

# Remarks by Craig Phillips, Counselor to the Secretary, on Market Structure

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Good afternoon. I trust that all of you have found today's panels and speakers both informative and thought-provoking. Before I begin my remarks, I want to thank the Federal Reserve Bank of New York for co-hosting this event on the evolving structure of the U.S. Treasury Market and also thank the other members of the Interagency Working Group for Treasury Market Surveillance (IAWG), for their participation here today, including the Board of Governors of the Federal Reserve System (Federal Reserve Board), the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC). Now in its 4th year, this has become an excellent forum to discuss important issues facing the U.S. Treasury market among the official and private sector.

Today I will focus on Treasury securities transaction data collected by the Financial Industry Regulatory Authority (FINRA) through its Trade Reporting and Compliance Engine (TRACE) from FINRA's member broker-dealers. I will discuss Treasury's observations from the TRACE data to date, its significance for Treasury as issuer, as well as for the regulatory community as a whole. Next, I will review suggestions for improvements in the data in order to incorporate unique aspects of Treasury market trading, including elements of completeness of the Treasury securities data set. I would then like to share some observations from our outreach efforts before concluding with important steps concerning developing and executing a policy on the potential for public dissemination of the data.

After last year's event, Treasury undertook extensive outreach to market participants that resulted in highly productive and informative conversations, and I want to personally thank many of you and your institutions for your participation in that effort.

In short, we continue to examine the appropriate level of public dissemination for the TRACE Treasury data at this time. As we've continually stated, the consideration of a properly tailored and calibrated process for public dissemination of some form of the data is worthy of further study. No matter the eventual outcome in this regard, it is important to continue to customize the data for the Treasury market to make it clear and understandable; to ensure Treasury market coverage is complete; and to collaborate within the official sector to gain a keen understanding of the impact that public dissemination would have on market structure, liquidity, and other important market factors.

The suggestions I will make for data improvements are specific to the Treasury securities market data, and are a natural step after adding this new, and unique asset class to the TRACE data. As expected, TRACE has proven a highly efficient way to collect this data, and as with other asset classes added to TRACE such as mortgage backed securities (MBS), additional improvements are now warranted to better fit the collection to the structure of the Treasury securities market.

At the same time, I want to emphasize the tremendous importance of the TRACE Treasury securities data and our commitment to continue to work with FINRA and the IAWG for the ongoing improvement of the Treasury securities data. There is no question that the decision to move down the path of collecting this data for the largest and most liquid market in the world was critically important. We are pleased with the results to date and foresee further progress in the future to optimize the value of the TRACE data that Treasury and our IAWG colleagues are receiving.

## **HIGH LEVEL PRINCIPLES**

It is useful to review a few principles that we have adopted as a framework in evaluating the TRACE data and its usefulness to all stakeholders. Treasury is dedicated to strong market functioning to ensure that the Treasury market remains the deepest and most liquid market in the world. Fostering an efficient and liquid Treasury market supports Treasury's primary objective to fund the U.S. Government at least cost to the taxpayer over time and we believe the data should be used in ways that are consistent with this objective by enhancing liquidity in the Treasury market. Minimizing our own debt service costs may also contribute to lower benchmark rates for other instruments, like corporates, agencies, and mortgages, providing cost benefits to all borrowers. In addition, a robust and liquid Treasury market reduces frictions and provides significant benefits for market participants that use Treasury securities for hedging or as collateral.

At the outset of this process we stated that our guiding principle was to “do no harm” to the market, and our deliberate approach in determining a path forward on TRACE data is a product of that principle. Our second principle is to consider the interests of all of our investors in order to encourage the broadest possible investor base for Treasury securities. Finally, Treasury is committed to using the data to help inform policies with the potential to improve Treasury market structure and foster innovation, while maintaining the Treasury market’s robustness and stability.

These principles remain intact today and, in fact, the wisdom of following them has consistently been reinforced through our discussions with a broad range of market participants. They will continue to guide our work going forward.

## **WHAT TREASURY HAS LEARNED FROM THE TRACE DATA**

### **Slide 2 – Security Volumes by Venue**

This slide will look familiar to many of you who attended last year’s conference. It provides an updated assessment of transaction volumes across the different segments of the market, loosely defined as the dealer to customer (DtC) or affiliate market, the dealer to dealer (DtD) market and the interdealer broker (IDB) market, which is further divided into an estimate of electronic and voice IDB. As you can see, average daily transaction volumes are almost \$600 billion per day. This total is largely split between the DtC and IDB markets, with primary dealers being the dominant liquidity provider in the former, while principal trading firms (PTFs) appear to be a substantial additional source of trading volumes in the latter electronic market, though they are not yet identified in the data. Across the sample period, we also see a number of regular spikes due to various events such as month-end rebalancing by market participants.

