



**STATE STREET**  
Serving Institutional Investors Worldwide

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Dear Sir/Madam:

As a leader in global custody, asset management and transaction execution services, State Street Corporation is directly interested in the proposed Treasury initiative to redeem portions of its outstanding public debt. Accordingly, attached are our firm's comments to the proposed rules concerning Treasury redemption operations for your consideration.

Due to State Street's significant role in the global fixed income markets, and particularly the US Treasury securities market, our interest in the redemption initiative is that of an active participant. Descriptive information regarding a technological solution for executing Treasury redemption operations is contained within the text of our specific comments and related materials. State Street welcomes the opportunity to meet with officials at the U.S. Department of Treasury and its fiscal agent, the Federal Reserve Bank of New York, to discuss in detail our comments and technology if deemed appropriate.

Thank you for your time and attention concerning this matter.

Sincerely,

  
Andrew Howieson



# **State Street Corporation's Comments On Proposed Rules Covering The US Treasury Department's Marketable Securities Redemption Operations**

## **Introduction**

State Street Corporation (SSC) is a recognized leader in providing investment management, custody and transaction execution services and products to institutions around the world. Through a commitment to client service and product excellence, SSC now has over \$6 trillion of assets under custody, and over \$490 billion in global assets under management. In addition, SSC has developed a unique fixed income trading system called Bond Connect that is based on a proprietary implementation of a combined value call market. Combined Value Trading (CVT) enhances portfolio performance by allowing items with complementary value to be traded as a group. SSC's Bond Connect technology is directly applicable to the Treasury's redemption initiative(s) using existing auction infrastructure, and will result in broad participation and a lower transaction cost for the Treasury. The use of a combined value call auction within a Treasury redemption process will not result in additional administrative or operational burdens for either the Treasury or its fiscal agent, the Federal Reserve Bank of New York.

## **Executive Summary**

The proposed rules establishing procedures and conditions by which the US Department of the Treasury (the Treasury) may redeem outstanding, unmatured marketable Treasury securities should provide for broad participation with minimal transaction costs. As part of the redemption initiative, the Treasury intends to redeem Treasury securities through an auction process in which it will buy some of the outstanding quantities of several issues from the multitude of institutions that currently own them. Unlike primary issuance auctions, in which it is the only seller, the Treasury cannot control the quantity of a security offered for trade in a redemption auction. The Treasury's only price control is to set a reserve price for each issue based on market conditions at the time of redemption. Consequently, an efficient use of any total expenditure requires a redemption auction process in which the quantities purchased of any issue vary depending on the structure of offers submitted for all issues being redeemed.

State Street Corporation (SSC), in conjunction with Bridge Information Systems and the Boston Stock Exchange, has developed and deployed a fixed income trading platform based on combined value trading (CVT) technology developed by Net Exchange, a spinout from the California Institute of Technology. CVT allows participants to express preferences across multiple securities in a single order. State Street holds exclusive rights to apply the CVT methodology in financial markets and Bond Connect is the first commercial application that SSC has introduced to the rapidly evolving business of securities trading. In its deployed form, Bond Connect allows buyers and sellers of fixed income securities to execute combined orders among themselves through a call market process paired with a multi-broker system of clearance and settlement. Bond Connect identifies the efficient trades among the call market participants, and then the traditional broker community formally executes the trades.

SSC believes that the technology employed in Bond Connect is directly applicable to the mechanism by which the Treasury would conduct a redemption auction. Bond Connect's combined value trading technology functions as a call market and is thus already adapted to the mode of operation presently used for Treasury auctions. A combined value call market would allocate purchases among the issues to be redeemed so as to maximize the difference between the Treasury's reserve price and the offers of the tendered securities, all within quantity limits and an overall budget constraint defined by the Treasury. The multi-broker model employed in Bond Connect is easily adapted to a Treasury redemption auction. Trades could be formally processed by the primary dealers through the Federal Reserve Bank's Trading Room Automated Processing System (TRAPS). Liquidity could be further enhanced by direct access for current bond holders and the ability for them to express portfolio values in combined orders.



