optiver INSIGHTS

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MARKET STRUCTURE

BUILDING RESILIENCE IN EU EQUITY MARKETS

Optiver supports open discussion and debate on all market structure topics that would lead to an improvement of the market.

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Optiver recognises that achieving true resilience across Europe's equity markets is a large, multifaceted challenge that cannot be solved with a single action or a simple solution. That said, given the multitude of execution venues available in Europe, we believe it is unacceptable to have no alternatives if the primary exchange happens to have a technical issue and believe that basic market model changes, in addition to improved communication and removal of regulatory hurdles, can solve for this problem.

Optiver also believes there are some clear and immediate improvements to be made by exchanges when communicating during and after an outage, as well as by regulators to ensure that no structural issues remain that the industry cannot innovate around.

We believe that these improvements will make trading in European equity and related markets safer and more efficient. It will also make markets more resilient to outages, preserving flexibility for participants to make their own execution judgement based on their own individual goals and factors.

WHAT ARE THE NEXT STEPS?

In November last year, Optiver first wrote on the topic of resilience in European equity markets. In particular, we looked at what happened when two major European listing exchanges had prolonged disruptions to their trading systems. We observed a nearly complete lack of migration of trading to other exchanges, despite their continued functioning. The implication is that European equity markets are not resilient to these outages.

Since then, stakeholders across the industry have voiced concern with the status quo. But what, exactly, should be done? Should the problem be left up to the market to organically come up with solutions? Should regulators step in and mandate specific changes? Or should we do nothing?

In order to further the discussion, Optiver believes interested parties should put forward ideas for improvements for others to engage with, leading to more specific discussion and then finally implementation of improvements. The ongoing ESMA

consultation on algorithmic trading[1] provides a good start, and we have outlined our ideas here.

Optiver believes there should be a three-pronged approach to improve resilience of Europe's equity markets:

I. Implementation of minimum standards for communication by trading venues during and after outages to ensure all stakeholders have accurate and timely information.
II. Targeted regulatory intervention aimed at ensuring certain critical functions like the closing settlement auction and post trade processes proceed smoothly despite outages as well as removing hurdles for trading to continue on alternative venues.
III. New market models developed by exchanges working with their members and stakeholders to provide for a safe and orderly continuity of trading during outages by major venues.

We believe that this three-pronged approach will make trading in European equity and related markets safer and more efficient. It will also make markets more resilient to outages, preserving flexibility for participants to make their own execution judgement based on their own individual goals and factors.

I. MINIMUM STANDARDS OF COMMUNICATION

Optiver believes that trading venues should improve their communication to the market at large during system or trading outages. The trading outages in 2020 (as well as those that occurred previously) highlighted varied communication protocols and standards from different exchanges, which further exacerbated the disruption to the market caused by the outages in the first place.

We believe that the need for these communication improvements continues to grow as European exchanges continue to consolidate. This consolidation leads to more widespread effects of an outage as single trading systems operate on many markets simultaneously.

Optiver does not believe that there should be one prescriptive format for communication but that there should be a set of minimum standards in place for all trading venues for handling and communicating a trading outage. These should include the following:

[1] See questions 35 and 36 in https://www.esma.europa.eu/sites/default/files/library/esma-70-156-2368_mifid_ii_consultation_paper_on_algorithmic_trading.pdf

- A crisis management team should be established at each trading venue. This crisis management team would be responsible for communications around outages to all stakeholders as well as maintaining the venue's crisis playbook.
- All trading venues should develop and publish a playbook for what will occur if or when an outage takes place. The playbook should clearly identify the mechanisms and locations (websites, protocols) for dissemination of information to stakeholders regarding the outage. It should be clear what information these channels will include and in what format. In addition, there should be protocols for identifying, diagnosing and resolving issues and halting and restarting trading.
- All communication regarding the ongoing health of a venue's trading system and details about possible outages should be made publicly available to all interested parties and hosted in a central location, for instance on a defined webpage.
  - This should be updated on a fixed schedule, for instance every 30 minutes, giving a status update, even if the update is "no update".
  - Any planned re-opening times should be published on this central location.
- Communications regarding market status should also be in a machine-readable format, ideally available on exchange connectivity and market data protocols, so that trading systems can automatically incorporate these notifications into their functioning, if relevant.
  - At a minimum, any market statuses, instrument prices, outstanding order statuses, and trade feeds published by trading venues on their execution or market data feeds must be accurate and consistent during an outage.
- Trading venues must be proactive and clear in their communications, giving stakeholders as much detail as is known, as soon as it is known, without speculation.
- Trading venues should provide publicly the specific times stamp at what point orders were cleared and/or rejected and which trades were considered valid.
- Trading venues should provide all stakeholders and members with a comprehensive post-mortem analysis and follow-up points after any major incident, which should include disclosure of the root cause and the steps taken to rectify and prevent recurrence.

