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| Reply form for the Consultation Paper on the Algorithim Trading |

**Responding to this paper**

ESMA invites comments on all matters in this consultation paper and in particular on the specific questions summarised in Annex I. Comments are most helpful if they:

* respond to the question stated;
* indicate the specific question to which the comment relates;
* contain a clear rationale; and
* describe any alternatives ESMA should consider.

ESMA will consider all comments received by **12/03/2021.**

All contributions should be submitted online at [www.esma.europa.eu](http://www.esma.europa.eu) under the heading ‘Your input - Consultations’.

**Instructions**

In order to facilitate analysis of responses to the Consultation Paper, respondents are requested to follow the below steps when preparing and submitting their response:

1. Insert your responses to the questions in the Consultation Paper in the present response form.
2. Please do not remove tags of the type <ESMA\_QUESTION\_ALGO\_1>. Your response to each question has to be framed by the two tags corresponding to the question.
3. If you do not wish to respond to a given question, please do not delete it but simply leave the text “TYPE YOUR TEXT HERE” between the tags.
4. When you have drafted your response, name your response form according to the following convention: ESMA\_ALGO\_nameofrespondent\_RESPONSEFORM. For example, for a respondent named ABCD, the response form would be entitled ESMA\_FOTF\_ABCD\_RESPONSEFORM.
5. Upload the form containing your responses, in Word format, to ESMA’s website ([www.esma.europa.eu](http://www.esma.europa.eu) under the heading “Your input – Open consultations” 🡪 “Consultation on Algorithmic Trading”).

**Publication of responses**

All contributions received will be published following the close of the consultation, unless you request otherwise. Please clearly and prominently indicate in your submission any part you do not wish to be publically disclosed. A standard confidentiality statement in an email message will not be treated as a request for non-disclosure. A confidential response may be requested from us in accordance with ESMA’s rules on access to documents. We may consult you if we receive such a request. Any decision we make not to disclose the response is reviewable by ESMA’s Board of Appeal and the European Ombudsman.

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**Who should read this paper**

This document will be of interest to (i) alternative investment fund managers, UCITS management companies, EUSEF managers and/or EuVECA managers and their trade associations, (ii) distributors of UCITS, alternative investment funds, EuSEFs and EuVECAs, as well as (iii) institutional and retail investors investing into UCITS, alternative investment funds, EuSEFs and/or EuVECAs and their associations..

**General information about respondent**

|  |  |
| --- | --- |
| Name of the company / organisation | Citadel Securities |
| Activity | Other Financial service providers |
| Are you representing an association? |  |
| Country/Region | International |

**Introduction**

***Please make your introductory comments below, if any***

<ESMA\_COMMENT\_ALGO\_1>

Citadel Securities welcomes the opportunity to respond to the ESMA consultation on the MiFID II/MiFIR review report on algorithmic trading. Overall, Citadel Securities agrees with ESMA’s assessment that the regulatory framework introduced by MiFID II/MiFIR to govern the use of algorithmic trading, high-frequency trading (HFT) and direct electronic access (DEA) is largely fit-for-purpose, requiring only slight adjustments or adaptions to optimise regulatory outcomes.

Broadly speaking, we believe that the current definitions of algorithmic trading, HFT and DEA are satisfactory and accurately capture the essence of the trading practices or market access arrangements to which they refer. The existing definitions also strike the right balance between specificity and flexibility and are sufficiently broad to enable a wide variety of different types of algorithm and algorithmic trading strategies to be encompassed while avoiding an overly prescriptive approach. We believe that the current approach to adopting a broader, more general definition of algorithmic trading is ultimately better than a more prescriptive approach from a regulatory standpoint and when it comes to creating a framework that enables innovation. We believe that a more prescriptive approach would heighten the risk of certain types of algorithmic trading being inadvertently prohibited, loopholes being created or the evolution of trading practices in Europe undermined and innovation being curbed. More generally, the process of identifying and prescribing multiple different types of trading algorithm, as contemplated by ESMA, would be a burdensome exercise and might needlessly introduce greater complexity into a currently effective and well-functioning legal framework.

Furthermore, we also believe that IT incidents and market outages on trading platforms have highlighted the need to enhance the requirement for trading venues to deploy robust systems and controls to mitigate the likelihood of market impacting failures occurring and improve operational resiliency. The recent experiences with outages have illustrated the potential wider disruption which they can create. For example, a trading interruption on the main market for a financial instrument may cause trading to effectively halt across multiple related EU markets. A failure of a venue’s technical infrastructure has the potential to impact liquidity, price formation and risk management both on that trading venue and other related trading venues. Due to the interconnectedness of European capital markets, the importance of the uninterrupted operation of a trading venue cannot be understated. Particularly when this venue is “the most relevant market in terms of liquidity” for a significant number of the Eurozone’s and EU’s most liquid financial instruments, which in turn are core constituents of both EU national, pan-European and sectoral index-based financial instruments (ETPs & index derivatives) and benchmarks. As such, trading venue outages have manifest consequences across the EU markets and are not just restricted to one trading venue’s members locally.

Accordingly, we recommend that trading venues be required to create internal functions and procedures to ensure expeditious action in response to any disruptive incidents. Commensurate with their status as critical market infrastructure, we believe that the obligations applicable to trading venues in relation to business continuity should be enhanced in the interest of creating a more reliable and operationally resilient market ecosystem.

Another means by which the capacity and resilience of EU markets could be enhanced is through the establishment of a real-time, post-trade Consolidated Tape (CT) for both equities and non-equities. As advocated by Citadel Securities in the context of other consultations by both ESMA and the European Commission, the CT should have full market coverage – aggregating both on-venue and OTC post-trade market data in real-time. From the perspective of market resilience and integrity, an EU CT would lower the reliance that market participants have on the “most relevant market” in terms of liquidity discovery in order to provide a reference price for trading. By aggregating market data in relation to a financial instrument the CT could reliably provide a reference price more reflective of the entire market that would also enable trading to continue uninterrupted in the event of an outage on the “most relevant market”.

While we recognise the overlap in the legal requirements in relation to the testing of algorithms applicable to both investment firms and trading venues – as both investment firms and trading venues have a measure of responsibility for ensuring that algorithms are properly tested – we firmly believe, first and foremost, that effective, comprehensive and proper testing of trading algorithms is predicated upon trading venues providing appropriate testing facilities. In our view, these requirements are complementary to the European Commission’s efforts to improve operational resilience in the financial services sector, among others, through proposals such as the Digital Operational Resilience Act (DORA). That being said, we believe that testing environments could be improved through the implementation of practical changes that would better facilitate trading algorithm testing.

<ESMA\_COMMENT\_ALGO\_1>

**Questions**

1. : What is your overall assessment of the MiFID II framework for algorithmic trading, HFT and DEA?

<ESMA\_QUESTION\_ALGO\_1>

Citadel Securities believes that the framework introduced by MiFID II for algorithmic trading, HFT and DEA is effective and remains fit-for-purpose in its current form for all market participants. In particular, the existing framework has struck the right balance between establishing clear definitions and associated regulatory obligations for algorithmic trading, HFT and DEA while still allowing the flexibility necessary to allow innovation in trading practices and to support financial markets adequately.

In addition, we believe that the efficacy of the existing framework was clearly demonstrated during the period of market volatility in March 2020. The current framework proved efficient and resilient as it mitigated the potential risks associated with algorithmic trading while ensuring that market volatility was not compounded during stressed market conditions.

