

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

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Abstract

Global activity in foreign exchange (FX) and over-the-counter (OTC) derivatives markets increased over the three years to April 2019. Continuing a trend observed over prior years, growth in turnover of foreign exchange derivatives outpaced growth in spot market activity. Trading between dealers and other financial institutions accounted for a larger share of market activity than trading between FX dealers.

The Australian dollar remained the fifth most traded currency globally, although the volume of FX trading activity in the Australian market was little changed. Over the past three years, the growth of global and Australian OTC derivatives markets has been driven by interest rate derivatives.

The Bank for International Settlements (BIS) Triennial Central Bank Survey provides the most comprehensive information about the size and structure of global foreign exchange and OTC derivatives markets.^[1] This article discusses the key results from the Triennial Survey. First, it examines trends in foreign exchange market activity by jurisdiction, currency, counterparty and instrument. It then analyses turnover in single-currency interest rate derivatives before providing an overview of developments in the size of OTC derivatives markets based on a number of measures.

Foreign Exchange Turnover

Global foreign exchange turnover grew strongly over the three years to April 2019, rising by over 30 per cent to an average of US\$6.6 trillion per day (Graph 1).^[2] The growth in turnover more than reversed the modest decline recorded in the 2016 survey, and coincided with a rise in the value of international trade over the same period (Graph 2). In contrast, global cross-border lending and investment have been little changed over recent years. While these macroeconomic factors continue to be key drivers of demand for foreign

exchange transactions, their overall influence on turnover is limited, especially in economies with well-developed financial systems. Consistent with this, a substantial portion of the growth recorded in the April 2019 survey was in market segments where foreign exchange activity is more closely related to managing financial risks, such as trading between reporting dealers and other financial institutions (particularly smaller banks, hedge funds and proprietary trading firms).

In contrast to a significant increase in global turnover, turnover in the Australian foreign exchange market was little changed in US dollar terms over the three years to April 2019. Turnover in the Australian foreign exchange market remains well below the levels seen earlier in the decade, in part reflecting the depreciation of the Australian

dollar over this period. More frequent data collected by the Reserve Bank of Australia indicate that in Australian dollar terms activity in the Australian foreign exchange market has been fairly stable since 2011.^[3]

Turnover by jurisdiction

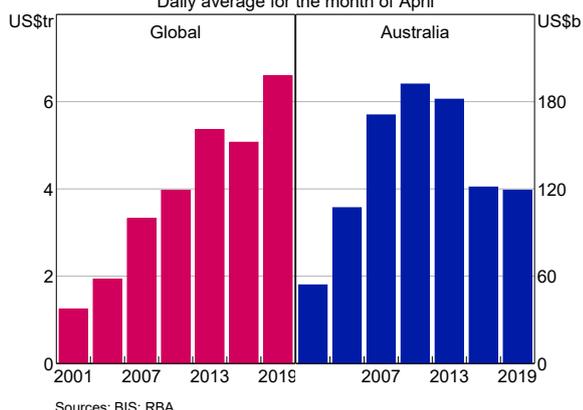
The global foreign exchange market continues to be highly concentrated geographically. The five largest jurisdictions accounted for just under 80 per cent of global turnover in April 2019; this share has increased steadily since 2007 (Table 1, Graph 3). The United Kingdom remains the largest trading centre and accounted for a large share of the increase in global turnover over the three years to April 2019. The United States remained the second largest centre, but its share declined as turnover grew more slowly than the global results.

Several Asian jurisdictions have increased in importance as centres for foreign exchange trading over recent years. After recording a sharp increase in turnover between 2013 and 2016, the three largest Asian centres – Singapore, Hong Kong and Japan – maintained their global share at around 20 per cent in the April 2019 survey. Strong growth in Hong Kong offset relatively slower growth in Tokyo and Singapore. China also recorded an increase in trading activity, though it still accounts for a smaller global share than Hong Kong. China is now the eighth largest foreign exchange trading centre (up from 13th in April 2016). The gradual increase in

