

CELENT

# THE ASIAN OTC DERIVATIVES MARKETS

A STUDY PREPARED FOR

ISDA<sup>®</sup>

Celent Securities & Investments Team  
April 23, 2013

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## EXECUTIVE SUMMARY

The Asian OTC derivatives market, like any other Asian financial services market, is highly fragmented, with different groups of countries having their own characteristics and levels of maturity. Not surprisingly Australia, Singapore, and Hong Kong, the three countries with well-developed financial markets, are the leaders in OTC derivatives. Driven largely by favorable regulations and their “offshore” status, Singapore and Hong Kong account for high turnover across all OTC derivative products. Australia, driven by a large foreign exchange market, also sees significant activities in the OTC derivatives segment and more than double the turnover of Hong Kong. The bigger economies like India, China, and the ASEAN block have a large real trade of goods and services which should conceivably result in high demand for OTC derivatives for hedging purposes.

Relatively more cautious regulatory regimes have not allowed for the rapid development of the OTC derivatives market across a broad base in Asia. However, the market has continued to grow even post crisis. In 2012 there was US\$42.6 trillion in notional outstanding in the Asian financial markets (Australia, China, Hong Kong, India, Indonesia, Malaysia, New Zealand, Singapore, South Korea, and Taiwan). This figure includes OTC derivatives in FX, Interest Rates, Equity Linked, Commodities and credit default swaps (CDS), but does not account for portfolio compression.

In 2012, annual turnover was US\$186 trillion. The high turnover could be attributed to more hedging activities by portfolio managers and some carry trade activities. Turnover was adversely impacted for most countries in 2009, the immediate aftermath of the financial crisis. Things started to stabilize or improve in 2010 and 2011. By 2011, turnover had reached or surpassed 2008 levels for some countries; the upward trend continued in 2012. Overall, turnover has increased since 2008 at a CAGR of 2.2%.

Dealers<sup>1</sup> account for 57% of the turnover of OTC derivatives across Asia. Outside of dealers, financial institutions (including banks and securities firms) dominate OTC derivatives trading, and the contribution of non-financials/ corporates (i.e., the real sector) is low. This may be attributed to the barriers in regulations related to OTC derivative trading as well as a lack of development of trading infrastructure in the large economies (e.g., China, India, and Indonesia), particularly in the commodity segment, which force many participants to trade at international exchanges or with international counterparties. This results in low activities in the onshore market. It also means knowledge about derivatives among users in the corporate sector is not well developed outside the local markets which include exchange-traded instruments. Only 3% of the market is cleared through central counterparties.

Asian OTC derivatives are a “tale of FX.” The primary driver of growth in turnover of the Asian market is OTC foreign exchange derivatives. In fact, between 2008 and 2012, OTC FX derivatives accounted for over 80% of the growth in turnover. Interest rate derivatives are the second most powerful driver but accounted for only 17% of the growth. FX has seen the fastest growth, with a 3% CAGR since 2008. All other OTC turnover has grown at or less than 1% since 2008 across the region. In 2012, FX OTC derivatives accounted for a whopping 76% of the turnover in Asia with interest rate derivatives a distant second at 18% of the turnover. The share of other asset classes is in the single digits.

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<sup>1</sup>See section ‘Market Participation’ in chapter “Key Findings: Overall Asian OTC Derivatives Market” for definition.

The dominance of FX is partly due to factors pertaining to real economic activities and partly by design. The multiple sets of rules and regulations in each country (most importantly in the areas of currency regimes, capital controls, and currency management) drive the need for hedging currency exposure. There are also many global and regional firms in Asia having operations in, and financing needs from, other countries—this provides an additional impetus and is only likely to grow with more integration of these countries with global markets as well as among the ASEAN bloc. In theory this should contribute to the growth of the interest rate segment. However, the bond markets in Asia, particularly the corporate debt markets, are underdeveloped, and liquidity is negligible in many countries. This prevents the growth of the interest rates derivative market.

Derivatives used by 25 top corporates in Asia not only reflect the importance of FX, but also the importance of interest rate derivatives given that large corporates typically issue debt. Outside of rates and FX, there are pockets of demand for OTC commodity derivatives from the non-financial sector. However, there is not much infrastructure for onshore OTC commodity derivatives trading in most countries, except for Singapore and Hong Kong. As a result, corporates trade on international exchanges or with international counterparties offshore.

Hong Kong and Singapore are trying to position themselves as hubs for regional and global activities. This competition is supported by a conducive regulatory environment and incentives for foreign/ international trading communities.

In the aftermath of the global financial crisis there have been calls to reform the OTC derivatives market. Different Asian countries have responded differently to the proposed changes, ranging from India, which has agreed to and already implemented many of the proposed changes, to Malaysia, which has expressed little interest to follow them in the near future claiming their market is not sophisticated enough to respond to these calls.

These changes will have implications for different market participants. Western banks are dominant in OTC derivatives in many of these Asian countries; some of them may have to scale down or even withdraw from some markets if new regulatory hurdles, capital charges, reporting requirements, and rising costs make their businesses untenable. A move towards Central Counterparty (CCP) clearing may engender concentration risk, and some of the countries may be vulnerable to it. Moreover, too many CCPs in the region may create operational issues for participants dealing in multiple countries because each country CCP will have its own requirements. The move towards electronic trading will likely affect voice brokers. Firms will need to upgrade post-trade processes including valuation and reporting. Even if these issues are sorted out in the long run, their short-term impacts may force some market participants to rethink their operations in Asia.

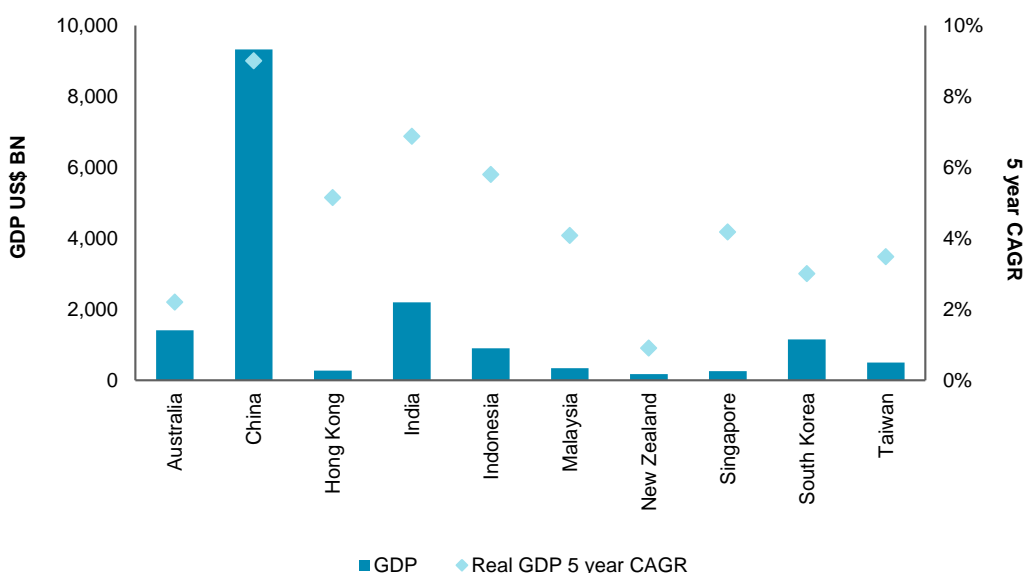
## BACKGROUND

This report was commissioned by ISDA, which asked Celent to design and execute a study on the Asian OTC derivatives markets on its behalf. The analysis and conclusions are Celent's alone, and ISDA had no editorial control over report contents.

## INTRODUCTION

Asian economies have gained prominence in the aftermath of the global financial crisis of 2008. Asia not only is the home of two of the world's largest economies, China and India, but also the fastest growing region in the world. This is all the more important as the Eurozone continues to grapple with the debt crisis, while recovery in the US remains moderate at best. The Asian region has therefore become the growth engine of the world; global investors as well as financial services firms are flocking to this region to capture its promise.

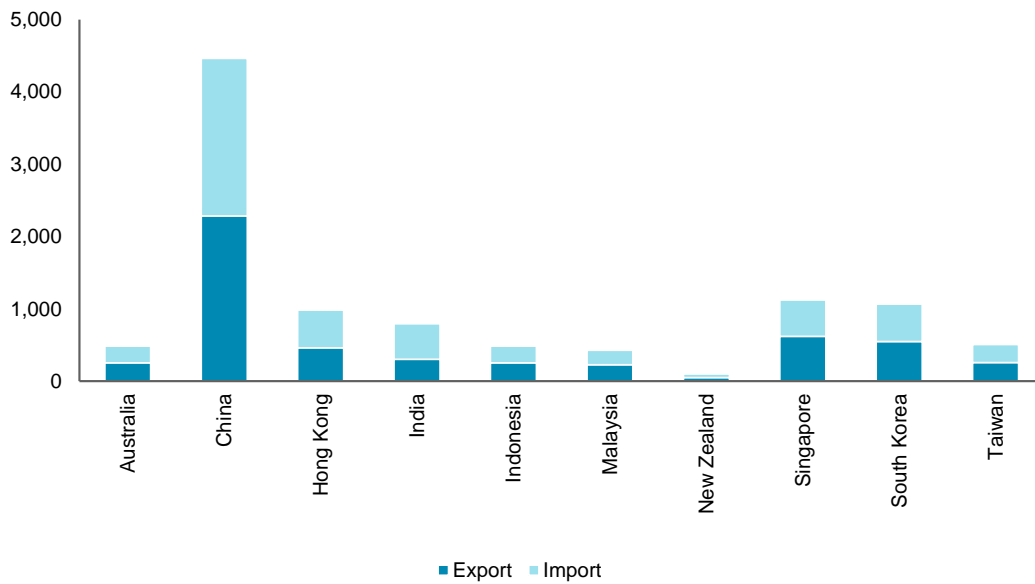
Figure 1: GDP and Growth Rates of Asian Economies



Source: Celent analysis based on central banks, IMF, World Bank, news sources

The high growth of the region is propelled by international trading, primarily the export of goods and services. This is particularly true of the two Asian giants. While China is the hub of global manufacturing, India is being called the world's back office due to its export of services. The evolution of the region over the past couple of decades has resulted in more integration, both regional and global—and this trend is likely to continue. Many firms from these countries are now expanding their horizons by setting up operations in other countries. Global integration, growing international trade, firm expansion—all of these will necessitate newer financing instruments. Some firms issue depository receipts to lure foreign investors, some issue foreign currency-denominated debt for financing their needs, while some use derivative instruments to manage risks.

Figure 2: International Trading Position of the Asian Economies



Source: Celent analysis based on central banks, IMF, World Bank, news sources

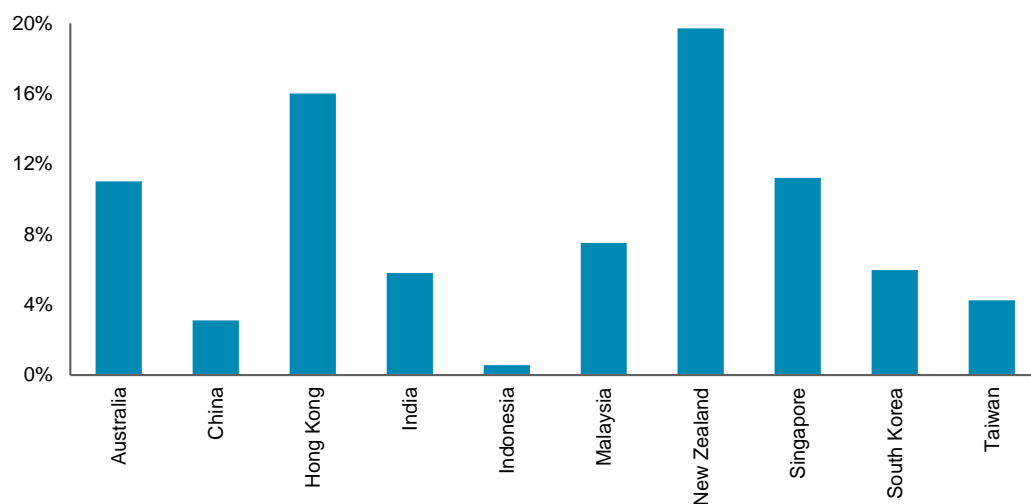
### ASIAN OTC DERIVATIVES LANDSCAPE

Not all countries have the same level of maturity when it comes to the development of financial markets. Countries like Australia, Hong Kong, and Singapore have advanced rapidly and are at par with any western economy with respect to maturity of financial markets. China, India, Indonesia, and Malaysia have lagged behind.

The primary reason for the lack of development of this second group has been a conservative regulatory environment—which has helped the emerging countries of the region in weathering and recovering from the financial crisis. The advanced economies have also recovered quickly, at times helped by government stimulus. Not every financial center in Asia is trying to attract global banking business; some countries are content to create barriers which serve to protect the local market and encourage trading in more exotic instruments elsewhere. However, the situation is slowly changing, and the authorities in many of these countries are embracing global standards to make their economies internationally competitive.

One measure of financial market development is the contribution of financial services to GDP. The divide between the two sets of countries in the region can be observed in Figure 3.

Figure 3: Contribution of Financial Services Sector to GDP



Source: Celent analysis based on central banks, IMF, World Bank, news sources

The Asian OTC derivatives market is not homogenous. Market structure, participants, drivers, regulations, and instruments of choice are country-dependent and highly divergent. In other words, the developed OTC derivatives markets in Singapore, Australia, and Hong Kong have more in common with London, New York, or Chicago than they do with developing neighbors in the region like Indonesia or Malaysia.

