The Asia Pacific FX Markets: Opportunities for Growth
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Asia Pacific is comprised of diverse currency markets that are shaped by various and, at times, competing forces, from global regulation to local capital controls.

The objective of this study is to examine the structure and development of the foreign exchange (FX) market across the region, including the roles of different market participants, methods of execution and the regulatory environment. It aims to illustrate the changes in regional FX markets over the past decade and shed light on their future direction.

The report has been jointly written by KPMG and the Global FX Division (GFXD) of the Global Financial Markets Association (GFMA). All the statistics used in the report are based on a combination of data from the Bank for International Settlements (BIS) Triennial Central Bank Survey of Foreign Exchange Market Activity from 2004 to 2016; desktop research from publicly available sources; internal resources of the GFMA and KPMG; and multiple interviews with market participants, including members of the GFXD.

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EXECUTIVE SUMMARY

**Market Conditions**
- Increased local currency activity
- Liquidity more concentrated
- Volatility more extreme and harder to predict
- Reduced risk appetite
- Greater use of algos for orders
- Greater fragmentation

**Electronic Execution & Technology**
- Asia playing catch-up
- Active marketing by SDPs and MDPs
- Driven by best ex, cost reduction & STP

**Market Participants**
- Opportunities for local/regional banks
- Growing influence of NBLPs
- International/local interdependency
- FDI & institutional investor inflows

**Regulatory Environment**
- Diverse & complex
- Inconsistent application
- Challenges for strategy & technology
- Uncertainty over extraterritorial impact

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**CURRENT**

**FUTURE TRENDS**

**OUTCOMES**

- RMB internationalisation likely to shape global markets over the next decade
- Opportunities to develop greater price discovery, improve market access and efficiency in onshore markets will benefit local economies
- Access to local markets and ability to incorporate new technologies will differentiate market participants
- Market participants will need to innovate and leverage new services to create capital efficiencies
- Access likely to remain restricted in certain markets
- Conduct requirements will continue to help shape business models
- Higher levels of cross-border regulatory equivalence but not full harmonisation, hence possible bifurcation
This study has identified the following key conclusions, which can be divided into current and emerging trends, and likely future outcomes or implications for regional FX markets.

(a) Market conditions

Current and emerging trends

In line with the region’s rapid development, average daily FX volumes traded in Asia have climbed 20 percent since 2013 to US$1.16 trillion. This regional market growth, since 2013, has been supported by a 28 percent increase in swap volumes to US$608 billion and a 52 percent increase in forwards volumes to US$193 billion.

The Japanese yen (JPY), despite volumes having recently fallen back from their 2013-14 Bank of Japan (BoJ) quantitative-easing (QE) peak, continues to dominate overall regional trade, with volumes rising 172 percent since 2004. Whilst JPY’s dominance continues, the renminbi (RMB) has become the eighth most actively traded currency in the world and the most traded non-G10 currency. This has been driven, in part, by the Chinese authorities’ encouragement since 2009 to use the currency to settle current account transactions and for cross-border trade invoicing. However, the recent priority for the Chinese authorities has been stability and the strengthening of existing capital controls over the internationalisation of the RMB which may impact short term future growth.

Given the widespread currency restrictions across the region a number of currencies are non-deliverable. Four of the top five globally traded non-deliverable forward (NDF) currencies – the Korean Won (KRW), Indian Rupee (INR), onshore Chinese Yuan (CNY) and Taiwan Dollar (TWD) – are from Asia and in most cases have higher volumes than their onshore deliverable equivalents.

Despite the increase in volume traded in the region there has been a fall in the number of reporting dealers\[1\] in most jurisdictions indicating that liquidity is becoming more concentrated across a smaller number of banks.

\[1\] BIS reporting dealers are typically large commercial and investment banks that are active in the local markets and regularly trade through electronic platforms
A series of recent events has resulted in periods of extreme volatility and price spikes increasing the randomness in volatility that has been exacerbated by the following structural changes in the FX market:

- the impact of prudential regulation on banks’ ability to warehouse risk
- the increased cost of continuing to participate in the market
- the competitive edge some institutions have gained through enhancing the sophistication of their platforms
- the growing influence of Non Bank Liquidity Providers (NBLPs)

An apparent outcome of this combination of structural changes is that during periods of price stability there is ample liquidity, but when there are events resulting in extreme volatility the liquidity disappears.

**Outlook**

- Liquidity is likely to concentrate further among fewer institutions in the years ahead.
- Despite its rapid recent growth China’s FX market is still disproportionately small as a percentage of GDP and primarily domestic, pointing to a clear opportunity for the market to develop further.
- The ongoing internationalisation of the RMB is set to be a major force shaping the global financial system over the next decade. It will make China’s financial markets deeper and more liquid and have significant implications for international investment trends and global asset prices. The challenge for China will be furthering this internationalisation while ensuring stability, given the likely disruptions to the exchange rate and capital flows.

**Market participants**

*b) Market participants*

**Current and emerging trends**

The banking segment of the market is still largely split among:

- International banks that serve an extended group of international and regional clients, but have limited local currency offerings
- Regional banks that compete with international banks for cross-border flows in the region but struggle to provide competitive G10 currency liquidity
- Local banks that dominate domestic currency liquidity and the onshore client base. This can be due to local currency restrictions in some jurisdictions.

These divisions are more nuanced than they may initially appear. Relationships are often symbiotic, with international banks partnering with local entities that act as distributors for products and provide access to local liquidity. These partnerships also act as a crucial secondary market for local banks looking to recycle risks and exposures in the G10 market.
The role of the institutional investor has become more significant with the flow of capital into the region's markets rising. Forwards traded by financial institutions (FIs) in the region have more than doubled since 2013 as investors look to hedge the regional component of their portfolios.

NBLPs in Asia are becoming more significant in liquid G3 currencies where they can use their developed market strategies. However, their penetration into local currencies has so far been limited by a lack of access to the local markets and because local currency trading has traditionally been relationship based, voice executed and subject to higher levels of volatility.

Outlook

• Given the rising costs of compliance, the continued development of electronic platforms and the investment required in new technologies, only a small number of banks together with NBLPs will be in a position to act as liquidity providers.

• NBLPs will play a key role in liquid spot currencies and will grow their offering in more liquid local currencies and NDFs. Some may become niche players in certain products, asset classes or markets in response to buy-side demand.

• Local institutions may find the cost of operating beyond their traditional client base uneconomical and may be limited to being the main providers of liquidity in their domestic currencies.

(c) Electronic execution and technology

Current and emerging trends

Electronic trading has gained ground in Asia in recent years, with providers playing catch up with the developed markets and widening their product offerings and client coverage. Secondary FX venues are generally managed out of London and New York so have not had the same focus to onboard regional market participants. High-frequency traders (HFTs) and NBLPs have historically preferred markets where liquidity is deeper and where they have access to a multitude of secondary venues, which make emerging markets less attractive.
Banks have actively migrated voice-executed trades onto their single-dealer platforms (SDPs) to drive cost reductions and improve efficiency. Multi-dealer platforms (MDPs) have gained popularity by providing access to multiple counterparties, enabling investors to satisfy client best execution requirements.

