

ICMA Guide to Asia Pacific Repo Markets

Australia

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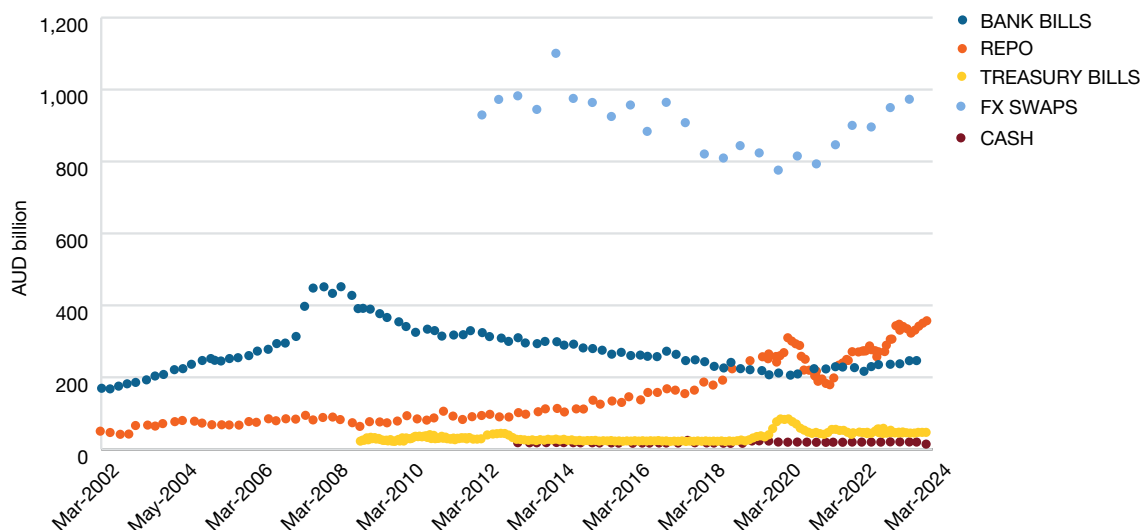


Commonwealth Bank
of Australia

As part of ICMA's objective to promote the development of repo markets around the world, it is publishing a series of reports by Richard Comotto on individual Asia Pacific domestic repo markets—covering market infrastructure, types of repo and collateral, market participants, post trade operations, and legal and regulatory framework. The seventh in this series is Australia.

Australia possesses well-established cash and repo markets in government and other fixed-income securities. Growth started to pick up in these markets in 2012, in the aftermath of the Global Financial Crisis (GFC). The repo market overtook the unsecured interbank deposit market in 2015 and forged ahead of the traditionally dominant bank bill market in 2019, to become the largest segment of the domestic Australian money market.^{1 2 3} The growth in activity since 2019 has been accompanied by something of a sea-change in the nature of the market, including a smaller role for the central bank. By the middle of 2024, the outstanding size of repo had grown to about AUD 350 billion from about AUD 200 billion at the end of 2021 (growth of about 75%).⁴

Chart 1: outstanding value of money market transactions in Australia



Sources: ABS, AOFM, APRA, BIS, RBA

The growth of both the cash bond and repo market has recently rekindled discussion about the need for a [central counterparty \(CCP\)](#) to mitigate systemic risk and enhance market efficiency.

¹ Garvin, *Identifying Repo Market Microstructure from Securities Transactions Data*, RDP 2018-09 (August 2018), p1.

² Bristow and Tang, *The Australian Repo Market: a Short History and Recent Evolution*, RBA Bulletin (July 2024). In terms of combined on- and offshore money market trading, repo is second only to AUD-denominated FX swaps.

³ *Ibid.* p52. The outstanding value of unsecured interbank deposits with a residual term-to-maturity of one day rarely exceeds AUD 3 billion, compared to up to AUD 20 billion in repo of the same term.

⁴ *Ibid.* p47

One of the strengths of the Australian repo market is that its core is securities-driven (albeit that most repos trade at the general collateral or GC repo rate).⁵ This means that, first of all, the repo market in Australia supports not only the underlying cash market in bonds but also fosters liquidity in both OTC and exchange-traded derivatives. The cash and derivatives markets, in turn, support the repo market, by providing collateral securities and generating demand for repo. A securities-driven market also means that there is a reliable motive force driving the growth and development of the Australian repo market, in the form of securities dealers (dealers are captive users of repo, whereas non-dealers such as banks typically have alternative sources of financing to repo).

A secular challenge to the development of the Australian repo market continues to be the relatively low level of government debt (which constitutes the principal source of repo collateral — see Table 1 below). This problem has periodically been made worse by reduced issuance, as is currently the case, with the government debt/GDP ratio declining from a peak of 39.1% in 2020-21 to 34.7% in 2022-23 (having been as low as 4.7% in 2008-09). Scarcity may also have been exacerbated by increasing purchases by regional central banks and other non-residents who are buy-and-hold investors. It is also noticeable that, in comparison with other developed markets, the turnover of government debt is low relative to the stock of that debt.⁶

To some extent, collateral scarcity is being offset by declining central bank purchases of securities. Some relief is also provided by established official securities lending facilities. Central-clearing by a CCP, if adopted, might enhance efficiency in collateral use. And the effective supply of collateral could be enhanced by increased further growth in securities lending from the investment portfolios of non-bank financial institutions (NBFIs), as well as the continued diversification in collateral.

Table 1: Comparative government debt and repo market statistics

	Outstanding government securities v GDP	Government securities turnover ratio	Repo v cash market turnover in government securities
Australia (2023)	34.7%	1.6	1.4
Eurozone (2021)	95.6%	2.1	6.9
UK (2021)	97.2%	4.6	5.4
US (2021)	94.1%	7.7	7.7
Japan (2021)	224.8%	3.1	11.1
China (2021)	100.0%	0.4	8.2
Indonesia (2020)	25.4%	2.8	0.1
Philippines (2020)	37.3%	0.9	0.1
South Africa (2022)	62.0%	2.3	2.5
South Korea (2022)	47.4%	2.0	2.3

Sources: AOFM, author's estimates

5 "General collateral" (GC) consists of any security that trades in the repo market at the same or a similar repo rate to repos against other securities of the same type, where these securities are all widely acceptable as collateral and are considered to be ready substitutes for each other in that role. Because buyers (cash lenders) are indifferent as to which GC issue they receive as collateral, GC repo rates are determined by the supply and demand of cash (albeit that the demand for cash reflects the aggregate supply of GC securities in need of financing). In this respect, GC repo are sometimes described as "cash-driven".

But while the GC repo rate can be described as cash-driven, the motive for many GC transactions may be to finance or borrow collateral securities, rather than for the purpose of firm-wide liquidity management. In this sense, GC repos can also be "securities-driven".

On occasion, securities-driven trading creates strong demand for a particular collateral security, giving it some intrinsic value. This will be manifest in its repo rate trading below the GC rate (as buyers have to offer cheaper cash to acquire this issue). At this point, the issue is said to have become "special". All specials can be described as "securities-driven". GC is also often used to describe repos against multiple collateral securities, as opposed to "specific" repos, where only one issue is provided as collateral. Specifics may or may not also be specials (all specials are specifics but not all specifics are special) but all multiple-security repos will trade at the GC rate.

6 The debt/GDP ratio in 2012 was about 10%. It peaked in 2021, at approximately 47%. Debt almost entirely disappeared in the early 2000's, because of an abundance of tax and royalties from mining. However, the government was persuaded by financial market participants to keep a nominal amount of bonds on issue (AUD 50 billion). The ratio was near zero at the start of the GFC. (Source: *Trading Economic*).

The development of the Australian repo market

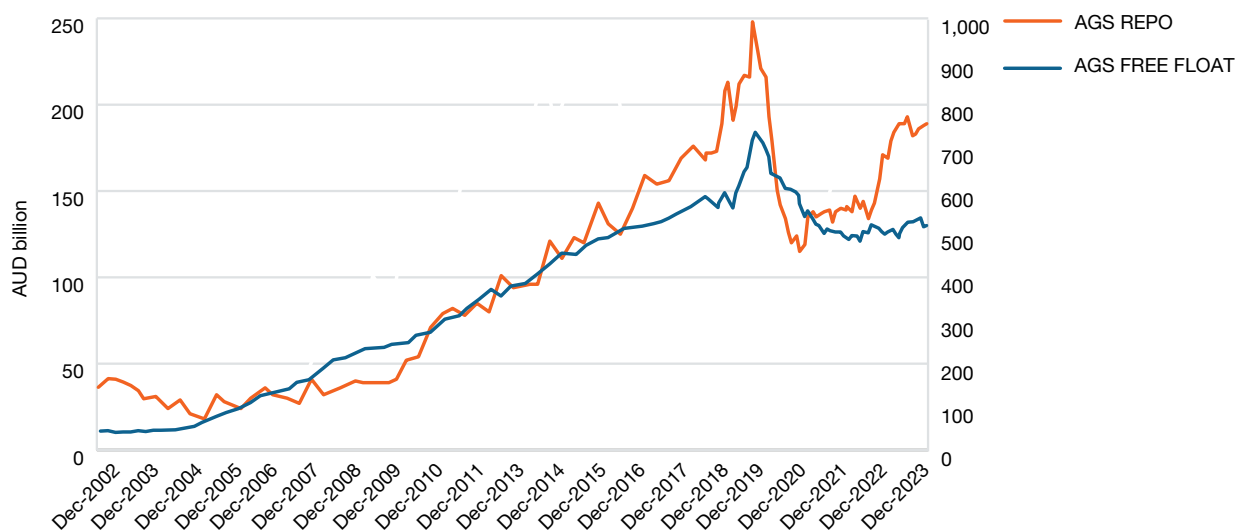
A form of repo first emerged in Australia in about 1949, in the form of “buy-backs” and “sell-backs”.⁷ These appear to have been an example of the undocumented buy/sell-back species of repo (as opposed to the repurchase transaction). They were originated by stockbroking firms, who began financing themselves by selling central government securities to customers who were seeking a safe short-term investment that paid more than bank deposits, with an agreement to buy the securities back after a period of anything from a few days to a month. In 1958, reluctance to further expand their balance sheets prompted these firms to make a request to the central bank (at that time, called the Commonwealth Bank) for a lender-of-last-resort facility. This access was granted, in 1959, to firms which agreed to become “authorised dealers” subject to supervision by the central bank.⁸

Initially, the repo activities of authorised dealers were restricted by the central bank. Thus, their sell-backs with non-banks were limited to just 0.25 % of assets and repos with banks were prohibited. Ironically, these restrictions eventually caused problems for the central bank, when, from 1984, it started to use repo in its open market operations. This was because authorised dealers held only small quantities of eligible securities on their own account and were prevented from intermediating by borrowing securities from banks and non-banks in order to sell to the central bank. Consequently, in 1986, all restrictions were lifted. Between 1985 and 1991, turnover in repo by authorised dealers expanded by some 450%.⁹

Authorised dealers disappeared in 1996, when the central bank (by then, the Reserve Bank of Australia or RBA) began dealing directly with all types of major financial institution, including banks, in preparation for the introduction of real-time gross settlement (RTGS) of payments.¹⁰ Since that time, bank dealers have been the principal type of intermediary in the Australian repo market.