<ESMA\_QUESTION\_ALGO\_1>

1. : In your views, are there risks other than the one mentioned in MiFID II or impacts on market structure developments due to market electronification/ algorithmic trading that would deserve further regulatory attention? Please elaborate.

<ESMA\_QUESTION\_ALGO\_2>

Citadel Securities believes that the risks associated with algorithmic trading addressed by the MiFID II framework are the most relevant.

We are not aware of any other substantial risks other than those already considered by the existing legal requirements that arise specifically due to algorithmic trading or the broader electronification of financial markets.

<ESMA\_QUESTION\_ALGO\_2>

1. : Do you consider that the potential risks attached to algorithmic trading should also be given consideration in other trading areas? Please elaborate.

<ESMA\_QUESTION\_ALGO\_3>

Citadel Securities believes that the existing MiFID II framework governing algorithmic trading appropriately and effectively addresses the areas in which potential risks associated with algorithmic trading are most salient – namely in multilateral trading environments in which multiple third-party buying and selling interests interact with one another.

Citadel Securities agrees with ESMA that any algorithmic trading-related issues are likely to create more detrimental consequences to orderly market function in a multilateral trading landscape. The MiFID II framework and scope has been fit for purpose to prevent such scenarios.

In addition, while electronification has also made significant inroads in bilateral trading, there does not appear to be any problem with how the market currently functions – or obvious potential risks arising therefrom – that would warrant extending the MiFID II framework on algorithmic trading to other trading areas. Please also see our response to Question 9 below which sets out our detailed view on ESMA’s proposal to extend the scope of algorithmic trading requirements to SIs.

<ESMA\_QUESTION\_ALGO\_3>

1. : Do you agree with this analysis? If not, please explain why.

<ESMA\_QUESTION\_ALGO\_4>

Citadel Securities believes that the MiFID II definition of algorithmic trading is clear to the industry at large. We do not believe that there is any uncertainty as to the MiFID II definition of algorithmic trading or, correspondingly, uncertainty as to its scope of application.

We agree with ESMA that, given the definition of algorithmic trading in MIFID II, the MiFID II algorithmic trading requirements are applicable to members/direct participants of trading venues as well as to DEA clients of such members/direct participants of trading venues.

<ESMA\_QUESTION\_ALGO\_4>

1. : Did you encounter any specific issue with the definition of HFT? Do you consider that the definition should be amended? Do you have any suggestion to replace the high message intraday rates with other criteria or amend the thresholds currently set in Level 2? Please elaborate and provide data supporting your response where available.

<ESMA\_QUESTION\_ALGO\_5>

Citadel Securities believes that the current MiFID II definition of HFT is clear and fit-for-purpose from the perspective of the industry as a whole. The existing definition provides an adequate basis to identify HFT as a subset of algorithmic trading by reference to specific practical arrangements including intraday message rates. Accordingly, we see little reason to amend or alter the MiFID II definition of HFT.

In relation to ESMA’s suggestion to amend or replace the high intraday message rates criteria in the HFT definition, we believe that the current thresholds are appropriate and should be maintained. While it is possible that the average speed and frequency of algorithmic trading is increasing across the market as more market participants deploy algorithms, this alone should not justify revising the thresholds established to determine HFT. Maintaining the current intraday message rate threshold for HFT should result in more market participants being caught under the definition of HFT. This seems an appropriate outcome since the perceived risks with HFT are no less mitigated even if all market participants were to trade only at (or under) the current frequency for HFT.

<ESMA\_QUESTION\_ALGO\_5>

1. : Based on your experience, is sub-delegation of DMA access a frequent practice? In which circumstances? Which benefits does it provide to the DEA user and to the sub-delegatees? Are you aware of sub delegation arrangements in the context of Sponsored access? If so, please elaborate.

<ESMA\_QUESTION\_ALGO\_6>

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<ESMA\_QUESTION\_ALGO\_6>

1. : (for DEA Tier 1clients) Do you sub-delegate direct electronic access? If so, are your Tier 2 clients typically regulated entities/investment firms? Are they EU-based or third country based?

<ESMA\_QUESTION\_ALGO\_7>

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<ESMA\_QUESTION\_ALGO\_7>

1. : Do you agree with this analysis? If not, please explain why. Do you consider that further clarification is needed in this area? If so, what would you suggest?

<ESMA\_QUESTION\_ALGO\_8>

Citadel Securities agrees with ESMA’s analysis that online brokerage does not constitute the provision of DEA to retail investors. As outlined by ESMA, this is because even when using an online brokerage service, the retail investor “cannot exercise discretion regarding the exact fraction of a second of order entry and the lifetime of the order within that timeframe.”

Accordingly, retail clients of online brokers do not decide upon the full parameters of their orders and thus should not be considered as having direct electronic access.

<ESMA\_QUESTION\_ALGO\_8>

1. : Do you agree with ESMA’s proposal? If so, do you consider that the requirements considered above relevant? Should there be additional ones? If you disagree with ESMA’s proposal, please explain why.

<ESMA\_QUESTION\_ALGO\_9>

Citadel Securities agrees with ESMA that potential risks attached to algorithmic trading and potential damaging consequences to orderly markets are more salient with respect to multilateral trading where multiple buying and selling orders may interact with each other within a very short timeframe. Citadel Securities believes that the current scope of algorithmic trading requirements addresses any risks that arise due to the use of algorithms in multilateral trading environments – which are where the risks associated with the use of algorithms are most salient – is fit for purpose.

An investment firm operating in an SI would already be subject to the algorithmic trading requirements when it interacts with the wider market in a multilateral setting where contagion could potentially occur - so subjecting the investment firm to the same requirement within the SI framework would be redundant.

We therefore do not believe that it is necessary to introduce requirements to govern the use of algorithmic or electronic trading practices by SIs . Fundamentally, SI trading is bilateral in nature with no wider or more dynamic interaction with exposure to markets in which multiple buying and selling interests are active. Accordingly, there is less risk associated with algorithmic trading to the market at large.

While Citadel Securities is in favour of creating a level-playing field between the different trading and execution venues represented in Europe’s market structure, we do not believe that extending the scope of algorithmic trading requirements to apply to bilateral trading is proportionate or necessary.

<ESMA\_QUESTION\_ALGO\_9>

1. : Do you agree with ESMA’s proposals above? Please elaborate.

<ESMA\_QUESTION\_ALGO\_10>

Citadel Securities is supportive of ESMA’s efforts to ensure a level-playing field by ensuring that EU-based DEA users are not put at a competitive disadvantage or subject to more stringent requirements vis-à-vis their non-EU counterparts when accessing EU markets. Accordingly, we agree with the proposal to remove the obligation for EU-based DEA users to be authorised as investment firms when dealing on own account. ESMA is operating within the limits of its remit and jurisdiction when making recommendations on the treatment of EU entities that make use of DEA to operate on European markets.

However, in relation to the treatment of third-country entities that deploy HFT strategies on EU trading venues – and, in particular, the ESMA proposal to require that they be authorised as investment firms – we believe that ESMA should approach this proposal with caution.

By requiring non-EU firms that intend to adopt HFT strategies on EU trading venues to be authorised as investment firms, ESMA would in effect be requiring that such firms establish a physical presence in the EU that can then apply to the relevant NCA for authorisation. The requirement to establish an authorised investment firm in an EU member state may dissuade non-EU firms from participating in EU trading venues in the first place. Any reduction of EU trading venue participation would have a negative impact on EU market liquidity.

This would be an unintended and negative consequence for the EU secondary markets and more broadly for the development of the Capital Markets Union. In view of the challenges associated with directly applying EU law to non-EU entities, we would advise ESMA and the European Commission against doing so, particularly in the absence of any significant issue and when the costs of such action may outweigh the benefits.