However, countries in the region do have things in common. Asian OTC derivatives markets are going to be strongly affected by developments in US and European markets as regulation continues, particularly in areas such as central clearing. In addition, they are united in their diversity; local factors are overwhelmingly important, with local regulations, local market drivers, and local customs having a strong impact on each country and thus on market participation.

The Asian OTC markets have developed in very different ways. Traders in London, New York, Chicago, or Frankfurt will not recognize the trading patterns in Asia. For example, OTC foreign exchange derivatives are a much larger share of the market than they are in North America and Europe. Also, since many Asian countries are large physical commodity producers, commodities outweigh other factors (although commodities, like FX, tend to be concentrated in Australia and Singapore). Use of commodity derivatives is particularly high among corporates; however, the share of commodity derivatives in overall OTC derivative trading is low due to the dominance of financial institutions engaged in OTC FX and interest rate derivatives.

But, this is just a taste of the many differences. In this report on the Asian OTC Derivatives Markets prepared by Celent for ISDA, we provide a detailed analysis of the size and scope of the Asian OTC derivatives markets. Ten Asian financial markets are covered in this report: Australia, China, Hong Kong, India, Indonesia, Malaysia, New Zealand, Singapore, South Korea, and Taiwan. The report also discusses the steps taken by these countries to respond to global calls to reform the OTC derivatives segment.

Moreover, based on a survey of financial and nonfinancial institutions, we describe how OTC derivatives are helping firms manage risk and how this is changing with the advent of central clearing initiatives and regulations. The survey results provide insight into how firms are positioning themselves in the evolving regulatory and economic environment.

## KEY FINDINGS: OVERALL ASIAN OTC DERIVATIVES MARKET

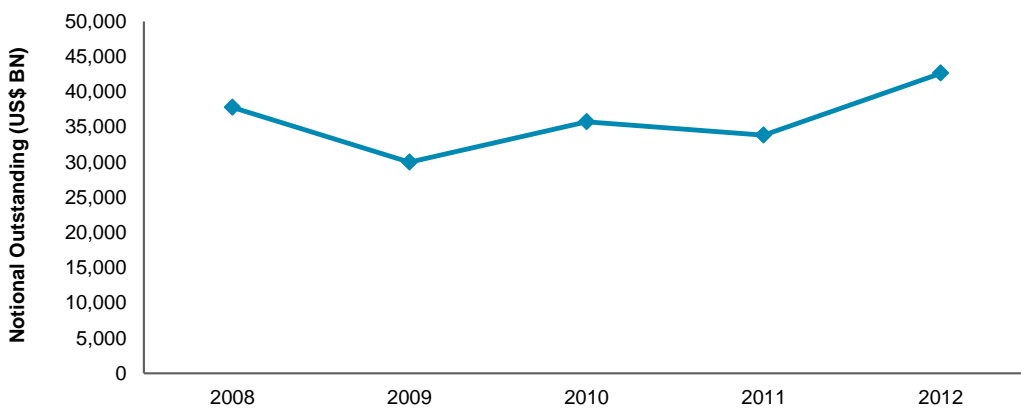
### MARKET SIZE AND SCOPE

The overall size of the Asian OTC derivatives market is over US\$42.6 trillion in notional outstanding. Notional outstanding is not a measure of the amount of OTC derivatives risk; rather it is a useful measure of the aggregate level of activity.

The covered markets include Australia, China, Hong Kong, India, Indonesia, Malaysia, New Zealand, Singapore, South Korea, and Taiwan. This figure includes OTC derivatives in FX, interest rates, equity linked, commodities, and credit default swaps (CDS).

After the global financial crisis in 2008, notional actually declined in 2009 before rising in 2010 and 2011. However, notional outstanding spiked in 2012 (over 25% from 2011 to 2012), resulting in a five-year CAGR of 3.1%. The recent spike in notional outstanding can be attributed primarily to growth in FX and interest rate derivatives, particularly Australian cross-currency swaps (52% of the increase).

Figure 4: Asian OTC Derivatives: Notional Outstanding



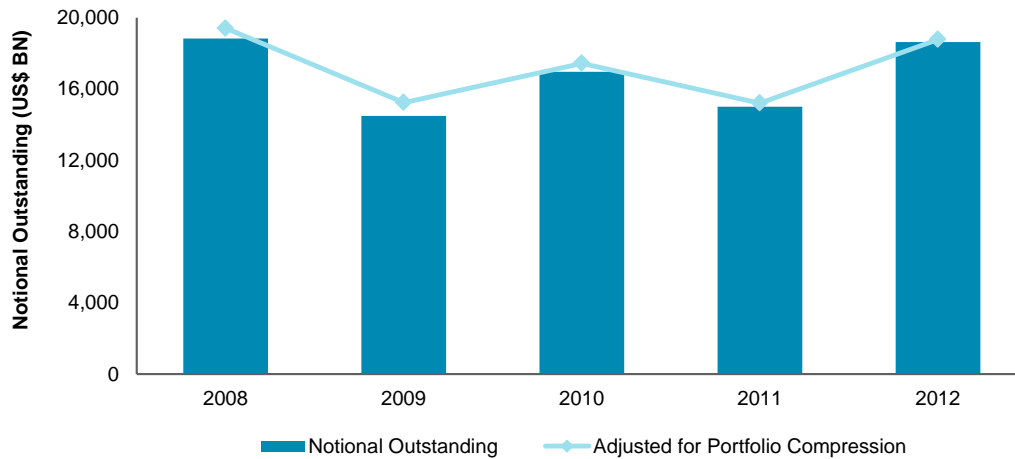
Source: Celent analysis based on central banks, BIS, IMF, World Bank, news sources

The above numbers do not account for portfolio compression.<sup>2</sup> Portfolio compression eliminates trillions of dollars from outstanding derivatives globally. To reflect this, we adjusted the notional outstanding figures for these Asian countries by adding portfolio compression values for interest rate and credit derivatives. We see portfolio compression reduces notional outstanding by approximately 3% for IR and CDS derivatives for these countries, as can be observed from the following figure.

<sup>2</sup>Portfolio compression reduces the overall notional size and number of outstanding contracts in derivative portfolios. Importantly, it does so without changing the overall risk profiles of these portfolios. This is achieved by terminating existing trades on single name reference entities and on indices and replacing them with a smaller number of new trades with substantially smaller notionals that carry the same risk profile and cash flows as the initial portfolio. (Source: ISDA)



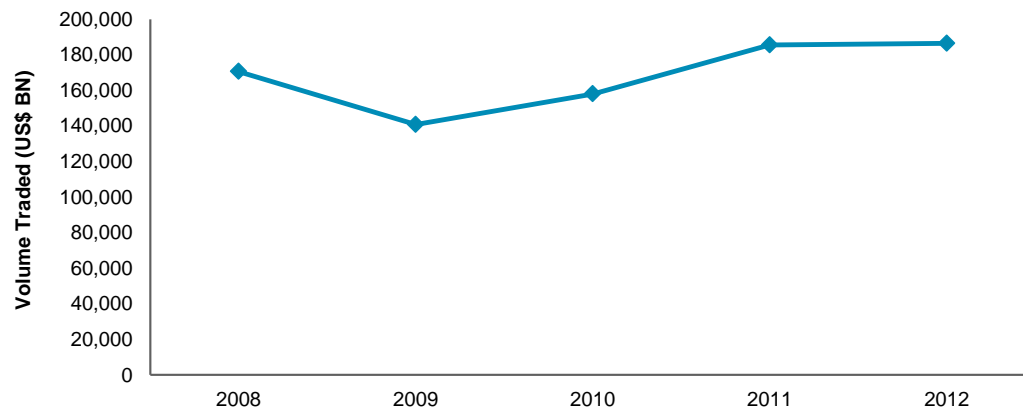
Figure 5: Portfolio Compression of IR and CDS



Source: Celent analysis, central banks, BIS, news sources

We also analyzed the trend in annual turnover, measured in US dollars, for the last five years. While dropping initially due to the global financial crisis, turnover has increased since 2008 at a CAGR of 2.2%. After an initial decline in 2009, 2010 and 2011 saw a strong rebound, and 2012 was also a modest growth year. In 2012, turnover was \$186 trillion, 4.4 times the notional outstanding for that year. This is primarily due to high turnover in Singapore and Australia, particularly for FX derivatives. This could be due to the development of cross-border transactions in these two countries, which results in more hedging activity from portfolio managers. Another possible factor could be carry trade activity, a scheme where investors raise funds through low-yielding currencies to invest in higher-yielding instruments. The 61% share of reporting dealers (explained later in this document) also suggests this phenomenon.

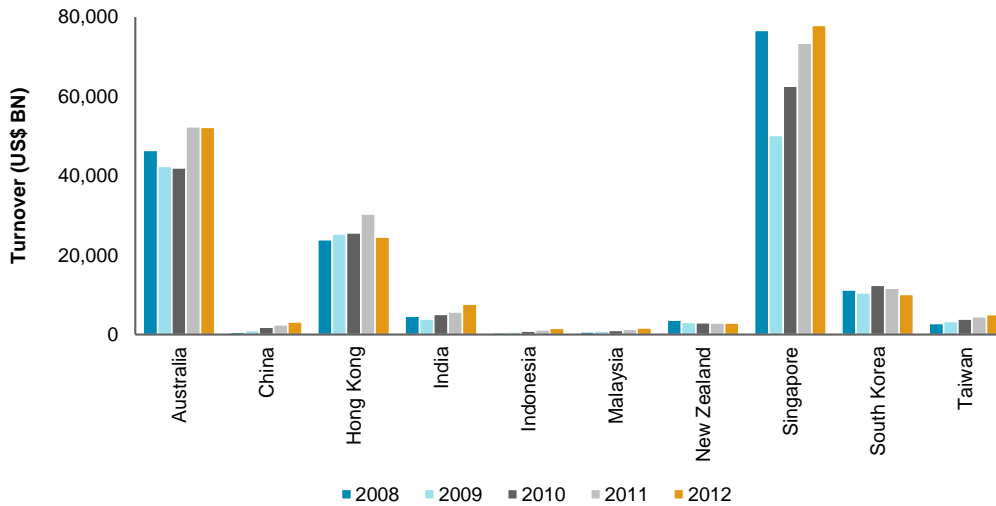
Figure 6: Asian OTC Derivatives: Annual Turnover



Source: Celent analysis based on central banks, BIS, IMF, World Bank, news sources

Figure 7 presents a more granular picture. The evolution of turnover over the last five years indicates a similar pattern. Turnover was adversely impacted for most countries in 2009, the immediate aftermath of the financial crisis. Things started to stabilize or improve in 2010 and 2011. By 2011, turnover had reached or surpassed 2008 levels for some countries; the upward trend continued in most but not all countries in 2012.

Figure 7: Asian OTC Derivatives: Turnover by Country



Source: Celent analysis based on central banks, BIS, IMF, World Bank, news sources

## A TALE OF FX

The primary driver of this growth in turnover traded is OTC foreign exchange derivatives.<sup>3</sup> Foreign exchange derivatives account for two-thirds of overall OTC turnover in Asia. In fact, between 2008 and 2012, OTC FX instruments accounted for over 80% of the growth in turnover. While non-FX products have recovered and enjoyed growth since 2008, FX has seen the biggest change and the fastest growth, with a 3% CAGR since 2008.

Some FX activity is repatriation of funds from offshore bond issues. Australia is particularly active in this regard. Not just corporates but also banks issue bonds offshore, and thus need to do FX transactions to get the money back into AUD.

Table 1: Size of Offshore Bond Market

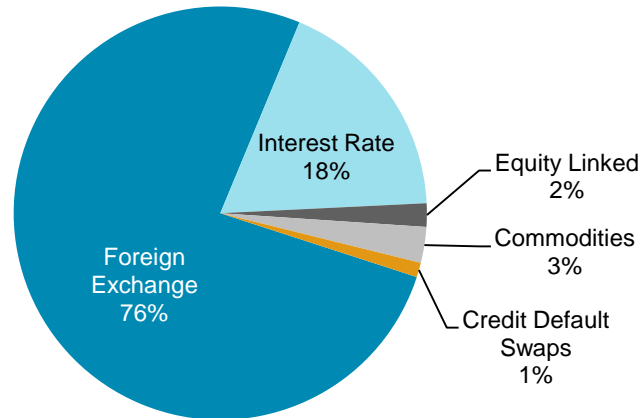
Country	Size of Offshore Bond Market (US\$ bn)	Country	Size of Offshore Bond Market (US\$ bn)
Australia	26.9	Malaysia	25.5
China	3.3	New Zealand	21.4
Hong Kong	49.7	Singapore	90.0
India	19.5	South Korea	167.8
Indonesia	37.8	Taiwan	9.5

Source: Celent analysis based on central banks, BIS, AsianBondsOnline, news sources

In 2012, FX OTC Derivatives accounted for a whopping 76% of Asian turnover, with interest rate derivatives a distant second at 18%. Other asset classes are in single digits.

<sup>3</sup>We have followed BIS's definition of FX instruments in this report. All derivative contracts involving the exchange of currencies in the forward market are reported under foreign exchange instruments. Foreign exchange derivatives include outright forwards, foreign exchange swaps, currency swaps including cross-currency interest rate swaps, and currency options.