The growth in repo in Australia, as elsewhere, is highly correlated with growth in government securities, which is the core collateral in virtually all repo markets (but see the next section about recent growth).

Chart 2: outstanding value of AGS repo vs AGS issuance



Free float is outstanding market value of outstanding issuance less RBA outright balances. Includes borrowing from RBA collateralised by AGS.

Sources: AOFM, APRA, RBA

⁷ Allan RH, *The Economics of Intervention in the Short-term Money Market*, PhD Thesis, Australian National University (June 1977).

⁸ For the central bank, the arrangement had the advantages of extending its supervision of credit growth outside the banking system, providing another channel through which to influence the money market, improving government bond market liquidity and limiting the threat to financial stability from failing dealers.

⁹ RBA, *Authorised Short Term Money Market Dealers*, RBA Bulletin, June 1991.

¹⁰ Given that payments are made gross and not netted, an RTGS payments system requires the provision of significant intra-day liquidity by the central bank.

An important periodic influence on the Australian repo market has been arbitrage opportunities involving the Australian dollar in the foreign exchange market — cross-currency basis swap arbitrage — that have arisen post-GFC due to reduced trading by banks as a result of the higher regulatory costs of trading. Cross-currency swap arbitrage involves an investor repoing out Australian government securities (AGS) or other Australian dollar-denominated bonds for Australian dollar cash.¹¹ ¹² This is then temporarily exchanged in the FX swap market for other currencies, usually the euro or Japanese yen, to lend in the repo markets in those currencies. An inconsistency between the interest rate differential between repo rates in the two currencies and the cost of hedging the currency risk with FX swaps produces an arbitrage profit.¹³

Recent developments

The growth in the repo market since 2019 has been driven by changes in the structure and operation of the market. Thus, there has been an increase in the number and type of market participant, further strong offshore interest and a widening array of collateral securities, as well as more active trading by dealers, which has helped to make the pricing of repo more efficient. Furthermore, the crowding-out of the repo market by central bank monetary policy operations is being reduced by the unwinding of the monetary policy measures introduced in response to the Covid-19 shock in 2020.¹⁴

The number of dealers reporting to the RBA increased from about 15 in the decade prior to 2018 to 34 in 2024.¹⁵ In addition, over the last decade, non-residents have doubled their share of the value of outstanding transactions to around 60% (reflecting their role as the largest group of investors in AGS). The expansion of foreign interest has been facilitated by the fact that the Australian market is open to non-resident dealers, who act as intermediaries for non-resident investors (but may also trade for their own account).

The most significant event in the recent development of the repo market has been the RBA's monetary policy response to the Covid-19 shock in March 2020. As in other markets, the crisis initially triggered a “dash for cash”, which immediately boosted repo trading. However, this was followed by a collapse in market activity, as the supply of central bank reserves to the banking system (called “Exchange Settlement Account” or ESA balances) was increased by the RBA's enhanced open market operations and bond purchases, as well as by the introduction of the Term Funding Facility (TFF). Between late 2020 and late 2021, demand halved for repo against the main class of collateral (called GC1 — see the section below on Collateral).

From late 2021, after the demand for reserves had been sated, the repo market bounced back to reach record size. This is despite the fact that AGS issuance has not been growing. The reason is likely to have been a boost to bond and repo trading driven by expectations of lower bond yields.

11 Prior to 2015, Australian government securities were called Commonwealth Government Securities (CGS).

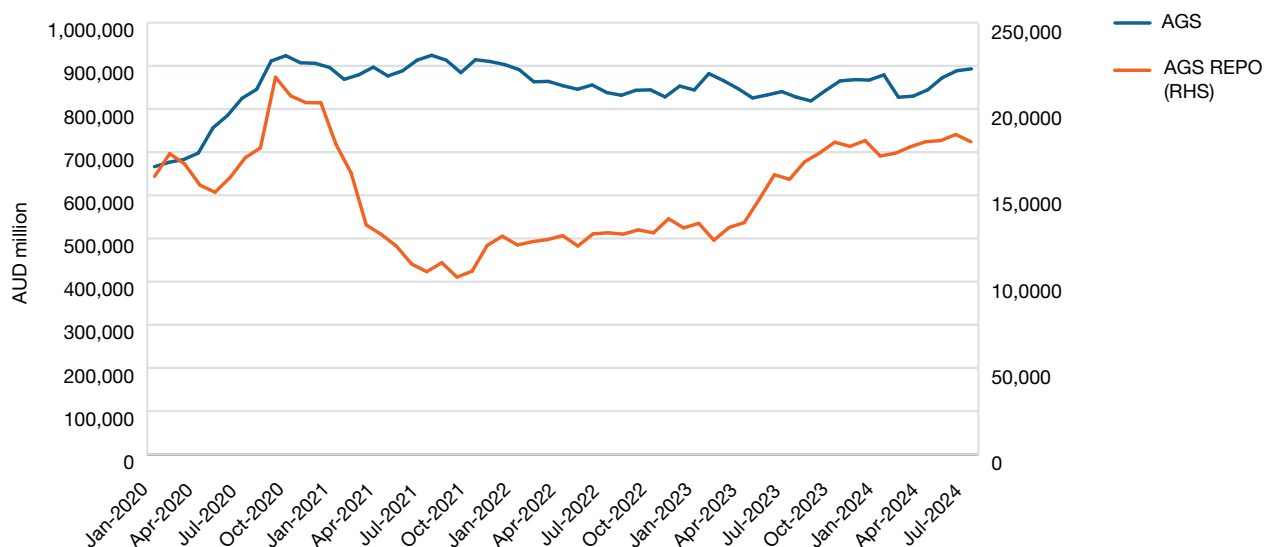
12 In addition, an investor in bonds denominated in another currency might acquire Australian dollar bonds through a collateral swap in order to exploit the Australian dollar arbitrage.

13 The arbitrage opportunity ultimately arises because other foreign investors borrow Australian dollars to buy bonds in that currency, typically for diversification, and hedge the currency risk with an FX swap for which they are willing to pay a premium (as represented by the basis), which arbitrageurs are able to capture.

14 At times in the past, particularly after the Covid-19 shock, over half of all repo activity involved the RBA.

15 Bristow and Tang, *op.cit.*, p49.

Chart 3: outstanding market value of AGS issuance versus AGS repo



Sources: AOFM, APRA

Marketplace

Trading in the domestic repo market in Australia takes place over-the-counter (OTC). In other words, parties execute transactions directly with each other, sometimes after being introduced by voice-brokers. Negotiations are conducted primarily on the telephone and electronic messaging services.¹⁶

Official securities lending facilities

Liquidity in the Australian repo market has been underpinned by official securities lending facilities, from which dealers can borrow specific conventional or index-linked AGS issues. These facilities prevent squeezes and reduce failed deliveries at times when government debt is in short supply due to reduced issuance or official purchases.

Since 2004, dealers have been able to borrow specific AGS issues, on an intraday or open basis, through the securities lending facility operated by the RBA on behalf of the federal debt management office, which is the Australian Office of Financial Management (AOFM). The AOFM issues extra bonds to itself for this purpose (it is permitted by law to issue up to AUD 5 billion for lending). Similar facilities are also offered for their issues by a number of the State governments.

Since 2022, a dealer has been able to borrow from the AOFM securities lending facility by means of a repo from the RBA. Previously, borrowing was only by means of a reverse repo with the RBA, which had to be offset by a repo of eligible and margined GC back to the RBA. These back-to-back transactions effectively create a securities loan to the dealer.

The cost of intraday borrowing from the AOFM facility is just a charge made to recover settlement costs at Austraclear. The cost of borrowing on an open basis has, since the Covid-19 shock, been the difference between the repo rate paid to the RBA on the GC repo leg — which is set equal to the RBA's rate of remuneration on central bank reserves — and

¹⁶ There may be some repo trading on the automated trading platform, Tradeweb Australia (formerly, Yieldbroker), but this is principally used for cash trading of bonds and bills. This platform offers a "click-to-trade" facility to the dealer-to-dealer (D2D) market segment and "request-for-quote" (RFQ) trading to the dealer-to-customer (D2C) segment. There is no automatic matching of orders or quotes on a central limit order book (CLOB). In "click-to-trade" trading, dealers place quotes or orders on an order book, where they rest until accepted by other dealers or they expire or are pulled. However, execution is subject to a "look-back" by the quoting dealer, meaning that the quoting dealer can refuse to go ahead with the transactions for reasons such as lack of a credit line or legal agreement with the accepting dealer. In a "request-for-quote" (RFQ) trading, a customer can submit an order to one or several selected dealers. The dealers can independently submit quotes (for repo rate and haircut) back to the customer. The latter can accept a quote, seek to open negotiation with one of the dealers or reject all the quotes.

the rate received by a borrower from the RBA for the reverse repo leg — which is 25 basis points below the RBA rate of remuneration on reserves. In other words, the cost of borrowing is an implicit fee of 25bp.^{17 18}

The RBA will also lend specific AGS issues to dealers from its own holdings. As a result of purchases during and in the aftermath of the Covid-19 shock, by February 2022, the RBA had accumulated holdings equivalent to 36% of AGS and 16% of State or Territory securities. Lending is on a reverse enquiry basis, for a maximum term of one week and can be against cash or eligible collateral. The RBA currently repos out AGS at a repo rate of 20 basis points less than the rate of remuneration that it pays on central bank reserves. Borrowing can also be arranged (as in the AOFM securities lending facility) as a composite securities loan against eligible collateral. In this case, the dealer not only reverses in specific AGS from the RBA but must also repo back eligible collateral and pay the reserves remuneration rate.

The AOFM facility was most heavily utilised during 2008, when trading in the secondary market for AGS became illiquid. On the other hand, most post-Covid borrowing has been from the RBA rather than the AOFM facility.¹⁹ This likely reflects its slightly cheaper cost. Another reason may have been the fact that the AOFM did not, until 2022, accept cash as collateral (by allowing use of a standalone repo rather than a composite securities loan). Many borrowers are likely to have preferred to borrow against cash because of the high levels of reserves held at RBA as a result of liquidity injections in response to the Covid-19 shock, as well as the lower free-float of bonds available to them to post as collateral as a result of RBA operations.

From late 2021 to early 2022, there was a renewed surge in securities borrowing from the official securities lending facilities. This seems to have been an indirect consequence of the collateral scarcity created by RBA bond purchases, specifically, of the three-year AGS. As a result, these bonds became expensive compared to the three-year government bond future (whereas, prior to the Covid-19 shock, they had tended to be a little cheaper).²⁰ The difference in price — called a “basis” — presented an arbitrage opportunity that could be exploited by means of a basis trade. In this case, the basis trade involved going short of the relatively expensive bond and buying the relatively cheap future.²¹ The necessary short position in the bond required the bond to be borrowed. But as the three-year bond was scarce in the repo market, many arbitrageurs had to borrow from the official securities lending facilities.

