KX SURVEILLANCE
FOR CREDIT AND RATES

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Introduction

FCA's Market Watch 68 (Nov 2021) brought into focus capital markets trade surveillance in the rates and credit markets on several fronts. These points along with other hot topics are discussed here.

COMPLETE TRADE LIFECYCLES

Capturing the full lifecycle of Request for Quotes, Orders and/or execution is a key requirement to meet the trade reconstruction rules under MiFiD 2 to answer questions such as, **"What was the perpetrator doing before executions?"** Combined with the ability to overlay unstructured data sources such as news and communications, effective investigation tools empower analysts by automating the piecing together of disparate data sources within a diverse information technology landscape of a large modern financial institution. The recent fine on NatWest for spoofing in the US Treasury markets illustrates the regulatory scrutiny in the fixed income markets pre-execution.

OVERSIGHT OF MULTIPLE VENUES

Fixed income markets can be traded on venues such as multiple MTFs (Multilateral Trading Facilities) as well as OTFs (Ordinary Trading Facilities) or ATS (Alternative Trading Systems) in the United States. In a fragmented market, malfeasant traders could place orders in one venue to affect the price in another venue. Cross-venue monitoring of an increasingly electronic fixed income markets is therefore vital.

CROSS PRODUCT ANALYSIS USING RISK METRICS

Another of the challenges for the fixed income surveillance is that there may be a multitude of securities which affect the yield curve. It is possible to solve this problem using PV01 (or DV01) sensitivities of widely used trading systems. Surveillance on trades impacting the yield curve is then made possible regardless of the product. E.g., Did a trader take advantage of a resting RFQ on a FRA and pre-hedge in a futures market? Pre-hedging is not necessarily market abuse but the ability to monitor it is a valuable surveillance capability and as such any derivative needs to be in scope.

Another benefit is the ability to filter out immaterial transactions using dollar duration – or the ability to ensure the surveillance models are monitor appropriate cohorts using filters on the duration i.e., surveillance on the near end vis-à-vis the far end of the curve.

OUTLIER DETECTION ON YIELDS

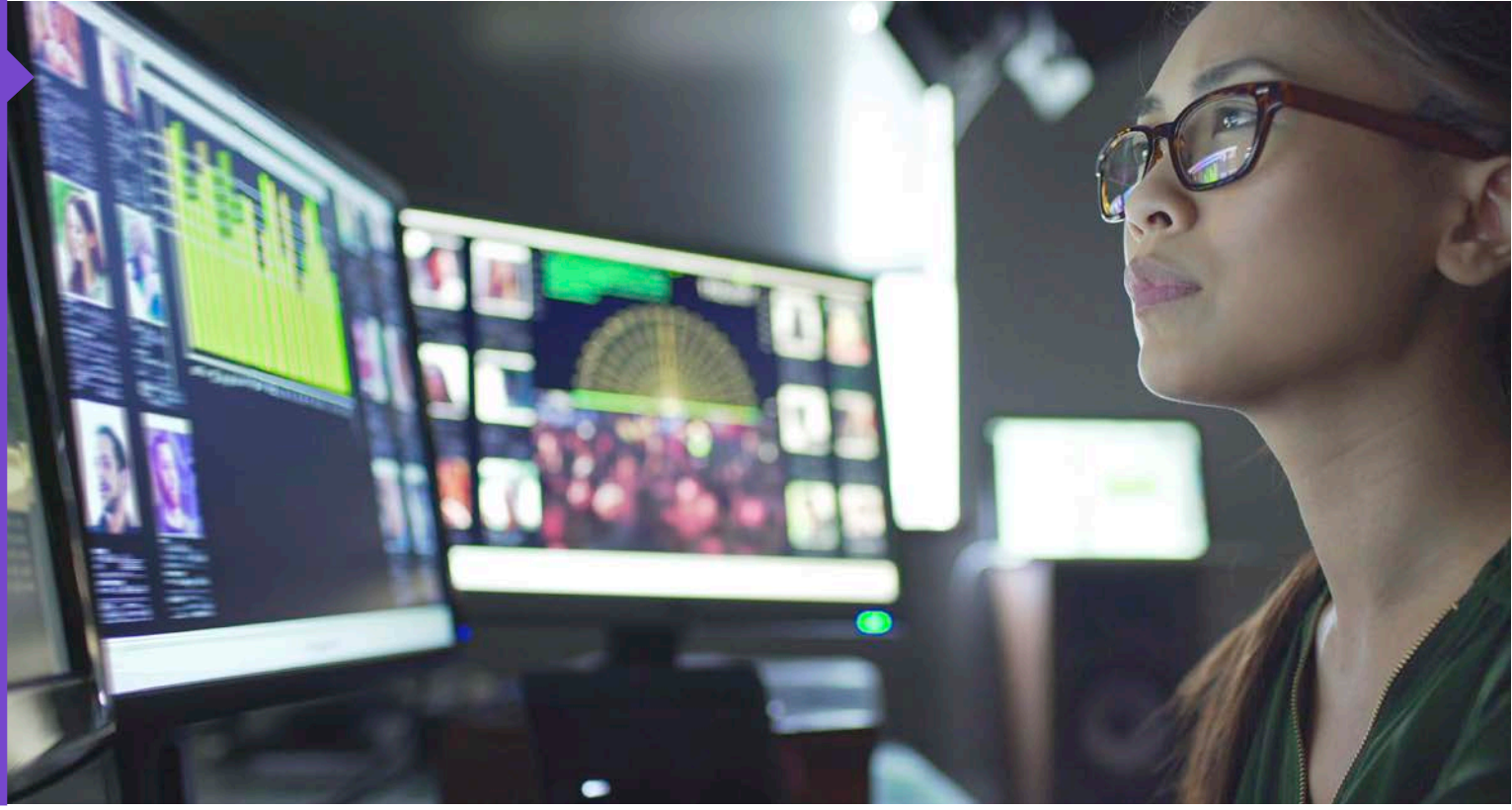
Fixed income markets typically trade on yields or spread over the risk-free rate. As surveillance is often looking for outlying patterns versus thresholds, it makes more sense to do so on yields to enable comparisons of similar instruments with differing maturities.

