CITADEL

April 22, 2016

Mr. David R. Pearl
Office of the Executive Secretary
U.S. Department of the Treasury
1500 Pennsylvania Avenue, NW
Washington, DC 20220

Re: Request for Information on the Evolution of U.S. Treasury Market Structure

Dear Mr. Pearl:

Citadel LLC[1] ("Citadel") appreciates the opportunity to provide comments to the Department of the Treasury (the "Treasury") on its request for information ("RFI") regarding the evolution of U.S. Treasury market structure.[2] Citadel is a significant participant in the U.S. Treasury market, both through its hedge funds and also as a liquidity provider through the separate market making businesses of Citadel Securities.

The U.S. Treasury market is the deepest and most liquid government securities market in the world, and plays a fundamental role in both the U.S. and global economies. The liquidity, integrity and resiliency of the U.S. Treasury market support the efficient funding of the U.S. government and the widespread use of Treasuries as an investment and hedging instrument globally.

We firmly support efforts to comprehensively review the regulatory framework applicable to Treasuries given the paramount importance of this market. As detailed in the *Joint Staff Report: The U.S. Treasury Market on October 15, 2014*,[3] the U.S. Treasury market has undergone significant change over the course of the last decade, with technological innovation spurring a transition to electronic trading. The growth of electronic trading has transformed many segments of the market, and investors today benefit from increased transparency and competition. In parallel, the greater use of automated processes has improved overall operational stability. Nevertheless, this transition has introduced new challenges that deserve the attention of regulators, trading venues, and market participants. Recent reforms in other fixed income markets, such as the implementation of reporting, clearing, and trading requirements for OTC derivatives, clearly demonstrate the importance of modernizing regulatory frameworks to improve market transparency, fairness and resiliency.

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[1] Citadel is a global financial firm built around world-class talent, sound risk management, and innovative market-leading technology. For more than a quarter of a century, Citadel's hedge funds and capital markets platforms have delivered meaningful and measurable results to top-tier investors and clients around the world. Citadel operates in all major asset classes and financial markets, with offices in the world's leading financial centers, including Chicago, New York, San Francisco, Boston, London, Hong Kong, and Shanghai.

[2] 81 Fed. Reg. 3928 (January 22, 2016) (the "**RFI**").

[3] *See* Joint Staff Report: The U.S. Treasury Market on October 15, 2014 (July 13, 2015), available at: http://www.treasury.gov/press-center/press-releases/Documents/Joint_Staff_Report_Treasury_10-15-2015.pdf (the "**Joint Staff Report**").

In light of the significant evolution of U.S. Treasury market structure and recent experience in other fixed income markets, we believe there are several steps that regulators should take to improve transparency and resiliency and to ensure a level playing field in the U.S. Treasury market:

- **Introduce Real-Time Public Reporting**. Despite being one of the largest and most liquid markets in the world, Treasuries are not currently subject to post-trade public reporting requirements. As a result, a significant portion of the market operates without meaningful transparency. Implementing real-time public reporting for secondary market Treasury transactions will increase investor confidence by leveling the playing field and providing the information necessary for investors to better assess execution quality. Greater transparency also enhances market resiliency by minimizing information asymmetries and ensuring that changes in supply and demand are more efficiently reflected in current price levels. The immediately tangible benefits of real-time public reporting have been witnessed in a range of markets, including both principal-based and agency-based market structures. Examples include equities, futures, corporate bonds and swaps.

- **Register Multilateral Trading Venues**. In light of the rapid growth of electronic trading in the U.S. Treasury market, it is critical that multilateral trading venues be subject to appropriate regulatory oversight. With multilateral trading venues estimated to account for over 65% of the more than $500 billion per day in secondary market volumes,[4] these platforms clearly play a vital role in the overall market structure. As a result, they should be formally registered under a regulatory framework designed to heighten supervision, improve transparency, create reliable audit trails, and enhance operational stability.

- **Ensure Non-Discriminatory Access is Provided to Multilateral Trading Venues**. Ensuring that all qualified market participants have non-discriminatory access to multilateral trading venues is critical to promoting competition, increasing liquidity, ensuring a level playing field, and facilitating access to best execution.

- **Invigorate Industry Efforts to Expand Repo Clearing**. The introduction of a market-wide clearing solution for bilateral Treasury repurchase agreements ("repos") would alleviate many of the constraints impacting liquidity in these securities financing transactions. Repo clearing would reduce balance sheet constraints through netting and would eliminate the current interconnected web of counterparty credit exposures and bilateral settlements. In addition, increasing the availability of securities financing would reduce transaction costs to trade Treasuries, helping to reverse negative trends observed in certain segments of the U.S. Treasury market. We believe policymakers and regulators should take a leadership role in invigorating the industry-led efforts to expand clearing for bilateral Treasury repos.