AFMA Repo Market Conventions

The Australian repo market operates within a well-established framework of explicit best practices recommendations and market conventions compiled by the Repo Committee of the Australian Financial Markets Association (AFMA).²² These [Reciprocal Purchase Agreements Conventions](#), updated in September 2024, are part of AFMA’s Code of Conduct. The Conventions are similar to ICMA’s Guide to Best Practice in the European Repo Market.

Among other things, the AFMA conventions define which types of security should be understood to be general collateral and divides general collateral eligible for purchase by the RBA into two layers, GC1 and GC2.

¹⁷ Prior to the Covid-19 shock, the AOFM securities lending facility was intended to be a last-resort for dealers. Consequently, the rate paid by the RBA on the reverse repo leg of a securities loan was the lower of 25 basis points below the RBA’s reserves remuneration rate or 300 basis points. During the GFC, demand increased for AGS but dealers were disinclined to take positions that might have to be covered at such an expensive fee. The result was that, by mid-2008, some dealers withdrew from making a two-way market in AGS.

The floor of 300 basis points was removed following substantial purchases of AGS by the RBA between 2020 and 2022, and the abandonment, in November 2021, of the RBA’s “yield target” policy (which had led to the fee being increased on several occasions in order to make it unattractive to short the bond and increase downward pressure on prices and upward pressure on yields).

¹⁸ *Aziz and Jackman, The RBA and AOFM Securities Lending Facilities, RBA Bulletin (December 2022).*

¹⁹ *Ibid.*

²⁰ There are also five and 10-year bond futures but the five-year contract is not well traded and no significant basis opened up at 10 years.

²¹ When a bond is expensive relative to the futures contract on that type of bond, there is a negative basis. The appropriate basis trade is then to “sell the basis”, which means immediately borrowing and selling the bond and simultaneously buying the future. As the expiry date of the futures contract approaches, the price of the future will converge on the price of the bond (given that the futures contract will be settled at the future bond price). This means that expensive bond prices must fall and the cheap futures price must rise relative to each other. The basis-trader will then have paid less to buy the bond through the cheap futures contract than they received when they shorted the expensive bond (taking into account the cost of borrowing the bond through the repo market). As a result, the basis-trader will realise an arbitrage profit.

²² The Australian Financial Markets Association (AFMA) is a representative market association which aims to promote efficiency, integrity and professionalism in Australia’s financial markets (with the exception of foreign exchange). The aim of the AFMA Code is to establish a common understanding of the standard of behaviour expected of all AFMA member organizations and their employees when they are conducting business with clients, counterparties and colleagues, and when providing financial services to retail and wholesale clients. AFMA was formed in 1986. It now has more than 130 members, ranging from Australian and international banks, leading brokers, securities companies and state government treasury corporations to fund managers, energy traders and industry service providers.

The AFMA conventions also note the customary deal size for GC repo arranged by voice-brokers (AUD 50 million and no more than one issue of collateral security per AUD 50 million of cash); the customary size of repos negotiated using voice-brokers' screens (AUD 20 million for 1 to 7-day transactions and AUD 50 million for longer tenors); and the general size of repos of any tenor against index-linked, global or exchangeable bonds (AUD 10 million).²³

There are also AFMA recommendations about collateral substitution (including a convention to allow one substitution of GC per week), margining (drawing on the ERCC recommendations), haircuts, confirmations and settlement fails.

Post-trade infrastructure

Collateral securities in repo transactions settle across the EXIGO securities settlement system operated by Austraclear, which is a subsidiary of the ASX Settlement Corporation, which is in turn owned by Australian Stock Exchange (ASX). Austraclear is also the central securities depository (CSD) for all domestic Australian securities. EXIGO is linked to the Reserve Bank Information and Transfer System (RITS), which is the RBA's RTGS high-value payments system, to provide the delivery-versus-payment (DVP) settlement (DVP Model 1) of domestic securities. From 2021, repos have been settled using a dedicated repo module in Austraclear.²⁴

Settlement finality at Austraclear is ensured by its statutory protection as an RTGS under the Payment Systems and Netting Act 1998 (PSNA).

In addition to Austraclear, it is possible to settle repos against Australian securities across the books of global custodian banks or the International Central Securities Depositories (ICSD).

There is currently no repo CCP in Australia, and consultations by the RBA with the market in 2015 found insufficient support.²⁵ However, a new consultation was launched in March 2023, in the light of the substantial growth in the underlying repo and bond markets, which poses systemic risk but also means that the participation of the RBA would not be needed to make a CCP viable; structural changes in the composition of the market which have made it more complex; and greater familiarity with CCPs at Australian banks from using them in other markets. There is broad support for CCP-clearing in AFMA's Repo Committee but little support among AFMA's members for cash bond clearing. The RBA has stated that it is open to the idea of an offshore CCP. It is also understood that CCP-clearing, if pursued, would not be made mandatory.

Settlement cycles in the repo market are flexible and include a corporate value date of T+3, reflecting the role of investors in other time zones. However, most repos are traded on an open basis. Market practice is to roll-over open repos at the previous day's repo rate, unless one of the parties terminates the transaction or requests a re-rate. Fixed-term repos tend to settle at T+0 or T+1.

Conventional settlement in the underlying domestic bond market is T+2.^{26 27} There is reportedly little appetite in Australia to follow North American and other markets which have or are expected to soon commit to accelerate cash bond settlement to T+1. A move to T+1 is seen as impractical in Australia at the current time because of the time zone differences between Australia and other markets. T+1 is also judged unnecessary because of a low rate of failed deliveries in fixed-income (1-2%), whereas there is concern that compressing the processing time could increase settlement risk. A move to T+1 is therefore seen as very unlikely before 2030.

²³ Global bonds are securities issued by entities in a currency foreign to their domicile but, unlike eurobonds (often called "international bonds") — which are also issued in a foreign currency — global bonds can be issued and traded in the country in whose currency the bond is denominated. Exchangeable bonds are fixed-income securities which the holder can convert into existing equity (as opposed to convertible bonds, which can be converted into new equity).

²⁴ As EXIGO is a rather dated system, which reportedly suffers routine stresses at the end of the settlement day, it is having to be undated.

²⁵ There used to be a repo CCP in Australia. This was the Bond and Repo Clearing (BRC) service launched in 2001 by SFE Clearing Corporation (SFEC), which became ASX Clear (Futures). At one time, about 40% of fixed-income cash and repo trades were cleared through BRC. However, as several dealers did not use the service, there were problems in concluding delivery-versus-payment (DVP) settlement of chains of trades. Where a link in a chain was not cleared by BRC, the seller would have to obtain the security to meet its delivery obligation (rather than delivery being netted against receipt). Borrowing securities to meet such an obligation was difficult at the time, which was before official securities lending facilities became available, because of the low level of AGS issuance. As a result of such difficulties, BRC was suspended in July 2004.

²⁶ Garvin, op.cit. p34

²⁷ In an open repo, the maturity date is not fixed until after the transaction has started, when one of the parties gives due notice to terminate the transaction.

Austraclear has, since 2012, operated a tri-party collateral management system called ASX Collateral to support repo. This a white-label service using technology supplied by the ICSD, Clearstream Banking Luxembourg. However, use of ASX Collateral is largely limited to repos by the RBA as part of its open market operations and is in the order of about 5% of outstanding market value but market usage is said to be increasing.

Types of repo

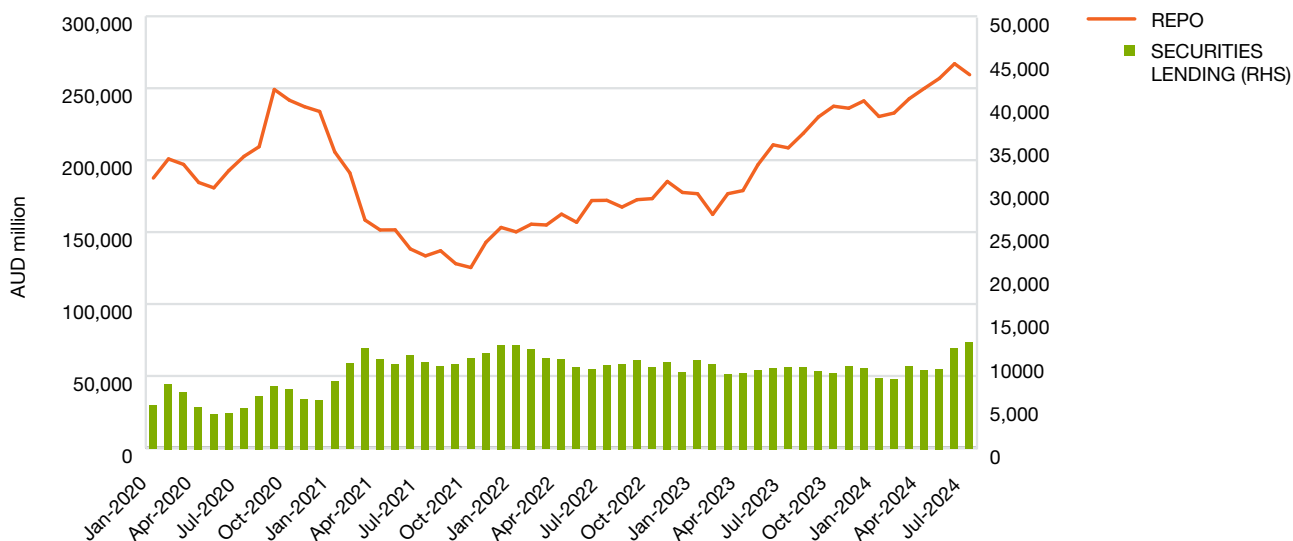
As noted earlier, a form of repo first emerged in Australia in about 1949 in the form of “buy-backs” and “sell-backs”, which were undocumented buy/sell-backs. One consequence of these early repos is that the Australian repo market has sometimes been described as a buy/sell-back market. However, buy/sell-backs are rare and virtually all repos take the form of repurchase transactions.²⁸

The standard documentation for repo in Australia, both domestically and cross-border, is the ICMA Global Master Repurchase Agreement (GMRA) with special annexes attached to customise the GMRA for use in Australia:

- AFMA Annex — this applies to the repo market rather than RBA repos: it changes the governing law to that of New South Wales; amends various definitions; and specifies a price source for collateral revaluation, confirmation obligations, margin and termination deadlines, and interest rates to be applied to cash,
- RITS Annex — this is required for Australian dollar repos with the RBA, which are settled across RITS, and covers many of the same issues as the AFMA Annex but also deals with questions that are relevant to official repos and other central bank facilities.²⁹

There is a small securities lending market in Australia for AGS and semis. Most securities lending is of equity.

