MTS™

Bond Data
Profit Opportunities

As the focus on automation in bond markets continues to grow, more technology-focused banks are seizing upon the opportunity of new, richer and unique data sources such as MTS Live[1] to maximise their profitability. In many cases they are adding this new feed with multiple other data sources that they may have already cleaned and normalised as part of their regulatory due diligence.

As a result, they are able to derive unique business intelligence that can feed through into enhancing multiple activities, including market making, proprietary trading and risk management.

A recent report by Celent, "Emerging Trends in Emerging Data", examines some of the new sources of data that participants in financial markets are starting to use to obtain a competitive edge. While the report expects what it refers to as "Market Data 2.0" to include data gathered from sources such as Internet of Things, satellites and wearables, some existing market data feeds now also include new richer data content. In addition to traditional time stamp plus bid/ask and OHLCV (Open, High, Low, Close, Volume), these feeds can deliver a broader range of other data fields associated with the trading process.

For example, MTS Live offers additional real-time data, such as all Fill-and-Store (FAS) orders, double side quotes, order changes/cancellations and all executed trades.

MTS Live - Sample data order by best bid/ask
Time series: one second

Current aggregated order book
Order book updates from MTS Cash markets (CMF).

14:04:09:814.575 — cMF DEPTH updates

Bid Qty	Bid Price	Ask Price	Ask Qty
20	99.24	99.43	25
15	99.23	99.44	15
10	99.22	99.45	10
10	99.21	99.46	10
10	99.20	99.47	10

MTS Live updates
Full order book depth ordered by best bid/ask.
Aggregated quantity is for illustration only. Includes entry ID.

BID PRICE

Bid Price	Bid Qty	Aggregated Qty	Entry ID
99.25	10		900000415
99.25	10		900000464
99.25	10		900000405
99.25	10	40	900000594
99.25	10		900000594
99.24	10		900000166
99.24	10	20	900000501
99.24	10		900000405
99.23	10		900000169
99.23	5	15	900000010
99.21	10	10	900000312
99.20	10	10	900000565
99.19	10		900000296
99.03	5		900000420
99.02	5		900000420
98.44	5		900000389
98.43	5		900000389
98.26	5		900000375

ASK PRICE

Ask Price	Ask Qty	Aggregated Qty	Entry ID
99.41	5		900000389
99.42	5	5	900000389
99.42	10		900000594
99.43	10		900000594
99.43	10		900000415
99.43	10	30	900000464
99.44	10		900000594
99.44	10	20	900000166
99.44	10		900000501
99.45	10		900000405
99.45	5		900000169
99.45	10	25	900000010
99.47	10	10	900000405
99.48	10		900000312
99.49	10		900000565
99.72	5		900000296
99.73	5		900000420
100.42	5		900000420

Current aggregated order book
Second order book update within time series.

14:04:10:816.327 — cMF DEPTH updates

Bid Qty	Bid Price	Ask Price	Ask Qty
40	99.25	99.42	5
20	99.24	99.43	30
15	99.23	99.44	20
10	99.21	99.45	15
10	99.20	99.47	10

Graph Key:
- Un-aggregated bid – Unique to MTS Live
- Un-aggregated ask – Unique to MTS Live
- Depth outside aggregated order book – Unique to MTS Live
- Proposal updated and no longer active – Unique to MTS Live

[1]MTS Live is available to participants on MTS Cash, the European interdealer bond marketplace

Insights

Building benefit on the back of necessity

How exactly these new unique data types will be used to generate new revenue streams or improve existing margins will vary enormously across the market. However, one common opportunity for banks is to add new data to cleaned and normalised existing data stores they have prepared in order to comply with regulation, such as Basel III, MiFID II and GDPR. In doing so, a compliance overhead can be transformed into potentially multiple P&L opportunities. For example, analysis of stored client trading behaviour could be combined with new data on order modifications to adjust the algorithms used in a bank's internal pricing engine. These in turn could be used to refine pricing quoted to clients and so fine tune the bank's competitive edge. By the same token, new external data feeds that are also definitive sources of record can be used to validate existing internal data and help streamline the process of regulatory data compliance, as well as complementing existing data sets.