[4] *See* "Primary Dealer Participation in the Secondary U.S. Treasury Market", Michael Fleming, Frank Keane, and Ernst Schaumburg, Liberty Street Economics (February 12, 2016), available at: http://libertystreeteconomics.newyorkfed.org/2016/02/primary-dealer-participation-in-the-secondary-us-treasury-market.html.

We provide additional detail regarding each of these recommendations below, while responding to each of the four sections of the RFI in order.

I. The Evolution of the U.S. Treasury Market and Implications for Market Structure and Liquidity (Section I of the RFI)

A. The Evolution of the U.S. Treasury Market

On-the-run Treasuries

Over the course of the last decade, U.S. Treasury market structure has evolved most dramatically for secondary market trading of the most recently issued (i.e. "on-the-run") securities. Technological innovation, combined with the highly liquid nature of these securities, has led to the growth of electronic trading across a variety of different platforms. All-to-all anonymous central limit order books ("CLOBs"), such as BrokerTec and ESpeed, launched in the early 2000s and have continued to periodically enhance their matching engines in an effort to more efficiently execute transactions and minimize associated price impact. Separately, electronic request-for-quote ("RFQ") platforms have become commonly used by investors to streamline the process of obtaining prices directly from multiple liquidity providers.

The growth of electronic trading for on-the-run Treasuries has improved market conditions for investors by increasing transparency and fostering competition, leading to better pricing and deeper liquidity. Individual platforms are able to aggregate data and provide members with more information regarding trading activity than was previously available in a purely bilateral voice-traded market. Importantly, the growth of electronic trading has enabled new participants to enter the market and compete with the incumbent dealers, reducing market concentration and enhancing liquidity. In fact, such new entrants now account for a significant portion of the trading activity on CLOB venues.[5] In parallel, the greater use of automated processes has improved market resiliency by reducing trade breaks and other errors that frequently resulted from manual processes. Electronic trading has also enhanced market resiliency by ensuring that the prices of related instruments, such as cash Treasuries and Treasury futures, remain efficiently linked.

Notwithstanding the growth of electronic trading and the entry of new liquidity providers, the market structure for on-the-run Treasuries remains extremely segmented, with distinct "dealer-to-customer" and "dealer-to-dealer" channels. Historically, this segmentation has resulted in most investors transacting solely with the incumbent dealers. There are some indications that this segmentation is beginning to decline due to market dynamics, with investors seeking access to additional sources of liquidity.[6] We remain concerned, however, that in at least some cases, this natural evolution is being hindered by access barriers imposed by specific trading venues, such as arbitrary and restrictive membership criteria and discriminatory fee structures.

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[5] Joint Staff Report at page 36.

[6] For example, a recent Greenwich Associates survey indicates that more customers are planning to join the "dealer-to-dealer" venues (*see* "U.S. Treasury Trading: The Intersection of Liquidity Makers and Takers," Greenwich Associates (Q4 2015) at page 4) and Citadel Securities recently joined the Bloomberg "dealer-to-customer" venue in order to provide Treasury liquidity directly to customers.

Two other observed trends are worth mentioning for on-the-run Treasuries. First, the incumbent dealers continue to focus on efficiently internalizing customer trading activity. However, this increasing internalization is occurring without real-time public reporting, which would provide investors with the information necessary to better assess execution quality.

Second, the growth of electronic trading has enabled market participants and trading venues to innovate with respect to trading protocols. Recently, several new trading venues have launched for on-the-run Treasuries[7] and market participants have expanded the use of bilateral price streaming relationships. Innovation and experimentation with respect to trading protocols can be helpful in providing market participants with a range of options regarding how to interact, leading to better pricing and deeper liquidity.

Off-the-run Treasuries

Secondary market structure for trading Treasury securities other than the most recently issued (i.e. "off-the-runs") has not changed as dramatically over the course of the last decade. Voice trading continues to be the dominant method of execution, although there have been initiatives to expand the use of electronic trading in this segment of the market as well. Liquidity has become more challenging for many of these instruments, including as a result of the prolonged low interest rate environment, re-allocation of balance sheet by liquidity providers, the activities of large official holders, and increasing difficulties in financing inventory and obtaining specific off-the-run Treasuries in the securities lending market.

