

# **FXJSC PAPER ON THE FOREIGN EXCHANGE MARKET**

**September 2009**

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## **I INTRODUCTION AND BACKGROUND**

Events of the past two years have placed the world's financial system under intense scrutiny. There is a broad consensus that the crisis conditions that prevailed in many parts of the financial system were exacerbated by structural vulnerabilities and limitations within the system itself. Work is now underway in many quarters to examine the current financial system architecture, identify problems and devise potential solutions. This is a significant challenge; the highly complex and interconnected nature of today's financial markets means that any changes to the system aimed at addressing specific issues in a given area are likely to have a wider impact.

In this context, the Foreign Exchange Joint Standing Committee (FX JSC), which was established in 1973 as a forum for banks and brokers to discuss broad market issues<sup>1</sup>, has undertaken a review of the foreign exchange (FX) market and its operation during the recent financial crisis. The Committee concluded that in general the FX market continued to function well throughout the crisis. The deep and liquid nature of the market and high level of transparency, together with the risk mitigating structures already in place and a well established code of conduct between participants, have each played a vital role in ensuring that the FX market remained operational during times of high volatility and increasing uncertainty. However, lessons have been learned and there is scope to mitigate risks further. CLS performed a critically important function in managing FX settlement risk, but more can be done to expand its usage across currencies, products and market participants. Existing bilateral agreements were successful in mitigating counterparty credit risk exposures following the default of large FX counterparties last year (e.g. Lehman Brothers). Nevertheless, more can be done reduce credit risks further. The FX market community, mindful of the particular characteristics of FX trading, is actively looking at all alternatives.

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<sup>1</sup> The FXJSC comprises senior staff from many of the major banks operating in the wholesale foreign exchange market in London, representatives from brokers, the Wholesale Market Broker's Association (WMBA), the Association of Corporate Treasurers (ACT) *representing corporate users of the foreign exchange market*, the British Bankers' Association (BBA) and the Financial Services Authority (FSA). The Committee website can be accessed here: <http://www.bankofengland.co.uk/markets/forex/fxjsc/index.htm>

This paper is split into five sections, starting with a brief overview of the FX market, a description of its size and the regulatory regime under which it operates. The second section sets out the structure of the FX market and the different phases of the FX trade life-cycle: trade, post-execution/pre-settlement and settlement. Section three looks at how the FX market performed during the recent financial turbulence, using the Lehman bankruptcy as a case study and drawing out the key observations made by the market. Section four briefly sets out current market initiatives under discussion to reduce risks further. Finally, section five provides a brief summary.

*(a) The FX Market*

Transmission and exchange of currency is a fundamental financial activity that underpins the world's economic and commercial system. Millions of foreign exchange transactions are concluded around the world every day, representing trillions of dollars of notional value. The 'foreign exchange market', in its broadest form, is the term used to describe this ubiquitous financial activity.

The specific reasons behind each foreign exchange transaction are almost as diverse as the vast number of direct and indirect market participants. In general, however, the principal drivers behind foreign exchange activity can be grouped as follows:

- The need to pay for goods and services or to effect foreign direct investment (FDI).
- 'Induced' foreign exchange deriving from other financial market activity; for example buying foreign currency denominated bonds or equities.
- Hedging commercial or asset portfolio currency risks.
- Direct investment in currencies as an asset class.

Anecdotal evidence suggests that that the majority of FX currency flows are entered for commercial (i.e. to facilitate trade/investment and mitigate risks) rather than purely for speculative purposes.

In comparison with other financial markets, the FX market is in many ways relatively straightforward. A basic spot or forward FX contract is simply an

agreement to exchange cash flows in two different currencies in a given manner on a given date. As cash flows are readily fungible, economic risks are easy to net and offset. The bulk of market activity is concentrated around a handful of the most economically important currencies. Products tend to be straightforward to value, and the global nature of FX usually makes the market price readily available.

Despite the relative simplicity of the FX product range however, the specific needs of FX market users, which include commercial and industrial corporations, governments, banks, savings and investment funds and private investors amongst others, are as variable as the individual cash flows that each needs to manage.

