Testimony of John Shay
Senior Vice President and
Global Head of Fixed Income and Commodities
Nasdaq
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Subcommittee on Capital Markets, Securities, and Investment

Thank you Chairman Huizenga and Ranking Member Maloney for the opportunity to testify today on fixed income market structure. The market for U.S. Treasury Securities ("USTs") is widely recognized to be the most liquid and consequential market in the U.S. and perhaps the world. Trillions of dollars of USTs circumnavigate the globe, trading across, and resting in, the accounts of individual investors, institutions, corporations, and governments on every continent. Trillions of dollars more in derivatives on USTs trade separately and just as actively. The U.S. Treasury Bond reflects the stability of the United States and its strength and is, quite literally, the coin of the realm for the world. That said, the market for USTs could benefit from greater transparency, organization and efficiency.

As you know, Nasdaq has extensive experience operating markets and protecting participants and investors. We operate 25 exchanges and six clearinghouses around the globe for equities, options, commodities, power, freight, interest rates, and fixed income trading, as well as providing technology to power more than 70 other brokers, markets, and regulators around the globe. With Nasdaq Fixed Income (NFI), previously known as eSpeed, with its lineage as the first electronic trading platform for Core Benchmark USTs, providing real-time institutional trading of benchmark USTs and is one of the largest and most liquid fixed-income cash markets in the world. Currently our client profile features 112 Institutional Clients consisting of 23 Primary Dealers, many Banks and Broker Dealers, Proprietary Trading Firms and a number of non–banks. We offer trading through our SEC registered Alternative Trading System (ATS) and Financial Industry Regulatory Authority (FINRA) regulated broker dealer entity utilizing an anonymous, fully electronic central limit order book using price time priority. Currently, among our competitors, our activity represents around 20% of the daily market share. Competitors in our space includes NEX (Brokertec), BGC, and DealerWeb. On the Nasdaq Fixed Income - US Treasury platform we offer:

- US Treasury active Benchmarks. 2yr, 3yr, 5yr, 7yr, 10yr, and 30yr.
- In addition the most actively traded US Treasury T-Bills, newly announced supply and short dated notes.
- Recent enhancements included "Off-The-Run" product offering which are previously issued US Treasury Notes.

Our market continues to evolve with the release this year of several functionality enhancements that we believe will make us the market leader:

- **Nasdaq FIRST**: Allows users to provision additional liquidity between the bid-offer spread. When better pricing is available, the Nasdaq Fixed Income Front-end GUI will display an asterisk (*) indicator on the Bid / Offer Price.

- **Off-the-run (OTR) Swaps**: Nasdaq Fixed Income is offering a new Price Swap Box for trading off-the-runs.
- **Best Price Accelerator (BPA)**: When a new price is entered that improves the current BBO spread, trade state will immediately end and start a new trade state at the better price. In the event of a Trade Through scenario, we display the aggregate total size filled through our interface.
- **Show Instrument Trade History**: The new trade history window will show all trades in detail in the instrument you want to view.

Nasdaq's analysis of market structure and market structure reforms is driven by the application of core principles derived from this experience. Nasdaq believes that the market for USTs can be significantly improved on in each of these measures:

- ***Transparency Benefits all Market Participants***. Markets must be transparent in each of several respects to serve market participants and investors fully and fairly. The structure, regulation, and operation of the market should be readily understood to inspire trust and confidence. Widespread availability of the best available prices ensures that market participants make informed investment decisions and receive high quality, low cost service from intermediaries and markets alike.

- ***Regulation Must be Clear, Consistent, and Technology Driven***. Markets and market participants should be held to clear, high, and consistent standards of conduct. As markets evolve and automate, regulators must maintain a coordinated and complete view of market activity. Full transparency to regulators underpins fair markets.

- ***Competition on a Level Playing Field***. Market structure serves market participants best by including a diverse set of participants. The open interaction of diverse trading interests and strategies – whether long term, short term, institutional, or proprietary – promotes continued innovation and efficiency.

