

Developments in Foreign Exchange and Over-the-counter Derivatives Markets

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Photo: da-kuk – Getty Images

Abstract

This article discusses the key results from the 2022 Triennial Central Bank Survey of Foreign Exchange and Over-the-counter Derivatives Markets. Global activity in foreign exchange (FX) markets increased over the three years to April 2022, driven by increased turnover of FX swaps with short maturities and trading between dealers. The volume of FX trading activity in the Australian market also grew, although this was largely driven by increased trading between related parties. The Australian dollar was the sixth most traded currency globally, down from fifth in 2019. Turnover of over-the-counter (OTC) interest rate derivatives declined globally, reflecting the transition away from the London interbank offered rate (Libor); however, activity increased in the Australian OTC interest rate derivative market, reflecting an increase in turnover of interest rate swaps. For Australian banks, the value of OTC derivatives increased sharply, driven by interest rate and commodity derivatives.

Introduction

Every three years, the Bank for International Settlements (BIS) collects information about the size and structure of global foreign exchange (FX) and over-the-counter (OTC) derivatives markets from 52 jurisdictions. This article discusses the key results from the 2022 Triennial Central Bank Survey of FX and OTC Markets, with a focus on Australia.^[1] It

analyses trends in FX turnover – including by jurisdiction, counterparty, instrument, execution method, settlement method and currency – as well as activity in single-currency interest rate derivatives and developments in OTC derivatives markets.

FX turnover

The survey was undertaken in April 2022, which was a period of elevated volatility in FX markets due to a backdrop of shifting expectations for inflation and central banks’ policy rates, as well as the Russian invasion of Ukraine. Global FX turnover increased to US\$7.5 trillion per day on average in April 2022, up 14 per cent from the previous survey in April 2019 (Graph 1).^[2]

Two key factors drove the increase in global turnover:

1. *Higher turnover of FX swaps with short-dated maturities that are rolled over more frequently.* Increased activity in these shorter dated FX swaps may have reflected market participants’ aversion to taking on risks over longer tenors amid increased uncertainty and volatility.
2. *Increased trading between dealers, which tends to rise with volatility* (Drehmann and Sushko 2022). The share of turnover related to customers, such as large corporations and other financial institutions – which is more likely to be associated with trade and investment – declined.

Turnover in the Australian FX market increased by 26 per cent over the three years to April 2022, reaching a daily average of US\$150 billion. Similar to global turnover, much of the growth was driven by short-dated FX swaps. However, unlike the global results, turnover in Australia was primarily driven by related party trades. Related party trades occur within the same institution or among affiliated

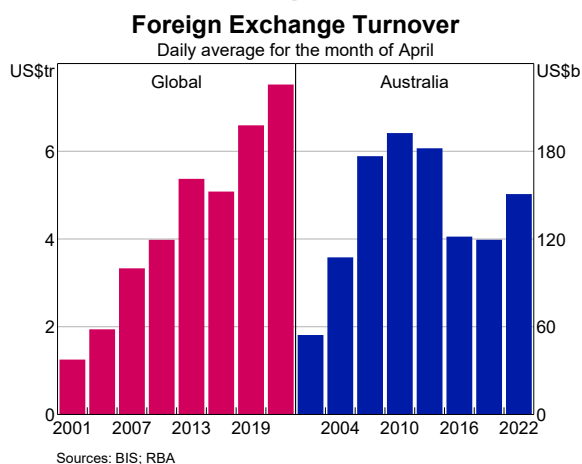
firms, and tend to be driven by reporting requirements or the centralisation of risk management practices within a company. As a result, these trades do not necessarily reflect the same underlying behaviour as when participants ‘go to the market’, and the increase in related party activity may not have contributed much to price discovery or market functioning.

Turnover by jurisdiction

The vast bulk of turnover in the global FX market is concentrated within a small number of financial centres. The largest of these is the United Kingdom, which accounts for almost 40 per cent of global turnover, followed by the United States, which reported strong growth in turnover over this period, and then financial centres in Asia, including Singapore, Hong Kong and Japan (Graph 2; Appendix A, Table A1).

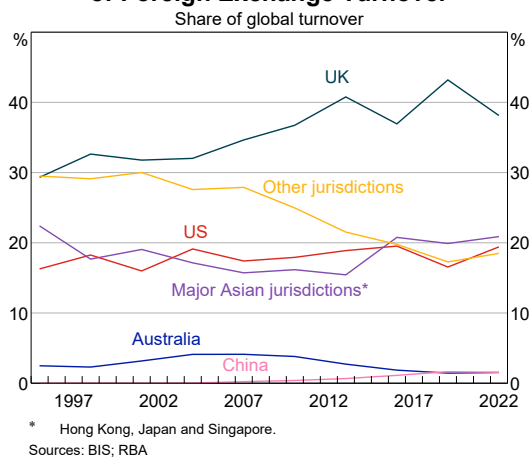
China is now the 10th largest FX market globally, having increased its share of total turnover over the past two decades alongside the increasing internationalisation of the Chinese renminbi as well as further efforts over the past three years to open up domestic financial markets to foreign participants. Australia was the 11th largest FX market globally in 2022, down from 10th in 2019, having been surpassed by Canada.

Graph 1



Graph 2

Geographical Distribution of Foreign Exchange Turnover



Turnover by counterparty

The BIS survey records three broad categories of market participants that transact in the FX market:

- *reporting dealers* – large commercial and investment banks that facilitate activity in the FX market by trading for their own account or to meet demand from customers
- *other financial institutions* – such as banks, superannuation and investment funds
- *non-financial institutions* – such as large corporations.