Figure 8: Asian OTC Derivatives: Share of Turnover



Source: Celent analysis based on central banks, BIS, IMF, World Bank, news sources

In other words, we believe Asian OTC derivatives are really a “tale of FX.” The dominance of FX is partly due to factors pertaining to real economic activities and partly by design. The multiple sets of rules and regulations in each country (most importantly in the areas of currency regimes, capital control, and currency management) drive the need for hedging currency exposure. Also there are many global and regional firms in Asia that have operations in and financing needs from other countries; this provides an additional impetus and is only likely to grow with more integration of these countries with global markets as well as among the ASEAN bloc. In theory this should contribute to the growth of the interest rate segment. However, the bond markets in Asia (particularly the corporate debt markets) are underdeveloped, and liquidity is negligible in many countries. This prevents the growth of the interest rates derivative market.

Outside of rates and FX, there are pockets of demand for OTC commodity derivatives from the real sector. However, there is not much infrastructure for onshore OTC commodity derivatives trading in most countries. As a result, corporates trade on international exchanges or with international counterparties offshore.

### COUNTRY TURNOVER PROFILES BY PRODUCT

Across Asia, Australia, Hong Kong, and Singapore are the most dominant financial centers and tend to concentrate turnover, though each has their specialties. Australia and Singapore combined account for over two-thirds of the FX activity by turnover, with Singapore by far the biggest market. In fact, the Singapore OTC FX market accounts for over 40% of the turnover of OTC derivatives in the entire region.

In interest rates, concentration is high with Australia and Singapore the most active markets, at 44% and 32% of the total respectively. South Korea, Hong Kong, India and Taiwan are also somewhat active in the IR market.

The commodities market, while small in turnover at only 3% of the market, is critical to the real economy in Asia. It is also highly concentrated, with Singapore (60%) and Australia (38%) accounting for 98% of the total market.

The OTC equity-linked market is relatively small but less concentrated and spread among Hong Kong (34% of the market), Singapore (33%) and Australia (26%).

The relatively tiny CDS market is shared among these same markets, but with Singapore dominant at 56% market share, followed by Hong Kong with 24% and Australia with 20% of the market.

Table 2: Asian OTC Derivatives: 2012 Share of Product Turnover by Country

Market	Foreign Exchange	Interest Rate	Equity Linked	Commodities	CDS
Australia	24%	44%	26%	38%	20%
China	2%	2%	0%	0%	0%
Hong Kong	15%	5%	34%	1%	24%
India	4%	4%	0%	0%	0%
Indonesia	1%	0%	0%	0%	0%
Malaysia	1%	2%	0%	0%	0%
New Zealand	2%	1%	0%	0%	0%
Singapore	43%	32%	33%	60%	56%
South Korea	6%	6%	4%	0%	1%
Taiwan	3%	4%	3%	1%	0%

Source: Celent analysis based on central banks, BIS, IMF, World Bank, news sources. Totals may not equal 100% due to rounding.

## MARKET PARTICIPATION

In this section Celent analyzes the share of different segments in Asian OTC derivatives turnover. Our research assessed reporting dealers, financial institutions (banks and securities firms, central counterparties, insurance firms, hedge funds, and others) as well as non-financial customers.<sup>4</sup>

<sup>4</sup>Dealers (or reporting dealers) are commercial and investment banks and securities houses, including their branches and subsidiaries and other entities that are active dealers.

Other financial institutions: Financial institutions not classified as reporting dealers, including central counterparties (CCPs), banks, funds, and non-bank financial institutions which may be considered as financial end users (e.g., mutual funds, pension funds, hedge funds, currency funds, money market funds, building societies, leasing companies, insurance companies, and central banks).

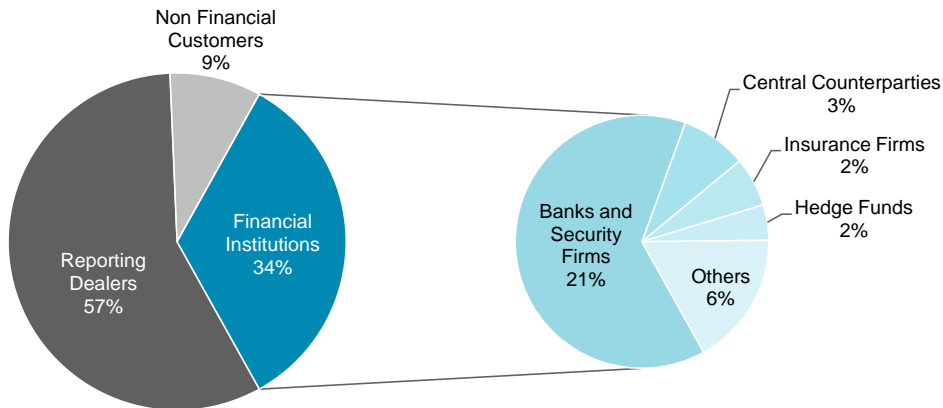
CCPs are entities that interpose themselves between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer.

Hedge funds are mainly unregulated investment funds that typically hold long or short positions in commodity and financial instruments in many different markets according to a predetermined investment strategy and that may be highly leveraged.

Non-financial customer: Any counterparty other than the ones mentioned; in practice mainly corporate firms and governments. (Source: BIS)

Not surprisingly, reflecting their role as intermediaries, reporting dealers account for 57% of the turnover of OTC derivatives in Asia. Financial institutions represent 34% of turnover (banks and securities firms are 21%), and non-financial customers account for 9% of the total.

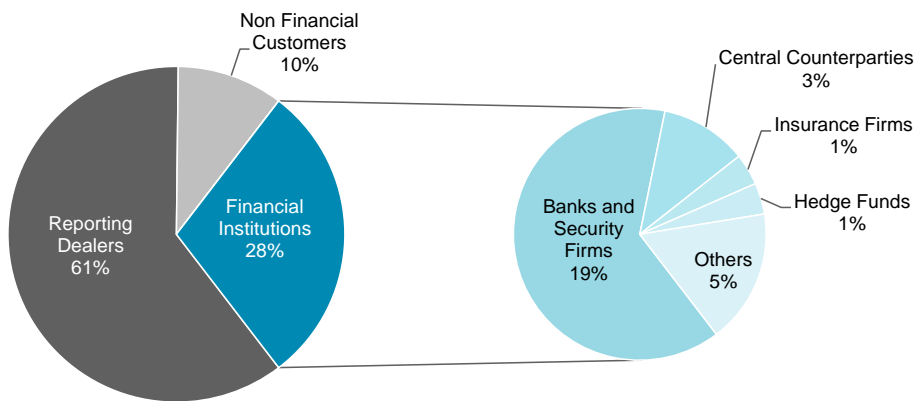
Figure 9: 2012 Share of Total Turnover Traded, by Participant: All Instruments



Source: Celent analysis based on central banks, BIS, IMF, World Bank, news sources

Because FX reflects the majority of transaction volume, the participant breakdown is similar to the larger market, but with slightly higher dealer concentration at 61% and less representation by financial institutions.

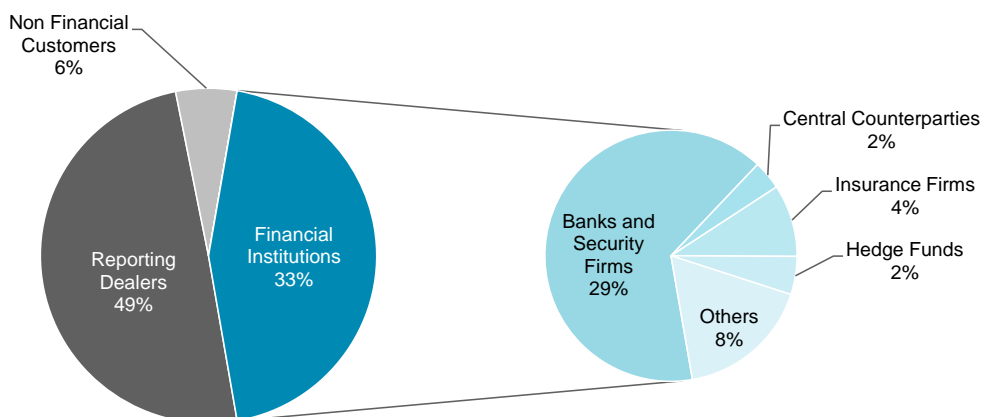
Figure 10: 2012 Share of Total Turnover Traded by Participant: FX



Source: Celent analysis based on central banks, BIS, IMF, World Bank, news sources

The breakdown of transaction volumes in interest rates shows dealers at 49% and the largest concentration of financial institutions at 33%. Banks and securities firms are particularly well represented in interest rates at 29% of trading turnover.

Figure 11: 2012 Share of Total Turnover Traded by Participant: Interest Rates



Source: Celent analysis based on central banks, BIS, IMF, World Bank, news sources

Thus, while dealers account for the largest share of all OTC derivatives followed by banks and securities dealers, the breakdown by participants does vary somewhat by product. FX and commodities are the areas where we see the highest presence of non-financial customers, reflecting the importance of these products to the non-financial sector.

In commodities specifically, we believe demand for OTC derivatives arises from the non-financial sector. However, in most countries there is not much infrastructure for “in country” OTC commodity derivative trading, except for Singapore and Hong Kong. As a result, many corporates trade at international exchanges or with international counterparties, which may not be reflected in the data.

Table 3: Asian OTC Derivatives: 2012 Share of Product Turnover by Participant Type

Market	Foreign Exchange	Interest Rate	Equity Linked	Commodities	CDS
Dealers	61%	50%	55%	58%	48%
Banks/ Securities	19%	29%	24%	18%	30%
Central Counterparties	3%	2%	3%	4%	2%
Insurance firms	1%	4%	3%	1%	6%
Hedge funds	2%	1%	3%	2%	3%
Others	5%	7%	6%	5%	7%
Non-financial customers	10%	6%	6%	11%	4%

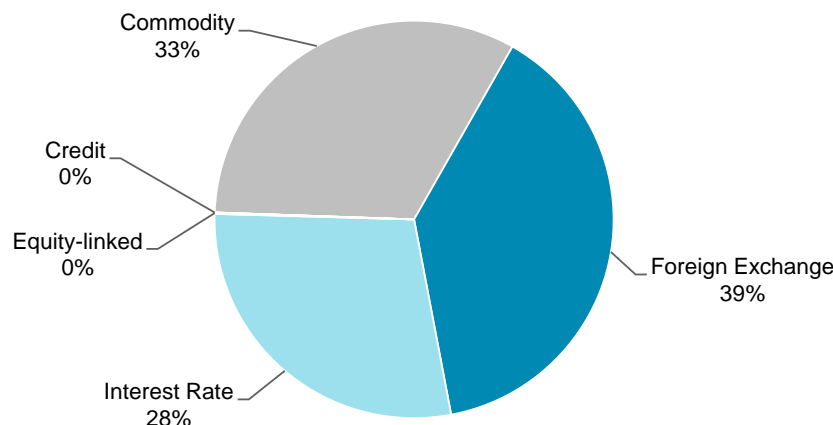
Source: Celent analysis based on central banks, BIS, IMF, World Bank, news sources. Totals may not equal 100% due to rounding.

## OTC DERIVATIVES HELD BY TOP ASIAN CORPORATES

To further dissect OTC derivatives use by corporates we have examined the five leading corporations in each market that also appear in the Fortune Global 500, a total of 25 firms. Although any measure of leading corporates in Asia includes the presence of banks in Australia, China, and India, we have excluded them from this analysis to get a clearer sense of non-financial market participation.

Derivatives used by the 25 top corporates in Asia not only reflect the broad importance of FX (39%) to the region, but also the importance of commodity derivatives (33%), given that large corporates are major participants in the energy and manufacturing sectors of the real economy. Next in line are interest rate derivatives which are significant for services firms (such as telecoms). Credit and equity-linked derivatives are de minimis. Thus, in a snapshot, these 25 top firms reflect the use of OTC derivatives as mirroring the real economies of Asia, given the multitude of currencies, the need to repatriate funds, and the issuance of debt in the market for financing.

Figure 12: Fair Value<sup>5</sup> of OTC Derivatives Holdings: 25 Top Asian Corporates  
Total FY 2012: US\$42.6B



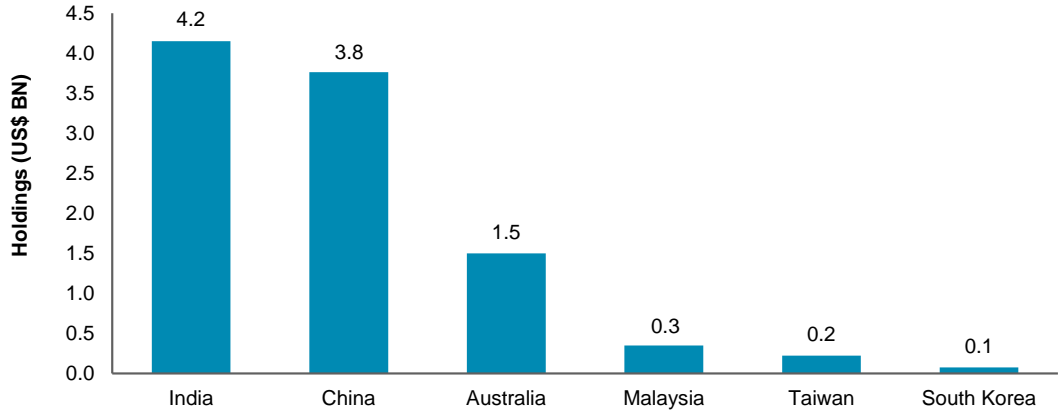
Source: Celent analysis based on annual reports

We have further broken down the corporates by individual markets based on the dollar amount of notional on the balance sheet. The average of the top Indian corporates in terms of fair value held is US\$4.2 billion, followed by China's top corporates at US\$3.8 billion. The size of both Indian and Chinese corporates reflects the presence of large energy companies and their FX and commodities hedging positions as top corporates. Indian energy companies have particularly large FX positions, and Chinese energy companies are particularly active in commodities.