<ESMA\_QUESTION\_ALGO\_10>

1. : Do you agree with ESMA’s proposal? Please elaborate.

<ESMA\_QUESTION\_ALGO\_11>

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<ESMA\_QUESTION\_ALGO\_11>

1. : Do you see merit in ESMA developing a template for notifications to NCAs under Articles 17(2) and 17(5) of MiFID II? If not, please justify your position.

<ESMA\_QUESTION\_ALGO\_12>

Citadel Securities believes that the existing requirements for the notifications to NCAs pursuant to Articles 17(2) and 17(5) are already appropriate. They provide NCAs with the information relevant to enable effective supervision of algorithmic trading and DEA access within their jurisdiction while also providing investment firms with the flexibility required to present this information in the most effective and/or efficient manner.

We also note that in Article 17(2) and 17(5), NCAs are granted the discretion to require investment firms to provide further information on their algorithmic trading strategies, their trading parameters, the limits to which their systems are subject, and the key compliance and risk controls they have in place on either an ad-hoc or regular basis where necessary and appropriate. This further ensures that investment firms making use of algorithmic trading strategies or providing DEA access are effectively supervised by the relevant NCA(s).

Accordingly, we would see little value in prescribing a template for notifications to NCAs, and fear that that such templates would be overly prescriptive and impose burdens without materially enhancing supervision of algorithmic trading and/or DEA access.

<ESMA\_QUESTION\_ALGO\_12>

<ESMA\_QUESTION\_ALGO\_0>

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<ESMA\_QUESTION\_ALGO\_0>

1. : Do you agree that it would be useful to clarify that notifications should be done ‘without undue delay’?

<ESMA\_QUESTION\_ALGO\_13>

Citadel Securities does not believe that the expression ‘without undue delay’ requires further clarification as it seems self-explanatory.

<ESMA\_QUESTION\_ALGO\_13>

1. : Do you agree with ESMA’s approach for the exchange of information between NCAs? If not, please justify your position.

<ESMA\_QUESTION\_ALGO\_14>

Citadel Securities agrees with ESMA’s approach in relation to the exchange of information between NCAs. As evidenced by the NCA’s own responses to ESMA’s questionnaire, it does not appear that any problems in terms of the exchange of information between NCAs has emerged.

Moreover, we would highlight that developing a template for the exchange of information between NCAs may not automatically increase the level of interaction between NCAs in practice. We trust that NCAs are best placed to assess the level and content of information they need and would continue to benefit from an adequate level of flexibility in these regards.

<ESMA\_QUESTION\_ALGO\_14>

1. : What is your view on clarifying the definition of algorithmic trading? If you deem it beneficial to refine the definition and account for further types of algorithms or algorithmic trading strategies, please provide your suggestion as well as underlying rationale.

<ESMA\_QUESTION\_ALGO\_15>

As outlined earlier in our response, Citadel Securities believes that the existing MiFID II definition of algorithmic trading is appropriate and sufficiently broad to encompass a wide variety of algorithms and algorithmic trading strategies. In our view, there is no need to further clarify the MiFID II definition of algorithmic trading nor to enumerate or specify further types of algorithms or algorithmic trading strategies to which the definition should expressly apply.

Indeed, we believe that adopting an overly prescriptive approach (in particular, to the types of algorithms or algorithmic trading strategies that would fall within the MiFID II definition of algorithmic trading) will be unable to account for the variety and heterogeneity of algorithms in use and add unnecessary complexity. Moreover, by attempting to identify the specific algorithms to which the definition applies, there is a risk of excluding certain types of algorithmic trading or creating loopholes in the framework while rendering the further evolution of algorithmic trading more challenging.

Moreover, the existing guidance that ESMA has provided in order to clarify the MiFID II definition of algorithmic trading has been sufficient to date.

<ESMA\_QUESTION\_ALGO\_15>

1. : Do you think there should be specific requirements for different type of algorithms or algorithmic trading strategies in RTS 6? Please explain.

<ESMA\_QUESTION\_ALGO\_16>

Citadel Securities believes that the existing requirements accommodate a wide variety of different types of algorithms and algorithmic trading strategies while still ensuring that all are properly deployed and adequately regulated and supervised.

As a result, we do not believe that there is any need to prescribe specific requirements for different types of algorithms or algorithmic trading strategies. In our view, this would not enhance nor improve the existing framework and would create an unnecessarily complex and prescriptive regulatory framework to the detriment of European markets and market participants.

<ESMA\_QUESTION\_ALGO\_16>

1. : What is your experience with testing environments? Are they used frequently? If not, why? Do you see a need for any improvements?

<ESMA\_QUESTION\_ALGO\_17>

Citadel Securities has had extensive experience with testing environments. While they are frequently used by market participants in order to test their trading algorithms there are a few improvements that would make regular testing easier.

Based on our experience, we note that reliable and consistent access to testing environments is not always provided by trading venues across Europe. On certain venues – the User Acceptance Testing (UAT) environment is closed on certain days of the week or there is a lack of flexibility as to the available testing days. Accordingly, we believe that ESMA should require trading venues to make available testing facilities during business hours on every business day to ensure that trading algorithms can be tested appropriately and that investment firms can schedule testing with certainty.

In addition, investment firms that access trading venues for the purposes of testing often find their access to connections is unstable or that there is a constant need to reset login details. This is a frustrating and easily rectified problem that – despite its seemingly trivial nature – renders testing a more cumbersome exercise.

In the context of an upgrade to a production environment announced by a trading venue, ESMA should ensure that the trading venues provide access to two testing environments - one to include the upgrades to be introduced and one to reflect the current production system - so that it is always possible to test a trading algorithm in each environment.

Additionally, we note that some trading venues use mock symbols not corresponding to real instruments when simulating market environments. We believe that these random symbols create additional complexity in the testing process. Consequently, we would suggest that ESMA encourage the use of real symbols during testing or market simulations as this ultimately results in less burdensome and more compelling and insightful testing outcomes.

Moreover, we believe that testing of algorithms could be enhanced if algorithms could interact with orders injected by the trading venue on a set of symbols through an automated UAT trading engine. This would further enhance testing by replicating a wider range of real-life market conditions.

Finally, we believe that trading venues should ensure proper monitoring of the UAT environment to make sure it operates consistently across an adequate number of symbols to create a sufficiently dynamic testing environment and to better mimic a production-matching environment that would simulate the trading day.

<ESMA\_QUESTION\_ALGO\_17>

1. : Do you agree that the definition of “disorderly trading conditions” should be clarified? If yes, how would you define such trading conditions?

<ESMA\_QUESTION\_ALGO\_18>

Citadel Securities does not believe that the expression “disorderly trading conditions” requires any further clarification. We believe that the expression is self-explanatory and could correspond to many scenarios. In paragraph 114 of the Consultation Paper, ESMA notes that it considers “disorderly trading conditions” to refer to “a market where the maintenance of a fair, orderly and transparent execution of trades is compromised”. We consider this interpretation to be unduly restrictive. This is because disorderly trading conditions, in a broader sense, is still capable of occurring without the execution of trading being compromised.

<ESMA\_QUESTION\_ALGO\_18>

1. : Do you agree that ESMA should provide additional guidance on the expectations concerning the checks and testing to be done, in particular for testing on disorderly trading conditions?

<ESMA\_QUESTION\_ALGO\_19>

We believe that there is no need for ESMA to provide additional guidance on the expectations concerning the checks and testing to be done, in particular for the purpose of testing on disorderly trading conditions. Flexibility remains essential in this instance.

