Equity automation improves performance and strengthens best execution

BLOOMBERG PROFESSIONAL SERVICES
OVERVIEW

Bloomberg
Electronic Trading

Contents

Equity automation improves performance and strengthens best execution

Equity traders manage thousands of orders from multiple portfolio managers, in diverse markets, with distinct instructions amid varying market conditions, while striving to achieve best execution.

Trading desks use an Execution Management System (EMS) to view market intelligence and access trading destinations to execute their orders. Now, more firms are looking to automated trading within their EMSs to optimize execution, manage transaction costs, and reduce performance setbacks from trading delays. This typically requires creating a repeatable workflow for each order category, measuring trade performance against a consistent benchmark, and having the flexibility to change the process regularly.

Tools such as Bloomberg's Rule Builder (RBLD), which is integrated into Bloomberg's EMS and can serve as part of both the workflow optimization and best execution process. RBLD is a multi-asset automated trading tool that allows traders to systematically implement and manage routing rules to automate actions on selected orders or for an entire trading desk for Listed Equities, ETFs, Futures, Options, Fixed Income and FX workflows.

RBLD helps maintain a consistent process, and user-defined rules help to profile orders into specified workflows. This includes options like zero-touch, one-touch, or letting traders manually choose a specific plan for an order. As a result, orders can leave the blotter quicker, giving traders more time to focus on complex trades and high-touch activities.

The known benefits of automation for operational efficiency, like systematically managing and freeing up a trader's blotter, are widely acknowledged. However, the impact of automation on trade execution performance has been underexplored. To better understand this, we analyzed the performance of firms that use Bloomberg's RBLD in the U.S. and European equity markets. We evaluated trade execution using anonymized data including the arrival price or Implementation Shortfall benchmark, normalized by the weighted average based on each trade's notional value (USD). The analysis[1] utilized anonymized data from Bloomberg's Transaction Cost Analysis (BTCA)[2], covering 23 million orders between January 1, 2022, and December 31, 2023.

The data showed that U.S. and European equity trading desks that use Bloomberg RBLD show performance improvement in both automated and manual orders. It suggests performance enhancements measured through the widely accepted Implementation Shortfall (IS) across key trading metrics including order sizes, volatility and bid/ask spreads.

Enhancing trading performance

In the U.S. equity markets, automated orders using RBLD outperformed manual orders by 38% (3.0 bps). Additionally, the overall performance (combination of automated and manual orders) of firms using RBLD was 30% (2.5 bps) better than Non-RBLD (only manual orders) firms (see Figure 1). Similar trends were observed in European equity markets, where RBLD orders outperformed manual orders by 68% (4.5 bps). Likewise, firms using RBLD observed a 36% (2.5 bps) improvement in the overall performance compared to their Non-RBLD counterparts (see Figure 2). Empirically, the data shows that RBLD orders have less slippage against the arrival price.

To further understand the impact of automation on performance, the RBLD orders were analyzed under different automation buckets by percentage[3]. An in-depth look at the firms using RBLD reveals that in both the U.S. and European equity markets, the slippage against the arrival price reduced as more order flow was automated (see Figures 3 and 4). The Implementation Shortfall (IS) in the U.S. decreased by 28% (1.9 bps) when automation went from low to medium, and by 131% (6.4 bps) when automation increased from medium to high. In Europe, the trend showed a decrease from 41% (2.6 bps) to 19% (0.7 bps) across low to medium, and medium to high automation, respectively.

These findings make it clear that RBLD could help to automate low-touch, repetitive orders that offer little to no opportunity for a trader to gain execution alpha. Traders can use the integration of RBLD with BTCA to create various benchmarks for measuring the performance of automated workflows.

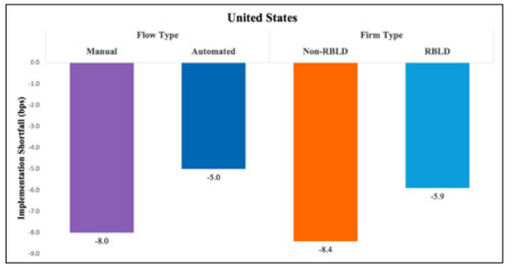

Figure 1. Performance by Flow Type and Firm Type in the U.S.

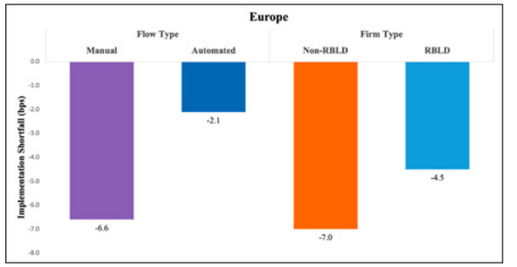

Figure 2. Performance by Flow Type and Firm Type in Europe

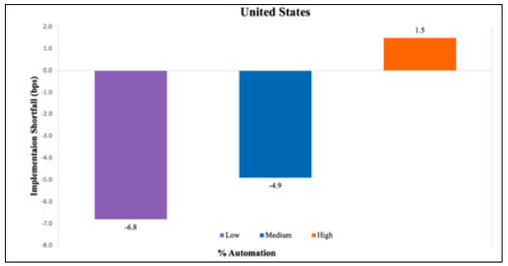

Figure 3. Performance of Automated orders across % automation buckets in the U.S.

