



Quantitative Services Group LLC

QSG Drill Down on Agency Block Trading

Technology has forever changed the way that equity trading desks conduct their business. The collapse and consolidation of some of the equity markets' biggest players has forced many buy-side desks to reevaluate their execution relationships. In addition, the proliferation of High Frequency Trading (HFT) has complicated the perceived historic benefits of using automated trading strategies. This report will dive into one broker's results to evaluate buy-side traders' path to best execution on high impact trades. In essence what was old school needs to be reconsidered as the vanguard of best execution.

An important part of this evaluation is the role of traditional "high touch" brokers in the mix of capital committing and algorithmic providers. One of these firms that we see gaining market share is Jones Trading. Jones Trading is also one of the only pure play firms that specializes in agency block trading and serves as an excellent proxy for the study.

Quantitative Services Group (QSG) is a leading third-party independent provider of trading analytics. At QSG we regularly comb through our database for trends in the market that we can illuminate to help clients deliver better execution results. In analyzing our extensive universe of 200 broker dealers' trading data for 2009, Jones Trading consistently placed in the top decile. These results triggered an academic curiosity to drill down into why and how they deliver these results. The analysis was conducted on a tick-based level to quantify the specific value of Jones Trading's execution services versus the peer group over the first two quarters in 2009. Of particular interest was the impact of Jones Trading's internal crossing activity and whether those executions contributed favorably to a client's implementation results. Jones Trading's strategy focuses on crossing stock anonymously with minimal price impact. The firm has close to 100 sales traders with 13 offices spread across the US and Canada. The size and relationship focus of the firm covers roughly 1,600 clients and offers what they claim as a unique liquidity pool for their customers.

Execution Quality Analysis

The analysis in this report covers over 2.7 billion shares traded in quarters one and two of 2009 and is representative of large-cap, mid-cap, and small-cap stocks.

QSG's bottom-up analysis of 'Best Execution' provides a systematic framework for evaluating trading performance. To establish useful comparisons, this analysis will compare Jones Trading to traditional benchmarks used for TCA as well as QSG's tick-based 'T-Cost Pro' methodology which separates the cumulative execution 'footprint' of a trade from the short-term price drift (alpha) over the execution period. An important goal of the analysis is to isolate Jones Trading's crossing activity to show how these crosses impact overall execution quality. We will compare Jones Trading's execution quality to those of a subset of QSG's Peer Universe with 'like trades'. This subset is made up of trades with similar Capitalization, Trade Liquidity, Momentum and Volatility characteristics that Jones Trading's trades constituted. The metrics detailed in this report are the actual execution costs and benchmark 'slippage' values of

...this analysis will compare Jones Trading to traditional benchmarks used for TCA as well as QSG's tick-based 'T-Cost Pro' methodology...

Jones Trading and the QSG Peer Universe and do not represent peer comparisons derived from regression analysis. All averages are weighted by executed value.

Figure 1 displays the basic benchmark comparison for Jones Trading versus the QSG Peer Group from 1/1/2009 through 6/30/2009 for all trades greater than 5% of daily volume. Jones Trading significantly outperforms the QSG Peer Universe versus 'Arrival Price'. This is defined as the midquote of the prevailing bid/ask spread at the first execution in an order. Jones Trading's overall value-weighted slippage from Arrival Price is 26.01bps, whereas the Peer Universe's slippage is 61.15bps. This is a 35.14 bps advantage for the period. The second benchmark comparison is to Interval VWAP, or the volume-weighted average price during the trading interval (First to Last Trade). Jones Trading outperforms this benchmark on average by 2.14 bps. The Peer Universe on average underperforms this benchmark by 1.69 bps, yielding an outperformance of 3.83 bps over the QSG Peer Universe against Interval VWAP. The third comparison is to the Full Day VWAP. Again, Jones Trading's execution outperformed the Peer Universe by a respectable 5.30 bps.

