

The foreign exchange and over-the-counter interest rate derivatives market in the United Kingdom

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- In April this year, the Bank of England conducted its usual three-yearly survey of turnover in the United Kingdom's foreign exchange and over-the-counter (OTC) interest rate derivatives market.
- The results show that turnover in foreign exchange rose by just under one half (47%) between April 2010 and April 2013. The increase in turnover in OTC interest rate derivatives was more modest (9%) over the same period.
- This article reviews some short and long-term factors that are likely to account for the increase in foreign exchange turnover between the two surveys.

Overview

In April this year, the Bank of England conducted its usual triennial survey of turnover in the United Kingdom's foreign exchange and OTC interest rate derivatives market. This forms part of the latest worldwide survey co-ordinated by the Bank for International Settlements, with the aim of monitoring the structure of, and developments across, global markets.

Results of the UK survey

Average daily turnover in the UK foreign exchange market was US\$2,726 billion during April 2013, 47% higher than in April 2010. This increase was larger than the rise reported across other major financial centres and cemented the United Kingdom's position as the largest centre of foreign exchange activity.

Similarly, the United Kingdom remained the largest financial centre for OTC interest rate derivatives, accounting for just under half (49%) of global daily turnover during April 2013. Turnover rose by a relatively modest 9% over the period.

Underlying influences on foreign exchange turnover

Short-term drivers are likely to account for some of the strong rise in foreign exchange turnover. In particular, the volume of trades involving the Japanese yen more than doubled during the latter part of the period, seemingly stimulated by monetary and fiscal policy changes in Japan.

Longer-term factors continued to play an important role in the foreign exchange market. Technological improvements and increased demand for electronic trading resulted in an increase in the total number of electronic trading platforms. While this is likely to have contributed to the overall rise in turnover, contacts suggested it might also have made foreign exchange liquidity more fragmented and, in effect, increased the complexity of the market.

Foreign exchange activity in the United Kingdom remained dominated by financial customers. Heightened market stress and a slow economic recovery were thought to have caused a decrease in non-financial clients' trading activity between 2010 and 2013.

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Introduction

In April this year, central banks and monetary authorities in 53 countries, including the United Kingdom, conducted national surveys of turnover in foreign exchange (FX) markets⁽¹⁾ and in over-the-counter (OTC) interest rate derivatives markets. These surveys have taken place every three years since 1986⁽²⁾ and measure turnover for the whole of April. They are co-ordinated on a global basis by the Bank for International Settlements (BIS), with the aim of obtaining comprehensive and internationally consistent information on the size and structure of the corresponding global markets.

This article begins by outlining the results of the latest UK contribution to the BIS global survey.⁽³⁾ The focus is largely on developments in FX markets, highlighting the significant increase in UK turnover since the previous survey. OTC interest rate derivatives survey results are summarised in the box on page 399. The second part of the article considers the main developments in the UK FX market in recent years that may have contributed to the marked increase in turnover.

The UK survey was conducted by the Bank of England, covering the business of 47 institutions (both UK-owned and foreign-owned) located in the United Kingdom. The box on pages 396–97 describes the types of trades captured in the survey.

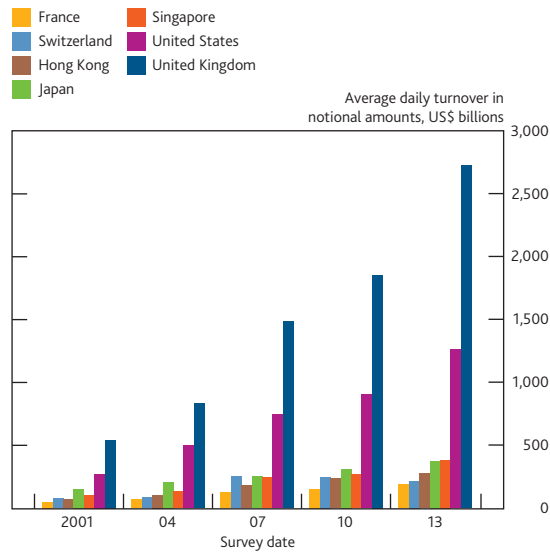
The results of the UK survey

Average daily turnover in the UK FX market during April 2013 was US\$2,726 billion, 47% higher than in April 2010. This continues the upward trend in FX turnover reported in previous surveys.

Most global financial centres saw increased activity over the three years to April 2013 (**Chart 1**). The United Kingdom recorded the largest increase in turnover and strengthened its position as the centre of FX activity, accounting for 41% of the global market in 2013, up from 37% in 2010.

The United Kingdom's share of the global FX market has exceeded 30% in each of the past six surveys. The next largest centre was the United States, with 19% of the global market share in 2013, up from 18% in 2010. Singapore displaced Japan as the third largest centre, accounting for 6% of the market share. The majority of turnover in the UK FX market was cross-border⁽⁴⁾ — some 60% of total turnover in April 2013 — reflecting London's role as an international financial centre. While this is less than the cross-border share in April 2010 (71%) it does not necessarily mean that the market has become less international. The increased trading activity in financial centres suggests that a rising proportion of business is between counterparties located in the United Kingdom that may be headquartered elsewhere.

Chart 1 Average daily FX turnover in the United Kingdom and other major centres



Source: BIS.

