

Liquidity fragmentation and quality of execution

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In this issue TAG presents an in-depth analysis of fragmentation focused on the five main European indices, CAC 40, DAX 30, AEX 25, FTSE 100, and SLI 30. In addition, Turquoise, Chi-X, BATS Europe and NASDAQ OMX Europe are included as alternative venues. The following benchmarks are highlighted: Average Print Size in Euros, Evolution of Market Share, Average Print Size (shares), % of Time at EBBO and % of Time at EBBO with Greatest Market Size.

Primary market share - 72%.

This is the current average market share retained by primary markets on the main indices that TAG covers in this analysis. More brokers have joined the bulge bracket firms in employing the many Smart Order Routers (SOR) now in place, thus increasing fragmentation, but at a lower speed. Last quarter, the agreements Turquoise had for liquidity ended, and as a consequence, their total share immediately after March 15 dropped by more than a half, but has since inched back up to reach 6% of global share in August. On the other hand, Chi-X has done extremely well these past twelve months.

The main highlights of the last three months were:

- All main markets except NYSE Euronext continue to see the erosion of their market share. The most fragmented being FTSE 100, with less than 67%. If 60% average market share fragmentation is reached, we can assume structural market changes may happen.
- Turquoise is progressively fighting back, and their market share numbers and coverage benchmark (distribution of their share among a wide number of index components) continues to improve, confirming their recovery. This is due to a combination of several factors, among them the entry of aggressive new members.

- BATS Europe's progress has been volatile, but on average they have gained traction, especially on CAC 40 where they reached 6% in June (but ended at 4% in August). On aggregate, they attained close to 3% global market share (2.5% end of May), meaning they have also improved in other categories.
- Less volatility in the market helped new alternative venues capture market share.
- Average print sizes recovered, mainly due to two factors: the increase of stock value and institutional order-flow returning.
- NASDAQ OMX has an impressive 0.8% of global market share, and they reached 1% in the FTSE 100 and CAC 40, which implies that they can attain similar results in other segments.

Considering book volumes, Chi-X is now the third venue by volume in Europe, doubling its share in the CAC 40, AEX 25, DAX 30 and SLI 30 in little over a year. Turquoise and BATS Europe were also in the top 10 most of the time.

- End of August Average Daily Volumes for each MTF:

Chi-X	€3,230 m
Turquoise	€1,120 m
BATS Europe	€645 m
NASDAQ OMX	€125 m

Pricing models

Several venues have changed their trading cost models. BATS Europe conducted a very aggressive rebate on NYSE Euronext segments, and concurrently Euronext implemented billing only on a per order basis (not per execution). The main objective of changing a pricing model is segmentation - trying to capture or retain specific order-flow.



TAG, as an independent best execution measurement specialist, has met almost all participants: regulated markets, new MTFs, brokers, buy-sides, and data feed providers and regulators, and welcomes the opportunity to bring its vision of this newly fragmented landscape.

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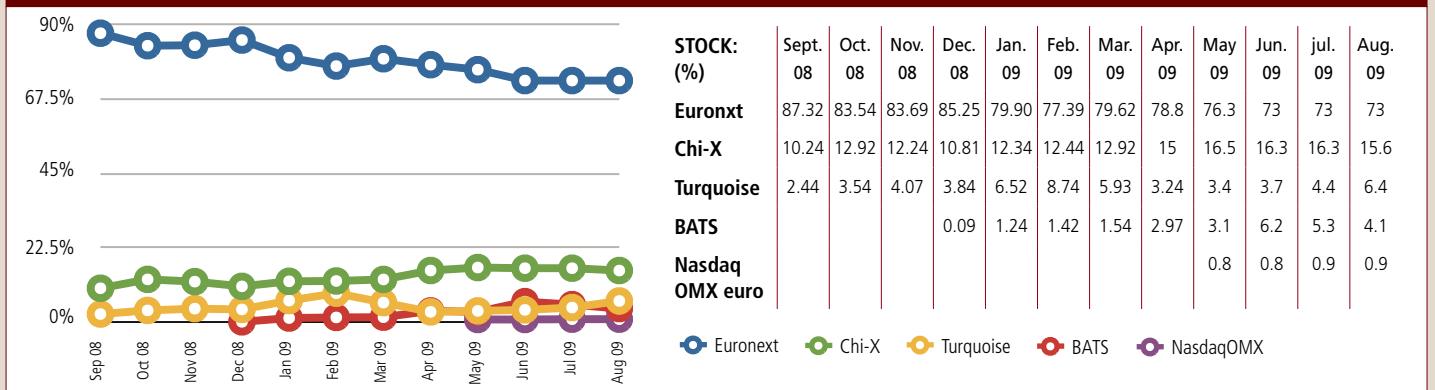
Smart Order Routing

