



Trends in e-FX Options Market

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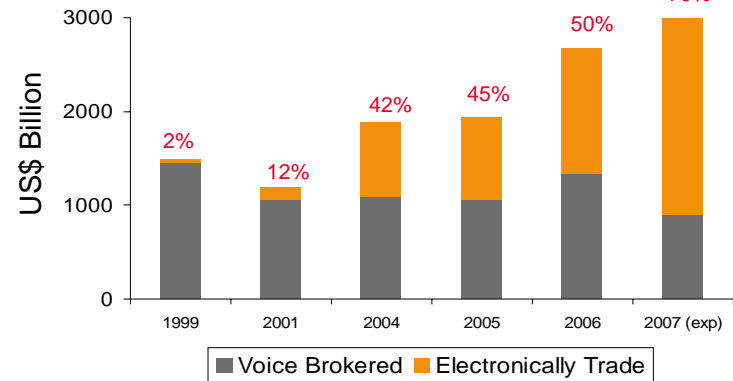


Market Picture: e-Options Trading vs. Voice (DTC & DTD)

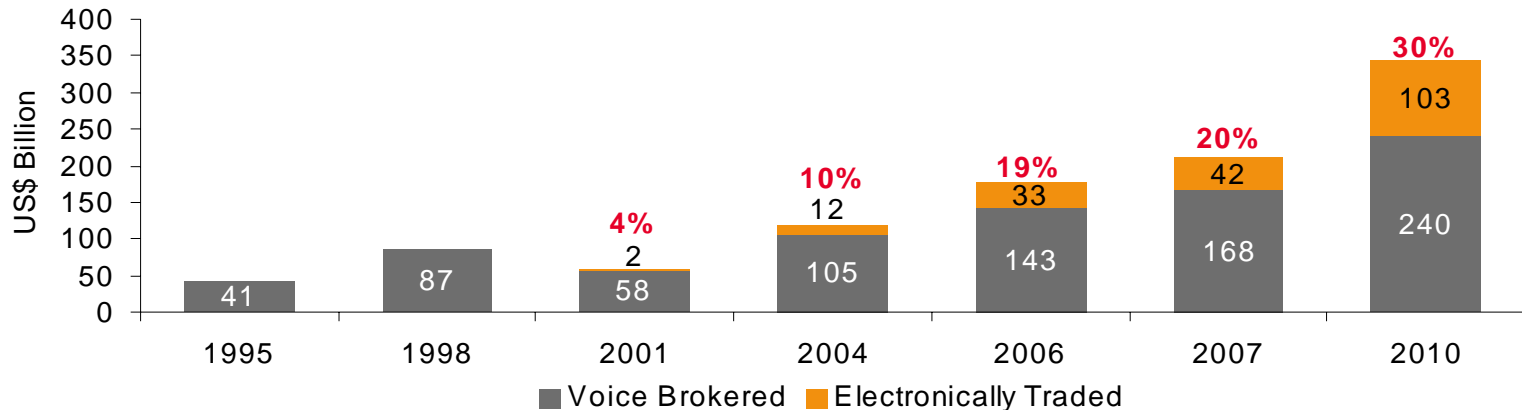


- Electronic trading in FX options is estimated to account for US\$ 42 bn of average daily volume in 2007 and reach over US\$ 100 bn by 2010
- Almost all the e-trading volume is conducted for vanilla and first generation exotic options

Average Daily Turnover in FX Market (Spot – Forward – Swap)



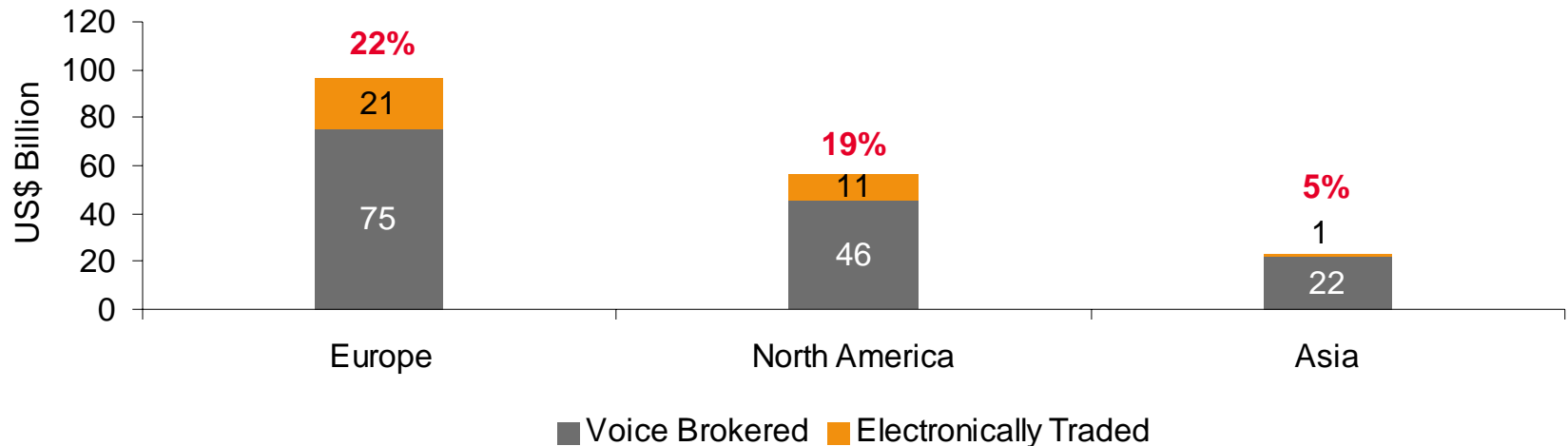
Average Daily Turnover in FX Options Market