Treasury repo

Repurchase agreements are commonly used by market participants to finance inventory, and therefore directly impact overall U.S. Treasury market liquidity in both on-the-run and off-the-run securities. There is a trend of declining availability and rising costs for Treasury repos, with dealers reducing the amount of balance sheet allocated to this segment of the market and total volumes falling significantly. Repo clearing, which can alleviate these constraints, is currently only available for certain dealer-to-dealer repo transactions. As a result, some repo market users have been shut-out and dealer concentration has increased. The reduced availability of stable and efficiently priced financing increases transaction costs to trade Treasuries, particularly impacting the ability of market participants to maintain directional positions or to correct price dislocations. Negative swap spreads are an example of a price dislocation that persists in part due to the greater cost now associated with financing a Treasury versus a swap.

B. Implications for U.S. Treasury Market Structure and Liquidity

We expect the market structure trends described above to continue for on-the-run Treasuries, with investors utilizing electronic trading in order to maximize efficiency and reduce costs. The recent Greenwich Associates survey highlights this dynamic, with nearly 85% of institutional

[7] Direct Match and LiquidityEdge are two recent examples of new entrants in the market.

investors trading Treasuries electronically, up over 20% from 2005.[8] We also expect investors to continue seeking access to additional sources of liquidity and demanding greater accountability from their liquidity providers. Notably, we expect new liquidity providers to enter what is today the "dealer-to-customer" segment of the market, a beneficial trend that should reduce market segmentation and increase liquidity and competition. This natural evolution of market structure will have the effect of further blurring the lines between the various categories often used to classify market participants, such as "bank dealers," "non-bank dealers" and "principal trading firms."[9]

The entry of new liquidity providers in traditional "dealer-to-customer" channels should serve to improve the robust liquidity conditions already observed for on-the-run Treasuries. When transacting in the U.S. Treasury market, we continue to observe healthy liquidity conditions in on-the-run Treasuries, despite the changes in market structure resulting from, among others, the growth of electronic trading and the entry of new liquidity providers to compete with the incumbent dealers. This observation is generally consistent with analysis from economists at the Federal Reserve Bank of New York.[10]

For off-the-run Treasuries and Treasury repo transactions, we expect challenging liquidity conditions to continue absent market solutions designed to alleviate current constraints. Developing a repo clearing solution that is available to all market participants is critical to increasing the availability of securities financing. Otherwise, participants in the Treasury repo market will continue to experience a lack of market depth, increased fails, and difficulty in obtaining securities that are trading "special" (i.e. with repo rates well below the Fed target rate). Structural changes affecting the repo market, such as a rise in interest rates or a reduction in Federal Reserve support, would only heighten the impact of these challenges as demand for leverage would be expected to increase as a result.

C. Key Recommendations to Improve Transparency and Resiliency and to Ensure a Level Playing Field in the U.S. Treasury Market

As the various segments of the U.S. Treasury market continue to evolve, we believe that the regulatory framework can be enhanced to increase transparency and to ensure a level playing field for market participants. This will encourage competition and the development of market solutions, such as repo clearing, that are available to all investors. It is critical that natural market evolution occurs without artificial constraints that inhibit competition on the merits, such as discriminatory access barriers or structurally imposed information asymmetries. In addition, given the fundamental importance of the U.S. Treasury market, the regulatory framework should promote market resiliency and operational stability by ensuring multilateral trading venues are subject to appropriate regulatory oversight.

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[8] "U.S. Treasury Trading: The Intersection of Liquidity Makers and Takers," Greenwich Associates (Q4 2015) at page 3.

[9] *See, e.g.,* Appendix A of the Joint Staff Report.

[10] *See, e.g.*, "Has U.S. Treasury Market Liquidity Deteriorated?", Tobias Adrian, Michael Fleming, Daniel Stackman, and Erik Vogt, Liberty Street Economics (August 17, 2015), available at: http://libertystreeteconomics.newyorkfed.org/2015/08/has-us-treasury-market-liquidity-deteriorated.html.

Based on these overriding principles, we have the following specific recommendations to improve transparency and resiliency and to ensure a level playing field in the U.S. Treasury market.

1. *Introduce Real-Time Public Reporting*

We strongly believe that real-time public reporting should be required for secondary market Treasury transactions. We address this recommendation in Section III below, given that the RFI devotes a specific section to post-trade transparency.

