

## The Development of the Government Securities Clearing Corporation

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The U.S. Government securities marketplace is one of the largest and most liquid securities market in the world.<sup>1</sup> It is arguably the world's single most important financial marketplace, from which all interest rates are derived globally.

Surprisingly, the Government securities marketplace was one of the last major securities marketplaces to receive the benefits of centralized clearance and settlement services, which did not develop until the late 1980s. This article reviews the development of such services, through the formation of the Government Securities Clearing Corporation (now the Government Securities Division of the Fixed Income Clearing Corporation, a subsidiary of The Depository Trust & Clearing Corporation).

### The Government Securities Marketplace in the 1980s

Before the 1980s, in spite of the fact that it was essentially unregulated,<sup>2</sup> the Government securities marketplace had been thought of as transparent, efficient, and safe. During the first half of that decade, however, there occurred a number of failures of Government securities dealers, including those involving Bevill, Bresler & Schulman Asset Management Corporation, Drysdale Government Securities, E.S.M. Government Securities Inc., and Lombard-Wall Inc. This led to Congressional hearings in 1985 on the safety of the marketplace. What ultimately resulted was the signing by President Reagan of the Government Securities Act of 1986 ("GSA")<sup>3</sup>, which, among other things, provided for the registration of Government securities brokers and dealers.

The timing of the enactment of the GSA, together with the ending by the Treasury Department in 1986 of issuances of registered debt (in other words, by then, all Treasury securities were issued in book-entry form) converged with the

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<sup>1</sup> "Many people do not realize that the U.S. bond markets dwarf the stock markets in size, with respect to both outstanding securities and volume of transactions." Testimony of Micah S. Green, President, The Bond Market Association, before the U.S. House of Representatives Committee on Financial Services Subcommittee on Capital Market (Hearing on the GAO Report on Recovery and Renewal Efforts Post-September 11, February 12, 2003).

<sup>2</sup> The Securities Act of 1934 ("SEA") specifically exempted U.S. Government securities from its key provisions.

<sup>3</sup> Pub. L. No. 99-571, 100 Stat. 3208.

establishment of the Government Securities Clearing Corporation (or “GSCC”). The enactment of the GSA laid an important legal foundation for the formation of GSCC in at least two respects. First, the GSA amended the definition of “exempted security” in the Securities Exchange Act of 1934 (the “Exchange Act”) to include a new section stating that “government securities shall not be deemed to be ‘exempted securities’ for the purposes of section 17A”.<sup>4</sup> Consequently, the GSA required the registration of any entity seeking to perform the role of a clearing agency for Government securities, and granted the SEC jurisdiction over such clearing agency activity.<sup>5</sup>

Also, the GSA laid an important legal foundation for the successful operation of a Government securities clearing agency by extending federal regulation of the Government securities marketplace to many of the prospective participants in such a clearing agency, such as Government securities brokers, Government securities dealers and depository institutions. This broad extension of federal regulation greatly facilitated the ability of a Government securities clearing agency to build and maintain the comprehensive risk management system that would be essential for its successful operation.

The idea for GSCC arose in the mid-1980s, as Government securities trading volume increased and the Federal Reserve, the Public Securities Association (“PSA”, now “The Bond Market Association” or “TBMA”), and various large market participants became concerned with the safety and soundness of the process for the clearance and settlement of Government securities. The particular issues that they raised included the risks associated with the potential failure of a major firm and the inefficiencies of manual paper processing of trade confirmations and trade-for-trade settlement.

The Fed also had several concerns, including with the large and increasing levels of intra-day credit extensions, or “daylight overdrafts”, on the

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<sup>4</sup> See Section 102(a) of the GSA. Section 17A of the SEA (National System for Clearance and Settlement of Securities Transactions), among other things, directs the SEC to use its authority to facilitate the establishment of a national system for the prompt and accurate clearance and settlement of transactions in securities other than exempt securities.

<sup>5</sup> A registered clearing agency typically performs at least three basic functions:

1. Comparison: the process of matching or recording the terms of each side of a transaction. Attendant to a comparison service usually is the ability to correct or resolve differences in reported trades.
2. Clearance: the process of preparing compared trades for settlement. This can take several forms, from the most basic (to simply produce individual receive and deliver instructions for each trade matched) to sophisticated (to net all deliver and receive obligations in each security on a continuous basis).
3. Settlement: the actual exchange of securities and funds.

Fedwire, as well as the frequent delays in the closing of Fedwire and the bunching of deliveries within peak “traffic periods”<sup>6</sup>.

