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# Trading Talk

## Market Structure Analysis & Trading Strategy

### LET THERE BE LIGHT

#### Rosenblatt's Monthly Dark Liquidity Tracker

*"I want to see it painted, painted black*

*Black as night, black as coal*

*I want to see the sun blotted out from the sky"*

—Mick Jagger, 1966 (From the Rolling Stones song "Paint it Black")

After a hiccup in June, dark pools resumed their seemingly inexorable growth last month, registering 8.18% of overall U.S. equity volume. That's up from a revised 7.74% in June, and represents the group's highest market share in the six months we've been publishing *Let There Be Light*. The 18 venues we track executed 788.1 million shares in July, adjusted for multiple counting, up 26.5% from a revised 623.2 million in June. Their growth outpaced even the 19.6% increase in consolidated volume, which reached 9.63 billion shares daily in July (see chart, page 2).

The expansion of activity in non-displayed markets last month was all the more remarkable for occurring in spite of rising volatility. The average closing value of the CBOE's Volatility Index hit 24.3 in July, up 10% from June and 33% from May. In March, April and May we observed a strong inverse correlation between volatility-driven spikes in overall volume and activity in dark pools. Consolidated volume jumped 15% from February, to 8.32 billion, and the market share of non-displayed volumes declined. But over the next two months, with volatility and consolidated volume retreating significantly, dark-pool market share picked up where it left off, rising to 7.37% in May.

This pattern jibed with our long-held belief that dark volumes suffered during periods of frenzied trading. One reason for this is that fast-trading hedge funds, statistical arbitrageurs and other so-called high-frequency traders tend to drive volatility-fueled volume spikes, and typically shun dark pools. Additionally, the long-only institutions that comprise the core customer base for crossing networks tend to either sit out volatile periods or seek the shelter of public-market price discovery.

More recently, it has become clear that the nature of dark-pool trading is changing rapidly, and that the idea of volatility damping non-displayed volumes is increasingly obsolete. In June, we saw that dark activity kept pace with the broader market, despite both volatility and consolidated volume reaching their highest levels since March. And in July the tide turned more swiftly, with non-displayed markets outpacing overall trading activity by seven percentage points amid as strong a volatility-driven spike in consolidated volume as we've seen in the past several months.

The main difference between the past two months and earlier this year is that newer venues, which are generally low-priced and open to algorithmic and sell-side flow, have deepened their stranglehold on the growth of dark-pool volume. Several of these are owned and operated by bulge-bracket brokerages, which often have internal market-making, stat-arb and high-frequency units that thrive on volatility, and which prefer to internalize as much customer and proprietary flow as possible to avoid paying exchange fees. (Perhaps these firms should adopt the Stones' "Paint it

Black” as their unofficial anthem). Citigroup’s Citi Match system, for example, matched an average of 50.5 million shares a day in July, up 46.4% from June and a whopping 119.6% from May. Lehman Brothers’ LX pool matched 51 million shares a day last month, up 36% from June and 85.5% from May. Goldman Sachs’ Sigma X, the world’s biggest dark pool, matched 142 million shares daily in July, up 29.1% from June and 98.6% from May. Sigma X executed 1.47% of consolidated volume last month, making it nearly as big as the six independent and agency-broker-sponsored pools combined, which matched 1.75% of overall volume. The Level ATS, a fast, cheap dark utility owned by a consortium of big brokerage firms, also continued its rapid growth, executing 44.1 million shares daily in July, up 37% from June and 43.2% from May.