2. *Register Multilateral Trading Venues*

In light of the rapid growth of electronic trading in the U.S. Treasury market, it is critical that multilateral trading venues be subject to appropriate regulatory oversight. In addition to promoting market resiliency, this will create consistent and predictable standards that market participants can rely upon when trading on these venues. The secondary market for U.S. Treasuries is estimated to account for more than $500 billion in average daily trading volume.[11] Approximately half of this volume is estimated to be transacted on "dealer-to-dealer" trading venues,[12] with one such venue reporting that it alone now accounts for daily trading volume of more than $150 billion.[13] In turn, close to 40% of the "dealer-to-customer" segment of the market is estimated to be transacted on electronic RFQ trading venues, with approximately $100 billion in average daily volume.[14]

With volumes of this magnitude, multilateral trading venues for Treasuries play a vital role in the overall market structure and should be formally registered under a regulatory framework designed to enhance operational stability. As we recently commented to the Securities and Exchange Commission ("SEC"),[15] we believe the current exemption from registration as an "alternative trading system" ("ATS") for venues that solely trade Treasuries should be removed.[16] This exemption was included in the SEC's final rule on "Regulation of Exchanges and Alternative Trading Systems" in 1998, with the explanation that Treasuries were subject to "their own specialized oversight structure."[17] However, we urge regulators to re-assess this position given the dramatic growth of electronic trading that has since occurred and the lack of a regulatory framework specifically designed for these multilateral trading venues.

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[11] *Supra* note 4.

[12] *Id.*

[13] *See* ICAP Monthly volume data for March 2016, available at: http://www.icap.com/investor-relations/monthly-volume-data.aspx.

[14] *Supra* note 4.

[15] Please see our letter to the SEC dated March 1, 2016, available at: https://www.sec.gov/comments/s7-23-15/s72315-26.pdf.

[16] *See* 17 CFR 242.301(a)(4)(i) and (ii)(A).

[17] 245 Fed. Reg. 70844, 70860 (Dec. 22, 1998).

Requiring registration by multilateral trading venues is consistent with the approach taken in other fixed income markets, including futures, swaps and corporate bonds, and provides the mechanism to impose appropriate requirements designed to improve transparency and resiliency in the U.S. Treasury market. These requirements should include comprehensive standards with respect to systems testing, trading controls, audit trails, and monitoring and surveillance. As examples, both SEC Regulation SCI[18] and the Commodity Futures Trading Commission's Regulation Automated Trading proposal[19] impose requirements on multilateral trading venues that are designed to increase market resiliency in an era of electronic trading. Given the volumes in Treasuries transacted daily on multilateral trading venues, a single systems malfunction or instance of erroneous trading activity could have significant consequences for the entire U.S. Treasury market.

Venue registration would also enable regulators to improve market transparency, such as by requiring standard, publicly available disclosures regarding platform rules, order types and trading protocols. We believe market participants transacting in Treasuries would benefit from many of the operational transparency requirements included in the SEC's recent proposal relating to equities ATSs, such as with respect to (a) potential conflicts of interest, (b) order types, and (c) fees, rebates and incentives.[20]

Both "dealer-to-dealer" CLOB platforms and "dealer-to-customer" RFQ platforms should be required to register and subject to equivalent obligations given the vital role they play in the current market structure. Notably, the operators of all of the dominant multilateral trading venues in the U.S. Treasury market already operate registered trading venues for other products. In order to maintain a level playing field across these currently unregistered platforms, the rules should clearly state that all Treasury multilateral trading venues are required to be registered if multiple third-party buying and selling interests are able to interact with each other in the system, including by exchanging information regarding the essential terms of a transaction or by responding to actionable indications of interest. This will improve market resiliency and benefit market participants across all segments of the U.S. Treasury market.

3. ***Ensure Non-Discriminatory Access is Provided to Multilateral Trading Venues***

The principle of non-discriminatory access should be specifically included as part of the regulatory framework implemented for multilateral trading venues operating in the U.S. Treasury market. This will serve to reduce market segmentation and increase liquidity, participant diversity, and competition across the U.S. Treasury market. As detailed in the Joint Staff Report, the "dealer-to-dealer" trading venues have gradually revised their membership criteria in order to permit a broader range of market participants to join.[21] However, certain "dealer-to-customer" trading venues continue to impose barriers to access that serve to restrict competition and artificially maintain the bifurcated structure of the U.S. Treasury market. Examples of access barriers include

[18] 234 Fed. Reg. 72252 (Dec. 5, 2014).

[19] 80 Fed. Reg. 78824 (Dec. 17, 2015).

[20] 80 Fed. Reg. 80998 (Dec. 28, 2015).

[21] Joint Staff Report at page 36.

arbitrary and restrictive membership criteria, such as only permitting primary dealers to act as liquidity providers, and discriminatory fee structures that are designed to only be commercially viable for those members that also have an ownership interest in, or receive a revenue share from, the relevant trading venue. These access limitations are intended to restrict competition through limiting the universe of liquidity providers that can be accessed by investors on the relevant "dealer-to-customer" platform.