Chart 4: repo versus securities lending of AGS and semis (outstanding market value at end-month)



Sources: APRA, RBA

²⁸ The key substantive difference between repurchase transactions and buy/sell-backs is what happens when a coupon or other income is paid on a security while it is being used as collateral in a repo. In the case of a repurchase transaction, an income payment on collateral — which the issuer should make to the buyer in the repo, given that the buyer holds legal title — should trigger an immediate and equivalent contractual payment by the buyer to the seller. This is often called a “manufactured payment”. It is made to compensate the seller for the fact that, by virtue of committing to repurchase the collateral at a fixed price, the seller continues to be exposed to the risk on the collateral securities, despite having sold them in the repo.

In contrast, in a buy/sell-back, income payments on collateral do not trigger manufactured payments from buyer to seller. Instead, the seller is compensated by reducing the repurchase price of the repo, when it is negotiated, by the amount of any expected coupon and some extra income to take account of the delay between the income payment date (when the income should be paid to the buyer) and the repurchase date of the repo (when the seller would get the benefit of the reduced repurchase price).

²⁹ The substance of the RITS Annex is set out in the [RITS Regulations](#) (see Annexure A on p68), which were updated in October 2024.

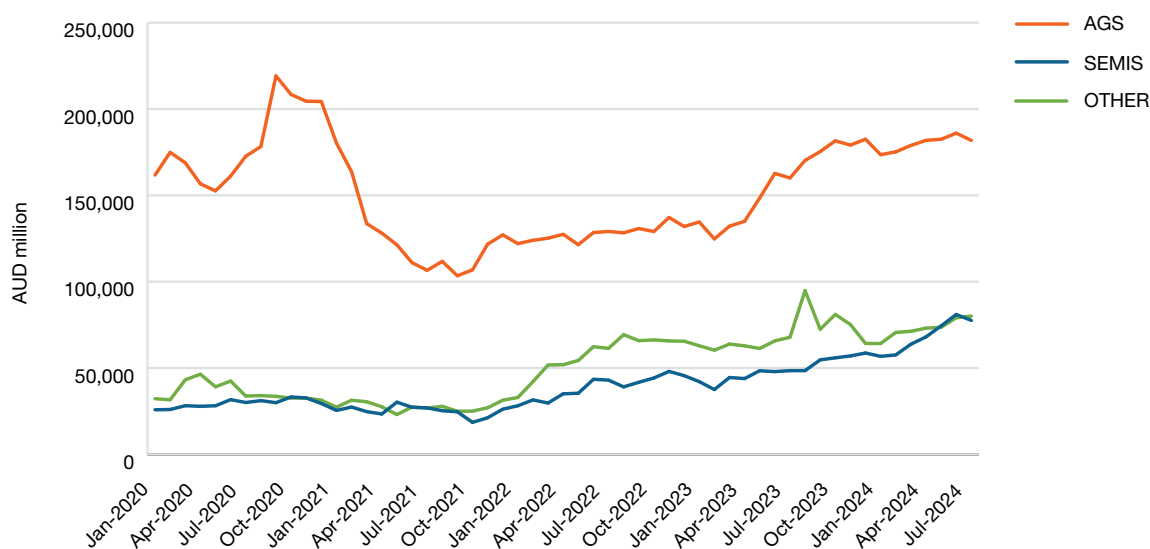
Collateral

The most common type of collateral in the Australian repo market is, and generally has been, central government (federal) domestic debt securities (2008 being an exception). These securities have been known, since 2015, as Australian Government Securities (AGS). AGS consist of both conventional bills and bonds, and index-linked bonds. AGS have remained the most common type of collateral, even when fiscal surpluses have resulted in substantial reductions in government issuance.³⁰

A second layer of domestic public sector collateral is provided by conventional bills and bonds, as well as index-linked bonds, issued by States and Territories in the federation. These issues are referred to as “semi-government securities” (SGS) or just “semis”. During the GFC, low issuance pushed the stock of outstanding AGS to below that of semis. This and excess demand for safe assets prompted the use of semis as substitutes for AGS, at least by creditworthy bank dealers, and repos of semis exceeded repos of AGS (although riskier banks continued to use AGS, in order to secure better rates).^{31 32 33}

The final layer of domestic public sector debt consists of federal and state/territory government-guaranteed debt.

Chart 5a: classes of repo collateral (market value of outstanding at end-month)



Sources: APRA, RBA

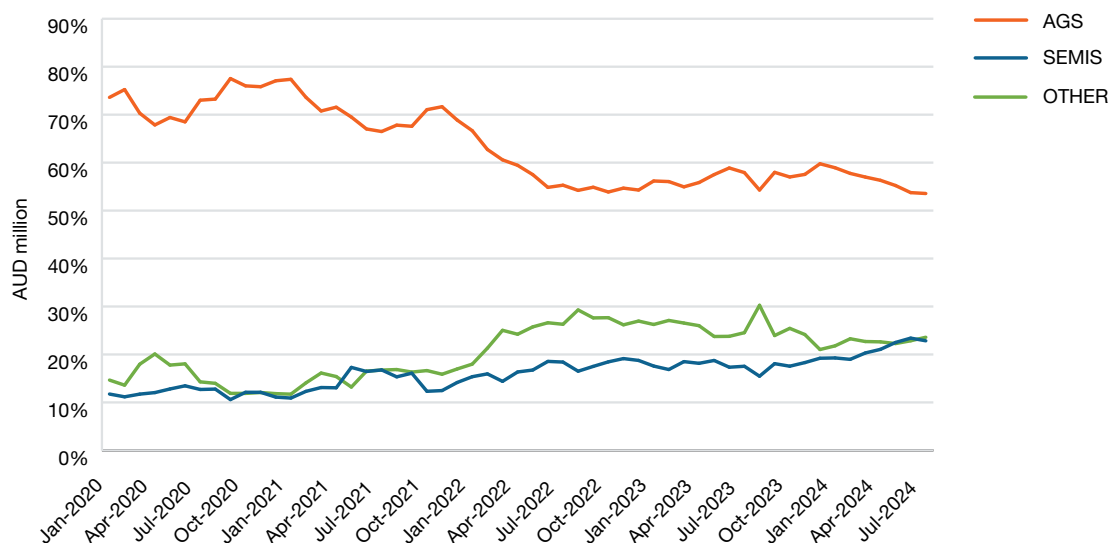
³⁰ Australia ran fiscal surpluses from 1998 to 2008 and from 2023. There was a balanced budget in 2019.

³¹ Garvin (2018) *op.cit.* pp21-22.

³² *Ibid.* p20.

³³ Becker, Fang and Wang, *Developments in the Australian Repo Market*, RBA Bulletin (September 2016), p42. Dealers have tended to hold semis to meet regulatory liquidity requirements, rather than to use as collateral for repos for the purpose of liquidity management.

Chart 5b: classes of repo collateral (share market value of outstanding at end-month)



Sources: APRA, RBA

Repo trading in private-sector securities is modest but has been growing, in particular, in issues by sovereigns, supranationals and agencies, as well as other foreign entities and banks.³⁴ Positions in these securities are thought to have doubled in value since 2020, with especially strong growth during 2022. The growth in bank bonds has been attributed to dealers, who having repoed this type of debt into the RBA’s Committed Liquidity Facility (CLF) during the Covid-19 shock, have had to refinance them in the market as the facility has been wound down.³⁵ Bank debt was the second most common type of collateral held by the CLF.³⁶

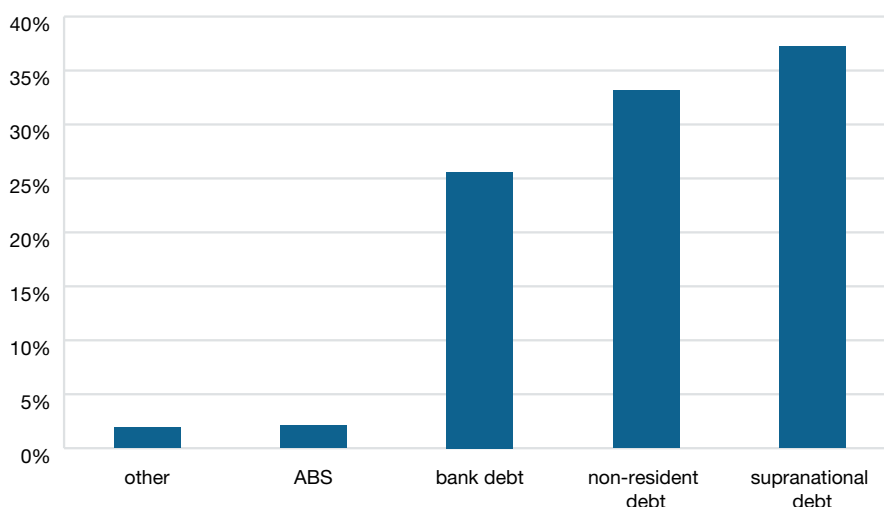
Finally, there is occasional repo activity against highly-rated (but less liquid) securitised debt such as residential mortgage-based securities (RMBS) and asset-backed commercial paper (ABCP).

34 Garvin (2018) *op.cit.* pp21-22. In 2006-15, the top supras were IBRD, EIB, Landeswirtschaft Rentenbank and KfW.

35 Bristow and Tang, *op.cit.* p48.

36 *Ibid.* p49. Cites Bermann, Connolly and Muscatello, *The Committed Liquidity Facility*, RBA Bulletin (September 2019).

Chart 6: outstanding market value of non-GC collateral



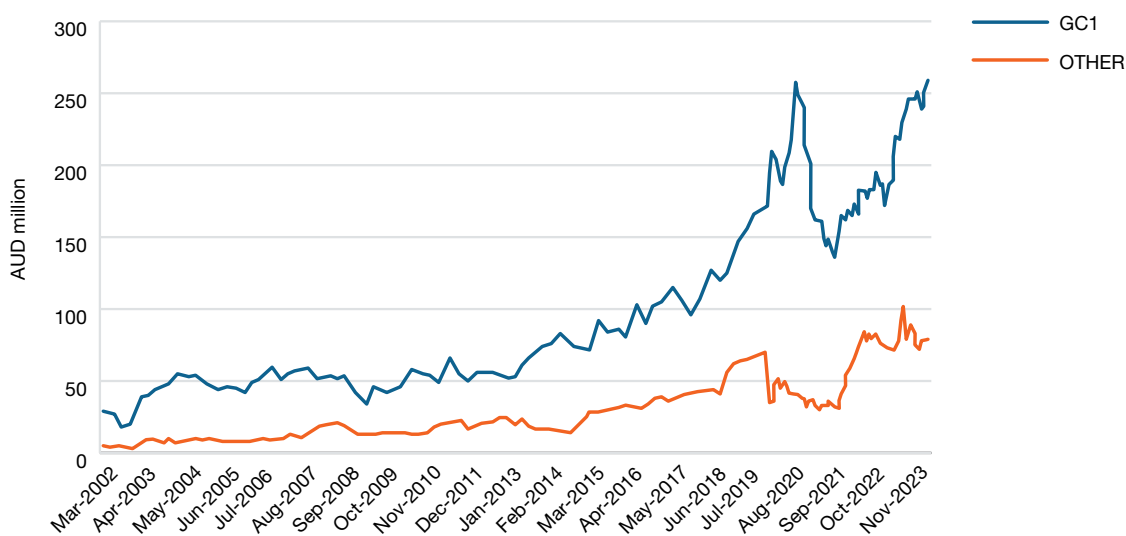
Sources: APRA, RBA

As noted, AFMA grades RBA-eligible general collateral (GC) in the Australian market into:

- **GC1** – actively-traded AGS and semi-government conventional notes and bonds, and index-linked bonds,
- **GC2** – any other securities, including non-government issues, accepted by the RBA in daily liquidity dealings, except global and exchangeable securities.³⁷

GC1 is naturally more liquid than GC2 securities, with some AUD 1.5 trillion outstanding, and is the only type of security to qualify as high-quality liquid assets (HQLA) in Australia.³⁸ Consequently, most GC repo trading is in GC1 securities.³⁹

Chart 7: outstanding value of repos in terms of collateral classification



Repos are by banks and registered financial corporations; includes securities lending; excludes RBA repo and equity repo.