Graph 1

Foreign Exchange Turnover

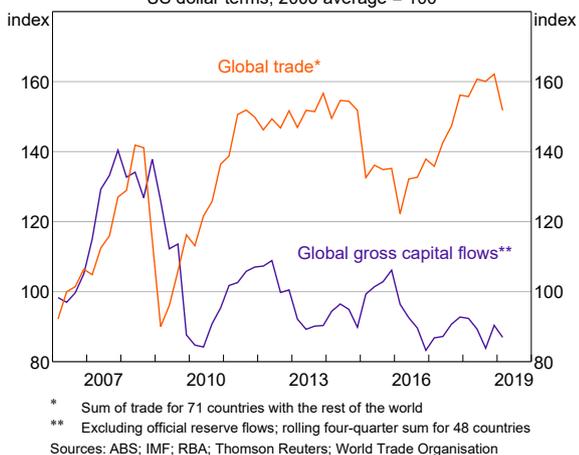
Daily average for the month of April



Graph 2

Global Trade and Gross Capital Flows

US dollar terms, 2006 average = 100



Graph 3

Geographical Distribution of Foreign Exchange Turnover

Share of global turnover

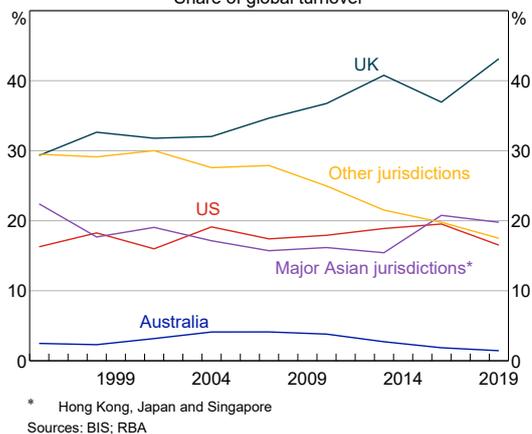


Table 1: Global Foreign Exchange Turnover by Jurisdiction^(a)

	Daily average April 2019 US\$ billion	Change over 2016–2019 Per cent	Market share April 2016 Per cent	April 2019 Per cent
Total	6,590	30	n/a	n/a
United Kingdom	3,576	49	36.9	43.2
United States	1,370	8	19.5	16.6
Singapore	633	22	7.9	7.7
Hong Kong	632	45	6.7	7.6
Japan	376	–6	6.1	4.5
Switzerland	276	76	2.4	3.3
France	167	–7	2.8	2.0
China	136	87	1.1	1.6
Germany	124	7	1.8	1.5
Australia	119	–2	1.9	1.4
Other jurisdictions	867	6	12.8	10.5

(a) The sum of jurisdiction subtotals exceeds the global total as jurisdiction subtotals are not adjusted for cross-border double counting; subtotals may not sum to total due to double counting

Sources: BIS

China's market share since 2001 has reflected progress toward internationalising the Chinese renminbi (RMB), China's financial market development, and the gradual opening up of China's capital markets to international investors (Lien and Sunner 2019). These developments may have contributed to the increase in cross-border transactions in both China and Hong Kong over the three-year period.

As turnover has become more concentrated in the large centres, smaller centres – such as Australia – have seen a continued decline in their share of activity. Australia accounted for a smaller share of global turnover in April 2019 compared with April 2016 and was the tenth largest foreign exchange market in the world, down from eighth in 2016. Similar declines in shares of global turnover were reported in France, Germany, Denmark and the Netherlands. One exception was Switzerland, whose share of global turnover increased over the period.

Turnover by currency

Global foreign exchange turnover continues to be heavily concentrated in the currencies of major advanced economies (Table 2). Reflecting its pre-eminent role in global cross-border payments, funding and reserve portfolios, the US dollar (USD)

remained by far the most traded currency in the world; the USD has consistently been on one side of 80–90 per cent of all foreign exchange transactions for the past several decades.

While most major currencies recorded similar market share compared to previous years, the Japanese yen (JPY) saw a 5 percentage point decline in its share of total turnover. This decline was due almost entirely to lower turnover in the USD/JPY currency pair. Turnover in this pair – which accounts for nearly 80 per cent of global yen turnover – tends to increase in periods of higher financial market volatility, whereas volatility was at historically low levels at the time of the April 2019 survey. Turnover against the Turkish lira, South African rand and Brazilian real increased notably; these high-yielding currencies are attractive for Japanese retail investors, though they make up only a small share of total yen turnover.

While activity remains dominated by the reserve currencies, the share accounted for by emerging market currencies continued to rise over the three years to April 2019. Global turnover in the RMB grew strongly, although the pace of growth slowed to 41 per cent from 69 per cent three years prior, and

Table 2: 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	6,590	n/a	119	n/a
Currency^(b)				
USD	5,819	88.3	109	91.7
EUR	2,129	32.3	16	13.3
JPY	1,108	16.8	13	11.1
GBP	844	12.8	7	6.0
AUD	445	6.8	59	49.4
RMB ^(c)	284	4.3	2	1.9
Other currencies	2,552	38.7	32	26.7
Currency pair				
USD/EUR	1,584	24.0	12	10.0
USD/JPY	871	13.2	10	8.7
USD/GBP	630	9.6	5	4.5
USD/AUD	358	5.4	53	44.3
USD/CAD	287	4.4	2	1.7
Other currency pairs	2,860	43.4	37	30.9

(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

was generally in line with growth in global turnover. As a result, the RMB remained the eighth most traded currency, and its share of global turnover was largely unchanged. As noted above, the increased market activity in Mainland China over the three-year period saw the share of RMB activity accounted for in China increase (Graph 4). Around 95 per cent of renminbi turnover globally was against the US dollar.

The currencies of other Asian economies also recorded strong growth in turnover. The increase was particularly strong in the Korean won, Indonesian rupiah, Indian rupee and Hong Kong dollar. Turnover in the Hong Kong dollar more than doubled in the three years to April 2019 to become the ninth most traded currency globally, increasing from 13th in April 2016.