<ESMA\_QUESTION\_ALGO\_19>

1. : Would you agree that it could be beneficial if ESMA develops a prescribed format for the self-assessment foreseen in Article 9 of RTS 6?

<ESMA\_QUESTION\_ALGO\_20>

Citadel Securities does not believe it is necessary for ESMA to develop a prescribed format for the self-assessment foreseen in Article 9 of RTS 6. We note that firms vary widely in terms of their practices, operations and trading strategies. Accordingly, we anticipate that it would be challenging to conceive of a format for the self-assessment that would be appropriate for all relevant market participants.

More broadly, as noted by ESMA, the prescribed format would elevate the annual self-assessment to a form of “proper due diligence” and “it should be more ambitious than a statement of compliance,” thus rendering it a more burdensome exercise for firms to conduct. Despite also proposing to alter the frequency of the self-assessment to once every two years, ESMA specifies that NCAs would retain the right to request more regular self-assessments which would have to be submitted to NCAs for review.

We believe that ESMA’s proposals would create a significantly heavier regulatory burden for algorithmic trading firms without any clear benefits for NCAs or the market at large. Based on our experience and interactions, NCAs are satisfied with their existing powers to request that annual self-assessments be provided by investment firms where appropriate.

<ESMA\_QUESTION\_ALGO\_20>

1. : Do you agree with the changes proposed to the self-assessment of Article 9 of RTS 6?

<ESMA\_QUESTION\_ALGO\_21>

Citadel Securities does not believe that the annual self-assessment should mandate the inclusion of information on the ‘specific testing environments and for which algorithms’ as this is overly prescriptive and flexibility should be retained to allow firms to outline their testing approach as appropriate for their practices, operations and trading strategies.

In addition, to reiterate, we do not believe that a prescribed format should be created for the annual self-assessment nor that any requirement to submit it to NCAs on a mandatory basis should be introduced. In our view, this would increase regulatory and administrative burden without enhancing the quality of supervision already enabled by the existing framework.

<ESMA\_QUESTION\_ALGO\_21>

1. : Would you propose any other targeted legislative amendments to RTS 6? Please include a detailed explanation of the proposed amendment and of the underlying issue that this amendment would aim to tackle.

<ESMA\_QUESTION\_ALGO\_22>

Citadel Securities does not believe that targeted amendments to RTS 6 are required.

<ESMA\_QUESTION\_ALGO\_22>

1. : Do you agree with ESMA’s proposal to harmonize and create a clear structure for the performance of the self-assessment?

<ESMA\_QUESTION\_ALGO\_23>

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<ESMA\_QUESTION\_ALGO\_23>

1. : Do you agree with limiting the self-assessment to every two years and to require trading venues to share it with their relevant NCA?

<ESMA\_QUESTION\_ALGO\_24>

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<ESMA\_QUESTION\_ALGO\_24>

1. : Do you agree with ESMA’s analysis about the overlapping requirements between RTS 6 and 7? Are those overlaps considered beneficial, should they be removed or are there any gaps? Are there any further points that should be clarified?

<ESMA\_QUESTION\_ALGO\_25>

We agree with ESMA’s analysis that the requirements applicable to investment firms stemming from RTS 6, and the obligations of trading venues arising due to RTS 7, overlap to a certain extent. In principle, we believe that overlapping requirements could appear to be beneficial by fostering a measure of responsibility among both investment firms and trading venues when it comes to the proper testing of algorithms.

However, in practice, it is important to highlight that, while investment firms maintain their own arrangements for testing algorithms, they rely to a great extent on the testing facilities provided by trading venues. We believe firmly that the maintenance of orderly and resilient markets lies with the trading venues and the way they operate the market infrastructure is critical. Accordingly, from both a practical and principled standpoint, we consider that effective, comprehensive, and proper testing of algorithms (although relying on both market participants and trading venues) relies primarily on the facilities maintained by trading venues – and that trading venues are best placed to simulate the trading conditions that prevail on their platforms and thereby ensure that testing is effective and realistic. While the testing conducted by investment firms is key, it is not an equal or adequate substitute to the testing that is taking place on trading venues which are very well placed to support the testing of algorithms in production like environment.

Accordingly, we would recommend a range of practices that trading venues should introduce in order to improve the reliability and accessibility of their testing environments (see our answer to Q17) – thereby increasing confidence in testing outcomes and enhancing the resilience and efficiency of markets. Importantly, these practices may not require amendments to existing legal provisions but could be encouraged by ESMA through Level 3 measures, such as guidelines for trading venues and or dedicated Q&As. Nevertheless, by facilitating testing through the promotion of best practices on the part of trading venues, ESMA would contribute significantly to better and – perhaps equally as important – more pertinent testing of algorithms by market participants before their deployment on the live market.

<ESMA\_QUESTION\_ALGO\_25>

1. : What is your view with regards to the testing of algorithms requirements? Do you agree that more robust testing scenarios should be set?

<ESMA\_QUESTION\_ALGO\_26>

Citadel Securities believes strongly that ESMA should refrain from prescribing a set of testing scenarios. Financial markets are dynamic and – as the rapid electronification of trading has revealed – are subject to rapid and often unforeseen change. In such a context, a prescribed set of testing scenarios might quickly become redundant or unfit for purpose as trading practices evolve quickly and to a certain extent a barrier to innovation.

Consequently, ESMA should ensure a measure of flexibility for trading venues and investment firms when it comes to testing scenarios. Introducing overly prescriptive requirements for the testing of algorithms would render it challenging for European markets to adapt to new developments or may impose regulatory burdens associated with providing for testing scenarios that may no longer be appropriate.

<ESMA\_QUESTION\_ALGO\_26>

1. : Are the testing environments available for the testing of algorithms appropriate for this purpose?

<ESMA\_QUESTION\_ALGO\_27>

As mentioned previously, Citadel Securities believes that the effective, comprehensive and proper testing of algorithms relies to a great extent on the facilities that trading venues make available for the purpose of testing. Commensurate with their status as critical market infrastructure, trading venues bear the significant responsibility to guarantee orderly trading conditions and resilient and well-functioning markets. While the testing of algorithms by investment firms is important, trading venues are best placed to simulate realistic trading conditions based on their experience with trading conditions that arise and/or typically prevail on their platforms. As a result, the reliability and accessibility of testing environments maintained by trading venues is essential.

See our answer to Q17.

<ESMA\_QUESTION\_ALGO\_27>

1. : Do you agree with ESMA’s analysis that the circuit breaker mechanism achieved its objective to avoid significant disruptions to the orderliness of trading?

<ESMA\_QUESTION\_ALGO\_28>

Citadel Securities agrees with ESMA’s analysis that circuit breakers fulfil an essential mechanism to halt disorderly trading during periods of heightened market volatility. Citadel Securities agrees with ESMA’s analysis that the circuit breaker mechanism has achieved its objective to avoid significant disruptions to the orderliness of trading.

<ESMA\_QUESTION\_ALGO\_28>

1. : Do you agree that the requirements under Article 48(5) of MiFID II complemented by RTS 7 and the guidelines on the calibration of circuit breakers and publication of trading halts under MiFID II remain appropriate? If not, what regulatory changes do you deem necessary?

<ESMA\_QUESTION\_ALGO\_29>

Citadel Securities believes that recent experience has illustrated that requirements under Article 48(5) of MiFID II have proven to be more than adequate to contend with adverse or volatile market conditions.

