

Recent Developments in the Cash Market

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Photo: alexsl – Getty Images

Abstract

Following the implementation of unconventional monetary policy measures during the COVID-19 pandemic, liquidity in the banking system rose significantly. This led to a fall in cash market activity and a decline in the cash rate to below the cash rate target. Despite the high level of liquidity – as measured by Exchange Settlement (ES) balances – some banks have continued to borrow in the cash market. Over the past year or so, this borrowing has picked up somewhat and the cash rate has risen modestly to be slightly closer to the target, largely owing to an increase in the concentration of ES balances. As the Reserve Bank’s unconventional policy measures unwind and ES balances decline, activity in the cash market is likely to increase further. The extent of any future pick-up in activity, and the level of the cash rate relative to the target, will be influenced by the distribution of ES balances across banks.

Introduction

Banks borrow and lend Exchange Settlement (ES) balances on an overnight, unsecured basis in the cash market. Banks hold ES balances in their accounts at the Reserve Bank and use them to settle payment obligations with other banks. Banks may also hold ES balances for other reasons, such as for precautionary liquidity. Banks with insufficient ES balances to meet their needs can source additional

funds by borrowing in the cash market (Hing, Kelly and Olivan 2016).

The cash rate is the weighted average interest rate on transactions in the cash market. It plays a central role in the transmission of monetary policy – in particular, it is the Reserve Bank’s operational target for monetary policy and the primary anchor for other interest rates in the economy. The cash rate is also an important financial benchmark; it is used as

the reference rate for Australian dollar overnight indexed swaps and the ASX’s interbank cash rate futures contract.

Since the onset of COVID-19, activity and pricing in the cash market have changed in response to the substantial increase in ES balances brought about by the Reserve Bank’s pandemic-era policy measures. Prior to 2020, the Reserve Bank managed the supply of ES balances to closely match demand at the cash rate target. Banks frequently needed to borrow from each other in the cash market because the aggregate level of ES balances was intentionally kept relatively low. Since then, the supply of ES balances has increased substantially, such that most banks hold ES balances in excess of their needs. Hence, the demand to borrow in the cash market has declined (Graph 1). As expected, the excess supply of ES balances pushed the cash rate below target and towards the interest rate paid on banks’ deposits held at the Reserve Bank – known as the ‘ES rate’. The ES rate acts as a floor for the cash rate because banks can earn this interest rate by holding their ES balances on deposit at the Reserve Bank rather than lending them in the interbank market (Debelle 2021).

Since late 2021, demand to borrow in the cash market has picked up a little and the cash rate has increased relative to the ES rate, despite the supply of ES balances remaining around its historical peak (Graph 1).

This article first explores some reasons for these developments, including changes in the structure of the cash market and how ES balances are distributed across banks. It then discusses how activity in the cash market may evolve when the Reserve Bank’s pandemic-era policy measures unwind and ES balances decline.

Changes in cash market activity

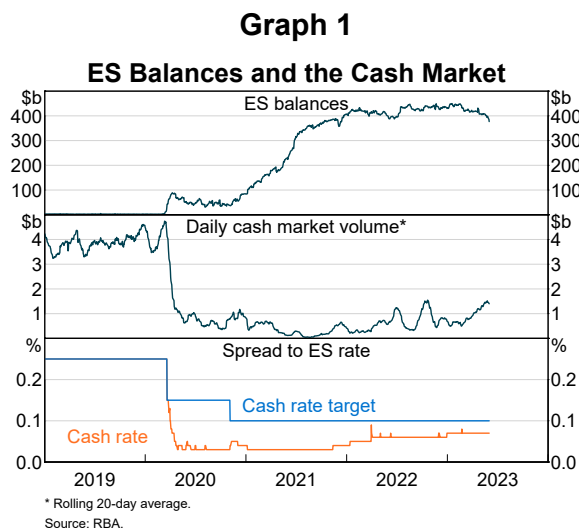
Since the pandemic, the volume of transactions in the cash market has been largely determined by the supply of ES balances and how these balances are distributed across banks. Increases in the supply of ES balances generally lead to lower cash market activity, as a greater number of banks will have enough ES balances to meet their demand and so

will have no need to borrow from other banks. However, if a given level of ES balances is more concentrated among a few banks, cash market activity will tend to increase because it is more likely that the remaining banks will have insufficient ES balances to meet their needs.