### **THE NUMBERS**

VENUE	Q208	JUN 08	JUL 08	JUN 08 (ADJUSTED)	JUL 08 (ADJUSTED)	CURRENT % OF CONSOLIDATED VOLUME
BIDS	22.3	20.8	24.7	10.4	12.4	0.13%
BNY CONVERGEX VORTEX <sup>a</sup>	13.7	14.2	14.5	4.3	4.4	0.05%
CITI MATCH	53.0	68.9	101.0	34.5	50.5	0.52%
CREDIT SUISSE CROSSFINDER <sup>a</sup>	132.3	130.9	142	65.5	71.0	0.74%
DIRECT EDGE ECN <sup>b</sup>	59.3	69.4	91.6	38.4	52.7	0.55%
GETCO EXECUTION SERVICES	23.1	32.8	47.1	32.8	47.1	0.49%
GOLDMAN SACHS SIGMA X <sup>a</sup>	170.0	220.0	284.0	110.0	142.0	1.47%
INSTINET CBX	~33.6	~33.0	~43.8	~16.5	~21.9	0.23%
ITG POSIT <sup>c</sup>	45.0	~51.0	~56.0	~25.5	~28.0	0.29%
ISE MIDPOINT MATCH	17.0	20.0	29.0	20.0	29.0	0.30%
KNIGHT LINK	76.1	79.1	103.0	79.1	103.0	1.07%
LEHMAN LX	62.0	75.0	102.0	37.5	51.0	0.53%
LEVEL	61.2	64.3	88.2	32.2	44.1	0.46%
LIQUIDNET	67.5	62.1	82.7	31.1	41.4	0.43%
MORGAN STANLEY MS POOL	38.0	42.0	45.0	21.0	22.5	0.23%
NYFIX MILLENNIUM	48.1	50.3	55.3	25.2	27.7	0.29%
PIPELINE TRADING	~27.5	33.0	~29.2	16.5	~14.6	0.15%
UBS PIN	~42.7	~46.0	~50.0	~23.0	~25.0	0.26%
TOTAL	992.4	1112.8	1389.1	623.2	788.1	8.18%
CONSOLIDATED U.S. EQUITY VOLUME	7198.5	8055.8	9630.7	8055.8	9630.7	
% TOTAL VOLUME IN DARK POOLS	N/A	N/A	N/A	7.74%	8.18%	

All volumes in millions; Adjusted figures divide reported volume by two to eliminate double counting, except for Getco Execution Services, Knight Link and ISE Midpoint Match (which single-count) and where otherwise noted.

~ Denotes Rosenblatt Estimate

<sup>a</sup>Adjusted figures exclude shares executed at partner pools, and are divided by two to eliminate double counting.

<sup>b</sup>Adjusted figures reflect shares executed on Direct Edge’s book in response to outbound IOIs linked to hidden orders.

<sup>c</sup>Includes volume of BlockAlert, a JV of ITG and Merrill Lynch (taken over fully by ITG and renamed Posit Alert on August 1).

These venues, with average trade sizes in the 200-600-share range and a wide variety of orders, more closely resemble displayed markets than they do older dark venues like Liquidnet, ITG's Posit and Pipeline Trading, which are geared primarily toward institutions buying and selling many thousands of shares per ticket. The latter group has enjoyed less remarkable growth of late. Pipeline, for example, posted a very strong June, only to see its volume decline by 11.5% in July, to approximately 14.6 million shares per day on an adjusted basis. Liquidnet enjoyed a very strong July, increasing volume by 33.1% to 41.4 million adjusted shares per day, yet was only up 16.9 percent from May, far behind the 41.8% rate of growth in consolidated volume for the same period.

### Exchange and ECN Dark Order Types

Hidden orders on exchanges and ECNs accounted for 9.3 percent of consolidated equity volume last month. Our calculation is significantly larger than previous measures because this month we included NYSE Arca's Post No Preference Blind order type, which is a hidden order priced at the NBBO or better, with a tradable price pegged to the contra side of the NBBO. If the limit price and tradable price no longer overlap because the NBBO moves away from the limit price, the PNP Blind order converts to a fully displayed PNP limit order, but NYSE Euronext says this happens less than 10% of the time. When counting this order type, NYSE Arca's hidden executions surpass its next-largest rival, Nasdaq by 23%. Adding exchange and ECN hidden executions with dark pool volumes, fully 17.5% of consolidated volume in July could be considered dark.

### **WHEN LIGHT IS DARK**

*Hidden orders on exchanges and ECNs accounted for 9.3% of U.S. volume in July.*

VENUE	HIDDEN ADV <sup>a</sup>	% VENUE VOLUME	% CONSOLIDATED VOLUME
NYSE ARCA <sup>b</sup>	426	21.3%	4.4%
NASDAQ	345.1	11.9%	3.6%
BATS	73.8	7.9%	0.8%
DIRECT EDGE	47.9	10.2%	0.5%
TOTAL	1339.8	N/A	9.3%
ALL DARK POOLS	788.1	N/A	8.2%
DARK POOLS + HIDDEN	2127.9	N/A	17.5%

<sup>a</sup> In millions of shares. Does not include reserve orders, which are partially displayed

<sup>b</sup> Arca hidden ADV is an estimate based on company-provided figures. Arca counts both sides of the trade, plus routed orders, and we attempt to adjust for double counting and routing as the company would not break out matched volume.

