



Resiliency of Liquidity Provision in Stressed Markets

Benefits of Non-Bank Market Makers in Fixed Income Markets



Executive Summary

Record sovereign debt levels, persistent inflationary pressures and heightened geopolitical uncertainty underscore the need for new and durable sources of liquidity in financial markets.

Citadel Securities and other non-bank market makers are playing an increasingly important role as liquidity providers to institutional investors in fixed income markets, including during periods of severe market stress. This has delivered material benefits to investors, issuers, and the broader market with respect to pricing, liquidity, choice, competition, and resiliency.

Nevertheless, certain incumbent intermediaries have questioned the resiliency of liquidity provision by such new entrants, particularly during episodes of volatility—a false narrative that has also been echoed in certain financial stability corners. Citadel Securities has a longstanding and consistent track record of delivering dependable pricing and liquidity to institutional and retail investors across asset classes, including equities, options, corporate bonds, sovereign bonds, interest rate swaps, and foreign exchange. The resiliency of our liquidity provision has been on full display during multiple recent significant market shocks—including the Iran conflict, tariff-related dislocations, collapse of Silicon Valley Bank, and the COVID pandemic. For example, during the onset of the Iran conflict in March 2026, we maintained industry-leading low ‘no-quote-rates’ while trading a record \$1.36 trillion in a day. We reliably met the liquidity needs of our 1,600+ strong global institutional client base that includes the world’s leading central banks, sovereign wealth funds, pension funds, asset managers and insurance companies.

Meanwhile, the number and capacity of legacy intermediaries continue to shrink due to a combination of consolidation and shifting risk appetite. Policymakers and regulators around the globe are increasingly recognizing and embracing the value proposition of non-bank market makers across asset classes, and their contribution to enhanced pricing, liquidity and resiliency. In contrast to incumbent efforts to preserve the status quo, we have consistently advocated for policy measures to increase choice, competition and resiliency in the market—including with respect to trading, clearing, and transparency frameworks.



Contents

Introduction	4
01 A New Generation of Market Makers	4
02 Consolidation & Retrenchment by Legacy Intermediaries	5
03 Benefits of New Entrants in Fixed Income Markets	5
04 False Narratives Regarding the Resiliency of Non-Bank Liquidity	6
05 Citadel Securities Case Studies	6
06 Recommended Measures for Measuring Resiliency of Liquidity in Dealer-to-Customer Markets	8
07 Official Sector Recognition of the Value of Non-Bank Market Makers	9
08 Policy Recommendations	10
Appendix	11
End Notes	12



Introduction

Recent periods of significant stress in fixed income markets—the onset of the Iran conflict in March 2026, tariff-driven dislocations in April 2025, SVB’s failure in March 2023, and the onset of the pandemic in March 2020—provide an opportunity to evaluate the quality and resiliency of liquidity provision during periods of heightened market volatility.

We use Citadel Securities’ data to illustrate that certain market makers can and do step up to continue to deliver superior pricing and liquidity to investors during such challenging market conditions, while others retreat. Indeed, empirical evidence debunks the false narrative that non-bank market makers are less reliable liquidity providers in stressed or volatile market conditions – in fact, the opposite is true. We also highlight policy measures that can continue to enhance the overall efficiency and resiliency of fixed income markets to the benefit of both investors and issuers.

01

A New Generation of Market Makers

Technological innovation has significantly transformed all facets of the real economy, changing the way we communicate, obtain news and information, work, and travel among others.

In markets, a new generation of analytically driven and technologically advanced market makers has emerged in recent decades, competing against the legacy manual intermediaries that once controlled the markets. The use of predictive analytics and the efficient integration of market moving information allows these new entrants to provide extremely precise and up-to-date quotes to the marketplace. This has also led to innovations such as firm and immediately executable quotes in fixed income markets where only indicative quotes were historically available.

Greater automation of once manual processes, from auto-quoting to auto-hedging and the streamlining of middle and back office workflows, has led to more scalable operations and a more efficient use of financial resources. New entrants’ ability to precision price risk and to hedge and warehouse risk in a more timely, cost-effective, and reliable fashion together translate into more accurate prices and more reliable liquidity for investors, even in volatile market conditions. This ultimately allows both buyers and sellers to transact closer to the true market value of a financial instrument, thereby reducing their transaction costs.

While banks grew in recent decades to occupy a central role in many fixed income markets (at times through the acquisition of broker-dealers), this is not a preordained state of affairs, and greater diversity among bank and non-bank market makers is both a historical reality and a future possibility.



