

The RBA and AOFM Securities Lending Facilities

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Abstract

Australian Government Securities (AGS) play an important role in the transmission of monetary policy given that yields on these securities provide a benchmark for other interest rates across the economy. The Bank has a large amount of AGS and ‘semi-government’ bonds issued by state and territory borrowing authorities (semis) on its balance sheet as a result of purchases to support the economy through the COVID-19 pandemic. To support the efficient functioning of these markets, the Bank operates a securities lending facility (SLF) from which eligible counterparties can borrow AGS and semis; the Bank also operates an SLF on behalf of the Australia Office of Financial Management (AOFM). The use of these SLFs picked up noticeably following the end of the Bank’s yield target and bond purchase program. This article discusses these facilities in detail, including why market participants might use them and the recent increase in borrowing.

Introduction

The Reserve Bank currently holds a large amount of Australian Government Securities (AGS) and semi-government bonds issued by state and territory borrowing authorities (semis) on its balance sheet as a result of its monetary policy measures adopted during the COVID-19 pandemic. From March 2020 to February 2022, the Bank purchased a total of \$361 billion worth of bonds, including \$293 billion of AGS and \$68 billion of semis –

substantially more than the issuance of AGS and semis over this period. Initially, these purchases helped to address dysfunction in AGS markets at the onset of the pandemic as well as in support of the Bank’s yield target. Later, sizeable purchases were undertaken as part of the bond purchase program (BPP). These purchases supported the Board’s monetary policy objectives at that time (RBA 2020). As at February 2022, the Bank’s holdings amounted to around 36 per cent of AGS outstanding, and 16 per cent of semis outstanding;

since then, issuance into these markets and maturities of some of the Bank's holdings have reduced those shares slightly.

The Bank operates a securities lending facility (SLF) from which eligible counterparties can borrow from the Bank's holding of bonds (RBA SLF). The facility works in conjunction with an SLF from the Australian Office of Financial Management (AOFM), which is operated by the Bank on the AOFM's behalf (AOFM SLF). The Bank and AOFM offer these facilities to support the efficient functioning of the AGS and semis markets.

As bond dealers do not hold a selection of every bond outstanding (there are around 160 unique AGS and semis in total), dealers need to be able to sell bonds that they do not own in order to 'make a market' in bonds. They do this by borrowing those bonds for a short period of time, and work to cover their resulting 'short' position quickly. If they were not able to borrow bonds, they would either have to stop quoting offers to sell some bonds, or be prepared to fail to deliver the bonds they have promised to sell. As a result, securities lending enhances the efficiency and liquidity of the bond market by helping dealers to provide prices to both sell and buy bonds to clients on a wider selection of bonds (i.e. two-way pricing).

The importance of the RBA and AOFM SLFs is heightened in the current environment, where the Bank owns a large amount of AGS and semis, including large shares of particular bond lines. Without these SLFs, bond market functioning may have been less effective, which would have increased the cost of government borrowing and reduced the transmission of monetary policy.

This article details the workings of the RBA and AOFM SLFs and considers why their use has increased recently.

Parameters of the SLFs

Market participants can borrow any of the Bank's AGS and semis from the RBA SLF, for a fee of 20 basis points for up to seven days, secured either against cash or other bonds.^[1] Subject to the provision of that collateral, lending from the RBA

SLF is only limited by the amount of each bond the Bank holds on an outright basis.

By contrast, market participants in aggregate can borrow up to \$5 billion of AGS from the AOFM SLF, for a fee of 25 basis points, and on an open term. For some time this borrowing could only be secured against government or government-guaranteed bonds, but recently the AOFM SLF has also begun accepting cash as collateral.^[2]

The current pricing of the RBA and AOFM SLFs is different from that which applied during the pre-pandemic period. Previously, for the AOFM SLF, bond dealers paid the lessor of 25 basis points below the cash rate target or 300 basis points; for the RBA SLF, bond dealers paid a fee aligned with prevailing market rates, which could vary across different bonds. In the current environment of elevated Bank holdings, however, a smaller flat fee for all bonds is more appropriate. This is the case for two reasons: it supports bond market functioning; and, as the Bank's bond holdings affect market pricing for securities lending, determining an independent market rate for securities lending is not feasible. Nevertheless, the parameters of these facilities remain at the discretion of the Bank and the AOFM, and can be changed if needed.