Around 2:30 p.m. in the afternoon of each business day, it had become standard practice at many Government dealer firms to hold large deliveries for which they had received only part of the required securities (e.g., \$150,000,000 to make a \$200,000,000 delivery) until five minutes before the latest announced close. The Federal Reserve Bank would, as it does now, announce at least five minutes prior to a scheduled close whether or not it was going to extend. If the wire was not extended, the firms would either try to borrow securities to make the larger delivery or make smaller deliveries to minimize their negative fails. This practice helped lead to congestion on the FedWire late in the day as dealers made last-minute deliveries.<sup>7</sup>

The Fed also had a long-standing concern, dating back at least to the failure of Drysdale Government Securities in May 1982, with the risks arising from Government securities trading.<sup>8</sup>

### Formation of GSCC

In May 1986, at the suggestion of several of its participants that were primary dealers, the Board of the National Securities Clearing Corporation ("NSCC") established a Government Securities Committee to consider applying NSCC's expertise in automated comparison and netting to the Government

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<sup>6</sup> On December 12, 1986, at a PSA Conference on Regulation of the U.S. Government Securities Markets, Cathy Minehan, Vice President of the Electronic Payments Function at the New York Fed (later to become the President of the Federal Reserve Bank of Boston), reported that the settlement of Treasury securities was a significant portion of total transfers on the FedWire, and that, in 1986, the average closing time of the FedWire was 4:30pm, two hours later than the established closing time.

<sup>7</sup> Indeed, in January 1988, in an attempt to reduce risk and even out the flow of traffic on the FedWire, the Fed instituted a maximum limit of \$50 million per Government securities transaction. But this measure did not significantly alleviate the problem. Thus, market participants became concerned that the Fed would further react by imposing strict debit cap requirements.

<sup>8</sup> The failure of Drysdale Government Securities had enormous implications for the marketplace. Prior to that, it was common practice in the repo market to ignore the value of accrued interest in pricing repos using coupon-bearing securities. This practice enabled Drysdale to acquire a substantial amount of undervalued securities, despite its limited capital base. Drysdale used the securities it had reversed in to make short sales to a third party for an amount that included the accrued interest. Using the surplus cash generated, Drysdale was able to raise working capital and to make interest payments to its other repo counterparties. This strategy worked until May 17, 1982, when cumulative losses on Drysdale's interest rate bets caused it to be unable to pay the interest on securities it had borrowed. As a result of the weaknesses exposed by the Drysdale matter, full accrual pricing, in which accrued interest is included in full in the initial purchase and resale prices, was adopted as standard market practice. Stephen A. Lumpkin, Repurchase and Reverse Repurchase Agreements (Federal Reserve Bank of Richmond 1998)

securities market.<sup>9</sup> In doing so, the NSCC Board took note of the fact that many of the concerns expressed regarding the Government securities marketplace were not dissimilar to those faced and resolved by NSCC in the corporate and municipal securities markets. Subsequently, the NSCC Board created a more broadly representative “Ad Hoc Committee on Clearance of Treasury Securities”, which included representatives from each of the major industry groups in the Government securities market -- primary dealers, interdealer brokers, and clearing banks.<sup>10</sup>

In September of that year, the NSCC Board approved the establishment of GSCC as a wholly owned subsidiary, capitalized with \$1 million. On October 28, 1986, the Government Securities Act was signed into law. Weeks later, on November 18, 1986, GSCC was incorporated under the New York Business Corporation Law. At its December 11, 1986 meeting, the NSCC Board selected the first Board of Directors, and officers, of GSCC.<sup>11</sup>

In December 1987, a private placement of GSCC shares began, with about 81 percent of GSCC’s shares ultimately being sold to 44 participant firms (the rest of the shares were retained by NSCC). By May of the following year,<sup>12</sup>

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<sup>9</sup> NSCC, an SEC-registered clearing agency, had been formed in 1977 as a result of the merger of the clearing corporations of the American Stock Exchange, the New York Stock Exchange, and the National Association of Securities Dealers. Now a subsidiary of The Depository Trust & Clearing Corporation (“DTCC”), NSCC is the nation’s largest provider of post-trade processing, clearance and settlement services for equity, corporate and municipal security, unit investment trust, and mutual fund transactions to the broker/dealer, bank and mutual fund communities.

<sup>10</sup> William Tierney of Salomon Brothers Inc. was Chairman of the Ad Hoc Committee. Its other members were: William Aimetti of Citibank Investment Services, James Avena of Cantor Fitzgerald Securities Corporation, Richard Blum of First Chicago Corporation, Jeremiah Callaghan of Bear, Stearns & Co., Nicola Caporale of Goldman Sachs & Co., Peter Gall of Discount Brokerage Corporation, Edward Geng of Fundamental Brokers Inc., David Kelly, President of NSCC, Herbert Levitt of Spear, Leeds & Kellogg; Gerard Lynch of Morgan Stanley & Co., Inc.; Peter McKay of RMJ Securities Co.; Charles Moran (who in April 1987 would become the first President of GSCC) of Manufacturers Hanover Trust Company; Ronald Readmond of Alex Brown & Sons, Inc.; William Riley of The First Boston Corporation; Howard Shallcross of Merrill Lynch Government Securities; Stephen Tilton of Garban, Ltd.; Ronald Upton of Irving Trust Company; Robert Van Kirk of SIAC; Roy Whitaker of Bank of America; and Roseanne Witmer of The Bank of New York.