Over the past three years, ES balances have risen substantially. In early 2020, in the weeks following the outbreak of COVID-19, the Reserve Bank significantly increased the amount of ES balances that it lent through its open market operations in response to a sharp increase in banks’ demand for liquidity (Dowling and Printant 2021). From 2020 until early 2022, ES balances rose further as a result of the Term Funding Facility (TFF) and the Reserve Bank’s bond purchases. In contrast to the initial increase early in the pandemic, these additional ES balances were well in excess of banks’ day-to-day needs and resulted in an abundance of liquidity in the banking system. Following the end of the bond purchase program in early 2022, the level of ES balances has remained around historical highs.

As a result of the substantial increase in ES balances, most banks had enough to meet their payment needs. Consequently, demand to borrow ES balances decreased, and the number and value of transactions in the cash market declined noticeably.

Since 2020, the level of ES balances has risen and they have become increasingly concentrated among certain banks – with the share of ES balances held by large Australian banks rising to



more than 80 per cent (Graph 2). This is evidenced by a rise in the Gini Coefficient over this period (Graph 3). Changes in the distribution of ES balances across banks tend to follow net payment flows as banks use ES balances to settle their payment obligations with one another. Banks with a large share of deposits have received most of the additional ES balances injected by the Reserve Bank as their customers received payments and left them on deposit. This particularly applies to large Australian banks because they hold over 80 per cent of all deposits in Australia. Conversely, foreign banks hold only a small share of deposits in Australia; while they held the majority of ES balances before the pandemic, their share of ES balances has declined over time (Graph 2). Although ES balance shares have converged toward banks' deposit shares, significant short-term variation is possible as banks can acquire or shed ES balances through other means, such as issuing wholesale debt or transacting in foreign exchange markets.

The concentration of ES balances among large Australian banks may also reflect the fact that these banks face a higher opportunity cost on lending ES balances than other banks, owing to the major bank levy. The five largest banks in Australia – Commonwealth Bank, ANZ, Westpac, National Australia Bank and Macquarie – are subject to this levy. The major bank levy is an annualised charge of 6 basis points on selected liabilities of the banks less

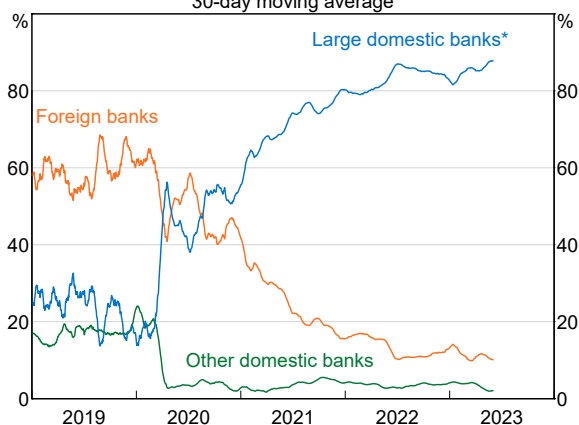
their holdings of ES balances (Treasury 2017). If these banks lend out their ES balances, it increases the size of the levy payable. Therefore, these banks need to receive a return equal to the ES rate plus 6 basis points to have the incentive to lend their ES balances, compared with a return of the ES rate for all other banks.

The recent pick-up in activity reflects an increase in the concentration of ES balances and has occurred despite the aggregate supply of ES balances remaining close to its historical peak. Some foreign banks' ES balances have declined to the point that they have increased the size and frequency of their borrowing in the cash market, to ensure they have sufficient ES balances to meet their daily needs (Graph 4). This growing demand to borrow in the cash market has been met increasingly by large Australian banks, which hold the bulk of ES balances (Graph 5). As such, large Australian banks have become increasingly important lenders in the cash market and the interest rates they lend at have played a greater role in the calculation of the cash rate.

The cash rate is a significant financial benchmark in Australia, and the increase in activity in the cash market over the past year has supported more regular setting of it on the basis of market transactions. In order to ensure the calculation of the cash rate is robust, it is only based on market transactions if there is sufficient cash market activity.^[1] If there is insufficient cash market activity, the Reserve Bank (as the benchmark administrator

Graph 2

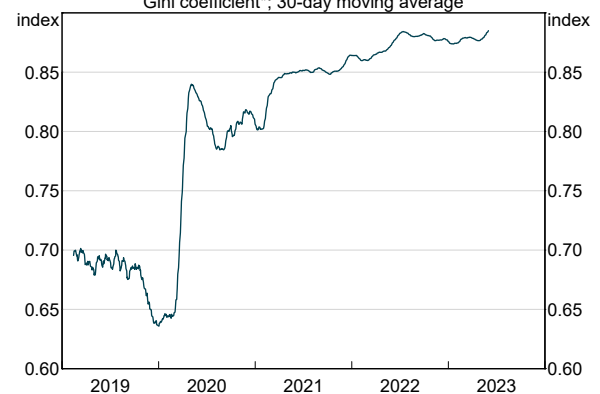
Share of ES Balances
30-day moving average



* Includes CBA, NAB, Westpac, ANZ and Macquarie.
Source: RBA.

