



The Swiss Stock Exchange

Trading InfoSnack #04: Liquidity under the Volatility Microscope

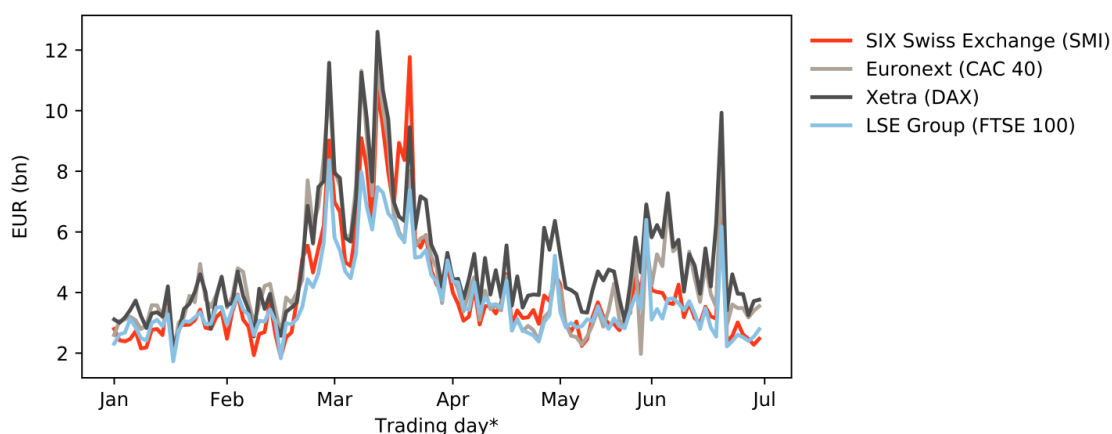
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Liquidity under the Volatility Microscope

A volatility shock across markets resulted in significantly different impacts on each market's underlying liquidity. We associate that with a number of market specific factors and characteristics that affect the ability of electronic liquidity providers to efficiently operate.

The coronavirus pandemic brought unprecedented volatility levels to the market, which caused many stock indices to sink. This fuelled a spike in trading activity across March 2020, with many markets experiencing volumes comparable to or higher than the 2008 financial crisis. Chart 01 plots the year to date (2020) trading volumes across major European Primary Exchanges.

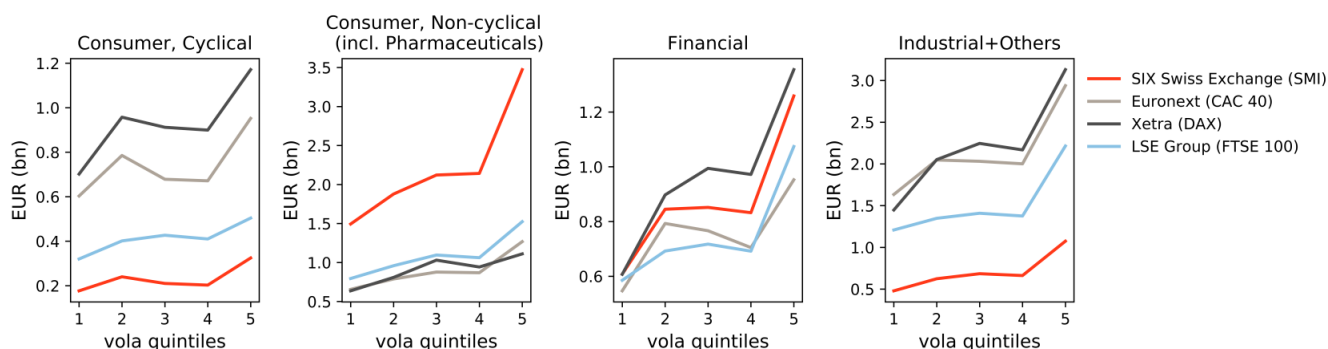
Chart 01: Turnover across major European markets



Data sources: BMLL, SIX | Securities: Index constituents | Venues: Primary exchanges
Sample period: 03 Jan 2020 - 30 Jun 2020 | Sampling frequency: 1 day
* Month on axis denotes first business day of the month

The surge in liquidity observed on major European Primary Exchanges, was disproportionate across key trading sectors. On the Swiss Stock Exchange, we observed the increase in trading activity in the Consumer Non-Cyclical (incl. Pharmaceuticals) of 133% compared to 84% for Consumer Cyclical (as per Chart 02 below). Whereas, on Xetra the increase in respective sectors was 74% and 67%.