Flexibility is key when looking at the future of SORs. As various small and medium brokers can't compete with the larger brokers on certain routing destinations, a new initiative has been formulated by NASDAQ OMX, Baikal and Turquoise to route on behalf of their members using their SORs.

The Future

Starting in September we will see several new initiatives by primary and alternative venues. For example, the LSE will offer a new pricing model that apparently is not helpful for high frequency traders, BATS Europe will employ an aggressive model with UK stocks, and Chi-X will host a new autumn pricing promotion.

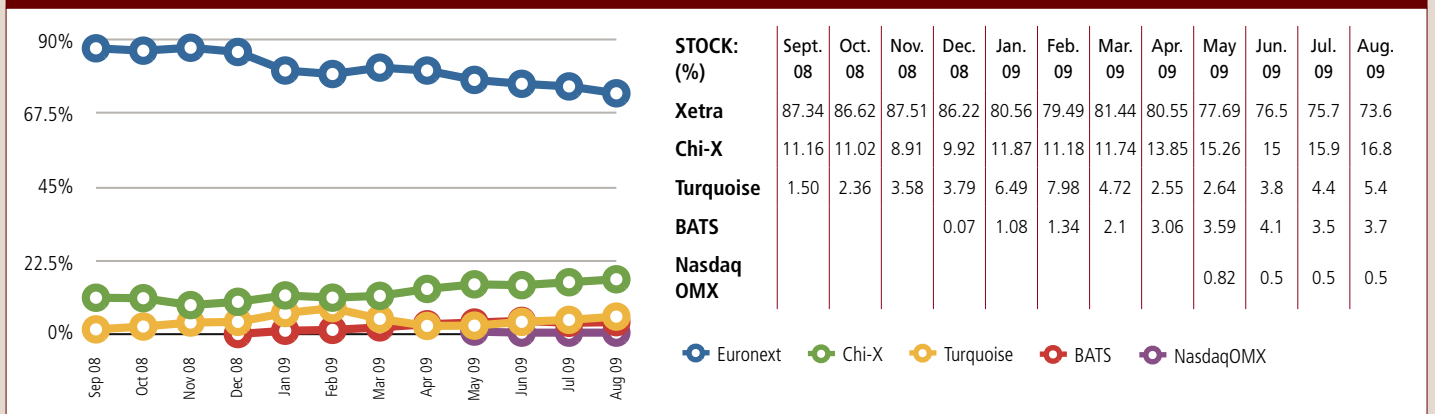
French stocks – CAC 40



French stocks – CAC 40

In general, this quarter's total market share volume is stable for the first time in over a year. Euronext's market share has steadily declined to 73.0%, while Chi-X has been steadily increasing with a slight dip to 15.6% at the end of this quarter. Turquoise has more than doubled its share to 6.4% and BATS Europe had shown steady growth but started slipping in July and was down to 4.1% in August. NASDAQ OMX is approaching 1.0% due to their excellent numbers at the EBBO.