The Australian dollar remains the fifth most traded currency globally, and AUD/USD remains the fourth most traded currency pair. Global turnover of the

Australian dollar grew in line with global turnover (in US dollar terms) over the three years to April 2019. Most of the growth in Australian dollar turnover was recorded in offshore markets and, consistent with the global results, the United Kingdom and Hong Kong accounted for an increased share of Australian dollar turnover. Overall, 90 per cent of turnover in the Australian dollar occurred outside of Australia, having increased gradually from 60 per cent in 2001. This is broadly consistent with the trends in the share of offshore turnover in other globally traded currencies, such as the New Zealand dollar and Canadian dollar.

Turnover by counterparty

Large commercial and investment banks facilitate activity in the foreign exchange market by trading for their own account or to meet demand from customers. These 'reporting dealers' trade among themselves – the interdealer market – as well as

Table 3: Foreign Exchange Turnover by Counterparty^(a)

April 2019

	Global		Australia	
	Daily average April 2019 US\$ billion	Change over 2016–2019 Per cent	Daily average April 2019 US\$ billion	Change over 2016–2019 Per cent
Reporting dealers	2,522	19	94	–3
Other financial institutions	3,595	40	21	11
<i>Non-reporting banks</i>	1,612	45	6	–21
<i>Institutional investors</i>	777	–3	11	53
<i>Hedge funds, proprietary trading firms</i>	593	52	0	–66
<i>Official sector financial institutions</i>	89	21	1	–19
<i>Other/undistributed</i>	524	175	3	82
Non-financial institutions	474	24	4	–22

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

Source: BIS

with other financial institutions and non-financial institutions. Global turnover in all three of these segments increased over the three years to April 2019 (Graph 5, Table 3).

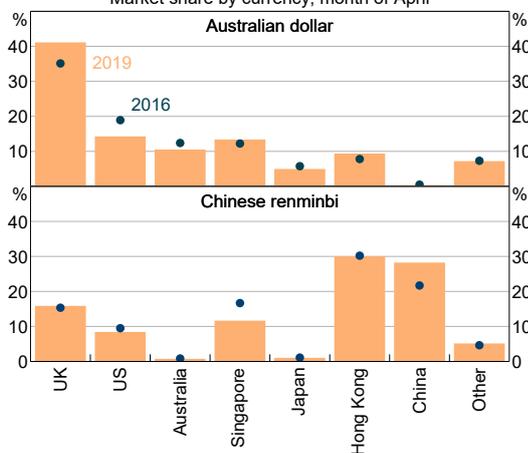
The structure of the Australian market differs markedly from the global counterparty breakdown. In Australia, the interdealer market accounts for a much larger share of activity than globally while

other financial institutions have a much smaller presence. This partly reflects the concentration of the Australian banking sector and, therefore, less activity between large dealers and smaller ‘non-reporting’ banks (who engage reporting dealers in foreign exchange transactions but do not themselves provide market-making services). It also reflects the fact that there are fewer hedge funds and proprietary trading firms (PTFs) active in Australia than in some other markets. Over the three years to April 2019, increased trading activity by institutional investors and non-financial institutions in Australia was offset by declines in other segments, including the interdealer market.

Globally, the share of turnover in the interdealer market has fallen gradually over time, from about three-quarters in 1995 to one-half in 2019. This decrease has been linked to the rise in trade internalisation, whereby reporting dealers offset trades from one customer against other customer trades in the opposite direction within a short time frame (typically a few minutes). This allows them to manage their inventory risk by squaring off positions internally rather than conducting trades with other dealers. Increased trade internalisation

Graph 4**Geographical Distribution of Foreign Exchange Turnover**

Market share by currency, month of April



Sources: BIS; RBA

may also partly account for the reported shift in foreign exchange turnover from spot to derivatives, as spot transactions are relatively more straightforward to internalise. On a value-weighted basis, the share of turnover internalised by reporting dealers ('internalisation ratios') averaged 63 per cent in April 2019.^[4]

Internalisation may also partly explain the increased concentration of the foreign exchange market over recent decades – both by institution and geographically. Larger reporting dealers with larger customer order flow can internalise trades more efficiently, and may enable these institutions to attract customers with more favourable bid-offer spreads. Further, institutions are better able to generate sufficient customer order flow to internalise trades in large and deeply liquid markets. As a result, internalisation ratios tend to be highest in larger foreign exchange trading centres. For example, the United Kingdom and United States reported internalisation ratios in excess of 75 per cent. Consistent with this, these markets have reported relatively larger declines in interdealer turnover – particularly in spot transactions – over recent surveys. Australia also recorded above-average levels of internalisation for April 2019.

