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As markets evolve: Are underlying structures changing?

ECB Bond Market Contact Group, 14th February 2023

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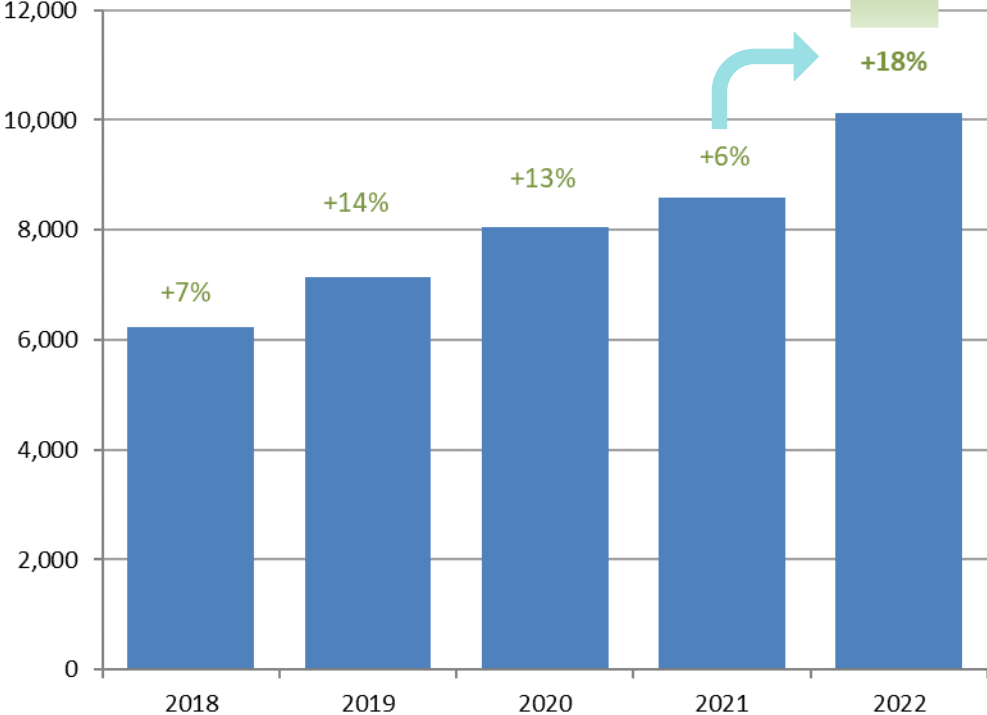
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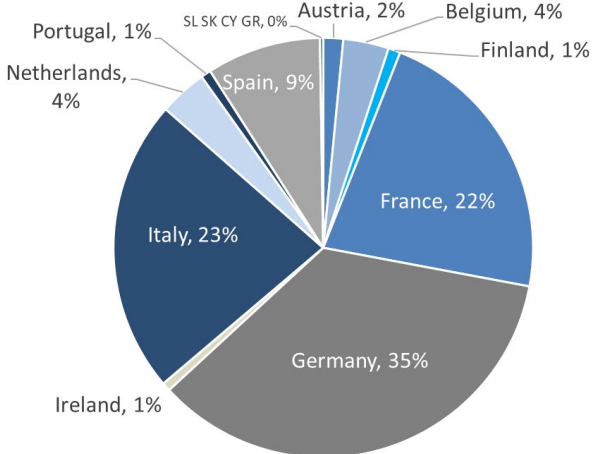
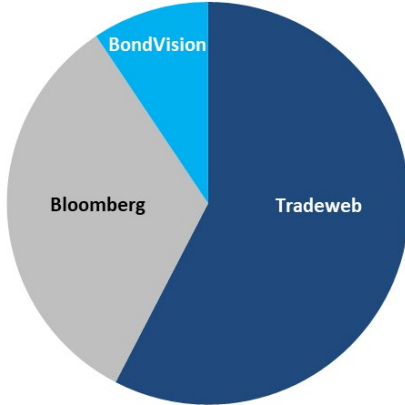
Pace of Trading Automation continues