German stocks – DAX 30



German stocks – DAX 30

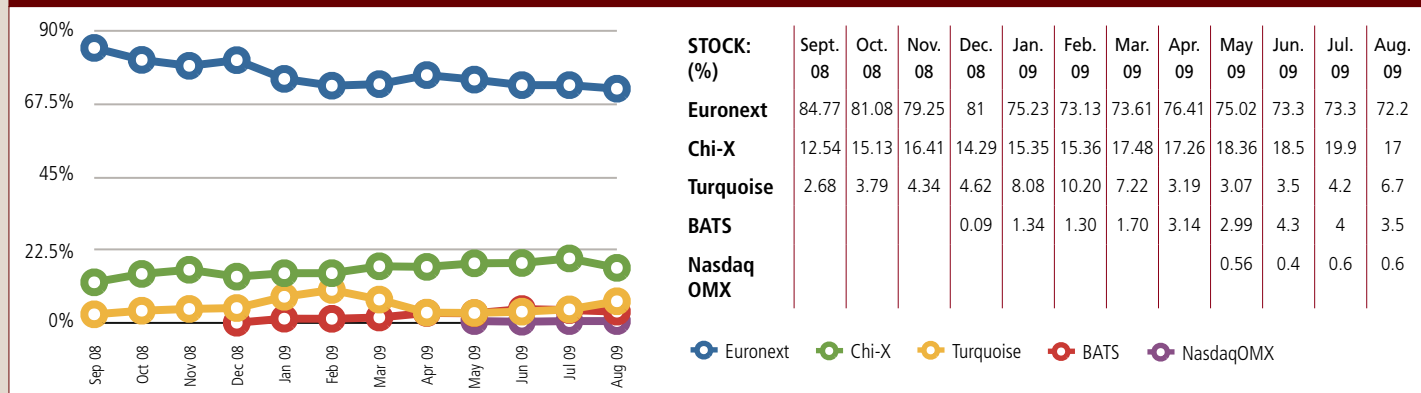
In this quarter, Deutsche Börse (Xetra) has experienced a steady decline in market share reaching 73.6% in August, down from 77.7% in May. BATS Europe topped out at 4.1% in June and then dropped to 3.5% in July. Probably due to the removal of their aggressive June rebate. Chi-X and Turquoise both improved their share on the back of BATS Europe's rebate removal in July and August. NASDAQ OMX started out strongly for a new venue and levelled off at 0.5% during the last quarter.

Chi-X is proof that the better the "% Time Best Bid and Offer" number is compared to the LSE, the better your prices are, and market share improves. This is particularly true if the market is efficient, assuming that all brokers have implemented SOR, and they are smartly configured.

Analysis > Fragmentation

Looking at the additional benchmarks (see page 52), we can conclude that the large difference between Xetra's Average Print Size (€) of 21.609, and the other venues' numbers is primarily due to the integration of all executed orders in their mid-point system. Xetra operates generally as a block crossing system rather than a real, open order book.