02

Consolidation & Retrenchment by Legacy Intermediaries

In contrast to the growth and increased reliability of non-bank market makers in fixed income markets, the number and capacity of legacy bank intermediaries continues to shrink due to a combination of consolidation and shifting business priorities and risk appetite. To be clear, some of the largest global systemically important banks remain formidable and consistent suppliers of liquidity to the market, however, they do not represent the banking sector as a whole. Instead, the market has witnessed:

- **Consolidation:** Credit Suisse's acquisition by UBS, Lehman Brothers (US Broker-Dealer) by Barclays and Bear Stearns by J.P. Morgan.
- **Retrenchment:** Many European banks have pared back materially their scale and ambitions in fixed income market making.

Indeed, fixed income markets can be characterized as having “higher barriers to entry” and “low barriers to exit”. This presents a challenge to both investors—who may find themselves with few dealers to rely upon—as well as to overall intermediation capacity and resiliency in the market. The investor experience benefits from more, not fewer competitors in liquidity provision. As stocks of government debt continue to rise rapidly while many banks retrench from market making, any attempt to limit credible liquidity providers from offering a durable and reliable experience will detract from market resiliency.

03

Benefits of New Entrants in Fixed Income Markets

The entry of non-bank market makers into fixed income markets has provided institutional investors with better pricing, newer and differentiated sources of liquidity, and a greater choice of counterparties. For example, Bank of England research found that the transition to trading interest rate swaps on new more competitive, transparent “swap execution facilities” a decade ago has led to a significant improvement in liquidity and a material reduction in execution costs, with end-users saving between \$7 million and \$13 million per day.

This competition has in turn compelled legacy intermediaries to up their game – such that even clients who do not trade with new entrants benefit from their presence. This new liquidity has been additive and complementary to bank liquidity, rather than zero sum, creating a deeper, healthier and more diverse liquidity ecosystem. The net effect of all of this has been a dramatic improvement to the resiliency of bond and derivative markets, especially during times of stress.



04

False Narratives Regarding the Resiliency of Non-Bank Liquidity

Nevertheless, certain incumbents—and the trade associations that represent them—continue to question the resiliency of liquidity provision by new entrants, particularly during episodes of volatility. This is a false narrative. Through a bank trade association, they have alleged that “none”¹ of the new entrants “have been tested through a genuinely market-wide fixed income stress event or impact tolerance testing,”² implying that non-banks are only ‘fair weather’ liquidity providers. This allegation is simply wrong, as the trading data in the next section demonstrates.

05

Citadel Securities Case Studies

Periods of market stress and volatility are when investors most need access to reliable pricing and liquidity in order to meet their investment and hedging objectives. Recent periods of significant stress in fixed income provide an opportunity to evaluate the quality and resiliency of liquidity provision during periods of heightened market volatility:

- The onset of the Iran conflict in March 2026
- Tariff-driven dislocations in April 2025
- Silicon Valley Bank’s failure in March 2023
- The onset of the pandemic in March 2020

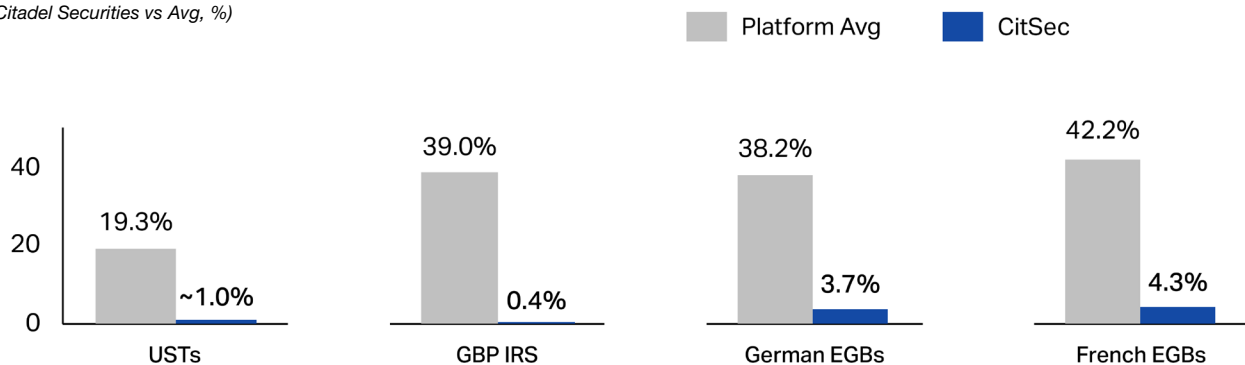
In this section, we use data from Bloomberg and Tradeweb³ to demonstrate that certain market makers can and do step up to continue deliver superior pricing and liquidity to investors during stressed market conditions, while others retreat.