Recent borrowing

The RBA and AOFM facilities have been available to counterparties for at least two decades, but borrowing from the RBA SLF has increased since mid-2021 and even more notably from November 2021 (Graph 1). Both the value and number of transactions has increased, with more counterparties using the facility and generally seeking larger amounts of bonds.

Borrowing from the AOFM SLF has remained low by comparison. This is likely to reflect the fact that the RBA facility is slightly cheaper. Also, the AOFM did not until recently accept cash as collateral and most demand for current borrowing is focused in bonds available in the Bank's portfolio.

The preference of some borrowers to use cash as collateral partly reflects the high levels of cash held by commercial banks in their Exchange Settlement accounts at the Reserve Bank, as a result of the

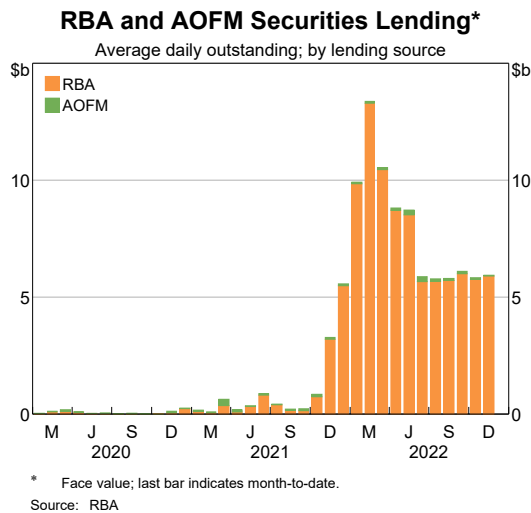
Bank's policy measures implemented in response to the COVID-19 pandemic (RBA 2022a). The lower 'free float' of bonds (i.e. bonds on issue less RBA holdings) available to post as collateral is also likely to have played a role.

Although system liquidity is high, the resulting cash balances are not distributed evenly. Some market makers, such as large foreign banks and non-banks, tend to have lower Australian dollar balances than large domestic banks. These market makers are therefore more likely to secure their SLF borrowings using other bonds as collateral instead of cash. In recent months, around two-thirds of borrowing by value from the RBA SLF has been against cash, and one-third against bonds (Graph 2).

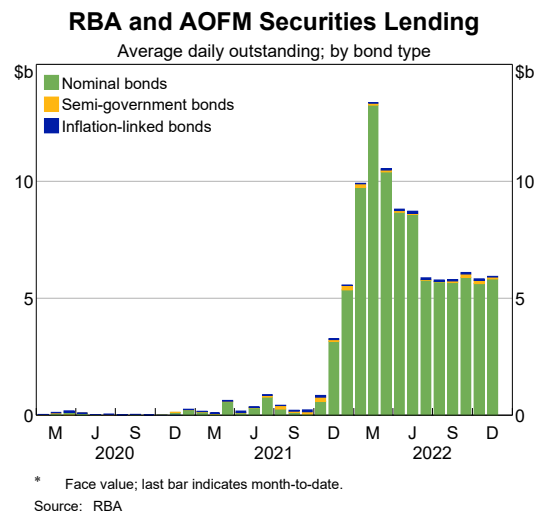
By bond type, the overwhelming majority of bonds borrowed are nominal AGS, with the remaining borrowing made up of semis from the RBA SLF and inflation-linked AGS from the AOFM SLF (Graph 3).

By tenor, most borrowing from these facilities is short term, with the overwhelming majority borrowed for one or two business days (Graph 4). A smaller but still material amount of borrowing is for five business days (a calendar week), the maximum tenor offered by the facilities. These are mostly borrowings that market makers roll each week to support their own longer term positions or the positions of their clients. An example of such a long-term position – a bonds-futures basis trade – is discussed below.