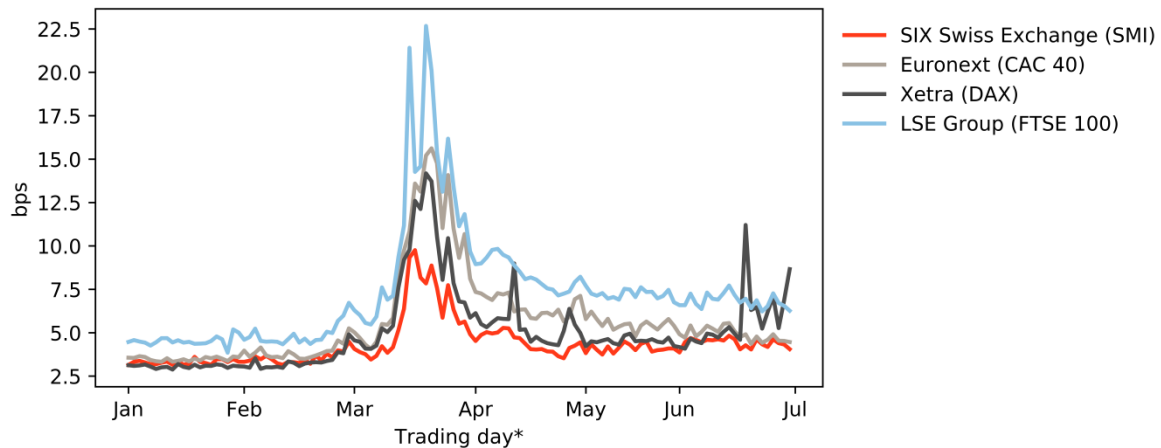
Chart 02: Average daily turnover to volatility across sectors



Data sources: BMLL, SIX, Bloomberg | Securities: Index constituents | Venues: Primary exchanges
Sample period: 03 Jan 2020 - 30 Jun 2020 | Sampling frequency: 1 day

Further to this, as a result of increased volatility, spreads widened on all primary exchanges but to varying degrees. As demonstrated on Chart 03, spreads on the Swiss Stock Exchange remained the tightest and recovered most quickly, whilst spreads on the LSE were the most impacted and have not returned to the levels observed at the beginning of the year.

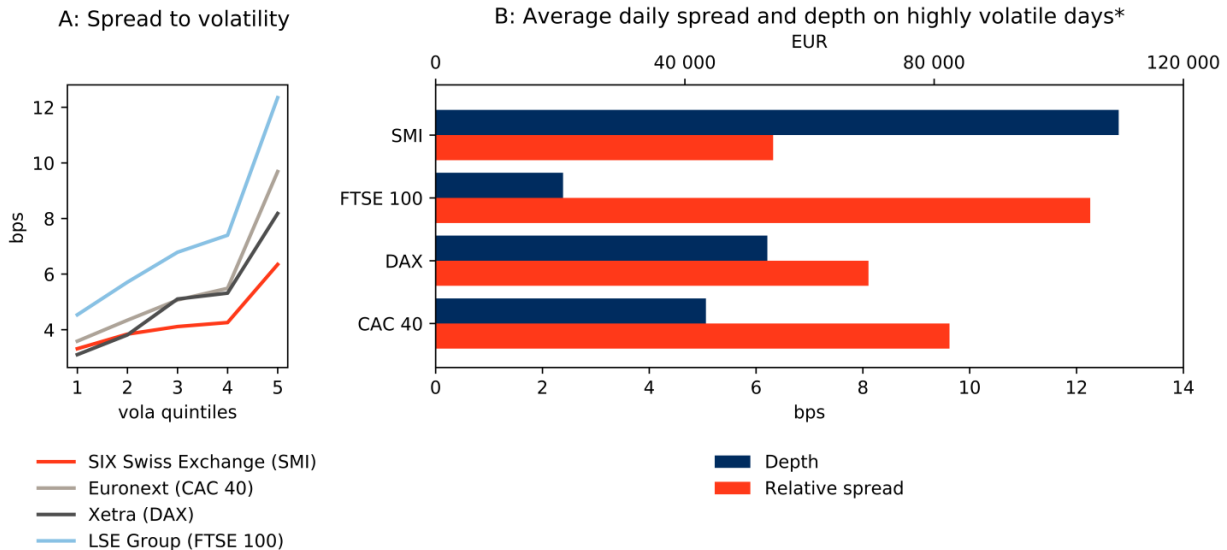
Chart 03: Relative spread at BBO across major European markets