<ESMA\_QUESTION\_ALGO\_29>

1. : Do you agree that the co-location services and fees structures are fair and non-discriminatory? Please elaborate.

<ESMA\_QUESTION\_ALGO\_30>

Citadel Securities believes that trading venues should guarantee that access to the matching engine is fair to all participants in co-location (i.e. cross-connects connecting participants' cabinets to the matching engine and participants' cabinets to telecommunication meet-me-rooms must be latency equalised) in order to ensure that no locations in the data centre have an intrinsic advantage. Latency tolerance on equidistant cables should be minimized to ensure fairness and equal access.

Alongside this, ESMA should ensure that venues guarantee a fair and competitive environment to vendors offering services in the data centre. As an example, a venue must not use its direct or indirect control over its data centres to provide a latency advantage to its own services or those of (a) select vendor(s).

We believe that venues should have a cost-based pricing approach in relation to co-location charges. Trading venues should not use their monopolistic advantage as owner (or sole contractor) of the data centre to charge unreasonable rates for colocation services and the rates should reflect the costs of the supply of those services and the supply and demand to allow for equitable access.

Trading venues should communicate in a transparent fashion and in a timely manner their plans to migrate to a new data centre. Venues should open a consultation period allowing co-located customers to provide feedback and include an impact assessment of the cost of the move on market participants. In case of a migration, access to the new datacentre should be made available as early as possible to support participants in their preparation effort. As well as this, fees should also be predicable and stable when it comes to co-location services.

<ESMA\_QUESTION\_ALGO\_30>

1. : Do you think that the disclosures under RTS 10 made by the trading venues are sufficient or should they be harmonized among the different entities? Please explain.

<ESMA\_QUESTION\_ALGO\_31>

Citadel Securities believes that disclosures under RTS 10 could be enhanced. In our experience, the information provided on co-location fees and service pricing are unclear. The disclosures often tend to be impenetrable and excessively complicated thus frustrating (potential) co-location users in their attempts to understand co-location fees.

Consequently, we would be supportive of ESMA’s attempts to standardise and harmonise the disclosures mandated by RTS 10 to ensure that supervisors can monitor compliance.

<ESMA\_QUESTION\_ALGO\_31>

1. : Do you agree with ESMA’s proposal to set out the maximum OTR ratio, calibrated per asset class?

<ESMA\_QUESTION\_ALGO\_32>

Citadel Securities believes that trading venues should determine Orders to Transactions Ratios (OTRs) that are appropriate and proportionate to the nature and scale of trading on their platform. This would ensure that trading venues can set OTRs that match their technological capacity and quality.

It is our understanding that OTRs are partially set to ensure the resilience of the trading venue’s architecture. As a result, we fear that if OTRs are harmonised at EU level they will be harmonised in such a way as to accommodate the lowest common denominator thus potentially undermining the incentive for trading venues to invest in improving their architecture.

Accordingly, we would advise against introducing harmonised OTR requirements as they would invariably be unsuitable for the broad range of trading venues to which they would apply.

<ESMA\_QUESTION\_ALGO\_32>

1. Q33: Do you agree that the maximum limits are not frequently exceeded? Please explain any potential underlying issues in this respect that should be recognised.

<ESMA\_QUESTION\_ALGO\_33>

TYPE YOUR TEXT HERE

<ESMA\_QUESTION\_ALGO\_33>

1. : Do you agree with the consequences as described of exceeding the maximum limits or should there be a more convergent approach? Please provide any comment or suggestion regarding the procedures in place by trading venues in case of a member exceeding the prescribed limit.

<ESMA\_QUESTION\_ALGO\_34>

TYPE YOUR TEXT HERE

<ESMA\_QUESTION\_ALGO\_34>

1. : Do you agree with the need to improve the notification process in case of IT incidents and system outages? Beyond the notification process between NCAs and ESMA, which improvements could be done regarding communication of incidents to the public?

<ESMA\_QUESTION\_ALGO\_35>

In view of the recent experience with system outages on significant trading platforms, we agree that there is a need to significantly improve the notification process and communication around IT incidents and system outages. More concretely, we believe that trading venues should have communication & crisis management processes and identified individuals that are prepared to respond expeditiously to IT incidents and system outages. These processes and people should be adequately qualified and subject to period stress testing to ensure that they are prepared in the event of an issue.

Trading venues should also have clear policies in place that indicate how orders and trades that are pending during the interruption to trading will be treated upon the restoration of normal conditions. This should specify whether and, if so, under what conditions, pending orders and trades will be cancelled or maintained. These policies should be readily available, maintained and periodically updated to take account of recent experience or industry best practices.

More broadly, trading venues should provide an application or functionality on their website that enables the status of the market to be monitored. This functionality should reliably reflect the market and be easily accessible.

In the event of any IT incidents or system outages, trading venues should be required to communicate the incident to the market through a public notice as soon as possible so as to inform market participants that there has been an incident, provide some information on the nature of the problem and an indication of anticipated timing for the resumption of normal operation of the trading venue.

While we agree that trading venues should do their utmost to restore normal market conditions and a resumption of trading as soon as possible, we do not believe that it is practical to impose an arbitrary time limit within which tradign venues must reopen. According to the consultation paper "ESMA further emphasizes the importance of trading to resume within or close to two hours to minimise disruptoins and not affect the orderliness of trading." In our view, insisting that trading venues reopen within two hours risks complicating the underlying problem or cause of the incident by imparing trading venues to properly apprise themselves of the issue. In order to ensure a return to orderly trading, and to minimise the risk of further incident, we believe that trading venues should prioritise identification and rectification of the underlying problem that caused the incident before proceeding to reopen for trading.

That being said, trading venues should ensure that the prices established for the market close are reliable and published as soon as possible even in case of incidents. They should have clear policies in place that indicate how closing prices will be determined in case of disruption.

Finally, we believe that recent experience with system outages has further revealed the potential utility of an EU consolidated tape. The consolidated tape would have multiple obvious benefits for market transparency and access in Europe. However, we believe that it could also enhance the resilience of European markets by ensuring the continued availability of a reference price for financial instruments beyond their “most relevant market” in terms of liquidity. Accordingly, in the event of an outage on the “most relevant market”, trading could continue on other venues, minimising the adverse impact of the interruption to trading.

<ESMA\_QUESTION\_ALGO\_35>

1. : Do you believe any initiative should be put forward to ensure there is more continuity on trading in case of an outage on the main market, e.g. by requiring algo traders to use more than one reference data point?

<ESMA\_QUESTION\_ALGO\_36>

Consistent with our response to Question 35, we believe that the establishment of an EU consolidated tape would contribute to greater continuity of trading in case of an outage on the main market or “most relevant market” in terms of liquidity. We believe that the regulatory framework should foster competition between trading venues and achieve a European market that is sufficiently integrated to enable order flow to migrate to secondary or ancillary trading venues in the event of an outage on the “most relevant market”. That being said, we do not believe that ESMA should prescribe the way in which investment firms that use algorithmic trading should respond to market outages. Accordingly, the regulation should not mandate that trading firms use more than one data reference point to enable continuous trading.

For that reason, the consolidated tape has the potential to continue providing a reference price – subject to possible necessary adjustments following an outage on the main market for the effected instruments – that would enable trading to continue on secondary or ancillary venues. Furthermore, order flow may migrate from the main market to secondary or ancillary venues in a manner that would render European capital markets more dynamic in terms of where liquidity can arise.

Indirectly, the possibility for order flow to be diverted to secondary or ancillary venues would result in the original main market being competitively penalised for IT incidents and market outages. This would create further commercial incentives for primary trading venues to remain operationally resilient.