<sup>11</sup> The members of the first GSCC Board were taken from the Ad Hoc Committee. Mr. Tierney was named the Chairman of the Board. Messrs. Kelly, Levitt, Lynch, Moran and Readmond were the other Board members. Mr. Kelly also was named Vice Chairman and CEO. Thomas Costa, who was the first full-time employee of GSCC and the individual most integral to its formation and ultimate growth and success, was named First Vice President. Finally, Robert Woldow, who was General Counsel and Secretary of NSCC, was named General Counsel, Secretary, and Treasurer of GSCC.

<sup>12</sup> On March 14, 1988, the Legal Advisory Services Division of the Office of the Comptroller of the Currency issued a letter holding that the proposed acquisition of GSCC shares by a national bank is permissible. On April 18, 1988, the Board of Governors of the Federal Reserve System ruled that bank holding companies may invest in the voting shares of GSCC without the filing of an application under the Bank Holding Company Act, provided that no bank holding company acquires more than five percent of such shares. On June 8, 1988, the New York State Banking

13,800 Class A shares, and 7,000 Class B common shares had been sold to eligible participants for \$10.4 million. Also in May 1988, the SEC granted GSCC temporary registration as a clearing agency.<sup>13</sup> On August 31, 1988, the first participant shareholder Board of Directors of GSCC was elected. It was a 15-member Board comprised of representatives of six primary dealers, three inter-dealer brokers, and three clearing agent banks, plus a management director (GSCC's President) and two "NSCC Designated Directors".<sup>14</sup>

### Launch of the Comparison System

GSCC's operations began on August 26, 1988 when its Comparison System – which provided for the reporting, validating and matching of the buy and sell sides of a securities transaction – was implemented. GSCC began to match, in an automated fashion, the next-day and future-settling Treasury and Agency trades of 30 participants, with the comparison of trade data being deemed to have occurred when a report of the comparison of such trade was made available by GSCC to members.<sup>15</sup>

The system supported CPU to CPU transmission and machine readable input and output, plus print-image output. While the system was built to support real-time interactive comparison, these capabilities would not be utilized for over a decade. When-issued trades executed on a yield basis had to be submitted

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Department issued a letter approving the application filed on behalf of several State banks for authorization to invest up to \$250,000 in the capital stock of GSCC.

<sup>13</sup> The SEC took note of the fundamental change in the Government securities market regulatory environment in its May 24, 1988 order granting GSCC temporary registration as a clearing agency (Release No. 34-25740). The SEC observed that, pursuant to the GSA, all government securities brokers and dealers are subject to registration, examination and financial regulatory requirements. In footnote 21 of the order, the SEC linked this regulatory expansion to the newly-required registration of government securities clearing agencies as follows:

"The [GSA], among other things, authorizes and directs the Secretary of the Treasury to issue financial responsibility, recordkeeping, and financial reporting and audit rules. The Secretary also must regulate the possession and control of customer securities and funds. The law requires clearing agencies that provide centralized clearance and settlement services in Government Securities to register with the Commission under Section 17A of the [Exchange] Act and requires dealers and brokers that were previously unregulated to register with the Commission and to join either an exchange or a registered securities association."

<sup>14</sup> The initial 14 directors (the second NSCC-Designated Director -- Andrew Threadgold of JPMorgan Securities Inc. -- was named at the December 7, 1988 Board meeting) were Jorge Brathwaite of The Bank of New York; Allen B. Clark of Manufacturers Hanover Trust Company; Frank Cuoco of Garban; Herbert Friedman of Salomon Brothers; Peter Gall; Edward Geng; David Kelly; Bruce Lakefield of Lehman Brothers; Leonard Monteleone of RMJ Securities; Charles Moran; Alexander Neamtu of Morgan Stanley; Howard Shallcross of Merrill Lynch; and Ronald Upton. At the January 1989 GSCC Board meeting, Mr. Lakefield was elected Chairman of GSCC, a position he held until 1994.

<sup>15</sup> In 2000, when GSCC had moved to a real-time trade matching environment, the time of comparison effectively was moved from end of day to minutes after execution of the trade.

two times -- pre-auction at execution and the day after auction date with actual price and final money. By a rule filing that was approved by the SEC on February 22, 1989, GSCC comparison output was established as constituting the final and binding evidence of a correctly matched trade.