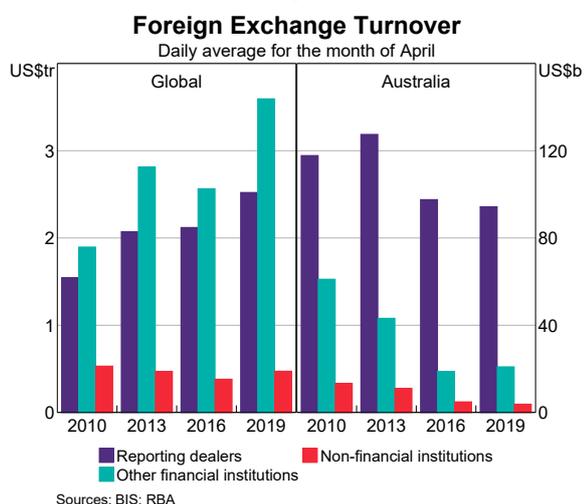
As interdealer trading has become less dominant, trading between reporting dealers and other financial institutions has grown to more than half of the global market. Growth in this segment over the three years to April 2019 more than reversed the

decline recorded in the previous survey. The increase was driven mainly by increased turnover between reporting dealers and non-reporting banks, and hedge funds and PTFs. The majority of the increase in turnover by these counterparties came from the United Kingdom where a large share of these players are located.

Increased turnover with other financial institutions coincided with a rebound in prime brokerage activity in foreign exchange markets. Prime brokers enable their clients – typically other financial institutions – to conduct trades with pre-determined third-party banks in the prime broker's name. These services are often used for more speculative activity and high-frequency execution methods. In the 2016 survey, their market activity declined sharply as banks pulled back from their prime brokerage business as they reassessed the profitability of these activities and risk associated with them (BIS 2016). Over the three years to April 2019, prime brokerage volumes grew sharply, reversing the decline reported in the previous survey.

Use of electronic execution methods continued to grow at the expense of voice methods in the three years to April 2019. However, this growth was not uniform across instruments, with electronic execution methods for outright forwards growing at a faster rate than spot transactions. Turnover executed using voice methods fell over the same period, but still accounts for over a third of global turnover.

Graph 5



Turnover by instrument

Global turnover increased across all types of foreign exchange instruments over the three years to April 2019 (Graph 6). Turnover in foreign exchange swaps and outright forwards grew at a faster rate than spot transactions, continuing the longer-run increase in the share of derivatives at the expense of spot turnover. Since 1995, foreign exchange derivatives have risen from 58 per cent to 70 per cent of total global turnover.

Turnover in foreign exchange swaps increased by 34 per cent over the three years to April 2019, and contributed the most to the increase in overall

global turnover. Non-reporting banks contributed close to half of the increase in swaps over the period, consistent with swaps being used to manage funding liquidity and hedge currency risk. The majority of foreign exchange turnover was in swaps with short maturities, reflecting the fact that these instruments would need to be rolled over more frequently.

In contrast to the global results, turnover in foreign exchange swaps in the Australian market fell over the three years to April 2019, more than offsetting increases in spot and outright forwards turnover. This continued the gradual decline in the share of Australian turnover accounted for by foreign exchange swaps that began in 2013, driven mainly by declines in cross-border activity. Foreign exchange swaps accounted for 55 per cent of total turnover in Australia in April 2019, decreasing from two-thirds in April 2016. More than half of foreign exchange swaps in the domestic market involved the Australian dollar, with the majority of these being against the US dollar.

Turnover in cross-currency swaps (which differ from foreign exchange swaps as they involve interest payment streams in addition to the exchange of principal) in the Australian market increased in line with global results over the three years to April 2019. Australian financial institutions issue around two-thirds of their bonds offshore and typically use cross-currency swaps to hedge the foreign exchange exposures associated with this borrowing. However, over the three-year period Australian

banks' foreign currency-denominated bond issuance decreased slightly in US dollar terms, which highlights that these instruments are also used for other purposes.

Single-currency Interest Rate Derivatives Turnover

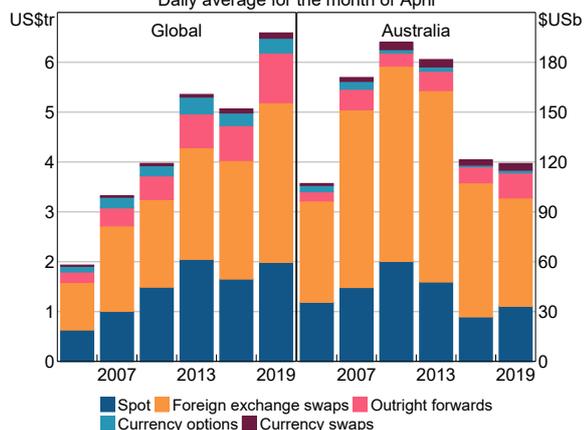
Over the three years to April 2019, average daily global turnover in single-currency OTC interest rate derivatives more than doubled to \$US6.5 trillion (Graph 7).^[5] The sharp increase in turnover may have reflected several factors. Shifts in monetary policy expectations around the time of the survey were likely to have contributed to an increase in hedging and positioning activity in interest rate derivatives markets, particularly overnight index swaps (OIS). Given that these instruments are typically of short maturities, it may be the case that a driver of the increase in turnover was the need to replace these contracts more often. Another potential driver of the increase in turnover is a higher number of so-called 'compression trades' noted by reporting dealers in the 2019 survey compared with 2016. These trades look to replace a large number of existing contracts with new ones to reduce outstanding notional amounts, while keeping net exposures unchanged, but still contribute to turnover figures.