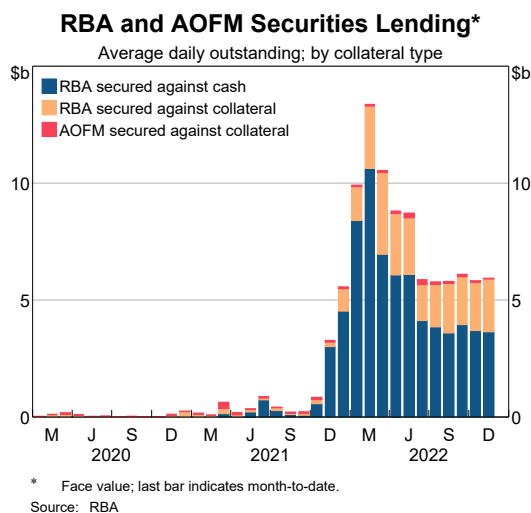
Graph 1



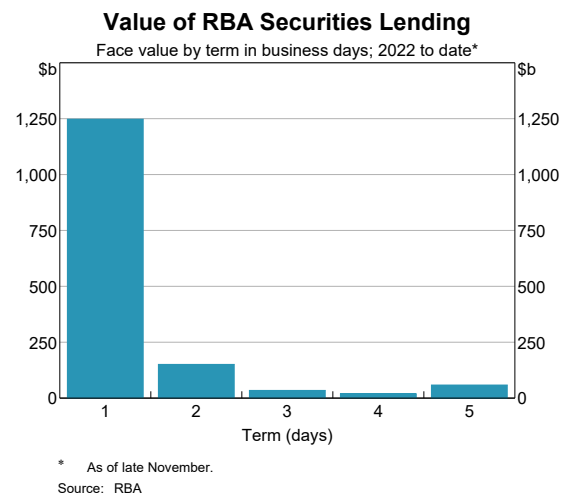
Graph 3



Graph 2



Graph 4



Drivers of the recent increase in borrowing

Shortages of bonds

Securities lending increased significantly towards the end of 2021, peaked in February 2022, and has remained elevated since. The large increase in securities lending coincided with the Bank owning an increasingly large share of AGS outstanding as a result of bond purchases to support the yield target and under the BPP (Graph 5). The Board has said that it currently intends to hold these bonds until maturity, and so Bank holdings reduce the free float of bonds available to market participants – shown here as AGS on issue less Bank holdings (Graph 6).

The free float of bonds available at the specific maturities shown in Graph 6 can still decrease even after the Bank's purchases have concluded. As a bond's residual maturity reduces over time, it will fall out of a maturity 'basket' (like the Nov-24 bond shown in Graph 5, which was previously a three-year bond) and could be replaced by longer dated bonds with higher Bank holdings (such as the Apr-26 and Sep-26 bonds in Graph 5).

Estimates by market participants of the 'circulating' free float (after also excluding bond holdings of other long-term 'buy-and-hold' investors) are lower still.^[3] These estimates put the share of some individual bond lines available in circulation as low as 10 per cent, with the lowest shares generally for bonds with a remaining term to maturity of three

years or less. Both the share of total bond lines outstanding, as well as the absolute dollar value, are likely to be relevant to effective market functioning.

The reduction in the free float has made it more difficult for market makers and other participants to source the bonds they need in the market to engage in trades, hedge trading positions or deliver bonds to clients. Market liaison has suggested significant shortages in some bonds since late 2021, most notably the AGS bonds maturing in 2024 and 2025 (including the final yield curve target bond, the April 2024 bond). However, the availability of the RBA and AOFM SLFs means that participants can reliably source these bonds for the purposes of market making. Consistent with this, most borrowing from these facilities has been in bonds with a remaining term to maturity of three years or less (Graph 7).

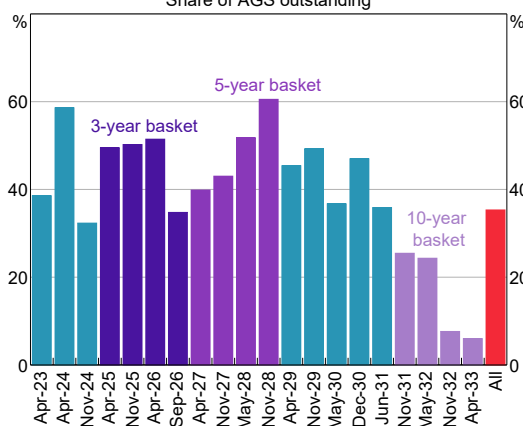
The three-year bonds-futures basis trade

While the direct effect of fewer bonds in circulation has contributed to more securities lending, it is unlikely to explain all of the very large increase in securities lending through late 2021 and early 2022. A sizeable portion of this additional borrowing was driven by an arbitrage opportunity in the bond market that the Bank's purchases helped to create.