These communication standards should be applied to cases where an incident affects trading as well as cases where it does not do so directly, but could have had a large impact on the market.

We believe that, ideally, the industry should come together to self-implement these minimum standards for communication.

II. TARGETED REGULATORY INTERVENTIONS

Optiver believes that there should be industry-led initiatives put forward and implemented in order to facilitate more continuity of trading in case of a technical outage on the primary market. Optiver firmly believes that such initiatives are best developed by industry practitioners and stakeholders and subject to normal commercial incentives rather than strict regulatory intervention. Our ideas for those improvements are outlined in the next section.

That said, there should be targeted regulatory intervention undertaken to give such initiatives the chance to succeed. Without these, the hurdles to truly resilient trading remains too high and key fragilities will remain in the European equity market structure. Regulatory interventions should be narrow in their focus and aimed only at removing hurdles to resilience, in order to avoid introducing additional complexity (and therefore creating fragility or unintended consequences).

Optiver believes that these regulatory interventions are necessary in order to enable industry innovation and improvement to the continuity of trading in case of a primary market outage. At the same time, they will prevent such outages, which are disruptive by nature, from causing excessive systemic disorder in the wider capital markets and to instead be contained to the venue on which the outage occurred.

COMMUNICATION STANDARDS AND REOPENING PROCEDURES

Regulators should mandate the minimum standards of communication as described in the previous section.

Along with this, regulators should remove the pressure for trading venues to re-open in a certain arbitrary, fixed time period, and instead allow operators and their members to take the necessary amount of time needed to solve the underlying issues and reopen in an orderly, controlled fashion.

While Optiver recognises the intention behind resuming trading as rapidly as possible, the reality of IT incidents is that they take time to assess and resolve. The true nature or cause of an incident is often not apparent from its initial symptoms. In order to properly solve any incident, a careful analysis must be taken, followed by an orderly fix. Only then can trading be restarted, which must also occur simultaneously with the restart of members' trading systems as well.

Exchanges also have an inherent economic incentive to restart trading quickly, and this incentive would only increase if trading moved to alternative markets, so regulatory pressure is simply redundant.

The market would be better served by improved resilience across the system as a whole, with true alternatives to primary markets (or any individual venue), rather than a specific and arbitrary focus on restart times.

SAFEGUARD THE ORDERLINESS OF SETTLEMENTS AND CLOSE

Regulators should act to ensure that there is always a robust settlement price mechanism in place. In particular, the closing auction - and the critically important daily settlement price – must be performed every day. Regulators must act here because the closing auction (and more broadly all settlement related trading) is a monopoly held by the listing venues and the settlement price it produces is of critical importance to the orderly functioning of the entire European equity, ETF, fund, and equity derivatives markets, not to mention index and benchmark providers.

It is important to note that should an outage on a primary market prevent orderly settlement price formation for, say, a benchmark index future or at a stock options expiration, there would be no clear replacement mechanism for settlement and the knock-on effects to the entire financial system could be severe. If such an outage were coupled with heightened volatility, participants could conceivably go bankrupt and trigger systemic disruption. Other regions (where multiple trading venues exist[2] or prolonged disruptions due to natural disasters are more common[3]) have clear and robust fall-back mechanisms in place - Europe should have one too.

This could be achieved in a number of ways, for instance:

- Implementing a regulatory defined secondary venue for handling the closing auction in case of a primary listing outage that occurs or is still occurring within a set period prior to the close. This will ensure the continuity of settlement prices, which are critical to all industry participants. Such a secondary venue could be an alternate primary listing market or an MTF.
  - This should be extended to any major settlement procedure, such as those that occur intra-day during benchmark index futures and options expirations.
- Alternatively, allowing primary markets to maintain their monopoly on the closing settlement auction but holding these auctions to a higher resilience and continuity standard. For instance, by mandating that the closing auctions have redundant, seamless failover protocols in place.

MANDATE PAN-EUROPEAN POST-TRADE INTEROPERABILITY

Despite existing in some forms for more than 30 years, interoperability agreements between CCPs are not the norm in Europe. In fact, only a handful of agreements exist in 2021[4]. While a full analysis of why this is the case is outside the scope of this paper, the main driver is that CCPs are not themselves incentivised to allow for interoperability because such arrangements break the CCP's de facto monopoly and require them to establish external connections. Therefore, it is only in the face of consistent and fierce member demands that CCPs work toward interoperability.

The upshot is that this fragmentation in post-trade significantly increases the hurdles and associated costs that participants face when considering trading on alternative venues. In many cases the lack of full interoperability ensures participants remain captive, exclusive members of primary markets.