In comparison, growth in OTC interest rate derivatives turnover was less marked, increasing by 9% since April 2010 to stand at US\$1,348 billion per day in April 2013 — see the box on page 399. The rest of this article focuses on the results of the FX market. The remainder of this section highlights some of the key trends from the survey before the subsequent section examines the underlying factors that have contributed to those developments.

Increase in swap and spot transactions

Turnover increased across all FX instruments, as illustrated in **Chart 2**. FX swaps showed the largest increase in absolute amounts, up 45% to US\$1,127 billion per day. Swap transactions remain the most traded FX instrument, accounting for 41% of all FX transactions. Spot transactions increased to US\$1,032 billion from US\$697 billion per day in April 2010. Turnover in FX options rose by 67% to US\$227 billion per day, while outright forwards increased by 35% with turnover of US\$309 billion per day. At the same time turnover in currency swaps grew by 77%, but still only accounted for 1% of the FX market with turnover of US\$32 billion per day.

(1) Unless otherwise stated, turnover figures published in this report are adjusted to remove double counting of trades between UK principals that will have been reported by both parties (so-called 'local double counting').
 (2) In the 1986 survey four countries, including the United Kingdom, reported data to the BIS. The first published global data were for the 1989 survey, which also included results of the 1986 survey. OTC derivatives were included for the first time in 1995.
 (3) All the data shown in the charts and tables in this article are sourced from this and previous surveys, unless otherwise stated. The Bank published a summary of the UK results on 5 September 2013 (see www.bankofengland.co.uk/publications/Pages/news/2013/101.aspx). The BIS global results can be found on the BIS website at www.bis.org/publ/rpfx13.htm.
 (4) 'Cross-border business' covers transactions with entities located outside of the United Kingdom.

BIS triennial survey definitional issues

Participants

Forty-seven institutions, mainly commercial and investment banks, participated in the UK survey — the same number that participated in 2010. Others active in the UK market were not directly involved in the survey, but their transactions with participating principals will have been recorded by those institutions.

The questionnaire

Survey participants completed a questionnaire prepared by the Bank of England, based on a standard format agreed with other central banks and the Bank for International Settlements (BIS). Participants were asked to provide details of their gross turnover for the 21 business days in April 2013. Gross turnover (measured in notional values) is defined as the absolute total value of all deals contracted; there was no netting of purchases against sales. Data were requested in terms of US dollar equivalents, rounded to the nearest million. The basis of reporting was the location of the sales desk of the trade, as with the past three surveys. The questionnaire asked for data broken down by currency, instrument and type of counterparty.

The survey distinguished the following types of transaction:

Foreign exchange

- *Spot transaction*: a single outright transaction involving the exchange of two currencies at a rate agreed on the date of the contract for delivery (cash settlement) usually within two business days. The spot legs of foreign exchange (FX) swaps and FX swaps that were for settlement within two days (that is, 'tomorrow/next day' swap transactions) were excluded from this category.
- *Outright forward*: a transaction involving the exchange of two currencies at a rate agreed on the date of the contract for delivery (cash settlement) at some time in the future (more than two business days later). Also included in this category were forward FX agreement transactions, non-deliverable forwards, and other forward contracts for difference.
- *FX swap*: a simultaneous transaction that involves the exchange of two currencies, first the near leg and then, subsequently, a reverse transaction at a forward date (the far leg). Short-term swaps carried out as overnight and 'tomorrow/next day' transactions are included in this category.
- *Currency swap*: a contract which commits two counterparties to exchange streams of interest payments in different currencies for an agreed period of

time, and to exchange principal amounts in different currencies at a pre-agreed exchange rate at maturity.

- *Currency option*: an option contract that gives the right to buy or sell a currency against another currency at a specified exchange rate during a specified period. This category also includes currency swaptions, currency warrants and exotic FX options such as average rate options and barrier options.

Single-currency over-the-counter interest rate derivatives

- *Forward rate agreement*: an interest rate forward contract in which the rate to be paid or received on a specific obligation for a set period of time, beginning at some time in the future, is determined at contract initiation.
- *Interest rate swap*: an agreement to exchange periodic payments related to interest rates on a single currency. This could be fixed for floating, or floating for floating based on different indices. This category includes those swaps for which notional principal is amortised according to a fixed schedule independent of interest rates.
- *Interest rate option*: option contract that gives the right to pay or receive a specific interest rate on a predetermined principal for a set period of time. Included in this category are interest rate caps, floors, collars, corridors, swaptions and warrants.

Reporting institutions were asked to distinguish between transactions with:

- *Reporting dealers*: financial institutions that are participating in the globally co-ordinated survey. These institutions actively participate in local and global FX and derivatives markets.
- *Other financial institutions*: financial institutions that are not classified as reporting dealers. This category includes:
 - *Non-reporting banks* — covers smaller banks and securities houses, not directly participating as a reporting dealer.
 - *Institutional investors* — includes mutual funds, pension funds, insurance companies and endowment funds.
 - *Hedge funds and proprietary trading firms* — covers investment funds, money managers and proprietary trading firms that invest, hedge or speculate on their own account.
 - *Official sector financial institutions* — comprises central banks, sovereign wealth funds, international financial

institutions of the public sector, development banks and agencies.

- *Other* — all remaining financial institutions that cannot be classified to any of the above categories.
- *Non-financial customers*: covers any counterparty other than those described above — so mainly non-financial end-users, such as businesses and governments.

In each case reporters were asked to separate local and cross-border transactions (determined according to the location, rather than the nationality of the counterparty) to permit adjustment for double counting.