The Bank's significant purchases of three-year bonds contributed to these bonds being more expensive (i.e. lower yielding) than the equivalent three-year futures contract.^[4] (By contrast, prior to the pandemic, bonds were generally a little cheaper

Graph 5

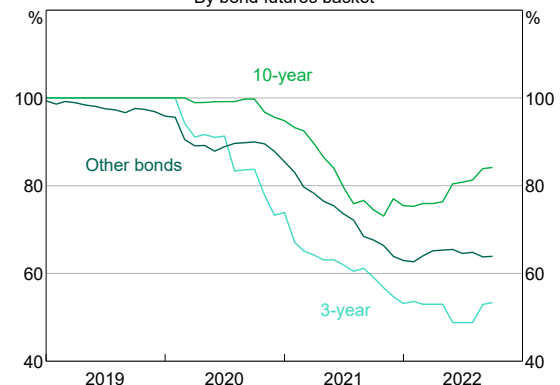
RBA AGS Holdings*
Share of AGS outstanding



* Excludes holdings under repo; excludes inflation-linked bonds; baskets based on the December 2022 futures contract.
Sources: AOFM; ASX; RBA

Graph 6

Free Float of AGS*
By bond futures basket



* Proportion of Treasury bonds outstanding less RBA holdings.
Sources: AOFM; ASX; RBA

than equivalent futures contracts.) That bonds are a little more expensive than futures currently reflects the relative scarcity of ‘physical’ three-year bonds as a result of the low free float, highlighted above. No such scarcity exists in futures, as they are a derivative product.^[5] This difference in price (or in yield) is referred to as a ‘basis’, and by market convention, when bonds are more expensive, the basis is negative.

Market participants can take advantage of this arbitrage opportunity via a ‘bonds-futures basis trade’. Although the prices of the bonds and futures contract are different now, market participants have certainty that their prices will be the same in future, because the price of the futures contract at its maturity is defined as equal to the price of the bonds.^[6] As a result, a negative basis implies that the price of futures must rise relative to bonds over time, which is information a market participant can use to trade.

To engage in this trade, a market participant borrows some amount of bonds and then immediately sells them (going ‘short’ the expensive physical bonds), and simultaneously buys an equivalent value of futures contracts (going ‘long’ the cheaper futures). Towards the futures expiry, the value of the futures contracts rises relative to that of the bonds. At the futures maturity, the market participant receives the value of the futures contract in cash, and uses these funds to buy back the bonds to repay their original borrowings.

Because the basis was originally negative, the payout from the futures contract will be more than the final purchase price of the bonds, creating a low risk return for the market participant. For more detail on the mechanics of this trade, see Appendix A.

Like with any arbitrage, market participants engaging in this trade also helps bring the prices of the bonds and futures closer together (although medium-term factors, particularly the low free float of three-year bonds, may keep the basis negative for some time).

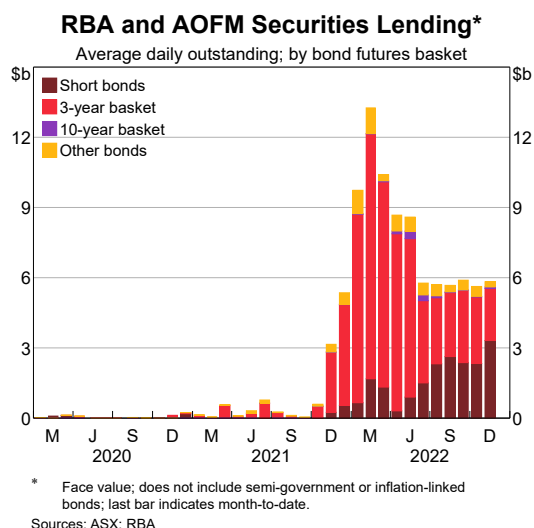
Market contacts reported very large demand from their clients to borrow bonds from the Bank’s facility to engage in this trade through late 2021 and into early 2022, supporting the significant increase in borrowing from the RBA SLF over the same period.