Reporting dealers can trade among themselves – in what is referred to as the *interdealer market* – as well as with other financial and non-financial institutions.

The growth in global turnover between 2010 and 2022 was driven almost entirely by trading between dealers, reversing the long-term trend of a declining share of activity in the interdealer market (Graph 3; Appendix A, Table A2). This may partly reflect the period of elevated volatility in which the survey was conducted. During such periods, it can be more difficult for dealers to internally manage imbalances arising from customer trades, and so they may be more willing to trade in the interdealer market to manage these risks.

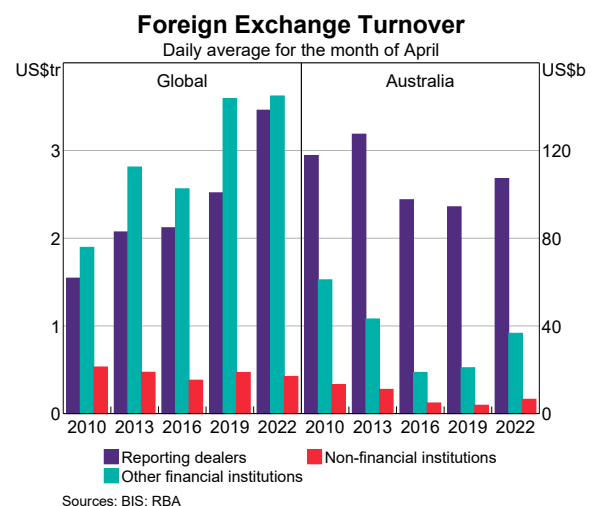
While the interdealer market segment accounted for around 45 per cent of turnover in the global FX market in April 2022, this was a decline from around 60 per cent in the late 1990s. The longer term decline was linked to the rise of some risk management practices, including trade internalisation – a process where reporting dealers offset trade orders internally from one customer against trades from another customer without going to the interdealer market. This allows them to manage risk internally rather than trading with other dealers, which can also lower costs.

Meanwhile, turnover with non-financial institutions decreased in the three years to 2022, and trading with other financial institutions was little changed from the previous survey. This reflected a decline in trading with hedge funds and proprietary trading firms (PTFs) that was offset by increased turnover with institutional investors and official sector financial institutions.^[3]

The structure of the FX market in Australia differs noticeably from the global picture. Trading between reporting dealers represents a larger share of the Australian FX market than globally, while the share of other financial institutions is much smaller. One reason for the much lower share of other financial institutions is the greater concentration of the banking sector, which means there is less activity between dealers and ‘non-reporting’ banks. It also reflects the fact that there are fewer hedge funds and proprietary trading firms that are active in Australia compared with some other markets.

Similar to the global results, trading between dealers in Australia increased over the three years to 2022. However, there was a significant increase in related party trades, which accounted for more than 40 per cent of total turnover in the Australian market (Graph 4). Globally, related party trades account for around one-fifth of total turnover. Although some related party transactions reflect genuine funding requirements – such as the use of swaps to fund an offshore branch – others are driven by reporting requirements, or to centralise and consolidate risk management within a parent entity. The increase in the share of related party turnover in Australia was greater than the global increase, and the share of turnover that was ‘non-market facing’ was also higher in Australia.^[4] Given these trades reflect different underlying behaviour by participants compared with ‘going to the market’ for customer-related trades, it is not clear that increased turnover with related parties in the

Graph 3



Australian market has contributed to price discovery or added much to market functioning.

Turnover with ‘other’ financial institutions also increased over the three years to April 2022. Other financial institutions include superannuation funds, which have seen offshore funds under management more than triple over the last 10 years. While activities related to the hedging of these offshore assets are likely to have increased Australian turnover, some large fund managers also conduct activities from offshore jurisdictions that would be captured in global turnover.

Turnover by instrument

Globally, turnover increased across all types of FX instruments over the three years to April 2022, primarily driven by FX swaps (Graph 5). Turnover in FX swaps and outright forwards grew at a faster pace than spot transactions, continuing a longer run trend towards the use of derivatives. Indeed, FX derivatives now account for more than 70 per cent of global turnover, while spot transactions account for slightly less than 30 per cent.

Turnover in FX swaps increased by around 20 per cent over this period, with the increase entirely driven by trading of shorter dated swaps. Reflecting this, FX swaps with a tenor of less than seven days now make up around 70 per cent of all swap turnover, of which close to half have an overnight maturity. Increased use of shorter dated derivatives is likely to have mechanically increased

total turnover, assuming contracts are rolled over more frequently.

In the Australian market, turnover of short-dated FX swaps was also the main driver of growth in total turnover, while turnover in swaps with a maturity of more than seven days was little changed. This is despite the fact that Australian funds have increased the share of foreign assets in their portfolios, and the value of hedged foreign assets has increased markedly. While longer dated FX swaps can be used to hedge exchange rate risk on these type of assets, some Australian funds undertake these swaps in markets outside of Australia.