Sources: APRA, RBA

³⁷ The RBA will also not accept any bonds with embedded optionality, eg Tier 2 securities.

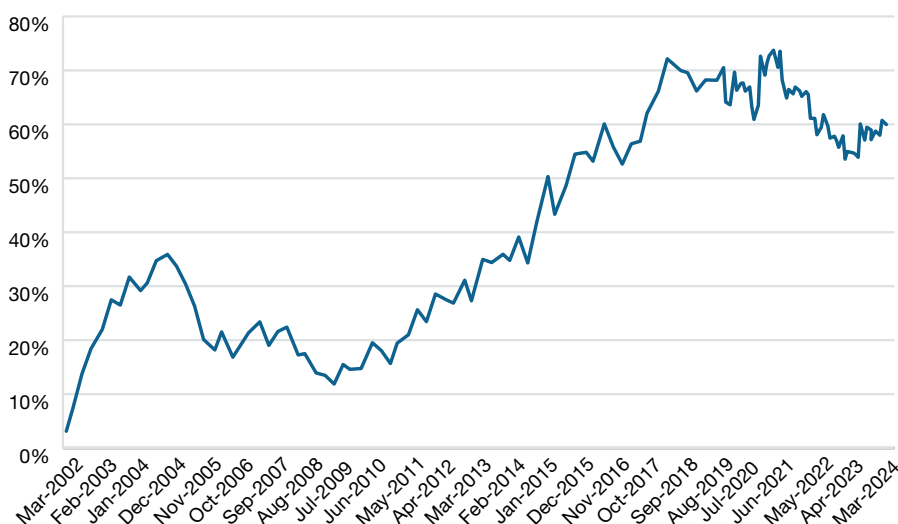
³⁸ *Ibid.*

³⁹ <http://www.rba.gov.au/mkt-operations/resources/tech-notes/eligible-securities.html>

During the “dash-for-cash” triggered by the Covid-19 crisis, there was an initial shift into GC1 from other collateral, the use of which declined as it became more expensive to fund such riskier collateral. Then, between late 2020 and late 2021, GC1 usage halved as the RBA supplied ample liquidity to banks. However, from late 2021, as market normalised, the trading of GC1 bounced back sharply.⁴⁰

Non-residents hold over half of the stock of AGS (almost 13% of identified beneficial owners were in Asia, over 5% in Europe outside the eurozone and about 2.5% in North America). Most of these investors are central banks and other buy-and-hold investors. On the other hand, non-resident investors such as sovereign wealth funds, pension funds, life insurance companies and other financial institutions actively manage their Australian dollar bond portfolios. A key strategy has been to exploit arbitrage possibilities in the cross-currency swap basis between Australian dollar and currencies such as the euro and Japanese yen (see the section above on The Development of the Australian Repo Market). Thus, non-resident holders of Australian dollar bonds can repo these securities for Australian dollar cash and swap that the dollars in the FX market for other currencies to invest in repo in those currencies at a riskless profit.

Chart 8: outstanding value of repo by non-residents

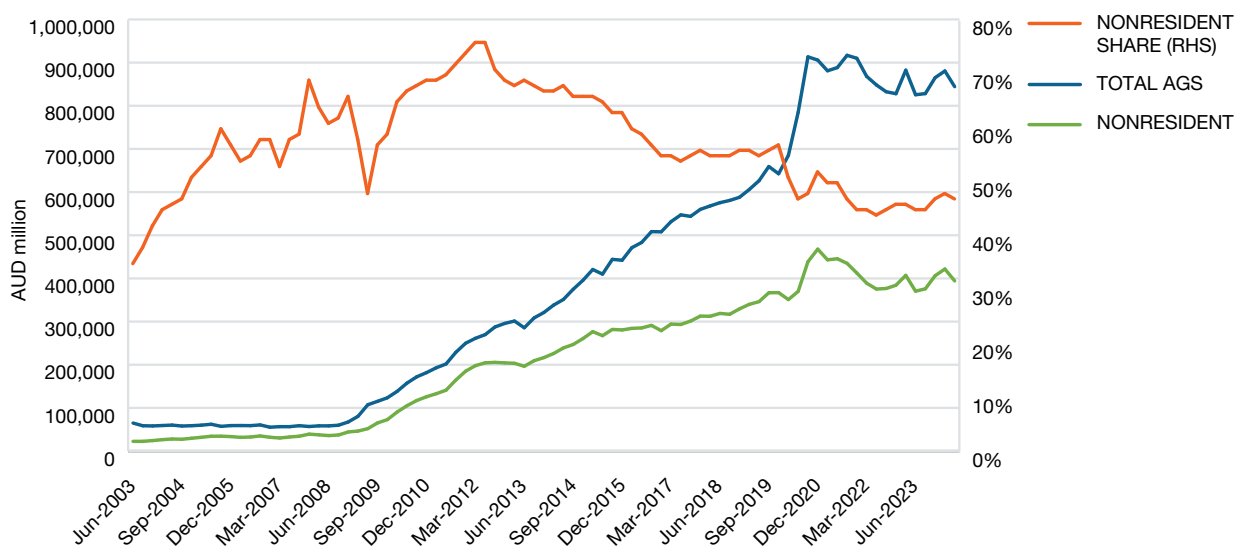


Includes securities lending; excludes RBA repo and equity repo.

Sources: APRA, RBA

⁴⁰ Bristow and Tang, *op.cit.* p49.

Chart 9: non-residents holdings of AGS (market value outstanding at end-month)



Source: AOFM

Haircuts

Research by the RBA has suggested that collateral haircuts have been randomly dispersed either side of zero, with negative haircuts (in favour of seller) representing repo against special collateral and securities loans.⁴¹

The same research found no significant relationship between haircuts and repo rates, questioning whether they are negotiated simultaneously.⁴²

Counterparties

The Australian repo market has been, and largely remains, an interdealer market dominated by the largest banks.^{43 44} The number of dealers reporting to APRA has increased from about 15, in the decade prior to 2018, to 33 in 2024. Bank dealers are thought to account collectively for about half of the outstanding value of the market.⁴⁵

41 Garvin, *op.cit.* p23.

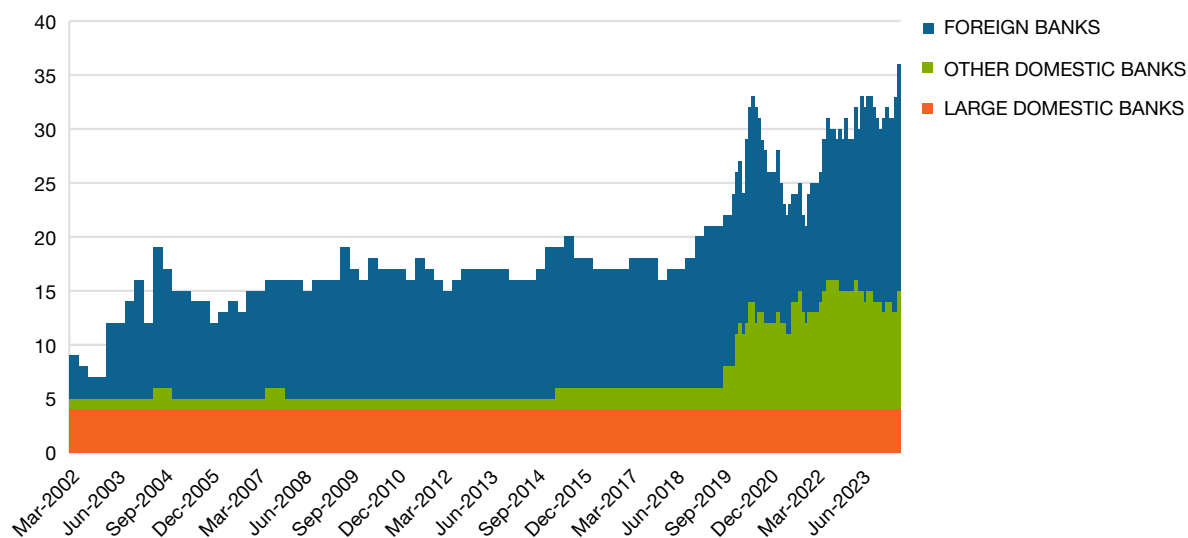
42 *Ibid.* p33.

43 *Ibid.* p29.

44 *Ibid.* p30. This 2015 study suggested two-thirds of the Australian repo market was in a concentrated "core" of activity.

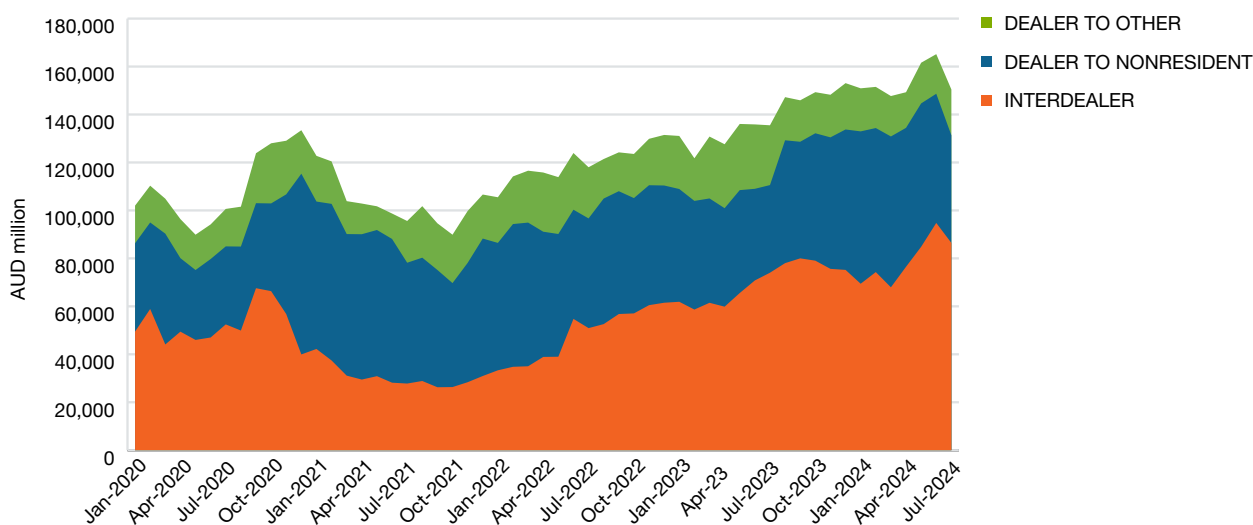
45 Bristow and Tang, *op.cit.* p51.