<ESMA\_QUESTION\_ALGO\_36>

1. : Do you agree with the view that the tick size regime had overall a positive effect on market depth and transaction costs?

<ESMA\_QUESTION\_ALGO\_37>

Citadel Securities believes that the tick size regime introduced by MiFID II for equity markets in the EU has been a success. It has certainly contributed to improving market depth in the EU. That being said, the tick size regime has to be calibrated so as to ensure that spreads are not arbitrarily tick constrained while maintaining a healthy level of liquidity at the touch. Larger tick sizes tend to create a bias in favour of time priority/queue position while smaller tick sizes increase the competition for price priority.

Accordingly, from the perspective of lowering transaction costs, smaller tick sizes are principally preferable as they will narrow spreads and reduce the direct costs for those actively engaging with liquidity in the market. However, the desire for more positive outcomes in terms of transaction costs must be balanced with the need to facilitate liquidity provision.

<ESMA\_QUESTION\_ALGO\_37>

1. : Is there any further issue you would like to highlight regarding tick size regime?

<ESMA\_QUESTION\_ALGO\_38>

TYPE YOUR TEXT HERE

<ESMA\_QUESTION\_ALGO\_38>

1. : Do You agree with the proposal not to amend the tick size regime for third country shares? Please explain.

<ESMA\_QUESTION\_ALGO\_39>

Citadel Securities agrees with ESMA’s position that the tick size regime applicable to third-country shares should not be amended at this juncture. This is in view of the difficulty associated with calibrating an appropriate regime for the wide range of third-country instruments – of widely varying liquidity profiles – available to trade within the EU.

However, in the interest of minimising the potential for regulatory arbitrage, we suggest that ESMA should remain open to considering the development of a harmonised tick size regime in collaboration with UK and Swiss authorities that would be applicable across the equities markets across the Greater European Area, encompassing markets in the EU, UK and Switzerland given the proximity and interconnectedness of these markets.

With regard to third-country instruments with a home market more remote from that of the EU, we would advise removing these instruments from the MiFID II tick size regime altogether. We are mindful that certain trading venues in the EU enable trading of these instruments and thus believe that the tick size regime should be tailored to better facilitate such trading. Accordingly, we believe that trading venues that permit trading in such instruments should be granted the flexibility to set tick sizes consistent with the main third-country markets so as to enable further growth of trading in these instruments.

<ESMA\_QUESTION\_ALGO\_39>

1. : Do you agree with the proposal to widen the scope of the tick size regime to all ETFs? Would this pose challenges in your view? Please explain.

<ESMA\_QUESTION\_ALGO\_40>

TYPE YOUR TEXT HERE

<ESMA\_QUESTION\_ALGO\_40>

1. : Do you agree with the proposal not to widen the scope of the tick size regime to non-equity instruments? Please explain.

<ESMA\_QUESTION\_ALGO\_41>

Citadel Securities agrees that ESMA should not broaden the scope of the tick size regime so as to encompass non-equity instruments. In our view, the diverse nature of non-equity markets renders conceiving and administering appropriately calibrated tick sizes extremely challenging from a practical standpoint.

<ESMA\_QUESTION\_ALGO\_41>

1. : Do you agree with ESMA findings and assessment of the current MiFID II market making regime?

<ESMA\_QUESTION\_ALGO\_42>

Citadel Securities would like to highlight that market makers are strongly dedicated to the efficient provision of liquidity to markets on a continuous basis – as evidenced by their response to market volatility triggered by the COVID-19 pandemic. Consequently, we agree with ESMA’s assessment that EU markets did not experience a liquidity issue during the period of market volatility in March 2020. In addition, we believe it is important to emphasise that – while some market makers may have altered their behaviour in response to market volatility – market makers continued to provide liquidity during the period of market stress and thereby contributed significantly to maintaining continuity during the adverse market conditions.

As a general point, we also think it is important to highlight that trading venues have a clear incentive to attract liquidity and have the tools to do so under the current requirements. In terms of the nature and content of the market making agreements mandated by RTS 8, we believe that the current framework grants trading venues the flexibility needed to assess and decide upon the best conditions for market making agreements applicable in the markets they host on their platforms. In the interest of preserving this flexibility, we believe that a prescriptive approach to market making schemes for types of trading systems (other than continuous auction order books) or for all instruments as referred to by ESMA in the consultation paper should be avoided. Ultimately, this is due to our positive experience with the existing framework which grants enough flexibility to accommodate a diverse and dynamic market ecosystem without significant deficiencies having arisen.

We also note ESMA’s observation that trading venues differ in terms of what they qualify as “stressed market conditions”. We believe that, as market conditions will vary from trading venue to trading venue, the definition of “stressed market conditions” will always be relative. Accordingly, we consider that trading venues should be left to define what qualifies as “stressed market conditions” based on the nature and profile of the market that they maintain and provided the definition is transparent and based on a clear and objective (statistical) methodology that enables market participants to anticipate market developments with greater certainty.

<ESMA\_QUESTION\_ALGO\_42>

1. : What do you think of ESMA proposals and suggested amendments to RTS 8? In your view, what other aspects of the market making regime require to be amended and how?

<ESMA\_QUESTION\_ALGO\_43>

Citadel Securities believes that trading venues are best situated to establish, monitor, and manage RTS 8 market making agreements appropriate to trading on the markets they host on their platform. Accordingly, we are not supportive of proposals that might reduce the discretion or flexibility available to trading venues in determining the appropriate nature and content of their market making agreements.

That being said, Citadel Securities believes that the obligation to maintain comparable quote sizes in accordance with RTS 8 market making agreements potentially and inadvertently reduces liquidity provision. In our experience, the requirement for market makers to maintain two-way quotes of comparable size is not interpreted consistently by trading venues across the EU. In certain instances, the practices of trading venues prohibit or even penalise market makers that provide more liquidity on one side of the market despite maintaining two-sided quotes above the minimum size threshold. These asymmetric quote sizes are a standard part of market making activity and reflect market makers responding dynamically to supply and demand while also managing their own inventory and market risk. Consequently, we do not believe that market makers should be prohibited or penalised when providing liquidity, albeit through asymmetric quote sizes.

Accordingly, as a practical suggestion, we believe that the obligation to maintain comparable quote sizes should no longer apply once quotes exceed a certain size threshold on both sides. We are aware that certain trading venues have adopted this approach whereby once both bid and ask sizes exceed the minimun obligation, market participants are permitted to provide asymmetric quotes sizes.

On a more administrative matter, in our experience the process by which trading venues register and deregister market makers varies widely across the EU. In some cases, trading venues have introduced unnecessarily complex, slow and convoluted administrative procedures for registering and de-registering as a market maker. To rectify this issue, we would suggest that trading venues introduce an automated registration and deregistration process for market makers that would reduce costly administrative processes. This automated system could also include a record keeping function whereby the registration history of market makers is available to members of the trading venue.

Finally, while Citadel Securities also shares ESMA’s desire to increase the trading volume in illiquid instruments and SME shares, we do not believe that ESMA prescribing the introduction of a monetary incentive – potentially in the form of fee rebates – for market makers that deal in illiquid instruments or SME shares would be an effective driver to increase liquidity. In general, we believe that trading venues should be granted the flexibility to determine the best trading tariff and commercial terms for their market. Trading venues should have the flexibility to determine the market making agreements and incentive structures best suited to their markets. This flexibility should also enable trading venues to innovate and embrace a broader range of strategies such as non-passive liquidity provision. We note that there is a tendency to conceive of liquidity provision as an exclusively passive function. However, we believe that non-passive market making – whereby market makers interact dynamically with order flow – also plays a valuable role in improving market quality. As a result, trading venues should be able to balance between both passive and active strategies to enhance the functioning of markets.