Graph 3

Concentration of ES Balances
Gini coefficient*; 30-day moving average



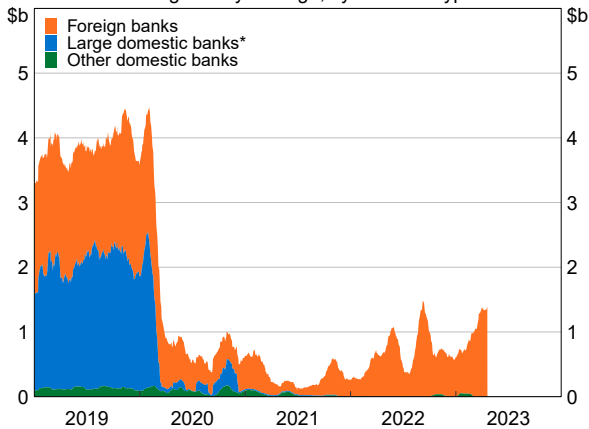
* Gini coefficient takes value zero if ES balances are evenly distributed across all banks and value one if one bank holds all ES balances.
Source: RBA.

of the cash rate) uses a range of information to determine the level of the cash rate that reflects market conditions – a process known as ‘expert judgement’.^[2] Expert judgement was first used in May 2020 following the increase in system liquidity discussed above; it picked up in frequency in 2021 – when it was required on around 95 per cent of days – as the supply of ES balances continued to rise (Graph 6). Since mid-2022, with activity in the cash market having picked up, expert judgement has only been required for around one in every three days.

Graph 4

Cash Market Borrowing

Rolling 30-day average; by borrower type

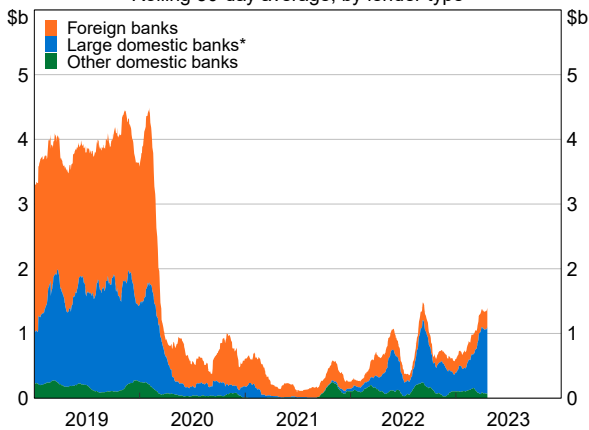


* Includes CBA, NAB, ANZ, Westpac and Macquarie.
Source: RBA.

Graph 5

Cash Market Lending

Rolling 30-day average; by lender type

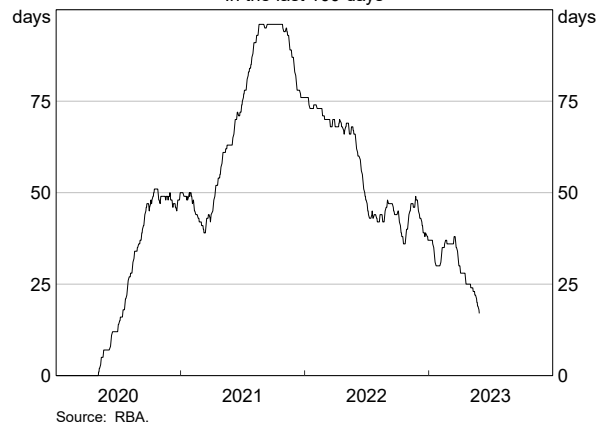


* Includes CBA, NAB, ANZ, Westpac and Macquarie.
Source: RBA.

Graph 6

Expert Judgement Used

In the last 100 days



Changes in cash market pricing

Together with the fall in cash market activity since the onset of the pandemic, there have been significant changes in the pricing of transactions in the cash market.