Market conditions

Participants were asked whether they regarded the level of turnover in April 2013 as normal. The responses, summarised in **Table 1**, suggest that the survey results can be regarded as representative of FX turnover at the time of the survey.

The aggregate responses (adjusted for double counting) for the 2013 questionnaire and previous years are shown in **Tables C and D** at the end of this article.⁽¹⁾ The BIS published a report on FX activity on 5 September 2013 and further analysis of the global survey results in its December *Quarterly Review*.⁽²⁾

A survey of global outstanding positions in the derivatives market (measured at the end of June 2013) was also undertaken, and global results for this survey were published in November.⁽³⁾

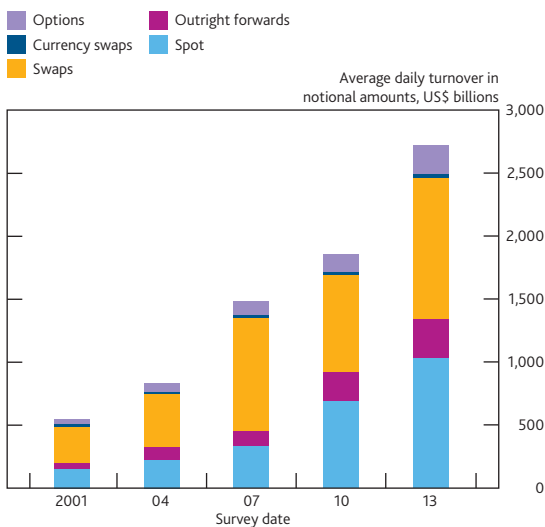
Table 1 Survey participants' estimates for FX turnover levels

| In April 2013 | | |
|-------------------------|---------------------|---------------------------------------|
| | Number of reporters | Percentage of turnover ^(a) |
| Below normal | 4 | 0 |
| Normal | 30 | 47 |
| Above normal | 13 | 52 |
| In preceding six months | | |
| | Number of reporters | Percentage of turnover ^(a) |
| Decreasing | 6 | 1 |
| Steady | 18 | 19 |
| Increasing | 23 | 80 |

(a) Percentages may not sum to 100% due to rounding.

(1) A full breakdown of aggregate responses for the 2013 questionnaire is available at www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2013/full2013triennialsurveyresults.xls.
 (2) The report on FX activity can be found on the BIS website at www.bis.org/publ/qtrpdf/r_qt1312.htm.
 (3) Results of the BIS amounts outstanding global survey can be found on the BIS website at www.bis.org/publ/rpfx13.htm.

Chart 2 FX turnover by instrument type^(a)



(a) For a definition of the different instrument types, see the box on pages 396–97.

Continued importance of the US dollar

The US dollar continued to be the dominant currency in the UK FX market, with 88% of all trades having one side denominated in US dollars in April 2013 (**Table A**). While the euro remained the second most traded currency, its market share fell from 44% to 37%. In contrast, the proportion of FX turnover involving the Japanese yen increased from 17% to

23%. This reflects the large increase in US dollar/yen trades to an average of US\$516 billion per day, more than double the level in April 2010. The proportion of turnover involving sterling fell to 16%, continuing the decline shown in previous surveys.

Table A FX turnover — currency breakdown

| Per cent ^(a) | Survey date | | | |
|-------------------------|-------------|------|------|------|
| | 2004 | 2007 | 2010 | 2013 |
| US dollar | 88 | 88 | 85 | 88 |
| Euro | 43 | 42 | 44 | 37 |
| Japanese yen | 16 | 15 | 17 | 23 |
| Pound sterling | 27 | 21 | 18 | 16 |
| Australian dollar | 4 | 4 | 6 | 8 |
| Swiss franc | 6 | 6 | 6 | 5 |
| Canadian dollar | 3 | 3 | 4 | 4 |
| Other currencies | 13 | 21 | 20 | 20 |

(a) Because two currencies are involved in each transaction, the sum of the percentage shares of individual currencies totals 200% instead of 100%.

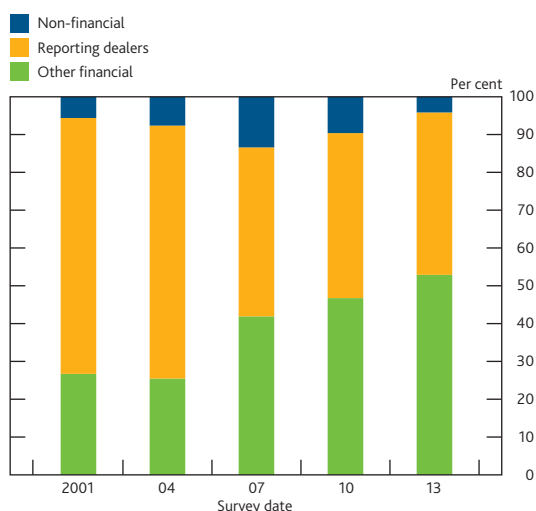
Increased diversity of market participants⁽¹⁾

Turnover with 'other financial institutions' (OFIs), a category that includes hedge funds, pension funds, and smaller banks

(1) The definition of counterparty categories is detailed in the box on pages 396–97.