The principle of non-discriminatory access to trading venues has been broadly adopted in other markets. The Commodity Futures Trading Commission ("CFTC") requires trading venues listing either futures or swaps to provide impartial access to market participants[22] and the SEC imposes similar fair access requirements on equities exchanges and specific ATSs.[23] In Europe, the MiFID II framework – which covers instruments including sovereign bonds – also requires trading venues to implement rules providing non-discriminatory access.[24] Notably, the recent Fair and Effective Markets Review carried out by UK regulators with respect to fixed income markets specifically called for there to be "open access to FICC markets for all, either directly or through an open, competitive and well-regulated system of intermediation."[25]

Providing non-discriminatory access to multilateral trading venues is critical to increasing liquidity, ensuring a level playing field, promoting competition, and facilitating access to best execution. Enabling all qualified market participants to access the available trading venues:

- Increases liquidity by allowing all market participants to act as both price makers and price takers;

- Ensures a level playing field by removing anti-competitive barriers to access and information asymmetries;

- Promotes competition by lowering barriers to entry for new liquidity providers and by providing market participants with the freedom to execute with any other eligible counterparty; and

- Facilitates access to best execution by ensuring that market participants can both view and access the widest array of pricing sources and liquidity pools.

We urge the adoption of a non-discriminatory access requirement for multilateral trading venues in the U.S. Treasury market. As discussed in further detail in Section III below, we also strongly support additional transparency with respect to trading venue fees, rebates and incentives

[22] §38.151(b), 118 Fed. Reg. 36612, 36701 (June 19, 2012) and §37.202(a), 107 Fed. Reg. 33476, 33587 (June 4, 2013).

[23] Sections 6(b)(2) and 6(c) of the Exchange Act and Rule 301(b)(5), 17 CFR 242.301(b)(5).

[24] Articles 18(3) and 53(1) of Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments.

[25] *See* Fair and Effective Markets Review Final Report (June 2015) at page 19, available at: http://www.bankofengland.co.uk/markets/Documents/femrjun15.pdf.

in order to prevent trading venues from circumventing non-discriminatory access requirements through other methods, such as discriminatory fee arrangements.

4. *Invigorate Industry Efforts to Expand Repo Clearing*

The introduction of a market-wide clearing solution for bilateral Treasury repos would alleviate many of the constraints impacting liquidity in these securities financing transactions. As a result of clearing, dealers would benefit from substantial reductions in outstanding balance sheet obligations through netting and more favorable regulatory treatment for exposures to a qualifying CCP.

Market participants have been working with several CCPs for over a year to develop a viable solution for clearing bilateral Treasury repos that would be open to all market participants and not just the incumbent dealers. Such a solution requires addressing certain risks that are specific to the Treasury repo market, including the concentration of settlement risk and the significant liquidity needs of the CCP, particularly given that a clearing member or client default could involve large portfolio unwinds. Though progress has been made, recent declines in the number of CCPs involved in discussions and in overall engagement from the dealer community raise concerns.

Therefore, we urge policymakers and regulators to take a leadership role in invigorating the industry-led efforts to expand clearing for bilateral Treasury repos. In addition to increasing liquidity in these securities financing transactions, a market-wide clearing solution for Treasury repos would enhance market resiliency by eliminating the current interconnected web of counterparty credit exposures and bilateral settlements, and by reducing dealer concentration and the number of fails. Through a centralized default management process, the risk of bank repo runs due to a default would decrease and fire sale risk would be effectively managed. Repo clearing would also increase overall market transparency though the dissemination of pricing data and the creation of reliable audit trails for monitoring and surveillance purposes.

Increasing the availability of stable and efficiently priced financing will reduce transaction costs to trade Treasuries, helping to reverse negative trends observed elsewhere in the U.S. Treasury market. These include challenging liquidity conditions for many off-the-run securities and market participants experiencing difficulties in maintaining directional positions or in correcting price dislocations. In all, a commercially viable market-wide clearing solution for bilateral Treasury repos can benefit many different segments of the U.S. Treasury market and industry efforts to develop a solution should be vigorously pursued. We believe that leadership from policymakers and regulators is needed for the successful development and implementation of a market-wide repo clearing solution.