### Getco Execution Services: The Fastest-Growing ATS Ever?

This month we're pleased to add GETCO Execution Services to the list of pools we track. GES is an alternative trading system launched at the end of March by GETCO Holdings, a Chicago-based outfit best known for its high-frequency market-making operations, which have helped redefine U.S. equity market structure and are increasingly influential in other asset classes such as fixed income, commodities and foreign exchange.

GETCO has been highly successful making automated, displayed markets on exchanges and ECNs, but wanted to find a way to interact with the growing universe of liquidity that is never

exposed publicly and believed it could offer an innovative non-displayed product. For instance, a big chunk of U.S. retail flow, which market makers consider very attractive, is priced out of the public markets because exchanges and ECNs charge fees for market orders that take liquidity while wholesalers like Citadel, Knight and UBS pay rebates for these orders. GES puts GETCO in this wholesaling game.

GES is a very simple, straightforward market. GETCO's Octeg<sup>1</sup> market-making unit is the sole liquidity provider, entering firm buy and sell quotes into the system that it cannot back away from. Any broker/dealer can be a customer and take liquidity. Currently GES serves a mixture of retail and institutional brokerages, the latter group comprising both agency firms as well as full-service operations that send proprietary and principal flow to the pool. There is just one order type — a blind, immediate-or-cancel order (blind meaning the customer cannot see the bid or offer and simply enters an IOC for a given security in hopes of getting a fill). Executions are priced at the NBBO or better and virtually instantaneous, returned in less than a few milliseconds, compared with one second or more for some wholesalers, potentially giving GES a big competitive advantage. And the fee schedule is both flexible and extremely attractive — ranging from a small fee to no fee to a small rebate. GES can configure execution parameters on a client-by-client basis, for example by offering a less attractive fee in return for more frequent price improvement — essentially giving up part of the spread it would otherwise take for itself — for clients who value the latter.

GES is registered with the Securities and Exchange Commission as an ATS<sup>2</sup> and organized as a separate entity within GETCO, run out of New York by Dave Babulak, GETCO's co-head of trading, and Jon Ross, a former technologist at the Island ECN and CTO at Nasdaq, where he was responsible for integrating the SuperMontage trading platform with the Brut and Inet ECNs that Nasdaq acquired a few years ago. Ross handles the day-to-day operations of GES. The ATS is emphatic about the walls that divide it from GETCO.

The venue is essentially a dark market maker, and as such fits into the newer breed of non-displayed venues that are helping to transform the category and make it more closely resemble the public markets. Its simple formula has proven highly attractive to customers in the few months that GES has been up and running. In the nine trading days following its March 19 launch, the pool executed an average of 3.7 million shares daily. In April, average daily volume grew 273%, to 13.8 million shares, before nearly doubling in May and again since then, reaching 47.1 million shares last month. GES is by far the newest of the 18 pools we track, but it is also the fastest growing by a large margin, and already bigger than all but 6 of them. Significantly, all of this growth has occurred against a constant base of resident liquidity — Octeg's market making — and thus represents almost entirely the addition of new customers and increased activity from existing ones. And in typical GETCO fashion, GES has its sights set on a far broader playing field than just U.S. cash equities, including other asset classes and regions. If its astronomical growth thus far is any indication of its prospects elsewhere, we're reluctant to bet against it.

## For the Record

Last month's *Let There Be Light* incorrectly portrayed the use of indications of interest and blind immediate-or-cancel orders by Direct Edge ECN's Enhanced Liquidity Provider program. The chart titled "Shades of Grey" on page 6 should have shown "Y"s in all five categories for Direct

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<sup>1</sup> For those of you who have come across this firm and couldn't figure out who it was, it's Getco spelled backwards.

<sup>2</sup> This allows for customer-by-customer pricing flexibility that exchanges don't have

Edge, which both sends and accepts blind IOCs to and from venues that cannot send and receive IOIs. Direct Edge users also have the ability to tag any order so that it bypasses the ELP program.