The primary trading venues are still popular with banks in the region due to the fact that flows tend to gravitate towards them in the less liquid and more volatile conditions of the Asia time zone. In addition, almost all of the central limit order book (CLOB)/interbank offshore renminbi (CNH) volume is now captive on these venues.

There has been significant investment and progress in the ability to quote NDFs. As a consequence, NBLPs are starting to look at building their trading capabilities in more liquid local currencies and NDFs.

Outlook

- Regional e-trading volumes will continue to match those in developed markets, driven by changes in regulation, increased surveillance requirements, cost pressures and best execution obligations.

- Advances in areas like big data analytics and machine learning have the potential to produce a paradigm shift for the FX industry. On the one hand technology driven transformation can help the traditional market participants drive greater internalisation and generate greater efficiencies, while on the other it can eliminate some market distinctions, enabling technology firms with low overheads to compete with the traditional participants.

- International banks will migrate more order types to algo execution on their SDPs to improve surveillance and eliminate potential conflicts of interest.
• Banks that have been actively developing and marketing their SDPs will be able to take advantage of big data analytics generated from client behaviour, and machine learning to drive greater internalisation and efficiencies. In order to maintain relevance, SDPs will need to evolve to allow clients access to other liquidity providers.

• Banks that have invested heavily in proprietary systems will struggle to upgrade to new technologies without significant new investment that not all will be able to afford. Those that are able to pay the ‘cost of entry’ will need to focus on building partnerships to develop utility platforms and/or better leverage third party systems, while others may be faced with a decision to change business models or develop new alliances.

(d) Regulation

Current and emerging trends

The regional regulatory environment has been driven both by the global post-financial crisis agenda and efforts to protect local economies while ensuring stability as markets grow. It is diverse and complex, presenting challenges to global and regional banks as well as multinationals that seek to implement standard strategies and technology models across the region.

Despite the market and prudential regulatory agenda being agreed at the global level, there are often inconsistencies in local interpretation that can create an uneven playing field. However, there is evidence that national regulators, in the region and beyond, have started to consult on a more consistent regulatory approach.

Given the role of international banks in providing liquidity to regional market participants, there is a need for awareness of the extraterritorial consequences of regulation implemented in markets like the US and EU. These can lead to a fragmentation of the FX market and create multiple liquidity pools.

Outlook

• The most significant near-term drivers of change will include the implementation of the Global FX Code of Conduct (GCC), the extraterritorial impact of the Markets in Financial Instruments Directive II (MiFID II)/Markets in Financial Instruments Regulation (MiFIR), and prudential regulation such as the Fundamental Review of the Trading Book (FRTB), which could impact the liquidity of some Asian currencies.

• Despite greater dialogue and cooperation amongst regulators via the Financial Stability Board (FSB) and regional forums, a more harmonised regional regulatory framework is seen as unlikely to emerge in the near-term. This lack of harmonisation will continue to act as a dampener to the expansion of the regional FX market. One solution is the greater adoption of substituted compliance or equivalency in order to mitigate the impact of differences between regulation at the national level.
The Asia Pacific FX Markets: Opportunities for Growth
INTRODUCTION: Changing Market Landscape

The most recent triennial survey by the BIS showed a contraction in global FX trading activity for the first time since 2001, with Asian currency trading volumes also slipping. This is attributable to several factors, including:

- The slowdown of global trade from its 2013 peak
- US dollar appreciation which has reduced the reported value of volumes in other currencies
- Bouts of risk aversion prompted by shifts in monetary and macroeconomic policies in developed markets that have impacted active fund management and activity

However, the average daily FX volumes traded in the region have climbed 20 percent since 2013, to US$1.16 trillion. This growth is broad-based and has been driven by:

- An 18 percent uptick in the volume traded between reporting dealers, which, partly due to the smaller presence of NBLPs, account for 56 percent of volume in the region compared to 42 percent globally
- A 28 percent increase in swap volumes to US$608 billion, of which 65 percent was traded cross-border and 67 percent between dealers
- A 52 percent rise in forwards volumes to US$193 billion, with 59 percent traded by other financial institutions – up from 41 percent in 2013
Asian FX markets can essentially be divided into two categories. The first is comprised of jurisdictions with large FX trading volumes, limited local regulatory restrictions, high cross-border activity and G10 currency volumes. The second consists of markets with onshore regulatory barriers, lower volumes, lower cross-border and G10 volumes. This category includes India, South Korea and, notably, China, which has swiftly emerged as the leader in terms of volume despite being a relatively recent entrant.

Other restricted jurisdictions – with the possible exceptions of Korea and India, both of which are relatively large – exhibit limited growth prospects due to a lack of liquidity in their fixed income and FX markets.

In line with the region’s growing global role, Asian currencies have exhibited more global trading patterns with larger volumes traded offshore to hedge the flow of trade and investment into the region. One notable driver of this trend is...
the FI segment. International institutional investors are hedging their Asia asset weightings, which have increased as a by-product of extended monetary easing in developed markets.

The yen continues to dominate regional trade, with volumes climbing 172 percent since 2004. However, the RMB is the region’s rising star, with volumes surging over 100 times to US$202 billion since 2004 to make it the most traded non-G10 currency.

**Figure 3: Relationship between the volume of G10 pairs and the level of cross-border activity**

**Figure 4: Summary of trade in Asian currencies**

[4] BIS. Includes only transactions with G10 currencies on both sides of the transaction

[5] BIS
regional currency. This growth has been assisted by the emergence of offshore RMB centres linking international markets with the Chinese mainland.

The RMB internationalisation process was reinforced in late 2015 when the International Monetary Fund (IMF) designated the RMB as freely usable, and again in October 2016 when the currency was included in the IMF’s Special Drawing Rights (SDR) basket. However, the recent priority for the Chinese authorities has been stability and the strengthening of existing capital controls. This is more likely to be a pause in the internationalisation process, rather than a retrenchment.

Despite its performance, China’s FX market remains disproportionately small as a percentage of GDP indicating significant growth potential. With the opening of the China Interbank Bond market in early 2016 and foreign bondholders now able to use the onshore FX derivatives market to hedge currency exposures, the onshore market is expected to expand further.

(b) Market liquidity

The region’s liquid, globally traded currencies are characterised by high volumes and tight bid-offer spreads. Currencies where activity is primarily restricted to onshore markets to prevent speculation are typified by low volumes, wide spreads and directional trading. This limits the availability of natural hedges and increases trading costs.

However, there are exceptions - notably the INR and KRW, which have active onshore electronic trading and futures markets. There is a significant foreign investor presence in the Korean equity and fixed income markets while onshore Korean financial institutions can also access the NDF market. Meanwhile, India’s FX market has developed alongside the growth in its equity market and international trade over the last decade.