Turnover in the Australian market grew by 72 per cent in the three years to April 2019, rising by substantially less than the global results. The

Graph 6

Foreign Exchange Turnover

Daily average for the month of April

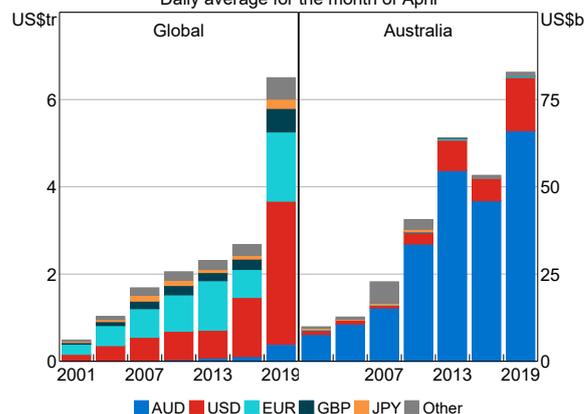


Sources: BIS; RBA

Graph 7

Single-currency Interest Rate Derivatives Turnover

Daily average for the month of April



Sources: BIS; RBA

increase was driven by growth in forward rate agreements as well as cross-border activity. Turnover of New Zealand dollar-denominated instruments in the Australian market grew substantially, accounting for 15 per cent of total Australian turnover – its highest share on record.

Global turnover in Australian dollar-denominated interest rate derivatives increased at a faster pace than other major currencies. The share of global turnover accounted for by Australian dollar-denominated interest rate derivatives rose to 6 per cent in April 2019, from 4 per cent in April 2016. This increase was driven mainly by significant growth in Hong Kong, which accounted for over two-thirds of the global increase in Australian dollar-denominated turnover. This continued the gradual decrease in Australia's share of Australian dollar-denominated interest rate turnover. Interest rate swaps accounted for 97 per cent of Australian dollar-denominated turnover, compared to 83 per cent in April 2016. This increase in share was almost entirely due to a sharp decrease in the share accounted for by forward rate agreements.

In contrast, in the global results turnover in forward rate agreements and interest rate options grew at a faster rate than interest rate swaps, though interest rate swaps still account for the majority of interest rate derivatives turnover. An increase in related party trades, which captures trades between a reporting dealer's own desks, branches and subsidiaries, accounted for 24 per cent of all single-currency interest rate derivative turnover in April 2019, increasing from 15 per cent in April 2016.^[6] More comprehensive reporting of these related party trades also contributed to the sharp growth in turnover between the 2016 and 2019 surveys.

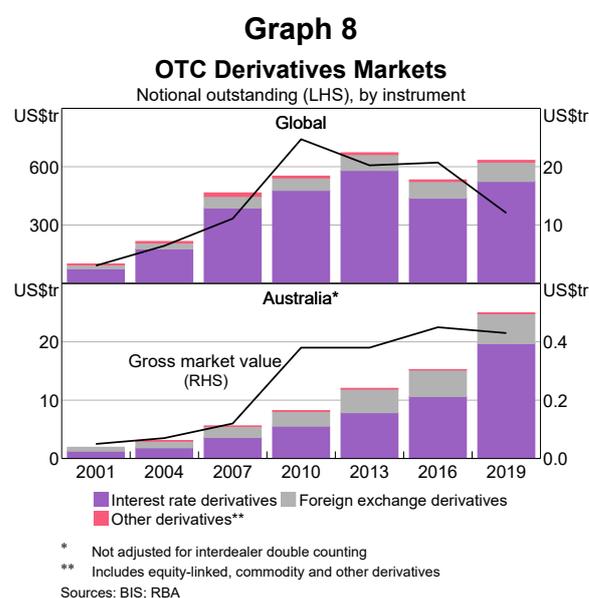
The 2019 Triennial Survey for the first time distinguished between OIS and other interest rate swaps. Turnover in OIS accounted for close to half of all interest rate swap turnover globally, which corresponds to 31 per cent of global interest rate derivative turnover. Combined, turnover in OIS and forward rate agreements accounted for over 60 per cent of all turnover.

The Size of OTC Derivatives Markets

In addition to measuring turnover, the survey provides data on the aggregate outstanding position of contracts in the OTC derivatives markets. The survey provides three measures of market size: notional amounts outstanding, gross market values, and gross credit exposures.