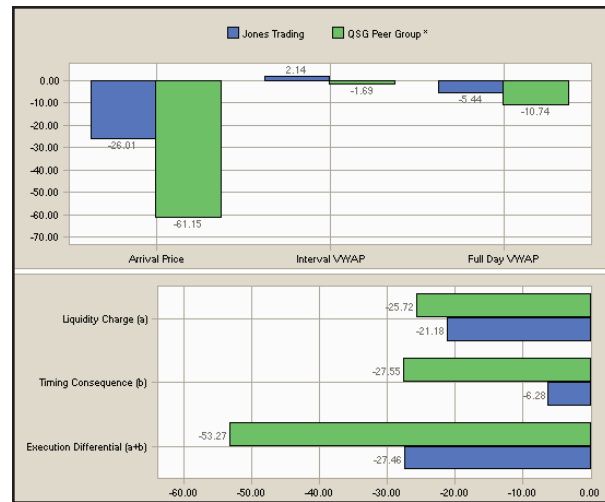


Figure 1 & 2

A powerful way to leverage the 'Arrival Price' slippage measure is to use QSG's T-Cost Pro methodology. This sophisticated methodology was developed by traders to separate an order's cost of liquidity (price impact) from the short-term price drift (exogenous movement of the stock) during the execution period. This is accomplished by identifying all Jones Trading's fills on the tape to accurately calculate the cumulative execution 'footprint' that resulted from the individual executions in the order. This allows us to breakdown the 'Execution Differential' (execution-level slippage from arrival price) into this Liquidity Charge (market impact cost) with the residual identified as the Timing Consequence (short-term alpha). This process requires identifying the executions on the tape; any execution not matched will not be included in the attribution analysis. The percentage of Jones Trading's matches to the tape was more than 98% of their executed value for the period.

Figure 2 details QSG's proprietary cost attribution of Jones Trading's executions versus the QSG Peer Universe for trades greater than 5% of daily volume. Jones Trading outperforms the QSG Universe across both components of the total Execution Differential. Specifically, Jones Trading outperforms the Peer Universe by 4.54 bps for Liquidity Charge, a 22% improvement, and 21.27 bps for Timing Consequence, an incredible 78% improvement.

The price improvement for Liquidity Charge is a clear illustration of the positive benefits of the internal natural crossing activity Jones Trading is delivering to clients. We isolated these numbers with respect to crossed and non-crossed orderflow below to fully understand the impact of this trading technique.

- It can be seen that the real driver of outperformance for Jones Trading's order flow is their Timing Consequence charges. For trades greater than 5% of daily volume, Jones Trading's costs due to short-term alpha amount to 6.28 bps and for the Peer Universe these costs amount to 27.55 bps.
- Jones Trading's outperformance with regard to Timing Consequence may very well be due to the 'active' nature of a human crossing network which they call "Proactive Liquidity Sourcing Solution" (PLSS). Jones Trading separates itself from automated dark pools and crossing networks by integrating a 'human network solution' for digging up liquidity.

Specifically, Jones Trading outperforms the Peer Universe by 4.54 bps for Liquidity Charge, a 22% improvement, and 21.27 bps for Timing Consequence, an incredible 78% improvement.

The Human Liquidity Network

'Asani Sarkar, research officer at the Federal Reserve Bank of New York, believes dark pools are imperfectly integrated. In a recent article in the Journal of Trading, "Liquidity Begets Liquidity: Implications for a Dark Pool Environment", Sarkar et al conclude that consolidation and two-sidedness are natural processes for an equity market. The authors assert that these are the main dynamics that underlie liquidity creation. They go on to explain:

"... modern technology facilitates the increased fragmentation of markets, and it supports the possibility of increasingly fragile, one-sided markets proliferating. True, technology also promises greater integration of markets, but such liquidity aggregation may prove inadequate. The extent to which the natural two-sidedness of markets stays resilient in the face of these developments remains to be seen."

JonesTrading's PLSS process integrates human ingenuity with technology and a liquidity network so that the other side of a trade can be discovered even when it is not advertised. JonesTrading's liquidity sourcing activity is an active process that works to limit the exposure of an open order to the market by collapsing the time to fill. By limiting exposure to price movements and signaling risk, negative 'Timing Consequence' costs will be avoided.