Among major unrestricted Asian currencies, the Singapore dollar (SGD) is among the more widely traded, particularly by institutional investors, with 56 percent of volume traded offshore. Hong Kong dollar (HKD) volumes are comparatively lower with tighter bid-offer spreads due to the currency’s peg to the US dollar.

As noted RMB volumes have grown strongly since the authorities began promoting the currency as a means to settle cross-border transactions in 2009 and the introduction of the CNH in 2010. Hong Kong is the pre-eminent CNH centre, accounting for 39 percent of global turnover despite a falling deposit base on the back of recent RMB depreciation. While this sentiment may have adversely impacted the USD/CNH market, CNH/HKD demand is expected to remain strong as RMB liberalisation continues.
(c) Non-deliverable forwards

Asia accounts for four of the top five traded NDF currencies globally. In most cases NDFs have higher volumes than their deliverable onshore equivalents – the result of a wider group of market participants and freer trading dynamics.

The Korean NDF market is the region’s largest with daily volumes of US$30 billion, up 54 percent from 2013. The market has been helped by the fact that the NDFs can be traded both on and offshore, despite KRW being non-deliverable offshore. The KRW’s weighting in the China Foreign Exchange Trade System (CFETS) RMB index, just behind the USD, euro (EUR) and JPY, also means it is often used as a proxy hedge for CNY exposures.

Volumes and liquidity in the CNY NDF market, by contrast, have declined with the introduction of CNH as an offshore deliverable counterpart to CNY, and history suggests the CNH and NDF markets will co-exist for a limited period. That said some market participants continue to turn to the CNY NDF due to concerns over the depth of liquidity in CNH or because they have not developed the infrastructure to enable them to physically settle RMB.

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[6] Relative bid-offer spreads are calculated by dividing the absolute bid-offer spread for the day by the average exchange rate of the day.
[7] Volumes adjusted for local and cross-border inter-dealer double counting
[8] BIS, Bloomberg Terminal
05
Changing Nature of Market Participants

(a) Reporting dealers

Asian FX markets remain dominated by inter-dealer activity, which accounts for 70 percent of regional activity compared to 52 percent in the UK and only 37 percent in the US.\[9\]

Volume is also concentrated among dealers in the main trading hubs, particularly Hong Kong and Singapore, where volumes have risen 63 percent and 27 percent respectively since 2013 supported by their emergence as CNH centres. Volumes in Japan meanwhile have slipped marginally due to a decline in onshore spot activity.

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\[9\] The percentages are different from those observed in Figure 1 as the volumes here are adjusted for only local inter-dealer double counting unlike in Figure 1 where the volumes are adjusted for both local and cross-border inter-dealer double counting.

\[10\] BIS, Volumes adjusted for local inter-dealer double counting only
International investment and commercial banks account for most of the trade in the hubs, from where they provide their global FI and multinational corporate (MNC) clients with hedging and settlement services. Onshore markets, on the other hand, are led by regional and local banks which are the primary liquidity providers in their domestic currencies to both global banks and their own clients.

Onshore markets can in turn be divided into two types. The first are high-growth, large manufacturing-based economies like China, South Korea and India where over 80 percent of onshore trading volumes are in the local currency. In these markets, local banks have a strong local client base, but struggle to meet the needs of international market participants. In addition, the requirements for underlying commercial trade documentation results in inefficiencies. The second type is smaller producing economies such as Indonesia, Malaysia, Thailand and the Philippines, where onshore banks have traditionally sourced non-local currency liquidity offshore for their clients. Slowing demand has seen these markets contract.

**Figure 7: Reporting dealer ADV by country** [11]

Given Asia’s growth and progressive globalisation, it would be reasonable to expect cross-border transaction volumes to have increased since 2004. However, slowdowns in economies like Malaysia, Indonesia and Thailand mean that while reporting dealer volume has risen, cross-border activity has declined. There has also been a fall in the number of reporting dealers accounting for 75 percent of volume in most markets, with the notable exception of Japan. [12]

[11] BIS, Volumes adjusted for local inter-dealer double counting only
[12] BIS data indicating the number of reporting dealers which account for 75 percent of turnover
This implies volume is being concentrated in the hands of fewer reporting dealers, which in turn points to a dwindling number of traditional liquidity providers. Taken with reduced risk appetite and higher costs of risk warehousing, this means commercial banks with access to a local deposit base are best positioned to dominate liquidity and grow market share across the region.

US and European banks may have cut business lines and downsized their regional presence, but local and regional banks lack the scale and access to G10 currencies to effectively compete with international institutions for global business. Banks operating outside their home jurisdictions and in less liquid convertible currencies may need to reconsider their business models to determine whether they should act as price takers or possibly on an agency basis.

(b) Other financial institutions

FIs account for 35 percent of the total FX volume traded in the region, with their total trading volume more than doubling to US$421 billion between 2013 to 2016. This growth has been driven by an increase in volumes of both forwards traded primarily by institutional investors looking to hedge portfolios as more capital flows to the region, and swaps used by local and regional banks to manage volatility.

Historically, Japan has had the highest volume of forwards traded by FIs in the region primarily due to a large trust bank presence. However, this mantle has passed to Singapore, where the volume of forwards traded by FIs has tripled to US$ 60 billion between 2013 and 2016, or 52 percent of the regional total. This reflects Singapore’s rising significance as a global trading centre.

[13] BIS. Volumes adjusted for local inter-dealer double counting only
Restricted currency jurisdictions, with the exception of India and China, posted falls in volumes traded by financial institutions between 2013 and 2016 due to depreciating local currencies and declining net investments.

Regional swap volumes have exhibited similar patterns to forwards. In Japan, FI volume has moved onshore due to a change in investor behaviour influenced by the BoJ’s QE program. In 2010, 80 percent of the FI volume was traded cross-border compared to 33 percent in 2016.

Hong Kong and Singapore accounted for over half the region’s FI swap volume with a turnover of US$90 billion in 2016, up from US$59 billion in 2013.

In China, currency and access restrictions mean the market is illiquid in all but the shortest tenors. FI activity is thus dominated by spot and short-dated swaps traded by local banks providing settlement services or managing liquidity.

Figure 9: FX ADV with hedge funds by geography [14]
Hedge funds are becoming a growing presence in Asia’s key FX hubs from a very low base. Total daily activity from this market segment rose from US$6 billion in 2013 to US$16 billion last year – with US$11 billion originating in Singapore where a number of funds have set up offices. However, this growth should be kept in perspective as hedge fund turnover still only accounts for under 2 percent of the regional total.

NBLPs will continue to play a key role in liquid spot currencies and will grow their offering in more liquid local currencies and NDFs. However, their business models will evolve and some may become niche players in certain products, asset classes or markets in response to buy-side demand.

(c) Non-financial customers

FX volumes traded by non-financial customers have fallen 37 percent since 2013 to US$102 billion in 2016 on the back of a decline in both swap and spot trades. This is primarily the result of a slowdown in trade, particularly in commodity based export markets.