**SIZE MATTERS**

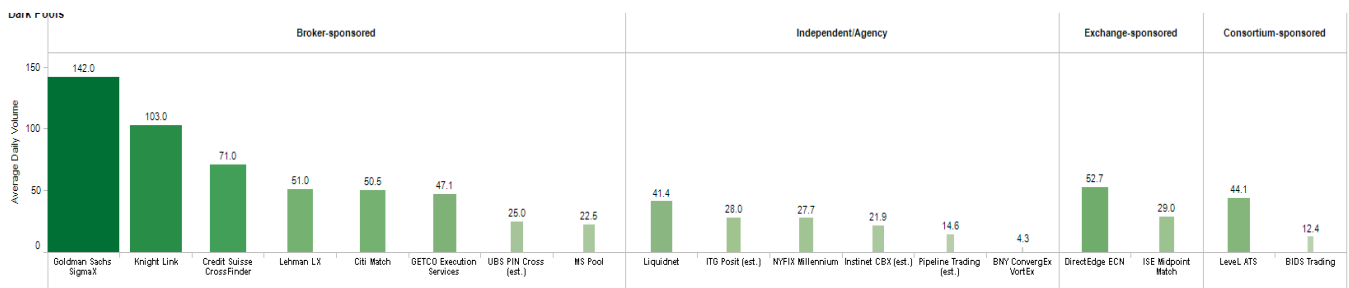
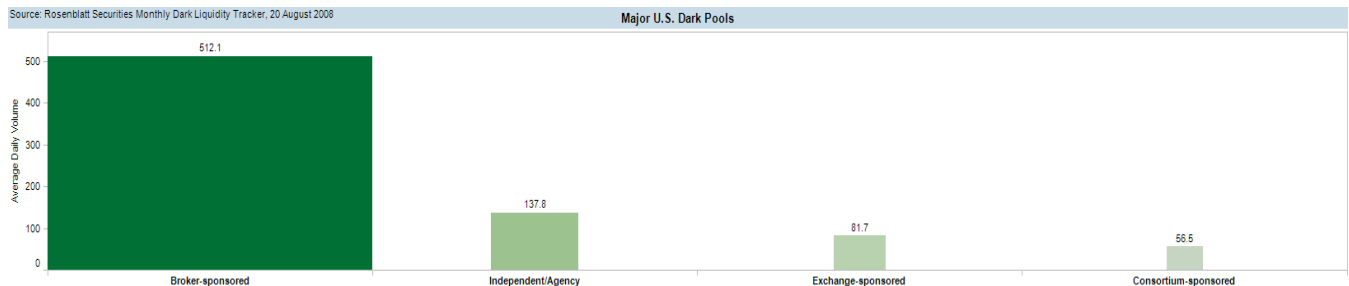
*Many dark pools trade in sizes comparable with displayed markets; Only a handful are truly block venues*

VENUE	AVG TRADE SIZE IN JULY (# Shares)	JULY ADV (Adjusted, millions of shares)
LIQUIDNET	59,139	41.4
PIPELINE TRADING	48,132	14.6
ITG POSIT	~6,000	~28.0
GOLDMAN SACHS SIGMA X	600	142.0
BNY CONVERGEX VORTEX	525	4.4
BIDS TRADING	449	12.4
LEVEL ATS	418	44.1
CITI MATCH	409	50.5
LEHMAN LX	400	51.0
NYFIX MILLENIUM	360	27.7
KNIGHT LINK	333	103.0
GETCO EXECUTION SERVICES	323	47.1
INSTINET CBX	299 <sup>a</sup>	21.9
DIRECT EDGE ECN	293 <sup>b</sup>	52.7
MORGAN STANLEY MS POOL	275	22.5
ISE MIDPOINT MATCH	257	29.0
CREDIT SUISSE CROSSFINDER	213	71.0

<sup>a</sup> Average trade size for Instinet CBX only; does not include other Instinet Crossing products (IDX, LDX and VWAPX).

<sup>b</sup> July volume for Direct Edge's ELP program was 91.6 million shares; 52.7 million of these shares were executed by Direct Edge in response to IOIs sent to dark markets, while the rest were routed to dark pools.

Source: Rosenblatt Securities Monthly Dark Liquidity Tracker, 20 August 2008



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