Onset of the Iran Conflict (March 2026)

In March 2026, volatility spiked in reaction to the war in Iran, particularly in European Rates products. During this period, the resiliency of Citadel Securities’ liquidity provision was on full display, while some traditional liquidity providers stepped back.

This is most notably exemplified by no-quote rates, which measure the percentage of clients’ request-for-quotes (RFQs) that a liquidity provider responds to. While many bank liquidity providers stepped back and stopped responding to client RFQs (resulting in high no-quote-rates), Citadel Securities continued to respond dependably across key US, UK and EU rates markets, with very low no-quote-rates:

No Quote Rate on Tradeweb
(Citadel Securities vs Avg, %)



Source: Tradeweb dealer report rankings, March 2026.



Across a range of other key metrics—including risk executed and hit rates—Citadel Securities similarly outperformed bank liquidity provider during these challenging market conditions:

USTs	#1 ranked in US Treasury risk executed on Tradeweb
USD Swaps	Top 3 in risk executed on Tradeweb
EUR Swaps	#1 DV01 Hit Rate across both Tradeweb and Bloomberg
GBP Swaps	#1 No-Quote Ranking across both Tradeweb and Bloomberg
EGBs (France)	#1 Hit Rate on Tradeweb (CitSec Hit Rate 44.8% vs 11.2% platform average) #2 Hit Rate on Bloomberg (CitSec Hit Rate 36% vs 16.7% platform average)
EGBs (Germany)	#1 Hit Rate on Tradeweb (CitSec Hit Rate 38.5% vs 12.8% platform average) #2 Hit Rate on Bloomberg (CitSec Hit Rate 30.8% vs 13.3% platform average)

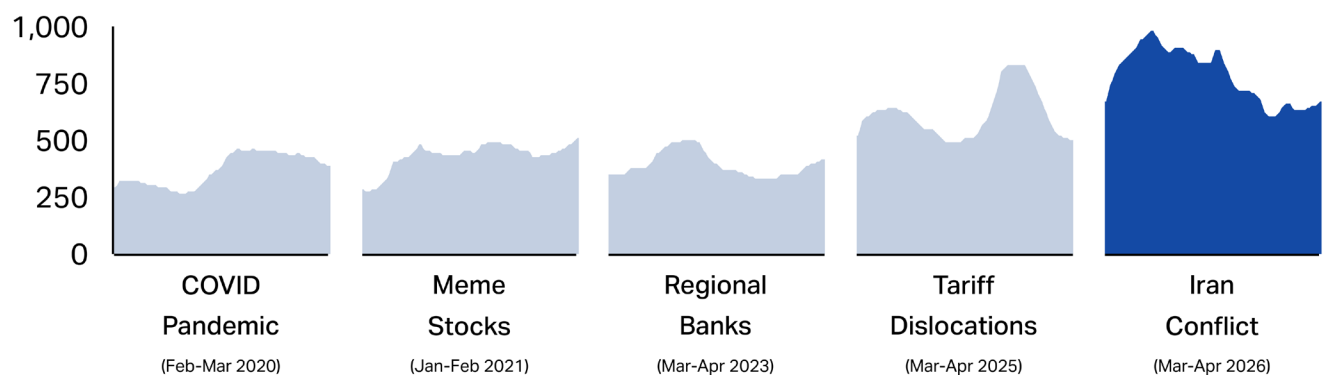
Source: Tradeweb and Bloomberg dealer report rankings, March 2026.

Additional Recent Episodes of Volatility

March 2026 was no anomaly. Across every recent major bout of market volatility, the same pattern has held: Citadel Securities kept providing liquidity and gained market share as traditional bank liquidity providers pulled back.

Citadel Securities as a whole has seamlessly handled increasingly significant trading volumes across major market events, including record transaction volume without incident during the market stress surrounding the onset of the conflict in Iran, and a record \$1.36 trillion on April 30.

Gross Trade Volume
Trailing Two Weeks Daily Avg Traded by Citadel Securities, (\$B)



Source: Citadel Securities internal data.