To understand the impact that JonesTrading's internally crossed flow has on their overall execution quality, we have separated crossed versus non-crossed order flow (Figure 3). This segmentation dramatically illustrates the advantage of crossing on the 'footprint' created by client orderflow. The price impact or Liquidity Charge is negligible versus the non-crossed orderflow. The -0.63 bps of Liquidity Charge indicates charges associated with fills that belong to orders consisting of more than just natural crosses. Timing Consequence charges for crossed order flow are comparable to that for non-crossed order flow. Thus, the largest impact that the naturally crossed order flow has on JonesTrading's overall execution quality is a severe mitigation of Liquidity Charge costs which leads to less slippage from Arrival Price (Execution Differential = -4.68 bps for crossed flow versus -18.60 bps for non-crossed flow).

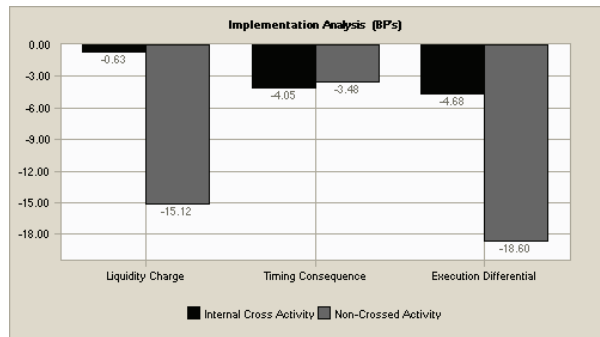


Figure 3

"Thus, the largest impact that the naturally crossed order flow has on JonesTrading's overall execution quality is a severe mitigation of Liquidity Charge costs which leads to less slippage from Arrival Price."

The rankings in Table 1 show the top 10 broker dealers in QSG's dataset ranked by Liquidity Charge in the Small Cap, Mid Cap and Large Cap buckets.

Small Cap > 5% DV	Rank	Mid Cap > 5% DV	Rank	Large Cap > 5% DV	Rank
Instinet L.L.C.	1	Liquidnet, Inc.	1	Liquidnet, Inc.	1
Jones Trading	2	Jones Trading	2	ITG, Inc.	2
Morgan (JP.) Securities Inc.	3	Raymond James & Associates, Inc.	3	Jones Trading	3
Morgan Stanley & Co. Incorporated	4	Jefferies & Co., Inc.	4	Instinet L.L.C.	4
Citigroup Global Markets, Inc.	5	Morgan (JP.) Securities Inc.	5	BNY Investment Center, Inc.	5
Banc of America Securities, L.L.C.	6	Morgan Stanley & Co. Incorporated	6	Credit Suisse Securities (USA) L.L.C.	6
Liquidnet, Inc.	7	Banc of America Securities, L.L.C.	7	Morgan Stanley & Co. Incorporated	7
Credit Suisse Securities (USA) L.L.C.	8	Goldman, Sachs & Co.	8	Banc of America Securities, L.L.C.	8
UBS Securities L.L.C.	9	Barclays Capital, Inc.	9	Morgan (JP.) Securities Inc.	9
Goldman, Sachs & Co.	10	BNY Investment Center, Inc.	10	Barclays Capital, Inc.	10

Table 1

The rankings in Table 1 show the top 10 broker dealers in QSG's dataset ranked by Liquidity Charge in the Small Cap, Mid Cap and Large Cap buckets. All trades included in this analysis were greater than 5% of daily volume. JonesTrading ranks in the number two spot for Small and Mid Cap stocks and in the number three spot for Large Cap names.

This analysis confirms the value of accessing naturally crossed liquidity. This large execution sample confirms the significant advantage of limiting the cumulative footprint created by each individual execution in an order. This is especially valuable when short-term price drift is not accentuated by waiting for the liquidity benefits of crossing opportunities.