Chart 10: numbers and types of repo dealer



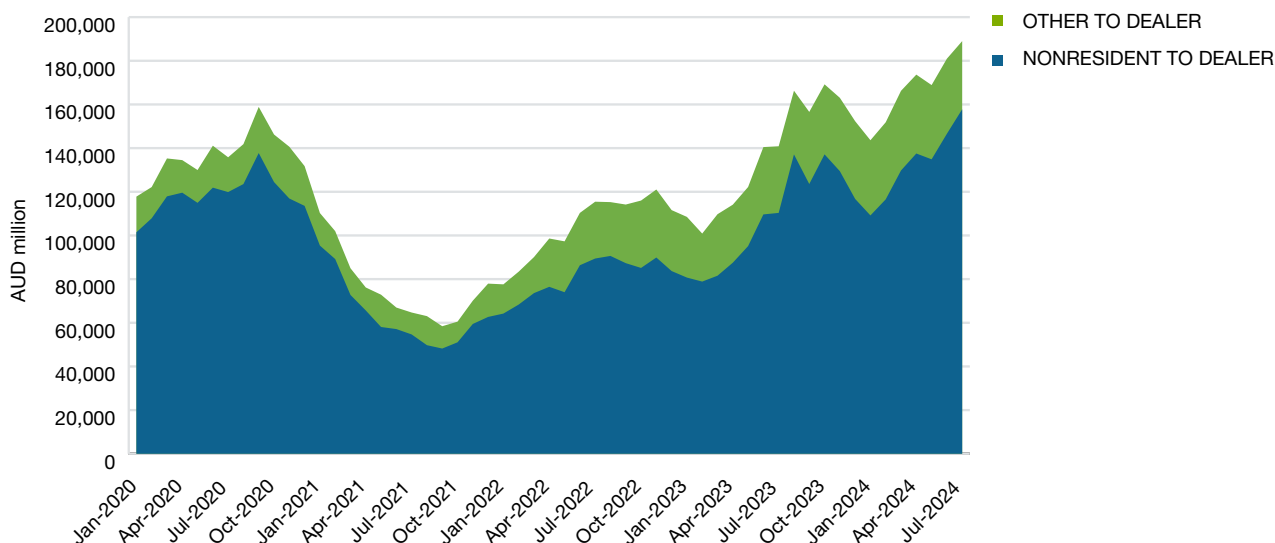
Banks and registered financial institutions reporting to APRA with gross repo positions of at least AUD 1 billion.
Sources: APRA, RBA

Chart 11: total of gross repo and reverse repo by dealers (market value outstanding at end-month)



Sources: APRA, RBA

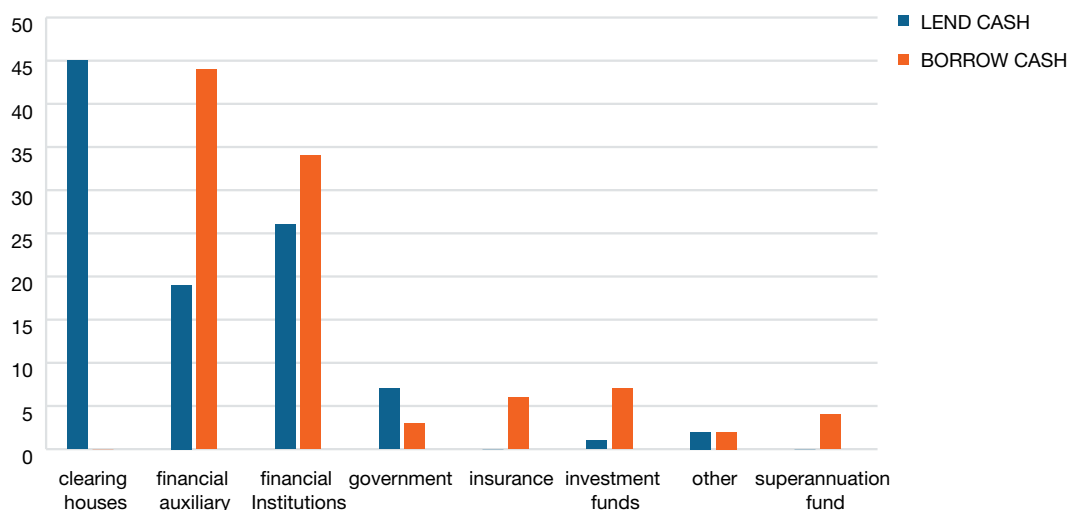
Chart 12: total of gross repo to dealers (market value outstanding at end-month)



Sources: APRA, RBA

Many of the remaining population of the Australian repo market are NBFIs, such as domestic asset managers (called nominee companies) and investment funds (financial auxiliaries, other financial institutions and clearing houses APRA). The latter include superannuation funds in their role as providers of both pensions (Australia is home to the fifth largest pension fund industry in the world) and short-term investment products (similar to money market funds). Funds often use repo to finance leveraged bond positions and reinvestment in high-yielding money market assets. On the other hand, some borrowing by NBFIs is initiated by dealers seeking to borrow specific securities. In recent years, hedge funds have become more active in the Australian market, using repo to support relative value trading.

Chart 13: types of non-bank repo market participants



Entities engaged primarily in activities closely related to financial intermediation but which do themselves perform intermediation.

Sources: APRA, RBA

The share of non-residents in the repo market grew from virtually nothing in the early part of the century, before collapsing in 2005 to a low of 12%. Growth revived in 2009 and accelerated in 2015, to reach 70% in 2018, before falling back to around 60% in 2024.

As explained earlier, while non-resident investors such as central banks are buy-and-hold investors, others — sovereign wealth funds, insurance companies, pension funds and other financial institutions — became more active in managing their Australian dollar investment portfolios in the low-interest-rate environment that followed the GFC. In particular, these investors sought to enhance returns by exploiting cross-currency basis swap arbitrage opportunities between the Australian dollar and other currencies, funding themselves by repoing out their AGS and other Australian dollar-denominated bonds.

The number of non-resident dealers jumped in 2019 and they now account for about a quarter of reporting dealers. Non-resident dealers tend to act for their offshore customers and are collectively the largest net borrowers of cash in the repo market.⁴⁶

The RBA has played a key role in financing the Australian repo market, with its share of outstanding market value rising to over 50% by 2008. This subsequently fell back, to fluctuate between 20% and almost 35% until late 2020, when it dropped again, to around 5%, as central bank assistance to the market in response to the Covid-19 shock was unwound.⁴⁷ Central bank repo was important in indirectly financing the growth of non-resident business.

Net flows

In terms of net funding flows through the repo market, dealers and registered financial corporations (RFC), in aggregate, ran matched-books in repo until the Covid-19 shock.⁴⁸ From this time, these entities increased cash lending, primarily to their non-resident clients, and have financed this expansion from deposits and central bank liquidity, rather than from matching repo. In other words, these institutions have become net lenders in the repo market.⁴⁹ This contrasts with other developed markets, where dealers obtain most of their funding from the interdealer repo market and through repo with NBFi customers such as money market funds.^{50 51}

⁴⁶ Bristow and Tang, *op.cit.*, p49.

⁴⁷ Becker and Rickards, *Secured money market transactions: trends in the Australian repo rate*, Monash University (2017), p2. While the RBA has in the past accounted for a large share of outstanding market value, its share of turnover has been far less important. This is because the average duration of interbank repo is very short, about two days, while the average term of RBA repo has been about one month (typically ranging from one week to six months, in order to avoid interfering with the private market).

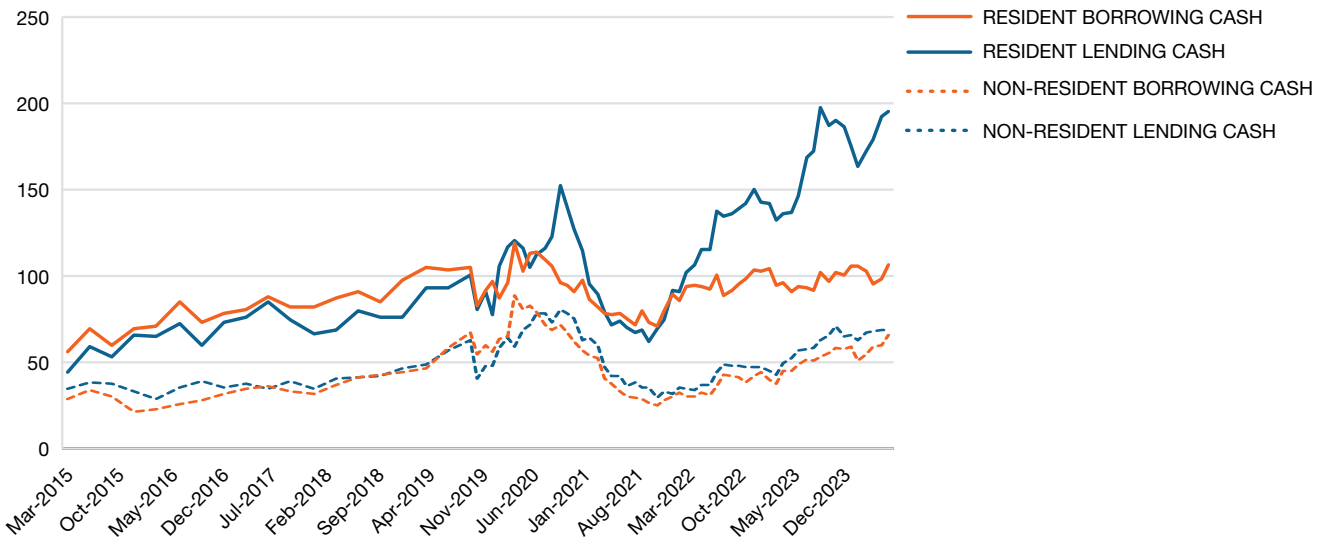
⁴⁸ An exception was during the GFC, when dealers borrowed heavily from the RBA to build up prudential balances.

⁴⁹ Becker and Rickards, *op.cit.*, p1.