SSC believes that its combined value trading methodology, as deployed in Bond Connect and/or modified to specific Treasury requirements, offers the Treasury an efficient, proven, and available means of performing redemption auctions. Accordingly, SSC has compiled comments to the proposed rules for its redemption procedures to allow for the execution of a call market with combined value trading. SSC is available to meet with Treasury officials to provide a demonstration of Bond Connect and present the theory and logistics of executing a call market auction with a combined value methodology.

## **Comments on Proposed Rules**

This section details SSC's comments on a rule-by-rule basis. Attachments have been included to provide insight and clarification on particular issues of relevance. Several of the proposed rules are unaccompanied by comments, as they are compatible with our recommended alternative trading system.

### **Subpart A – General Information**

**Section 375.0 What authority does the Treasury have to redeem its Securities?** *No comment.*

**Section 375.1 Where are the rules for the redemption operation located?** *No comment.*

**Section 375.2 What special definitions apply to this rule?** *“combined value trading” means the inclusion of multiple securities within an individual order and enables users to express quantity inter-relationships among securities in the order.*

**Section 375.3 What is the role of the Federal Reserve Bank of New York in this process?** *Include 375.3(f) which provides for and details the role of the Federal Reserve Bank of New York's role in administering the redemption auctions through technology in conjunction with a call market auction and combined value trading methodology. Also include 375.3(g) detailing the calculation of redemption operation results whereby Bond Connect technology will calculate the distribution of trades among the tendered securities and the prices at which securities trade.*

### **Subpart B – Offering, Certifications, and Delivery**

**Section 375.10 What is the purpose of the redemption operation announcement?** *No comment.*

**Section 375.11 Who may participate in a redemption operation?** *A reverse auction mechanism which encourages broad participation of a diversity of institutions will best serve the Treasury's redemption initiative(s). Existing mechanisms for conducting open market operations were largely developed based on a necessity for intermediation among institutional investors and Primary Dealers with communication through telephonic networks. Bond Connect technology allows for optimization of the redemption process by broadening the scope of “submitters” without obstructing the role of the primary dealers. Using this technology, orders may be submitted via a computer terminal and sent directly to a centralized matching engine that would calculate redemption operation results. Each order would designate a primary dealer who has been approved to conduct open market transactions with the Federal Reserve Bank of New York. Expanding the definition and scope of potential submitters will increase liquidity and thereby provide for an efficient redemption operation with equitable access for a diversity of participants.*

**Section 375.12 How do I submit an offer?** *Bond Connect provides a trading platform through which institutional holders of Treasury securities can express their trading values directly. Alternatively, a “tenderer” could arrange for a primary dealer to submit tenders on his behalf. All orders would be routed directly to a server where the combined value matching engine resides. Results of the redemption operation would be transmitted to the Federal Reserve Bank's Trading Room Automated Processing System (TRAPS) immediately upon calculation of redemption results. Bond Connect technology allows for auction tenders to be received up to the second when the call market auction is executed. Connectivity*



through data links to the Fed's back-end computer systems will provide for use of existing risk management and settlements processing systems already in operation at the Fed.

**Section 375.13 What requirements apply to offers?** *All offers must provide complete details of securities to be tendered, including a CUSIP identifier and security description, and par amount of each offer. The Bond Connect system allows submitters to specify prices of individual tenders, along with a capability to package several securities for tender through a combined value order format.*

**Section 375.14 Do I have to make any certifications?** *No comment.*

**Section 375.15 Who is responsible for delivering securities?** *No comment.*

### **Subpart C – Determination of Redemption Operation Results; Settlement**

**Section 375.20 When will the Treasury decide on which offers to accept?** *The combined value matching engine will allocate quantities to submitters and determine prices within 10 minutes of the time the auction is called. Combined value technology is compatible with both discriminatory pricing as in the proposed rule and a single clearing price model as is currently used by the Treasury in primary issuance auctions.*

**Section 375.21 When and how will the Treasury announce the redemption operation results?** *Bond Connect technology provides for notification of accepted orders through an on-line link at the conclusion of each call market auction. Notification of auction results to the general public through a Treasury press release including such information as the amounts offered and accepted, the price at which tenders were accepted, and the remaining privately held amount outstanding should follow the notification provided by Bond Connect. The brief period of time necessary to calculate redemption results implies little market risk to submitters. Relative to more time consuming methods of calculating redemption results, this method will indirectly encourage broader participation and more aggressive (lower) tender offers.*

