CREDIT SUISSE

# Foreign Exchange Implications of Algorithmic Trading

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CREDIT SUISSE SECURITIES (EUROPE) LIMITED

# Algorithmic Trading

"The Nissan Canton plant features 853 technologically advanced robots that will work alongside [a few] skilled employees." Is this our future?

*Source: http://www.plantautomation-technology.com/projects/nissan_canton/index.html#nissan_canton7*

In this presentation…

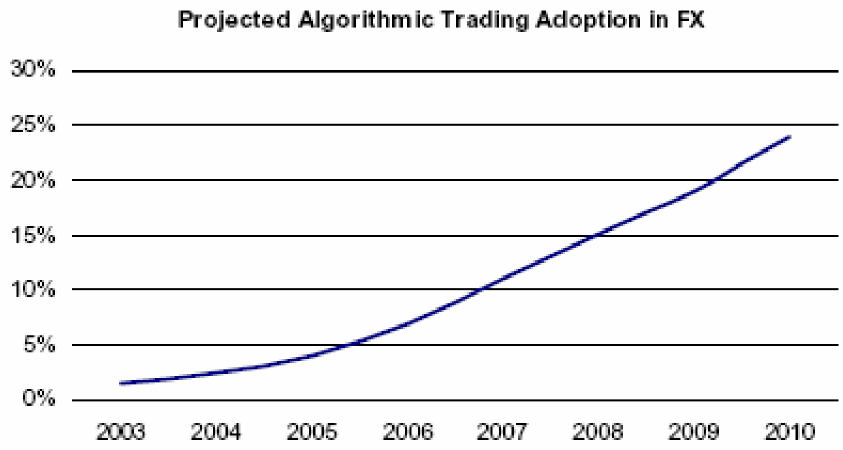
- Algorithmic Trading – Do you mean what I mean?
- What is changing in the market?
- Implications of different algorithmic developments
- Discussion points

# “Algorithmic Trade” – Do you mean what I mean?

- **Statistical Trading** – “traditional” algo trading.  Relative value trading, black box/CTA-style algorithms, macro portfolio models. Generates orders.
- **Auto-hedging**/Position Targeting **–** dynamic monitoring and management of risk levels.  Generates hedging orders.
- **Algorithmic Execution** – automating trading styles and using technology to work the placement of trades. Does not generate orders.
- **Liquidity Access** – optimisation of access to multiple trading venues.  Does not generate orders.