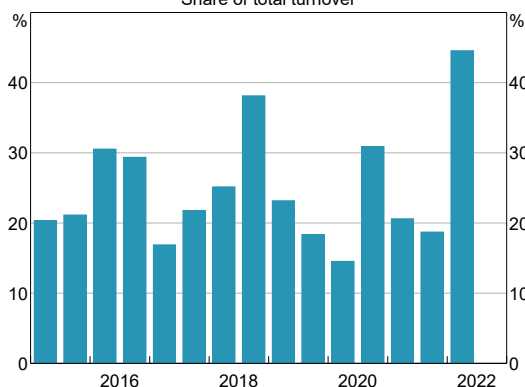
Cross-currency swaps differ from FX swaps as they involve swapping interest payment streams (that are often variable) in addition to the exchange of principal. Turnover of these instruments in the Australian market decreased in the three years to April 2022. Large Australian banks typically raise about three-quarters of their bond funding offshore and often use cross-currency swaps to hedge the FX risk associated with this borrowing (Johnson 2022).

Turnover by execution method and settlement

Market participants can execute FX trades directly with dealers or they can be intermediated by a third party. The 2022 survey showed a move towards direct forms of trading, both in Australia and globally, and away from anonymous venues, which

Graph 4

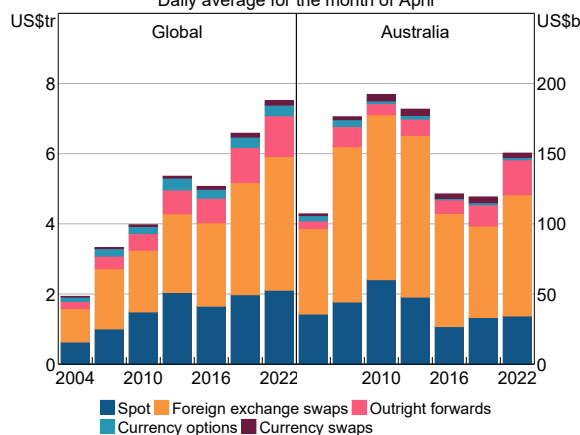
Related Party FX Turnover in Australia*
Share of total turnover



* Sourced from data collected by the RBA as part of its semi-annual FX turnover survey.
Source: RBA

Graph 5

Foreign Exchange Turnover
Daily average for the month of April



Sources: BIS; RBA

include primary venues such as Refinitiv and EBS (Graph 6). On these types of anonymous platforms, counterparties do not know who they are executing a trade with and they are more akin to an exchange; this differs from direct methods of execution, where information remains private. The shift away from indirect methods of execution that use multilateral platforms to make prices available to all participants implies that transparency of the global FX market may have decreased. In Australia, the increase in direct execution may also partly reflect growth in related party turnover.

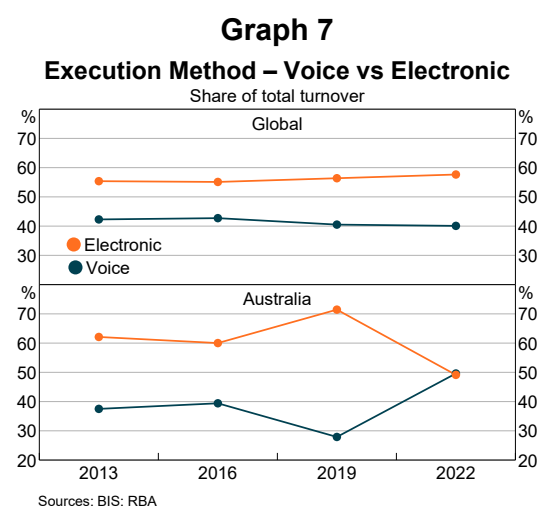
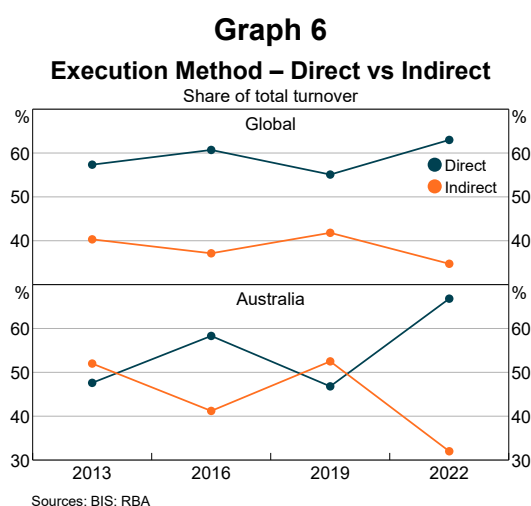
Trades can also be executed electronically or by voice. Globally, the share of turnover executed electronically has trended upwards over recent decades as technological innovations have facilitated a broader range of trading strategies and the composition of market participants has become more diverse. The 2022 survey showed that 58 per cent of trades were executed electronically, which was a slightly higher share than in 2019 (Graph 7).

By contrast, the share of electronic turnover in Australia decreased over this period and in April 2022 was lower than it was around a decade ago. This decrease can be linked to the elevated turnover of FX swaps in the Australian market. Trading of FX swaps relies more heavily on voice intermediation than some other instrument types, in part because they can involve particularly large notional amounts and are contracted with bespoke settlement dates. Around 85 per cent of the number of trades in Australia are executed

electronically. However, the value of turnover is split evenly between electronic and voice execution. This means that the value of any given voice trade is likely to be higher than an electronic trade.

The 2022 Triennial Survey introduced a greater breakdown of FX settlement data. Market participants can mitigate settlement risk (the risk that a party pays its obligation but does not receive its payment in return) by offsetting their payment obligations bilaterally, or by settling via payment-versus-payment (PvP) arrangements or via the same clearer. In short, in a PvP mechanism the final payment of one currency only occurs if the final payment of the other currency takes place. Settlement via the same clearer is termed 'on-us', and involves both payment legs settling across the books of a single institution.