The Comparison System, as well as GSCC's subsequent Netting System, was developed by SPC Software Services, a subsidiary of Security Pacific.<sup>16</sup> The netting software, which was based on the "SPEED" system used by Security Pacific National Trust Company (SPNTCO) to clear Government securities on a book-entry basis, was dubbed "IONS", for Industry-Owned Netting System.<sup>17</sup> The Securities Industry Automation Corporation ("SIAC") was retained to manage GSCC's hardware and communications facilities.<sup>18</sup>

The introduction of a centralized, automated comparison system was of critical importance to the industry. Prior to then, trades in Treasury securities (which were and continue to be largely done for settlement on the next business day) among dealers and brokers were verbally confirmed between the parties on trade date, with written confirmations to follow only on the next day.<sup>19</sup> The Comparison System eliminated the need for such physical confirmation; this brought more certainty, greater efficiencies, and lower costs to the comparison process. It also eliminated risk by providing for the easy resolution of trade data differences. As one participant indicated:

The GSCC comparison [system] has reduced our operational cost by an estimated \$100,000 a year and has increased our efficiency. We now process the computer information you make available and distribute reports to our traders before 7 a.m. These reports outline the compared and un-compared trades at our internal trading account level. As a result, the traders resolve previous day's difference before the opening of trading.<sup>20</sup>

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<sup>16</sup> Peat Marwick, an accounting firm, was retained to assess the functional, technical and environmental aspects of the proposed system. Peat Marwick concluded that the system would be able to handle GSCC's volumes as projected for at least the next five years.

<sup>17</sup> The SPEED system, which was also licensed to another clearing bank (Irving Trust Company) at the time, allowed customers to electronically control the movement of cash and securities and obtain real-time information about their positions. Customers that had a credit relationship with SPNTCO could also use SPEED to help finance their trading activities.

<sup>18</sup> SIAC contracted with Digital Equipment Corporation for the hardware required to run the system.

<sup>19</sup> Representatives of the Operations Departments of the various brokers and dealers would physically exchange paper confirms at a facility provided by Bankers Trust Co. -- the "Banker's drop" -- and immediately bring these back for comparison to their records in the hope of identifying any problems before the opening of the Fedwire or, more importantly, before any market-moving news affected a trading decision based on a faulty position.

<sup>20</sup> Letter of February 21, 1989 from Alexander Neamtu, Principal, Morgan Stanley & Co. to Charles Moran.

The Comparison System was successful from the start, with a daily average of over 16,000 sides being compared by December 1988 (and over 24,000 sides being compared on November 9, 1988, the record date for that year) and an average comparison rate by December of 94%. Comparison System participation grew rapidly in 1989, to 56 members by year-end with a record volume on August 11 of \$258.5 billion (representing over 34,000 sides).

The capabilities of the Comparison System also grew rapidly. “As-of” trades (trades compared on or after their scheduled settlement date) were made eligible for comparison in March 1989.<sup>21</sup> Trade cancellation and replacement features were added in May 1989.

### Commencement of Netting

The Comparison System was a prelude to a more ambitious initiative, the Netting System. On July 7, 1989, after months of planning, programming, testing and training on the part of GSCC staff and member firms<sup>22</sup>, the Netting System was implemented.<sup>23</sup> GSCC’s Netting System is a system for the aggregating and matching of offsetting deliver and receive obligations resulting from netting members’ trades, in order to establish a single net settlement position for a member’s activity in each CUSIP.

Netting in its essence is math. For a member’s activity in a particular CUSIP, all the buy activity (later to also include auction award, reverse repo start leg and repo close leg activity) par amounts that reflect the creation of a long obligation are added, then all sell activity (later to also include repo start leg and reverse repo close leg activity) par amounts that reflect the creation of a short obligation are added; the difference between these two totals is the member’s net long or short position for the CUSIP. (Thus, there is complete fungibility between buys, sells, auction awards and repos for settlement netting purposes.) Once the net settlement position is established by GSCC, the identity of the underlying trade activity is lost for clearance and settlement purposes.

GSCC nets on a multilateral basis, meaning that netting members are fungible and indistinguishable for netting purposes. The netting is done with a full guarantee of settlement for each net settlement position established. Once

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<sup>21</sup> Comparison of “as-of” trades commonly is done for audit trail purposes.

<sup>22</sup> GSCC began distributing test output to participants during April and, in conjunction, held training classes for participant operations and system personnel.

