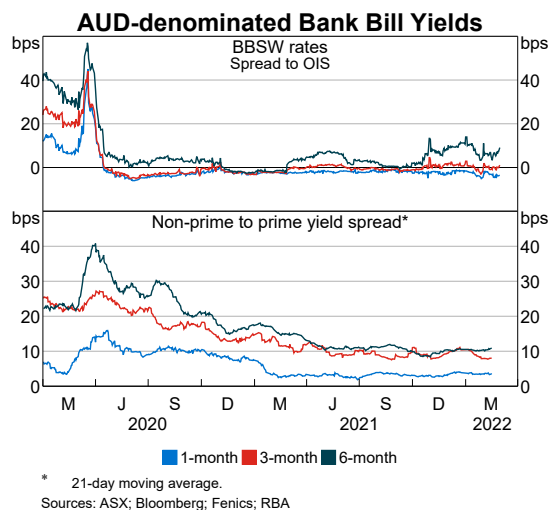
Prior to the pandemic, the implied yield for borrowing Australian dollars via the FX swap market was persistently higher than the cash rate.^[9] However, since the onset of the pandemic, the implied yield for borrowing Australian dollars in that market has fallen below the cash rate (and a little below zero) alongside the large increase in ES balances, which helped to stimulate a more reliable supply of Australian dollars available to lend in the FX swap market (Graph 10).

The significant decline in offshore debt issuance by Australian banks contributed to the decline in Australian dollar implied yields in the FX swap market. Banks were issuing less debt offshore given that they were able to access cheaper funding from domestic sources, including deposits and the TFF. Lower offshore debt issuance in turn reduced the demand by banks for Australian dollars in the FX swap market to hedge these exposures. By contrast, Australian asset managers (particularly superannuation funds) continued to supply

Graph 8



Graph 9



Australian dollars (and borrow foreign currency) in the FX swap market in order to manage the hedges on the exchange rate risk on their foreign investments.

The decline below zero in Australian dollar implied yields in the FX swap market has generally been limited despite a continued rise in ES balances. At yields more meaningfully below zero, some FX swap market participants could generate an arbitrage profit by borrowing Australian dollars at negative implied interest rates in the FX swap market and leaving the funds in their ES account, which the RBA currently remunerate at zero. In addition, when implied yields are sufficiently low, participants with access to US dollar funding markets (such as US investment banks) may find it cheaper to fund their Australian activities by borrowing Australian dollars in the FX swap market (in exchange for US dollars raised via US funding markets). Both of these actions would put upward pressure on implied negative yields, pushing them back towards zero.

As surplus ES balances have risen, liquidity in the FX swap market increased markedly. The increase in the overall level of Australian dollar cash in the banking system has seen FX swap dealers become more comfortable in warehousing larger amounts of risk, especially at shorter maturities, with liaison suggesting that the size of positions are substantially larger compared with those held prior to the pandemic. Alongside this willingness to

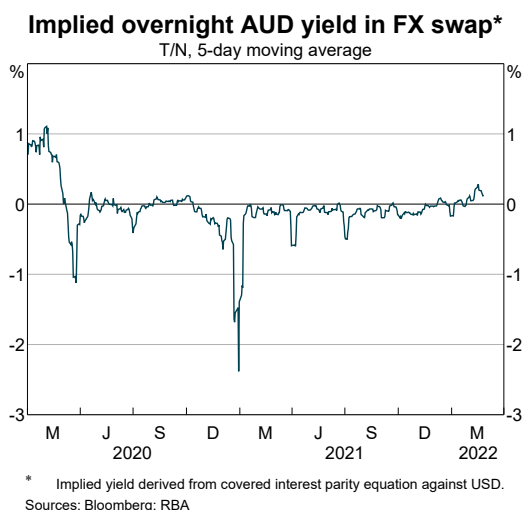
warehouse larger positions, bid-ask spreads have narrowed by around half. Turnover in short-dated swaps remains high, and similar to pre-pandemic levels (Graph 11).

Treasury Notes market

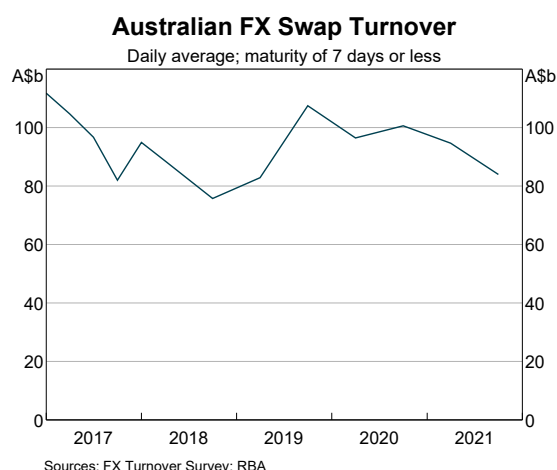
The Australian Government also uses money markets to raise funding, through the issuance of Treasury Notes. In the early stages of the pandemic, the government significantly increased its issuance of these short-term securities (Graph 12). This reflected an increase in the government's financing requirement, owing to higher expenditure related to its pandemic response and a decline in tax received due to the downturn in economic activity. In addition, the government sought to issue well ahead of its financing needs, building up its cash balances as a buffer against uncertainty surrounding its expenditures and revenues, and insuring against potential difficulties in accessing funding markets (Nicholl 2021). Indeed, the government sourced a greater-than-usual share of its financing via the issuance of Treasury Notes. This was partly because the Treasury Notes market continued to function well throughout this period amid strong investor demand for low-risk short-term assets (Nicholl 2020).