⁵⁰ Bristow and Tang, *op.cit.*, pp49-50.

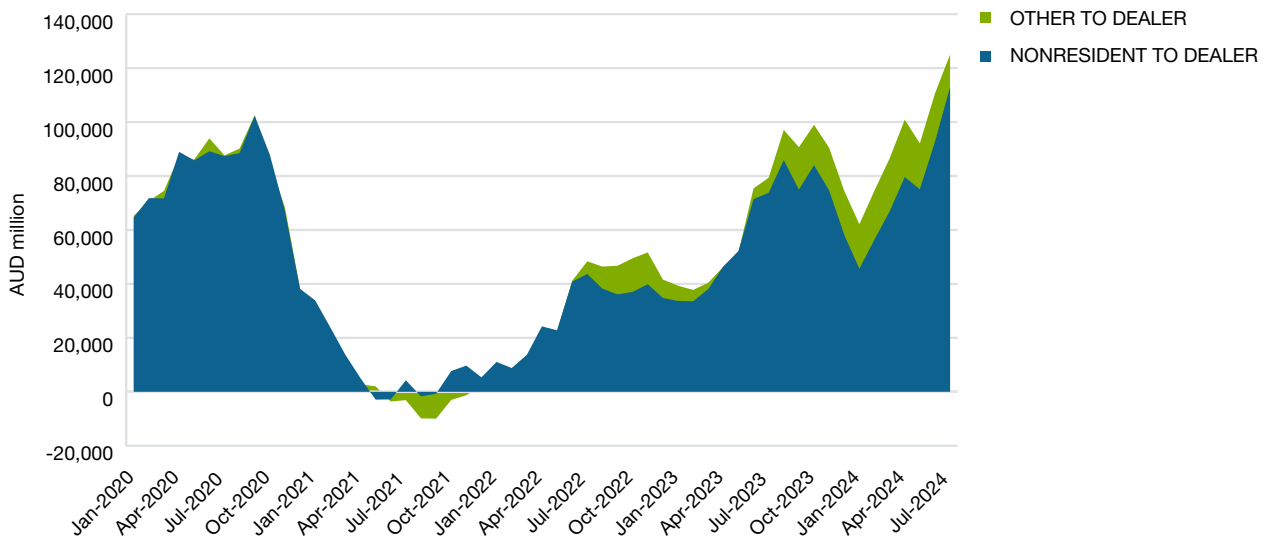
⁵¹ Wakeling and Wilson, *The Repo Market in Australia*, RBA Bulletin (December 2010), p5. This study reports that an RBA survey in July 2010 showed that bank dealers were net lenders in the repo market at that time, with about half of cash lending in repo by survey respondents was sourced internally.

Chart 14: outstanding value of repo and reverse repo positions by residence



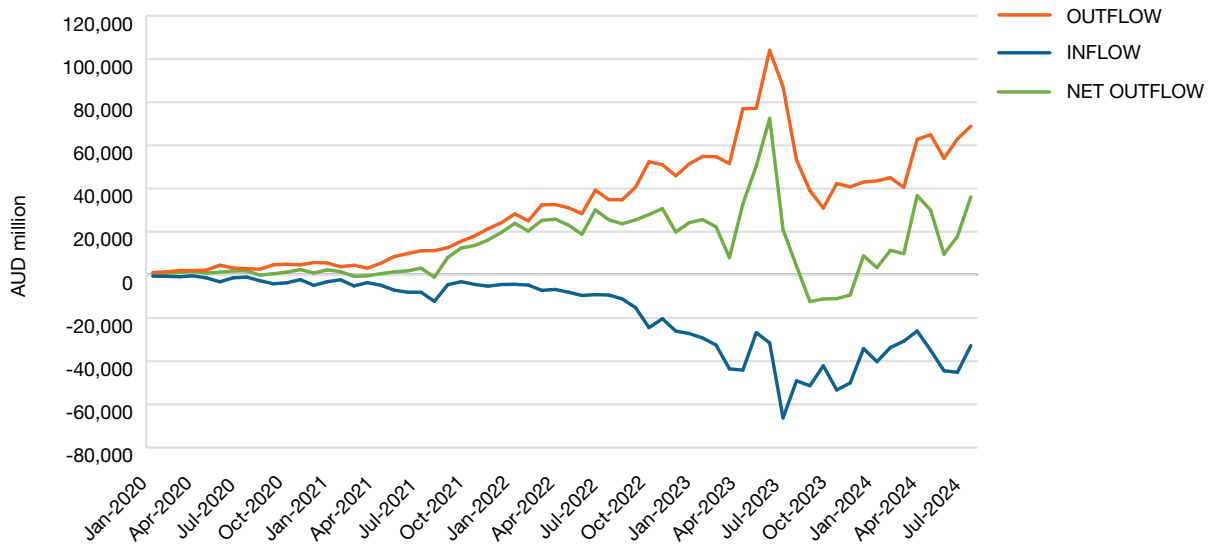
Borrowing includes securities lending; excludes TFF, RBA open repo and equity repo. Lending excludes RBA repo and official securities lending facilities. Sources: APRA, RBA

Chart 15: net reverse repo by dealers (market value outstanding at end-month)



Sources: APRA, RBA

Chart 16: non-resident flows of AGS repo and reverse repo



Source: AOFM

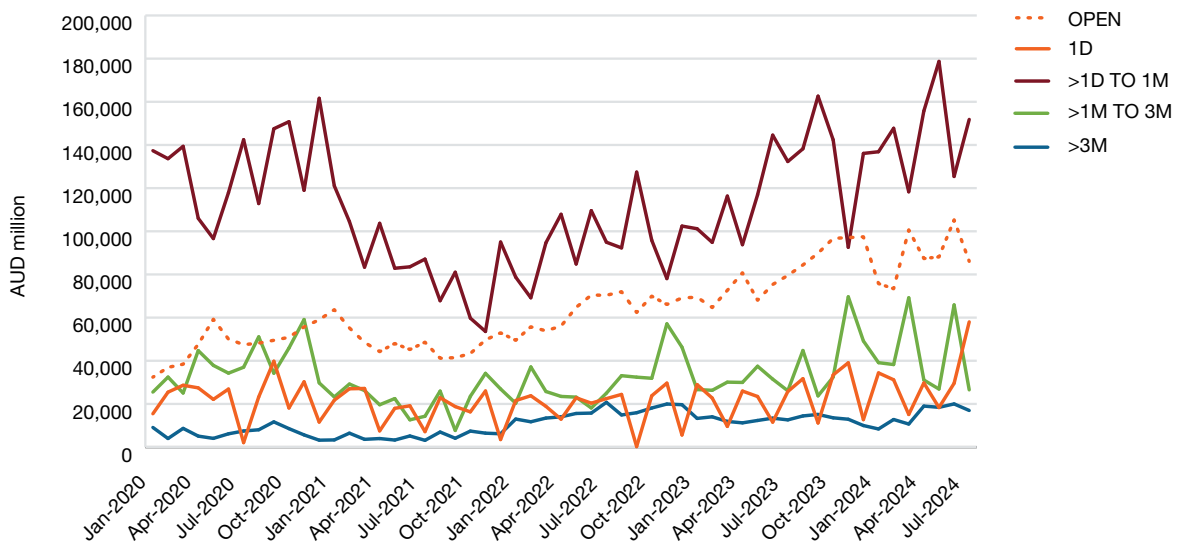
Non-resident dealers as a group have continued to run matched-books, probably reflecting limited funding alternatives to repo.

Finally, NBFIs as a group flip between being net lenders and net borrowers.

Tenors

The Australian repo market is concentrated at the very short end of the yield curve. Thus, three-quarters of tenors are for two weeks or less.⁵² However, the current maturity distribution is the result of a significant shift in the modal tenor from one week in 2006 to overnight in 2006.^{53 54}

Chart 17a: residual term-to-maturity (market value outstanding at end-month)



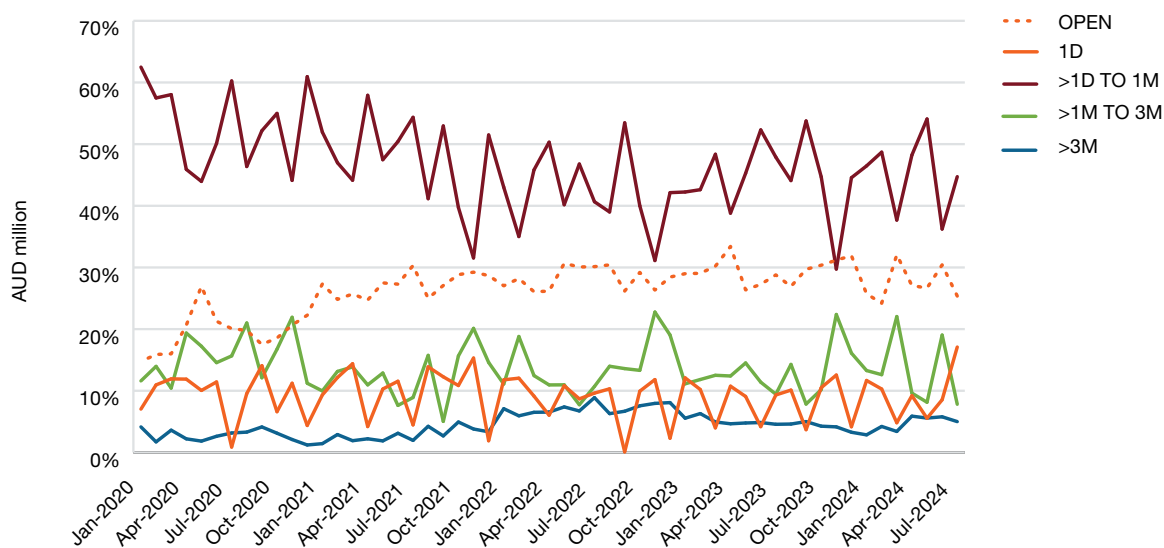
Sources: APRA, RBA

⁵² Bristow and Tang, *op.cit.* p54.

⁵³ Garvin, *op.cit.* p24.

⁵⁴ Wakeling and Wilson, *op.cit.* p2. This study stated that "most repos are contracted on an open basis".

Chart 17b: residual term-to-maturity (share of market value outstanding at end-month)



Sources: APRA, RBA

In other developed markets, collateral transformation has boosted the share of repo with residual terms-to-maturity between one and six months. In Australia, the impact is muted, despite the collateral transformation reportedly involved in cross-currency basis arbitrage trading, where it would appear much activity is for one month (see the next section on Repo Rates).

Repo rates

All repo rates in the Australian market are quoted on an actual/365-day basis.

