CASE STUDY

Fixed Income Market Making: The Hidden Cost of Latency Drift

How xMetrics Exposed Hidden Performance Issues and Ensured Continuous Monitoring.

Client Profile

A European bank's fixed income market-making desk had been loss-making for three consecutive quarters despite strong flow and competitive pricing. As a market maker on MTS, the client was obligated to maintain continuous two-way quotes across a range of EU Government Bond instruments.

The Challenge

An automated 'Quote Off' function was designed to immediately withdraw quotes after being hit, managing risk exposure across correlated instruments.

Why Quote Speed Matters

In quote-driven markets, milliseconds define profitability. When hit, a market maker must instantly withdraw quotes across correlated instruments to reduce exposure. Even brief delays create arbitrage opportunities for faster participants to exploit stale quotes – translating over time, into significant losses.

The Invisibility Problem

The Quote Off function had gradually degraded — likely due to software updates, configuration drift, or infrastructure changes. Without baseline metrics or continuous monitoring, the team had no defined view of "good" and could not detect when, or how badly performance had deteriorated.

Key Pain Points

- Unexplained P&L losses with no performance baselines to identify the cause
- Multiple fills on stale quotes across correlated instruments after initial execution
- Zero real-time visibility — issues only surfaced after significant losses had been incurred
- Systematic adverse selection by lower-latency participants
- No proactive alerting mechanism to detect further degradation

The xMetrics® Solution

xMetrics Trade Flow Analytics was deployed to deliver microsecond-level visibility across the client's fixed income trading infrastructure, establishing a baseline with intelligent, continuous alerting.

Optical TAPs and a network capture fabric

Deployed at all key infrastructure points, capturing and correlating every quote management, execution, and market data message in real time

End-to-end quote lifecycle tracking

From submission and hit detection to Quote Off invocation and market confirmation — with precise timestamping at each stage

Dynamic baseline

Established from historical behaviour, factoring in time of day, volatility, and instrument characteristics

Context-aware, multi-dimensional baselines

That adapt to prevailing market conditions, trading volumes, and system load

The Critical Discovery

Within days, xMetrics identified the root cause: the Quote Off function was averaging over 900ms — occasionally exceeding one second — to withdraw quotes. During this window, faster participants were repeatedly hitting stale quotes across correlated groups.

Correlating removal latency with P&L impact revealed that each additional 100ms of latency directly increased adverse selection losses. Optimal performance required sub-100ms latency, with 95% of removals completing within 150ms.

Ongoing Monitoring

After the platform vendor optimised the Quote Off function, xMetrics established the improved performance as the new "known good state" and now continuously monitors for:

- Average latency exceeding threshold over any five-minute window
- Removal completion rates dropping below target
- Any single removal exceeding alert thresholds, indicating a potential system fault
- Gradual degradation trends, even within acceptable limits

The Outcome

Armed with baseline-referenced data, the team implemented targeted improvements:

Quote removal latency reduced

Quote removal latency reduced by over 89%, achieving sub-100ms performance

Market-making

Market-making desk returned to consistent profitability

Three potential regressions detected

Three potential regressions detected and resolved before any P&L impact in the six months following deployment

Shift from reactive

Shift from reactive, post-loss investigation to proactive, real-time performance management

Full management confidence

Full management confidence through real-time dashboards displaying current metrics against established baselines

---

Summary

Most trading firms only monitor for outright failures. Yet the most damaging performance issues creep in gradually, eroding profitability long before alarms sound. Without defining what "good" looks like and continuously measuring against it, firms are operating blind.

xMetrics is designed for market makers facing unexplained P&L volatility, trading teams without performance baselines, firms experiencing regressions after upgrades, and any organisation needing early detection of degradation before it impacts revenue.

+44 (0)20 7030 3791
20-22 Wenlock Road
London N1 7GU

enquiries@instrumentix.co.uk
www.instrumentix.co.uk