Over the past two decades there has been a trend for multinationals to establish regional treasury centres to improve risk management and enable the internal netting of positions to reduce hedging and transaction costs, with Singapore and Hong Kong the preferred locations.

Retail activity has also declined since 2013 due to several factors that include the appreciation of the US dollar, tighter credit and margin requirements, and increased regulation. In Japan, historically the most active and sophisticated retail market globally, reduced market volatility and the BOJ’s QE program in 2013-14 has led to a fall in spot trading by retail traders who tend to thrive in periods of uncertainty.
The proportion of electronic execution in Asia is similar to that seen elsewhere given the high proportion, 65 percent, of regional FX turnover conducted in G10 pairs. While G10 spot can be traded electronically in all jurisdictions, Hong Kong, Singapore and Japan together accounted for 86 percent of the regional volume in 2016. For local currencies, restrictions prevent the electronic execution in some markets, including Indonesia, Taiwan and the Philippines.

Other markets have their own well-established electronic platforms for local currency interbank trading. These include:

- China, where interbank trading of USD/CNY on CFETS is mandatory
- Korea, where electronic execution of USD/KRW can only be undertaken on two state-sponsored platforms but a lack of application program interface (API) connectivity hampers price transparency
- India, where the central bank has encouraged competition between platform providers, resulting in an active and liquid electronic USD/INR market

Levels of electronic execution have recently plateaued, but are expected to rise further in response to improved algo trading as well as requirements for greater price transparency and best execution. This will present opportunities to enhance price discovery and efficiency in onshore markets that could benefit local economies.

Globally, banks have focused aggressively on developing their SDPs. They are enhancing product offerings by improving interfaces, execution algos and analytics, and on-boarding more clients in an effort to drive straight through processing (STP) and reduce costs. This
focus is likely to continue as banks look to migrate additional order execution to electronic platforms to avoid trader discretion and possible conflicts of interest.

Activity on primary venues has decreased as large international dealers with functionally rich platforms have moved to internalise more client flows. MDPs are also gaining popularity by providing access to multiple counterparties, helping investors satisfy best execution requirements of their clients.

Secondary FX venues tend to be managed out of London or New York and so may not have had the same focus on attracting Asian market participants. This together with lower levels of multi-dealer execution compared to London or New York suggests that the number of venues that are active and showing liquidity is lower during Asian trading hours.

High-frequency traders and other NBLPs are more active in markets where liquidity is deeper and they have access to secondary venues to ‘make’ and

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[15] BIS, central bank websites, KPMG calculations
‘take’ on. Consequently, they tend to trade major currencies outside the less liquid Asian trading hours.

The proportion of forwards executed electronically in Asia has lagged global levels as NDFs have traditionally been voice traded. However, both banks and NBLPs have made significant progress and investment in their capabilities to quote NDFs on their platforms, and levels of electronic execution are likely to grow as a result.

(a) Spot

Globally electronic spot trading levels are likely to have been skewed by the top eFX banks which have actively marketed their SDPs while pursuing market share with algos. In Asia, by contrast, SDPs have suffered as regional banks have moved away and Asian domiciled retail aggregators have looked to internalise more client flows.

MDP volumes have also grown in Asia as platforms improve their product offerings and attract new clients. Changing regulation and being able to offer one perceived solution for best execution may see more volumes move on to MDPs worldwide.

The primary trading venues remain popular with a number of banks in Asia. In the less liquid and more volatile conditions that can be experienced in the Asia time zone flows tend to gravitate towards the primary venues. In addition, both venues have made a strong push to capture CNH volume, and now host almost all the CLOB/interbank CNH trade.

(b) Forwards, Swaps and Options

Primary venues dominate the electronic NDF market and, with Asian NDFs among the most liquid with volumes highest during Asia hours, overall volumes have risen. MDPs have seen some success in providing liquidity for currencies such as KRW and INR, but recycled liquidity continues to be an issue.
For swaps, as with spot, non-bank market participants in Asia are moving to MDPs in order to access better liquidity and demonstrate best execution. Banks are also focusing more on providing liquidity to MDPs rather than the high number of direct APIs to which they have historically provided liquidity.

Primary platforms have increased swap market share over the last three years. They have recently acted to on-board additional banks as liquidity providers taking volume from other platforms and generating new volume from previously inactive market participants.

Given the nature of the product, voice continues to dominate the options trade, particularly for larger deal sizes. With the overall fall in option volumes across the region, electronic execution volumes have also fallen, hit by declining demand for vanilla and structured options from SMEs and other Northeast Asian corporates due to regulatory changes and CNH depreciation. This has directly impacted SDP volume which had been robust historically due to a high concentration of regional and private banks accessing liquidity for clients in small ticket sizes.

The market share of options traded on MDPs has historically been low as they were either not available or not liquid on these venues due to a lack of liquidity providers. However, local banks have become more active in trading vanilla options on MDPs, making pricing more competitive and challenging the position of SDPs.

(c) Emerging technologies

In response to the increased capital required to operate across multiple jurisdictions, banks will need to innovate to reduce costs, and leverage evolving utilities. Banks actively developing and marketing their platforms will be able to take advantage of big data analytics generated from client behaviour and machine learning to drive greater internalisation, efficiencies and insights.

Distributed ledger technology (DLT) has the potential to deliver cost savings across financial markets. The activities most likely to be impacted are those that are costly, complex and involve high levels of operational risk, especially in post-trade transaction processing where there has been minimal recent technology investment – i.e. confirmation and trade settlement. This will involve smaller proof of concept implementations over the next five years and wider adoption over the following decade.

However, new technologies and upgrades may require investments that will not be feasible for all institutions, meaning some may need to adjust their business models or cultivate alliances to maintain their competitiveness. With market participants facing the same regulatory shifts and cost pressures, there is an attractive opportunity for banks to form partnerships to develop utility platforms and/or better leverage third-party systems.
Opportunities for Regulatory Equivalence

Reflecting the varied levels of development of the region’s economies and markets, Asia’s regulatory environment is diverse and complex. This presents significant challenges to both global and regional banks and MNCs operating across the region. This environment is also being shaped by global forces, which include:

**The G20 regulatory agenda:** Global initiatives that have been implemented with local variations add complexity and cost to the design and build of technological solutions to facilitate compliance. International banks face additional challenges when home and host country requirements differ.

**Anti-Money Laundering (AML) and Know Your Customer (KYC):** Requirements frequently vary from country to country adding to the administrative burden of entities operating across multiple jurisdictions, and leading to inefficiencies in the client on-boarding process and impacting service quality.

**Basel capital requirements:** Inconsistencies in the implementation of these requirements could create a non-level playing field in some markets for non-locally incorporated entities that may be governed by a different interpretation at group level. In particular, there are uncertainties about how the Basel Committee’s FRTB will be interpreted, and how it will impact trading levels and liquidity of emerging market currencies and options.