Although the three-year basis has been persistently negative for much of the pandemic period, securities lending only increased materially in late 2021. Market liaison suggests that some market participants were engaged in this arbitrage earlier in 2021, but at a smaller scale, with this arbitrage facilitated by borrowing in the private securities lending market.

The change in activity may also be explained by the increased RBA and AOFM SLF fee for yield target bonds during parts of the yield target policy period (the fee was temporarily increased on several occasions, making it unattractive to short the bond and cover the position by borrowing it). The basis became most negative following the discontinuation of the Bank’s yield target policy in November 2021, due to substantial movements in yields and high volatility (Graph 8). This basis then returned closer to fair value in following months, in part due to very large bonds-futures basis arbitrage trades.

The arbitrage opportunity could underpin high level of stock lending for a time, as market participants who engage in this trade typically roll their positions for a few months until the quarterly futures contract matures (or even further, if arbitrage remains possible in the subsequent futures contract).

Graph 7



Outlook

Although the amount of securities lending through the RBA and AOFM SLFs has been relatively stable in recent months, market contacts generally expect borrowing activity to decline over the medium term, although the timing of this is uncertain.

The increase in borrowing (and short-selling of physical bonds) has contributed to the return of the basis back towards zero from its widest levels in late 2021. This has made the arbitrage less profitable, and in turn reduces the demand to borrow bonds.

The AOFM has also issued some of the most in-demand bonds, which has reduced their relative scarcity and therefore the demand to borrow these bonds (and also supported the return of the basis back towards zero).

Nonetheless, securities lending levels could stay elevated for some time. The three-year basis remains negative, and some market participants continue to report difficulty finding certain bonds of this tenor. Lending will also fluctuate with general market conditions. Finally, counterparties are also now much more familiar with the RBA and AOFM SLFs so they may continue to use them more than otherwise. Together, these factors could underpin demand for securities lending from both SLFs for some time.

Conclusion

To help support government bond market functioning, the Bank operates facilities to lend

bonds to market participants. Demand to borrow from these securities lending facilities increased from mid-2021 and has remained elevated. The large amount of bonds the Bank owns leaves fewer bonds in circulation, and the relative scarcity of some physical bonds has resulted in an arbitrage opportunity between bonds and futures. This demand should decrease over time as the AOFM continues issuance, bonds in the Bank's portfolio mature, and arbitrage opportunities are closed by trades from market participants. ✖

Appendix A: Mechanics of an AGS bonds-futures basis trade

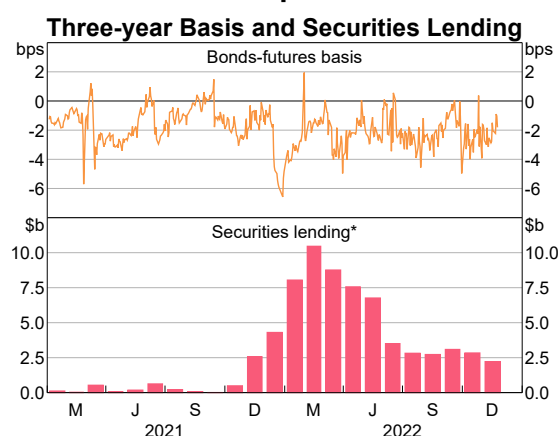
The payoff of a bond futures contract is linked to the average yield on a basket of underlying AGS, and so bond futures can be used to hedge (or take on) the interest rate risk associated with government bonds. While the value of a futures contract is tied to that of the underlying basket of bonds at the futures' expiry, there is no automatic mechanism to keep futures prices in line with bond prices prior to expiry. Instead, this similarity of prices results from investors acting on any arbitrage opportunities that emerge due to prices being misaligned, and trading to remove these (and make a profit in the process). If a negative bonds-futures basis arises (i.e. bonds are more expensive than equivalent futures), a market participant could engage in a bonds-futures basis trade to arbitrage this differential.

Opening the trade

- A **market participant** identifies a negative basis between bonds and futures large enough to profitably trade on.
- The **market participant** borrows the bonds referenced by the futures contract and sells them, and at the same time enters a long futures position. These three trades (borrowing bonds, selling bonds, buying futures) could be done either separately or as part of a single linked trade with a **market maker**; for simplicity, we assume that they occur as part of a single linked trade. The **market participant** is now short the physical bonds, and long futures.