And once again, the resiliency of our liquidity provision in core Rates markets has been on full display:

Tariff-Driven Dislocations (April 2025)

- #1 in US Treasury risk executed on Tradeweb
- Average daily voice market share in investment grade credit increased to 11.1% vs 7.6%

Silicon Valley Bank Failure (March 2023)

- #1 no-quote rate in USD IRS on Tradeweb (5.0% vs 34.4% platform average)
- Low no-quote rates in UST on Tradeweb (1.8% vs 21.0% platform average)

Onset of the Pandemic (March 2020)

- Top 5 in US Treasury risk executed on Tradeweb
- Low no-quote rates in US Treasuries on Tradeweb (3.3% vs 33.3% platform average)

Source: Tradeweb and Bloomberg dealer report rankings, April 2025, March 2023, March 2020; Citadel Securities internal data.

06

Recommended Measures for Measuring Resiliency of Liquidity in Dealer-to- Customer Markets

To truly assess the resiliency of liquidity provision by market makers—bank and non-bank alike—during both calm and turbulent market conditions, we recommend the following measures. These data points should largely be available to policymakers and regulators from trading venues and trade repositories. To date, assessments of the resiliency of sovereign bond market liquidity during periods of market stress have generally relied only on measures of quoted spreads and depth in the electronic central limit order books that largely cater exclusively to the inter-dealer markets for on-the-run securities. While instructive, they do not paint a full or accurate picture of quality of pricing and liquidity that is being provided by market makers to institutional investors.

Metric	Definition	Implication
No-quote rates	Measures the percentage of request-for-quotes (RFQs) that a liquidity provider responds to.	Low no-quote rates indicate that a liquidity provider is continuing to provide pricing and liquidity to investors, while high no-quote rates indicate that a liquidity provider is stepping back from the market.
Market share	Measures the percentage of transaction volume executed by a liquidity provider, as measured by risk (e.g., DV01), notional, or trade count.	Relative market share gains or losses reflect a liquidity provider's willingness and ability to continue to provide competitive pricing and liquidity to investors.
Execution cost savings	Measures the difference between the price provided by a liquidity provider on an executed trade and the next best price offered by competing liquidity provider (also known as the 'cover price').	Relative increases or decreases in execution cost savings reflect the degree to which competing liquidity providers are maintaining narrower quotes or widening their quotes.
Hit rates	Measures the frequency with which a client executed against a quote provided in response to a multilateral RFQ request.	Higher hit rates indicate relatively more competitive RFQ responses versus others.
Risk executed	Absolute transaction volumes, typically measured in DV01 terms.	Higher transaction volumes represent greater overall liquidity provision.



07

Official Sector Recognition of the Value of Non-Bank Market Makers

The value proposition of non-bank market makers across asset classes—and their contribution to enhanced pricing, liquidity and resiliency—has been increasingly recognized by policymakers and regulators around the globe. This includes a recognition that such firms are well regulated, but importantly, that regulation can be appropriately calibrated, and that bank regulation is not fit-for-purpose.

European Systemic Risk Board⁴

“Looking beyond banks, a system in which financial services are provided by a range of competing entities, including non-bank financial intermediaries, can be more resilient than one that only relies on banks, provided that the prudential framework remains risk based and proportionate.

Proprietary trading firms and other non-bank liquidity providers may undertake activities similar to banks’ trading desks or market making units. But they never do so while combining these activities with large, runnable retail deposits or typically not while operating critical payment functions. Their contribution to systemic risk therefore differs from those of banks. They also often do not have access to backstops such as central bank liquidity. It is thus appropriate that their prudential treatment, while risk sensitive, is not identical to that of banks subject to the full CRR/CRD regime.”

Nikhil Rathi, UK FCA Chief Executive⁵

“Too often, rules designed for large, global banks—with heavier capital burdens—limit smaller firms’ ability to contribute liquidity.

At the FCA we’re exploring how adjustments could encourage wholesale trading and improve market liquidity...and may in turn reduce barriers to entry for specialised trading firms that don’t hold retail deposits. Just look at the way non-bank traders are now capturing flows across US equities. A massive shift, in the space of just a few years.

We know custom rules can work – as in our Investment Firm Prudential Regime. And can free up capital, and new entrants. Tailored regulation for these specialised firms sparks growth and competitiveness, while protecting market integrity.”

European Commission⁶

“In addition, investment firms contribute to the diversity and depth of the capital market by offering services that both complement and compete with those of credit institutions, such as providing liquidity, contributing to an efficient allocation of capital and supporting the issuance of equity and debt securities. Any unjustified obstacles within the regulatory framework to the contribution of investment firms must also be addressed.”