The global results showed that pre-settlement netting reduced settlement risk for around one-fifth of deliverable turnover. In addition, half of the global deliverable turnover settled via PvP arrangements or via the same clearer, leaving around 30 per cent of all turnover at risk on any given day. The sizeable share of global turnover settled without risk mitigation can be explained by the fact that PvP settlement is not an option for some currencies and/or counterparties, and is limited to certain time zones. Additionally, some market participants may choose not to adopt PvP if they believe the cost of doing so outweighs the benefits (Glowka and Nilsson 2022).



In the Australian market, the level of turnover subject to settlement risk was low compared with the global results. Settlement risk was mitigated on around 85 per cent of deliverable turnover in Australia through pre-settlement netting or via other risk mitigation mechanisms. The main driver of this relatively high level of mitigation was a high level of turnover settled via the same clearer.

Turnover by currency

Global FX turnover continues to be heavily concentrated in just a few major currencies (Appendix A, Table A3). The US dollar remained the most traded currency in the world, being on one side of almost 90 per cent of all FX transactions globally and in Australia. The US dollar's dominant role in global FX markets is due to a number of factors, including: its use in international trade and global payments; its role as a reserve currency; and its use as a vehicle currency for FX transactions, whereby non-US dollar currency pairs are often exchanged via the US dollar (Maronoti 2022). The euro and Japanese yen recorded similar shares of turnover compared with the previous survey.

Turnover of the Chinese renminbi increased at a faster pace than the currencies of major advanced economies, to be the fifth most traded currency in 2022. Turnover increased by 85 per cent to more than US\$500 billion per day between 2019 and 2022. The main driver of the increase was greater trading of the currency outside of mainland China, including in some of the major financial centres; the share of global renminbi turnover that occurred within China actually declined (Graph 8) (Caballero *et al* 2022).

The Australian dollar was the sixth most traded currency globally, down from fifth in the previous survey, and the AUD/USD was the sixth most traded currency pair. Most of the turnover in the Australian dollar occurs in the major financial centres, with around 90 per cent of its turnover occurring outside of Australia.

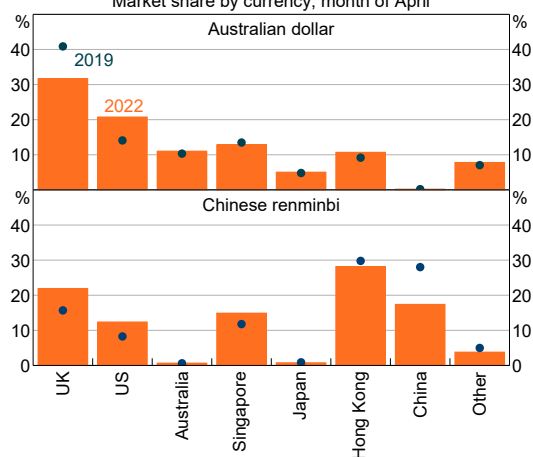
Given the strong trade links between Australia and China, some market participants have viewed buying the Australian dollar as a way to gain exposure to developments in China. Indeed,

movements in the renminbi and the Australian dollar have been positively correlated over a number of years (Adams *et al* 2021). However, trading in the renminbi has increased strongly over recent years, surpassing the share of turnover in Australian dollars in the 2022 survey. This may suggest that market participants are increasingly gaining exposure to developments in China directly by trading in the renminbi rather than indirectly through the Australian dollar.

Single-currency interest rate derivatives turnover

Global turnover in single-currency OTC interest rate derivatives declined by around 20 per cent to US\$5.2 trillion per day, reflecting the transition away from London interbank offered rate (Libor) to 'nearly risk free rates' (Graph 9) (Huang and Todorov 2022). Libor publication ceased for several key currencies at the end of 2021, leading to a significant decline in turnover of forward rate agreements (FRAs), which reference forward-looking rates such as Libor. By currency, the largest decline in turnover was for interest rate derivatives denominated in US dollars, with the Libor transition having a substantial impact on US dollar denominated FRAs. Overnight risk-free rates (RFR) have begun replacing Libor as key interest rate benchmarks in major currencies, which has increased trading in swaps that reference these RFRs.

Graph 8
Geographical Distribution
of Foreign Exchange Turnover
Market share by currency, month of April



Sources: BIS; RBA

In contrast to the global results, turnover in the Australian market grew by 16 per cent over the three years to April 2022, driven entirely by turnover of interest rate swaps. Interest rate swaps now account for almost all of the OTC interest rate derivative turnover in Australia, while the share of turnover in FRAs and options has declined to almost zero.^[5]

The change in the composition of single-currency interest rate derivative instruments in Australia has also affected the share of turnover by currency. Previously, the US dollar was the second most common currency of denomination after the Australian dollar for interest rate derivatives in the Australian market. The shift away from US dollar denominated FRAs has pushed the turnover of US dollar denominated instruments down by around two-thirds, and there is now more turnover of New Zealand dollar denominated instruments than US dollar denominated instruments in the Australian market.