### **Slide 3 – Trade Sizes for Nominal Coupons**

This slide shows summary statistics of the distribution of trade sizes for nominal coupon securities reported so far. The first thing to notice is the median trade size for most coupon securities is \$1 to 5 million, a point we’ll revisit a few slides later.

Focusing on the orange and green dots gives us a view into the upper tail of trade sizes. Two points come to mind: first, there are a number of large trades, think \$20 million and above, that occur every day across the coupon stack; second, the patterns are remarkably similar by tenor,

though the 10- and 30-year are traded in somewhat smaller sizes due to their higher duration. As nominal coupon securities are commonly viewed as the most liquid Treasury securities, let's look at how the trade sizes for other security types compare.

## **Slide 4 – Trade Sizes for Other Treasury Securities**

Slide 4 presents the same exercise, but by security type across the top rather than by tenor. While it may not be immediately obvious, the major difference between these trade sizes and those for nominal coupon securities is the pattern across on- and off-the-runs. In the previous slide, we saw that the trade sizes for each tenor's on-the-run security were quite compressed within \$20 million or less for even the 90th percentile, while the off-the-run trade sizes were often significantly larger, especially in the first, second, and third off-the-runs. In contrast, for bills, FRNs, TIPS and STRIPS the trade sizes don't show such a clear pattern. This lack of a consistent pattern reflects the bilateral and idiosyncratic nature of these markets relative to the electronic central limit order book (CLOB) transaction model that accounts for much of the transaction volumes in on-the-run nominal coupons.

## **Slide 5 – Trade Size Distributions for Nominal Coupons**

Rounding out this discussion, we wanted to show the variance in trade sizes by venue. On the left side, we present the cumulative distribution of trade sizes, which increases from left to right, for the DtC market. On the right side, we have the same chart for the IDB segment of the market. IDB transactions are dominated by \$1 million trades, whereas the DtC market has a wider range of trade sizes, as shown on the charts. This reflects the different nature of the IDB vs DtC market, with the IDB market featuring a very large number of electronic, algorithmic trades in \$1 million lots, while the DtC market features both smaller retail and larger institutional trades, which are absorbed by dealers and then redistributed across the IDB market or their customer base.

## **Slide 6 – Price Dispersion DtC Nominal Coupons**

This slide covers price dispersion in the DtC market. Here we introduce the notion of “excess ticks,” which we define as the difference between a transacted price and the relevant benchmark bid or ask price for a given security tenor, expressed in 32nds. The data shown reflects all TRACE trades during U.S. market hours where trade size is equal to or greater than \$1 million, excluding trades that are when-issued, with affiliates, or have a trade modifier, such as the .S flag. Positive values indicate trades at prices outside the typical bid-ask spread, negative

values are trades within the spread. This chart shows the 10th and 90th percentiles for excess ticks by original security term and age in increasing order of maturity from left to right. As the chart demonstrates, price dispersion measured by “excess ticks” is quite low, on average, across these dimensions. In particular, the median “excess tick” is negative, meaning that the median trade occurs within the bid-ask spread. For more seasoned securities (the 1st through the 3rd off-the-runs), we see that price dispersion is still quite low, with the entire inter-percentile range under half a tick for securities other than the long bond. The larger inter-percentile ranges in the longer-dated 1st through 3rd off-the-runs is related in part to larger bid-ask spreads on those longer duration instruments.

We have excluded most seasoned securities, those that are four or more times off-the-run because of the heterogeneity, such as high coupons versus low coupons, across the securities in these particular tranches. That said, our preliminary analysis of that data suggest similar patterns to the near off-the-runs, though with slightly larger tails.

These results are consistent with the notion that the Treasury securities market is already quite transparent, something many market participants conveyed to us. While we were pleased with the results of our initial analysis, it required significant cleaning of the data, and as such, is worthy of further study and review.

So, to summarize, what are the major takeaways from the data? First, trading volumes and pricing in both on-the-run and off-the-run securities are robust. On the whole, there is little indication of illiquidity (even in off-the-runs), and the vast majority of bid-ask spreads are quite tight. Second, as issuer, Treasury experiences tremendous continuity between secondary trading levels and the primary auction process. This is true in both continuity of pricing but also the participation of the primary dealers. Finally, the market structure is well functioning. Patterns of flows, sufficiency of trading venues, and the ongoing importance of DtC trading relationships are all sound. The activities of PTFs are notable in size, a topic that I will cover in a moment, but are working on a sustainable and predictable basis.

## **TRACE TREASURY SECURITIES DATA AND AREAS FOR FOCUS AND IMPROVEMENT**

FINRA has undertaken significant efforts to collect TRACE data, and its broker-dealer members have made significant efforts to assist. Both should be commended for the work and effort put into this process.