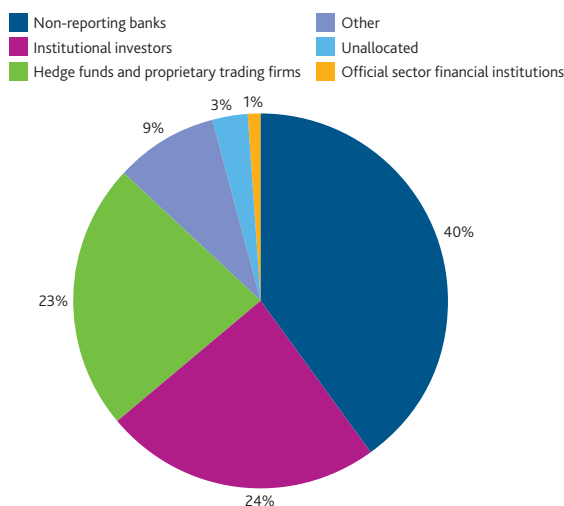
and securities houses, continued to increase and accounted for more than half (53%) of all FX turnover (**Chart 3**). Turnover in this category grew by 66% compared with April 2010, to US\$1,442 billion per day. Interbank trading⁽¹⁾ rose by 45% to US\$1,170 billion per day, while trades with 'non-financial institutions' fell by 36% to US\$113 billion per day. Interbank trading now accounts for 43% of all FX turnover, while trades with 'non-financial institutions' only make up 4% of total turnover.

Chart 3 FX turnover by counterparty



A further breakdown of OFIs was collected for the first time in the April 2013 survey (**Chart 4**). Within this category, 'non-reporting banks' represented the largest counterparty, comprising 40% of FX turnover with OFIs. Just under half of FX turnover within this category relates to FX swap contracts. The next largest subsectors by turnover are 'institutional investors' and 'hedge funds and proprietary trading firms', accounting for 24% and 23%, respectively. In contrast, spot transactions accounted for over half of FX turnover within these categories.

Chart 4 FX turnover with other financial institutions



The concentration of the UK FX market is broadly unchanged compared with April 2010. The combined market share of the ten institutions with the highest level of turnover fell from 77% to 76%, while the share of the top 20 increased from 93% to 94%. **Table B** shows how concentration varied by instrument. Five institutions appear in the top ten for all five instruments.

Table B FX turnover — market concentration

| Per cent share | Spot | Forwards | FX swaps | Currency swaps | Options | Total |
|-------------------------|-----------------------|----------|----------|----------------|---------|-------|
| | Top five institutions | 66 | 58 | 48 | 73 | 67 |
| Top ten institutions | 84 | 82 | 71 | 91 | 87 | 76 |
| Top twenty institutions | 97 | 97 | 92 | 99 | 100 | 94 |

Developments in trade execution

Electronic trading was the most popular way to execute trades with 55% of all FX turnover conducted over an electronic medium, at US\$1,487 billion per day. But trades executed directly over the phone — not via a third party — still remain an important way to execute trades, comprising 26% of total turnover at US\$709 billion per day. Trades executed through voice brokers stood at US\$506 billion per day.

Underlying influences on FX turnover

Short-term drivers are likely to account for a significant proportion of the large rise in FX turnover between the 2010 and 2013 BIS triennial surveys. Semi-annual turnover data collected by the London Foreign Exchange Joint Standing Committee (FXJSC) show that around half of the pickup between the 2010 and 2013 BIS surveys happened quite early on in the period under analysis, between October 2010 and April 2011, while the remainder occurred much more recently, in the six months between October 2012 and April 2013 (**Chart 5**). For a comparison between BIS and FXJSC data see the box on page 401.

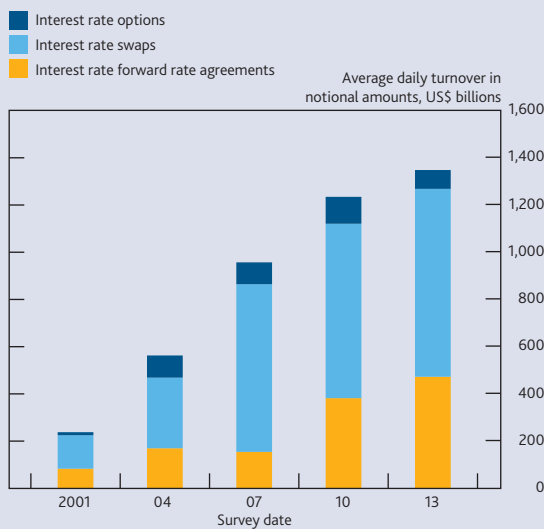
The majority of this latter increase can be attributed to a rise in the volume of trades involving the Japanese yen (**Chart 6**). This is likely to have been spurred by changing monetary and fiscal policy in Japan at the time the survey was conducted, which also led to a yen depreciation against a range of currencies. Contacts suggest that the yen depreciation drove greater activity in other currency pairs too, for example, due to related portfolio rebalancing flows. But as yen volatility subsided during the summer of 2013, contacts noted that volumes fell back somewhat.

(1) That is, trading with other banks and securities houses that participate in the survey (labelled 'reporting dealers' in **Chart 3**).

OTC interest rate derivatives turnover in the United Kingdom

Average daily turnover for over-the-counter (OTC) interest rate derivatives in the United Kingdom was US\$1,348 billion in April 2013, a 9% increase since April 2010. Within this, turnover in forward rate agreements recorded the largest increase between 2010 and 2013, up 24% (Chart A). Turnover in interest rate swaps also increased, up 8% from US\$739 billion to US\$796 billion. While swaps still accounted for 59% of the turnover in the OTC interest rate derivatives market, this figure is slightly down on the 60% reported in April 2010. In contrast, turnover in interest rate options fell by 30% from US\$114 billion to US\$80 billion in April 2013.