<sup>5</sup>Fair Value is the price of a financial instrument that a buyer would be willing to pay and a seller would be willing to accept on the open market. The estimate of fair value should take into account prices for similar assets and valuation results. In derivatives, a Fair Value Hedge bases its periodic settlements on changes in value of an asset or liability. This type of hedge is most often used to offset the price risk of a realized asset or liability or an unrealized firm commitment.

Corporates in Malaysia, Taiwan, and South Korea tend to hold smaller OTC derivatives positions, though Malaysia and Taiwan corporates are active across FX interest rate and commodities. Major South Korean firms, including Samsung, show a preference for exchange-traded derivatives.

Figure 13: Average Fair Value of OTC Derivatives Holdings: 25 Top Asian Corporates, FY 2012



Source: Celent analysis based on annual reports



## OTC DERIVATIVE MARKET REFORMS

Asia-Pacific members of the G20 (including Australia, China, India, and Korea, but excluding Indonesia) have all taken concrete steps toward implementing the G20 commitments of central clearing and trade reporting. The financial centers of Hong Kong and Singapore, though not G20 members, have also committed to these market infrastructure build outs. All of these jurisdictions have been careful not to get ahead of the US or Europe in terms of implementation timelines. Other jurisdictions such as Malaysia and Taiwan have made commitments in terms of trade reporting, but not clearing. This section discusses country-specific measures that have been proposed and implemented so far in this regard.

Australia passed legislation for G-20 OTC derivatives commitments early this year, giving the government the power to mandate trade reporting, central clearing, and trade execution obligations for some OTC derivatives. The regulatory stance is to mandate CCP clearing for Australian dollar IR derivatives, but let market forces decide whether the clearing should take place at onshore CCPs, offshore CCPs, or both. Regulators are recommending mandatory trade reporting for all OTC derivatives. The largest domestic financial institutions currently do some clearing through client clearing services, rather than as direct clearing members. Celent has learned that some institutions are considering direct clearing membership. One driver for this is CCP requirements in foreign jurisdictions in which they trade.

China has had trade reporting of FX trades through CFETS since 2005. CFETS also captures the vast majority of domestic IR trades. Shanghai Clearing House has been designated by the central bank to be the clearing house for OTC derivatives. The regulators are currently reviewing draft clearing house rules. RMB IRS will likely be the first cleared product.

The regulators in Hong Kong are in the process of introducing a legal framework which would include mandatory clearing, reporting, and possibly electronic trading. Some platform providers launched services in the country in 2011. The local stock exchange HKEx is making preparations for the launch of RMB NDFs and IRS clearing by setting up a new OTC clearing house independent of its existing houses; this will likely result in some OTC trading and/or clearing moving to the exchange. HKEX will provide clearing services for offshore OTC RMB derivatives. The first clearing service is in RMB IR Swap and will be expanded to NDF soon. Its trade repository will be a centralized registry managed by HKMA that maintains an electronic database of OTC derivatives transactions.

India has made reasonable progress in implementing G-20 recommendations. A centralized counterparty, CCIL, is already performing the functions of reporting and clearing of trades. FX forwards are settled on a guaranteed basis at present; IR trades will be centrally cleared in the future, and CCIL already provides settlement netting services. Central clearing for CDS will be taken up at a later stage. Regulators are trying to incentivize central clearing by assigning lower risk weights for such trades. CCIL is also in the process of developing trade compression services. Standardization of products will be implemented gradually. Most of the FX instruments traded in the country are plain vanilla products without much need for standardization. CDS products are standardized, while the process of complete standardization of IR products is currently under way.

The Malaysian Capital Markets and Services (Amendment) Act 2011 (CMSA) is awaiting Royal Assent and may take two to three more years before coming into force. This act

appoints the Securities Commission (SC) for overseeing OTC derivatives and also tasks the SC with establishing a trade repository. However, central clearing is not currently contemplated because the scale of the Malaysian market is not sufficient to make this viable. This act, once implemented, is likely to have a significant impact on the country's OTC derivative trading practices.

Regarding G-20 commitments, New Zealand has not indicated it will implement any measures, other than to say that it is monitoring developments in other countries and will “work to ensure that New Zealand banks have access to the appropriate payments infrastructure.” The country introduced a Financial Markets Conduct Bill, which among other things will regulate OTC derivatives and license market participants and platforms. It is expected to pass in 2013.

Singapore has pushed for central clearing of OTC products; the Singapore Exchange (SGX) has begun central clearing of OTC derivatives with its AsiaClear central counterparty clearing. At the same time it must be mentioned that Singapore is not planning to completely mirror the G-20 reforms, and is cautious about ensuring that the reforms do not hamper growth of this market in the country. For example it has not proposed mandatory trading of OTC derivatives at this stage. It also wants to exempt foreign exchange forwards and swaps from the clearing obligation. Non-local CCPs are allowed to operate in the country and compete with domestic entities (like SGX).

Singapore has pushed for central clearing of OTC products; the Singapore Exchange (SGX) has begun central clearing of OTC derivatives with its AsiaClear central counterparty clearing. At the same time it must be mentioned Singapore is not planning to completely mirror the G-20 reforms and is cautious about ensuring that the reforms do not hamper growth of this market in the country. Like the US, it wants to exempt foreign exchange forwards and swaps from the clearing obligation. Non-local CCPs are allowed to operate in the country and compete with domestic entities (like SGX). Singapore also has legislation in the works to mandate trade reporting and has already licensed more than one trade repository.

In Taiwan, regulators do not have a detailed time plan for OTC central clearing yet, and central clearing is unlikely in the near future. This is because the OTC products traded in the country are relatively simple and tightly regulated. The exchange is likely to launch some derivatives products that are similar to products in the OTC market, which can build a link between the OTC and Exchange markets.

These changes in different countries will have implications for different market participants. Western banks are dominant in OTC derivatives in many of these Asian countries; some of them may have to scale down or even withdraw from some markets if new regulatory hurdles, capital charges, reporting requirements, and rising costs make their businesses untenable. Some countries like India, China, and South Korea may force OTC derivatives to be cleared onshore; this may create conflicts between local regulators and home country regulators for some of these banks. Their withdrawal would likely impact liquidity and turnover adversely. Trade reporting already takes place through Gretai Securities, an MOF spin off.

Additionally CCPs may give rise to concentration risk, and some of the countries may be vulnerable to this. Moreover too many CCPs in the region may create operational issues for participants dealing in multiple countries because each country CCP will have its own requirements. The move towards electronic trading will likely affect voice brokers. Collateral funding requirements will increase due to CCPs and the coexistence of cleared and uncleared OTC derivatives. Firms will need to upgrade post-trade processes including valuation and reporting. Even if these issues are sorted out in the long run, their short-term impacts may force some market participants to rethink their operations in Asia.

## HOW ASIAN FIRMS ARE MANAGING RISK USING OTC DERIVATIVES

### PRIMARY USE

Celent conducted a survey of market participants to determine use patterns of OTC derivatives in Asia. The charts in this section are based on some 20 responses, split fairly equally between sell side and buy side, encompassing various OTC products and in emerging as well as developed countries across Asia.

In our conversations, we found that different market participants have varying reasons for using OTC derivatives in Asia. Table 4 summarizes the primary purpose of derivatives used by participant type, including dealers, hedge funds, commercial banks, central banks, and corporates.

Table 4: Summary of Asian Drivers of the Use of OTC Derivatives

Asian Market Participant	Primary Purpose of Derivatives Use
Banks, Brokers (Dealers)	Traditional role as market-makers across multiple OTC derivatives products; participate in dealer-to-dealer and dealer-to-client markets; demand comes from serving corporate customers including other FIs and issuers of offshore and onshore instruments. Offshore investors look for relatively high yield while onshore investors look for diversification.
Hedge Funds (Financial Institution)	Engage in OTC derivatives to return superior risk-adjusted returns to investors; OTC instruments can be used in tandem with cash products
Commercial Banks (Financial Institution)	Transact in OTC derivatives for proprietary trading purposes and to manage assets, liabilities and structural positions. Hedging involves managing exposures to interest rate, foreign currency, and credit risks arising from banking activities.
Central Banks (Financial Institution)	More limited; use FX swaps for two main purposes including domestic liquidity management and shifting settlements forward in time.
Corporates (Non-Financial Institution)	<p>Use multiple OTC instruments for hedging; use cross currency interest rate swaps to hedge interest rate risk and cash flow hedges to hedge currency risk arising from issued bonds.</p> <p>Use cross currency swaps as net investment hedges for foreign currency exchange risk on international operations.</p> <p>Use forward foreign exchange contracts as cash flow hedges for exposure to foreign currency exchange risks arising from forecasted or committed expenditure.</p> <p>Use OTC commodity derivatives, often with international counterparties and exchanges to hedge exposure due to commodity import and export.</p>

Source: Celent, market participants

Dealing firms use OTC derivatives widely to generate profits through market-making for clients, including investors and issuers. At the same time, dealers may hedge their own positions. Hedge funds in Asia engage in OTC derivatives to return superior risk-adjusted returns to investors, often in tandem with cash products such as bonds. Commercial banks primarily transact for proprietary trading purposes, to manage assets and liabilities, and to hedge. Central bank use is more limited, and we see FX swaps used for multiple purposes.

Non-financial firms and corporates engage in OTC derivatives extensively to hedge a number of different types of risk using different products. As a Malaysian securities firm told us, “Corporates use them for customization: they can be tailor made to the right

structure and quantity for them. A lot of corporates engage in all these hedging activities in an infrequent manner, so they have not set up a trading market for exchange trading. Also exchanges have fluctuations in margin, which we understand corporates do not like. A lot of underlyings are not traded on the exchange; even if they were, they would be offshore. So in our countries (Malaysia, Indonesia, Singapore, and Thailand) it is not easy for those corporates, regulatorily or operationally, to transact, say commodity futures on the Chicago board of trade. So we are simply the intermediary for them.”

## CHANGING NEEDS AND BEHAVIOR OF PARTICIPANTS

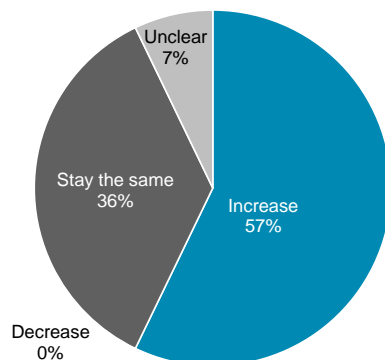
As the market changes, however, participants are changing their use of OTC derivatives accordingly. We asked participants about their future plans for the use of OTC derivatives amidst regulatory drivers (including central clearing), new trading methods, and the rise of electronic platforms.

A majority (57%) of respondents predicted that their use of OTC derivatives would increase, and about a third said it would stay the same. Most telling, none said their use would actually decrease.

A regional sell side firm thinks its turnover will increase, primarily driven by customer activity; they say, “where we operate is a bright spot in the global economy, so corporates are expanding, the sophistication level is growing, their level to perform better risk management is also increasing. These all will create more demand for legitimate hedging. On the market making side, we expect prop trading to drop, but market-making activities to support corporates to increase. All in all we expect volumes to increase due to a legitimate increase in corporate demand. There will be an adjustment among the different elements of buy and sell side and corporate demand.” These observations can be generalized for most countries in the region.

Figure 14: Expected Use of OTC Derivatives

Over the next few years, do you expect that your use of OTC derivatives will stay the same, increase or decrease?



Source: Celent survey of OTC derivatives use in Asia

Respondents shared their views on the impending regulations related to OTC derivatives and their potential impact on their business. A tiny fraction (8%) stated that global regulations (mandated CCP clearing) would negatively impact their use of OTC derivatives, while 58% said there would be no impact, and 34% said they were likely to trade more.

According to a large Indian corporate, “my primary objective is how to manage my exposure. If I need to hedge an exposure, the need for central clearing or otherwise will not make me alter my hedging plan.”

One Hong Kong based asset manager expects turnover will remain the same or slightly decline. They said, *“it will certainly not increase. Volume may dry up; there may be less competitive pricing. There may be higher margin requirements which will drive people out of the business, so fewer people in the game.”*

An Australian bank thinks the *“regulatory impact will be much wider than we usually think. It will shift the markets substantially, so entry of new participants will change what becomes more attractive and less attractive.”* The bank thinks its own use of OTC derivatives is not likely to be impacted by the newer regulations.