II. Enhancing Market Resiliency in Trading, Clearing, and Settlement (Section II of the RFI)

In addition to the policy recommendations outlined above, we believe there are several areas that deserve the focus of market participants, trading venues and clearing venues in order to further enhance market resiliency in the U.S. Treasury market. For example, order cancellation ("kill switches") and connectivity monitoring systems should be implemented on all multilateral trading

venues. Given the central role these venues have in monitoring activity across market participants, they should have clear authority and responsibility to use kill switches to immediately block activity that appears erroneous and likely to materially impact members or the market. Multilateral trading venues should also continue to enhance monitoring and surveillance capabilities to identify disruptive trading behavior. Self-match prevention technology should also be provided by each multilateral trading venue, along with sufficient transparency to market participants regarding the occurrence of self-matches on their systems.

From a clearing and settlement perspective, we support increased access to the Fixed Income Clearing Corporation ("FICC") for a greater number of market participants. The Joint Staff Report highlighted the significant trading volumes that continue to be settled bilaterally outside of FICC.[26] In order to standardize settlement workflows and mitigate settlement risk through the elimination of bilateral exposures, the industry must develop solutions to allow all market participants to access FICC, either directly or indirectly, in a commercially viable manner. We also support industry efforts to improve the same-day settlement of Treasury repos through FICC.

Regulators should continue to gather data with respect to these areas and support industry initiatives designed to enhance U.S. Treasury market resiliency. For example, the degree to which access to FICC is meaningfully expanded will inform whether additional steps, such as mandatory clearing of secondary market Treasury transactions, should be considered by regulators in the future. The implementation of mandatory clearing in the U.S. Treasury market could enhance overall market resiliency by streamlining workflows, reducing settlement risk, and accelerating Treasury repo clearing, but would need to be implemented in a manner that does not burden market participants with significant additional costs.

III. Increasing U.S. Treasury Market Transparency (Sections III and IV of the RFI)

A. Regulatory Reporting

We strongly support regulatory initiatives designed to increase the amount of the data regarding the U.S. Treasury market that is readily available to the official sector. The events of October 15, 2014 and the subsequent market analysis detailed in the Joint Staff Report exposed meaningful deficiencies with respect to current data collection requirements.[27] Providing regulators with timely access to comprehensive data relating to the trading of all Treasury securities will not only assist in the analysis of specific market events or trends, but will also improve general monitoring and surveillance capabilities, including those designed to detect disruptive trading practices or risks to market stability. These reporting enhancements will protect U.S. Treasury market resiliency by increasing market oversight and will provide regulators with the data to better evaluate how policy decisions may be expected to impact the market.

[26] The Joint Staff Report at page 55.

[27] *See* the Joint Staff Report at page 13. For example, the Joint Staff Report did not include data from the "dealer-to-customer" segment of the market, which was later obtained through an ad-hoc survey of select large dealers (see https://www.newyorkfed.org/medialibrary/media/newsevents/events/markets/2015/October-15-Dealer-to-Customer-Analysis.pdf).

In light of the above, we believe regulators should require executed transactions in all Treasury securities, including on-the-runs, off-the-runs, and Treasury repos, to be reported to a centralized repository.[28] This data should include, among others, (i) whether the transaction was executed on a trading venue, (ii) the type of trading protocol used (e.g. voice, electronic RFQ, or CLOB), (iii) whether the transaction was cleared, and (iv) whether the transaction was part of a package transaction. Common package transactions involving a Treasury include (a) spread overs (an interest rate swap and a Treasury), (b) curves (2 Treasuries of different maturities), (c) butterflies (3 Treasuries of different maturities), and (d) exchange for physicals (a future and a Treasury). In order to distinguish between different types of packages, data should also be collected on how many legs are associated with the specific package transaction and the instruments involved. Finally, trading venues should retain, and regulators should have access to, order and message data as necessary for monitoring and surveillance purposes.

In developing the appropriate reporting framework for the U.S. Treasury market, we believe regulators should leverage experience in other markets. For example, single-sided reporting (i.e. where each transaction is only reported by one party) has proven successful in reducing complexity and data discrepancies under the CFTC's reporting regime for swaps. We believe a hierarchy for identifying the reporting party for a given transaction (with trading venues first in line, and registered broker-dealers second) would streamline implementation. In addition, longer phase-in periods may be appropriate for those instruments that are less frequently traded on electronic trading venues, although the ultimate goal should be to standardize the reporting framework across all Treasury securities.

B. Real-Time Public Reporting

We strongly believe that the price, execution time, and size of secondary market Treasury transactions should be publicly reported in real-time. Today, the dominant "dealer-to-dealer" venues are able to provide market participants with information regarding trading activity on that specific venue, but there is little publicly available information regarding the "dealer-to-customer" segment of the market. As a result, according to estimates, over 50% of the secondary U.S. Treasury market[29] operates without meaningful post-trade transparency. This lack of post-trade transparency is in stark contrast to many other fixed income markets and significantly impacts investors and overall U.S. Treasury market dynamics.