The notional amount outstanding refers to the face value that is used to calculate payments made on derivatives contracts. Since June 2016, the notional size of the global OTC derivatives markets increased, but remains below its 2013 peak (Graph 8). In Australia, the notional amount outstanding also increased over the past three years, following global markets. The Australian OTC derivatives market has continued to expand since the early 2000s.

The gross market value outstanding is the aggregated replacement values of outstanding contracts, evaluated at the market price. That is, it is the gross costs to which counterparties are exposed if all open contracts needed to be replaced. This measure is sensitive to changes in the instrument upon which the contract is based (e.g. interest rate or exchange rate). Therefore, it reflects both the face value (or nominal value) of derivatives as well as the extent of any fluctuations in market prices. Over recent years, the global gross market value of derivatives has declined sharply, and has halved since 2016. Factors such as trade compression (the elimination of economically redundant positions)



and new settle-to-market practices have continued to drive down global market values (BIS 2019).^[7] These factors primarily affect interest rate derivatives (Financial Stability Board 2018). However, gross market value only declined slightly for Australian reporting dealers. This is consistent with earlier evidence suggesting that trade compression was less prevalent among Australian banks (RBA 2016).

These two measures of size capture overall market activity. However, as they both include the value of economically offsetting positions, these metrics do not necessarily reflect the true level of market or counterparty credit risk. These risks are better measured by the gross credit exposure, which nets the value of these offsetting positions (such as contracts covered by bilateral netting arrangements) from the gross market value. Globally, gross credit exposure has continued to fall, and is at its lowest level since the Global Financial Crisis (GFC). For Australian reporting dealers, gross credit exposure increased over the past three years. Nevertheless, gross credit exposure as a proportion of gross market value remained below long-term averages. This implies that the increase in credit exposure was likely to have been driven by the substantial expansion in the size of the Australian OTC derivatives market.

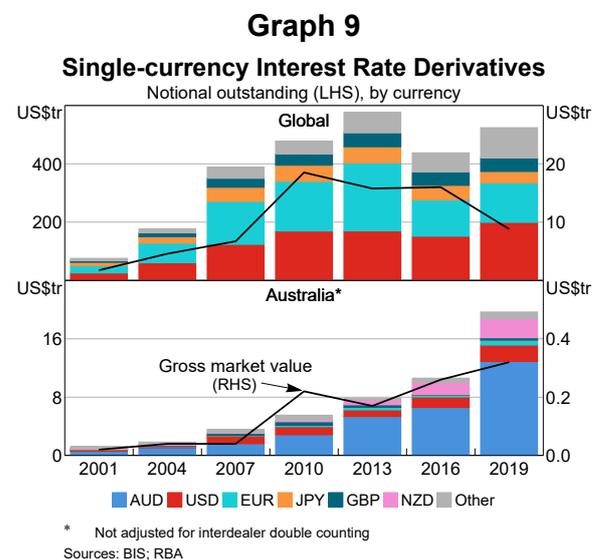
Over the previous three years, the global composition of OTC derivatives was largely unchanged. Globally, and in Australia, the majority of outstanding OTC derivatives contracts are single-currency interest rate derivatives. Australian banks had significant growth in interest rate derivatives. As a proportion of total nominal value outstanding, single-currency interest rate derivatives now account for 79 per cent of all outstanding Australian OTC derivatives contracts. This figure is up from 69 per cent in June 2016, and is now in line with the global composition of OTC derivatives. In Australia, the tenor composition of outstanding derivatives has shortened, reflecting an increasing proportion of contracts with less than 1 year to maturity.

Single-currency interest rate OTC derivatives

The notional value of single-currency interest rate derivatives grew over the past three years. However,

the market value of these contracts has experienced a broad-based decline across most major currency denominations (Graph 9). Australian banks have had significant growth in single-currency interest rate derivatives contracts over the past three years. The notional amount increased by 85 per cent while the gross market value increased by 22 per cent. This has been largely driven by Australian dollar-denominated contracts, which account for around 70 per cent of the increase in notional values. The notional value of New Zealand dollar-denominated contracts also grew significantly. The New Zealand dollar remains the second most common currency denomination for Australian interest rate derivatives; this reflects the significant New Zealand presence of some Australian banks.

Both globally, and in Australia, central counterparties (CCP) were the most common counterparty for transactions of single-currency interest rate derivatives (Graph 10). The global volume of OTC derivatives traded between reporting dealers and CCPs was first separately identified in the 2016 survey. The rise of CCP clearing in recent years can be partly attributable to mandatory clearing, capital, and margin requirements for OTC derivatives, as well as CCP reforms (Cole and Ji 2018; Financial Stability Board 2018). The use of CCP clearing can decrease notional amount outstanding, as a number of CCPs offer trade compression services that reduce the amount of offsetting trades (RBA 2018). In Australia,



the use of CCPs has become more widespread and currently accounts for 75 per cent of the notional value of interest rate derivatives. Conversely, the proportion of contracts with other reporting dealers fell by 12 per cent in the past three years.