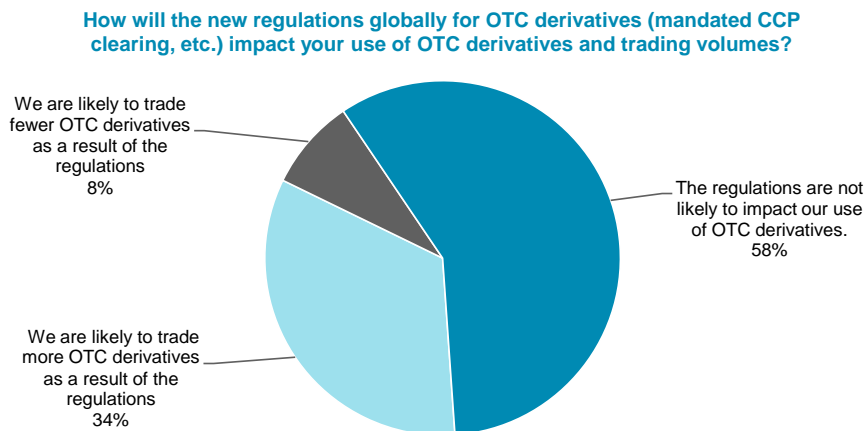
A Malaysian securities firm had this to say: *“A lot of these regulations will definitely increase the cost of doing business, and therefore the regulations would potentially reduce market liquidity; so there are implications in that sense. Clients may get slightly more expensive contracts, and the market might become slightly more volatile because of less liquidity. This is one challenge we might see. But in the local currency space, ours is a young market, and it is being supported by net growth in the underlying economic activity, so the demand for hedging can outweigh the regulatory burden.”*

The head of portfolio trading at an Australian bank said, *“our underlying core franchise will have very little change. But, it might depress volumes in certain types of trading, whereas in homogenous products trading might go up. Net, not much will change.”*

Representatives from three banks in China, India, and Taiwan all think that they are likely to trade more OTC derivatives as a result of the regulatory changes.

It can be inferred from these observations, that the OTC activities pertaining to the real economy are not likely to be impacted much by regulatory changes; however, activities like prop trading may be adversely impacted due to higher costs and possible reduction in liquidity. This should not come as a surprise because the primary objective of some of these regulatory changes is precisely to discourage speculation in this segment and encourage hedging activities.

Figure 15: Expected Effect of Regulation

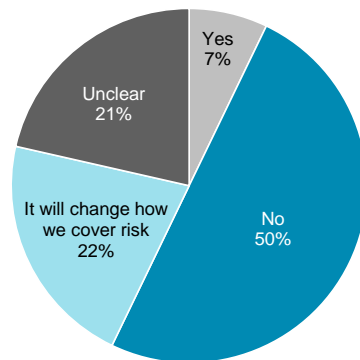


Source: Celent survey of OTC derivatives use in Asia

Fifty percent of respondents stated that the new regulations would not adversely affect their ability to cover risk, while only 7% stated that it would adversely impact them; 22% said regulations would affect *how* they cover risk. A fairly large percentage (21%) was uncertain. Some respondents expressed dissatisfaction regarding the lack of information from counterparties on how they will implement regulatory changes.

Figure 16: Expected Ability to Cover Risk

Will the new regulations adversely affect your ability to cover risks?



Source: Celent survey of OTC derivatives use in Asia

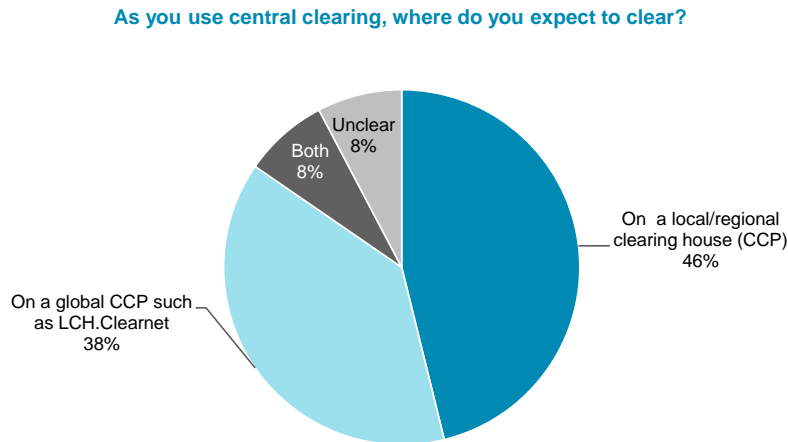
Market participants also reflected the likelihood (46%) of using local and regional clearinghouses as opposed to global clearinghouses (38%). While this may reflect the available options in the marketplace and general awareness, it may also depend on the counterparties and the details of specific transactions as well. An Australian bank summed this up: *“we will use a mixture (of local and global clearinghouses). This will be driven by where the market liquidity lives, not solely on our preference. We have different needs for different products. There is no Australian clearing house for OTC derivatives. An Australian OTC clearing house would need to have characteristics relative to offshore otherwise it wouldn’t be developed. The first threshold is that we are comfortable with the risk management position of the clearing house. Once comfortable with that, the second factor is where the liquidity is: the amount of volume going into an exchange relative to other venues.”*

An Indian oil company’s observations build on this point: *“We don’t find anyone local who does clearing, especially for oil. If new entrants come, we may consider. The driving factors to move to exchange clearing are twofold: one is to stay away from a trade in an environment when you’re not sure which counterparty is going to collapse, so it makes sense to use exchange clearing. Also, there are transaction costs; without clearing you need to pay margins up front, so CCP reduces clearing costs. The pros and cons of these two factors are how we decide to trade each trade. Also sometimes very good trades come up on exchanges, so we might wish to pick them up without lengthy negotiations and paperwork; this is a driver to use exchange clearing.”*

However, some participants are not certain how the situation is going to evolve. A Malaysian financial services firm mentioned: *“For us the dominant positions are in local currency, and these markets are very fragmented. We do not know yet how this will evolve. We have conversations with regulators in different countries, and regulators in different countries are moving at different speeds on this. I would not say we are moving to a global CCP; I don’t know if these countries (Indonesia, Malaysia, and Thailand) would ever want their local contracts cleared on a global CCP. I’m sure they will have a Southeast Asia-centric CCP, but the location of that can also produce a lot of nationalistic issues.”*

The Hong Kong based asset manager is also unclear. According to them, “the move towards CCPs will largely be dependent on the counterparty and the product. We have pushed very hard to get clear answers and there are zero clear answers—we’re preparing for it, putting documentation in place. But we can’t get an answer from any of our counterparties. No one will tell us what is going on.”

Figure 17: Expected Clearing Venues

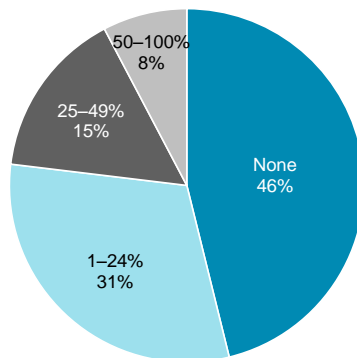


Source: Celent survey of OTC derivatives use in Asia

Market participants also reflected a relatively low portion of transactions being centrally cleared at the present time. Almost half (46%) claim that no transactions are centrally cleared. Also, 31% claim that less than a fourth of transactions are cleared, which means that three-quarters of the market do not actively clear transactions at the present time. A small percentage (8%) is very active in clearing OTC derivatives transactions, with over 50% of transactions cleared.

Figure 18: Current Use of Central Clearing

**What percentage of your transactions are centrally cleared at the present time?**



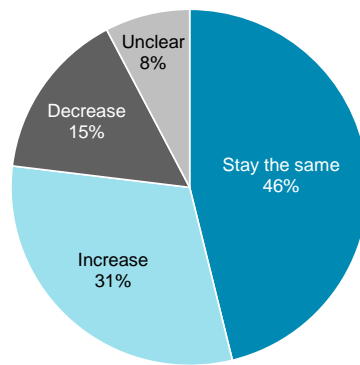
Source: Celent survey of OTC derivatives use in Asia

Almost a third (31%) said that they expect their use of centrally cleared OTC derivatives to increase, while 46% expect it to stay the same. In other words, 77% of respondents believe their use will either stay the same or increase, pointing to adoption of CCPs in the future. Only 15% expect it to decrease and only a small fraction are unclear.

An Australian bank said, “We expect central clearing to increase markedly in 2013. We are not a member of any clearing house, so are connecting through clearing brokers.” However, a Malaysian firm had a word of caution, saying, “we think it will increase; we are quite favorable on central clearing as the way to minimize counterparty credit risk; however we have not seen a good development of central clearing in Asia yet. We use different local currencies, and this has lots of regulatory issues when we do cross-border. A local CCP in each country would not make sense as that would waste a lot of collateral.”

Figure 19: Expected Use of Central Clearing

Over the few years, do you expect that your use of centrally cleared OTC derivatives will stay the same, increase or decrease?

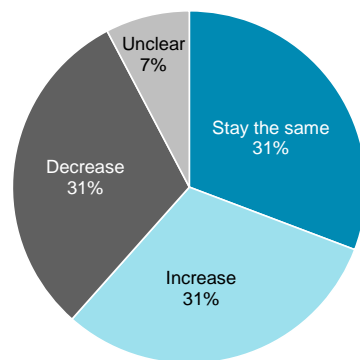


Source: Celent survey of OTC derivatives use in Asia

Going forward, 31% of respondents expect that their use of non-centrally cleared OTC derivatives will decrease, reflecting the potential rise of more standardized products in the region. However, an equally large percentage expects it to increase or stay the same, reflecting some indecision in the future of the marketplace.

Figure 20: Expected Use of Non-Centrally Cleared OTC Derivatives

Do you expect that your use of non-centrally cleared OTC derivatives will stay the same, increase or decrease?

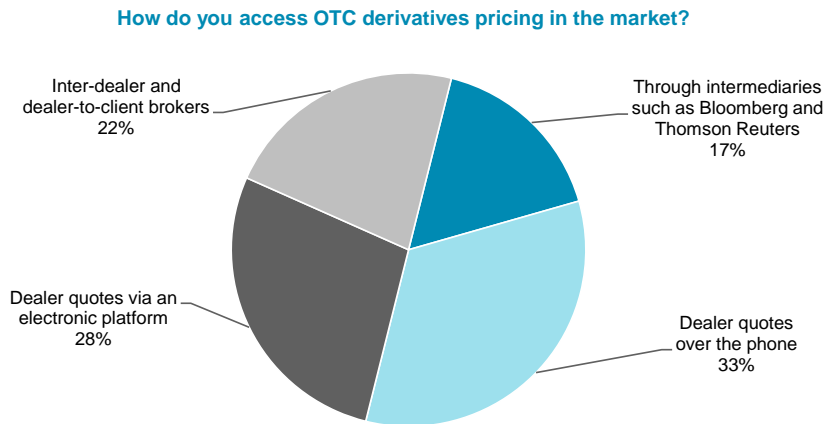


Source: Celent survey of OTC derivatives use in Asia



In terms of access to prices, we see a diverse marketplace with respondents having a variety of options available to them and expressing no consolidated choice. Overall, we observe a slight favoritism for dealer quotes (33%), though electronic platforms for dealer quotes are also popular at 28%. Twenty-two percent expressed that they access interdealer and dealer-to-client brokerages or platforms. Intermediaries such as Thomson Reuters and Bloomberg are accessed by 17% of respondents.

Figure 21: Access to OTC Derivatives Pricing



Source: Celent survey of OTC derivatives use in Asia

Exactly half (50%) of the respondents said they trade OTC derivatives through bilateral trading, while 20% said they used B2B or B2C dealers; 30% of respondents used both means.

According to an Australian conglomerate, *“Bilateral is easier to negotiate, do larger size trades and keep confidential from the market. The strength of using a B2B is price transparency. The weakness is lack of ability to negotiate”*.

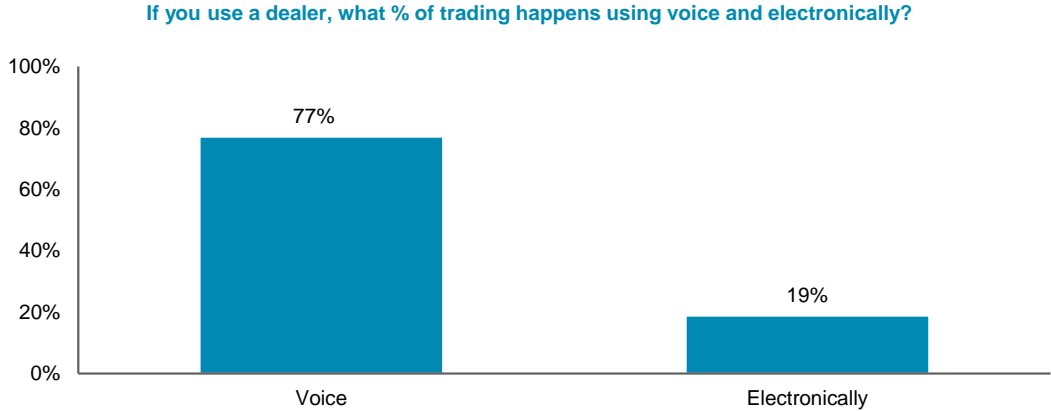
An Australian bank predicts large changes in the future: *“OTC derivatives are traded by a large number of counterparties, so these products lend themselves to electronic trading, because of the sheer number of users. AUD products are less widespread, about 5 or 6 counterparties have 60% of the market; so fewer users—a relatively old fashioned market exists due to its concentration. As Dodd-Frank comes in and trading venues appear, more business will tend to move electronic. Participants will change too, to non-bank financial participants such as funds trading for investment. Execution methodologies will become more compelling. Bilateral trading requires a good credit rating, but CCP removes the credit requirement. So potentially we will have a much wider group of participants.”*

Today, while the OTC markets in Asia are more voice-driven, respondents do use the electronic platforms of dealers, with respondents in aggregate expressing that 19% of turnover conducted at dealers is electronic. Of course, electronic trading is highly product and market-specific. We observe that FX is electronic for the G-3 issues (USD, EUR, JPY), but may be voice for others. In addition, developed markets in Australia have more electronic trading than Malaysia, for example.