Chart A OTC interest rate derivatives turnover by instrument type



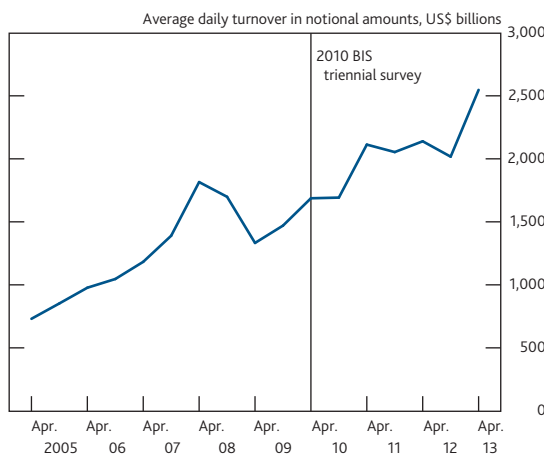
The United Kingdom remained the main centre for OTC interest rate derivatives trading, increasing its share of the global market to 49%, compared with 47% in 2010. The next largest centre was the United States (23%), followed by France (7%). For the first time local trades were greater than cross-border trades, and accounted for 54% of OTC interest rate derivatives turnover.

The euro remained the dominant currency in the OTC interest rate derivatives market, accounting for 69% of total turnover, up from 54% in April 2010. Compared with the foreign exchange market, the currency concentration was higher in the OTC interest rate derivatives market. Currencies other than the top four — US dollar, euro, sterling and Australian dollar — account for just 7% of the interest rate derivatives market, compared with 18% for foreign exchange.⁽¹⁾

The increase in activity was more than accounted for by customer business, up by 40% since April 2010. This was driven by increased activity with other financial institutions which now account for 54% of the interest rate derivatives market, slightly greater than in the foreign exchange market (53%). Factors contributing to the growth in customer business could include the growing prime brokerage business. In contrast, turnover with other reporting dealers declined by 17% since April 2010 and now account for only 41% of total turnover.

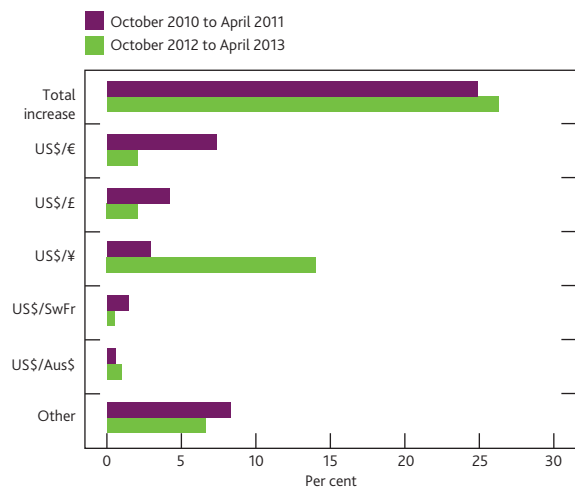
(1) For foreign exchange the top four traded currencies were US dollar, euro, yen and sterling.

Chart 5 Average daily FX turnover from the London FXJSC survey



Source: London FXJSC.

Chart 6 Breakdown of FXJSC semi-annual turnover growth reported in the April 2011 and April 2013 surveys by currency



Source: London FXJSC.

The earlier step-up in FX turnover between October 2010 and April 2011 was, in part, driven by a continued recovery from the temporary dip in trading activity observed during the 2008–09 financial crisis. The start of 2011 saw an improvement in sentiment and a related pickup in trading activity across a number of markets. **Chart 6** shows that a wide range of currency pairs contributed to the increase in trading volume between October 2010 and April 2011.

To a lesser extent, long-term factors, some of which are highlighted in Broderick and Cox (2010) on the previous BIS triennial survey results,⁽¹⁾ have continued to influence FX turnover during the latest survey period. The long-term factors can be split into the following three broad categories: (i) technological advances and associated changes in FX market infrastructure; (ii) changes to the mix of counterparties active in the UK market; and (iii) the attractiveness of FX to investors as a distinct asset class. The following section considers developments in these long-term drivers of FX activity.

Developments in market infrastructure

Broderick and Cox (2010) highlighted advances in the technology supporting electronic trading in the FX market and outlined how the development of electronic trading benefited end-customers. Although these advances in electronic trading continued to open access to the market for a wider range of FX market participants than in the past, contacts noted that the marginal benefit of further advances for end-customers had declined over the past three years. And it was unclear whether technological advances, in and of themselves, had helped to increase FX turnover. Nevertheless, technology continued to facilitate fundamental changes in the FX market infrastructure, especially in the spot market.

Continued strong customer and bank demand for more efficient trade execution had promoted an increase in the number of electronic FX trading venues on offer. And banks had sought to internalise transactions by matching more trades within the institution, wherever possible, rather than using third-party intermediaries. According to market contacts, this proliferation of external and internal trading venues has led to a fragmentation of liquidity. Contacts noted that the market has become more complex as a result, with investors finding it difficult to judge the depth of the market as a whole or what volumes it would be possible to transact, at a given price.