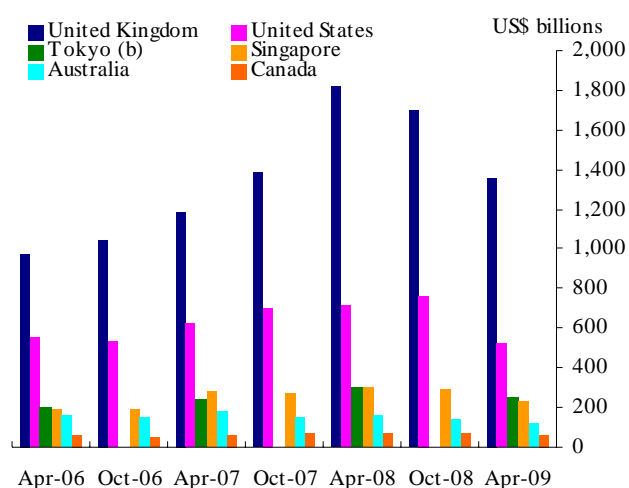
***(b) Global and UK size***

Foreign exchange is the largest most liquid market in the world. In its latest triennial survey in 2007, the Bank for International Settlements estimated daily turnover across the global FX market to be \$3,210billion. More recently, average global daily turnover in six of the largest currency markets was estimated to be around \$2,549billion in April 2009. If activity in the largest markets is representative of global activity, this would suggest that total global turnover is likely to have exceeded \$3,210billion in April 2009. Amongst the major markets, the UK segment of the foreign exchange market currently accounts for over half of the total with an average turnover of \$1,356billion per day - \$1,269billion in 'traditional'<sup>2</sup> FX products and \$87billion in other over-the-counter (OTC) FX instruments such as currency swaps and FX options.

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<sup>2</sup> Spot, NDFs, Outright Forwards, FX Swaps.

## Global FX<sup>(a)</sup> daily average turnover



Sources: Australian Foreign Exchange Committee, Canadian Foreign Exchange Committee, London Foreign Exchange Joint Standing Committee, New York Foreign Exchange Committee, Tokyo Foreign Exchange Market Committee and Singapore Foreign Exchange Market Committee.

(a) The data are calculated from the six global FX centres that conduct turnover surveys and include spot, outright forwards, FX swaps, currency swaps and FX options.

(b) The Turnover Survey of Tokyo FX Market is an annual survey completed in April.

### *(c) Current regulatory regime*

The regulation of the financial services industry in the UK is overseen by the Financial Services Authority (the 'FSA') and the principal legislation governing the foreign exchange market is the Financial Services and Markets Act 2000 ('FSMA'). The regulation of the wholesale FX markets in the UK is also subject to best practice guidelines derived from the Non-Investment Products (NIPS) Code<sup>3</sup>.

The regulation of the derivatives markets in the UK ultimately derives from a single provision ('General Prohibition') of the FSMA. In summary, options, futures entered into for investment purposes and contracts for difference are subject to direct FSA regulation. In practice, many FX transactions conducted in the London market are entered for commercial purposes (as defined by the FSMA) and are therefore outside the scope of direct regulation pursuant to the FSMA; FX spot transactions are also outside the scope of direct regulation.

<sup>3</sup> <http://www.bankofengland.co.uk/markets/forex/fxjsc/nipscode.pdf>

UK FX market participants are primarily guided by the NIPS Code. The NIPS Code comprises best practice guidelines which apply equally to brokerage firms, FSA regulated entities and other “principals”, as defined by the Code. While the NIPS Code is not underpinned by statute, it has been drawn up by a wide cross-section of market participants including the Bank of England and the FSA<sup>4</sup>, and its content is consistent with the relevant parallel provisions in the FSA Handbook. The Code provides market participants with clear guidance as to best practice to maintain the highest standards and professional reputation of the market. The FSA contributes to the development of the Code and there is a clear expectation that firms will have regard to its terms when conducting business covered by the Code. The Code is regularly updated and published on the FXJSC website.

From a European Union regulation perspective, MiFID – the Markets in Financial Instruments Directive – came into effect on 1 November 2007, replacing the Investment Services Directive (ISD). MiFID extended the coverage of the ISD and introduced new and more extensive requirements that firms must comply with, in particular for their conduct of business and internal organisation. FX spot transactions as well as forward transactions which are not derivatives (such as forwards entered into for commercial purposes) fall outside the scope of MiFID<sup>5</sup>.

It should also be noted that in addition to the above, many FX market participants, and in particular banks, which are the main intermediaries at the heart of the market, are themselves regulated entities typically regulated directly by an appointed prudential regulator such as the FSA in the UK.

## **II FX Market Structure**

### ***(a) Product types***

The table below summarises the key FX products types.

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<sup>4</sup> Apart from the members of the FXJSC the NIPS code is endorsed by the following associations: the Associate of Corporate Treasurers, British Bankers’ Association, Building Societies Association, Chartered Institute of Public Finance and Accountancy, London Bullion Market Association, London Investment Banking Association and the Wholesale Market Brokers’ Association.