Market Picture: e-Option Trading per Geographic Zone

- In North America and Europe, the overall level of e-trading in FX options is around 20% . It is estimated to be close to 5% in Asia

Average Daily Volume Traded in FX Options by Region
(US\$ Billion)



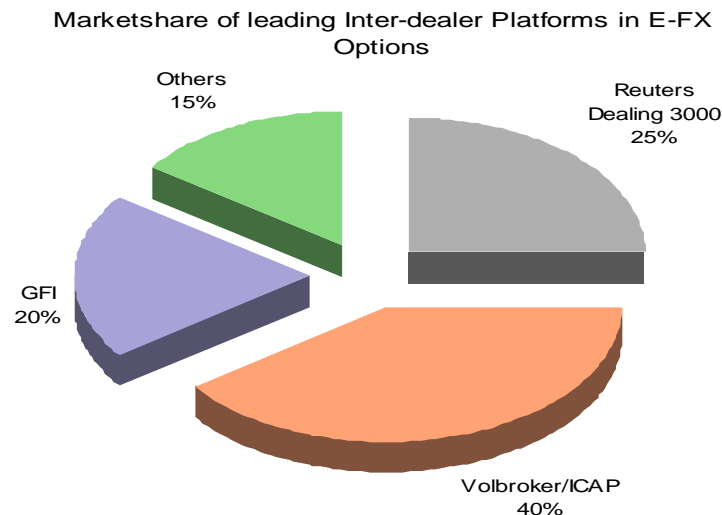
Source: Federal Reserve Bank of NY, B.I.S, E.C.B, Japan Securities Dealers Association



Market Picture: Main Inter-dealers Marketplaces



- There are three dominant platforms in the FX options space:
 - ▶ Volbroker/ICAP, Reuters & GFI
- But only Reuters is a pure e-trading platform, the two other platforms operate electronically and by voice
- It is therefore questionable to consider as pure e-trading the volume that goes through their platform



Source: Company Sources and Celent Estimates



DTC e-Options Market Actors: Sell-side (1/2)

A Very Disparate Market

- **In the Dealer to Client space, the market is dominated by a handful of bank's single dealer site:**
 - ▶ Barx
 - ▶ UBS/CitiFX/Autobahn FX ...

- **Potential new comers: the new comers are multi-dealer platforms**
 - ▶ **Hotspot FX**
 - The Dealer to Client FX platform is actively looking to enter the FX options market
 - ▶ **ISE FX options**
 - Launched in April 2007, its average daily volume is approaching 3,000 contracts. Open interest in ISE FX options has recently reached over 100,000 contracts



e-Options Market Actors: Sell-side (2/2)

A Very Disparate Market*

■ **Leading platform has a well advanced technology**

- ▶ Dynamic volatility curve and trade in real time both ways (Click & Trade)
 - e-FX options engine is linked to the spot FX pricing engine
 - Seeing the majority of their clients' e-Option transactions conducted online

■ **The followers have a less powerful pricing engine**

- ▶ Providing real-time quotes only on limited products and for specific customers
- ▶ Relying on RFQs for the majority of transactions
- ▶ Also seeing the majority (up to 60% in number of deals and 40% in volume) of their clients' vanilla e-Option transactions conducted online

■ **Some other banks do not have any offer yet**

- ▶ Entry ticket is expensive due to the requested high level of technology
- ▶ Banks are reluctant or not yet equipped to participate as liquidity providers
 - Risk from predators to be arbitrage
 - Does it worth it?