The size of OTC derivatives markets

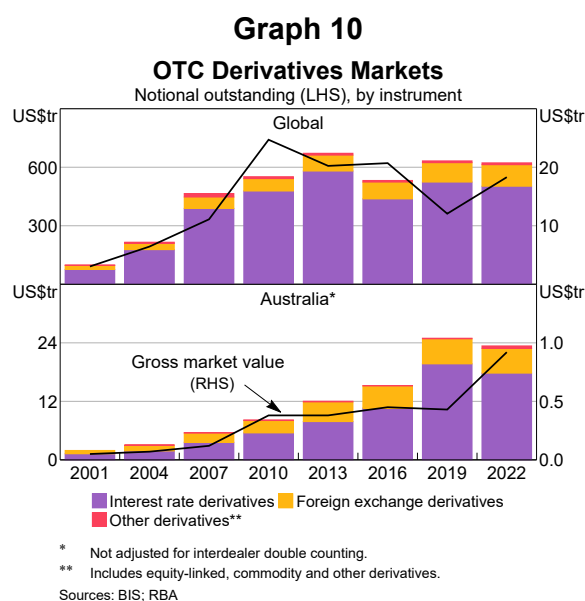
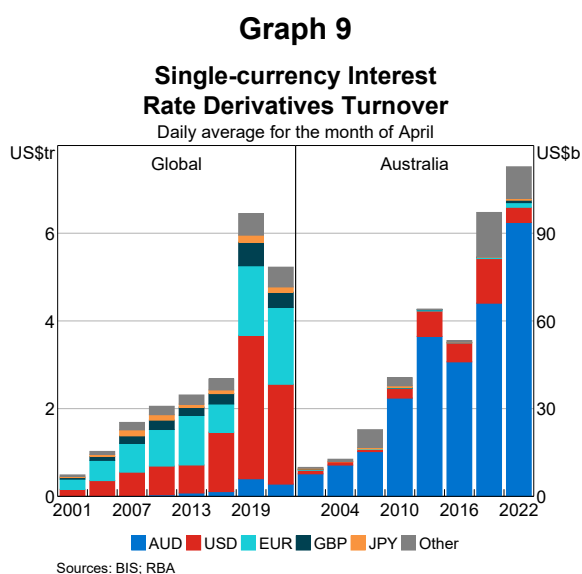
In addition to measuring turnover, the Triennial Survey provides data on the aggregate outstanding position of contracts in OTC derivatives markets as at the end of June 2022. It provides three measures of market size: notional amounts outstanding; gross market values; and gross credit exposures.

Notional amounts outstanding reflect the principal amount used to calculate payments made on

derivatives contracts. Over the survey period, the notional size of the global OTC derivatives market decreased slightly (Graph 10). In Australia, the notional amount outstanding decreased by around 6 per cent, largely driven by a decline in the notional amounts of interest rate swaps. In both domestic and international markets, the decline partly reflected a reduction in the notional amount outstanding of forward rate agreements, which fell following the phasing out of Libor benchmark interest rates (BIS 2022b). Despite this decline, the Australian OTC derivatives market remains around twice as large as it was a decade ago.

Gross market value measures the aggregated replacement values of outstanding contracts, evaluated at the market price – that is, it represents the gross costs counterparties would face if all their open contracts were replaced on the day of the survey. This measure is sensitive to changes in the market value of the underlying reference variable (e.g. interest rates or exchange rates) between the contract’s inception and the survey reporting date. Therefore, as a measure of market size, gross market value reflects both the quantity of derivatives outstanding and fluctuations in market prices.

Over recent years, the global gross market value of derivatives has increased, both in Australia and internationally, driven by the values of interest rate derivatives. Higher-than-expected inflation and the associated policy response from central banks led to



sharp increases in the interest rates on the assets underlying these contracts, above what was expected at their inception, which in turn increased the gross market value of these derivatives (BIS 2022b). The increase in Australian values was more pronounced than for global values. As a result, the Australian share reached 5 per cent of global derivatives' gross market values – the highest level since at least 2001.

While notional amounts outstanding and gross market values are important indicators of the size of OTC derivatives markets, both measures include the value of economically offsetting positions (such as contracts covered by bilateral netting arrangements). As a result, these metrics do not necessarily reflect the true level of risk in these markets. Gross credit exposures can better capture levels of market or counterparty credit risk by netting the value of these offsetting positions from gross market values. Globally, and for Australian reporting dealers, gross credit exposure rose in absolute terms but declined as a share of gross market value over the past three years (Graph 11).

The composition of outstanding OTC derivatives contracts has changed only a little since the previous survey. Both domestically and internationally, single-currency interest rate derivatives account for the majority of outstanding contracts. However, their relative share of the OTC derivatives market has declined. By notional value,

single-currency interest rate derivatives accounted for 76 per cent of all outstanding Australian OTC derivatives contracts in 2022, compared with 79 per cent in 2019. By tenor, around half of outstanding derivatives in Australia have one year or less remaining until maturity. While this is a decrease in the share of derivatives with shorter tenors since 2019, it brings the tenor composition of the Australian market more in line with global peers.