MACHINE LEARNING TECHNIQUES FOR TRADE SURVEILLANCE

As technologies and markets evolve, it is critical that surveillance is in lockstep with those developments. Without regular recalibration to the business scenarios there is also a risk of generating false positives. Dynamic thresholds use statistical techniques to identify out-of-character behaviour profiled by the entity's historical trading patterns. Market abuse alerting is then only on anomalous behaviour in the context of any idiosyncratic trading patterns for each market participant. For example, what is a large order for one trader may not be relevant for another trader who regularly trades such sizes. This helps reduce false positive alerting and saves analysts times in investigations.

By integrating machine learning techniques such as K-means clustering, it empowers analysts with data-driven decision making by informing them on common features of execution. Analysts are then able to deploy honed parameters to each cluster for finely tuned surveillance models.

The random forest model also provides further insight into which features of the data within the alerts are most relevant for true positives.



A MARKET CONDUCT KEY CONTROL

Operational risk departments can leverage the backtesting engine of algorithms to identify behaviour on either historic or stressed market data within a sandbox environment as the detective control for market abuse before any algorithm gets the sign off for deployment.

A well-designed preventative control for algorithms abusing the market could terminate the algorithm's activity. Alternatively, a historical replay of the algorithm in a sandbox environment would be a useful test of whether algorithms performed without exhibiting regulatory breaches.

KX SURVEILLANCE

KX's solution for market abuse compliments and integrates with existing IT infrastructure due to its flexibility.

KX Surveillance assesses pre-execution market abuse by monitoring not just trades but also orders and request-for-quotes. KX solution's uptake has been driven by the ability to monitor spoofing and layering behaviour in central limit order books, as well as for unusual activity in RFQs.

The solution's ability to aggregate multiple data sources from its flexible feed integration capabilities can provide the complete market picture on- and off-exchange, ensuring that even dark pools are not escaping the surveillance desk's attention.

It empowers trade surveillance analysts perform "what if" historical analysis on the parameter tuning of the surveillance models, and if need, deploy those hypothetical analyses into production at a click of a button.

Most notably, the solution is developed on low latency technology, thereby making it an ideal candidate for real time surveillance and the scope for deploying it as a preventative control.

TALK TO KX

KX Surveillance

Winner of **"Most Innovative Trade Surveillance Solution"** in the 2022 A-Team Innovation Awards and **"Most Innovative Technology for Regulatory Compliance"** in RegTech Insight USA Awards 2021.

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