Trade reporting of Treasury securities transactions is a tremendously large data set – typically composed of in excess of 230,000 reported transactions daily. Due to the complex nature of the Treasury market structure and the increased presence of electronic trading, trading volumes are far above what has been observed in other TRACE-reported segments. This is due in part to single economic trades being reported in multiple legs in many cases as well as the trend in decreasing trade size due to the nature of PTF trading patterns on IDB platforms.

We believe that unique aspects of the Treasury securities market warrant continued enhancements to the existing TRACE data reporting structure to more accurately reflect Treasury transaction pricing and volumes, some of which have already been addressed by FINRA, others of which are ongoing. For example, some broker-dealer firms report as two or more members separately due to historic organizational structure. Likewise, at this initial stage, FINRA only requires reporting Treasury security transactions to TRACE by end of day, leading to a variety of reporting times, with many firms reporting within 15 minutes.

Having said that, let me unpack some areas we have identified as priorities for improvement in the quality of TRACE data for Treasury securities transactions:

- The granularity of timestamps need to be refined due to characteristics of the Treasury market, such as the high frequency nature of electronic trades and the workup. There is a wide range of protocols across reporters and some questions concerning the timestamp methodology employed, including the level of precision;
- Fees are included as part of some prices. For Treasury security trades, these fee add-ons need to be normalized to have meaningful pricing information and trade matching;
- A wide range of off-market trades are included in the data. Some relate to trades with affiliates – an area that needs further review and standardization. Package transactions that incorporate spread trades, for instance, are booked against a “box spread” rather than the current “market price.” There appear to be some data reporting inconsistencies that suggest the need for additional checks and further clarification to reporters to standardize the reporting; and
- Accurately matching trades can be challenging, which is critical to properly size the market. This difficulty is compounded by some of the factors cited above.

Completeness of the data set is also critical. At this time there are two primary areas that can be improved. First, the trading activity of some depository institutions that conduct a government securities business are not reported to TRACE. There are at least three significant trading operations that we know of that fall in this category. As mentioned by Governor Brainard earlier

today, the Federal Reserve Board is proceeding with a plan to request this reporting to TRACE, for both Treasury securities and agency MBS securities, which is a critical step to help complete the data collected by FINRA for these markets.

Second, many PTFs do not report their activity to TRACE because they are not required to be registered with the SEC as broker-dealers and become FINRA members. Beginning in April 2019, large trading platforms operated by FINRA member broker-dealers that facilitate transactions in Treasury securities will be required to identify customers in their reports of Treasury securities transactions to TRACE. Because most PTF activity occurs on electronic IDB platforms, this may capture a large segment of PTF trading volume. The volumes currently are reported by IDB counterparties but can't be segmented at the firm level. Of course, firm specific names and flows would not be publicly disseminated, but the nature of this information is critical for Treasury and regulators to have a more complete picture of market flows at any given point in time.

Also beginning in April 2019 our ability to accurately sequence transactions, and therefore understand the dynamics of the workup, will improve significantly as ATS will be required to disaggregate trades executed within workups. Both these efforts were made possible with the support of SEC and FINRA staffs.

While much work has been completed, we can and must do more. The successful completion of this work, we believe, is and should be a condition precedent to any possible public dissemination of the data. FINRA has been an enthusiastic partner to that end and we appreciate the support of the Federal Reserve Board and the SEC.

## **SUMMARY OF TREASURY'S OUTREACH EFFORTS**

So far I have been focusing on what we learned from analyzing the data. Since my announcement at this conference last year, we have also undertaken a comprehensive outreach effort related to the TRACE data and the Treasury market structure more broadly, which I want to discuss next. First, a little bit about our process and how it was guided by our principle to consider all investor types to help ensure the broadest possible investor base. In all, we met with each primary dealer, every major platform, many major non-dealer liquidity providers, asset managers large and small, hedge funds, pension funds, insurers, foreign central banks and reserve managers and anyone else who volunteered their time and insight. Once again, many thanks to each and every one of you who gave us feedback throughout this process.

We were impressed by the depth and spectrum of views among market participants about the costs and benefits of public dissemination of the TRACE data. Beginning with the general points, market participants broadly agreed that Treasury securities prices are remarkably transparent, particularly when compared with other fixed income markets. However, flow transparency, especially in seasoned securities, remains more limited. This contrast brings to mind the most often articulated central concern of market participants regarding public dissemination of Treasury securities transaction level data, which is that the real value to the market is the flow transparency and that disclosing flows shortly after they occur could have adverse impacts on liquidity as intermediaries attempt to protect themselves by either widening out bid-ask spreads or reducing the size of trading activity they are willing to do with counterparties.