<sup>5</sup> Although FX forwards may still within the scope of ‘ancillary services’ within the meaning of MiFID.

Product	Definition	UK average daily volume (April 2009)	Percentage of total UK FX volume
Spot FX	The purchase or sale of one currency for another, with delivery usually taking place within two days after the dealing date.	\$445.4bn	32.8%
Outright Forwards	A contract to exchange a predetermined amount of one currency for another at an agreed date in the future, based upon a rate of exchange determined at the trade date of the contract.	\$146.2bn	10.8%
Non Deliverable Forwards (NDFs)	Similar to outright forward but there is no physical settlement of two currencies at maturity. Rather, based on the movement of two currencies, a net cash settlement will be made by one party to the other – usually in dollars.	\$15.7bn	1.2%
FX Swaps	A contract that simultaneously agrees to buy (sell) an amount of currency at an agreed rate and to resell (repurchase) the same amount of currency for a later value date to (from) the same counterparty, also at an agreed rate.	\$662.1bn	48.8%
Currency Swaps	A swap where interest and principal in one currency are exchanged for interest and principal in another.	\$17.3bn	1.3%
FX Options	A contract that gives the buyer the right, but not the obligation, to exchange one currency for another at a predetermined exchange rate on or until the maturity date.	\$69.6bn	5.1%

***(b) Trading venues***

Although it is predominately an over-the-counter market, FX has been at the forefront of the electronic trading revolution over the last ten years and this has brought substantial levels of transparency and efficiency to all participants.

Electronic trading platforms began to emerge in the late 1980s and by the early 1990s dealing systems developed by EBS and Reuters had become established for the interbank market. Furthermore, advances in technology, and especially the increasing capabilities of the internet, led to the appearance of web-based electronic platforms that are easily accessible by a broader range of market participants. Indeed, one of the most marked trends in recent years has been the rise in retail currency trading globally.

For Spot FX, many electronic communication networks (ECNs) and electronic intermediaries now exist that combine streaming liquidity from many competing banks to transparently offer their clients the best market price at any point in time. Indeed, it is not uncommon today for clients to be able to achieve prices equal to, or better than, the prices that banks themselves are able to achieve on the interbank market. Many of these ECNs and electronic intermediaries tend to focus on specific market segments and provide targeted value added services.

Competition between service providers is generally high, ensuring that fees are kept at attractive levels for clients.

According to the data gathered by the April 2009 FXJSC Turnover survey, 41% of all Spot transactions in the UK were executed through electronic broking systems, such as EBS and Reuters, and 21% through electronic trading platforms (both single and multi bank such as FXAll).

	Direct trading (incl. over the phone)	Voice Broker	Electronic Broking Systems	Electronic Trading Systems
INSTRUMENT				
Spot transactions	29%	9%	41%	21%
Non-deliverable forwards	62%	18%	1%	19%
Outright forwards	45%	5%	19%	31%
Foreign exchange swaps	46%	27%	18%	8%
Currency swaps	58%	34%	6%	2%
FX options	67%	20%	11%	3%

FX forwards and options can also be traded electronically today but, as more parameters are involved in their pricing, they tend to follow the Request For Quote (RFQ) model. Accordingly, the vast majority of NDFs and FX options in the UK market were executed directly (usually over the phone) in April 2009.

Traditional style exchange trading, on recognised investment exchanges such as the Chicago Mercantile Exchange in the US, has existed for many years for FX futures and options. However, it has never gained more than a small percentage of overall FX market share, in large part because it necessitates focusing liquidity around a relatively small number of highly standardised contracts. While this may be suitable for participants who simply need general financial exposure, these contracts may not always meet the individual requirements of FX market users who need a specific amount of currency in a specific place on a specific date.

***(c) Post-execution/pre-settlement***

- Contract standardisation

FX transaction documentation is generally highly standardised. The key economic parameters for most FX contracts are widely understood in common,



consistent terms, and the legal and contractual framework (master agreements, confirmations, etc) within which contracts are formed is well established.

The high degree of standardisation however, does not imply that contracts are in any way limited. FX contracts are as infinitely variable as the specific needs of each of the multitude of users of the FX market.

There is still scope for improving standardisation for a small range of products at the margins of the FX market including fixing<sup>6</sup> conventions for cross-currency NDFs/NDOs and confirmation standardisation for some complex exotics. A number of international foreign exchange committees, such as the London FXJSC and New York FXC, are actively working with ISDA<sup>7</sup> and EMTA<sup>8</sup> on increasing standardisation in these areas.