Electronic volume records continue to be broken year on year since 2016

Euro Government Client e-Market
Annual Notional Volume (€ Billions)



Growth of 93%
since 2016



Source: Tradeweb, Bloomberg, BondVision



Automated execution strategies: Continuous Advancement

All EGB secondary market participants remain motivated to increase automation of execution
 → Fundamentally for same reasons as 4yrs ago: Addressing client demand for a better outcome Reducing costs & errors
 Increasing price accuracy & efficiency Freeing “eyes” to focus on larger risk trades Compliance

**Market Makers:
Inter-dealer**

- Automation has evolved from fulfilling quoting obligations to **continuously improving price accuracy and speed**
- A subset are thought to have evolved further to **fully automated strategies**:
- EGB dealer algo: “ms” speed matters in inter-dealer markets
- *****Co-located market makers more than tripled to double digits in 4yrs¹**

The diagram shows a dark grey box labeled 'Dealer D2D Algo' followed by an equals sign, then a blue box labeled 'Auto-order execution' followed by a plus sign, and finally another blue box labeled 'Auto-hedge execution'.

**Market Makers:
Dealer-to-client**

- Noticeable uptick in market makers deploying **fully automated strategies**:
- EGB Dealer algo: In 4 yrs, **18% to 48%** tkts done in 2secs, 5-7% dv01
- *** **1 in 2 tickets now executed in 2secs² *****
- Compare UST: 60% tickets stable for last 4yrs, 30% dv01. Suggests algo drive peaked earlier.
- DV01 remains low in EGB, algos focused on “small liquid products”
- “Fixed income algo trader” has become a normal front office trading role

The diagram shows a dark grey box labeled 'Dealer D2C Algo' followed by an equals sign, then a blue box labeled 'Auto-RFQ response' followed by a plus sign, and finally another blue box labeled 'Auto-hedge execution'.

**Liquidity Takers:
Dealer-to-client**

- Last 4 years have seen clients dramatically increase use of **automated rules engines**
- These rules engines are implemented by the platforms and **translate the client’s best execution policy into a few simple automated rules**:

The diagram shows a dark grey box labeled 'Client D2C Algo' followed by an equals sign, then a blue box labeled 'Group RFQs into a List from OMS to Venue' followed by a plus sign, then another blue box labeled 'Auto-Select Dealers in RFQ' followed by a plus sign, then a blue box labeled 'Set Auto-execute conditions: Require min x responses within max y secs; within z tolerance to close/target/composite' followed by a plus sign, and finally a blue box labeled 'Auto-select Winning Dealer'.

- EGB client algo: In 4yrs, 34% to 66% tickets done through client algo (7% to 9% DV01)
- *** **2 in 3 tickets now executed through “no touch” client algos³ *****
- Highlights client algo suitability is skewed to small size tickets due to objective criteria

^{1 2 3} Footnotes and all stats sourced from relevant/significant venue in each case