Questions also surround the potential impact of emerging and future regulation. The recently launched GCC, designed to provide common guidelines to promote the integrity and proper operation of the FX market, the EU’s MiFID II, which is due to take effect in early 2018, and the BASEL prudential regulation will all have major implications for trading in Asia.
At the local level, there are marked differences among jurisdictions in areas such as:

**Data privacy and secrecy:** Inconsistent requirements complicate server deployments and compliance with mandatory over the counter (OTC) derivatives reporting obligations. They present challenges for cross-border booking arrangements and centralised management of client accounts and positions.

**Use of electronic trading platforms:** Regulations may be unclear or prevent the use of such platforms altogether. This lack of consistency has hampered the adoption of electronic trading in some jurisdictions.

**Outsourcing and use of offshore servers:** Requirements to place systems onshore and to register software with the authorities adds to the cost and complexity of maintaining and securing multi-jurisdiction platforms and the security of source code.

**Currency controls:** Designed to provide central banks with currency oversight, limit capital outflows and/or limit market access, controls can include requirements for transaction-based reporting to central banks and to present underlying commercial trade documents to support FX transactions. These impact operational efficiencies and opportunities for electronic execution.

The following sections examine in more detail how major global regulatory initiatives will impact the Asian FX market.
(a) Margin requirements

Recognising that international inconsistencies could lead to regulatory arbitrage, the Basel Committee on Banking Supervision (BCBS) and International Organization of Securities Commissions (IOSCO) issued a framework to establish minimum standards for margin requirements for non-centrally cleared OTC derivatives in 2015. Nonetheless, national regulators have adapted the framework to account for local market differences, resulting in a number of jurisdiction-specific variations that span areas such as:

- The scope of covered entities
- Treatment of physically settled FX forwards and swaps and reliance on BCBS Supervisory Guidance, resulting in interpretational and enforcement differences

### Table 2. Treatment of deliverable FX forwards and swaps and exchange of margin with non-netting jurisdictions

<table>
<thead>
<tr>
<th></th>
<th>Treatment of VM for Deliverable FX Forwards &amp; Swaps</th>
<th>Collateral Settlement Timeliness</th>
<th>Non-Netting Jurisdictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>Subject to the margin regime*</td>
<td>Collected on or before T+2</td>
<td>Exempt where &lt;2.5% ratio**</td>
</tr>
<tr>
<td>US Prudential Rules</td>
<td>The Fed has formally adopted the BCBS Supervisory guidance</td>
<td>Collected on or before T+1</td>
<td>Collect only</td>
</tr>
<tr>
<td>US CFTC Rules</td>
<td>NA</td>
<td>Collected on or before T+1</td>
<td>Collect gross; post net</td>
</tr>
<tr>
<td>Australia</td>
<td>Subject to the BCBS Supervisory Guidance2 (not explicit)</td>
<td>Conducted promptly</td>
<td>Exempt</td>
</tr>
<tr>
<td>Japan</td>
<td>Subject to the BCBS Supervisory Guidance2</td>
<td>Without delay</td>
<td>Exempt</td>
</tr>
<tr>
<td>Singapore</td>
<td>Subject to the BCBS Supervisory Guidance2</td>
<td>No later than T+3</td>
<td>Exempt</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>Subject to the BCBS Supervisory Guidance2</td>
<td>No later than T+2 after being called</td>
<td>Exempt</td>
</tr>
<tr>
<td>India</td>
<td>Subject to the margin regime in draft rules</td>
<td>Draft rules indicate on a regular basis</td>
<td>No guidance in draft rules</td>
</tr>
<tr>
<td>Korea</td>
<td>VM can be exchanged if it is considered necessary to manage risk</td>
<td>No later than T+3</td>
<td>No exchange – but risks should be properly managed</td>
</tr>
</tbody>
</table>

1. Under the BCBS/IOSCO Margin requirements for non-centrally cleared derivatives deliverable swaps and forwards are exempt from IM: http://www.bis.org/bcbs/publ/d317.htm
2. BCBS Supervisory guidance for managing risks associated with the settlement of foreign exchange transactions: http://www.bis.org/publ/bcbs241.htm
* Delay granted for VM on FX forwards until earlier of 31 December 2018 or application of MiFID2 amendments.
** So long as certain conditions met ratio of notional to total notional of all non-centrally cleared derivative at group level
- Treatment of exposures with counterparties in non-netting jurisdictions, which may limit the ability of some participants to trade in these jurisdictions, thereby impacting liquidity and transaction costs

- Timing of collateral settlement, which may create additional funding costs for Asian entities trading with US counterparties

While some of these differences may be resolved by the substituted compliance arrangements adopted by jurisdictions, it is still unclear how these will be applied as substituted compliance assessments have only been completed by Australia and Japan.

Some jurisdictions in Asia have not implemented margin requirements. This creates challenges for participants incorporated in those jurisdictions that are still expected to comply with margin regulations in other countries as a result of cross-border transactions.

European and US banks operating in the region that are subject to home country requirements due to their booking models are also potentially placed at a commercial disadvantage. This could result in a bifurcation of the market and higher transaction costs that will eventually be passed on to clients.

**(b) OTC trade reporting**

OTC derivatives trade reporting requirements also vary depending on jurisdictions, creating significant complications particularly for international banks with trading activities in multiple Asian locations.

Transactions that are reportable in one jurisdiction may not be reportable in another due to differences in:

- Definitions of OTC contracts
- Rules for reporting of packaged transactions
- Dual or single-sided reporting obligations
- Definitions of lifecycle events and their reporting treatment
- Reporting timelines

Australia, Hong Kong and Singapore add an additional layer of complexity by imposing ‘nexus’ reporting obligations, meaning trades booked in an affiliate can be subject to reporting requirements.

Another issue is the unique transaction identifiers (UTI) that most authorities require trades to carry when reported. There are no harmonised requirements on the formulation or use of UTIs, and while the Committee on Payments and Market Infrastructures (CPMI) and IOSCO have published technical guidance for regulators addressing harmonisation, concerns remain as to how this will work in practice.
### Table 3. OTC trade reporting requirements in the region