Benchmark done by Expand – Q1 2007

■ Method

- ▶ 11 pilot banks
- ▶ Top 5 as group A
- ▶ Top 6 as group B

Function	Sub-function	Group A		Group B	
		Vanilla options	Exotic options	Vanilla options	Exotic options
E-trading	Single dealer platform: Web delivered	40	40	17	0
	Single dealer platform: API delivered	60	60	17	0
	Connectivity to multi-dealer platform	60	60	17	0
	Connectivity to interdealer platform	60	60	17	0
	White labelling	20	20	17	0
	Automatic liquidity sourcing	40	40	0	0
	Automatic position management	40	40	17	0
	STP from electronic	60	60	33	0
Prime brokerage	Trade capture	80	80	33	33
	Workflow management eg Give Ups	80	80	33	33
	Client reporting	80	80	33	33

Example: 40% of the group A banks have reported being equipped with a single dealer platform with Web delivered for Vanilla options

Source: Expand



e-Options Market Actors: Buy-side

Different Type of Customers with Different Goals

■ Buying an insurance

- ▶ Corporate on FX options is growing (e-Forex Magazine)
- ▶ Small institutions like non-market making banks

■ Trading volatility: the majority of investors

- ▶ Asset Managers and hedge funds
 - They represent the majority of investors
 - They combined vanilla with exotic and therefore they often require manual trading on platforms
- ▶ Large hedge funds
 - They want to act as market maker and therefore are pushing e-platform to implement API

■ A wide disparity among actors

- ▶ While some customers are very comfortable with options market
 - Looking for transparency, speed and ease of execution online
 - Having appetite for e-FX options vanilla or even more complex structures
- ▶ Others are less familiar
 - Looking for more guidance
 - Using the online platform for price discovery and to try out strategies online before picking up the phone



How much of this Activity will end up Online?

- **The potential for growth is clearly present**
- **More complex characteristics of options are likely to impose a lower ceiling than for Spot FX**
 - ▶ 90% for Spot vs ? % for options ?



Main Drivers for e-FX Options Market Emergence

- **Buy-side growing appetite for**
 - ▶ **A greater transparency associated to the internet offer**
 - Everyone can determine options' fair price and spread.
 - Real profit and loss are accurately measurable.
 - ▶ **An improved execution process**
 - Price discovery
 - Speed and faster responds times
 - ▶ **Managing complexity**
- **Sell-side's evolutions**
 - ▶ **Bid/offer spreads reduction**
 - Ex Regular knock out options USD/JPY: 12-20 bp in 2000 vs 5-6 bp today
 - Brokerage fees are less than half of what they were 3 years ago
 - ▶ **Sales actors who are more proactive**
 - Suggesting efficient and sophisticated options strategies
 - ▶ **Developing a new business model**
 - Using flows to make money as Spot market
 - Brokers and Banks have reported sharply increased revenues
- **Operational risk management and compliance requirements on both sides (MiFiD)**

This has encouraged more liquidity and some clients are more comfortable with the concept of trading options online



Issues Around the Adoption of Electronic Trading in e-FX Options

- The pre and post trade functionalities varies greatly across product
- Defining the right contract is an issue
- Agreeing on the details that go in finalizing the price
- The status of quotes
- Exchanging the data
- Providing a dynamic options curve online
- Building liquidity: currently even the inter-dealer platform such as Reuters or Volbroker are struggling to attract sufficient liquidity on vanilla instruments and number of tickets remains minimal





Next Chapters on e-FX Options

- **First phase: vanilla options with ATM delta may go fully electronic**
 - ▶ Short term
 - ▶ A complete e-service as for Spot: tighter spreads, multi-banks, streaming, algorithmic trading, fully STP, delta hedge included ...
- **Second phase: out-of-the-money vanilla options**
 - ▶ May happen in the next 5 coming years
 - ▶ The additional liquidity that will occur when all market makers are connected to multi-bank trading platforms, will generate strike-price continuity
- **Third phase: exotic options**
 - ▶ So custom-tailored and thus, not easily standardised
 - ▶ More an efficient RFQ model: the quote request is sent directly to a market maker or pre-defined trading desks



And what about Algorithmic Trading in FX Options ?

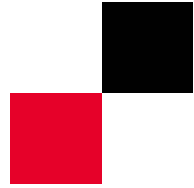
- **Inter-dealer platforms have launched API services that allows black box trading**
- **Algo trading in FX options remains insignificant in terms of volume and number of transaction**
- **FX model trading will benefit from the implementation of API for FX options to absorb new source of information**
- **FIX protocol (FIX 4.4) does not currently support very efficiently FX options trading**



Conclusion

- **Consolidation of platforms and/or launch of joint e-trading platform between banks will certainly boost the level of e-trading in FX options by increasing the liquidity Instruments coverage**
- **Vanilla and first generations exotic options can be incorporated into an e-trading platforms**
- **Second and third generation exotic options will certainly remain an OTC market in the future**





Appendices



What are Currently the Common Buy-side Requirements?

■ Pre-trade Services

- ▶ To use a browser window for login
- ▶ Discovery tools
- ▶ Simplified login process implying that FX options to be integrated with other related areas
- ▶ Research tool and (in some cases) pricing

■ Trade Services

- ▶ A java applet for trade execution
- ▶ At least Rfq mode
- ▶ At least plain vanilla ATM to be autoquoted and RFQs mode for «out », « in » and more exotic options

■ Post-trade Services

- ▶ STP
- ▶ Valuation



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