Rising complexity saw banks and third-party software providers develop a range of tools, aimed at navigating the trading environment more efficiently. These include advanced liquidity management tools, such as aggregation and execution algorithms, as well as post-trade evaluation and risk management tools. Some participants have also invested heavily in the capacity to process large amounts of data. These

tools have now become essential for those participants managing very high volumes, at high speed, and add multiple additional layers of complexity to FX market infrastructure. Contacts suggest such complexity brings a great dependency on the efficient operation of all nodes in the FX trading landscape.

Perhaps reflecting the widening use of liquidity aggregation tools, contacts noted that there has been a decline in the extent to which market participants now differentiate between venues used to either access or provide liquidity. In turn, the reduction in the differentiation between venues might have enabled a larger number of them to survive than otherwise. As a result, traditional electronic broking platforms have gradually lost market share to newer platforms and the total volume of FX transactions executed electronically has become more evenly divided among a greater number of trading venues compared with 2010.

Counterparties

Alongside these ongoing structural changes in the FX market, there were noteworthy changes in the activities and overall mix of market participants.

Other financial institutions

Other financial institutions overtook reporting dealers as the largest single counterparty group for the first time in 2010. In the 2013 survey, OFIs became even more significant, having seen the greatest increase in trading activity among the three counterparty groups between the 2010 and 2013 surveys. Here, we consider some of the subgroups within OFIs.

(i) Non-reporting banks

As highlighted in the first section, the 2013 BIS triennial survey provided for the first time a breakdown of reporting dealers' FX turnover with OFIs (**Chart 4**). Perhaps surprisingly, this shows that 'non-reporting banks' are by far the largest subgroup, accounting for 40% of OFIs' FX activity in the United Kingdom.

One driver of non-reporting banks' relatively high turnover might be related to their funding needs. Banks often use the FX swap market to obtain short-term funding in a particular currency. Consistent with this, the BIS data show that non-reporting bank transactions in FX swaps account for half of this counterparty group's total turnover. In addition, contacts suggest that the average maturity of smaller European banks' wholesale funding has fallen over the past three years. This might have increased the frequency of their refinancing transactions, part of which takes place in the FX swap market.

(1) See www.bankofengland.co.uk/publications/Pages/news/2013/101.aspx.

BIS triennial survey and the Foreign Exchange Joint Standing Committee survey

Since October 2004, the London Foreign Exchange Joint Standing Committee (FXJSC) has been publishing foreign exchange turnover data for the United Kingdom. The FXJSC is a UK market liaison group established by the banks and brokers of the London foreign exchange market and is chaired by the Bank of England. Data are published on a six-monthly basis, for April and October. Further details of the FXJSC can be found on the Bank's website at www.bankofengland.co.uk/markets/Pages/forex/fxjsc/default.aspx.

The FXJSC survey collects similar information to the foreign exchange section of the BIS triennial survey. However, there are two important differences, in institutional coverage and definition. First, more institutions participate in the BIS survey (47 compared with 30 in the respective April 2013 surveys). Second, the reporting basis for the FXJSC survey is based on the location of the price-setting dealer or trading desk (where transactions are executed), while the BIS triennial survey is based on the location of the sales desk (where transactions are arranged).

Despite these differences the two surveys are broadly comparable. Institutions that participate in both surveys report very similar results (Table 1) and account for the large bulk of turnover in the BIS survey (Table 2). This suggests that the FXJSC survey provides a reliable, and more frequent, indication of activity within the UK foreign exchange market.

Another possible explanation of the large share of total OFI activity is that small non-reporting banks might be using trading infrastructure from other providers, in order to offer their retail or corporate clients better access to the FX market than if they were to provide services directly themselves.

(ii) Hedge funds

According to the 2013 BIS survey, hedge funds accounted for 23% of total OFI activity. Contacts, however, suggest that hedge fund activity can be volatile and depends more heavily on market conditions than for other OFIs. Some noted that the policy changes in Japan in April 2013 were accompanied by greater hedge fund activity, in particular. And contacts thought that general market conditions were thought to have been supportive of risk-taking by speculative investors in early 2013.

Consistent with this, data from the FXJSC survey suggest that dealer prime brokerage activity saw a 52% increase between October 2012 and April 2013, while total FX turnover increased by 26% over the same period. This provides some

Table 1 Comparison of BIS triennial and FXJSC data for FXJSC reporting institutions

| Daily average in US\$ billions, unadjusted ^(a) | | | |
|---|---------------|--------------|------------|
| | BIS triennial | FXJSC | Difference |
| Spot | 1,159 | 1,222 | -62 |
| Outright forwards | 325 | 298 | 27 |
| FX swaps | 1,286 | 1,258 | 28 |
| Currency swaps | 42 | 32 | 10 |
| FX options | 255 | 216 | 39 |
| Total | 3,068 | 3,027 | 41 |

(a) To allow this comparison these data are not adjusted to remove double counting of trades between UK principles that will have been reported by both parties.

Table 2 FXJSC reporters' contribution to the BIS triennial data

| Daily average in US\$ billions, unadjusted ^(a) | | | |
|---|---------------------|--|-----------|
| | Total BIS triennial | Of which, FXJSC reporting institutions | Per cent |
| Spot | 1,167 | 1,159 | 99 |
| Outright forwards | 329 | 325 | 99 |
| FX swaps | 1,318 | 1,286 | 98 |
| Currency swaps | 43 | 42 | 98 |
| FX options | 256 | 255 | 99 |
| Total | 3,114 | 3,068 | 99 |

(a) To allow this comparison these data are not adjusted to remove double counting of trades between UK principles that will have been reported by both parties.

evidence to support contacts' reports that hedge fund activity was an important driver of the increased yen trading volumes.