- Affirmation and Confirmation

To achieve greater efficiency and control, the FX market has a number of initiatives currently underway to further improve post-trade affirmation and confirmation. Indeed, as an industry, a number of major dealers<sup>9</sup> in FX have committed to implement the following:

- *Increased Transparency*: Create reports for regulators to have a window into derivative volumes, unsent/outstanding confirmations and progression on increasing electronification. *The reports have been successfully introduced and are regularly updated.*
- *Expand the use of electronic confirmation solutions*: The London and New York FX Committee Operation sub-groups are actively promoting greater use

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<sup>6</sup> The fixing rate of a particular currency pair is a reference rate at a specific point in time.

<sup>7</sup> ISDA is the International Swaps and Derivatives Association and represents participants in the privately negotiated derivatives industry ([www.isda.org](http://www.isda.org)).

<sup>8</sup> EMTA is the Emerging Markets Trade Association and is dedicated to promoting the orderly development of fair, efficient and transparent trading markets for Emerging Market instruments and to helping integrate the Emerging Markets into the global capital markets ([www.emta.org](http://www.emta.org)).

<sup>9</sup> These include the Bank of America, N.A./Merrill Lynch & Co., Barclays Capital, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank AG, Dresdner Kleinwort, Goldman, Sachs & Co., HSBC Group, JP Morgan Chase, Morgan Stanley, The Royal Bank of Scotland Group, Société Générale, UBS AG, Wachovia Bank, N.A.. The latest letter of commitment, including a full list of signatories, can be accessed at: <http://www.newyorkfed.org/newsevents/news/markets/2009/060209letter.pdf>

of electronic confirmation solutions through their respective codes of best practice and by engaging with vendors and wider market participants. The target is by 31 December 2009 to increase electronic confirmations to:

- 50% of NDF eligible volume (from 25% currently)
- 25% of NDO eligible volume (from 0% currently)
- 10% of Barrier Option eligible volume (from 0% currently) (to increase to 20% by end 2010).

*The FX market is currently on target to meet all of these commitments.*

- *Engaging the Buy-Side<sup>10</sup>*: A critical step in reducing confirmation risk within the industry is to engage further with the buy-side community and encourage new developments (particularly in terms of electronification of processes for confirmation). The target is by 31 December 2009 to:

- In the US, create a Buy-Side working group which will meet with Dealers to strategise on how to increase electronic processing. In the UK, the FXJSC Operations sub-group has engaged with the Buy-Side community to discuss increasing efficiency and automation further in FX trade processing.
- Work with Buy-Side firms to increase electronic processing of deliverable option and NDFs to 40% of electronically eligible volume.

*The FX market is currently on target to meet all these commitments.*

#### - Netting

Netting is an important risk mitigant in the OTC market generally. The two forms of netting which are of particular relevance to the FX market are payment netting and 'close-out' netting. In order for either payment netting or 'close-out' netting to apply, FX counterparties ordinarily need to put in place an appropriate standard legal documentation framework, such as an ISDA Master Agreement. This is generally the common market practice.

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<sup>10</sup> 'Buy side' usually refers to investing institutions such as mutual funds, pension funds, insurance companies, hedge funds, commodity trading advisors, asset managers, corporates et al

Payment netting involves counterparties netting the sums due from one party to the other, in a given currency, on a given day, to a single net sum. By way of example, if two market participants have a number of FX trades with each other, a payment netting arrangement would facilitate their agreement to make net payments of the relevant currencies rather than effecting gross settlement. Payment netting can substantially reduce the cashflows between parties and thereby reduce operational and settlement risk.

‘Close-out’ netting involves the ability of counterparties to establish a net amount, typically in a single currency, representing the present value of future cashflows of the various transactions between them.

It applies where an event of default, or other prescribed event, occurs in respect to a party and the other party exercises its rights to ‘close-out’, or terminate, some or all outstanding transactions between the parties. The non-defaulting (or non-affected) party will ascribe a value to those terminated transactions in accordance with the methodology set out in the relevant netting agreement.

An effective ‘close-out’ netting arrangement will allow a party to recognise a much-reduced counterparty credit exposure. Where ‘close-out’ netting does not apply, a party will be required to recognise its counterparty credit risk on a gross basis and therefore a lower aggregate volume of trades will be sufficient to exhaust credit lines.

An additional benefit of being able to recognise a net counterparty credit exposure will typically be a more efficient use of capital, via a reduced amount of risk weighted assets applying to trades between the parties, from a regulatory capital perspective.