Over the period analyzed, JonesTrading's service model was especially effective in minimizing impact costs through the application of a human element that is missing from many technology-driven solu-



tions. This combination of lower impact and low information leakage is a distinct advantage for the toughest to trade orders, especially those in small capitalization names. The ability to combine block style liquidity, dynamic order management and broad venue access is the recipe for success in the new agency model. Comprehensive measures that isolate liquidity management are a powerful tool for fine-tuning execution strategy.

What about Algos?

Having explained the value creation of a high touch human network, it is interesting to compare that to the collective footprint of using low touch execution strategies through algorithmic trading venues. The perceived optimized path of trade channel selection has been to use automated trade venues such as algorithms. Algorithms by nature base their trade schedules on historic econometric modeling. The algorithms carve up the order into bin cycles and then plot how to trade within each bin. It is within these bins that the order is forced to repeatedly interact with high frequency trading predatory participants in the market. According to Tabb Group, 75% of the volume in the market can now be attributed to High Frequency Trading (HFT). The growth in this market segment is nothing short of amazing and must be because there is money being made off of natural investors. A recent white paper by Themis Trading breaks down the way in which predatory HFT strategies hunt for automated execution participants and uses them to their advantage.

Themis Trading's white paper asserts that "More than half of all institutional algo orders are 'pegged' to the National Best Bid or Offer (NBBO)". The problem is, if one trader jumps ahead of another in price, it can cause a second trader to go along side of the first one. Very quickly, every algo trading in a given stock is following each other up or down, creating huge, whip like price movements on relatively little volume.

This has led to the development of predatory algo trading strategies. These trades are designed to cause institutional algo orders to buy or sell shares at prices higher or lower than where the stock had been trading, creating a situation where the predatory algo can lock in a profit form the artificial increase or decrease in the price.

To illustrate, let's use an institutional algo order pegged to the NBBO with a \$20.00 bid, offered at \$20.04, with discretion to pay up to \$20.10. First, the predatory algo uses methods similar to the liquidity rebate trader to spot this as an institutional algo order. Next, with a bid of \$20.01, the predatory algo goes on the attack. The institutional algo immediately goes to \$20.01. Then, the predatory algo goes \$20.02, and the institutional algo follows. In similar fashion, the predatory algo runs up the institutional algo to its \$20.10 limit. At that point, the predatory algo sells the stock short at \$20.10 to the institutional algo, knowing it is highly likely that the price of the stock will fall. When it does, the predatory algo covers.

This is how a stock can move 10 or 15 cents on a handful of 100 or 500 share trades, and as Karl Denninger at Seeking Alpha has observed, "HFT systems that front-run are able to garner risk-free profits. This in fact is the reason such a practice is banned- their "risk-free" profit is your guaranteed loss."

This well articulated scenario shows that even in liquid low impact orders one can experience a high degree of impact, but in situations where an order represents more than 5% of ADV this problem can become acute.

By marrying these two premises together we find that there is a rational explanation for the superior results found in Jones Trading's upstairs high touch trading style. In essence, what was considered an antiquated approach to trading has become vogue again as savvy institutional and hedge fund traders are moving the pendulum back toward blocks to avoid the predatory landscape that has evolved in the marketplace.

Very quickly, every algo trading in a given stock is following each other up or down, creating huge, whip like price movements on relatively little volume.

"HFT systems that front-run are able to garner risk-free profits. This in fact is the reason such a practice is banned- their "risk-free" profit is your guaranteed loss."



1560 Wall Street
Suite 334
Naperville, IL 60563

PH 630.637.8088
FAX 630.637.8388

www.qsg.com

Copyright © 2009 Quantitative Services Group LLC. All rights reserved. The QSG name and logo are registered marks of the Quantitative Services Group LLC. Names and logos used in conjunction with QSG products or services are the property of the Quantitative Services Group LLC.

No reader should act on the basis of any matter contained in this publication without considering their own individual circumstances. Our research is for informational purposes only; QSG marketing collateral and software should not be considered as investment recommendations. Model past performance is not indicative of model future performance. Equity investing can be extremely risky, and one can lose a substantial amount of money in a short period of time. This brief statement cannot disclose all the risks involved with equity investing, and QSG assumes no responsibility for any occurrence not mentioned in this disclaimer.