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[2] http://www.nasdaqtrader.com/TraderNews.aspx?id=ETA2020-72

[3] https://www.msci.com/eqb/methodology/meth_docs/QA_Market_Closure_March_2020.pdf

[4] While focused on Exchange Traded Derivatives, an analysis from the European Systemic Risk Board gives a good background and overview of cash market interoperability as of 2019. See https://www.esrb.europa.eu/pub/pdf/reports/esrb.report190131_CCP_interoperability_arrangements~99908a78e7.en.pdf?2c92d1e3f430f7311a4a955e845ca575

Ensuring that post trade systems are fully interoperable, so that post-trade does not pose a challenge for participants to route flow to alternative venues, would be a benefit for European investors generally, as competition would force costs lower for both trading and post-trade processing. However full interoperability is a prerequisite to building true resilience and holding a closing auction on an alternate venue. In the absence of interoperability, participants (and/or their clearing firms) would face major operational hurdles to consolidate their trades and positions after trading in an alternative close. Many may choose not to participate because of this burden, thereby reducing the effectiveness of the alternative.

Full interoperability (or even a single pan-European post trade utility-like CCP) should be considered a public good and a pre-requisite for a true European Capital Markets Union. It would benefit European investors and issuers at large and especially SMEs, and should therefore be mandated by regulation.

IMPLEMENT A CONSOLIDATED TAPE

Regulators should prioritise the implementation of a real-time post-trade consolidated tape. This could then replace the primary market / most relevant market as the main benchmark reference feed used by trading participants across venues and would not be reliant upon any one trading venue operating. For more details on our envisioned structure for Europe's consolidated tape, please see our prior Insights note here: https://insights.optiver.com/consolidated-tape/

III. OUTAGE SPECIFIC MARKET MODELS

Optiver believes that there should be industry-led initiatives put forward and implemented in order to facilitate more continuity of trading in case of a technical outage on the primary market. Optiver firmly believes that such initiatives are best developed by industry practitioners and stakeholders and subject to normal commercial incentives rather than strict regulatory intervention.

The financial sector is an innovative place. New ideas are born every day and many go on to become product launches. The industry already knows how to identify a problem, come up with products to solve that problem, launch them, and then iterate these solutions. As long as no structural hurdles block innovation and as long as there is demand for a solution, products will be developed. There's no need to reinvent this process to solve for better resilience.

Optiver would suggest the following market model to foster continued trading during primary market outages. We will focus here on continuous trading on lit central limit order books, but the framework could be extended to most kinds of matching models.

- Upon the announcement of an outage by a primary market, secondary markets would enter a short freeze period, similar to a circuit breaker, after which they could reopen for trading by holding a re-opening auction.
- Trading would take place using relatively tight price collars/circuit breakers as we would expect liquidity to be thinner than normal. For instance, where circuit breakers may normally trigger after a move of 5%, in an outage trading model a 1% trigger could apply.
- Similarly, max order size restrictions should be automatically lowered to reflect the expected lower level of liquidity.
- A relatively limited set of more basic order types would be allowed. Market orders should be carefully considered and potentially disallowed.
- Due to these extra protections, a relatively higher share of orders may be rejected, or cause the protections to trigger. That should be considered a desired feature of the market in this state; we are aiming to keep trading in a safe, conservative manner.
- In general, auctions are considered to be positive for bringing liquidity together; this is why scheduled auctions are often used to set official settlement prices, circuit breakers use an auction to bring liquidity together prior to reopening, and markets for illiquid instruments sometimes have an auction-only model. On the flip-side, auctions that are too short in duration do not allow for sufficient participation to bolster liquidity. In this vein, during an outage, a frequent batch auction could be a more suitable primary matching model, provided the duration of the FBAs is long enough; for instance, moving to a duration measured in seconds instead of milliseconds.

Request for quote models would follow a similar logic

We would like to stress that, while we believe these model suggestions, coupled with the previously described minimum standards of communication and targeted regulatory improvements, would be an improvement to the European equity markets and make them more resilient to an individual (primary) venue outage, the problem is complicated. We welcome and look forward to spirited debate on our proposals as well as those from other stakeholders.

CONCLUSION

We recognise that achieving true resilience across Europe's equity markets is a large, multifaceted challenge that cannot be solved with a single action or a simple solution.

However, we do believe there are some clear improvements to be made by exchanges when communicating during and after an outage, as well as by regulators to ensure that no structural issues remain that the industry cannot innovate around. We call upon industry groups that represent exchanges, buy-side, brokers, and market makers to work together to develop and implement clear minimum communication standards that stakeholders can rely upon and guide regulators in implementing narrow, targeted reforms.

Given the multitude of execution venues available in Europe, we believe it is unacceptable to simply stop trading if the primary exchange happens to have a technical issue and believe that basic market model changes, in addition to improved communication and removal of regulatory hurdles, can solve for this problem.

We welcome discussion on the topic and look forward to developing improvements that all investors and European capital market participants can benefit from.