<table>
<thead>
<tr>
<th></th>
<th>G20 or Local</th>
<th>Timing</th>
<th>Single or Dual-Sided</th>
<th>Recipient</th>
<th>Public Disclosure</th>
<th>Direct or Via Agent</th>
<th>Content</th>
<th>Nexus</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Australia</strong></td>
<td>G20</td>
<td>Within T+1</td>
<td>Dual</td>
<td>Trade Repository</td>
<td>Weekly</td>
<td>Via agent</td>
<td>Trade data (61 fields)</td>
<td>Reportable if acceptance of the offer to enter into the contract is received in Australia (exemptions apply)</td>
</tr>
<tr>
<td><strong>Japan</strong></td>
<td>G20</td>
<td>Within T+1</td>
<td>Dual</td>
<td>Trade Repository, Regulator</td>
<td>Quarterly</td>
<td>Direct of via agent</td>
<td>Trade data (Not specified)</td>
<td>Reportable if decision to trade made in Hong Kong or parameters for electronic platform, are set in Hong Kong</td>
</tr>
<tr>
<td><strong>Hong Kong</strong></td>
<td>G20</td>
<td>Within T+2</td>
<td>Dual</td>
<td>Trade Repository</td>
<td>Under consideration</td>
<td>Direct of via agent</td>
<td>Trade data (100+ fields)</td>
<td>Reportable person who conducts activities relating to execution is located in Singapore. Trades on electronic platforms may be captured.</td>
</tr>
<tr>
<td><strong>Singapore</strong></td>
<td>G20</td>
<td>Within T+2</td>
<td>Dual</td>
<td>Trade Repository</td>
<td>Under consideration</td>
<td>Via agent</td>
<td>Trade data (36 fields)</td>
<td></td>
</tr>
<tr>
<td><strong>China</strong></td>
<td>G20</td>
<td>Single</td>
<td>CFETS, China Securities Internet System</td>
<td>Daily &amp; Monthly</td>
<td>Direct</td>
<td>Not specified</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>India</strong></td>
<td>Local</td>
<td>Hourly, EoD, T+1</td>
<td>Dual – inter-dealer; Single - All other</td>
<td>CCIL</td>
<td>Real-time</td>
<td>Via agent</td>
<td>Trade data (13 fields)</td>
<td>Not specified</td>
</tr>
<tr>
<td><strong>Korea</strong></td>
<td>Local</td>
<td>Daily</td>
<td>KRX, BoK</td>
<td>Quarterly</td>
<td>Direct</td>
<td>Not specified</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Taiwan</strong></td>
<td>Local</td>
<td>T+1</td>
<td>Single</td>
<td>Taipei Exchange</td>
<td>Regularly1</td>
<td>Direct</td>
<td>Not specified</td>
<td></td>
</tr>
<tr>
<td><strong>Indonesia</strong></td>
<td>Local</td>
<td>Single</td>
<td>Bank Indonesia</td>
<td>No public disclosure</td>
<td>Direct</td>
<td>Not specified</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Malaysia</strong></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A (Consultation paper issued in November 2013)</td>
<td></td>
</tr>
<tr>
<td><strong>Thailand</strong></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Philippines</strong></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

1 Based on Taipei Exchange’s PFMI, Information Disclosure Report. FSB, ASIC, DTCC, HKEx, CCIL, SHCH, OTC Clear, SGX, TPEx, Various Regulator Websites

### (c) Central clearing of derivative transactions

Clearing of deliverable FX contracts in Asia is only available in India and China, where the clearing of USD/local currency contracts on local central counterparty clearing houses (CCPs) is underwritten by the central bank. This is a result of BIS/IOSCO principles introduced in 2012 that state CCPs must understand the size and nature of same-day liquidity risk to guarantee full and timely sentiment.

A 2013 GFXD, study based on historical data of deliverable OTC FX options traded globally in 17 currencies and exercised between January 2007 and December 2011, estimated CCPs must demonstrate they are capable of...
managing same day liquidity shortfalls as high as US$161 billion - the result of the failure of two clearing firms representing the largest combined settlement obligations in each currency on any given day.

Rules on the recognition of equivalent regulatory regimes can also impact the status of CCPs, potentially limiting the ability of some market participants to clear in some jurisdictions. European regulation, for example, prevents ‘covered persons’ from participating in third-country CCPs that have not received recognition from the European Securities and Markets Authority.

Table 4. Summary of the clearing environment for FX products across the region [17]

<table>
<thead>
<tr>
<th>Local CCP</th>
<th>Mandatory Clearing of FX Products</th>
<th>FX Products offered for clearing on local CCP</th>
<th>QCCP Status under EMIR</th>
<th>QCCP Status under CFTC Regulations</th>
<th>Availability of Client Clearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>ASX Clear, ASX Clear (Futures)</td>
<td>None</td>
<td>Recognised</td>
<td>DCO Exempt - ASX Clear (Futures) only</td>
<td>N/A</td>
</tr>
<tr>
<td>China</td>
<td>Shanghai Clearing House (SHCH)</td>
<td>None</td>
<td>Not Recognised</td>
<td>No action relief¹</td>
<td>Available</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>OTC Clearing Hong Kong Limited (OTC Clear)</td>
<td>None</td>
<td>Recognised</td>
<td>DCO Exempt</td>
<td>Available</td>
</tr>
<tr>
<td>India</td>
<td>Clearing Corporation of India Limited (CCIL)</td>
<td>FX Forwards</td>
<td>Recognised</td>
<td>Not Registered / Exempt</td>
<td>N/A</td>
</tr>
<tr>
<td>Japan</td>
<td>Japan Securities Clearing Corp (JSCC)</td>
<td>None</td>
<td>Recognised</td>
<td>DCO Exempt</td>
<td>N/A</td>
</tr>
<tr>
<td>Korea</td>
<td>Korea Exchange (KRX)</td>
<td>None</td>
<td>Recognised</td>
<td>DCO Exempt</td>
<td>N/A</td>
</tr>
<tr>
<td>Singapore</td>
<td>SGX Derivatives Clearing Limited</td>
<td>None</td>
<td>Recognised</td>
<td>DCO Registered</td>
<td>Available</td>
</tr>
</tbody>
</table>

¹ No action relief extended until the earlier of 30 November 2017 or the date on which the CFTC exempts the SHCH.

In the US, the Dodd Frank Act requires third-country CCPs to apply for registration or exemption from being recognised as a derivative clearing organisation (DCO). Failure to do so means that US banks and overseas branches (but not overseas incorporated subsidiaries) using these CCPs will be in breach of the Commodity Exchange Act – though US authorities have demonstrated a willingness to grant temporarily relief from these requirements as they did recently for the Shanghai Clearing House (SHCH).

Volumes of cleared FX products have generally been low because (i) clearing is not mandatory, (ii) there is no solution to clear physically settled FX products and (iii) where voluntary clearing does take place the benefits from offsetting margin obligations have not been optimal. The voluntary clearing of NDFs on the London Clearing House’s ForexClear (LCH) increased five times between August 2016 and February 2017 after the margin requirements for non-centrally cleared OTC derivatives came into effect.

[17] ESMA, CFTC, FSB, CCIL, SHCH, OTC Clear, SGX, LCH Clearnet Ltd
A similar pattern seems unlikely in Asia. Of the four local CCPs clearing FX products only the Hong Kong Exchange (HKEx) and Singapore Exchange (SGX) offer NDF clearing. While these provide local market participants with an ability to clear in the same jurisdiction and time zone, international banks favour voluntarily clearing Asian currency NDFs on the LCH due to the liquidity and margin benefits of clearing both sides of a trade on the same platform.