An Indian corporate, which is 100% voice-driven, told us, *“we had been contemplating installing a trading terminal, but our internal policies are risk-averse, so we haven’t sorted out our security policy around the trading terminals. And voice is working fine.”*

According to an Australian bank, “the electronic platforms we use mainly are in the FX world, both in our roles as product taker and market maker. In the debt world, there are no electronic platforms, we use voice brokers mostly.”

Figure 22: Voice Vs. Electronic Trading



Source: Celent survey of OTC derivatives use in Asia

## INDIVIDUAL COUNTRY VIEWS AND INSIGHTS

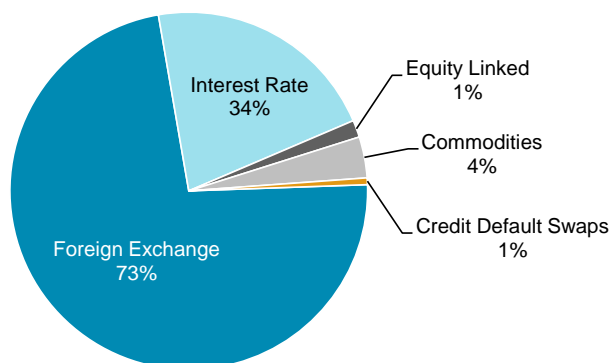
### AUSTRALIA

The Australian OTC derivatives market is heavily FX and interest rate concentrated, and both are amenable to electronic trading. One large bank respondent expects growth of electronic trading (and market fragmentation as a result) due to regulation and the move to CCP clearing. The bank thinks it is even likely to observe high frequency trading and the entrance of proprietary trading firms into the market over time.

Australia has emerged as a safe haven in the post-global financial crisis period. Overnight interest rate swaps and interest rate option trading is growing, driven by foreign participation. Also, foreign direct investment in Australia is driving the use (by foreign corporates) of FX options as a hedge against rapid movements in AUD exchange rates.

The Australian market is characterized by a heavy use of OTC FX derivatives at 73% of annual turnover. The OTC FX market is 75% derivatives and 25% spot, according to the AFMA. Australia is active in the repatriation of funds from offshore bond issues—not just in corporates but banks issuing bonds offshore. Thus, there is a need to conduct FX transactions to get the money back into AUD.

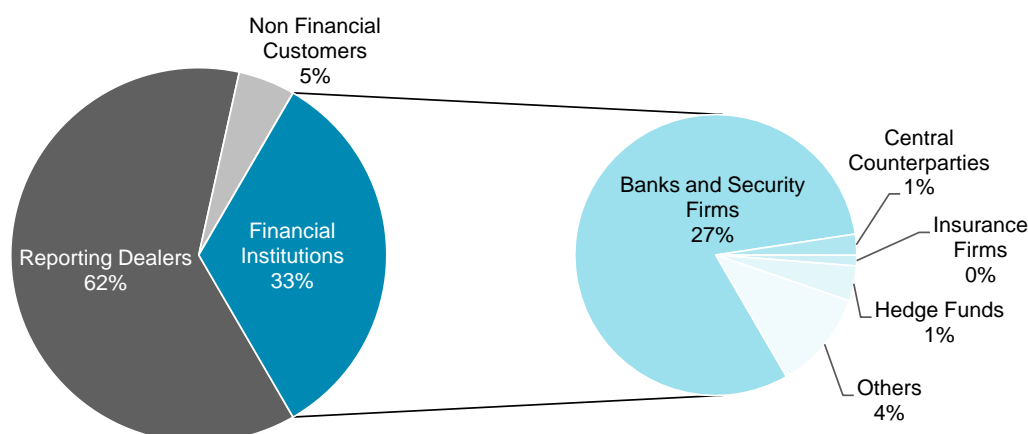
Figure 23: Australia OTC Derivatives: 2012 Share of Turnover by Instrument



Source: Celent analysis based on AFMA, BIS, news sources

Dealers are active in the marketplace and represent 62% of turnover. Financial institutions represent 33% of turnover.

Figure 24: 2012 Breakdown of Australia OTC Derivatives Turnover by Participant Type



Source: Celent analysis based on AFMA, BIS, news sources

In Australia, regulators will take a market-driven approach to CCP clearing, because they hope to avoid mandating CCPs. They would prefer to let institutions adopt CCP clearing if it makes sense for them. They expect the market to naturally evolve toward the adoption of CCP clearing, driven by international financial institutions and other large market participants. Basel III requires a higher risk-weighted capital, so dealers need to charge more to cover costs, and these costs will be passed on to clients. OTC turnover is not really seen as changing as a result of regulation, because fundamental needs will remain intact going forward.

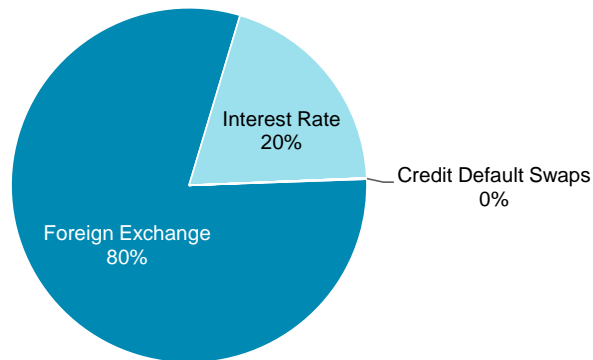
## CHINA

The Chinese market is heavily weighted (80% of annual turnover) to FX, followed by interest rate derivatives. Other OTC derivatives turnover is basically nonexistent. In China, banks and corporate users seek overseas derivatives market to hedge risk. The Shanghai clearing house will provide an OTC interest rate clearing service: the first cleared product will be interest rate swaps. There are several reasons for this. First, turnover is high and reached US\$617 billion in 2012. Second, the market exhibits a high growth rate, reaching 41% in 2012. The clearing service will be expanded to more OTC interest rate products.

Though the OTC derivatives market in China developed quickly, the market is still immature, as measured by the number of products, liquidity, market structure, and existing infrastructure. The People's Bank of China plans to build a central clearinghouse for the OTC market and standard OTC contracts.

We believe more asset management and proprietary firms will be founded in China. Proprietary trading revenues account for a solid one-third of securities firm's total income in China. Two proprietary firms were founded in 2010, and six securities firms applied for licenses in 2011.

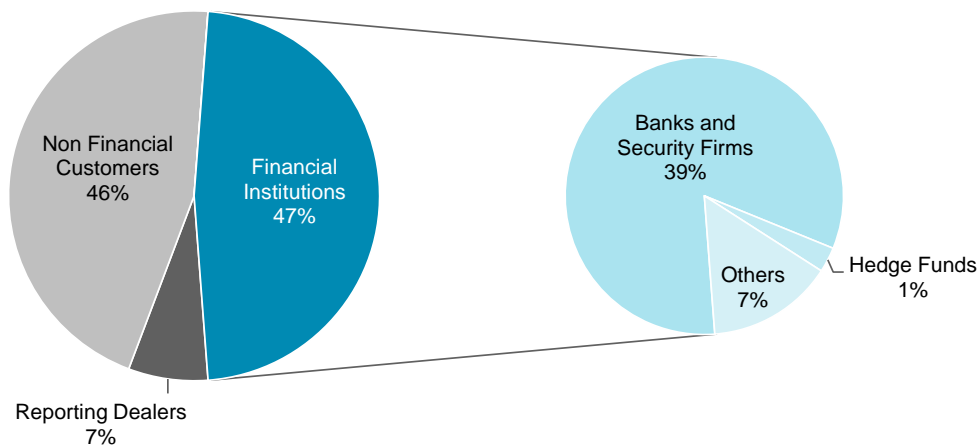
Figure 25: China OTC Derivatives: 2012 Share of Turnover by Instrument



Source: Celent analysis based on People's Bank of China, annual reports of banks, news sources

Very little of the turnover is classified as dealer turnover in China (only 7%). Financial institutions and non-financial customers are highly represented, reflecting the importance of banks and non-financial market participants in China.

Figure 26: 2012 Breakdown of China OTC Derivatives Turnover by Participant Type

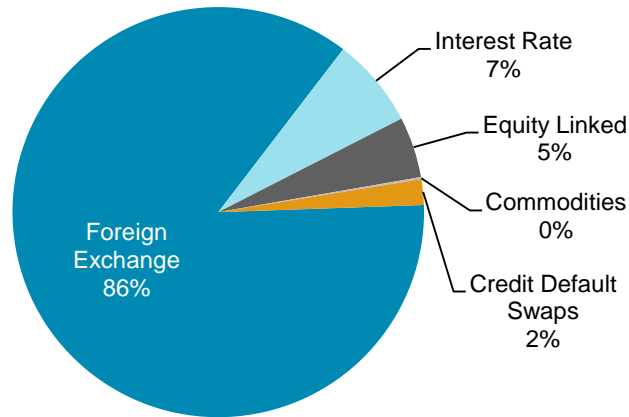


Source: Celent analysis based on People's Bank of China, annual reports of banks, news sources

## HONG KONG

Hong Kong has one of the most active OTC derivatives markets in Asia. Foreign exchange derivatives are the largest market by turnover followed by interest rate. In 2012, Hong Kong was the sixth largest FX market in the world and the third largest in Asia. There are a number of trading platforms operating in Hong Kong, such as FXall. Hong Kong is a market with no regulatory or artificial restrictions to foreign participants in the trading of OTC derivatives.

Figure 27: Hong Kong OTC Derivatives: 2012 Share of Turnover by Instrument

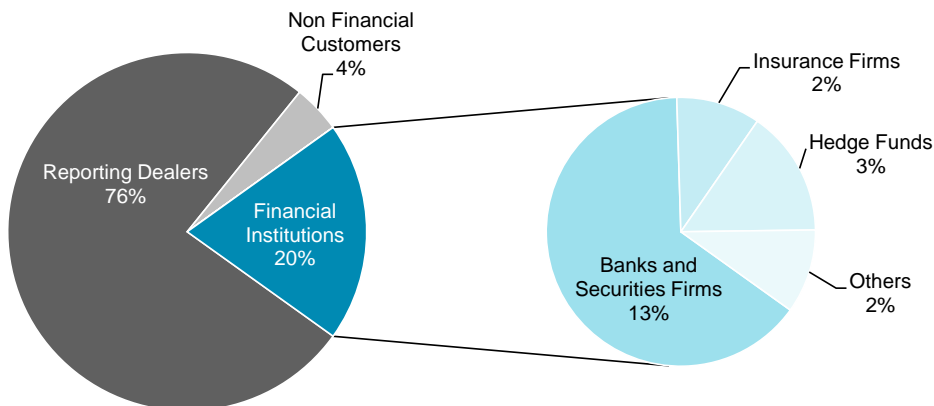


Source: Celent analysis based on HKMA, BIS, annual reports, news sources

The RMB has started to go global. The catalyst has been a collection of FX reforms over the past few months that have led to the formation of the CNH (that is, offshore) currency market and deliverable RMB market located in Hong Kong. Though, currently, the CNH and RMB NDF markets are small and illiquid, CNH NDF is expanding extremely rapidly (857% annualized).

Many factors show RMB-related derivatives will grow significantly. These factors include high market growth, deregulation, and many financial institutions joining RMB trading. Hong Kong is the largest RMB offshore market. However, the market size will remain limited for the time being, because of few outstanding RMB assets. Reporting dealers continue to be the largest group (around three-fourths of turnover), because Hong Kong is an important funding center where dealers can manage the currency mismatches of their balance sheets through FX swaps.

Figure 28: 2012 Breakdown of Hong Kong OTC Derivatives Turnover by Participant Type



Source: Celent analysis based on HKMA, BIS, annual reports, news sources

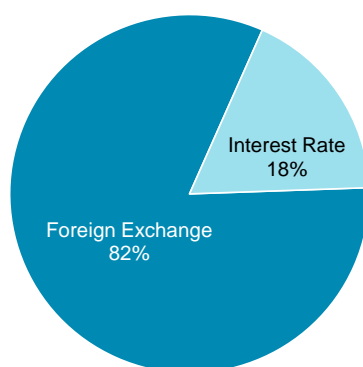
## INDIA

Even though the process of financial liberalization in India started over two decades ago, the Indian financial markets are subject to a capital control framework. OTC derivative products were introduced in the 1990s to first allow firms to manage currency exposure and subsequently to hedge interest rate risks. In India, OTC derivative markets have evolved within a regulated space. One of the counterparties in a derivative transaction has to be a central bank regulated entity. Only banks and primary dealers, in the case of certain interest rate derivatives, are permitted to act as market makers. All OTC derivatives attract high credit conversion factor.

Product coverage in the OTC space is inadequate but expected to develop quickly. The Indian market is heavily weighted toward FX OTC derivatives, followed at a distance by interest rates. In the OTC FX derivatives, forwards have been the most widely used instrument, followed by swaps and options. The only OTC interest rate derivatives permitted are the Forward Rate Agreements (FRA) and Interest Rate Swaps (IRS). There is very little activity in tenors beyond overnight, and as such there is no credible interest rate in segments other than overnight.