- ***Equal Access to Trading Promotes Efficiency***. Equal access fosters order interaction, price discovery and market efficiency. Restricted access and liquidity fragmentation creates order isolation, price opacity and inefficiency.

- ***All Investors are Entitled to a Fair Deal.*** The quality of execution for market participants should not depend on the venue they choose. If all venues that trade the same securities are equally transparent, equally regulated, and held to equally high standards of conduct, investors will be fairly treated.

These markets are evolving and they are becoming more fragmented and segregated; more opaque to competitors and regulators alike; subject to uneven and uncertain regulation and enforcement; less efficient; and less clearly focused on serving market participants. Therefore, Nasdaq recommends the following basic improvements that it believes are necessary to better serve market participants and protect investors:

1. Transparency: TRACE Reporting to FINRA was a positive step; further evolution

towards a comprehensive, centralized reporting mechanism is critical.

2. The establishment of minimum regulatory requirements on all venues to ensure fair and orderly markets.

3. Reduce systemic risk by requiring cost effective clearing of all transactions, be it centralized or through an interoperable model for all market participants.

By introducing these changes, Nasdaq believes that operational and systemic risks will be reduced and market efficiencies will be improved.

Current State of the Market

As it is generally known, the secondary market for USTs has two segments: the Dealer-to-Customer segment and the Inter-Dealer Broker ("IDB") segment. NFI operates exclusively in the IDB segment, offering a Central Limit Order Book ("CLOB") based on Price/Time matching principles.[1] As such, NFI provides a venue through which dealers can trade in ways that facilitate their customer-facing business. For example, a dealer can access liquidity in Nasdaq Fixed Income to rebalance inventory in reaction to a large customer trade. A liquid, well-functioning IDB market therefore ultimately benefits end investors.

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1 As opposed to "Workup" matching protocols, offering exclusivity and queue priorities originally introduced in early IDB solutions. These are no longer available on eSpeed for Treasury Benchmark securities.

The post financial crisis regulatory framework has impacted traditional providers of liquidity, mainly the enhanced compliance and regulatory burdens of the Volcker Rule[2] and Basel III Capital Requirements.[3] Principal Trading Firms ("PTFs") have become an increasingly important part of the IDB market, and currently represent a significant portion of Nasdaq Fixed Income activity. PTFs act as both liquidity providers (submitters of passive bid and offer quotes) and liquidity takers. This latter role is often associated with a variety of arbitrage strategies that tie together the prices of related asset classes, such as prices in the futures markets with prices in the cash market. PTF participation increases liquidity and price discovery in the IDB market. These PTFs have accounted for a substantial increase in trading volumes without any significant increase in overnight risk. Liquidity provisioning PTFs facilitate risk transfer while continuing to allow primary dealers to serve the buy side.

In response to the October 2014 market volatility in Treasuries, the Treasury Department and the SEC asked the FINRA to require their member firms to report their transactions so that the information can be made available to regulators. While this step is a good and reasonable place to start, it is not complete. As an operator of one of the primary UST venues, Nasdaq cannot completely evaluate the liquidity and/or efficiency of the entire market either in real-time or on a delayed basis. Nasdaq Fixed Income can only assess the activity on its own platform and

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2 See 79 F.R. 5808 (January 31, 2014); §619 (12 U.S.C. § 1851) of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

3 See http://www.bis.org/bcbs/basel3.htm.

does not have visibility into the best prices currently available or those recently executed at competing CLOBs or Single/Multi Provider Streaming ("SMPS") or Request For Quote/Request For Stream ("RFQ/S") venues.

The challenges of incomplete information is also compounded by the proliferation of trading venues and the resulting fragmentation. Since the introduction of Nasdaq Fixed Income, the number of CLOBs has grown from one to three (with more signaling that they will enter the market) and the emergence of several SMPS and RFQ/S solutions.