Gary Gensler, SEC Chair⁷

“It’s also important, while considering resiliency, not to discount the contribution that nonbank markets make to efficiency, liquidity, and transparency.

Finance, at its core, is about the pricing and allocation of money and risk. The nonbank sector plays a critical role in that price discovery. Further, transparency and liquidity in the public capital markets provide a public good, leading to more efficient allocation and pricing of capital. Academic research has long documented that strong capital markets promote economic growth, and may even provide greater resilience in crises.”

Nellie Liang, US Treasury Under Secretary for Domestic Finance⁸

“Moreover...principal trading firms (PTFs) increased their activity in the Treasury market in March [2023], providing a greater share of liquidity during this period of significant market stress.”

08

Policy Recommendations

Market reforms have begun to address legacy structural barriers and frictions that have impeded the development of more competitive and resilient fixed income markets, but have yet to be fully or universally implemented. The following key forward-thinking regulatory reforms should be expanded even further given their demonstrated potential to improve pricing, liquidity, competition and resiliency:

Transparency

Introducing greater transparency eliminates information asymmetries, providing investors with the confidence that quoted prices are fair and accurate and all market makers with the confidence to quote across market conditions. Thoughtfully calibrated frameworks can realize the benefits of greater transparency while protecting the confidentiality of client positions and safeguarding against information leakage.

- Consolidated tapes for the bond market are going live in the UK (May 2026) and EU (early 2027).
- Further enhancements to the UK and EU deferral regimes are warranted to ensure market data is available in a timely fashion, as opposed to being delayed days or even weeks.
- FINRA began publishing transaction level data for the on-the-run US Treasury market in February 2024, but this should be further enhanced by (i) including off-the-runs and (ii) moving from end-of-day to intraday reporting.

Trading

Trading on multilateral trading venues that provide non-discriminatory access to all market participants allows investors to access competing quotes from a greater choice of counterparties.

- The transition of the interest rate swap market onto SEFs in the US and MTFs in Europe has led to a significant improvement in liquidity and a material reduction in execution costs for end-users.
- Policymakers should continue to vigilantly enforce the existing requirements that fixed income trading venues provide non-discriminatory access, requirements that have long been in place

Clearing

Expanding the use of, and access to, central clearing and settlement systems not only mitigates systemic risk and improves investor protection, but also materially simplifies the process for investors to establish new trading relationships.

- The expanded use of, and access to, central clearing for OTC derivatives was a central and successful component of the post-2008 financial crisis reforms to improve the safety and stability of the financial system.
- Further efforts to expand the use of central clearing, particularly in the sovereign bond repo market, have the potential to increase intermediation capacity and market resiliency—but require the development of scalable client clearing models that unbundle clearing and execution.



Appendix

Leading Platform & Liquidity Source

Citadel Securities is a technology driven, next-generation global market maker.

We serve institutional and retail investors who require world-class liquidity, competitive pricing and seamless front-to-back execution to transact a broad array of financial products.

We harness leading-edge quantitative research and the accelerating power of compute, machine learning and AI to power our analytics and provide clients with an efficient and reliable trading experience.

Equities	#1	Retail market maker ⁹	24%	Of U.S. equity market volume executed through our platform ¹⁰
	#1	Equities market maker ¹¹	35%	Of U.S.-listed retail volume executed ¹²
Global Rates	#1	Rank on Tradeweb for UST by risk executed ¹³	\$23T+	In UST notional traded in 2025 ¹⁵
	#1	Rank on Bloomberg for UST by risk executed ¹⁴	\$92B+	Average daily volume of UST traded in 2025 ¹⁶
Options	#1	Options market maker based on OCC market share ¹⁷	30%+	of U.S. consolidated equity options volume executed, #1 retail market maker ¹⁸
	#1	Specialist across major U.S. options exchanges ¹⁹	25B+	Average daily options quotes sent ²⁰
IG Credit	14.2%+	Market share in block risk transfer (>\$5m / >7 yr) ²¹	\$406B	Notional traded in 2026 ²² (based on YTD trading vol 1/1/2026-6/30/2026)
ETF	#2	Rank on Tradeweb for ETF win rate in 2026 ²³	19%	of all U.S. listed ETF volume ²⁴

End Notes

¹<https://www.afme.eu/media/otcmdpoh/afme-response-fca-ep-market-risk-capital-requirements.pdf> Ibid.

² Ibid.