(iii) Central banks and sovereign wealth funds

Official sector investors, which include central banks, accounted for less than 1% of total UK FX turnover in April 2013 (Chart 4). But market contacts continued to report that central banks and sovereign wealth funds are increasingly important participants in the foreign exchange market.

In part, this reflects growth in the value of FX reserves held by central banks. According to the IMF's Currency Composition of Official Foreign Exchange Reserves (COFER) survey, global FX reserves rose by 32% between 2010 Q2 and 2013 Q2.⁽¹⁾ The reason why the perceived importance of official sector investors and their substantial foreign reserve holdings do not translate into a higher proportion of total trading volumes, however, remains unclear.

(1) See www.imf.org/External/np/sta/cofer/eng/index.htm.

Non-financial customers

The continued increase in financial companies' FX activity was not mirrored in transactions by non-financial market participants. Both as an absolute amount and as a proportion of total UK FX turnover, the non-financial clients' volumes (corporates and retail clients) declined between 2010 and 2013. Contacts report that, for non-financial customers, economic headwinds may have decreased the need to transact in FX markets.

Contacts suggest that heightened market stress during much of the period, along with a slow economic recovery, continued to suppress growth in international trade and cross-border mergers and acquisitions, and associated currency transactions. And heightened uncertainty about expected cash flows will have made it more difficult for corporates to hedge the currency risk associated with those cash flows.⁽¹⁾ Moreover, corporates may have reduced their hedging activities due to the relative stability of the major currency pairs in recent years, and the very low levels of interest rate differentials.

FX as an asset class

Broderick and Cox (2010) highlighted how some market participants that were unable to access markets during the financial crisis had instead hedged existing exposures to other assets via the FX market, through so-called 'proxy trades'.

FX remained one of the most liquid markets globally. Reflecting this, investors have continued to use FX instruments over the past three years to hedge exposures to correlated, less liquid assets.

But contacts suggested that the decline in many well-established correlations between certain currency pairs and some other assets since around mid-2012 rendered many popular 'proxy trades' less effective.

More recently, a different usage of 'proxy trades' has emerged. During the period of reduced liquidity in some emerging markets in Summer 2013, some investors were reportedly using major currency pairs as proxy for exposures to emerging market assets that they were unable to hedge efficiently.

Conclusion

Average daily turnover in the UK FX market increased at a quicker pace than reported in the previous triennial survey, rising 47% over the past three years, to US\$2,726 billion per day. The United Kingdom consolidated its position as the largest centre of FX activity.

But growth in FX turnover has not been evenly spread over the past three years. Some of it appears to be due to a continued recovery following the fall in activity during the 2008–09 financial crisis. The remainder is likely to be largely a reflection of a rise in activity related to changes in monetary and fiscal policy in Japan.

That aside, ongoing structural changes continued to shape the FX market. Most notably, technological developments during the period have driven further change in market infrastructure, making it more interconnected and complex than at the time of the 2010 survey. This complexity has also brought greater dependency on the effective functioning of the underlying technology and infrastructure.

In addition, FX activity in the United Kingdom became even more dominated by banks and other financial institutions. Meanwhile, non-financial 'end-users' of the FX market saw their share of trading activity decline.

(1) See www.bankofengland.co.uk/publications/Documents/quarterlybulletin/qb110204.pdf for further detail on corporate FX hedging behaviour.

References

Broderick, T and Cox, C (2010), 'The foreign exchange and over-the-counter interest rate derivatives markets in the United Kingdom', *Bank of England Quarterly Bulletin*, Vol. 50, No. 4, pages 354–65.

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Table C Foreign exchange market turnover by instrument, counterparty and maturity^(a)