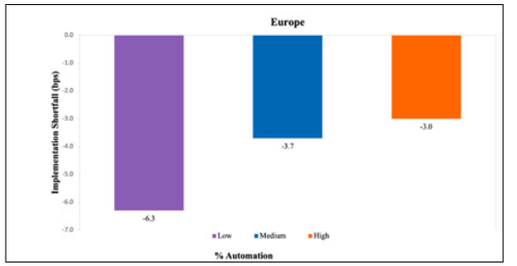

Figure 4. Performance of Automated orders across % automation buckets in Europe

Performance consistency with RBLD

The data shows that RBLD not only outperformed manual orders but also had less performance variation, thereby providing more consistent and predictable performance. This is evident because automated orders using RBLD exhibit a lower standard deviation of Implementation Shortfall in both the U.S. and Europe, leading to less variation from the average IS. RBLD can also be utilized by traders for better predicting and managing trade costs (see Table below).

Implementation Shortfall Standard Deviation (bps)

	Manual		Automated	
	Mean	**Std**	**Mean**	**Std**
United States	-8.0	± 54.2	-5.0	± 40.1
Europe	-6.6	± 54.1	-2.1	± 45.4

Performance breakdown of RBLD

The cost of trade execution can generally be predicted based on the order's trade size, the security's volatility, and its bid/ask spread. To explore RBLD's impact in more detail, the study was expanded to include 21-day average daily volume (ADV), 30-day annualized volatility, and 5-day average bid/ask spread categories.

Performance by order size ADV

Analyzing orders based on their size compared to the average daily volume (ADV) reveals that RBLD consistently performs better than manually routed orders in both U.S. and European equity markets across all size (≤ 2% of ADV) categories (see Figures 5 and 6). In the U.S., automated orders using RBLD outperformed manual orders by 25% (0-0.5% ADV), 35% (0.5-1% ADV), and 47% (1.0-2.0% ADV). Similarly, in Europe, the trend showed outperformance by 51% (0-0.5% ADV), 39% (0.5-1% ADV), and 84% (1.0-2.0% ADV). Traders can use RBLD's rules to categorize orders by their size compared to ADV, implement suitable trading strategies, and route them to a broker wheel using RBLD WHLS[4]. Additionally, BTCA can be used to analyze performance at the broker wheel level.

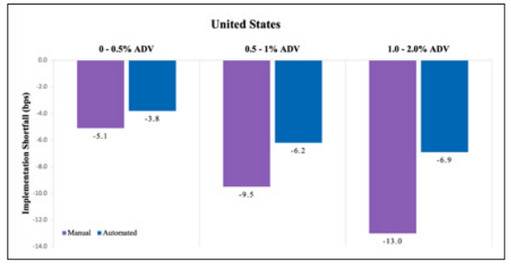

Figure 5. Performance of Manual and Automated orders across ADV buckets in the U.S.

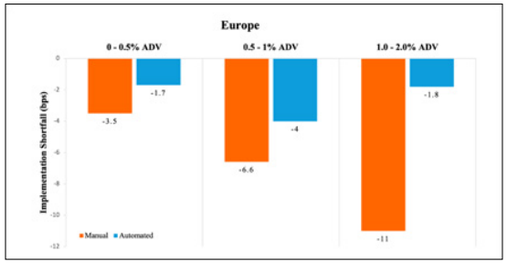

Figure 6. Performance of Manual and Automated orders across ADV buckets in Europe

Performance by volatility

Understanding a security's volatility (30-day annualized) is essential for evaluating risk, guiding trading decisions, and implementing effective risk management strategies. The analysis indicates that RBLD consistently performed better than manual orders across various levels of volatility[5] (see Figures 7 and 8). In the U.S., automated orders using RBLD showed improvements of 51% (low), 49% (medium), and 36% (high), while in Europe, the improvements were 83% (low), 47% (medium), and 64% (high). The data indicates that traders can gain advantages from automation, particularly in highly volatile and low average daily volume (ADV) securities. RBLD rules, considering a security's volatility, enable traders to automate decisions across low-to-high volatility scenarios, enhancing informed trading and automation in various market conditions.

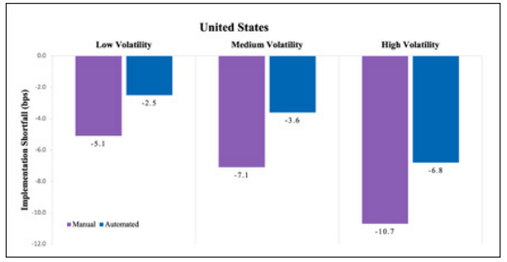

Figure 7. Performance of Manual and Automated orders across volatility buckets in the U.S.