**Section 375.22 Will I receive any additional information and, if I am submitting offers for others, do I have to provide confirmations?** *As previously stated, Bond Connect provides notification to all redemption operation participants at the conclusion of each call market auction. Formal confirmation procedures may occur at the close of business on the day of each call market auction as deemed necessary by the Treasury and its agents. Confirmation of orders and notices of impending redemption to customers of submitters is the responsibility of each submitter.*

**Section 375.23 How does the securities delivery process work?** *No Comment.*

### **Subpart D – Miscellaneous Provisions**

**Section 375.30 Does the Treasury have discretion in this process?** *The Treasury has discretion in this process through their ability to input buy orders and strategies in a combined value order format. Through this order format, the Treasury may express a range for the total expenditure of the redemption and the degree of flexibility in quantity mixes of securities purchased. Combined value technology would optimize the results of the operation such that the dollar value between all allocated bids and offers is maximized. State Street believes that this methodology speaks directly to the Treasury's goal of creating a mechanism which is efficient for both the Treasury and market participants and leverages existing auction infrastructure.*

**Section 375.31 What could happen if someone does not fully comply with the redemption operation rules or fails to deliver securities?** *No comment.*

## **Summary**

The rules establishing procedures and conditions under which the Department of the Treasury may initiate and execute redemption operations of outstanding, unmatured marketable Treasury securities should be drafted to provide for broad institutional participation, operational efficiency and a lower net cost to the Treasury. Through state of the art technology, Bond Connect's call market auction with a combined value trading methodology will enable the Treasury to redeem outstanding securities at a lower cost and higher level of efficiency than simply using traditional telephonic infrastructure and mechanisms. Additional information has been incorporated through attachment(s) in order to provide a deeper understanding of key concepts enumerated within this document. SSC would welcome the opportunity to provide Treasury officials with both more detailed information on how Bond Connect may be integrated into the redemption process and a demonstration of our technology.

## **Attachments**

- Appendix I. What is Bond Connect?
- Appendix II. Application of Combined Value Trading to Treasury Redemption
- Appendix III. Process Flow of Bond Connect Combined Value Trading



## **Appendix I.**

### **What is Bond Connect?**

Bond Connect is the first full-featured implementation of combined value trading in the securities markets. It is an electronic trading system for fixed income securities with several attributes that distinguish it from other fixed income trading environments: the use of a single price call auction, the ability to execute package or multi-security orders, and the flexibility to trade across a broad spectrum of instruments. Bond Connect currently accommodates treasuries, agencies, domestic corporates, mortgage-backed and asset-backed securities in a single electronic market.

Bond Connect is a single price call auction in which buy and sell side participants are brought together at a single point in time. In a call market, participants submit orders prior to a designated time when the auction is 'called'. Trades are then sought among all orders simultaneously and each security is cleared at a common price. This process can result in price improvement – an outcome better than the submitted order value.

Bond Connect is the only fixed income trading system that can execute 'package' or combined value orders. By creating package orders, a trader expresses his combined value for a group of securities. Combined value trading bridges the disconnect between portfolio values and a market structure in which single security trades are effected serially.

A trader may choose a high degree of anonymity when submitting an order. Because of this feature, a trader need not be concerned that order details will create negative market impact prior to execution. Participants can reflect their true willingness to trade, resulting in greater liquidity among participants.

Combined value trading, call market processing and anonymous order entry provide traders with incentives to enter their true quantity and price. While other electronic trading systems automate existing practices, Bond Connect represents a new marketplace that realizes efficiency and liquidity missed by the conventional market by applying technology to a new business model for trading and portfolio strategy implementation.

Bond Connect is a State Street product that was developed in collaboration with Net Exchange and Bridge Information Systems. Net Exchange developed the matching engine in Bond Connect and is a spinout from the economics group at the California Institute of Technology. BRIDGE developed the graphical user interface and provides the distribution network for Bond Connect. Bond Connect is presently operating in the United States as an SEC authorized ATS operating through a wholly owned subsidiary of the Boston Stock Exchange.