While FX and IR products have been in use for some time now, CDS was permitted in the country as late as December, 2011—after eight years of discussion and deliberations. There is still no OTC commodity derivative trading in the country, even though there is significant demand from corporates. These corporates are now trading with international counterparties, or even at international exchanges in the absence of local OTC trading opportunities. This is surprising considering exchange-traded derivatives are well developed and among the biggest (by turnover) for certain asset classes.

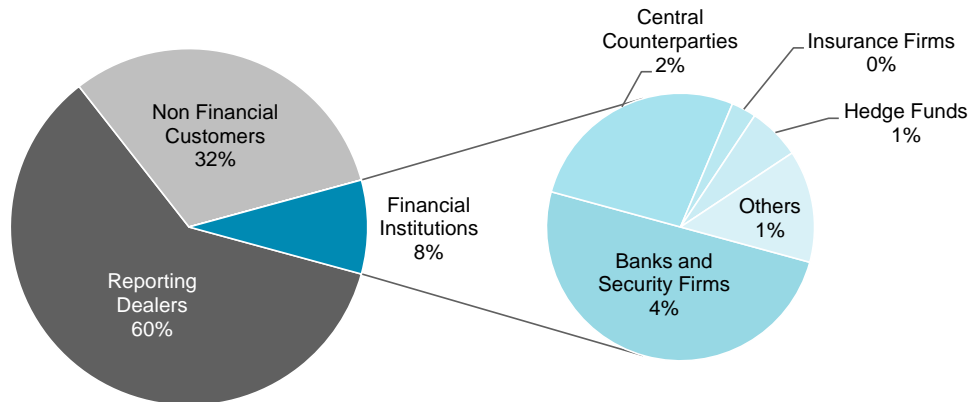
Figure 29: India OTC Derivatives: 2012 Share of Turnover by Instrument



Source: Celent analysis based on BIS, Reserve Bank of India, news sources

OTC derivative trading is dominated by banks in India. This is not surprising given that India's financial system has traditionally been bank-dominated. Surprisingly, foreign banks account for a large share in the OTC segment. Even though foreign banks account for only around 2% of banking industry assets, they account for 70–80% of trading in some OTC instruments.

Figure 30: 2012 Breakdown of India OTC Derivatives Turnover by Participant Type



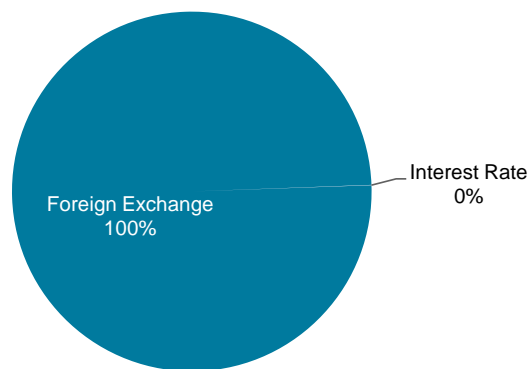
Source: Celent analysis based on BIS, Reserve Bank of India, news sources

## INDONESIA

The OTC derivatives market in Indonesia is still nascent. Currently, derivatives turnover in Indonesia is relatively very low, and most derivatives are not OTC but traded on the exchange. Equity derivatives products are required to be traded on the exchange in Indonesia, and the nation's regulator requires banks to report interest rate derivatives and FX derivatives transactions to the central bank. However, IR and FX derivatives trading volume, which is allowed to be traded through OTC, is also very limited in Indonesia compared to other Asian countries.

Indonesia is purely an FX market at the moment. Although Indonesia is rich in natural resources like gold and oil and agricultural crops like coconut and palm oil, commodities are traded on exchanges only, not through OTC, due to the stringent regulations.

Figure 31: Indonesia OTC Derivatives: 2012 Share of Turnover by Instrument

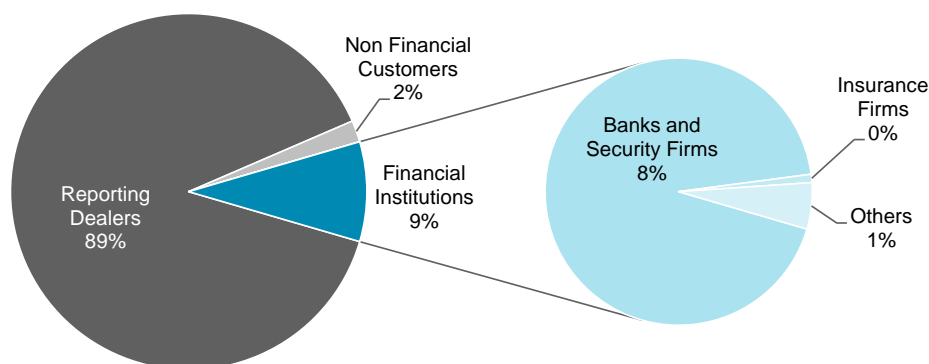


Source: Celent analysis based on Financial Supervisory Board, BIS, news sources



Reporting dealers dominate trading of FX in the Indonesian market at 89% of turnover, followed by banks and securities firms, which account for only 8% of FX trading share. Corporates in Indonesia do not trade OTC commodities derivatives for their hedging needs, although they trade physical commodities.

Figure 32: 2012 Breakdown of Indonesia OTC Derivatives Turnover by Participant Type



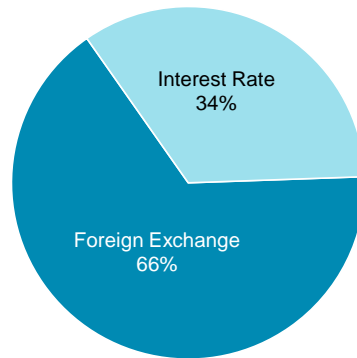
Source: Celent analysis based on Financial Supervisory Board, BIS, news sources

Indonesia does not have a plan to implement CCP clearing for OTC derivatives because the market is very limited currently. However, if regulations are updated in the future, the market has significant growth potential.

## MALAYSIA

Malaysia imposed strict capital controls in 1998 in the immediate aftermath of the Asian financial crisis. However, it started restructuring its financial sector in 2001, and 90% of its objectives have been achieved. Many of the restrictions pertaining to the financial markets have been or are being removed. Malaysia is among the largest countries in the ASEAN group with close proximity to China, Indonesia, Thailand, and Singapore, all of which put the country in a favorable position to capture the region's burgeoning growth. Malaysia has one of the world's most trade-dependent economies, with trade reaching 200% of annual GDP. This means that the OTC derivatives market has strong potential. However, there are stringent regulations in place; for example hedging of foreign exchange exposure must be related to trade activities and cannot exceed tenure of one year. Foreigners can only access the onshore forward market for purchasing securities listed on the exchange. Financial hedging (e.g., hedging of profit repatriation and loan payment) are not allowed without central bank approval. OTC derivatives regulation is not an immediate priority for Malaysia, according to its central bank—this indicates the market has not developed much. The market today is primarily FX and interest rates.

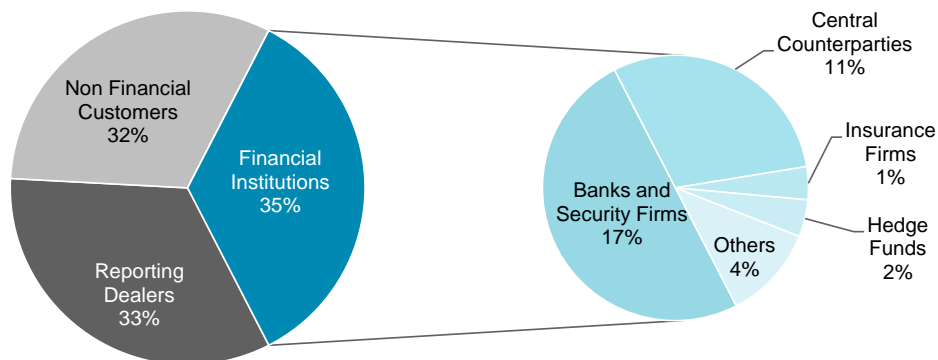
Figure 33: Malaysia OTC Derivatives: 2012 Share of Turnover by Instrument



Source: Celent analysis based on BIS, Bank Negara Malaysia, news sources

Very few Malaysian firms have appropriate understanding of derivatives. Transaction costs associated with derivatives is another source for concern. Managing accounting earnings is the main purpose of using derivatives by Malaysian corporates. More than 50% of corporates deal in OTC derivatives through local banks, while 40-45% uses foreign banks. Better knowledge of derivatives, tailor made contracts, and superior relationship management skills give foreign banks the advantage in dealing OTC derivatives.

Figure 34: 2012 Breakdown of Malaysia OTC Derivatives Turnover by Participant Type



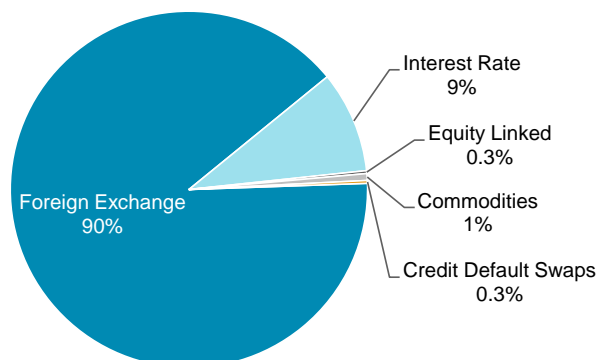
Source: Celent analysis based on BIS, Bank Negara Malaysia, news sources

Malaysia is a world leader in Islamic finance, with Islamic assets accounting for 20% of banking assets. Shari'ah-compliant OTC comprises only a small part of the industry, due to complexity, cost, and disparate standards of Islamic derivatives. Existing types of Islamic derivatives include cross-currency swaps, foreign exchange options, total return swaps, profit rate swaps, etc. Malaysia is taking steps to develop this segment by introducing first global Islamic Derivative Master Agreement (IDMA) documenting Islamic derivative transactions. This is likely to contribute the growth of this segment.

## NEW ZEALAND

In New Zealand, FX derivatives are 90% of OTC derivatives trading; there are small markets in commodity, equity linked and credit. Financial institutions dominate OTC FX derivatives trading (82.0% of the total); the IR market is dominated by dealers (40.4% of the total). Corporates use both OTC FX and IR for hedging.

Figure 35: New Zealand OTC Derivatives: 2012 Share of Turnover by instrument

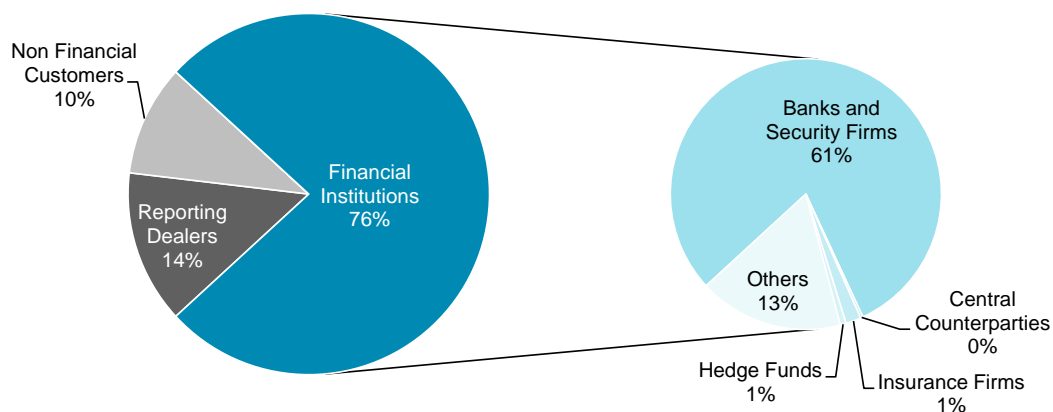


Source: Celent analysis based on Reserve Bank of New Zealand, BIS

Post-global financial crisis, the government has put in place a new regulator (Financial Markets Authority) replacing the Securities Commission, which was scrapped. Moreover, a new framework for capital markets regulation, the Financial Markets Conduct Bill, which among other things will regulate OTC derivatives and license market participants and platforms, is expected to pass in 2013.

Today, interest rate derivatives are only 9% of OTC trading, but turnover surged 28.5% in 2012, led by interdealer trading. Reliance on offshore debt has increased dramatically since the crisis; offshore bond issuance has nearly tripled, from US\$10.0 billion in 2008 to US\$21.4 billion in 2012. However, this has not led to a similar expansion of OTC FX or IR trading.

Figure 36: 2012 Breakdown of New Zealand OTC Derivatives Turnover by Participant Type



Source: Celent analysis based on Reserve Bank of New Zealand, BIS

## SINGAPORE

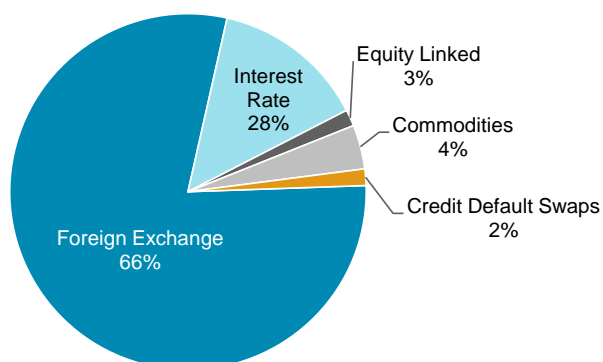
Singapore has one of the most advanced financial services industries in the region and is at par with international standards. Singapore attracts high levels of overseas investments as it builds a reputation as an offshore financial center. Singapore has a significant OTC derivative industry. It ranks eighth in the world in overall OTC derivative trading accounting for around 5% of global turnover, and ranks fourth and fifth in OTC FX and IR derivative trading, respectively. OTC daily turnover is almost 10 times that of exchange-traded derivatives.