Beginning first with on-the-run Treasury securities, we heard broadly that both price and volume transparency is readily available through proprietary data feeds of IDB activity, while transparency of volumes is more limited in the DtC market. Despite the information asymmetries that currently exist in the on-the-run market, most of those we spoke to agreed that providing greater insight into the DtC market for on-the-runs would not adversely affect liquidity provision. However, some expressed concern that increased transparency into customer order flow in on-the-runs could adversely affect liquidity in both the primary and secondary Treasury securities markets, which clearly is a concern we take very seriously. There is also the general concern about whether greater price and volume transparency in the DtC market would catalyze a transition of the market from the current principal trading model into an agency model and what that would mean for the primary dealers' obligation to bid in all Treasury securities auctions.

When we shifted to off-the-runs or security types other than nominal coupons, opinions about whether or not to publicly disseminate transaction data were far more varied. The high level dynamics of these markets are widely known by market participants, mainly that these markets are dealer-intermediated wherein dealers are expected to and do absorb the risks of their customers' trading flows. For many of the people we spoke to, the current model works quite well because customers are able to get in and out of large positions through their dealer counterparties, who are then able to transfer this risk while minimizing the impact on prices. However, others noted that increased transparency in these markets might improve pricing efficiency for all participants, enable more effective transaction costs analysis, entice new liquidity providers, or reduce market segmentation.

In consideration of these important market differences, we thought it was helpful to frame the question as what would an ideal reporting regime look like if we decided to adopt a policy for data dissemination. Many of the answers we received recommended a model based on the current TRACE dissemination models for other fixed income markets. Many market participants endorsed publicly disseminating full volumes of Treasury securities TRACE data (anonymized) with a significant delay, with significant meaning anywhere from 1- to 12-months, as the data could then be used for trade cost analysis and other post-trade analytical purposes. However, some cautioned that such a full set of data, even with significant time lags, could be analyzed for price signals regarding flows, particularly in off-the-run securities. More real-time reporting generated greater concern and raised important questions about capping the size of the data disseminated.

In dimensioning the appropriate capped trade size, market participants employed their own data, data from trading platforms, and their experience as a guide. Further complicating the question of the optimal reporting regime, is whether or not to vary either caps or delays across Treasury security types owing to different market characteristics. On this question, simplicity rather than complexity was generally seen as more beneficial among those we spoke with, though it was also acknowledged that nominal caps may overlook significant differences in duration exposure.

If we were to summarize all of this feedback into a short list of the costs and benefits of public dissemination, it would go as follows. On the benefits side, the data could reveal greater market depth, it could result in more competitive and homogenous pricing or it could improve end users confidence that the prices they receive reflect best execution in the market. As for the potential costs, public dissemination may reduce liquidity provision for larger trades and less liquid products by intermediaries concerned that other market participants will take advantage of the TRACE reporting after large orders. Most importantly, markets are complex and we must acknowledge that we lack perfect foresight into what all the unintended effects of a policy of public dissemination could be.

## **Slide 7 – Policy for the Public Dissemination of TRACE Data**

In conclusion, improvements to the data and submission process, conforming standards among submitters, improving data quality control, and assuring we have a complete data set are all necessary in order to responsibly develop a policy on TRACE Treasury securities data dissemination. We plan to continue to work towards resolving the data quality issues. Prior to

considering a policy decision regarding the dissemination of transaction level TRACE data, we could consider a cross-section of volume data by security type and transaction venue in aggregated form. This will be one of many layers of possible dissemination that we will consider, prior to deciding whether to release trade level data, to promote increased transparency and market knowledge and awareness, while following our principle to do no harm to the market, which requires a cautious approach.

## CONCLUSION

Over the past year and a half, we've gained tremendous insight into the structure of the Treasury market as a result of receiving TRACE data on Treasury securities transactions. As the deepest and most liquid market in the world, prices for Treasury securities are remarkably transparent around the clock. Meanwhile, precise volume data are not available for all securities at the same level of granularity. Therefore, many of our investors agreed that a policy of publicly disseminating some form of the data to improve volume transparency could enhance secondary market liquidity. However, we also recognize the uniqueness of the Treasury securities market and that the ability of our investors to transact in meaningful size is a critical feature of the market. Therefore, we plan to work towards first fixing the data issues and making the data more complete before considering a policy to disseminate TRACE data. We intend to further improve and analyze the TRACE data as we consider potential options for a policy for dissemination, in particular related to the accuracy of trade prices.

We promise to keep all of you apprised on our progress and we would welcome any feedback at this time. Once again, thank you to the Federal Reserve Bank of New York for hosting this event and to the other IAWG members for their contributions to another successful conference. I'm happy to take any questions or comments at this time.