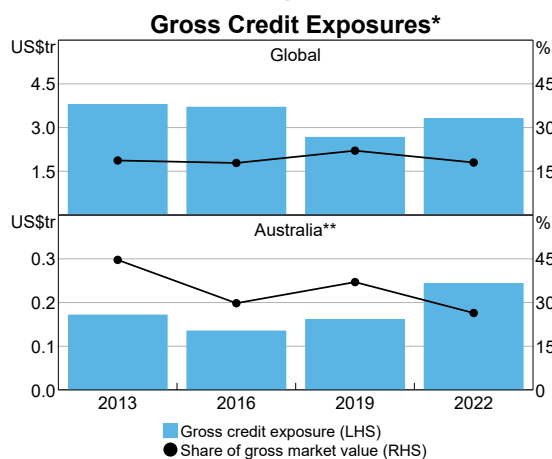
Single-currency interest rate OTC derivatives

The notional value of single-currency interest rate derivatives declined over the past three years (Graph 12). Globally, notional values have fallen by around 5 per cent since 2019, while Australian reporting dealers recorded a 10 per cent decline. The decline in notional amounts outstanding in Australia was largely driven by a fall in Australian dollar denominated contracts. These contracts now account for 60 per cent of outstanding Australian interest rate derivatives, down from 66 per cent in 2019. By comparison, the notional value of US dollar denominated contracts grew over the past three years, overtaking the New Zealand dollar as the second most common currency denomination for interest rate derivatives in Australia.

In contrast to the notional value of interest rate derivatives, the market value of these contracts, both globally and in Australia, experienced a broad-based increase across most major currency denominations as interest rates rose globally in 2022.

The cessation of Libor for most major currencies at the end of 2021 had a material impact on both the amount outstanding and the currency composition of forward rate agreements (BIS 2022b). Globally, and mirroring developments in turnover, US dollar denominated forward rate agreements as a share of notional amounts outstanding almost halved, while their share dropped to near zero for Australian reporting dealers (Graph 13). Currencies less affected by the change, such as the euro, saw their share increase.^[6] In contrast to forward rate agreements, the share of interest rate swaps denominated in US dollars increased both globally and in the Australian market. Forward rate

Graph 11



* Gross credit exposure is defined as the sum of positive and negative replacement costs of OTC contracts outstanding after taking into account legally enforceable bilateral netting arrangements.

** Not adjusted for interdealer double counting.

Sources: BIS; RBA

agreements denominated in currencies affected by the end of Libor are likely being replaced by interest rate swaps compatible with the reference rates replacing Libor (BIS 2022a).^[7]

Since they were separately identified for global reporting dealers in the 2016 Survey, central counterparties (CCPs) have been the most common counterparty for transactions of single-currency interest rate derivatives (Graph 14). Globally, the use of CCPs has remained relatively stable at around 79 per cent of the notional value of interest rate derivatives. In Australia, growth in the use of CCPs has continued, with trades settled through CCPs now accounting for 85 per cent of the notional value of interest rate derivatives. By contrast, the proportion of contracts with other reporting dealers

fell to 4 per cent, down from 7 per cent in 2019. The continued growth in the use of CCPs is consistent with the fall of gross credit exposures as a share of gross market value, as CCPs often offer trade compression services that reduce the amount of offsetting trades (RBA 2016).

FX OTC derivatives

While the notional amounts of global FX derivatives continued to increase over the past three years, notional amounts in Australia declined slightly (Graph 15). Somewhat in contrast, the gross market value of FX derivatives increased sharply from 2019 levels in both global and Australian markets, coinciding with a period of elevated volatility in FX markets. This increase was driven by contracts with a leg denominated in US dollars, which continues to be the most important currency for FX derivatives.^[8]

Outright forwards and swaps continue to account for the majority of outstanding FX derivative instruments, both globally and in Australia (Graph 16, green bar). The notional amount of forwards and swaps continued to increase in the global market, but decreased slightly in Australia for the first time since at least 2001.

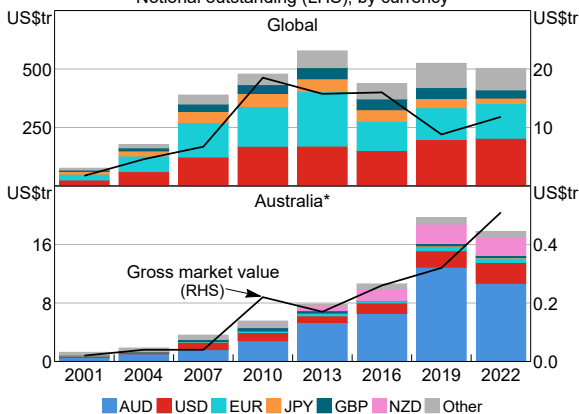
Credit default swaps

The notional amount of credit default swaps (CDS) outstanding increased both globally and in Australia over the past three years. Globally, this is the first