Foreign exchange OTC derivatives

The notional amounts of global foreign exchange derivatives continued to increase over the past three years (Graph 11). In contrast, the global gross market value of foreign exchange derivatives decreased from 2016 levels. Developments in the Australian market followed these international patterns.

Globally, and in Australia, outright forwards and swaps remain the most common foreign exchange derivative instrument (Graph 12). The notional amount of forwards and swaps increased by 26 per cent over the three years in the Australian market, almost twice as much as the growth in the global market.

Over the past three years, the notional positions of cross-currency swaps contracted slightly, both globally and in Australia. Moreover, global cross-currency swaps have accounted for a smaller share of foreign exchange derivatives than in Australia in recent years.

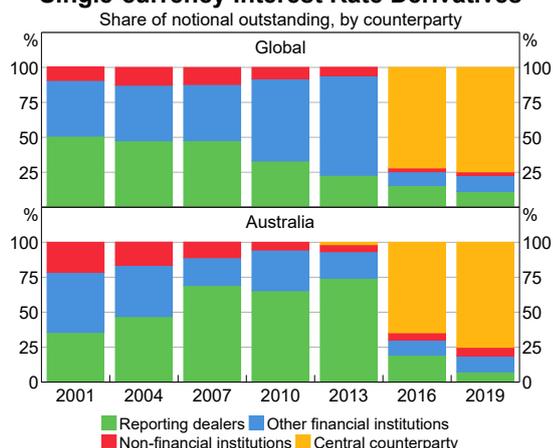
Credit default swaps

The notional amount of credit default swaps (CDS) outstanding decreased both globally and in Australia over the past three years. This follows the long-term decline in CDS contracts outstanding (Graph 13). The fall in the Australian market was more substantial than the fall in international markets with CDS falling by around 70 per cent.

The ongoing decline in the global and Australian CDS markets may indicate continued use of trade compression to reduce offsetting positions. The decline in Australia is also partly due to the aggregation of older contracts into fewer new contracts and the reduction of CDS market activity by most reporting dealers. The counterparty distribution of the CDS market has also shifted, with CCPs and non-financial institutions becoming more

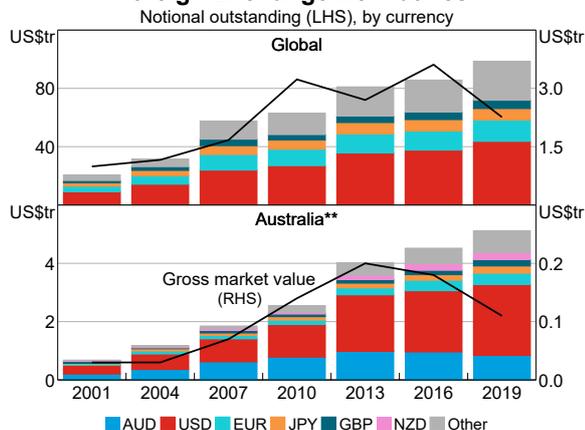
Graph 10

Single-currency Interest Rate Derivatives



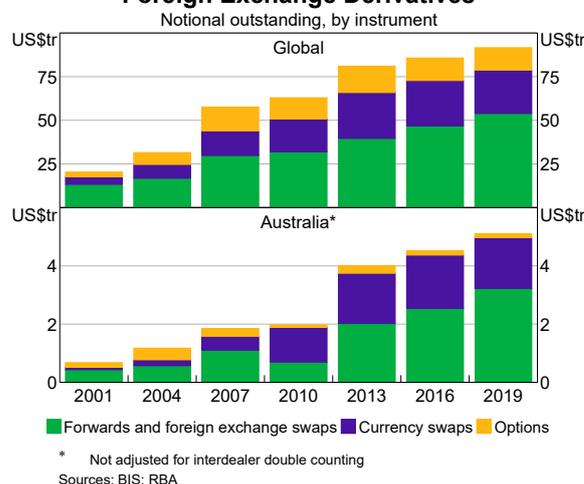
Graph 11

Foreign Exchange Derivatives*



Graph 12

Foreign Exchange Derivatives



common. In recent years, the increased presence of CCP clearing has been a key factor in reducing the market size of CDS globally (BIS 2018). However, contracts between reporting dealers remain the most common type, despite these recent declines.

Unlike the previous Triennial Survey, there were more multi-name than single-name CDS instruments outstanding in the global market. These multi-name instruments reference multiple entities, and are often indexed to a tradable basket of CDS contracts. The predominance of multi-name instruments has been a feature of the Australian market for some time.

The Australian CDS market remains more concentrated than global markets with over 40 per cent of the notional amount positions held between reporting dealers, compared with around 20 per cent for international markets. Nonetheless, both the Australian and global market concentration declined considerably relative to the June 2016 survey.