As this Committee is aware, the U.S. equities markets have experienced a similar proliferation of venues and similar fragmentation. However, the one true strength that mitigates some of the negative effects of fragmentation in the equity markets is the wide availability and cost-effectiveness of real-time data about prices and liquidity each security. Although we are not advocating for something similar to Regulation NMS being applied to the UST market, better regulation developed on a stronger base of transparency and coordination, would be an improvement to that which currently exists in the UST market today.

Without consistent rules and oversight of all liquidity pools, including private venues, fragmentation may lead to reduced levels of liquidity and wider spreads for those ineligible to participant in those private venues. Current regulations are largely focused on financial risk mitigation, leaving a number of important areas unaddressed such as trading infrastructure, system resiliency, technology requirements, and operating standards across venues. Nasdaq notes that it voluntarily publishes its operating manual online for the benefit of its market participants.

Perhaps understandably, the significant increase in the levels of automated trading has necessitated the development of advanced automated risk control systems. The leading marketplaces, such as Nasdaq Fixed Income, utilize a suite of financial risk management controls based on the SEC Market Access Rule,[4] including daily trading limits, profit and loss ("P&L") and market risk monitors, as well as counterparty credit monitoring processes. Many of these and other risk management solutions are widely available to market participants and are supported by a network of third party vendors who specialize in the provision of this technology.

We advocate for the implementation of uniform standards with respect to these areas, accompanied by greater supervision, provided that it is applied equally across all venue types, including CLOBs, SMPS and RFQ/S systems. We welcome competition, as long as it is based upon sound fundamental and operational structures.

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4 See SEC Rule 15c3-5, 17 C.F.R. 240.15c3-5.

Recommendation Number One: 1. Transparency: TRACE Reporting to FINRA was a positive step; further evolution towards a comprehensive, centralized reporting regime is critical. .

As previously stated, the incremental action to require FINRA members to report trades for regulatory purposes is a positive step, but will only bring transparency to a limited segment of Treasury market activity. Nasdaq believes that UST regulators should establish a truly comprehensive central registration and transaction reporting regime for their own use in the UST market, preferably based upon existing proven industry protocols, and encourage venues to offer services for the submission of transactions to reduce the overall impact on market participants. A comprehensive system would gather all transactions, including those executed on CLOBs, those executed on SMPS and RFQ/S platforms, and those executed bi-laterally between participants. A system that focused on creating transparency in just one segment of the market, such as IDBs, may encourage participants to shift transactions to segments of the market that remain dark, and therefore fail to capture the true breadth of transactions within the marketplace. The case for full and immediate data transparency to regulators and increased public transparency of venue operating guidelines is abundantly clear.

Nasdaq also supports price transparency. Strong reference prices created by exchanges, Trade Reporting Facilities,[5] and network processors[6] through the SEC's transaction reporting regime have helped make those markets the deepest, most liquid markets in the world. In fact, Nasdaq has been a leader and innovator in supplementing that already-strong transparency with an even wider and deeper range of "non-core" data products that provide market participants greater freedom to choose pre- and post-trade data. While Nasdaq does not support radical change in this area, preferring a more cautious and incremental approach to regulatory reform. Full pre- and post-trade transparency requires a level and breadth of technical infrastructure that does not currently exist in the market for USTs. For example, trading venues and market participants must operate under uniform quoting and trading conventions before data from multiple venues can be aggregated. Also, quotations must be uniformly accessible, requiring connectivity and operational frameworks.

Investor protections, considered standard in the equity and options markets, are unavailable to UST market participants due to the lack of a comprehensive, centralized reporting mechanism. Every protection offered in response to the equity "flash crash" of 2010 depends on centralization and cooperation; this includes market-wide and single stock circuit breakers, and standardized market making and trade break rules. Enforcement of best execution and trade through protection are facilitated by the same coordination and centralization. Reasonable minds

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5 See FINRA Rule Series 6700-6770.