Real-time public reporting provides investors with the information necessary to accurately assess execution quality when transacting in the "dealer-to-customer" segment of the market. By enabling investors to compare the prices they receive from liquidity providers with concurrent trading activity across the market, post-trade transparency enhances investor confidence and incentivizes price competition as investors are able to demand more accountability from their liquidity providers.

Real-time public reporting also promotes competition by removing information asymmetries. By leveling the playing field with respect to access to information about trading activity, market

[28] We note that Treasury futures data is already reported to the CFTC.

[29] *Supra* note 4.

participants are better able to compete on the merits, thereby promoting overall market diversity. As mentioned in a presentation discussed at the February 2016 meeting of the Treasury Borrowing Advisory Committee, secondary market transparency could "bring new players to the market place."[30]

The removal of these significant information asymmetries contributes to market resiliency by ensuring that changes in supply and demand are more efficiently reflected in current price levels. In addition, the existence of information asymmetries can impact the quoting and trading behavior of participants in both the "dealer-to-customer" and "dealer-to-dealer" segments of the U.S. Treasury market as a result of concerns about the information other market participants might have regarding current trading activity. Greater transparency will level the playing field and allow new information to be efficiently assimilated across the U.S. Treasury market, contributing to resiliency in times of stress.

Real-time publicly available information regarding executed transactions is already disseminated in both principal-based and agency-based markets, including equities, futures, corporate bonds and swaps. In addition, the MiFID II framework in Europe will introduce real-time public reporting requirements for a range of instruments, including sovereign bonds.[31] Significantly, real-time public reporting regimes have been successfully implemented for corporate bonds and swaps despite those fixed income markets being considered less liquid than Treasuries. Instead of negatively impacting market liquidity, studies have shown that increased transparency has delivered tangible benefits to investors in those markets. Corporate bond spreads have narrowed following the introduction of TRACE reporting in 2002[32] and several studies have shown that post-trade transparency generally has had positive effects on liquidity.[33] Similarly, studies in the swaps market have shown that increased post-trade transparency has contributed to improvements in liquidity[34] and recent Bank of England research found that pricing and liquidity in standard USD interest rate swaps has significantly improved following the implementation of

[30] *See* TBAC Charge #2 at slide 13, available at: https://www.treasury.gov/resource-center/data-chart-center/quarterly-refunding/Documents/February2016TBACCharge2.pdf.

[31] *See* Article 8 of Regulation (EU) No. 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments.

[32] *See* "Has U.S. Corporate Bond Market Liquidity Deteriorated?", Tobias Adrian, Michael Fleming, Or Shachar, and Erik Vogt, Liberty Street Economics (Oct. 5, 2015), available at: http://libertystreeteconomics.newyorkfed.org/2015/10/has-us-corporate-bond-market-liquidity-deteriorated.html.

[33] *See, e.g.*, Goldstein, M. A., Hotchkiss, E. S., Sirri, E. R., 2007. Transparency and liquidity: A controlled experiment on corporate bonds. Review of Financial Studies 20 (2), 235-273; Edwards, A. K., Harris, L. E., Piwowar, M. S., 2007. Corporate bond market transaction costs and transparency. The Journal of Finance 62 (3), 1421-1451; Bessembinder, H., Maxwell, W., Venkataraman, K., 2006. Market transparency, liquidity externalities, and institutional trading costs in corporate bonds. Journal of Financial Economics 82 (2), 251-288.

[34] *See, e.g.*, Loon, Y. C., Zhong, Z. K., 2014. The impact of central clearing on counterparty risk, liquidity, and trading: Evidence from the credit default swap market. Journal of Financial Economics 112 (1), 91-115; Loon, Y. C., Zhong, Z. K., 2015. Does Dodd-Frank affect OTC transaction costs and liquidity? Evidence from real-time CDS trade reports. forthcoming, Journal of Financial Economics.

the U.S. regulatory reforms.[35] Warnings from market participants regarding the dangers of increasing post-trade transparency in the U.S. Treasury market must be evaluated against documented market experience with real-time public reporting in other markets.

In order to meaningfully enhance transparency in the U.S. Treasury market, real-time public reporting should be required for secondary market Treasury transactions in on-the-runs and off-the-runs, subject to the limited exceptions described below. Real-time reporting, meaning as soon as technologically practicable, is consistent with other fixed income reporting regimes[36] and is required in order to provide an accurate representation of current market activity, particularly given the significant volumes executed daily in the U.S. Treasury market. The following information should be provided in real-time: (i) price, (ii) execution time, and (iii) size.