Two key points here are the breadth of the opportunity and the relatively low technology hurdle. A very large number of banks have enhanced their internal data management over the past few years in order to comply with regulation. In many cases, those changes will have included the introduction of technology, such as middleware, intended to ease the process of adding new data streams in the future. Therefore, parsing and using new data feeds or additional fields from existing data feeds, is no longer a major technological obstacle. (The same applies if the bank concerned is using technology from a third party ISV that handles the requisite feed anyway as part of its service.) The net result is that today the addition of new data has become primarily a business rather than a technology discussion - which might not have been the case five years ago.

Risk management and new data

One of the most fundamental recent changes in bond trading has been a shift in participants' understanding of risk and how they manage it. Historically, the common perception was that risk management was primarily a post-trade activity, with participants commonly using delayed or historical data to support this. The situation today is entirely different, with credit risk now very much becoming a real-time activity that needs to be supported by real-time data feeds - an approach that is already firmly entrenched in other markets such as foreign exchange.

Other aspects of risk management are also driving a requirement for high-quality, rich and fast real-time data. One consequence of MiFID II is the increasing involvement of more technologically-inclined participants. Many of these will be looking to take advantage of the requirements around increasing pre-trade transparency, which they see as an additional alpha opportunity. This in turn is likely to lead to higher trade frequencies and short term volatility. Managing the change in market risk associated with this requires access to a data feed that can provide a comprehensive picture of the order book with the absolute maximum of granularity and pre-trade information and the minimum latency. A data feed of this quality will also facilitate the better management of liquidity risk. This applies across several contexts, such as enhancing trade execution algorithms, refining external market making quotes and portfolio risk management.

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Insights

New technology + new data = new opportunity

The availability of high-quality, information-rich data sources such as MTS Live coincides neatly with the availability of new technology to facilitate better business performance. Artificial intelligence has made huge strides recently and in doing so has moved from the academically interesting to the (potentially) commercially robust. However, a critical factor in determining the performance of artificial intelligence is the quality of the learning features with which it is fed. This is where new data sources can add value if they contain information that human intelligence may be able to understand but that artificial intelligence can actually convert into profitability.

Quantity as well as quality now also plays a role in determining the performance of artificial intelligence: for a given quality of inputs, many established machine learning techniques tend to reach a performance plateau after a certain number of training examples. This is not true of the deep neural networks that are now available, where performance continues to increase in tandem with an increasing number of training rows for a given quality of inputs. This means that tick by tick data sources, such as MTS Live and MTS Historical Tick-by-Tick Data[2], which run to tens of millions of data rows (plus new additional data fields) can be leveraged to the full for trading strategies and business intelligence, as well as better risk and franchise management. For instance, trading models can be developed and back tested using MTS Historical Tick-by-Tick Data. Once validated, they can be traded live in real time using MTS Live as their data feed.

This is valuable enough in its own right, but an additional value layer is accessible when this sort of new high volume/value data is intelligently combined with the existing internal data stores mentioned earlier that have been cleaned and normalised. Artificial intelligence can then leverage that proprietary combination (it will be unique to each bank) to greater and business-specific effect. Better targeting of client opportunities, preservation of existing franchises (or development of new ones), enhanced risk management, more profitable automated trading algorithms, are just some of the very real opportunities that emerge.

Furthermore, these opportunities are practically attainable, because any organisation that already has the necessary data and the ability to combine it appropriately, also has ready access to the technology. This is because one of the most striking aspects of the recent resurgence in artificial intelligence is the open availability of the technology: many cutting edge artificial intelligence techniques are open source projects. Therefore, once armed with the right data and mindset, any market participant can benefit.

[2]Complete historical MTS Live with all data fields and microsecond time stamps dating back to June 2011.

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Conclusion

More so than ever, today's fixed income markets do not make stasis a viable business strategy. The competitive pressure is intense and changes in regulation will render it more so. The good news is that much of the investment already expended on regulatory data compliance can also be leveraged to significant commercial benefit. While high-quality information-rich external data feeds that offer unique data points are valuable in their own independent right, they have the potential to deliver substantial additional value when combined with existing high-quality internal data stores. Business decision making across the board can be enhanced. The logical extension of this is to exploit the quantity as well as the quality of suitable external data feeds even further through the use of deep learning artificial intelligence techniques.

Authors

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