<sup>23</sup> GSCC had announced on June 22 that July 7, 1989 would be the implementation date for the Netting System, but the necessary regulatory approvals were obtained virtually at the “last minute”. In the morning of July 7, at a meeting of the Board of Governors of the Federal Reserve System, and after a presentation by Ernest Patrikis, General Counsel of the New York Fed, the Board determined that GSCC’s proposed operating rules for the Netting System were consistent with its risk reduction policies. That afternoon, the SEC issued an order approving the extensive rules governing netting, settlement, and related risk management. For the author, who was Associate General Counsel of GSCC at the time, it was a nerve-wracking day.

the trade enters the net, GSCC becomes, through “novation”, the effective counterparty to each trading party for credit and settlement purposes. In other words, all of a member’s obligations, such as to pay money and deliver or receive securities, that were established as the result of its trade with a counterparty member are terminated and replaced by similar obligations to and from GSCC.

After net settlement positions have been determined, on the night before scheduled settlement date, resultant receive and deliver obligations are established. Each business day, GSCC establishes and reports by CUSIP and by product for the trades of netting members, in a manner that preserves anonymity, net settlement positions and deliver and receive obligations. GSCC interposes itself between all receive and deliver obligations so that a long position represents securities that the member will receive from GSCC, while a short position represents securities that must be delivered to GSCC by the member.<sup>24</sup>

Net settlement positions (including fail and forward ones) and any resultant deliver and receive obligations of a netting member are fixed and guaranteed by GSCC at the time that the report of such positions and obligations is made available by GSCC to the member.<sup>25</sup> At that time, all deliver, receive, and related payment obligations between members that were created by the trades that comprise the net settlement positions are terminated and replaced by the settlement obligations issued by GSCC. GSCC does not unwind positions that it has netted and guaranteed.

Twenty firms, including 3 inter-dealer brokers, participated, with the most current four-year Note being the first issue netted.<sup>26</sup> The necessary clearance,

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<sup>24</sup> Settlement of netted positions is done through GSCC’s settlement process. There are three basic underpinnings of that process: (1) every securities delivery, whether to or from GSCC, is made against full payment, (2) GSCC does not “build a box” during the day; rather, deliveries that come into GSCC ordinarily are instantaneously redelivered to another netting member (i.e., all movements are in a pre-bound status), and (3) all settlements are made over the Fedwire (or intra-bank); therefore, finality of settlement is obtained at the time of the securities movement. Deliver and receive obligations are satisfied through delivery to and receipt from clearing banks designated by GSCC. All deliveries and receipts must be made against simultaneous payment or receipt in Fed funds at that day’s system value for the obligations. (System value equals the par value of securities multiplied by their system price plus interest accrued to date; the system price is the uniform price established by GSCC for each CUSIP, based on current market value).

<sup>25</sup> At the outset of the Netting System, that time was around 2:30 a.m. on the following morning; now it is about 10:30 p.m. on the night of comparison.

<sup>26</sup> The three brokers were RMJ Securities Corporation., Garban Ltd., and Cantor Fitzgerald Securities Corporation. The 17 dealers were Carroll, McEntee & McGinley; Daiwa Securities America; Discount Corporation of New York; Dillon, Read; The First Boston Corporation; The First National Bank of Chicago; Goldman, Sachs; Kidder, Peabody; Kleinwort Benson Government Securities; Merrill Lynch Government Securities; Morgan Stanley; Nikko Securities; Nomura Securities International; Prudential-Bache Securities; Salomon Brothers; Smith, Barney, Harris Upham; and Yamaichi International (America).

settlement, custody (for margin) and financing services were provided to GSCC by SPNTCO (for Notes)<sup>27</sup> and The Bank of New York (for all other products).<sup>28</sup>

The introduction of the GSCC Netting System had enormous implications for the Government securities marketplace. The operational savings to members, particularly the brokers, were quite significant.<sup>29</sup> It also ensured the safety and soundness of the overall settlement process, and brought to that market, for the first time, the significant risk protections that stem from multilateral netting of obligations by novation (with GSCC assuming the position of counterparty on all trades for settlement purposes) and daily margining and marking-to-market (taking into account accrued interest) of the net settlement positions of each netting member. Also, GSCC imposed on its members the discipline of having to meet various financial, operational, and other standards for admission to and continuance in the system. Moreover, GSCC put in place a centralized loss allocation procedure for handling the insolvency of a member (which procedure, fortunately, has never been needed).