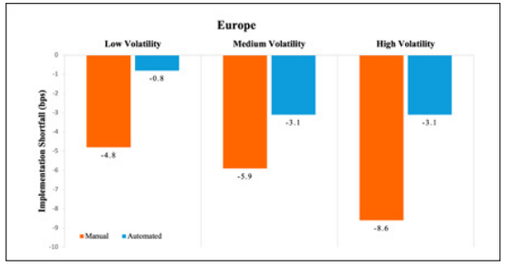

Figure 8. Performance of Manual and Automated orders across volatility buckets in Europe

Performance by spread

Understanding the bid/ask spread (5-day average) of a stock is essential for evaluating transaction costs, liquidity and potential price impact, which influence effective entry and exit points in trading decisions. RBLD's effectiveness is also evident in bid/ask spread[6] categories, making it a valuable tool for handling diverse scenarios (see Figures 9 and 10). In the U.S., automated orders using RBLD showed improvements of 24% (tight), 37% (medium), and 47% (wide), while in Europe, the improvements were 43% (tight), 36% (medium), and 74% (wide). The data suggests that automated workflows are beneficial not only for securities with tight spreads and low ADV but also for those with wide spreads and low ADV.

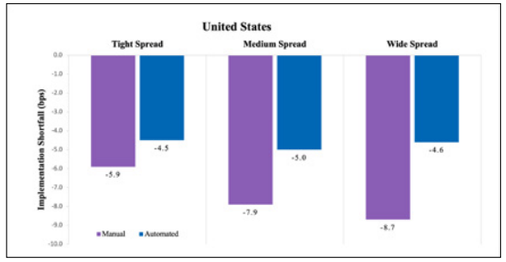

Figure 9. Performance of Manual and Automated orders across spread buckets in the U.S.

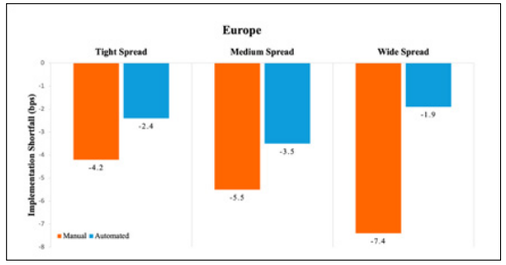

Figure 10. Performance of Manual and Automated orders across spread buckets in Europe

Our findings show that across various order execution cost factors, RBLD consistently outperforms manually routed orders. Reducing human bias through systematic workflows is likely the key factor behind this outperformance.

Conclusion

Trading desks using RBLD exhibit improved execution performance for both automated and manual orders. It indicates outperformance, measured through a widely accepted Implementation Shortfall across key trading metrics including order sizes, volatilities, and bid/ask spreads. RBLD provides a broad range of rule conditions, which is powered by the wealth of data and analytics across the Bloomberg Terminal. It integrates advanced workflow features, including time automation and re-run logic, and enables broker commissions management and routing to a global broker network. Ultimately, it facilitates proving out best execution using Bloomberg's BTCA offering. Traders can utilize these features together, creating workflows that combine the best of human-machine collaboration to further the value provided by the execution desk.

Endnotes

[1] These orders exhibited no limiting factor to their execution and were intraday, marketable, single-day non-auction, trading exclusively within the exchange's continuous session, and had sizes ≤ 2% of ADV.

[2] BTCA is a fully customizable post-trade transaction cost analysis tool that allows you to create, schedule, and distribute custom reports, so you can gain context and insight into your trading process and assess transaction costs and trader/broker performance.

[3] Percentage Automation was categorized into Low (0-25%), Medium (25-65%), and High (>65%) buckets.

[4] For RBLD orders in Bloomberg EMSX, WHLS allows the creation of custom rules like route based on quantity, notional, commission, symbol, or side to select the broker destination from a set of brokers systematically.

[5] Volatility was categorized into Low (0-25%), Medium (22-32%), and High (32-75%) buckets.

[6] Spread was categorized into Tight (0-2.0 bps), Medium (2.0-4.0 bps), and Wide (4.0-10.0 bps) buckets.

About Bloomberg Electronic Trading Solutions

Traders and portfolio managers at the world's leading financial institutions are partnering with Bloomberg's electronic trading team to access a comprehensive global network of deep liquidity for multi-asset class trading.

Before, during and after the trade, access comprehensive end-to-end solutions across the trading life cycle, bringing together pricing, analytics, liquidity, automation and execution optimized by straight through processing so you can connect more successfully to the global trading markets – all in one place.

Solutions for electronic trading

Get in touch with our sales specialists to discuss electronic trading insights, Bloomberg product enhancements and upcoming events.

bloomberg.com/professional

Beijing
+86 10 6649 7500

Dubai
+971 4 364 1000

Frankfurt
+49 69 9204 1210

London
+44 20 7330 7500

Hong Kong
+852 2977 6000

Mumbai
+91 22 6120 3600

New York
+1 212 318 2000

São Paulo
+55 11 2395 9000

Shanghai
+86 21 6104 3000

Singapore
+65 6212 1000

Sydney
+61 2 9777 8600

Tokyo
+81 3 4565 8900