**Figure 11: Monthly volume of NDFs submitted for clearing at the LCH**[^18]

![Monthly volume of NDFs submitted for clearing at the LCH](image)

[^18]: LCH; volumes cumulated up to 20th March 2017

### (d) Prudential requirements

The Basel Committee’s FRTB is an ambitious framework that will change the way banks assess risk and could potentially have significant implications for the regional FX market. Under the current version of the framework all banks will have to adopt the revised Standardised Approach (SA) which will be used to set a floor on the capital held by banks able to use the Internal Model Approach (IMA). This will require significant investment because both approaches calculate risk differently to the way that banks currently undertake risk management for internal purposes. In addition, the risk weightings applied in the SA and the liquidity horizons applied in the IMA disadvantage non-liquid currencies and options.

Banks that satisfy the P&L attribution test will gain approval to use IMA internal risk models. However, the published results of banks undertaking the test show a particularly high rate of failure which forces banks to fall back on the SA.

The most recent study showed that the SA generates an overall capital requirement of up to 2.5 times current levels compared to 1.6 times for the IMA. For FX risk, the SA capital requirements were 5.3 times higher than the IMA.
The regional impact of FRTB will depend to a large extent on how national regulators interpret the rules – to date Australia, Singapore and Hong Kong have all officially delayed implementation of the framework. The weightings applied under both IMA and SA may force banks to reconsider trading non-liquid currencies and options, potentially impacting liquidity and increasing execution costs. There are also concerns that international banks booking emerging market transactions in jurisdictions implementing FRTB could be disadvantaged due to the higher capital levels required.

(e) MiFID II

With an effective date of 3 January, 2018, MiFID II and MiFIR are aimed at improving transparency, enhancing investor protection, reducing risk in financial markets and preventing market abuses.

As the directive is subject to the interpretation of European national regulators before being adopted into local regulations, there is a risk of multiple approaches being required to meet the same requirements. For example, FX spot transactions, security conversions and transactions entered into as a means of payment are not considered financial instruments. However, there is no clear guidance on what constitutes a means of payment, meaning a short-dated forward could be exempt in one jurisdiction but subject to regulation in another.

There is also considerable uncertainty over the extraterritorial reach of MiFID II and how it may impact Asian entities, particularly given the different execution and booking models used for FX that could result in different outcomes.

The immediate concerns facing Asian entities trading with European counterparties include:

- The obligation to provide personal data subject to local data privacy legislation to EU trading venues or entities so transaction reporting obligations are met
- The requirement for all counterparties trading with a European entity to have a registered Legal Entity Identifier (LEI), which is not mandatory in Asia and therefore not widespread
- The extent of account repapering required as entities trading with European counterparties will in many cases have to sign revised agreements

(f) Global Code of Conduct (GCC)

Developed by the BIS Foreign Exchange Working Group (FXWG) to promote the integrity and efficiency of the wholesale FX market, the GCC was launched in May 2017. It is expected to apply to all FX market participants, including sell-side and buy-side, NBLPs, trading venue operators, and other entities providing brokerage, execution and settlement services. The GCC is a broad initiative that covers areas such as information sharing, governance, execution (including
### Table 5: Summary of the impact of the global code

<table>
<thead>
<tr>
<th></th>
<th>Actions required</th>
</tr>
</thead>
</table>
| **Strengthening the Control Environment** | • Strengthening Front Office Control functions, governance structures and policies and procedures.  
• Aligning incentives and reward structures to conduct metrics  
• Improved reporting, co-ordination and escalation |
| 1st Line of Defence | • Conduct including use of confidential data  
• Provision of market colour  
• Conflicts of interest associated with execution discretion including pre-hedging  
• External communication |
| Training          | • Improved surveillance and monitoring technology to cover chat rooms, email and voice communication channels  
• Ability to cross reference between channels to link conversations  
• Ability to link transactional activity with surveillance |
| Surveillance      | • Improved surveillance and monitoring technology to cover chat rooms, email and voice communication channels  
• Ability to cross reference between channels to link conversations  
• Ability to link transactional activity with surveillance |
| Business Model    | • Physical segregation of the Order taking desk  
• Higher percentage of orders routed through electronic channels and reduced trader discretion  
• Best execution obligations |
| Orders            | • Clarity of role  
• Greater transparency in pricing models and mark-ups  
• Clear communication of execution practices including execution priority, risk management and pre-hedging |
| Client disclosures| • Clarity of role  
• Greater transparency in pricing models and mark-ups  
• Clear communication of execution practices including execution priority, risk management and pre-hedging |
| Agency execution  | • Reduction in risk taking activity  
• Execution on a fee basis |
| Electronic execution | • Improved functionality and client interface  
• Improved controls over algo development, deployment and testing  
• Enhanced analytics |

requiring market participants to be clear about the capacities in which they act), and risk management.

For Asian entities, this will create a clear need to review business models and refine the front office control environment. This will require investment in people (training and control functions), processes (policies and procedures) and systems (monitoring and surveillance, electronic execution platforms).

The GCC does not impose legal or regulatory obligations. However, it does include a Statement of Commitment for market participants to sign demonstrating their commitment to conducting their FX business in accordance with the Code, and to confirm they have taken appropriate steps to align their activity to its principles.

Authorities and industry bodies are currently employing a number of different approaches to ensure adoption of the GCC. The UK’s Financial Conduct Authority and Prudential Regulation Authority have stated that they could use the Senior Managers Regime to enforce compliance, while the Association Cambiste Internationale has made adherence a prerequisite for membership.

Central bank members of the FXWG have indicated they will demonstrate their commitment to the Code by adopting the Statement, and they will expect their regular FX trading counterparties to adhere to its principles. In addition, a number of Foreign Exchange Committees have decided to publicly link membership with adherence to the Code using the Statement.
(g) KYC and market infrastructure opportunities

KYC requirements vary widely across the region, making client on-boarding processes costly and time-consuming, which adversely affects service to customers. These processes are also often duplicated across firms negatively impacting customers that often have to provide the same information to numerous counterparties. A 2016 survey by Thomson Reuters found investment banks in Asia spend an average of US$100 million on customer due diligence annually, and regional and retail banks an average of US$30 million.

As noted by the BIS Committee on Payments and Market Infrastructure (CPMI), a standard KYC utility could go a significant way towards addressing these issues by providing a single template or gateway for KYC checks, reducing resubmissions of identical information and enhancing accuracy, consistency and efficiency.

A number of utilities have already emerged that cover jurisdictions in the region, including Bloomberg Entity Exchange, the SWIFT KYC registry, Thomson Reuters Accelus and Markit/Genpact. However, in many cases they are still in the development stage and lack critical mass.