Commodity derivatives

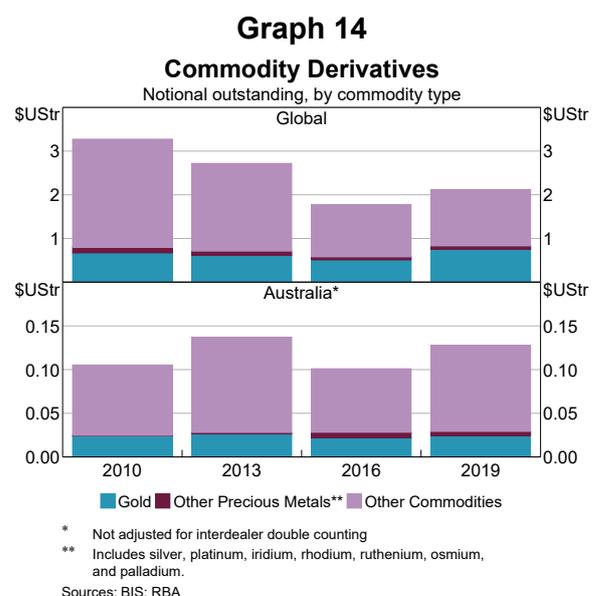
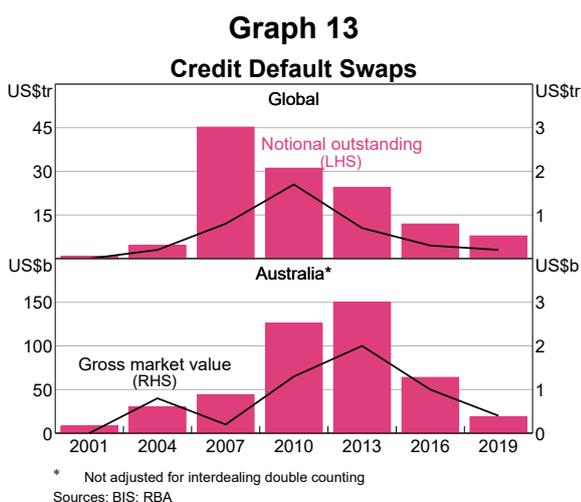
Globally, the notional value of commodity derivatives has increased since 2016 (Graph 14). Meanwhile, in Australia, the increase was more significant. The growth in commodity derivatives was mainly driven by an increase in the volume of

'other commodities' contracts.^[8] Australia's share of global commodity derivatives reached its highest level in 2019; historically, it has been higher relative to Australia's share in other derivative types.

Conclusion

Turnover in global foreign exchange markets increased in US dollar terms over the three years to April 2019. Turnover between reporting dealers and other financial institutions increased significantly, as did the share of turnover accounted for by foreign exchange derivative instruments. In contrast to global results, activity in the Australian foreign exchange market was largely unchanged: the Australian foreign exchange market was the tenth largest in the world, down from eighth in April 2016. However, the Australian dollar remained the fifth most traded currency.

The notional size of the global OTC derivatives market increased over the three years to June 2019, while the gross market value of OTC contracts fell substantially. Furthermore, the notional amounts outstanding for Australian reporting dealers grew significantly, mostly driven by the increase in interest rate derivatives. ✎



Footnotes

- [*] The authors are from Financial Markets Group.
- [1] The 2019 survey was undertaken in two parts. The turnover portion measured activity in foreign exchange and single-currency interest rate derivatives markets in the month of April. It was conducted by central banks and other authorities across 53 jurisdictions, and included 23 Australian reporting dealers. Data are reported based on where the transaction is arranged (sales desk basis). The outstanding portion measured the amount of OTC derivatives outstanding as at the end of June. It covered 53 jurisdictions and included responses for the consolidated operations of six large Australian banks.
- [2] Unless otherwise stated, global turnover figures are at current exchange rates and adjusted for interdealer double counting at both the local and global level. Country subtotals are adjusted for interdealer double counting at the local level only.
- [3] Semi-annual surveys are conducted by central banks and other authorities in Australia, Canada, Hong Kong, Japan, Singapore, the United Kingdom and the United States. These jurisdictions now account for around 80 per cent of the global foreign exchange market. However, the results are not directly comparable to the Triennial Survey due to some differences in the collection and attribution of turnover. Australia's results for the semi-annual survey are available on the Australian Foreign Exchange Committee website at <http://www.rba.gov.au/afxc/statistics/fx-turnover-reports/>. Quarterly data for the Australian market are also available at <http://www.rba.gov.au/statistics/tables/> (Statistical Tables F9 and F10).
- [4] Changes in reporting guidelines regarding internalisation ratios mean that these figures are not directly comparably between the 2016 and 2019 surveys
- [5] Single-currency OTC interest rate derivatives include forward rate agreements, swaps and options.
- [6] Part of this increase can be attributed to more comprehensive reporting of related party trades in the April 2019 survey than in previous surveys.
- [7] Settle-to-market practices refers to when financial institutions make outright payments (rather than posting additional collateral) against changes in market value, thereby restoring market values to zero.
- [8] The BIS does not provide a further breakdown of the 'other commodities' category. Other commodities include all commodities other than gold and other precious metals.

References

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