The most obvious effect of these changes has been a decline in the cash rate to below the cash rate target. As discussed above, before COVID-19 the Reserve Bank tightly managed the supply of ES balances to closely match the demand from banks at the cash rate target. Indeed, almost all transactions were made at the cash rate target (Graph 7). However, since the pandemic, the significant rise in ES balances and the resulting fall in demand to borrow in the cash market have led to the cash rate declining below the target but remaining above the ES rate. This was an expected outcome of the Reserve Bank’s policy measures and is consistent with the experience of other countries with comparable policy settings.

Alongside the decline in the cash rate to below the target, there has been more variation in interest rates on individual transactions in the cash market. Since the start of the pandemic, 12 per cent of transactions in the cash market have been at interest rates that differed from the cash rate, which again is the weighted average across all transactions when there are sufficient transactions (Graph 8). By contrast, in the year before the pandemic, only one cash market transaction had a different interest rate to the cash rate. As discussed further below, this increase in price dispersion reflects differing risk

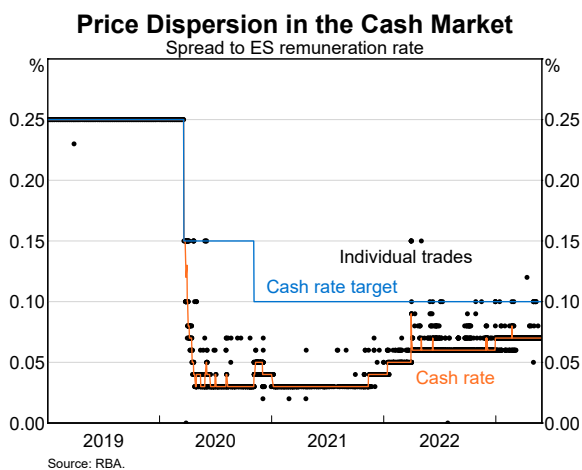
premia and opportunity costs between banks. Accordingly, compared with the pre-pandemic era, the cash rate now clearly reflects changes in market conditions as it is affected by the demand for ES balances and banks' willingness to lend them.

One common reason for differences in rates across cash market transactions is the variation in business relationships between the participating banks. Banks generally lend at lower interest rates to other banks with which they transact frequently. Moreover, borrowers tend to first source ES balances from lenders that offer the lowest interest rates – only relying on lenders that offer higher interest rates for additional volume. Thus, certain lending and borrowing banks transact frequently at higher volume and lower prices than other lender-borrower relationships.

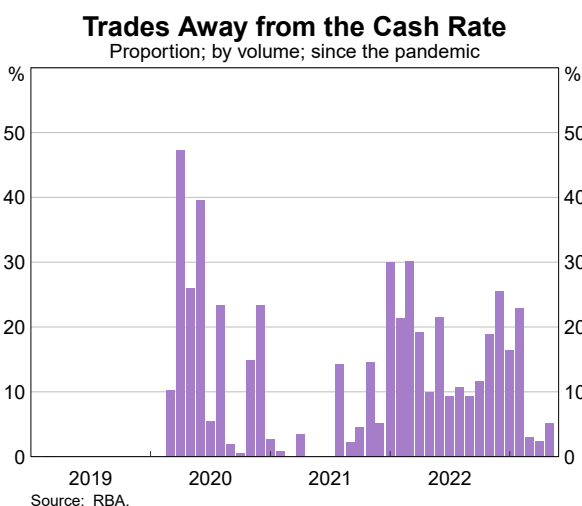
As mentioned above, the major bank levy creates different incentives to lend in the cash market for some banks. The five largest banks in Australia, which are subject to the major bank levy, face an opportunity cost of lending their ES balances at the ES rate plus 6 basis points. By contrast, other banks not subject to the levy face an opportunity cost on lending ES balances equal to the ES rate and can therefore profitably lend in the cash market at lower rates than banks subject to the major bank levy.

These different opportunity costs help to explain some of the variation in the cash rate since ES balances became abundant. For most of 2020 and 2021, most lenders in the cash market were not subject to the major bank levy, and the cash rate traded at the ES rate plus 3 basis points. This reflected the return that the lending banks could earn if they retained these ES balances, plus a small spread that incorporated a credit premium and the operational costs of transacting in the cash market (Debelle 2021). Since then, as the share of lending by banks subject to the levy has risen, the cash rate has also increased relative to the ES rate, reflecting these banks' opportunity cost of lending ES balances (the ES rate plus 6 basis points) plus, at times, a small spread.^[3] Many smaller lenders have tended to act as price-takers through this period, raising the interest rate they charge in line with the increases in the cash rate relative to the ES rate.