There are three caveats to the above. First, with respect to transactions that are truly large-in-size compared to the vast majority of executed transactions in a particular type of security and maturity bucket, it is appropriate to cap the reported size at a specific threshold. Second, we also believe it is appropriate to provide a reporting delay of 15 minutes for block transactions. Both of these features are consistent with other fixed income reporting regimes.[37] Third, a similar reporting delay of 15 to 30 minutes is appropriate for less liquid off-the-runs, which we define as securities that are more than two issuances older than the most recently issued securities. These relatively short reporting delays will provide liquidity providers with the necessary time to effectively hedge while not undermining the overall transparency regime.

Market transparency is a fundamental cornerstone to open, fair, and efficient markets. Real-time public reporting has delivered tangible benefits to investors in a wide variety of markets and should be required in the U.S. Treasury market without delay. By increasing investor confidence, removing information asymmetries and promoting competition, real-time public reporting will serve to enhance the liquidity and resiliency of the U.S. Treasury market.

C. Greater Transparency from Multilateral Trading Venues

As we recently commented to the SEC,[38] we believe that market participants would benefit from additional transparency from multilateral trading venues operating in the U.S. Treasury market. Therefore, in connection with registration, each trading venue should be required to have a publicly available rulebook that clearly describes order types and trading protocols. In addition,

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[35] *See* Staff Working Paper No. 580 "Centralized trading, transparency and interest rate swap market liquidity: evidence from the implementation of the Dodd-Frank Act", Bank of England (January 2016), available at: http://www.bankofengland.co.uk/research/Documents/workingpapers/2016/swp580.pdf.

[36] See the CFTC's reporting requirements for swaps in §43.3(a), 77 Fed. Reg. 1182 (Jan. 9, 2012) and FINRA's reporting requirements for TRACE securities in FINRA Rule 6730.

[37] Under the CFTC's reporting regime for swaps, reported sizes are capped at specific thresholds and block trades are subject to a maximum reporting delay of 15 minutes if executed on venue or bilaterally off-venue by a dealer (*see* 77 Fed. Reg. 1182 (Jan. 9, 2012)). Under FINRA's reporting requirements, TRACE eligible corporate bond transactions must be reported within 15 minutes and reported sizes are capped at specific thresholds (*see* FINRA Rule 6730 and ISDA/SIFMA: Block trade reporting for over-the-counter derivatives markets (Jan. 18, 2011) at 11-12, available at: http://www.isda.org/speeches/pdf/block-trade-reporting.pdf).

[38] *Supra* note 15.

information regarding fees, rebates and incentive programs (including both market maker programs and revenue share agreements) should be publicly disclosed by the operator of the trading venue, along with any potential conflicts of interest.

Improving trading venue transparency has been an area of focus in recent regulatory proposals in other markets, including the SEC's Regulation ATS proposal[39] and the CFTC's Regulation Automated Trading proposal.[40] The imposition of minimum transparency standards should not impose significant burdens on platform operators and provides critical information to market participants assessing the relative merits of these trading venues.

IV. Conclusion

The U.S. Treasury market has undergone significant change over the course of the last decade, with technological innovation spurring a transition to electronic trading. Given the magnitude of these changes and the fundamental importance of the U.S. Treasury market to both the U.S. and global economies, we strongly support efforts to comprehensively review the regulatory framework applicable to Treasuries.

We believe there are several steps that regulators should take to improve transparency and resiliency and to ensure a level playing field for investors in the U.S. Treasury market, including requiring the registration of multilateral trading venues and implementing real-time public reporting. This will enhance the operational stability of these critically important venues, while removing information asymmetries that can affect investor confidence and impact market resiliency. In turn, ensuring a level playing field enhances price competition and liquidity by enabling market participants to compete on the merits and, therefore, all qualified market participants should benefit from non-discriminatory access to multilateral trading venues. Finally, regulators should take a leadership role in industry-led efforts to expand access to clearing, including in the development of a much needed market-wide clearing solution for bilateral Treasury repos. These steps are consistent with recent reforms in other fixed income markets and can bring significant benefits to investors and the overall U.S. Treasury market.

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[39] 80 Fed. Reg. 80998 (Dec. 28, 2015).

[40] 80 Fed. Reg. 78824 (Dec. 17, 2015).

We appreciate the opportunity to provide comments to the Treasury on its RFI on U.S. Treasury market structure. Please feel free to call the undersigned at (312) 395-3100 with any questions regarding these comments.

Respectfully,

/s/ Adam C. Cooper

Senior Managing Director and Chief Legal Officer