The effectiveness of the contractual terms of a ‘close-out’ netting arrangement is subject to the application of whichever laws and regulations govern the insolvency of the parties to the agreement. Such insolvency laws will typically prevail in the event that the terms of a netting agreement run contrary to the requirements of the applicable insolvency regime. Accordingly, market participants typically obtain

legal opinions confirming the effectiveness of their netting agreements against particular types of counterparties in particular jurisdictions. Such opinions are frequently required in order for regulated entities to be able to recognise the benefit of netting arrangements for regulatory capital purposes.

Recent experience, and in particular during the market turbulence of the past couple of years, has shown that the mechanism for 'close-out' netting of FX products has been robust, partly because the relatively simple nature of most FX products which has meant that trade portfolios were easy to reconcile and value.

- Collateral management (CSAs)

An important means by which counterparty credit risk is managed in the FX market is via the exchange of collateral between counterparties. This would typically be under an agreement such as the ISDA Credit Support Annex (CSA). The collateral exchanged may be calculated so as to cover the entire net credit exposure between the counterparties, or only the portion of the exposure in excess of a certain threshold amount, in each case as agreed between the parties. CSAs generally apply across asset classes, enabling parties to collateralise a single net exposure across their OTC derivatives portfolio.

The collateral process for FX products does not tend to be particularly complex. FX portfolios are usually relatively straightforward to reconcile and to value, and significant disputes tend to be rare. The issues that do arise are often due to FX products being commingled in a wider portfolio of products, wherein there is potential for dispute.

ISDA and the financial industry are currently reviewing the entire process for bilateral collateralisation to improve efficiency and effectiveness, especially in stress scenarios. The main areas being addressed include:

- Developing standard electronic mechanisms for communicating margin calls and interest payments.
- Achieving more effective and efficient portfolio reconciliation.
- Devising a better, faster process for dispute resolution.

Although much of this work is focused on solving issues that are more prominent in other asset classes than FX (in particular valuation disputes), the large proportion of FX trading performed within the ISDA CSA framework means that the FX market will certainly be a beneficiary of any improvements that are implemented.

*(d) Settlement*

Arguably the most significant source of systemic risk in the foreign exchange market arises from the arrangements used to settle foreign exchange trades. FX settlement risk can be defined as the risk that, having paid away the currency being sold, a counterparty defaults and does not pay for the currency bought.

To address this risk, the private sector, with the support of central banks, created CLS Bank (CLS) which today successfully eliminates settlement risk for over three quarters of inter-dealer trades. This translates into an average of \$3.66 trillion of total value settled per day during June of 2009.<sup>11</sup>

CLS is a joint initiative between the commercial banks who participate in the service under common rules and legal commitments. The service is a key part of the FX market infrastructure and settles all the main FX products; spot, forwards, swaps and NDFs.

CLS participation has grown from 39 direct users settling seven currencies in September 2002 to 59 direct users and over five thousand other participants settling seventeen currencies by June 2009. There are a series of initiatives within the industry to further extend participation. One such example is the working group that has been formed by the FXJSC Operations sub-group which is liaising with CLS and prospective new participants.

CLS Bank<sup>12</sup> is supervised and regulated as a bank by the Federal Reserve Bank of New York. Given its role and importance CLS Bank is classified as a

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<sup>11</sup> Calculated by adding together both payment instructions per trade.

<sup>12</sup> A more in depth description of CLS and its functions can be found here: <http://www.cls-group.com/About/Pages/default.aspx>

‘systemically important payment system’ by the Federal Reserve. The Federal Reserve also acts as the lead overseer of CLS Bank in an international cooperative oversight arrangement with the central banks<sup>13</sup> whose currencies are settled by CLS Bank.

CLS also collects data on all the transactions that will be settled via the CLS mechanism, which comprises the vast majority of the interbank market and a growing proportion of transactions with non-banks. These data are akin to what is currently collected by trade data repositories for other asset classes. During the past year, the CLS data were an invaluable tool for market supervisors by providing real-time, detailed information on market conditions.

### III How the FX market performed during the recent financial crisis

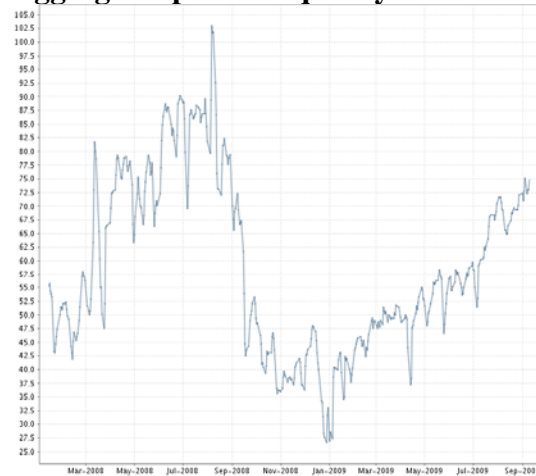
#### *(a) Market volumes and liquidity*

In contrast to some other asset classes, the FX market remained fully operational throughout the periods of heightened market stress during the past two years. However, FX liquidity was impaired during the second half of 2008, and this was most pronounced for FX forwards and swaps. Among the potential explanations, it seems that market participants were primarily concerned with their counterparty exposures. Market confidence started to improve in early 2009 and FX liquidity has subsequently gradually picked up.