Graph 7



Graph 8



Outlook for the cash market

Over the coming years, the level of ES balances will decline as funding provided to banks under the TFF unwinds and the Reserve Bank's holdings of government bonds mature (Graph 9). Nonetheless, the supply of ES balances will remain higher than pre-pandemic levels for a number of years; activity in the cash market is likely to increase from current levels but remain lower than it was before the pandemic for some time.

The future distribution of ES balances among banks will have an important influence on cash market activity and the level of the cash rate; however, it is uncertain how this will evolve. A greater concentration of ES balances among some banks would likely lead to other banks needing to borrow more in the cash market. Therefore, if ES balances

remain concentrated among the large Australian banks that are subject to the major bank levy, it is likely that demand to borrow in the cash market will continue to increase. If these banks continue to be the main cash market lenders, the opportunity cost they face (the ES rate plus 6 basis points) will continue to form an effective floor for the cash rate. If, on the other hand, ES balances become more evenly distributed among banks, cash market activity may not increase, even as the level of ES balances declines. In this case, it is more likely that the ES rate would form the effective floor for the cash rate.

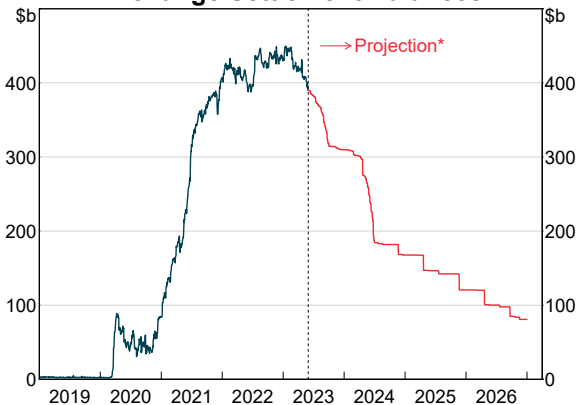
The future demand for ES balances will also determine banks' need to borrow in the cash market and their appetite to lend. Prior to the pandemic, banks typically held only enough ES balances to meet their payment obligations during

the day. Consequently, at close of business, when most payments activity ceased, banks had no need for their surplus ES balances and were generally willing to lend them in full.^[4] However, according to the Reserve Bank's liaison program and the experience of other countries, it is unlikely that banks' demand for ES balances will revert to such low levels in the future. Under the Australian Prudential Regulation Authority's liquidity standards, ES balances qualify as high-quality liquid assets (HQLA) and so can be used to meet the Liquidity Coverage Ratio (LCR). It is possible that some banks may continue to demand ES balances to meet the LCR, rather than holding HQLA securities (principally bonds issued by the borrowing authorities of the Australian, state and territory governments). As such, banks may no longer be willing to lend all their ES balances to the same extent. Under this scenario, the demand to borrow in the cash market would pick up while the supply of ES balances remains very high compared with the pre-pandemic era.

Finally, the way the Reserve Bank implements monetary policy in the future will play an important role in determining activity in the cash market. As discussed above, activity in the cash market was much higher before the pandemic when the Reserve Bank set aggregate ES balances at a relatively low level. By contrast, if the Reserve Bank chooses to implement monetary policy by maintaining an abundance of ES balances (even if this is still much lower than current levels) then cash market activity will typically be much lower than pre-pandemic levels. ✖

Graph 9

Exchange Settlement Balances



* ES balances in excess of banks' minimum requirements and late payments minus maturing Term Funding Facility loans and government bond holdings.
Source: RBA.

Endnotes

- [*] The authors are from Domestic Markets Department.
- [1] For the cash rate to be determined entirely from cash market transactions on a given date, all of the following criteria must be met: the total value of transactions is over \$500 million; the number of transactions is at least three; and the number of different cash market participants is at least four (RBA 2022).
- [2] There are three ways that the Reserve Bank may use expert judgment. The Reserve Bank may determine the cash rate to be: (1) the last published cash rate; or (2) the cash rate target, should a new target be announced by the Reserve Bank Board; or (3) another rate that is judged to better reflect the interest rate relevant to unsecured overnight funds for cash market participants.
- [3] Prior to the pandemic, the presence of the major bank levy was immaterial in banks' decisions to lend in the cash market. At that time, cash was lent at the cash rate target, which was the ES rate plus 25 basis points, well above the effective return that banks subject to the levy would receive on their holdings of ES balances. In other words, all banks could profitably lend at the cash rate, regardless of whether they were subject to the major bank levy or not.
- [4] Some banks with after-hours payments activity are required to hold ES balances to meet these expected payments. Banks could lend any surplus ES balances in excess of these requirements. For more details, see Dowling and Printant (2021).

References

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