Adoption is likely to remain limited until several factors are addressed, including:

- The lack of a regulatory framework permitting reliance on the information and documentation utilities provide
- Differences in documentation requirements between jurisdictions
- Interoperability limitations
- Varying cybersecurity and data privacy requirements
- Material outsourcing and data secrecy constraints

While these gaps present difficulties for banks, they also point to opportunities to develop utility platforms that address these shortfalls and facilitate a more standardised approach to KYC procedures.
### APPENDICES

#### (a) Glossary

**Regulatory Bodies & Other Institutions/Corporations**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACI</td>
<td>Association Cambiste Internationale</td>
</tr>
<tr>
<td>ASIC</td>
<td>Australian Securities and Investments Commission</td>
</tr>
<tr>
<td>ASX</td>
<td>Australian Securities Exchange</td>
</tr>
<tr>
<td>BCBS</td>
<td>Basel Committee on Banking Supervision</td>
</tr>
<tr>
<td>BI</td>
<td>Bank Indonesia</td>
</tr>
<tr>
<td>BIS</td>
<td>Bank of International Settlements</td>
</tr>
<tr>
<td>BNM</td>
<td>Bank Negara Malaysia</td>
</tr>
<tr>
<td>BoJ</td>
<td>Bank of Japan</td>
</tr>
<tr>
<td>BoK</td>
<td>Bank of Korea</td>
</tr>
<tr>
<td>CCIL</td>
<td>The Clearing Corporation of India Ltd.</td>
</tr>
<tr>
<td>CFTC</td>
<td>Commodity Futures Trading Commission</td>
</tr>
<tr>
<td>ESMA</td>
<td>European Securities and Markets Authority</td>
</tr>
<tr>
<td>FEDAI</td>
<td>Foreign Exchange Dealers’ Association of India</td>
</tr>
<tr>
<td>FCA</td>
<td>Financial Conduct Authority</td>
</tr>
<tr>
<td>FSB</td>
<td>Financial Stability Board</td>
</tr>
<tr>
<td>FT</td>
<td>Financial Times</td>
</tr>
<tr>
<td>GFMA</td>
<td>Global Financial Markets Association</td>
</tr>
<tr>
<td>HKEx</td>
<td>Hong Kong Exchange</td>
</tr>
<tr>
<td>HKMA</td>
<td>Hong Kong Monetary Authority</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>JSCC</td>
<td>Japan Securities Clearing Corporation</td>
</tr>
<tr>
<td>KMBC</td>
<td>Korea Money Brokerage Corporation</td>
</tr>
<tr>
<td>KRX</td>
<td>Korea Exchange</td>
</tr>
<tr>
<td>MAS</td>
<td>Monetary Authority of Singapore</td>
</tr>
</tbody>
</table>
PBOC  The People’s Bank of China
RBI   Reserve Bank of India
SFC   Securities and Futures Commission
SGX   Singapore Exchange
SHCH  Shanghai Clearing House
SMBS  Seoul Money Brokerage Services
TPEx  Taipei Exchange
WTO   World Trade Organisation

Other Abbreviations

ADV     Average Daily Turnover/Volume
API     Application Programming Interface
CCR     Counterparty Credit Risk
CDD     Customer Due Diligence
CFETS   China Foreign Exchange Trade System
CCP     Central Counterparty Clearing House
DCO     Derivative Clearing Organisation
DF      Deliverable Forwards
DLT     Distributed Ledger Technology
ECN     Electronic Communications Network
EMIR    European Market Infrastructure Regulation
FI      Financial Institutions
FDI     Foreign Direct Investments
FRTB    Fundamental Review of the Trading Book
FXWG    Foreign Exchange Working Group
GCC     Global FX Code of Conduct
HFT     High Frequency Trading
HIBOR   Hong Kong Interbank Offer Rate
IM      Initial Margin
IMA     Internal Models Approach
KYC     Know Your Customer
LCH     London Clearing House
LEI     Legal Entity Identifier
MDP     Multi Dealer Platforms
MiFID   Markets in Financial Instruments Regulation
MiFIR   Markets in Financial Instruments Directive
MNC     Multinational Corporates
MTF     Multilateral Trading Facility
NBLP    Non Bank Liquidity Providers
NDF     Non Deliverable Forwards
NMRF    Non-Modelable Risk Factors
OTC     Over the Counter
OTF     Organized Trading Facility
PTF     Proprietary Trading Firms
QCCP    Qualified Central Counterparty
QE      Quantitative Easing
QIS     Quantitative Impact Study
RM  Regulated Market
RTGS  Real Time Gross Settlement
SA  Standardised Approach
SDP  Single Dealer Platforms
SDR  Special Drawing Rights
SME  Small & Medium Enterprises
STP  Straight Through Processing
TCA  Total Cost Analysis
UTI  Unique Transaction Identifier
VM  Variation Margin

(b) References


12. The Economist Intelligence Unit, Forex Regulation Reports, (2016, 2017),


Relevant Country Regulatory, Exchanges and Central Bank related sources

1. Australia – Reserve Bank of Australia (RBA), Australian Securities and Investments Commission ASIC, Australian Prudential Regulation Authority (APRA),
2. China – The People’s Bank of China (PBOC), State Administration of Foreign Exchange (SAFE), Shanghai Clearing House (SHCH)

3. Hong Kong – Hong Kong Monetary Authority (HKMA), Hong Kong Exchange (HKEx)

4. India – Reserve Bank of India (RBI), The Clearing Corporation of India (CCIL),

5. Indonesia – Bank Indonesia,

6. Japan – Bank of Japan (BoJ),

7. Korea – Bank of Korea (BoK), Korea Exchange (KRX)

8. Malaysia – Bank Negara Malaysia, Bursa Malaysia

9. Philippines - The Bangko Sentral ng Pilipinas (BSP)

10. Singapore – Monetary Authority of Singapore (MAS), Singapore Exchange (SGX)

11. Taiwan – Central Bank of the Republic of China (Taiwan), Taipei Exchange

12. Thailand – Bank of Thailand (BoT),

About GFMA

The Global Financial Markets Association (GFMA) brings together three of the world’s leading financial trade associations to address the increasingly important global regulatory agenda and to promote coordinated advocacy efforts. The Association for Financial Markets in Europe (AFME) in London and Brussels, the Asia Securities Industry & Financial Markets Association (ASIFMA) in Hong Kong and the Securities Industry and Financial Markets Association (SIFMA) in New York and Washington are, respectively, the European, Asian and North American members of GFMA. For more information, visit http://www.gfma.org.

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In 1992, KPMG became the first international accounting network to be granted a joint venture licence in mainland China. KPMG China was also the first among the Big Four in mainland China to convert from a joint venture to a special general partnership, as of 1 August 2012. Additionally, the Hong Kong office can trace its origins to 1945. This early commitment to the China market, together with an unwavering focus on quality, has been the foundation for accumulated industry experience, and is reflected in the Chinese member firm’s appointment by some of China’s most prestigious companies.
## Mainland China

### Beijing
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Fax : +86 (10) 8518 5111

### Beijing Zhongguancun
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Beijing 100080, China  
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Fax : +86 (10) 5875 2558

### Chengdu
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No. 1, Section 3 Hongxing Road  
Chengdu, 610021, China  
Tel : +86 (28) 8673 3888  
Fax : +86 (28) 8673 3838

### Chongqing
Unit 1507, 15th Floor, Metropolitan Tower  
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Fax : +86 (23) 6383 6313

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