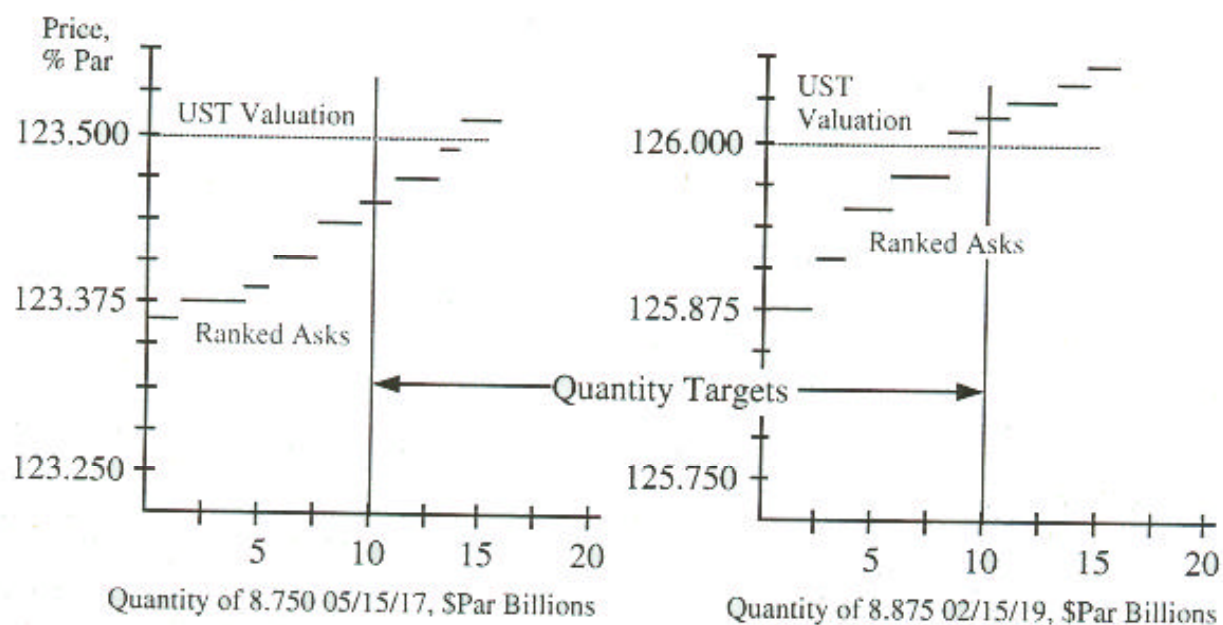
Bond Connect has received a wonderful reception in the marketplace. The majority of institutions introduced to Bond Connect have been enthusiastic about its format and capabilities. The product is distributed over Bridge Telerate Plus terminals and completely integrated with other Bridge fixed income applications. Industry experts from academia and market study groups have touted the benefits of combined value trading as an excellent means of implementing portfolio strategies and executing transactions.



## Appendix II. Application of Combined Value Trading to Treasury Redemption

If the U.S. Treasury (UST) wants to spend \$X billion buying back quantities of N issues, then the UST's preferences for how much of each issue it purchases depend on the absolute and relative prices the UST ends up paying. Because the UST cannot control the quantity or prices of offers submitted to at Buy Back Auction, efficient expenditure of the \$X billion requires the UST to implement a Buy Back Auction process that determines trades across all the issues, rather than issue by issue. An algorithmic process that accomplishes this quickly and relative to a set of well defined rules is in the interests of both the UST and the bond holders. A combined value call market is such a process.

As an example, consider a two bond Buy Back Auction in which the UST's initial target plan is to buy back \$10 billion face of two issues, 8.750 05/15/17 and 8.875 02/15/19. Privately, the UST evaluates the worth of these two issues at 123.500 and 126.000, respectively. A Buy Back Auction is announced and the asks shown in Figure 1 are submitted to the UST.



**Figure 1. Bids and Ranked Asks for a 2-Bond Buy Back Auction**

Given the structure of asks across both issues, it may be completely acceptable to the UST to redeem more of 8.750 05/15/17 and less of 8.875 02/15/19. A combined value call market process allows the UST to express its tradeoffs among various outcomes for both bonds so that the traded quantities represent the best match with the UST's combined value for redeeming debt across both issues.