Graph 12

Single-currency Interest Rate Derivatives

Notional outstanding (LHS), by currency

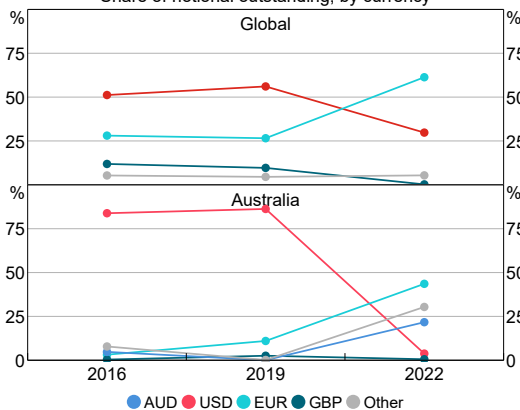


* Not adjusted for interdealer double counting. Sources: BIS; RBA

Graph 13

Forward Rate Agreements

Share of notional outstanding, by currency

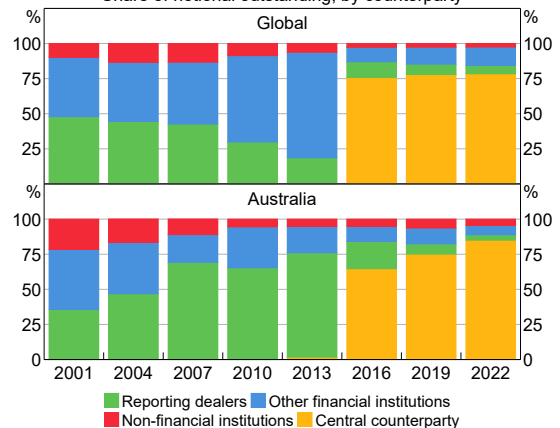


Sources: BIS; RBA

Graph 14

Single-currency Interest Rate Derivatives

Share of notional outstanding, by counterparty



Sources: BIS; RBA

time that notional values of CDS increased since 2007, following a long-term decline in CDS contracts outstanding (Graph 17). As in the previous survey, the majority of outstanding CDS contracts were multi-name (i.e. referencing multiple entities) rather than single-name instruments for both Australian and international reporting dealers. The tenor composition of outstanding CDS for Australian reporting dealers lengthened significantly in the past three years. The share of CDS maturing in one year or less fell to 3 per cent from 33 per cent in 2019, while the proportion of outstanding contracts maturing in one to five years increased from 54 per cent to 77 per cent.

The share of notional amounts outstanding held between reporting dealers halved over the last three years, from 40 per cent to 20 per cent. At the same time, the share of notional amounts outstanding held with CCPs increased by a similar amount during the period, to be around 40 per cent of notional amounts outstanding. The use of CCPs is most prevalent for outstanding CDS maturing in one to five years.

Commodity derivatives

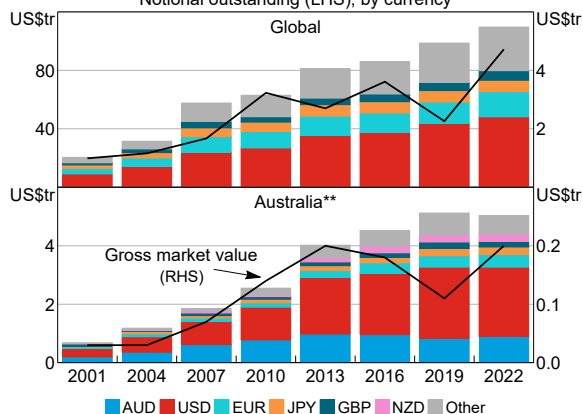
The notional value of outstanding commodity derivatives has increased for both international and domestic reporting dealers. The growth in commodity derivatives was mainly driven by an increase in the volume of contracts related to commodities other than precious metals. The strong increase in domestic outstanding values lifted Australia's share of global commodity derivatives by notional amount to its highest level in the past decade.

Globally, gross market values of commodity derivatives traded OTC increased significantly over the past three years, from US\$198 billion to US\$920 billion – an increase of over 350 per cent – driven almost entirely by movements in contracts related to commodities other than precious metals. Similarly, in Australia, the gross market value of these 'other commodities' increased sharply since 2019. While the survey does not provide a more detailed breakdown of these 'other commodities', the BIS noted that the increase coincides with rising food and energy prices (BIS 2022b).

Graph 15

Foreign Exchange Derivatives*

Notional outstanding (LHS), by currency

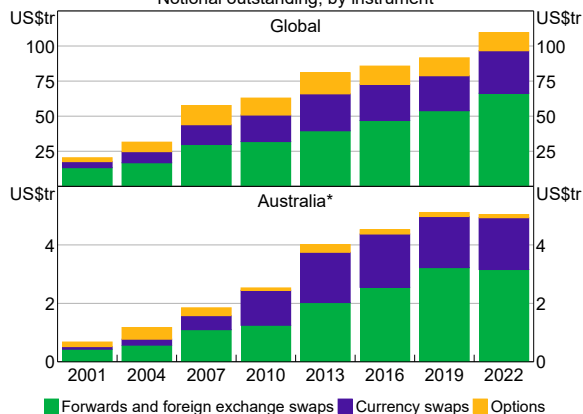


* The sum of each contract leg is divided by two.
 ** Not adjusted for interdealer double counting.
 Sources: BIS; RBA

Graph 16

Foreign Exchange Derivatives

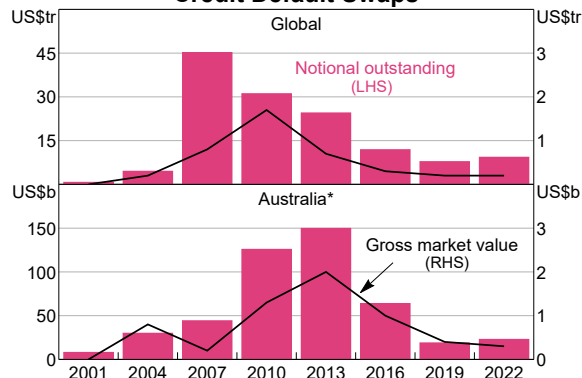
Notional outstanding, by instrument



* Not adjusted for interdealer double counting.
 Sources: BIS; RBA

Graph 17

Credit Default Swaps



* Not adjusted for interdealer double counting.
 Sources: BIS; RBA

Conclusion

Turnover in global FX markets increased over the three years to April 2022, driven by increased turnover of FX swaps with short-dated maturities and turnover between reporting dealers. Turnover in the Australian FX market also grew, although much of this was associated with an increase in related party trades. The Australian dollar was the sixth most traded currency, down from fifth in April 2019, and the Australian FX market was the 11th largest in the world. Globally, there was a large decrease in the turnover of OTC interest rate derivatives associated with the transition from LIBOR to RFRs.