<ESMA\_QUESTION\_ALGO\_43>

1. : What are market participants views regarding the flexibility left in the MiFID II market making regime? Would you agree with ESMA further clarifying certain relevant concepts? If yes, which ones?

<ESMA\_QUESTION\_ALGO\_44>

As outlined earlier in our response, Citadel Securities believes that as conditions vary from trading venue to trading venue, the individual trading venues are best placed to determine what – in relative terms – constitutes a “competitive price” or “stressed market conditions” in the context of trading on their platform. We do not believe it is necessary for ESMA to clarify these concepts further particularly if such clarification would limit the capacity of trading venues to regulate activity or tailor their market making regime so as to be appropriate to “the nature and scale of trading” on their platforms.

In relation to the distinction that ESMA draws between “high speed market makers” and “liquidity providers that operate on the basis of an established inventory and maintain overnight positions”, we believe the differentiation that ESMA establishes may be misleading. In our experience, market makers – regardless of whether they qualify as “high speed market makers” – still trade on the basis of their inventory and can still maintain overnight positions.

Nevertheless, as stated elsewhere, we believe that one of the strengths of the current framework is the flexibility it grants to trading venues in conceiving the optimal market making agreements and incentive structures for their markets.

<ESMA\_QUESTION\_ALGO\_44>

1. : Could you please describe how Primary Dealers agreements are designed (number of designated Primary Dealers, transparency about investment firms having signed such agreements, typical obligations contained, etc…). Do you consider that Primary Dealers should be exempted from the Article 1 of RTS 8? Do you consider that this can introduce a regulatory loophole?

<ESMA\_QUESTION\_ALGO\_45>

Citadel Securities does not believe that Primary Dealers should be exempted from Article 1 of RTS 8. More generally, we also note that the non-equity market in the EU suffers from persistent market structure deficiencies that limit competition, undermine liquidity and market efficiency. In the case of multiple non-equity segments, the market still operates on a closed basis whereby only Primary Dealers can participate with negative consequences for competition, liquidity and transparency.

In part, this practice is enabled by the longstanding deficiencies with the pre- and post-trade transparency regime for non-equities introduced by MiFID II in addition to arbitrary restrictions created by trading venues.

<ESMA\_QUESTION\_ALGO\_45>

1. : Do you think that venues which introduced asymmetric speedbumps provide enough information regarding the mechanism used? If not, what additional information would be useful to disclose to market participants?

<ESMA\_QUESTION\_ALGO\_46>

Trading venues proposing to implement an asymmetric speedbump should be required to clearly detail how it will affect overall market quality, competition, and fairness. Asymmetric speedbumps favour one subset of market participants (a select group of liquidity providers on that specific trading venue) over all other market participants, enabling liquidity providers to reprice displayed quotes before they can be accessed. Such mechanisms are unfairly discriminatory, increase non-tradeable and fading liquidity, and unfairly shift adverse selection risks to consumers of liquidity.

At the moment, EU trading venues are not uniformly required to provide market participants with a sufficient level of transparency and input regarding new rule proposals such as asymmetric speedbumps. Therefore, we recommend that ESMA and NCAs consider recommending that a more harmonized approach with respect to the consideration and approval of trading venue rule filings be uniformly adopted across the EU. This approach would leverage the rule filing processes used by US regulators, including the SEC and CFTC, where (i) all rule filings are publicly available, (ii) rule filings contain basic information regarding the proposal and a legal analysis of its consistency with relevant regulatory requirements, and (iii) market participants have an opportunity to submit feedback prior to the rule filing being approved. In addition, we recommend that NCAs affirmatively approve significant market structure proposals from trading venues, such as asymmetric speedbumps, rather than providing a "non-objection".

To the extent an asymmetric speedbump is implemented, it is critical that objective metrics are established in advance that will be used to evaluate the impact of the speedbump in light of the identified rationale for the proposal. For example, while displayed size may increase as a result of the advantage given to liquidity providers, did market quality improve through decreased spreads? Did quote fading increase? Did traded volume increase (or did fill rates decrease as displayed quotes were more likely to fade)?

<ESMA\_QUESTION\_ALGO\_46>

1. : Reflecting on those mechanisms which allow liquidity providers to provide quotes that can be filled only against retail order flow, do you think that such mechanisms are beneficial in terms of market quality? Is there any specific aspect that you think should be further taken into account, also considering the type of instruments traded? Please specify the venue of reference and the type of arrangement discussed.

<ESMA\_QUESTION\_ALGO\_47>

We note ESMA’s acknowledgement of the existence of mechanisms practically similar in effect to speedbumps employed by several trading venues to “allow liquidity providers to have the possibility of posting passive orders that can be executed only against retail order flow where the prices proposed by such liquidity providers improve the liquidity offered in the central limit order book. Hence such mechanisms, offer to liquidity providers protection from aggressive trades and more generally high frequency traders, and as a consequence should benefit retail investors as those “protected liquidity providers” can post improved quotes, without the risk of being adversely selected”.

ESMA may wish to perform a more comprehensive review of such mechanisms in order to fully understand their utility to the market and the extent of any connected issues and consider whether there is quantitative evidence that these mechanisms do, in fact, provide any meaningful economic benefit to retail investors. ESMA may wish to assess how sufficient regulatory oversight can be maintained with respect to such mechanisms and any inadvertent impact on market behaviour.

<ESMA\_QUESTION\_ALGO\_47>

1. : Do you think that venues which introduce asymmetric speedbumps should set tighter market making requirements? Please explain why and how tight those new requirements should be.

<ESMA\_QUESTION\_ALGO\_48>

An asymmetric speedbump primarily benefits a select group of liquidity providers on the relevant trading venue. The asymmetric speed bump provides these liquidity providers with the ability to back away from displayed quotations after quickly processing and evaluating the latest market data. This advantage is the economic equivalent of a “last look” – although the liquidity provider is not notified on an order-by-order basis of incoming orders, the liquidity provider is largely able to achieve the same result by using market data to anticipate when there are likely to be incoming orders that are being delayed by the speedbump. It is clear that only a select group of proprietary traders actually have the capabilities necessary to meaningfully exploit this small window of time.

As a result, asymmetric speedbumps deliver a material benefit to these select liquidity providers. To the extent such a mechanism could be determined to be consistent with MiFID II (which we doubt as further detailed in Question 50 below), it would appear appropriate to, at a minimum, impose a commensurate obligation on these liquidity providers in the form of more stringent market making requirements. In the absence of such requirements, an asymmetric speedbump is unlikely to result in tighter quoted spreads. This is because the advantage granted by an asymmetric speedbump loses much of its value if the relevant trading venue is alone at the best price in the market and therefore is routed to first by market participants, as this reduces the ability for its liquidity providers to first observe executions on other venues. As a result, liquidity providers should not generally be expected to narrow prevailing market-wide spreads if an asymmetric speed bump is adopted; instead, we would expect liquidity providers to often free-ride off of prices on other trading venues by posting prices equal to (or behind) those set by liquidity providers on other exchanges.

<ESMA\_QUESTION\_ALGO\_48>

1. : Do you agree on the conclusion that speedbumps might not be a well-suited arrangement for equity markets? If yes, do you think that such arrangements for equities should be prohibited in Level 1? Please explain.