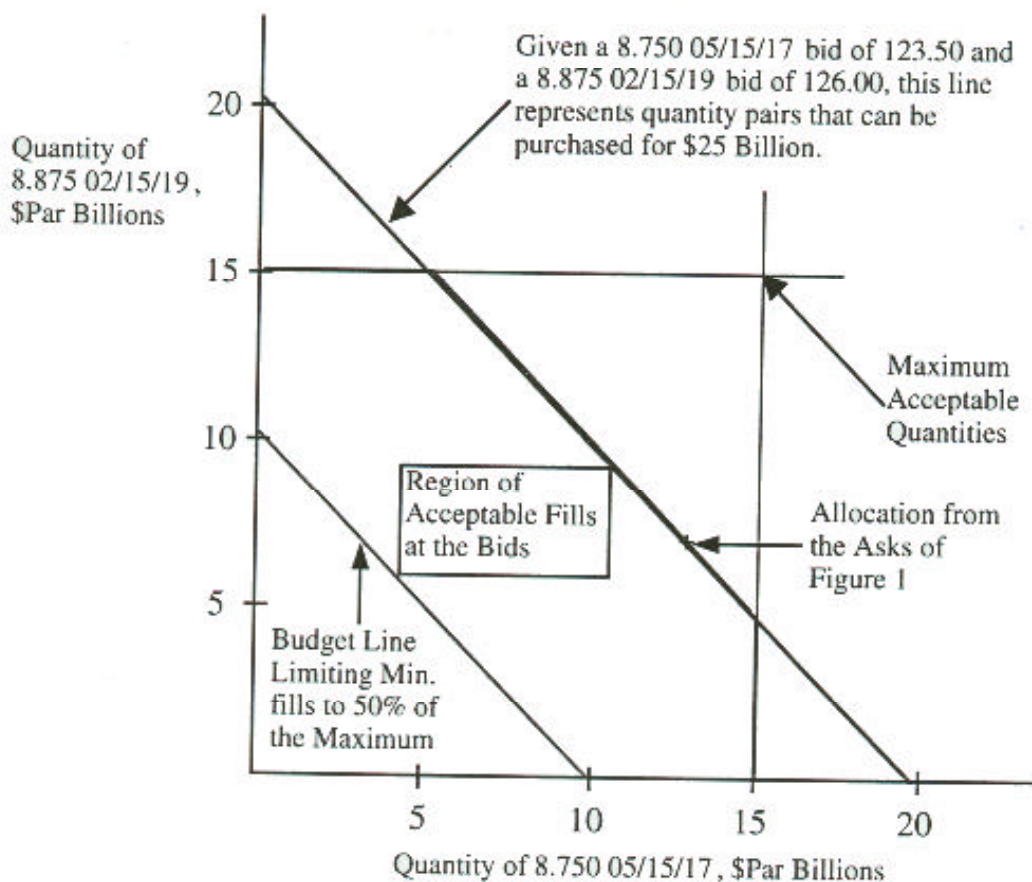
Figure 2 illustrates the construction of a two bond combined value order for the two issues that expresses the following combined trading preferences:

1. The UST wishes to redeem \$25 billion worth of 8.750 05/15/17 and 8.875 02/15/19, given private valuations of 123.50 and 126.00, respectively.
2. At these private valuations, the UST is unwilling to redeem less than \$12.5 billion across both issues.
3. The UST does not want to buy more than \$15 billion face of either issue (maximum quantity limits can be different for each bond).

Like a standard call market, a combined value call market determines the orders that trade by maximizing the gains from trade between buy and sell orders, this process is simply expanded across all items interconnected by combined orders. In the case of the UST Buy Back Auction bid of Figure 2 and the asks



of Figure 1, the allocation is that show in Figure 2. This outcome is arrived at quickly without the sort of human discretion that might cause bond holders to hedge their offers.



**Figure 2. Asset Flexible Combined Value Order for a 2-Bond Buy Back Auction**

The value to the UST of employing a combined value call market approach is independent of the pricing approach used (so long as the same approach is used for both the single item and combined value call approaches). Whether discriminatory pricing or marginal ask pricing is used, the allocation superiority of the combined value call market compared to item by item call markets will be maintained. Of course, under discriminatory pricing the ask profiles of Figure 1 will be flatter than under marginal ask pricing due to the incentive effects of the sellers knowing for certain that, should they trade, they will receive what they ask.