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<sup>13</sup> These include the Federal Reserve Bank of New York, Federal Reserve Board, Banco de Mexico, Bank of Canada, Bank of England, Bank of Israel, Bank of Japan, Bank of Korea, Danmarks Nationalbank, European Central Bank, Hong Kong Monetary Authority, Monetary Authority of Singapore, Norges Bank, Reserve Bank of Australia, Reserve Bank of New Zealand, South African Reserve Bank, Sveriges Riksbank, Swiss National Bank, Deutsche Bundesbank, National Bank of Belgium, Banca d' Italia, Banque de France and De Nederlandsche Bank.

### Aggregate spot FX liquidity index<sup>(a)</sup>

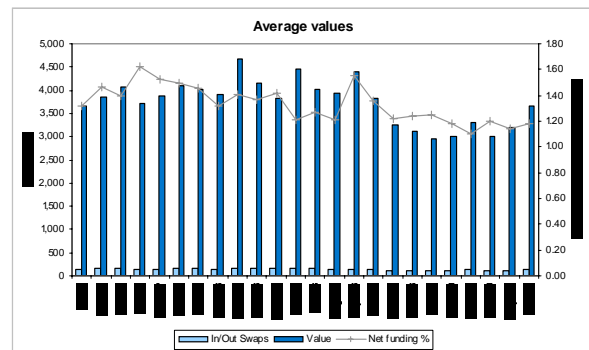
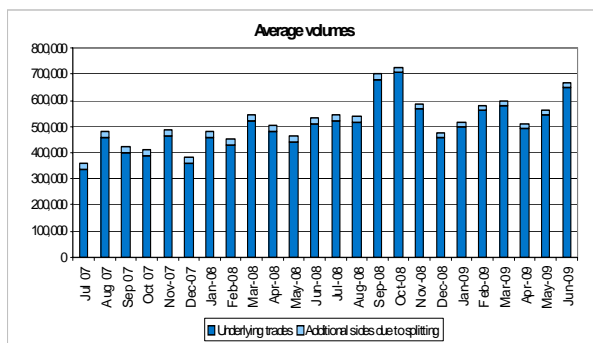


Source: Barclays Capital.

(a) The FX Liquidity Index is constructed using the notional amounts traded for a fixed set of FX spreads, aggregated using a weighting by currency pair. The indices are re-based relative to EUR/USD liquidity at the beginning of the series (making them comparable across time and currencies) and smoothed with a five-day moving average. A higher index reflects better liquidity conditions.

Following the Lehman bankruptcy in September 2008, FX transaction volumes grew markedly as exchange rate volatility increased and market participants began to deleverage and unwind their risk positions. Consequently, the automated processes within banks, as well as within the FX market infrastructure providers (such as CLS and Swift), were required to process unprecedented volumes of trades. For example, CLS settled a new peak volume 1.5 million instructions on 17 September 2008. Apart from some minor delays, all systems performed well.

### CLS Historical volumes and values settled<sup>(1)</sup>



Source: CLS Bank.

(1) Volumes are settlement instructions submitted and values are total values in all settled currencies converted to USD on value date.

### (b) Case study: Lehman bankruptcy

Lehman Brothers Holdings Inc. filed for US bankruptcy protection under Chapter 11 on 15 September 2008. It further announced that some of its subsidiaries would

continue to operate as normal. However, the size and complexity of Lehman was such (operating in over 40 countries through more than 650 legal entities outside the US) that market participants faced a considerable challenge in identifying exactly which entities, and at what time, had filed for bankruptcy protection or similar proceedings in their jurisdiction and what their exposures to these entities were.

In order to control the outgoing cash flows and to reduce settlement risk as much as possible, risk departments continuously re-assessed their exposure to other financial institutions. CLS members kept trades in the system as bankruptcy proceedings were initiated for various Lehman entities throughout the week. Only a few members rescinded trades from CLS because of cross default provisions under their ISDA Master Agreements. In contrast, during the Icelandic financial crisis in October 2008, counterparties had to resort to bilateral arrangements to reduce their counterparty exposures as the Icelandic Krona is not a currency that can be settled in CLS.