Singapore is a special venue for OTC FX derivatives and ranks second in Asia (after Japan); 87% of FX turnover occurs in pairs that do not involve SGD, so that Singapore serves as an international trading platform. This trend can be seen from other aspects as well (i.e., 80% of funds under management in Singapore comes from overseas).

Singapore is a hub for the trading of energy swaps in crude oil, gas oil, and fuel oil. Such products are increasingly in demand as hedging tools amid continued demand for key energy commodities, much of it driven by China. Commodity derivatives represent the fastest growing OTC product in Singapore. Singapore is the Asia-Pacific center for oil and rubber products. Global natural rubber output is dominated by its neighbors, including Thailand, Indonesia, Malaysia, and India.

Singapore is actively trying to develop a commodity derivative segment by offering a concessionary tax rate of 5% for activities under Commodity Derivatives Traders (CDT) status—commodity derivatives are big in the region and have good potential. In 2010, Singapore Mercantile Exchange (SMX) was launched in Singapore as the first Pan-Asian multiproduct commodity derivatives exchange. In the second half of 2010, SGX and its subsidiary, SICOM, moved to consolidate their commodity contracts on a single trading platform to integrate and enhance synergies between their commodity businesses.

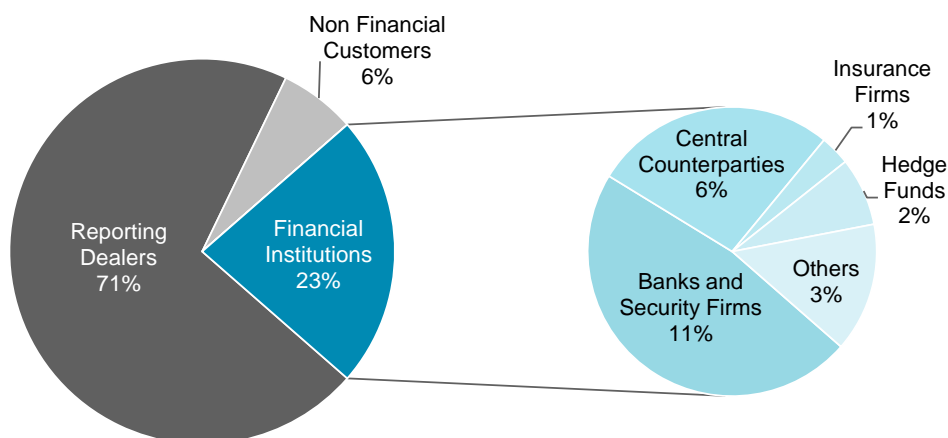
Figure 37: Singapore OTC Derivatives: 2012 Share of Turnover by Instrument



Source: Celent analysis based on BIS, Singapore Foreign Exchange Market Committee, MAS, news sources

Singapore, though not a part of G20, has proactively agreed to implement G20 OTC derivative reforms; yet it wants to do them in its own way. So while it has taken steps and already implemented measures for central clearing of OTC derivatives (SGX Asiaclear), it does not want to force any mandatory central or electronic trading of OTC trades because it is very cautious about not hampering growth of the market while responding to global norms.

Figure 38: 2012 Breakdown of Singapore OTC Derivatives Turnover by Participant Type



Source: Celent analysis based on BIS, Singapore Foreign Exchange Market Committee, MAS, news sources

As Singapore authorities push for more central clearing, a significant proportion of OTC trades will likely become standard trades clearable by CCPs over the next four to five years, with high migration of mainly IR and commodity derivatives to CCPs. MAS, the country's central bank, intends to expand and intensify derivatives clearing by allowing international derivatives clearing houses in the country along with the local exchanges. Clearport and ICE are present in Singapore, and we believe that significant turnover will be traded there.

## SOUTH KOREA

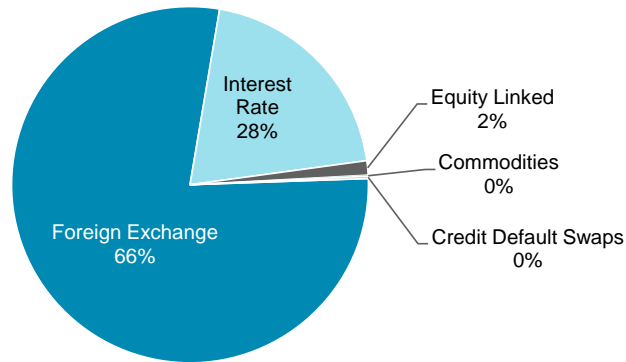
The outstanding notional amount of OTC derivatives makes up 99% of the South Korean derivatives market. As of the end of 2011, the notional outstanding of South Korean exchange-traded derivatives was US\$ 62 billion, while that of South Korean OTC derivatives was US\$ 6.1 trillion. Due to the imbalance between exchange-traded derivatives and OTC derivatives, regulators are looking to move some OTC derivatives products to the exchange.

In 2012, the South Korea OTC derivatives market was stagnant due to the decreased volatility of the interest rate and FX markets and the prolonged Euro crisis. The OTC market has much space to grow and may expand under a central clearing regime.

A revision of the Capital Market Consolidation Act passed South Korea's National Assembly in November 2012. The reformed law calls for the adoption of CCP clearing and will have a significant effect on the OTC derivatives market.

The Korea Exchange was planning to launch a CCP for interest rate swaps trading in November 2011 and to expand the services from 2013, but due to delay in amending the Capital Market Consolidation Act, the establishment of the CCP has also been delayed.

Figure 39: South Korea OTC Derivatives: 2012 Share of Turnover by Instrument

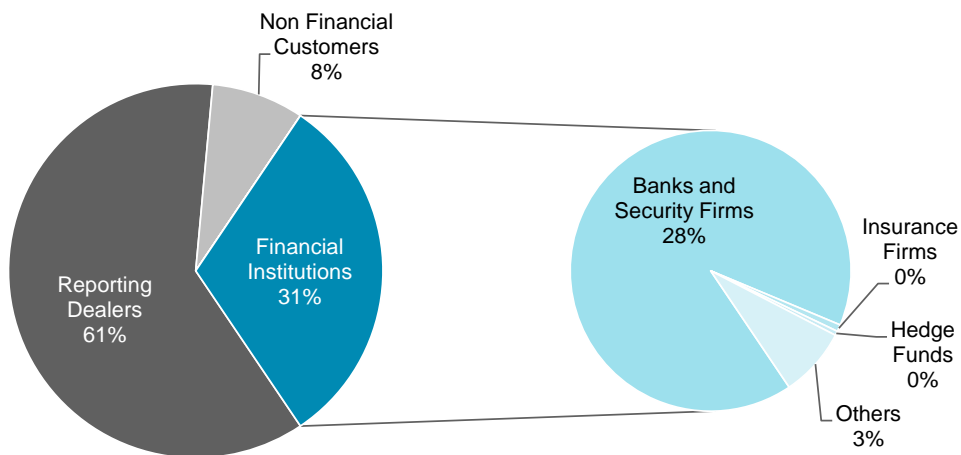


Source: Celent analysis based on FSS, BIS, news sources

Although commercial banks have the largest market share in the South Korean OTC derivatives market, the share of securities firms increased in OTC equity-linked derivatives and credit default swap trading in 2012. CCP adoption will give a great deal of leverage in expanding their market share.

Both financial institutions and corporates use FX for hedging, while corporates use OTC commodities derivatives for hedging price fluctuations in raw materials. OTC derivatives trading by small and midsize corporates suffered in the wake of widespread FX options losses when the Korean won plunged in 2008. However, with the adoption of CCP, the SME sector is expected to return to the OTC derivatives market.

Figure 40: 2012 Breakdown of South Korea OTC Derivatives Turnover by Participant Type



Source: Celent analysis based on FSS, BIS, news sources

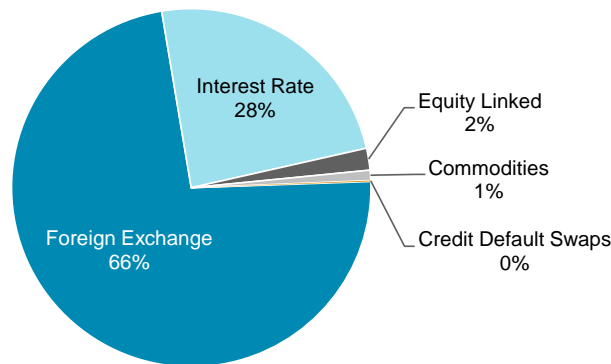
## TAIWAN

Compared to developed markets, the Taiwanese OTC derivatives market is emerging. Its characteristics include a lack of innovation, products, and liquidity. Most of the regulations are designed for a particular product, and there are few systematic regulations. However, regulators are expected to liberalize the market to advance the development of OTC derivatives, including allowing more products, lowering the tax rate, and lowering the threshold for market entry.

Taiwan will start RMB business in 2013, and many financial institutions are preparing for this business. After the launch of offshore RMB business, Taiwan plans to develop an RMB derivatives market. Taiwan will also establish a Treasury Markets Association to serve RMB bond and NDF trading.

There is a distinct lack of a commodities market. After becoming a member of WTO, the government removed price protection, and corporates are facing a global market, which brings greater price fluctuations. Taiwanese corporates can only seek overseas commodities markets.

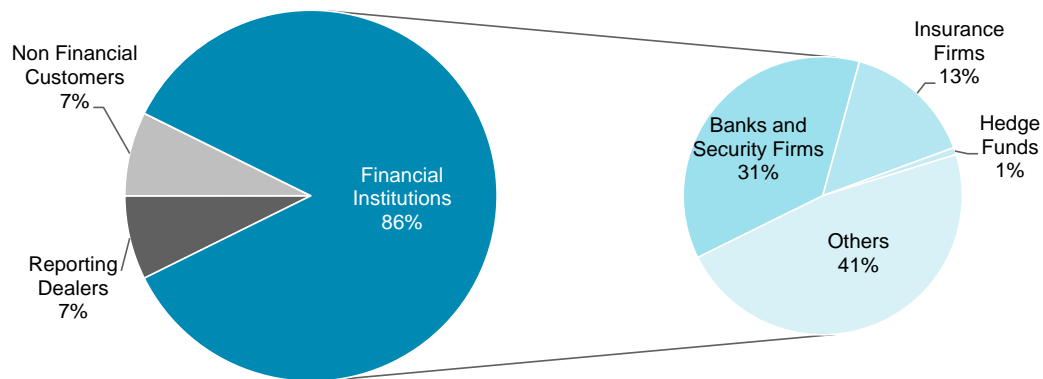
Figure 41: Taiwan OTC Derivatives: 2012 Share of Turnover by Instrument



Source: Celent analysis based on Central Bank of the Republic of China (Taiwan), news sources

Taiwan is considering CCP clearing, but its attitude differs from Hong Kong's; CCP clearing is not considered urgent. However, we expect Taiwan will move some trading from OTC to the exchange market.

Figure 42: 2012 Breakdown of Taiwan OTC Derivatives Turnover by Participant Type



Source: Celent analysis based on Central Bank of the Republic of China (Taiwan), news sources

## CONCLUSION

An Australian banker participating in this study told us, “I haven’t been convinced that anybody actually can understand what the markets will look like in 2 to 3 years’ time; there is a lot of shifting that will happen.” Still, based on our research and analysis, it is worth highlighting some key themes that we think will shape this market.

The Asian OTC Derivatives market is highly variable by country, with Australia, Hong Kong, and Singapore playing the biggest roles by market. It is clear that these dominant roles by turnover and participation will likely continue given that other markets are either too small or favor exchange-traded derivatives. Moreover, there does not appear to be a rush to engage in central clearing in any market outside Singapore, with most markets allowing participants to set the direction, and with the regulators waiting to see what happens in the US and European markets.

The market has recovered since the global financial crisis, and all signs point to health. Both overall and by segment, OTC markets are either stable or expect to see additional turnover and participation. OTC FX is the most dominant product partly due to real factors and partly by design. The multiple sets of rules and regulations in each country drive the need for hedging currency exposure. There are also many global and regional firms in Asia that have operations in and financing needs from other countries. Interest rates are the second most important product. However, the bond markets in Asia (particularly the corporate debt markets) are underdeveloped, and liquidity is negligible in many countries. This prevents growth of the interest rate derivatives market to rival FX.

Equity-linked derivatives are mostly nonexistent, but the most surprising circumstance (given the size of the real economy in terms of energy and manufacturing) is the relative lack of size and scale of the OTC commodity derivatives markets. In Asia, there is not much infrastructure for onshore OTC commodity derivatives trading in most countries, and corporates are instead active users of international exchanges or with international counterparties offshore.

We expect that Hong Kong and Singapore will continue to position themselves as hubs for regional and global activities. This competition is supported by relatively relaxed regulations and incentives for the foreign and international trading communities, who are more comfortable dealing with these markets. However, not every financial center in Asia is trying to attract global banking business. Some countries are content to create barriers which serve to protect the local market and encourage trading in more exotic instruments elsewhere. Overall, we expect that individual markets will have very different profiles based on local needs and nuances.



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