During the initial weeks of the netting operation, eligible securities were limited to newly issued Treasury Notes, allowing participants time to acclimate themselves to the process. The first Treasury Bond (the August 30-Year) was added to the system in September. Product eligibility grew rapidly. By January 1990, all non-Zero Treasury securities were eligible for the net (and there were

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<sup>27</sup> In 1992, SPNTCO's parent was merged into Bank of America National Trust and Savings Association ("BOA"). BOA subsequently determined, for risk reasons, to exit the clearing business. SecPac continued to operate and provide clearance services for two years after Bank of America (which had acquired SecPac earlier) announced that it was planning to exit the business, in order to facilitate the smooth, seamless conversions of its customers to other clearing banks. Interestingly, NSCC/GSCC considered buying SPNTCO at that time, in order to allow non-banks to have direct access to Fed services. A myriad of issues prevented this, including NSCC and GSCC becoming subject to the Bank Holding Company Act, lack of sufficient capital, and intraday overdraft and overnight credit considerations.

<sup>28</sup> In the early years of GSCC, there was discussion with the Fed and the Treasury of GSCC not having to be in the business of moving securities, which requires its use of an additional intermediary -- a clearing bank. GSCC argued that the most efficient and least risky scenario for settling Government securities would have GSCC issuing settlement balance orders directly to the Fed, through a GSCC account at the Fed. No Fed intra-day credit would be required by GSCC. Apparently, this idea was never seriously considered by the Fed.

<sup>29</sup> As stated in an internal Chemical Bank publication called the "Data Bank" regarding the benefits of GSCC:

Everybody wins. GSCC members are happy because netting eliminates the labor-intensive, time-consuming, and error-prone process of manual comparison. Accuracy levels have greatly improved, lowering a major risk factor...Here at Chemical, Operations staff have witnessed a drop in the volume of buy and sell "deliveries", which is "particularly dramatic on our most active day," says Kyle Conselyea, who managed the GSCC project...The common practice of holding onto outgoing deliveries until closing time--and the ripple effect that had on the subsequent task of "proving" -- meant that overtime was a fact of life. Now his staff gets to go home at 5:00. "I don't know when I last paid overtime," Conselyea reports.

34 netting participants.) In April 1990, the scope of the Netting System was expanded to encompass all forward-settling trades (that were scheduled to settle within 15 days of execution) of netting members in Treasury securities. The following month, the quarterly Treasury refunding was encompassed within the net for the first time, and in July 1990, Agency securities become eligible for the net. On February 1, 1991, zero-coupon securities were made eligible for netting. By the end of 1991, GSCC was processing on average each business day over 20,000 sides, worth over \$150 billion.

### Impact of the Salomon Brothers Scandal

In August 1991, Salomon Brothers Inc. admitted that it had seriously violated U.S. Treasury auction rules by submitting fraudulent bids a year earlier. It managed to avoid an indictment but, after paying \$290 million in fines, Warren Buffett took control of the company, and a number of senior executives resigned, including Chairman and CEO John Gutfreund.<sup>30</sup>

The Salomon Brothers scandal had significant implications for GSCC and the Government securities marketplace. By the early 1990s, the inter-dealer brokers (“IDBs”), who formed the core of this over-the-counter marketplace, found themselves in an untenable economic position because of severe cuts in commission rates in previous years. These cuts were caused by primary dealer pressure, including actions such as the formation of Liberty Brokerage Inc., which was owned by various primary dealers. To make up for lost commission income, the IDBs sought to “go national” and expand their customer base beyond primary and aspiring primary dealers.

In late 1991, four inter-dealer brokers -- FBI, Garban, Liberty and RMJ -- announced that they would expand access to their screens to non-primary dealers that are GSCC netting members.<sup>31</sup> This action had been untenable before the Salomon Brothers scandal, as a primary dealer would not continue to do business with a broker that might match it against a “second-tier” dealer on a blind basis. The inter-dealer brokers, taking advantage of the post-scandal climate (and the intensified scrutiny of primary dealer actions), adopted the standard of status as a GSCC netting member as an objective means of expanding their customer base beyond the primary dealer community. The first non-primary dealer to receive broker screens was The Chicago Corporation (on October 28, 1991), followed by Continental Illinois Bank.<sup>32</sup>

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<sup>30</sup> The firm was sold to Travelers Group in 1997 and is now owned by Citigroup.

<sup>31</sup> At the time, there also was a category of “aspiring primary dealer”, which was treated as a primary dealer for these purposes. The one aspiring primary dealer was Eastbridge Capital.

<sup>32</sup> Certain primary dealers were vocal in their opposition to this development, voicing credit concerns. GSCC’s position was that this was a positive development for a number of reasons, including enhanced market liquidity and transparency. GSCC also emphasized that, if a non-primary dealer that has inter-dealer broker screen access fails, the primary dealers are far better off having that failed dealer be a netting member because GSCC will have guaranteed the transaction and collected appropriate margin and mark from the insolvent member.