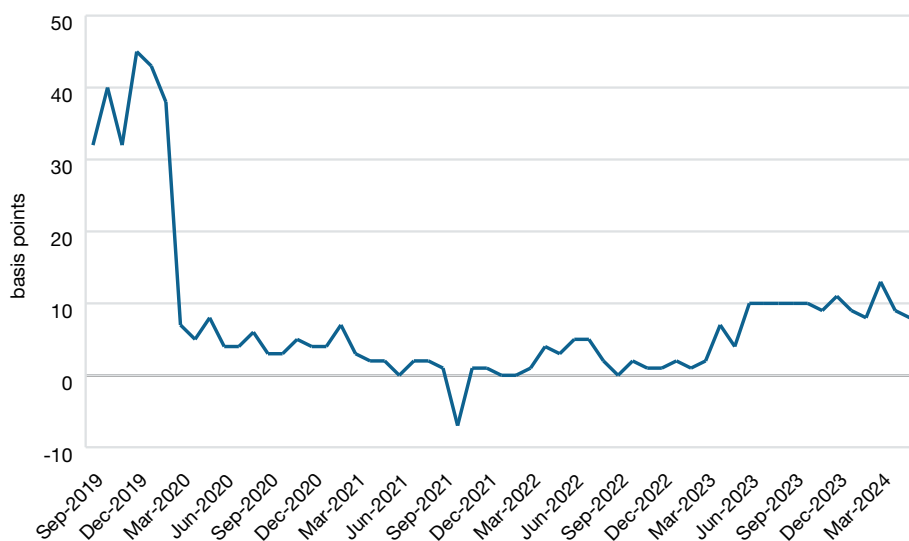
Prior to the GFC, short-term GC repo rates generally traded below the unsecured interbank cash rate, consistent with the collateralised nature of repo.⁵⁵ However, spillover from the GFC led to a significant increase in short-term repo rates relative to unsecured market rates and bids in RBA auctions. This premium persisted after the GFC until the Covid-19 shock.⁵⁶ Balance sheet constraints appear to have prevented banks from exploiting this arbitrage opportunity.⁵⁷

⁵⁵ *Ibid.* p5.

⁵⁶ Bristow and Tang, *op.cit.* p47.

⁵⁷ *Ibid.* p47. Cites Cheung and Printant, *Bank Balance Sheet Constraints and Money Market Divergence*, RBA Bulletin (September 2019).

Chart 18: spread of overnight repo to ES rate



Overnight repo rate is for trades with a 1-day residual maturity originated within the month and is calculated using ASX's SOFIA methodology.

Sources: APRA, RBA

The rise in repo rates in the aftermath of the GFC was, in part, probably a consequence of the dependence of the repo market on funding from domestic banks (both internally, from the same institution's treasury, and externally, via the repo desks of other institutions). This exposed the repo market to the way in which treasurers manage liquidity risk. In order to diversify sources of funding, treasurers try to discourage over-reliance by their repo desks on internal funding by encouraging them to seek external funding, often by charging a high internal transfer rate, sometimes well in excess of the cash rate. This enforced market demand naturally applies upward pressure to the repo rate.

Repo rates were also influenced, after the GFC, by a daily cycle in the money market, in which, funding used to be more expensive and less available in the morning. This was when the overnight repo market was active, because treasurers were reluctant to lend too much too early in the day in case unexpected liquidity demand emerged later in the day that could not be covered by drawing on constrained unsecured credit lines.

Other factors behind the upward pressure on post-GFC repo included the substantial expansion in the quantity of AGS to be financed in the repo market and increased competition for funding due to the entry of more dealers into the AGS market, many of whom do not have access to the unsecured interbank market. There is also evidence that the increase in the spread of repo rates over the unsecured interbank rate reflected the growing and substantial demand in the repo market for Australian dollar funding by non-residents seeking to execute cross-currency basis swap arbitrages.^{58 59}

In addition, the bond-futures basis was positive in the period after the GFC, that is, AGS were cheap relative to bond futures (in contrast to the situation in 2020-21, discussed in the section on the Marketplace, when the basis was negative). The trade to exploit a positive basis is to buy bonds and sell the equivalent futures contract. The demand for repo financing generated by this basis trade added to pressure on the repo rate.

Finally, post-GFC capital, leverage and liquidity regulations may have contributed to higher repo rates by increasing the cost of capital and weakening arbitrage between money markets. They may also have given rise to the volatility

58 Garvin, *op.cit.* p23.

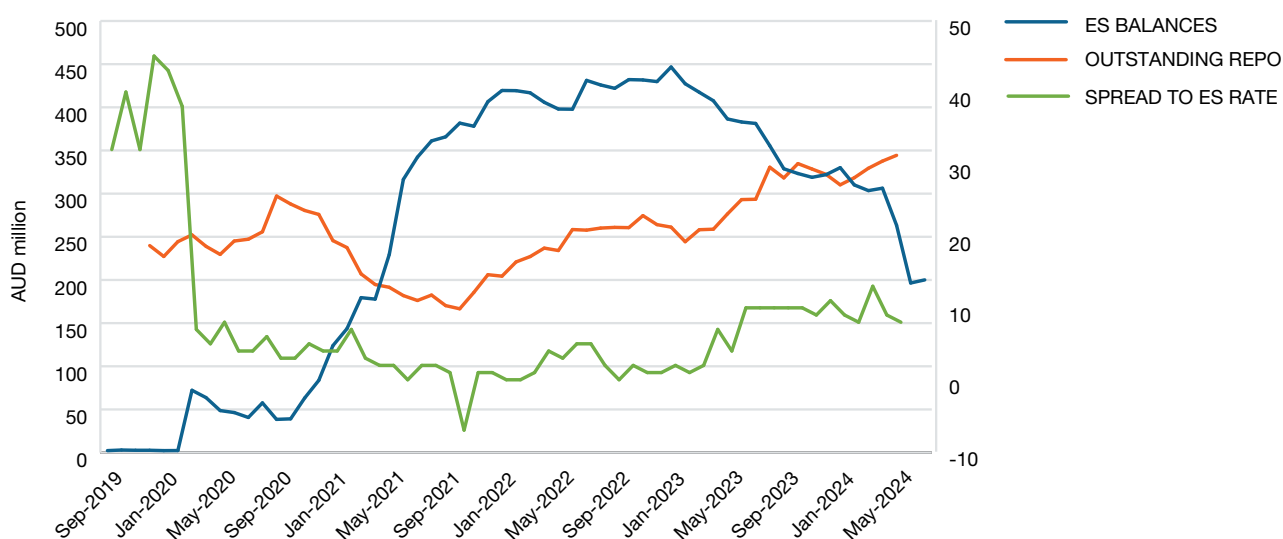
59 Becker and Rickards, *op.cit.* p6. This study observed an asymmetric correlation between repo rates and the cross-currency basis. Rises in the basis tended to coincide with higher repo rates — reflecting increased demand for repo funding — but falls in the basis were not immediately reflected in lower repo rates.

subsequently observed in repo rates around reporting dates, probably as a result of window-dressing to reduce regulatory ratios on those dates.⁶⁰

The premium in repo rates continued until the Covid-19 shock. In the period prior to this event, a key reason may have been the small amounts of reserves being injected by the RBA into the money market, which could have encouraged banks to hoard reserves.⁶¹

Immediately after the Covid-19 shock in 2020, as the supply of cash was expanded by the RBA and the demand for prudential reserves diminished, repo and other money market rates converged on the interest rate paid on reserves by the RBA – known as the “ES rate”. In addition, the divergence in repo and other money market rates virtually disappeared.

Chart 19: repo market rates vs spread to ES rate vs outstanding repo



Overnight repo rate is for trades with a 1-day residual maturity originated within the month and is calculated using ASX’s SOFIA methodology. Repos are by banks and registered financial corporations; includes securities lending; excludes RBA repo and equity repo. Sources: APRA, RBA

Since early 2023, as reserve balances at the RBA have declined, the TFF has been paid back and some RBA bond purchases have rolled-off, there has been a small increase in the overnight repo rate relative to the ES rate. This has coincided with a jump in repo trading, which may represent more active liquidity management in the market but also intensified trading on bullish expectations about bond yields as central banks have cut interest rates.

Prior to mid-2016, there was a co-movement between the overnight repo rate and the one-month repo rate set at the RBA auction. This is thought to have been due, in part, to dealers benchmarking their repos in the market to the spreads set at the auction. Subsequently, a term premium seems to have emerged out to one month. Among the possible explanations is the connection between Australian dollar repo rates and the cross-currency basis. Cross-currency basis swap arbitrages may be funded at term and dealers may seek to match the maturities of their liabilities by bidding more aggressively for one-month funds at the RBA auction, rather than rolling-over their funding of term loans in the overnight repo market.

60 Ibid. p3.
61 Ibid. p47.

Interest rate benchmarks

Currently, Australia has two interest rate benchmarks:

- **Interbank [Overnight Cash Rate \(OCR\)](#)** — calculated by the RBA since 1998 — is the weighted average of interest rates at which authorised deposit-taking institutions (ADIs) report that they pay to borrow or charge to lend unsecured overnight funds from/to other ADIs and is the RBA's operational target for monetary policy,
- **[Bank Bill Swap Rate \(BBSW\)](#)** — calculated by AFMA until 2017 and now by ASX --- is a forward-looking, unsecured rate, incorporating a credit premium, “based on actual transactions of discounted securities issued by Prime banks in the form of NCDs (negotiable certificates of deposit) and Bank Bills”. More than 90% of the eligible securities are NCDs.

Austraclear has recently developed and is currently testing a repo rate index — [SOFIA \(Secured Overnight Funding Index Australia\)](#) — as a potential alternative money market reference rate that would qualify as a (near) risk-free rate.

Tax

Legislation changing the definition of interest for withholding tax purposes was accompanied by an Explanatory Memorandum that states that, “financial products which have never been subject to withholding tax are not intended to be captured by the expanded definition. Examples of transactions which would not generally be considered as falling within the existing withholding tax provisions are forward foreign exchange transactions, forward rate agreements, swaps, and reciprocal purchase agreements. Broadly speaking, these transactions do not involve the provision of finance.” The market relies on this statement to adopt the position that repo transactions do not give rise to interest withholding tax.

Regulators

The prudential regulator for the Australian repo market is the [Australian Prudential Regulation Authority \(APRA\)](#), which is a statutory authority of the Australian Government that was established in July 1998. However, as is the case in most jurisdictions, the importance of the repo for the functioning of the money market means that, in practice, official engagement with the repo market falls to the central bank.

A third authority with an interest in the repo market is the [Australian Securities and Investment Commission \(ASIC\)](#). ASIC is the corporate, markets, financial services and consumer credit regulator. Its role in markets includes supervision of trading on Australia's domestic licensed equity, derivatives and futures markets. ASIC was set up under and administers the Australian Securities and Investments Commission Act 2001 (ASIC Act). It carries out most of its work under the Corporations Act. Its involvement in the regulation of the repo market is tangential, in as much as ASIC is responsible for the registration of financial corporations and ensuring that they operate efficiently, honestly and fairly. A more direct involvement in repo is in infrastructure: ASIC regulates and supervises ASX and would do the same for any repo CCP.

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