

Trade-Through Analysis

From an 11Ac1-5 Perspective

- Rule 11Ac1-5 data specifically measure execution quality provided to market orders.
- Dash-5 advantages:
 - Know order direction (buy/sell);
 - Benchmark is best quote at order receipt time.
- Dash-5 drawbacks:
 - Not available in real-time;
 - Monthly averages only.

**Market Order Shares Traded Outside the Quote
February 2004: 11Ac1-5 Statistics**

Market Order Size Category	NYSE-listed Securities		Nasdaq-listed Securities	
	All Market Centers	NYSE Specialist	All Market Centers	Market Makers
100-499 shares	16.8%	20.2%	7.8%	5.1%
500-1999 shares	21.7%	25.5%	13.0%	11.1%
2000-4999 shares	31.4%	34.6%	22.5%	22.1%
5000-9999 shares	38.7%	41.7%	27.0%	27.3%

Traditional Trade-Through Analysis

- Compare “Last Sale” trade price with prevailing NBBO.
- Problems with detection:
 - Don’t know buy/sell direction;
 - Lags in trade reporting time;
 - Quote “flickering”.
- Conservative approach to detection: Look for price worse than a quote standing x seconds before trade and y seconds after.

Observed Trade-Through Rates using Last Sale Data

Apr 1 – 12, 2004

Detection Rule <i>Before/After</i> <i>(seconds)</i>	NYSE-Listed <i>(Avg 1.95 MM Trades/day)</i>		Nasdaq-Listed <i>(Avg 3.49 MM Trades/day)</i>	
	Trades	Shares	Trades	Shares
0/0	4.2%	10.2%	7.7%	11.5%
5/2	2.0%	6.9%	1.6%	5.1%
10/5	1.5%	5.3%	0.9%	3.5%
25/10	1.0%	3.6%	0.5%	2.0%

Note: NYSE-listed statistics do not include “satisfying commitments” done to satisfy trade-through complaints.

Observed Trade-Through Amount

April 1 – 12: Trade-Throughs less than \$2

	NYSE-listed	Nasdaq-listed
25 th Percentile	\$0.01	\$0.01
50 th Percentile	\$0.01	\$0.01
75 th Percentile	\$0.02	\$0.03
95 th Percentile	\$0.07	\$0.10
Mean	\$0.024	\$0.029

The Other Reason for Trade-through Protection

- Submitters of aggressive limit orders/quotes that set the NBBO could become discouraged if traded-through.
 - Spreads would widen unnecessarily.
- Remedy: move orders/quotes to venues where being traded-through less likely.
 - Brokers receive commission for limit orders only when orders filled. Incentives are properly aligned.

Inside-the-Quote Limit Order Fill Rates:

Rule 11Ac1-5 Data: February 2004

Index	NYSE-listed		Nasdaq-listed		
	All Orders	Retail Orders*	Nasdaq MMs	Market Makers	ECNs**
S&P 500	36.4%	67.4%	80.5%	82.5%	15.2%
S&P MidCap	30.3%	64.3%	70.5%	76.8%	16.0%
S&P SmallCap	24.1%	61.0%	62.4%	69.4%	15.7%

Fill rates for Limit Orders between 100 and 1999 shares.

* Drawn from NYSE Supplemental Disclosure. Orders represent 0.8% of shares executed by NYSE for this order type/size category.

** ECN category includes ArcaEx and SuperMontage. Low ECN fill rates are due to submitter cancellation.

Are Spreads Wider for Nasdaq-listed Stocks?

Small Market Order Effective Spreads

Rule 11Ac1-5 Data: February 2004

	NYSE-listed		Nasdaq-listed		
	Specialists		Nasdaq MMs	Market Makers	ECNs**
Index	All Orders	Retail Orders*			
S&P 500	2.31	1.46	1.56	1.25	1.70
S&P MidCap	3.05	2.85	2.67	2.49	2.96
S&P SmallCap	4.53	4.73	4.52	4.56	4.21

Spreads (cents/share) for market orders between 100 and 1999 Shares.

* Drawn from NYSE Supplemental Disclosure. Orders represent 6.7% of shares executed by NYSE for this order type/size category.

** ECN category includes ArcaEx and SuperMontage.