Prior to the bankruptcy, Lehman Brothers Holdings Inc, was a CLS User Member and a top quartile participant both by value and volume. During the week of 15 September the CLS settlement system operated as designed, settling in excess of \$150billion of trades where Lehman's was a counterparty. Moreover, that week included not only the Lehman bankruptcy but also the sale of Merrill Lynch to Bank of America and significant currency volatility that produced a surge in volumes over this period. Overall, CLS settled a total of \$26.5trillion and 4.4 million instructions during that week. All settlement and pay-out processing occurred without incident.

Following the Lehman bankruptcy, the CLS In/Out swap facility (which is used by institutions to manage intraday liquidity<sup>14</sup>) was a cause for concern for some CLS members in that the Out leg of the swap is settled outside CLS and carries settlement risk. With heightened concern about counterparty exposure, CLS

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<sup>14</sup> An In/Out Swap comprises two equal and opposite FX transactions that are agreed as an intraday swap. One of the two FX transactions is input to CLS, in order to reduce each Member's net position in the two currencies. The other is settled outside CLS. For a more detailed description please see: <http://www.cls-group.com/Products/Pages/InOutSwaps.aspx>



members were less willing to engage in this type of swap and had to face an increase in their funding requirements. CLS is currently working on a number of initiatives that will address this issue going forward, including introducing same-day settlement cycles for same-day trades.

***(c) Key observations***

A number of observations can be made from the financial market turbulence over the past two years:

- The FX market did in general continue to function throughout the crisis.
- Operationally, the FX market coped well despite occasions of extremely high global transaction volumes and high volatility.
- CLS performed a critically important function in managing FX settlement risk, and was proven to work successfully during the failure of major market participants.
- Counterparty settlement risk for payments not within CLS or other settlement risk-mitigating mechanisms (such as internal account settlements across a bank's client books) became the critical risk to manage.
- There were some periods when liquidity for longer-dated FX trades was significantly impaired due to concerns about counterparty risk.

#### IV Current Market Initiatives

***(a) Counterparty settlement risk***

The FX market community has been working on a number of initiatives designed to further reduce settlement risk including:

- ***Extending CLS coverage:*** The CLS community is currently working towards extending both their direct membership (currently targeting six possible new members) and their third-party participants. The CLS community is also looking to add more branch locations of existing members and third parties.

Finally, CLS is expanding the list of settlement currencies, targeting three new currencies for 2011<sup>15</sup>.

- **Extending CLS service:** Work is currently underway to introduce same-day settlement, initially CAD/USD for the North American Market and the settlement of the 'out' leg of In/Out swaps between CLS settlement Members. Same-day settlement for European/US same-day trades is also being considered. For ineligible currencies, CLS is considering introducing a matching and pre-settlement netting service.

**(b) Counterparty credit risk**

Overall, existing bilateral collateral agreements (such as CSAs) were successful in mitigating credit risk exposures between FX market counterparties following the default of both Bear Sterns and Lehman Brothers last year.

However, liquidity in certain market segments, and in particular FX forwards, was impaired during the second half of 2008, perhaps suggesting that market participants remained concerned about their counterparty exposures despite the bilateral arrangements already in place.

The FX market community is currently considering a number of possible solutions to further reduce credit risk including:

- Strengthen existing credit risk mitigation tools such as CSAs (these are currently being reviewed by ISDA).
- Introduce a central mechanism where market participants can multilaterally 'flatten' their bilateral FX Delta<sup>16</sup>.
- Introduce a central counterparty clearing mechanism (CCP) for FX trades.

CCPs provide a mechanism for mitigating credit risk in the event of a counterparty default which may, in stressed market conditions, help to maintain market liquidity. CCPs providing multi-lateral netting can also help to reduce

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<sup>15</sup> For a new currency to be introduced in CLS it will need to meet a number of eligibility criteria including minimum sovereign ratings, stability of the bank system, rules of law, existence of a robust domestic payment system, convertibility of the currency, the interest and commitment of the local central bank and other factors. New currency additions to CLS are on-going but are multi-faceted projects that can take several years.

<sup>16</sup> The delta of an FX option is the change in the price of an option, relative to a change in the foreign exchange rate.

overall counterparty risk, with associated regulatory capital benefits, and so reduce systemic risk.

CCPs have existed in some areas of the FX market for many years, but thus far their take up has been limited, even during periods of heightened market stress. It is important therefore to consider what the key characteristics of a FX CCP would need to be to ensure that it reduces credit risk while taking into account the specific characteristics of the FX market.