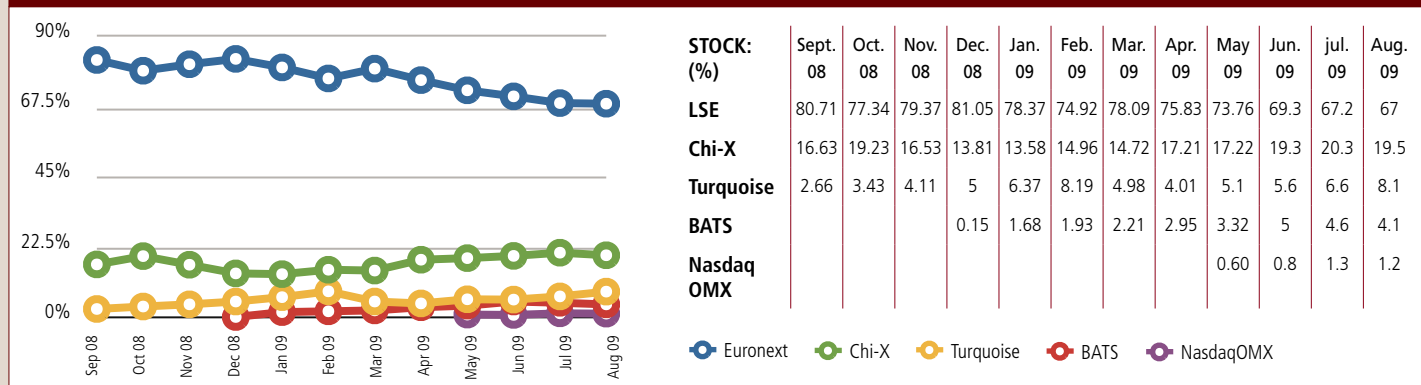
Dutch stocks – AEX 25



Dutch stocks AEX 25

The global volume is stable, but after the UK, the Dutch stocks are probably the second most fragmented. Turquoise has seen their share more than double, but Chi-X's market share has steadily decreased to 17%. Again, BATS Europe shows a small decrease, mainly due to the removal of their aggressive pricing on Euronext segments. My opinion still holds that liquidity gained only by aggressive pricing rebates isn't a stable business model upon which to build.

UK stocks – FTSE 100



UK stocks – FTSE 100

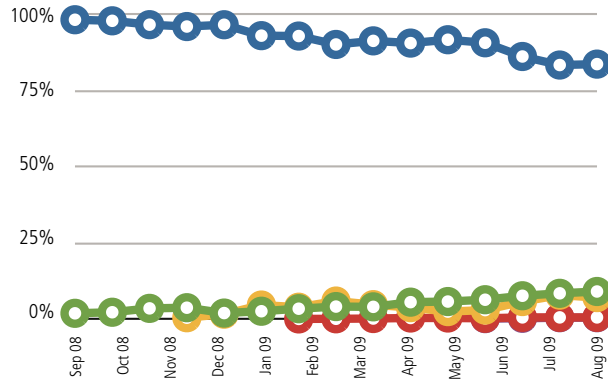
The London Stock Exchange (LSE) now retains only 67% of the pie. This is due to several factors :

Since the beginning of the year, the LSE has seen its market share decrease month by month, except in March due to the overflow as a result of Turquoise's liquidity agreements ending.

- As the LSE volumes are by far the largest, they are the first stop on the trade route.
- All MTFs target FTSE 100 stocks, and a few also route to FTSE 250.
- Turquoise has gained traction in the last 2 months reaching 8%, even though their liquidity agreements have changed.

During the past 12 months, the LSE market share has dropped from 83% to 67%. BATS Europe has reached 4.1% market share and Turquoise 8.1%, making this their largest index. The industry trend shown here is the result of two types of fragmentation. One type is a continuous erosion of shares between LSE and other venues. The other type is the rebalancing caused by the steady introduction of new MTFs sharing the volume lost by the LSE.

Swiss stocks – SLI



STOCK: (%)	Sept. 08	Oct. 08	Nov. 08	Dec. 08	Jan. 09	Feb. 09	Mar. 09	Apr. 09	May 09	Jun. 09	Jul. 09	Aug. 09
Swx	95.93	96.52	92.94	92.81	90.05	91.23	90.52	91.60	90.65	86.1	83.3	83.6
Chi-X	3.68	1.92	2.52	3.35	4.05	3.96	5.48	5.67	6.27	7.6	8.4	9
Turquoise	0.39	1.56	4.55	3.84	5.86	4.68	3.73	2.43	2.86	5.7	7.8	7
BATS				0.00	0.04	0.13	0.26	0.30	0.16	0.5	0.5	0.5
NasdaqOMX									0.06	0.2	0.4	0.4

● Euronext ● Chi-X ● Turquoise ● BATS ● NasdaqOMX

Swiss Stocks – SLI 30

The SWX is the least fragmented marketplace. The move by SWX Europe, whose platform was based and regulated in UK, to Switzerland was done without losing market share. Chi-X has done well reaching 9.0% in the SLI 30 and Turquoise has more than doubled their share in this segment since May, reaching 7.0%. BATS Europe and NASDAQ OMX seem to show little interest in the SLI 30 for the moment.



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