The coordination problem faced by the UST regarding the aggregation of supply and the efficient selection among this aggregation is solved through the use of combined value orders; however, in the structure proposed by the rule, two sources of coordination concern remain among the bond holders and the primary dealers.

1. The requirement that the primary dealers corral binding supply commitments prior to the Buy Back Auction.
2. The inability to meaningfully convey any combined values held by the bond holders, values that were they 'brought to market' would improve the outcome for the UST.

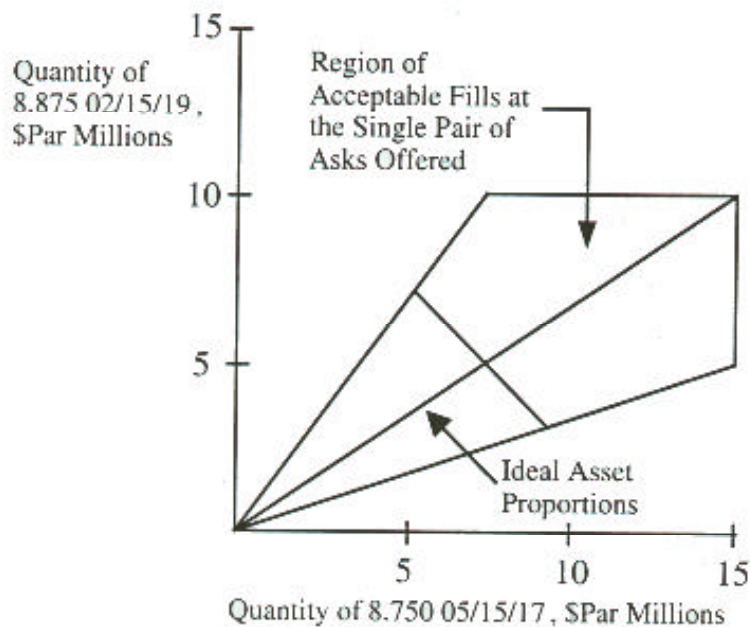
The first coordination concern can be solved by allowing direct participation by the bond holders through the means of a distributed order submission process and a multi-broker credit, clearance, and settlement system. The primary dealers (and, potentially, other brokers) would stand behind every order as the prearranged credit brokers of the bond holders, but their role would be limited to processing those orders that ended up trading in the Buy Back Auction. All order formulation and submission tasks would be the



responsibility of the individual bond holders through the use of a Buy Back Auction graphical user interface operating on a PC in their offices and networked to the Buy Back Auction server.

As for the second coordination concern, some bond holders may not just be interested in selling a specific quantity of a single issue -- their portfolio interests cause them to prefer a balanced draw down of their zero-risk bond holdings. Such bond holders would offer the UST a slightly better deal were they able to submit a combined sell order rather than having to submit a series of single bond orders, some of which might not trade, leaving 'holes' in their portfolios.

Figure 3 illustrates a combined value order format that emphasizes portfolio balance, or asset mix rather than budgetary impact, which was the principal emphasis of the order format of Figure 2. Figure 3 is a sell order for both bonds, \$15 million face of 8.750 05/15/17 and \$10 million face of 8.875 02/15/19. The minimum fill and the extent of proportional discretion are parameters set by the bond holder.



**Figure 3. Asset Inflexible Sell Order, 50% Minimum Fill, 50% Proportional Discretion**

In an combined value Buy Back Auction, if the UST wanted to buy back some of four issues, it might submit one asset flexible order such as Figure 2 for all four. Among the bond holders, some would submit sell orders for pairs, some triplets, a few for the quartet, and others might just submit single bond orders. The multi-bond sells could be asset flexible (Figure 2) or asset inflexible (Figure 3). The combined value call market envisioned identifies the allocation, from among such a set of orders, that maximizes gains from trade.

Generally, there is no reason that the UST could not employ asset inflexible orders. Further, the UST may be able to express multiple bid, quantity, and asset flexibility combinations across issues such that the UST could construct multiple acceptable Buy Back orders. These orders could be placed in an OR group – the combined value call market will identify the one order in the OR group that maximizes gains from trade.

To most effectively encourage bond holders to bid their combined values, marginal ask pricing is suggested rather than the discriminatory pricing proposed in the rule, although the process can be operated with discriminatory pricing.



# Appendix III. Process Flow of Bond Connect Combined Value Trading