# FX Market – Projected Algorithmic FX Trading

**FIGURE 16: PROJECTED ADOPTION OF ALGORITHMIC FX TRADING**

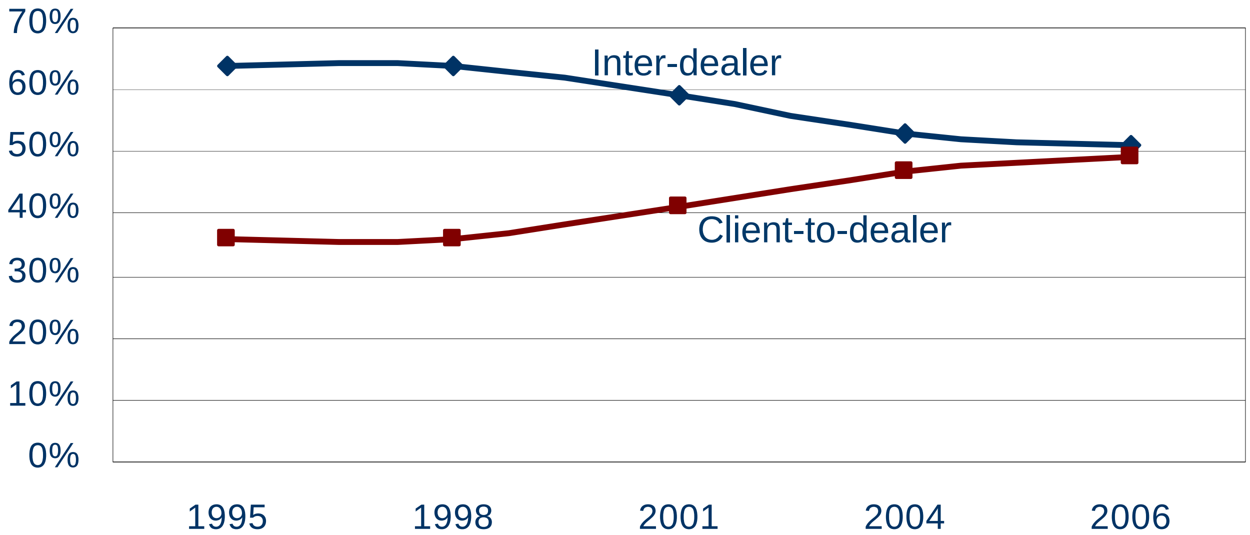



*Source: Aite Group estimates*

With an estimated 7% adoption rate at the end of 2006, algorithmic trading is clearly still in early stages. Expected to increase to approximately 25% be the end of 2010.

*Source: Aite Group“Electronic FX: Welcome to the Banks’ Neverland” April 2007*

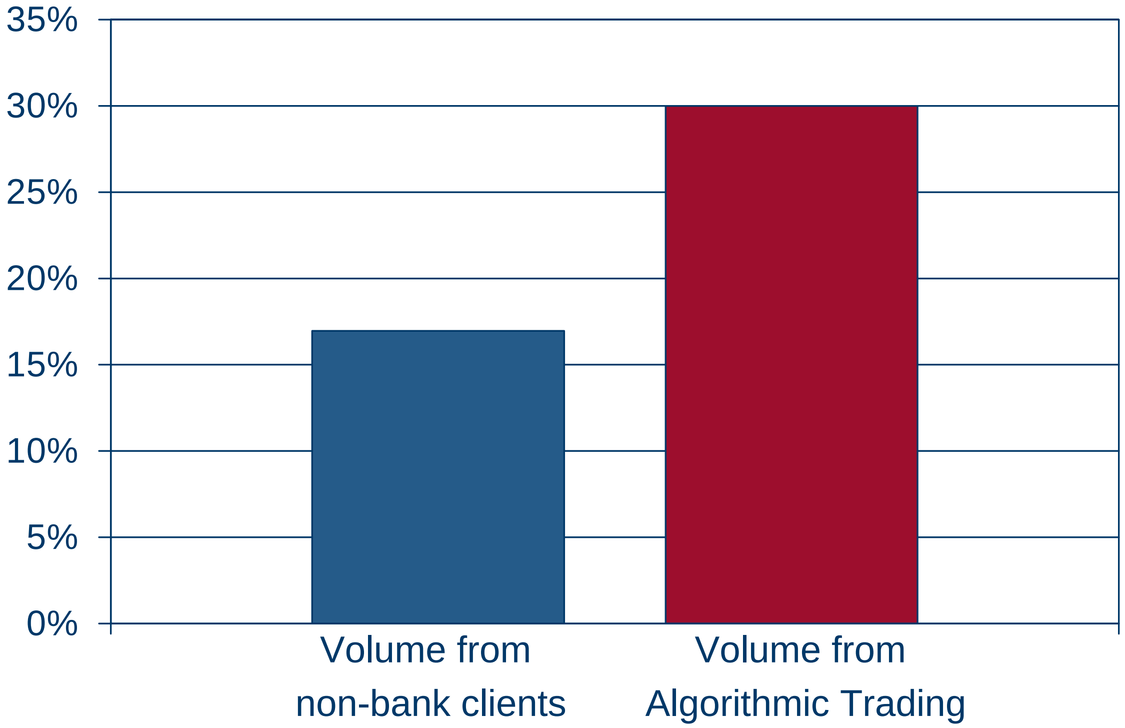
# Market Dynamics are Changing




*Source: Aite Group"Electronic FX: Welcome to the Banks' Neverland" April 2007*

10 years ago Inter-bank market accounted for > 60% total daily t/o.
End 2006 Customer Market was almost 50%