6 See 15 U.S. Code §78k-1, Exchange Act Section 11A; see also SEC Rule 603 of Regulation NMS, 17 C.F.R. 242.603.

can differ on whether all of these protections are currently necessary in the UST market, but it is clear that proponents would be seriously hindered by the current market structure. On October 15, 2014, the current market structure, as we know it today, experienced an unusually high level of volatility and significant price movements. It is important to state that such events are not common in the UST markets - absent market or policy driven announcements. October 15th prompted five Federal Agencies to review the day's events along with trading data. The resulting findings report published July 13, 2015 noted that while banks and non-banks continued to execute transactions, non-banks firms represented more than half the traded volume[i].

*Recommendation Number Two: **Impose minimum regulatory requirements on all venues to ensure fair and orderly markets.***

Well-functioning markets must be transparent, fair, and orderly. This requires uniform minimum regulatory standards across all trading venues, whether electronic multiparty trading platforms or bi-lateral dealer-to-customer arrangements. For example, rules similar to Regulation SCI,[7] recently implemented by the Securities and Exchange Commission to enhance the technology infrastructure of securities markets, would ensure that participants in the UST markets develop systems with sufficient capacity, resiliency, availability and security to minimize the

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7 See 17 C.F.R. Parts 240, 242, and 249; https://www.gpo.gov/fdsys/pkg/FR-2014-12-05/pdf/2014-27767.pdf.

occurrence of disruptive systems issues. SCI also provides requirements for industry-wide testing that could enhance the stability of these markets.

It is critical that trading venues do their part to keep bad actors out of the treasury market. NFI is operated by a FINRA-regulated broker dealer and SEC-registered ATS and upholds its duties through a holistic vetting process that includes robust Know Your Customer and Anti-Money Laundering monitoring standards under the USA PATRIOT Act. NFI uses a third party vendor to investigate each prospective customer by comparing customer information against 120+ government-managed lists and websites for any potential negative information. Resources used for this review include lists and websites maintained by agencies such as the Office of Foreign Assets Control, Federal Bureau of Investigation, Department of Justice, Securities and Exchange Commission and Financial Crimes Enforcement Network.

NFI does not allow any customer to access the ATS prior to receipt of confirmation of clearance. Additionally, NFI engages this same third party vendor to conduct continuous real-time monitoring on all of its customers and receives alerts whenever negative news associated with a customer is obtained.

Beyond minimum regulatory standards, Nasdaq believes that market protection requires sound surveillance and monitoring to ensure fair and orderly markets. The securities and futures markets have developed a tiered approach to market surveillance with individual firms and trading platforms tasked with compliance monitoring of their activity, and self-regulatory organizations ("SRO") given front-line responsibility for market surveillance and enforcement.

In the UST market, as with our other markets, Nasdaq has implemented operational and compliance best practices to promote and maintain the integrity and efficiency of Nasdaq Fixed Income, and the overall UST market. Similar to other securities and futures markets, Nasdaq Fixed Income employs its own surveillance program, which is designed to review its participants' trading activities for instances of manipulative or deceptive practices. Surveillance reviews currently deployed or in development include manipulative wash trading, spoofing, layering, mid-point price manipulation, and flipping. Each UST venue should perform similar market monitoring surveillance for the activity related to that venue. In addition, Nasdaq believes the UST market would benefit from consolidated surveillance by a SRO with regulatory responsibility for the trading activity.

Of course, proper surveillance of a fragmented UST market requires that regulators have visibility across all UST cash and derivative markets with the ultimate goal of efficiency and transparency. Regulators could significantly benefit by being a central repository of information to monitor trading across the UST cash and derivative markets using order and transaction activity. This could be accomplished by using trade data similar to that which is available to FINRA from the securities exchanges.