- **Coverage:** While FX spot and swaps account for the biggest proportion of the daily UK FX market turnover, the benefits of a CCP would arguably be more pronounced in longer-dated currency products such as FX forwards, FX options and in particular cross-currency swaps (although cross-currency swaps are usually considered to be interest rate rather than FX instruments). However, some of these longer-dated products are sometimes less standardised, possibly making them less suitable for CCP clearing. Moreover, a CCP that focuses solely on sub-set of FX products (such as spot or forwards) might have an adverse impact on FX hedging strategies and inadvertently increase individual credit exposures.
- **CCP participation model:** Existing CCPs for other asset classes tend to use a third-party participation model, whereby the clearing members of the CCP can provide third-party clearing services to non-members. There is some concern in the FX community that such a model may lead to an increased concentration of counterparty risk for the core players in the system, who perform the clearing member role, in respect of the large number of non-members.
- **Links with existing infrastructure:** There is a strong desire to reuse as much of the existing infrastructure as possible (e.g. for trading matching, payment routing, settlement etc).
- **Global nature of FX:** Given the global nature of the FX market, a CCP that only clears currency transactions effected within a particular jurisdiction will only be able to capture a portion of any FX product (for example spot USD/GBP can trade out of Europe, Asia or the US depending on the time of day). Were an FX CCP to transcend different jurisdictions and avoid

fragmenting the FX market, which would be needed to secure the risk reduction benefits of the CCP, an international regulatory framework would need to be considered to ensure its robustness in times of crisis.

- ***Non-financial companies***: for non-financial companies that use FX instruments, introducing a CCP with its associated margin requirements may increase the complexity of hedging their exposures. Furthermore, under certain circumstances it may be that their counterparty risk increases, especially if they can only gain access to the CCP through third parties to whom, out of necessity, they would acquire a credit exposure.

Given the specificities of the foreign exchange market it may be, therefore, that pursuing the agenda of credit risk reduction mechanisms that stops short of an FX market CCP is more appropriate at this stage. The FX market community globally is actively looking at all alternatives including potential commercial CCP offerings being developed by a number of commercial vendors.

#### ***(c) Capacity and Operational risk***

CLS is planning to offer a service that aggregates (i.e. compresses) FX trades later this year in a joint venture with Traiana<sup>17</sup>. CLS Aggregation is a pre-settlement service to address operational risk issues caused by high frequency, low value FX trades attributable to, for example, algorithmic trading, prime brokerage and retail aggregators. This is a collective effort to re-engineer and streamline post-trade processing for the fastest growth segment of the market.

## V Summary and conclusions

After reviewing the FX market and its operation during the financial turbulence of the last two years, the London FX Joint Standing Committee has reached the following conclusions:

- The FX market continues to be a vital artery for the world's economic and commercial systems. Millions of transactions are conducted every day on behalf of many thousands of participants, each with their own specific needs.

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<sup>17</sup> Traiana is an ICAP Group company whose mission is to automate post-trade processing for financial institutions.

- The FX market already benefits from high levels of transparency, process standardisation and automation. Further initiatives are underway to increase automation at the margins of the market, for example for exotics products and non-deliverable forwards.
- In general the FX market continued to function effectively throughout the crisis, including during times of extremely high volumes of transactions.
- At some points during the crisis, liquidity in forward FX markets was impaired due to concerns regarding counterparty risk.
- FX counterparty settlement risk resulting from the physical exchange of principal is a major source of risk in the FX market. CLS, a payment-versus-payment mechanism developed by the market over the last 10 years, played a vital role during the recent crisis. The CLS mechanism was proven to work effectively when a major market participant failed.
- The crisis highlighted that settlement risk for those trades not in CLS (or another settlement risk mitigating mechanism) remains a critical risk for the market to manage. There needs to be an ongoing drive to reduce this risk further, for example by adding more currencies and products to CLS and increasing participation.
- Counterparty credit risk in the FX market tends to be more pronounced in longer-dated FX products such as FX forwards, FX options and in particular cross currency swaps. In retrospect, bilateral credit mitigation mechanisms (such as CSAs) were seen to work generally well during crisis events. Nevertheless, the reduced liquidity in forward markets during times of greatest market stress revealed considerable ex-ante anxiety. The FX market community is actively examining this issue and a variety of solutions are possible.

- Central counterparties (CCPs) for FX have existed for a number of years but have not been widely adopted. There is broad consensus that further discussion is necessary on the possibility of introducing CCPs to ensure that they take into account the specific characteristics of the FX market.