# EBS Volume Details




Q1 07 30% of EBS volume was from alogrithmic trading

> Over $100 bio / day

# Statistical Trading

## *Traditional algo trading. Relative value trading, black box/CTA-style algorithms, macro portfolio models*

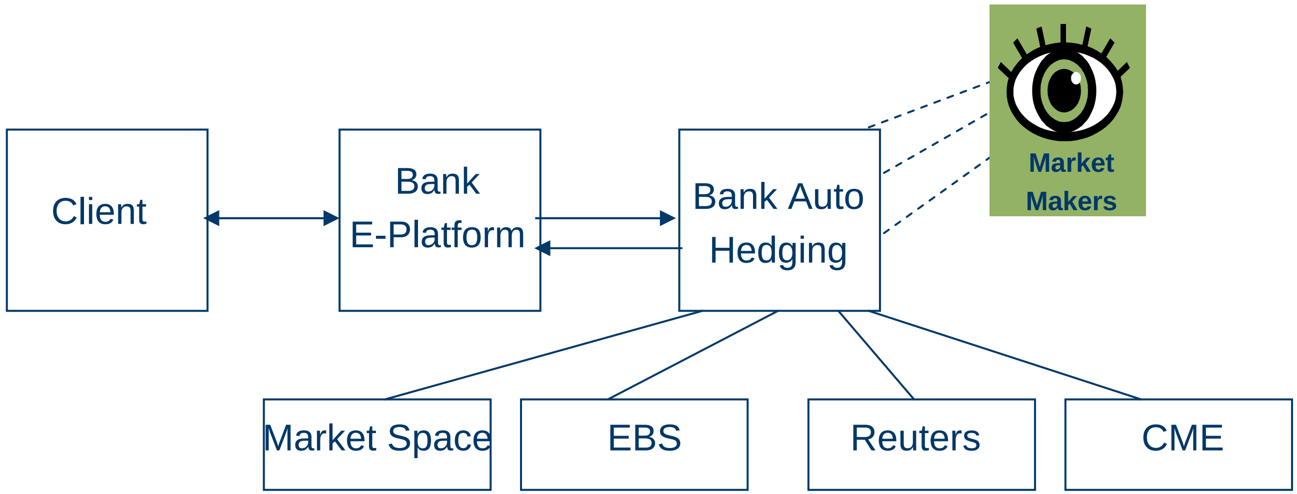
- Already prevalent. Driven much of the growth in algo trading

Implications

- Hard to add value with traditional sales coverage or FX research
  - > Purely a price relationship
  - > Growth of quantitative research from banks
- Raises latency issue for banks
  - > Growth of auto-hedging and client profiling

# Auto-hedging

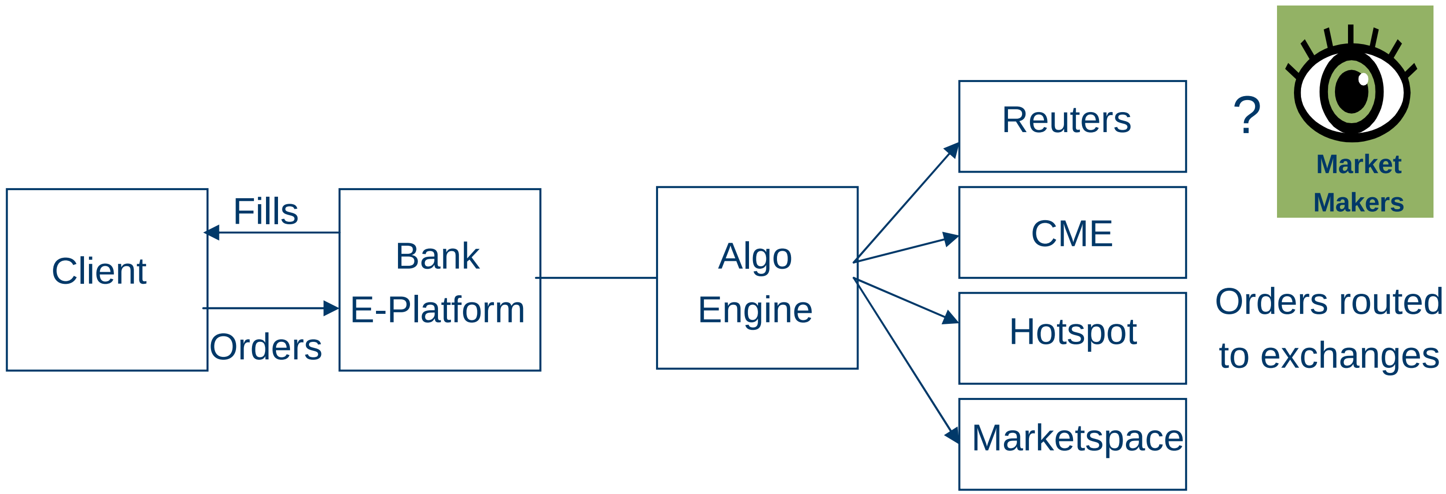
## *Position Targeting – dynamic monitoring and management of risk levels*