In line with other money market rates, yields on Treasury Notes declined, and their spread to OIS narrowed significantly, despite the sharp increase in issuance (Graph 13). The spread between yields on Treasury Notes and BBSW widened in the early

Graph 10



Graph 11



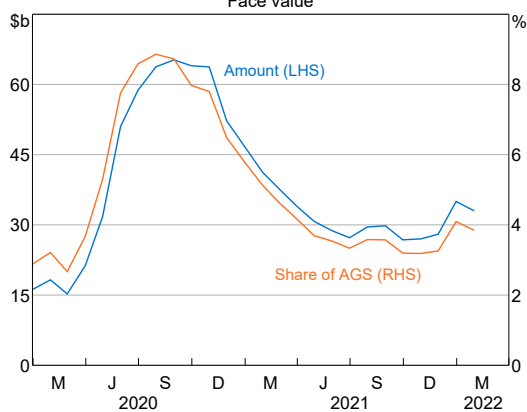
stages of the pandemic, alongside the sharp increase in Treasury Note issuance. But the spread has since narrowed as the pace of issuance has slowed and more investors have moved into the asset class.

Conclusion

Well-functioning money markets are important for the functioning of the broader financial system. They provide banks and other borrowers with access to short-term funding and support liquidity in other markets. They also allow for the effective transmission of the RBA’s monetary policy settings. In response to the economic disruption caused by the pandemic, the RBA implemented a package of

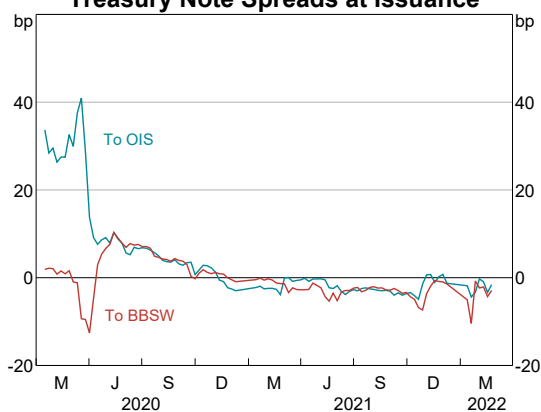
policies. These policies led to a significant reduction in money market rates: the cash rate target was cut to 10 basis points; the actual cash rate declined below that, trading between the target cash rate and the remuneration rate of zero on ES balances; and many money market rates have traded somewhat below the cash rate. The substantial increase in ES balances has also contributed to significant liquidity in money markets throughout the pandemic. The ongoing availability of funding in money markets, at much lower interest rates than before the pandemic, has helped to underpin very accommodative financial conditions across the financial system and supported the Australian economy. ✨

Graph 12
Treasury Notes on Issue
Face value



Sources: AOFM; RBA

Graph 13
Treasury Note Spreads at Issuance



Sources: AOFM; ASX; Bloomberg; Fenics; RBA

Endnotes

- [*] Ahmet Aziz, Calebe de Roure and Paul Hutchinson are from Domestic Markets Department; Samuel Nightingale is from International Department.
- [1] ES balances are deposits held at the RBA that banks use to settle their payment obligations to other banks.
- [2] For a more comprehensive discussion of the RBA’s policy response to the pandemic, see Kent (2020b); Debelle (2021); Dowling and Printant (2021).
- [3] The decline in activity has been such that the use of fall-back procedures to determine the cash rate have been required on approximately 60 per cent of days since March 2020 (RBA 2021).
- [4] Under a repurchase agreement (repo), one party sells a security to another party and agrees to buy it back at a later date. The difference between the sale and repurchase price reflects the rate of interest (or ‘repo rate’) earned by the cash lender.
- [5] For more in-depth discussions of the Australian repo market, see Wakeling and Wilson (2010); Becker and Rickards (2017).
- [6] Although the RBA’s TFF provides three-year funding via repo, the facility is not considered in this section because of the long term of the repos.
- [7] Based on data from the EFS collection: see APRA (2018).
- [8] Prime banks need to be of a high credit quality and with a sufficiently large issuance program so as to promote liquidity. Currently, there are four prime banks: ANZ, CBA, NAB and WBC (ASX 2021).
- [9] The implied yield on AUD in the FX swap market is derived from covered interest parity and is the cost of borrowing US dollars at OIS and swapping them into

Australian dollars via an FX swap. The contract allows a bank to swap the foreign proceeds of offshore debt

issuance back into Australian dollars to fund their Australian operations.

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