³ The two leading trading platforms in the dealer-to-customer market for sovereign bonds and interest rate swaps

⁴ https://www.esrb.europa.eu/pub/pdf/other/ESRB.response260417_EC_response_consultation_Competitiveness_banking-faf7b323e6.en.pdf

⁵ <https://www.fca.org.uk/news/speeches/predictable-volatility>

⁶ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52026DC0615>

⁷ <https://www.sec.gov/newsroom/speeches-statements/gensler-remarks-bloomberg-global-regulatory-forum-102224>

⁸ <https://home.treasury.gov/news/press-releases/jy1917>

⁹ Measured based on sampled SEC 605 public reporting of executed shares of marketable orders as compiled by Citadel Securities, as of May 2026.

¹⁰ Ibid.

¹¹ Reporting of publicly reported transaction volume averaged over past 12 months, as compiled by Citadel Securities, as of April 2026. Figures are for illustrative purposes only. Past performance does not guarantee future results.

¹² Ibid.

¹³ Tradeweb dealer ranking reports for Q2 2026.

¹⁴ Bloomberg dealer ranking reports for Q2 2026.

¹⁵ Citadel Internal Data: UST overall Notional flows traded in 2025 inclusive of IDB Flows, excluding UST ETFM and UST HFET Flows.

¹⁶ Citadel Internal Data: UST Notional ADV flows traded in 2025 inclusive of IDB Flows, excluding UST ETFM and UST HFET Flows.

¹⁷ OCC as compiled by Citadel Securities, number of specialist names and percentage of OCC coverage as of June 2026. Figures are for illustrative purposes only.

¹⁸ OCC and Citadel Securities as compiled by Citadel Securities as of June 2026. Sum of contracts executed in an agency or principal capacity divided by the publicly reported cleared volume for the month prior to certification.

¹⁹ Ibid.

²⁰ Citadel Securities average for trailing 3 months daily quotes sent, as of June 30, 2026. Figures are for illustrative purposes only. Past performance does not guarantee future results.

²¹ Citadel Securities, estimate as of (1/1/26- 06/30/26); Long End: >=7y maturity.

²² Citadel Securities Internal Data (from 1/1/26- 06/30/26)

²³ Tradeweb ranking report Q1, 2026. Rank based on Notional Won and Shares Won.

²⁴ Publicly reported ETF transaction volume (shares traded), as compiled by Citadel Securities, full year 2025.



Legal Entities Disseminating this Material: This material is disseminated in the United Kingdom by Citadel Securities (Europe) Limited ("CDGE") authorised and regulated by the Financial Conduct Authority ("FCA") (Registered company number: 05462867); in the European Union by Citadel Securities GCS (Ireland) Limited ("CSGI") and its Paris Branch authorised and regulated by the Central Bank of Ireland ("CBI") (Registration Number: C173437); in Hong Kong by Citadel Securities (Hong Kong) Limited ("CDHK") licensed by the Securities and Futures Commission of Hong Kong ("SFC"), in Japan by Citadel Securities Japan Co., Ltd ("CSJC") registered as a Type 1 financial instruments business operator with the Japan Financial Services Agency ("JFSA"); and in the United States of America by Citadel Securities LLC ("CDRG") registered with the Securities Exchange Commission ("SEC"), Financial Industry Regulatory Authority ("FINRA"), and Securities Investor Protection Corporation ("SIPC"), Citadel Securities Institutional LLC ("CSIN") registered with the SEC, FINRA, and SIPC, or Citadel Securities Swap Dealer LLC ("CSSD") registered with the SEC, Commodities Futures Trading Commission ("CFTC"), and National Futures Association ("NFA"). Unless governing law permits otherwise, you must contact a Citadel Securities entity in your home jurisdiction if you want to use our services in effecting a transaction in any financial instruments or securities, including derivatives.

FOR INSTITUTIONAL USE ONLY; FOR PROFESSIONAL CLIENTS AND ELIGIBLE COUNTERPARTIES ONLY. This material is not intended as and does not constitute investment research. Contents of this material will be strictly limited to non-specific, generic information (i.e. macro events/topics) and are not subject to the Markets in Financial Instruments directive (MiFID II) or FINRA research rules. This material does not constitute an offer, solicitation, invitation, or inducement to purchase, acquire, subscribe to, provide, or sell any financial instrument or otherwise engage in investment activity. Please see additional important disclosures, including disclosures that may be relevant to your country of residence or business at www.citadelsecurities.com/GlobalSalesTrading.

<https://www.citadelsecurities.com/privacy/>