The size of global OTC derivatives markets, as measured by notional amounts outstanding, decreased slightly over the three years to June 2022. By contrast, the gross market value of OTC contracts increased substantially, driven by increases in the value of interest rate derivatives as interest rates rose globally. Developments in the Australian market mostly followed these international patterns, although increases in the notional amount and market value of commodity derivatives was more pronounced in the Australian market. ↘

Appendix A

Table A1: Global Foreign Exchange Turnover by Jurisdiction^(a)

	Daily average	Change over	Share of total turnover	
	April 2022 US\$ billion	2019–2022 Per cent	April 2019 Per cent	April 2022 Per cent
Total^(b)	9,843	19	n/a	n/a
United Kingdom	3,755	5	43	38
United States	1,912	40	17	19
Singapore	929	45	8	9
Hong Kong	694	10	8	7
Japan	433	15	5	4
Switzerland	350	32	3	4
France	214	28	2	2
Germany	184	48	2	2
Canada	172	58	1	2
China	153	12	2	2
Australia	150	26	1	2
Other jurisdictions	897	17	9	9

(a) Jurisdiction subtotals are not adjusted for cross-border double counting; subtotals may not sum to total due to double counting.

(b) Numbers in this table are reported on a 'net-gross' basis. As a result, the total differs to the global figures reported above on a 'net-net' basis.

Sources: BIS; RBA

Table A2: Foreign Exchange Turnover by Counterparty^(a)

April 2022

	Global		Australia	
	Daily average, April 2022 US\$ billion	Change over 2019–2022 Per cent	Daily average, April 2022 US\$ billion	Change over 2019–2022 Per cent
Reporting dealers	3,460	37	107	14
Other financial institutions	3,622	1	37	75
– Non-reporting banks	1,618	0	14	128
– Institutional investors	846	9	19	76
– Hedge funds, proprietary trading firms	514	–13	1	237
– Official sector financial institutions	99	11	1	–7
– Other/undistributed	544	4	1	–52
Non-financial institutions	425	–10	7	0

(a) All amounts represent transactions between reporting dealers and each counterparty.

Sources: BIS; RBA

Table A3: Foreign Exchange Turnover by Currency^(a)

	Global		Australia	
	Daily average US\$ billion	Share of total Per cent	Daily average US\$ billion	Share of total Per cent
Total	7,506	n/a	150	n/a
Currency^(b)				
USD	6,639	88	139	92
EUR	2,292	31	27	18
JPY	1,253	17	17	12
GBP	968	13	10	7
RMB ^(c)	526	7	4	3
AUD	479	6	70	47
Other currencies	2,854	38	33	22
Currency pair				
USD/EUR	1,705	23	21	14
USD/JPY	1,013	14	15	10
USD/GBP	714	10	8	5
USD/RMB	494	7	4	3
USD/CAD	410	5	4	3
USD/AUD	381	5	62	41
Other currency pairs	2,789	37	36	24

(a) Subtotals may not sum to total due to rounding.

(b) The sum of currency subtotals is divided by two as each transaction involves two currencies.

(c) Includes onshore (CNY) and offshore (CNH) renminbi turnover.

Sources: BIS; RBA

Endnotes

- [*] The authors are from Financial Markets Group and would like to thank Jessie Cameron, Tim Atkin and Jason Griffin for their significant contribution to this work.
- [1] Global highlights from the Triennial Survey are discussed by McGuire, Schrimpf and Tarashev (2022).
- [2] Unless otherwise stated, global turnover figures are adjusted for interdealer double counting at both the local and global level (i.e. 'net-net' basis). Country subtotals are adjusted for interdealer double counting at the local level only (i.e. 'net-gross' basis).
- [3] PTFs are firms that invest, hedge or speculate for their own account and often employ high-frequency trading strategies (BIS 2018).
- [4] The 2022 survey was the first time the BIS looked to measure 'non-market facing' trades. These trades are defined as back-to-back trades and compression trades. Back-to-back trades are deals that automatically follow trades with customers to shift risk across sales desks, and compression trades occur when dealers optimise their portfolios by replacing existing contracts with new ones to reduce notional amounts while keeping net exposures unchanged.
- [5] Interest rate swaps represented over 99 per cent of interest rate derivative turnover in Australia in April 2022, up from 86 per cent in 2019. Overnight indexed swaps are the most common type of interest rate swap in the Australian market.
- [6] While euro Libor has been discontinued, there are no plans to discontinue Euribor. Most euro denominated contracts reference Euribor (BIS 2022b).
- [7] Libor rates are forward looking in that they reflect expectations of banks' future borrowing costs. RFRs reflect the evolution of actual overnight rates and so are backwards looking. This difference has limited the benefits of using FRAs to hedge fixing risk on interest rate swaps. For further information, see Huang and Todorov (2022).
- [8] FX contracts are reported on a single-currency basis. This means that the notional amount outstanding (and the market value) of any contract will be reported twice according to the two currency legs, and the amounts reported for each currency will add up to 200 per cent of total. Total amounts are therefore divided by two when presenting the results.

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