<ESMA\_QUESTION\_ALGO\_49>

We agree that speedbumps are particularly problematic for equities markets, given the number of trading venues, the overall level of fragmentation, and the associated impact on correlated instruments (such as ETFs and options).

It is important to note that an asymmetric speedbump has not been approved in the US equities market due to the resulting unfair discrimination against consumers of liquidity and market participants on other trading venues. Figure 18 in the consultation paper correctly notes that the CboeEDGA proposal was rejected by the SEC and the Chicago Stock Exchange proposal was dismissed. However, the NASDAQ OMX proposal was also withdrawn (<https://www.sec.gov/rules/sro/phlx/2012/34-67780.pdf>). These decisions by the SEC reflect the fact that a broad and diverse coalition of market participants raised significant concerns regarding the impact of an asymmetric speedbump on institutional and retail investors and overall market quality (see <https://www.sec.gov/comments/sr-cboeedga-2019-012/srcboeedga2019012.htm>).

These concerns are underscored by academic research finding that an asymmetric speedbump implemented in the Canadian equities market has hurt overall market quality. In particular, research has concluded that (see Haoming Chen et al., “The value of a Millisecond: Harnessing Information in Fast, Fragmented Markets” (Nov. 18, 2017), available at: <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2860359>):

1. Quote fading increased by 46% on average after implementation of the asymmetric speed bump, enabling “fast liquidity suppliers to ‘fade’ away from orders which consume liquidity across multiple venues" (see Chen study at pages 5, 17, and 62 (Figure 1, Panel A)). In fact, our own analysis found that approximately 70-80% of the quoted volume on TSX Alpha is being cancelled without executing, which sharply contrasts with quote fading rates of approximately 30% on other inverted venues and approximately 20% on maker-taker venues (see <https://www.sec.gov/comments/sr-cboeedga-2019-012/srcboeedga2019012-6321413-194388.pdf> at Appendix, Diagram 2).

2. While the asymmetric speed bump reduced adverse selection, this advantage accrued to the TSX Alpha liquidity providers in the form of increased profits and not to the broader market in the form of narrower bid-ask spreads. In fact, liquidity providers on TSX Alpha were almost never alone at the best bid or offer. (see Chen study at pages 4, 5, 15 and 65 (Figure 4)).

3. Profits for a select group of proprietary traders significantly increased (see Chen study at pages 1 and 4).

4. Overall market quality deteriorated (see Chen study at page 6).

This research demonstrates why it is critically important to closely scrutinize asymmetric speedbump proposals for consistency with MiFID II requirements. As detailed further in Question 50, in our view asymmetric speedbumps are clearly inconsistent with several MiFID requirements. We would welcome additional clarification from ESMA regarding the application of these provisions to ensure consistent application across the EU and would also be supportive of further clarity in Level 1 to the extent helpful.

We also note that data shows that symmetric speedbumps may also be problematic in equities markets. In particular, NYSE American adopted a symmetric speedbump but discontinued it after finding that “since our speed-bump rollout, we have seen market quality and liquidity decline.” (see <https://www.nyse.com/data-insights/nyse-american-eliminate-speed-bump-restore-floor-based-trading>).

<ESMA\_QUESTION\_ALGO\_49>

1. : Do you think that the introduction and functioning of speedbumps should be further regulated? If yes, which specific requirements would you like to be included in EU legislation?

<ESMA\_QUESTION\_ALGO\_50>

Yes, it is important to ensure that a consistent regulatory approach is taken across the EU when evaluating speedbump proposals. In particular, asymmetric speedbumps appear inconsistent with several MiFID II requirements, including (a) transparent and non-discretionary rules and procedures that provide for fair and orderly trading (MiFID II Articles 47(1)(d) and 18(1)) and (b) non-discriminatory rules governing access to the facility (MiFID II Articles 53(1) and 18(3)).

As detailed by ESMA in the consultation paper, these requirements are intended to prohibit trading venues from "favouring one market participant or a subset of market participants" and from implementing mechanisms that have the effect of creating illusory, non-tradeable liquidity.

In contrast, asymmetric speedbumps are clearly designed to provide a subset of market participants (i.e. a select group of liquidity providers on that venue) with a material advantage over other market participants. In fact, it is the presence of this material advantage that leads supporters of asymmetric speedbumps to claim that liquidity providers will be incentivized to post more displayed liquidity as a result. However, much of this displayed liquidity will be illusory and non-tradeable as liquidity providers begin to routinely fade quotes. As detailed in academic research evaluating an asymmetric speedbump in the Canadian equities market, quote fading increased by 46% on average after implementation. A mechanism that institutionalizes quote fading is particularly problematic during periods of market volatility, when liquidity providers will be most likely to take advantage of the ability to cancel their resting quotes while investors’ incoming orders are delayed. Asymmetric speedbumps will therefore only increase uncertainty about available liquidity and exacerbate existing concerns about the resilience of liquidity.

Given the nature of concerns expressed, and the fact that US regulators have concluded that these concerns warrant rejection of asymmetric speedbump proposals in the US equities market, we recommend that ESMA work to ensure that a consistent regulatory approach is taken across the EU when evaluating speedbump proposals.

<ESMA\_QUESTION\_ALGO\_50>

1. : Is there any specific issue you would like to highlight about speedbumps?

<ESMA\_QUESTION\_ALGO\_51>

We recommend ESMA revise Figure 18 in the consultation paper to more clearly group by asset class and active/rejected status. Speedbumps implemented on FX spot trading venues, for example, are generally not subject to a regulatory review process given the exempt status of FX spot. In addition, the practice of giving liquidity providers a “last look” is endemic in the FX asset class, and therefore it may not be surprising that asymmetric speedbumps are employed on certain FX venues given the similarities between “last look” and an asymmetric speedbump.

<ESMA\_QUESTION\_ALGO\_51>

1. : What are your views on the relative timing of private fill confirmations and public trade messages? If you are a trading venue, please provide in your answer an explanation of the model you have in place.

<ESMA\_QUESTION\_ALGO\_52>

Citadel Securities is a strong advocate of fair and non-discriminatory markets. We believe that every effort should be made by trading venues to disseminate public trade messages and private fill confirmations at the same time as this is vital to the fair and orderly functioning of financial markets. Where this is not possible, we believe that public trade messages should be released faster than private fill confirmations in order to safeguard investor confidence in the financial markets, but in order that firms are able to manage their risk effectively and safely trading venues should be required to ensure that the variance between the two is at a minimum. Further we would oppose any intentional delay of either feed as inconsistent with fair, efficient and transparent markets.

<ESMA\_QUESTION\_ALGO\_52>

1. : Do you consider information on the sequencing of these two feeds at trading venues to be easily available? If you are a trading venue, please provide a link to where this information can be found publicly.

<ESMA\_QUESTION\_ALGO\_53>

In our experience, information from trading venues on the sequencing or relative timing of their private and public trade message feeds is not readily available. With very few exceptions we need to contact and engage with trading venues on a bilateral basis in order to gain access to this information. Accordingly, we believe that market transparency would be enhanced if trading venues were required to publish statistics on their private and public data feeds on a periodic basis with clear information on the distributions of the relative timing or latency of the two feeds.

<ESMA\_QUESTION\_ALGO\_53>

1. : Do you think there should be any legislative amendments or policy measures in respect of these feed dynamics?

<ESMA\_QUESTION\_ALGO\_54>

We believe that any legislative amendments in relation to feed dynamics should give more prominence to the principle of fairness and equal access to information.

<ESMA\_QUESTION\_ALGO\_54>