The **market maker** engages in this activity for profit; charging a 'bid-ask' spread for the sale of

Graph 8



bonds, and charging a fee for lending bonds (likely a mark-up over the RBA SLF fee). The **market maker** also seeks to maintain its relationship with the **market participant** for future profitable transactions.

- The **market maker** may have enough of these bonds in its portfolio to lend; alternatively, it

may need to borrow these bonds from the RBA SLF. In the latter case, the **market maker** approaches the **RBA** to borrow the bonds, rolling this borrowing until the expiry of the futures contract (or participant's trade), and paying a fee.^[7]

Figure 1: Opening the Bonds-futures Basis Trade



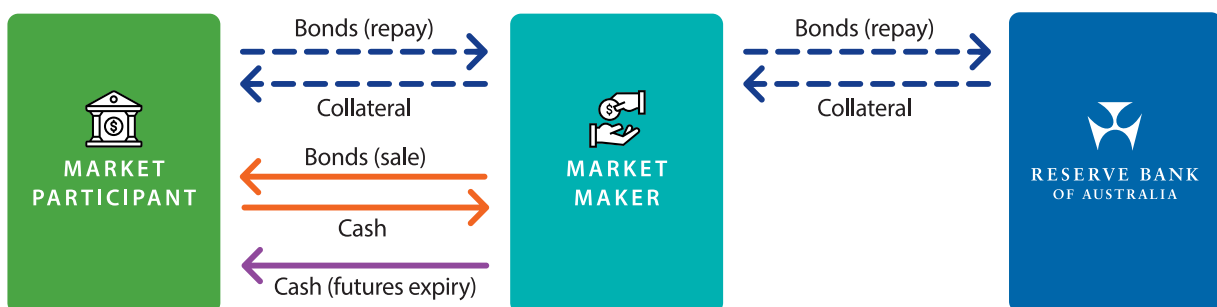
Closing the trade

- As the expiry of the futures contract approaches, the value of the futures contract increases towards the value of the underlying bonds.
- The **market participant** holds the futures contracts to expiry and receives a payout linked to the yield on the bonds underlying the futures contract.^[8] At the same time, the **market participant** purchases the relevant bonds in the market and delivers them to the **market maker** to close its short bond position; for simplicity, we assume all these transactions are

conducted by the market participant through the market maker.

- The **market maker** closes its short position with the RBA SLF.
- The **market participant's** profit from the trade – being the change in value of the futures contracts *less* the change in value of the underlying bonds *less* net fees and charges – should be positive.

Figure 2: Closing the Bonds-futures Basis Trade



Endnotes

- [*] The authors are from Domestic Markets Department.
- [1] For securities lending against bonds, the Bank accepts AFMA's General Collateral Basket 2 (GC2) (AFMA 2022). Haircuts are applied to this collateral in line with the Bank's Eligible Securities framework to provide a buffer for potential declines in the market value of the collateral. Positions are margined daily. See RBA (2022b).
- [2] The \$5 billion figure is a limit set in legislation. For detail, see AOFM (2022b).
- [3] These buy-and-hold investors typically include domestic banks holding AGS for high-quality liquid asset purposes, and offshore investors making long-term Australian dollar investments.
- [4] There are also five-year and 10-year bond futures contracts. The basis for these two contracts have been largely flat. The five-year part of the AGS curve is much less actively traded; while the 10-year part of the AGS curve is more traded, the Bank owns a lower share of 10-year bonds.
- [5] For more information on physicals and bond futures, see Cheung (2014).
- [6] At expiry, the futures price is defined as equal to 100 less the average yield on the relevant bonds, so a non-zero basis (accounting for any costs involved in putting on the trade) represents an arbitrage opportunity.
- [7] In Australia, futures trades are executed via an exchange, but the market maker can facilitate that trade through the exchange.
- [8] The futures contract will be margined daily through the exchange, so cash flows associated with changes in the value of the futures will occur throughout the period where the trade is open. We omit these flows in the figures for the sake of simplicity.

References

- AFMA (Australian Financial Markets Association) (2022), 'Reciprocal Purchase Agreements Conventions', March.
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