In summary, we strongly advocate for the standardization of regulatory standards and surveillance practices across all UST venues. This would benefit market participants, regulatory agencies, and potentially a centralized clearing provider should the UST markets evolve in that direction. In setting these standards, we believe regulatory agencies should leverage models similar to those that already exist in the securities markets (such as Regulation SCI, SRO oversight, the Consolidated Tape, and TRFs) before devising new sets of rules or requirements that might have unintended consequences on the UST market.

Recommendation Number Three: ***Reduce systemic risk by requiring cost effective clearing of all transactions, be it centralized or through an interoperable model.***

The clearing market structure, in our view, has fallen behind the realities of automated trading. The uneconomical cost of clearing large volumes of trades with very small net positioning has resulted in the majority of trading that occurs in the UST market being done without utilizing a centralized clearing counterparty ("CCP"). This development poses material counterparty risk to the market. The market instead relies on the solvency of the trading venues and an ever diminishing number of Clearing Brokers.

Clearing Brokers are the only third-party that can view a client's full trading position, as they typically act as settlement agents. Trading venues only receive ~~get~~ an incomplete view based upon the transactions being executed on their platform. However, Clearing Brokers acting as agent are not legally bound to guarantee the settlement of executed trades. This exposes trading venues and market participants to counterparty risk and it creates a scenario whereby default management must involve multi-lateral coordination of clearing brokers, trading venues, and clients, thus adding unnecessary complexity and risk to the market.

To mitigate counterparty risk, Nasdaq Fixed Income has implemented a suite of pre-trade and post-trade risk controls as well as a thorough credit review of clients that do not clear trades. The Nasdaq Fixed Income Credit Risk team conducts annual credit due diligence exercise to evaluate each client's management and firm history, trading strategies, risk management policies and procedures, operational controls and compliance, financial condition, and past performance. This data is used to assess each client's credit quality, which drives client daily trading limits and any collateral posting to Nasdaq Fixed Income. This is supplemented by market risk monitoring of unsettled trades and internal default management policies and procedures. For example, real-time P&L monitoring will alert the Credit Risk team to any unusually large client P&L or exposure that exceeds pre-determined thresholds.

In addition to the counterparty risk associated with the clearing structure currently in place, there are very large inefficiencies in terms of the required collateral for clients to trade effectively across the different venues. Cash trades done on different venues require individual margin postings that do not net across a client's positions. Also, trades done in the futures market against cash positions do not always receive the benefit of netting and require even more collateral. A centralized clearing solution would very likely help to significantly reduce counterparty risk (and help the default management process) while making the collateral margin requirements reflect the actual risk being taken by particular entities.

In summary, the lack of a centralized clearing solution poses material counterparty risks to the market and leads to the following:

- Less transparency as to the size of the exposure faced by individual participants;
- Concentration risks that are not properly managed;
- Clients having to post collateral to multiple venues and brokers creating inefficient management of settlement and counterparty risk; and
- A decentralized default management process that is cumbersome and prone to delays and errors, thus increasing the chances of financial losses and/or subsequent litigation.

We believe that, so long as market liquidity is maintained, the ideal clearing solution involves a CCP, be it centralized or through an interoperable model, as is the case with many asset classes. The CCP has a complete view all trading by all participants. It is ideally suited to provide uniform capital and risk controls applied equally to all market participants.

The caveat is that clearing costs represent a frictional market force which leads to either a virtuous or a vicious cycle. Lower costs lead to more liquidity and less market risk, while higher costs lead to less liquidity and more market risk. The virtuous cycle would be aided, for example, by a model including intra-day netting because allowing immediate offsetting of positions would reduce both systemic risk and member margin requirements. The relationship between risk and cost closes the cycle. Lower risk leads to lower clearing costs and vice-versa. Thus, it is imperative that the CCP be cost efficient and well governed, having representation from a cross-section of all market participants.

We appreciate the opportunity to testify on these important issues. I am happy to answer your questions.

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[i] Summary Section 3 of the Joint Staff Report of July 13 2015.