- Bank e-flow no longer managed by traders
- Market makers become position takers trying to leverage flows

# Algorithmic Execution

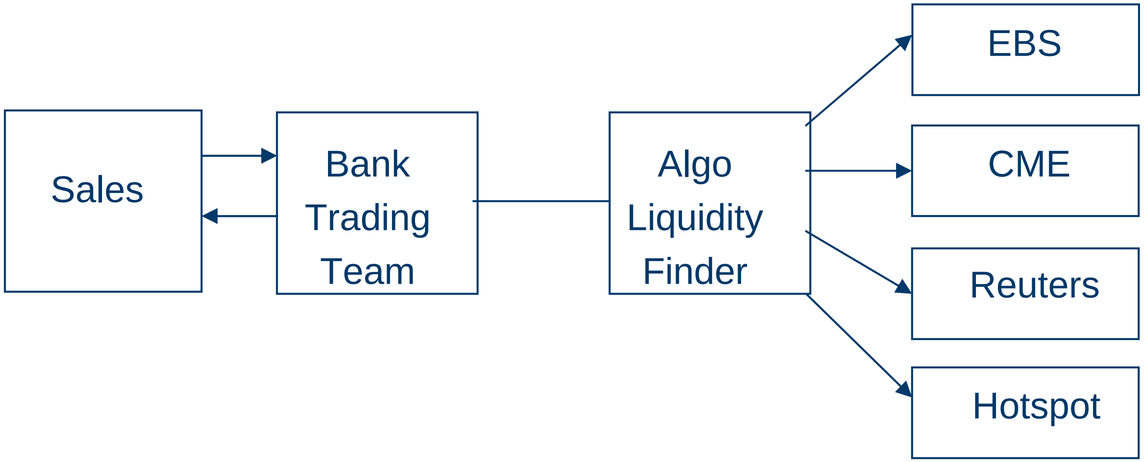
## *Automating trading styles and using technology to work the placement of trades*




- Algo engine replaces rate engine
- Client pays a transparent commission
- Flows not observed by Sales/Trading

# Liquidity Access
## *Optimisation of access to multiple trading venues*

Algorithms used to provide DMA to exchange which is providing best liquidity/price




Optimised risk clearing for traders in a fragmented market

> Improved efficiency for market makers

> Market effectively becomes less fragmented

# Implications

Growth of statistical trading / Arb clients

1. Banks forced to reduce latency
   > Pre-deal credit checking increasingly dropped as a consequence
   > Pricing engines required in different locations
2. Decision to deal with a particular sophisticated e-client becomes an IT decision rather than a trading decision
3. Exchange model prospers as statistical traders require multi-lateral trading markets
4. Traditional trading / sales execution headcount replaced by quant teams developing auto-hedging models and IT teams building fast links

# Discussion Points

- For all the talk of disintermediation the reality is that banks have the infrastructure and IT capacity to adapt to the changing market
- Costs re-directed to IT from Sales/Trading to quant research from macro research
- As ticket volumes increase – settlement costs are under the spotlight
- Is Credit-Risk an issue?

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