## Growth of the Netting Process

In January 1992, the Federal Reserve, SEC, and Treasury Department issued a “Joint Report on the Government Securities Market”, which stated that they “do not believe that the Government securities market is flawed or broken in any fundamental economic sense”.<sup>33</sup> Included among the report’s findings was that GSCC has made the market “even more efficient”, and that GSCC’s netting process “substantially reduces counterparty risk” for GSCC members.<sup>34</sup>

GSCC moved ahead quickly to provide additional enhancements.<sup>35</sup> On February 21, 1992, an executing firm information field enhancement to the Comparison System was implemented. This feature offered members the opportunity for improved comparison results through identification of the true executing parties to a trade.<sup>36</sup> It also allowed non-member firms that cleared

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<sup>33</sup> In conjunction with the release of the Joint Report, the New York Fed issued a revised set of criteria for designation as a primary dealer and for the administration of its relationship with primary dealers. The Fed eliminated certain market-making requirements, and replaced them with criteria including making “reasonably good markets” in trading with the Fed’s trading desk, participating meaningfully in Treasury auctions, and providing the Fed’s trading desk with useful market information and analysis.

<sup>34</sup> The Report further noted the benefits of GSCC’s proposal to include original issue Treasury auction in its netting system in addition to encouraging GSCC to (1) “develop efficient processing systems for market participants’ repo activity; (2) “expand to a greater universe of trades the benefits of netting”; and (3) to accelerate its efforts to expand membership.

<sup>35</sup> GSCC did not accept all market requests for application of its services. Indeed, of some ironical note is that in December 1991, GSCC management met with representatives of the Operations Committee of the PSA’s Mortgage-Backed Securities Division (Laura Lo Cosa of Morgan Stanley, Edward Watts of Goldman Sachs, Steven Hopkins of First Boston, and Wendy Wallis of the PSA) with regard to that Committee’s effort to find a provider for a low-cost, CPU-to-CPU interactive message delivery system for MBS pool information, to replace the then-current fax/telephone processes. GSCC ultimately determined to not submit a bid to provide the requested pool notification service, based on the theory that such a service is best provided by the entity that provides comparison, netting, and other clearance services for MBS generally. Of course, this service ultimately became the EPN pool notification service that is now provided by the MBSD of FICC.

<sup>36</sup> When participants are knowledgeable as to the correspondent clearing relationships of other members, correspondent trades party or account information can be successfully submitted for comparison without any third party or account information. Difficulty arises, however, when the clearing relationships are not well understood. A GSCC member, unaware that its trading partner was the correspondent of another member, very often failed to submit the matching side of such trade for GSCC processing. In addition to causing an uncompleted trade for the submitting party, this made it difficult for the contra, who got an advisory, to determine the cause of and resolution for that advisory. Generally speaking, these unmatched trades pended in the system until deleted by GSCC. The situation was complicated by the fact that, while some members guarantee the trading activity of their correspondents, others did not (a situation that remains to this day). Trading partners that were netting members often were hesitant to submit the contra side of non-guaranteed correspondent trades to GSCC, as this activity is subject to netting and margin and mark-to-market requirements. To avoid these problems and the undue pending of trades, GSCC provided new fields for identifying the correspondents, and netting members were allowed to indicate whether the activity of a given correspondent with another netting member is netting eligible.

through GSCC members to more readily access GSCC's comparison and netting services. By the end of that year, over 250 executing firms were taking advantage of this feature (the number of executing firms is now over 900).

On October 16, 1992, an automatic yield-to-price conversion feature was implemented, eliminating the two-step comparison process for when-issued trades and allowing when-issued trades to be netted and novated on trade date. Prior to that, members' when-issued trading activity between announcement and auction date was submitted to GSCC on the original date with a yield. These transactions then had to be resubmitted to GSCC for comparison on a dollar price and final money basis during the auction date + 1 processing cycle. Only then were trades, if compared, eligible for GSCC's netting and novation services and the resultant credit protections. With the launching of the yield-to-price facility, GSCC automatically converted yield trades into priced trades at the time of their submission.<sup>37</sup> The service thus reduced risk (because novation occurs as soon as a yield trade compares) and costs (because of the elimination of the double submission of when-issued trades).<sup>38</sup>

On Friday, February 26, 1993, the day of the first World Trade Center bombing, and the weekend thereafter, GSCC opened its processing facilities to member firms displaced by the disaster, helping to maintain the continuity of Government securities transaction processing throughout the period. Specifically, GSCC extended the deadline for the input of trade data by members located in the World Trade Center, and worked over the weekend with those members (particularly Cantor Fitzgerald) to ensure that their trade data was received and processed.<sup>39</sup>

Membership and trade data submissions continued to grow rapidly. On March 31, 1994, GSCC had its first \$1 trillion netting day (more than \$950 Billion was eliminated from settlement).