Data sources: BMLL, SIX | Securities: Index constituents | Venues: Primary exchanges
 Sample period: 03 Jan 2020 - 30 Jun 2020 | Sampling frequency: 1 day
 * Month on axis denotes first business day of the month

The variance in spread impact is emphasised further on Chart 04.A below, which plots the relative spread against market volatility. Comparing the slope of each curve, we find that a 1% increase in VSTOXX is associated with a relative spread increase of 1.68 basis points on the Swiss Stock Exchange. However, a 1% increase in VSTOXX lifts spreads on Xetra by 3.13 bps, Euronext by 3.64 bp and the LSE by 4.66 bps. In addition to this, Chart 04.B compares the spread and depth of liquidity in each market exclusively during the most volatility days (i.e in the highest quintile). On such days, the difference in liquidity depth among the Exchanges is even greater than for the spread measure.

Chart 04: Performance of relative spread and depth at BBO to volatility



Data sources: BMLL, SIX, STOXX | Securities: Index constituents | Venues: Primary exchanges
 Sample period: 03 Jan 2020 - 30 Jun 2020 | Sampling frequency: 1 day
 * Highly volatile days are days when VSTOXX exceeds 80th percentile (25 days)

It is clear to see from the above charts that whilst the COVID-19 pandemic drove a surge in volatility and trading activity across Europe in H1 2020, the impact on liquidity, spreads and depth has differed across venues.

In terms of explaining the above, an obvious place to start is to consider the differences in sector weightings across European Primary exchanges. Venues with a greater weighting of underlying securities in the Consumer Non Cyclical (incl. Pharmaceuticals) and Financials sectors have seen

proportionally more trading activity than their peers. However, whilst sector weightings help to explain per venue turnover gains, they do not fully explain divergence in spreads and depth impacts.

Similarly, given the strong negative momentum observed in some sectors, some recent studies have argued that short-selling bans were the major factor affecting liquidity. However, when we compare markets for DAX, FTSE100 and SMI - all 3 without short-selling restrictions - we see diverging impacts on spreads and depth. Further, we see that Euronext – the only market in the sample affected by the short-selling bans – has not underperformed some of the other exchanges included in the sample in terms of order book liquidity. This leads us to believe that the enactment of short-selling bans themselves do not fully explain the variance we observe.

The next most obvious factor that comes to mind is trading technology – with each primary exchange running on a different system. In times of high volatility, with markets experiencing high trading velocity, liquidity providers are experiencing less risk on venues with highly predictable technology. This means both reliable and highly performant systems, with latency distribution curves that are not affected by dramatic spikes in order message traffic.

Another factor that could have played a role here is liquidity concentration. We record the following market share values in H1 2020: Euronext 66%, LSE 62%, SIX 100% and Xetra 72%. The order books with higher liquidity concentration (i.e. market share) should exhibit greater volatility resiliency.

Last but not least, one could look at liquidity provider schemes and trading incentives. It is likely that certain venues decided to waive their LP scheme obligations during times of increased volatility. That may have directly impacted liquidity provision, spreads and depth on these venues.

To summarize, we believe that the differences in liquidity evolution across markets cannot be attributed to a single factor such as a short-selling ban. In contrast, we believe that differences are driven by a larger set of parameters ranging from trading systems to liquidity composition.

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