Daily averages in April, in US\$ billions and percentages

| Instrument/counterparty | 2004 | | 2007 | | 2010 | | 2013 | |
|--|------------|------------|--------------|------------|--------------|------------|--------------|------------|
| | Amount | Per cent | Amount | Per cent | Amount | Per cent | Amount | Per cent |
| Spot | 223 | 27 | 335 | 23 | 697 | 38 | 1,032 | 38 |
| with reporting dealers | 147 | 18 | 158 | 11 | 293 | 16 | 385 | 14 |
| with other financial institutions | 59 | 7 | 135 | 9 | 344 | 19 | 614 | 23 |
| with non-financial customers | 17 | 2 | 43 | 3 | 60 | 3 | 32 | 1 |
| Outright forwards | 103 | 12 | 124 | 8 | 228 | 12 | 309 | 11 |
| with reporting dealers | 60 | 7 | 37 | 2 | 63 | 3 | 114 | 4 |
| with other financial institutions | 28 | 3 | 62 | 4 | 124 | 7 | 173 | 6 |
| with non-financial customers | 15 | 2 | 26 | 2 | 40 | 2 | 21 | 1 |
| Foreign exchange swaps | 428 | 51 | 899 | 61 | 775 | 42 | 1,127 | 41 |
| with reporting dealers | 301 | 36 | 419 | 28 | 399 | 22 | 574 | 21 |
| with other financial institutions | 102 | 12 | 375 | 25 | 309 | 17 | 503 | 18 |
| with non-financial customers | 25 | 3 | 105 | 7 | 67 | 4 | 50 | 2 |
| Currency swaps | 16 | 2 | 18 | 1 | 18 | 1 | 32 | 1 |
| with reporting dealers | 11 | 1 | 9 | 1 | 7 | 0 | 21 | 1 |
| with other financial institutions | 3 | 0 | 6 | 0 | 11 | 1 | 10 | 0 |
| with non-financial customers | 2 | 0 | 2 | 0 | 1 | 0 | 1 | 0 |
| Options and other instruments^(b) | 67 | 8 | 106 | 7 | 135 | 7 | 227 | 8 |
| with reporting dealers | 40 | 5 | 39 | 3 | 47 | 3 | 76 | 3 |
| with other financial institutions | 21 | 3 | 44 | 3 | 79 | 4 | 141 | 5 |
| with non-financial customers | 6 | 1 | 23 | 2 | 10 | 1 | 9 | 0 |
| Total | 835 | 100 | 1,483 | 100 | 1,854 | 100 | 2,726 | 100 |
| with reporting dealers | 559 | 67 | 663 | 45 | 809 | 44 | 1,170 | 43 |
| with other financial institutions | 213 | 25 | 622 | 42 | 866 | 47 | 1,442 | 53 |
| with non-financial customers | 64 | 8 | 199 | 13 | 178 | 10 | 113 | 4 |
| Local | 262 | 31 | 465 | 31 | 547 | 29 | 1,095 | 40 |
| Cross-border | 573 | 69 | 1,019 | 69 | 1,307 | 71 | 1,631 | 60 |
| Outright forwards^(c) | 113 | 100 | 126 | 100 | 241 | 100 | 329 | 100 |
| Up to seven days | 64 | 56 | 61 | 49 | 144 | 60 | 167 | 51 |
| Over seven days and up to one year | 47 | 41 | 62 | 49 | 94 | 39 | 138 | 42 |
| Over one year | 2 | 2 | 3 | 2 | 3 | 1 | 24 | 7 |
| Foreign exchange swaps^(c) | 527 | 100 | 966 | 100 | 873 | 100 | 1,318 | 100 |
| Up to seven days | 394 | 75 | 792 | 82 | 653 | 75 | 932 | 71 |
| Over seven days and up to one year | 129 | 24 | 167 | 17 | 215 | 25 | 302 | 23 |
| Over one year | 4 | 1 | 7 | 1 | 6 | 1 | 84 | 6 |

(a) Adjusted for local double counting.

(b) The category 'other instruments' covers highly leveraged transactions and/or trades whose notional amount is variable and where a decomposition into individual plain vanilla components was impractical or impossible.

(c) Data for maturity breakdown cannot be adjusted for local reporting dealers, so maturity values will not be equal to product totals.

Table D OTC interest rate derivatives turnover by instrument, counterparty^(a)

Daily averages in April, in US\$ billions and percentages

| Instrument/counterparty | 2004 | | 2007 | | 2010 | | 2013 | |
|--|------------|------------|------------|------------|--------------|------------|--------------|------------|
| | Amount | Per cent | Amount | Per cent | Amount | Per cent | Amount | Per cent |
| Forward rate agreements | 170 | 30 | 154 | 16 | 382 | 31 | 473 | 35 |
| with reporting dealers | 89 | 16 | 100 | 10 | 233 | 19 | 203 | 15 |
| with other financial institutions | 78 | 14 | 36 | 4 | 125 | 10 | 263 | 20 |
| with non-financial customers | 2 | 0 | 18 | 2 | 25 | 2 | 7 | 1 |
| Swaps | 299 | 53 | 710 | 74 | 739 | 60 | 796 | 59 |
| with reporting dealers | 198 | 35 | 329 | 34 | 377 | 31 | 314 | 23 |
| with other financial institutions | 87 | 15 | 347 | 36 | 268 | 22 | 431 | 32 |
| with non-financial customers | 15 | 3 | 34 | 4 | 93 | 8 | 50 | 4 |
| Options and other instruments^(b) | 94 | 17 | 93 | 10 | 114 | 9 | 80 | 6 |
| with reporting dealers | 42 | 8 | 52 | 5 | 57 | 5 | 36 | 3 |
| with other financial institutions | 44 | 8 | 33 | 3 | 47 | 4 | 40 | 3 |
| with non-financial customers | 7 | 1 | 7 | 1 | 10 | 1 | 4 | 0 |
| Total | 563 | 100 | 957 | 100 | 1,235 | 100 | 1,348 | 100 |
| with reporting dealers | 329 | 59 | 481 | 50 | 668 | 54 | 552 | 41 |
| with other financial institutions | 209 | 37 | 417 | 44 | 440 | 36 | 734 | 54 |
| with non-financial customers | 24 | 4 | 59 | 6 | 127 | 10 | 61 | 5 |
| Local | 189 | 34 | 242 | 25 | 427 | 35 | 731 | 54 |
| Cross-border | 374 | 66 | 715 | 75 | 808 | 65 | 617 | 46 |

(a) Adjusted for local double counting. Single-currency interest rate contracts only.

(b) The category 'other instruments' covers highly leveraged transactions and/or trades whose notional amount is variable and where a decomposition into individual plain vanilla components was impractical or impossible.