A month before that, GSCC filed a rule change proposal with the SEC to permit it to extend its comparison and netting services to U.S. Treasury securities purchased at auction and distributed through the Federal Reserve Banks. The proposal provided for all proprietary (or "house") purchases of Treasury Bills,

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<sup>37</sup> The process uses an assumed coupon derived daily from recently compared trade data. Compared yield trades between netting members are novated and marked-to-market in the same manner as final money trades.

<sup>38</sup> Participation in the service initially was voluntary. Those members who did not participate had to submit final money on auction date or their trades would be rejected. Also, they needed to submit final money for all trades executed between auction and settlement date in order for those trades to compare.

<sup>39</sup> Two weeks later, on March 10, 1993, Bernie Cantor, the founder and head of Cantor Fitzgerald, wrote to the Chairman of GSCC and extended his "heartfelt thanks" to GSCC for providing assistance to Cantor Fitzgerald during the crisis.

Notes, and Bonds by GSCC netting members, whether done on a competitive or non-competitive basis, at the Treasury auction to be included.<sup>40</sup>

On September 12, 1994, members' proprietary Treasury auction awards were encompassed within GSCC's net. On that day, three Federal Reserve banks (New York, Chicago and San Francisco) submitted the results (i.e., auction award details) of the 3-month and 6-month Bill auctions to GSCC, which in turn generated locked-in confirmations for the 39 participating GSCC members.<sup>41</sup> The size of each auction was \$11.6 billion, nearly half of which reflected proprietary auction bids that were awarded to eligible GSCC participants. Auction purchases were then netted with when-issued and other secondary market trades in the same securities submitted by GSCC netting participants. The combined total of auction purchases and secondary trades totaled more than \$120 billion. However, through netting, the resulting receive and deliver obligations generated on September 15, when the securities were issued, came to approximately \$28 billion. The implementation of auction processing enabled GSCC to: (1) accept eligible auction award details from Federal Reserve Banks and generate comparison output based on those details; (2) net auction purchases with when-issued and other secondary market trades in the same security submitted by netting members; and (3) take direct delivery of purchased securities from Federal Reserve Banks at one of GSCC's designated clearing banks for redelivery to members in net long positions through GSCC's settlement process. It was significant for GSCC and the marketplace in that the prompt redelivery of auction awards to participants in the ultimate long positions (within minutes of receipt of securities from the Fed) reduced securities movements, decreased settlement risk, streamlines the settlement process, allowed for more accurate margining of members, and reduced the daylight overdraft exposure associated with new issue distribution.

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Subsequently, GSCC began to focus on services for repo transactions, which began in 1995. These and more recent developments are chronicled in other articles.<sup>42</sup>

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<sup>40</sup> Auction awards resulting from bids made by netting members on behalf of customers that have been named on the bidding member's tender form were not (and still are not) eligible. This was required by the Treasury Department in order to ensure that customer awards always would be filled (and not netted out by short sales in the secondary market). Securities that are auctioned and issued on the same date also were (and remain) ineligible.

<sup>41</sup> A trade is considered "locked-in" if one-sided input from an approved locked-in trade source (i.e., a Reserve bank) is used to automatically generate the contra side of the trade as a binding, pre-matched transaction. This input results in the automatic generation by GSCC of a compared trade for each contra participant (i.e., each netting participant that bid for and was awarded securities in the auction). These compared trades are reported to participants.

<sup>42</sup> See Jeffrey F. Ingber and Nikki M. Poulos, *A Coming Together of Marketplaces: The Advent of Cross-Margining Between the Cash and Futures Markets*, Journal of International Financial Markets (October 2002); Jeffrey F. Ingber, *Gets Confusing Fast: A Review of the GCF Repo Service*, The RMA Journal (May 2003); Kenneth D. Garbade and Jeffrey F. Ingber, *The*

As noted above, GSCC subsequently combined with the MBS Clearing Corporation to form the Fixed Income Clearing Corporation (“FICC”), a subsidiary of The Depository Trust & Clearing Corporation. FICC, which is AAA/A-1+ rated by Standard & Poor’s, is an integral part of the Government, MBS, and financing marketplaces. In 2004, it processed over 23.5 million transactions, reflecting almost \$710 trillion in value. Thus, it may be said that GSCC has evolved within a 15-year period from a fledgling company to what is arguably the largest clearing corporation in the world.

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*Treasury Auction Process: Objectives, Structure, and Recent Adaptations*, Federal Reserve Bank of New York Current Issues in Economics and Finance, vol. 11, number 2 (February 2005); Jeffrey F. Ingber, *A Decade of Repo Netting*, Futures and Derivatives Law Report, vol. 25, number 5 (July 2005).