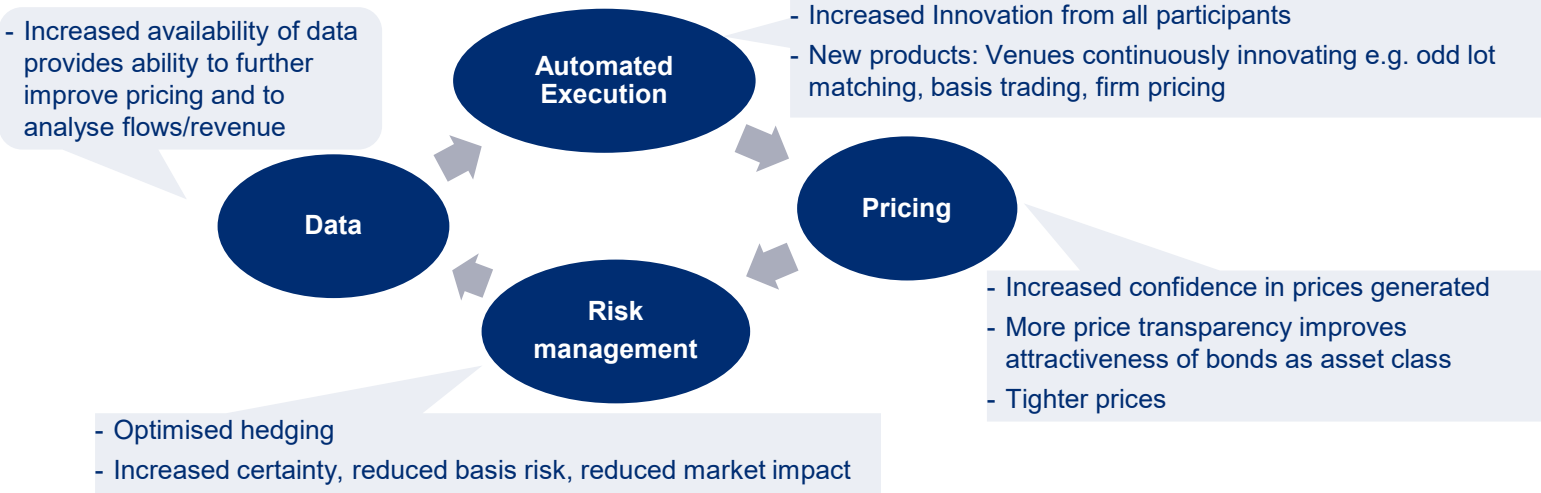
Automated execution strategies: Market Impact

eTrading has increased market efficiency

Note: Supporting increased automation requires management of multiple aspects - Continuous investment to ensure competitive offering, compliance to risk management policies, higher execution and data costs, awareness of regulatory changes.

Benefits

Virtuous Liquidity Circle



Trends: Game Changers?

- Inter-dealer Markets:
 - EMEA: New entrants emerging: non-bank High Frequency Trading firms (HFTs)
 - US: Principal Trading Firms (PTFs) dominate liquid products
Market making banks represent majority in less liquid products
- Dealer-to-client Markets:
 - Hedge Funds demanding streamed firm pricing in order to connect to their existing systematic trading strategies
- Venue Operators:
 - Inter-dealer markets adding RFQ functionality
 - Dealer-to-client markets adding firm pricing UST (with last look) & EGB (no last look)



Initiatives blurring the line between D2D and D2C?

Automated execution strategies: Market Structure

So... has the Underlying Market Structure changed?

EGB Market Structure

- Significant increased use of “algos” across the board has been:
 - Mainly technology- and data-led
 - Mainly focused on small-sized trades in liquid instruments
 - Mainly leveraging on existing trading protocols i.e. no agency-style TWAP/VWAP yet....
- No evidence at this stage that the **Underlying Market Structure** has changed or will change imminently
- Market predominantly remains:
 - Bifurcated: D2D and D2C
 - Principal: Risk taking Liquidity Providers and Price Takers (clients)
 - Institutional
 - RFQ
 - Relationship-based
- Bilateral risk taking has thus far proved to be critical for:
 - Bespoke, large and illiquid trades
 - Providing liquidity in stressed market conditions
 - Providing ability to absorb big imbalanced flows

UST Market Structure - comparison

- Specific characteristics mean that UST secondary market has evolved into a more “algo-rich” structure than EGB i.e.
 - Fewer, larger, more liquid UST cash benchmarks vs EGBs
 - Therefore fewer, deeper corresponding UST futures contracts
- Despite this, no evidence at this stage that the Underlying Market Structure has evolved or will imminently evolve to an all-to-all central limit order book

Discussion points

Group Discussion Points

- 1) Will evolving automated execution strategies eventually lead to **all-to-all** central limit order for liquid bonds?
 - Policy makers have considered enforcing clearing in bond markets to facilitate liquidity. Could this help?
 - Would a central limit order book lead to better tighter pricing? And what about better liquidity?

- 2) Should Issuers/policy makers be concerned with non-bank HFTs, particularly in times of stress?
or
could non-bank HFTs help unlock increasing capital restrictions facing banks?

- 3) Does/will increased use of algos by clients necessitate hiring of new skills (e.g. data, technology)?

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