

FINANCIAL SECTOR ASSESSMENT PROGRAM

# UNITED STATES OF AMERICA

THE FIXED INCOME CLEARING CORPORATION—GOVERNMENT  
SECURITIES DIVISION OBSERVANCE OF THE CPSS/IOSCO  
RECOMMENDATIONS FOR CENTRAL COUNTERPARTIES

## REPORT ON STANDARDS AND CODES (ROSC)

JULY 2010

INTERNATIONAL MONETARY FUND  
MONETARY AND CAPITAL MARKETS DEPARTMENT



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## GLOSSARY

CCP	Central Counterparty
CFTC	Commodity Futures Trading Commission
CME	Chicago Mercantile Exchange
CPSS	Committee on Payment and Settlement Systems
DTC	Depository Trust Company
DTCC	Depository Trust and Clearing Corporation
FICC-GSD	Fixed Income Clearing Corporation – Government Securities Division
FICC-MSBD	Fixed Income Clearing Corporation – Mortgage Backed Securities Division
FSS	Fedwire Securities Service
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commission
NSCC	National Securities Clearing Corporation
RCCP	Recommendation for Central Counterparties
RSSS	Recommendation for Securities Settlement Systems
SEC	Securities and Exchange Commission
SSS	Securities Settlement System

## I. INTRODUCTION AND METHODOLOGY

1. The Fixed Income Clearing Corporation–Government Securities Division (FICC-GSD) observes the majority of the recommendations and broadly observes the others of the CPSS-IOSCO Recommendations for central counterparties (RCCPs).<sup>1</sup> The system properly addresses risks related to clearing, custody, financial resources, operations, and links. Some measures to improve resilience against financial risks, governance arrangements, and transparency have been identified. It is, however, important that FICC-GSD effectively takes additional steps to properly address financial risks. It would also be beneficial that the Securities and Exchange Commission (SEC) requires FICC-GSD compliance with RCCPs, and the Federal Reserve is provided with a legal mandate to oversee FICC, as a complementary function to the existing SEC regulation and supervision.
2. The assessment of FICC-GSD was undertaken in the context of the IMF Financial Sector Assessment Program (FSAP). This assessment only covers FICC-GSD, i.e. the CCP providing services for transactions in U.S. Government Treasury and Agency securities. The FICC Mortgage Backed Securities Division (MBSD), which is not yet providing CCP services, is not covered by this FSAP mission.
3. Prior to the mission, FICC-GSD conducted a self-assessment following the RCCPs methodology published by the CPSS-IOSCO in 2004. The assessment also benefited from discussions with the SEC, the Federal Reserve Board and Federal Reserve Bank of New York representatives, as well as the operator of FICC and some major participants in the system.<sup>2</sup> Relevant authorities and the operator of the system have been very co-operative in providing additional confidential information and organizing additional meetings, when required.
4. Given the organization of the Depository Trust & Clearing Corporation (DTCC), the assessment of the three entities belonging to the group i.e. the Depository Trust Company (DTC), the National Securities Clearing Corporation (NSCC) and the Fixed Income Clearing Corporation (FICC) resulted in almost identical recommendations on legal risk (RSSH1 and CCP1), operational risk (RSSH11 and RCCP8) governance (RSSH13 and RCCP13), efficiency (RSSH15 and RCCP14) and links (RSSH19 and RCCP11).

## II. INSTITUTIONAL AND MARKET STRUCTURE—OVERVIEW

5. The FICC-GSD, wholly-owned subsidiary of DTCC, is a systemically important CCP for transactions in U.S. Government Treasury and Agency Securities. It was established in 2003 from the merger between the Government Securities Clearing Corporation and the Mortgage Backed Securities Clearing Corporation. Its predecessors were established in 1986 to provide automated trade comparison and settlement services, risk management and

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<sup>1</sup> The underlying Detailed Assessment Report was published in May 2010 and is available at <http://www.imf.org/external/pubs/cat/longres.cfm?sk=23872.0>.

<sup>2</sup> This assessment was carried out by Daniela Russo (external expert) and overseen by Elias Kazarian (IMF).

operational efficiency to the U.S. Government securities market. Key figures of FICC's activities are provided in Table 1.

**Table 1. Key Statistics of FICC-GSD, 2007–09**

	2007	2008	2009
1. Number of contracts and transactions cleared (millions)	30.4	34.4	28.7
2. Value of contracts and transaction cleared (USD billions)	1,006,100	1,014,500	905,100
3. Average daily value of transactions (USD billions)	4	4	3,6
4. Peak value of transactions (USD trillions)	5.9	7.0	5.8
5. Total number of clearing members, of which:	103	97	98
5.1. Foreign clearing members	11	11	13
6. Clearing fund (USD millions) <sup>1/</sup>	13,701.7	18,896.8	14,141.4

Source: DTCC.

<sup>1/</sup> Includes the value of cash and securities.

6. FICC-GSD is a registered as a clearing agency and regulated and supervised by the SEC (section 17A of the Securities and Exchange Act). Although the SEC has not formally required FICC-GSD to perform a self-assessment with respect to the RCCPs, compliance with SEC rules assures compliance with most of the recommendations. FICC-GSD, as an affiliate of DTCC, is also subject to the oversight of the Federal Reserve.

### III. MAIN FINDINGS

#### *Legal Framework (Rec. 1)*

7. FICC's activities are governed by a consistent set of laws, regulations, and contractual arrangements that form a sound legal foundation for clearing, settlement, and custody activities. This information is publically available and readily accessible to system participants.

#### *Participation requirements (Rec. 2)*

8. The FICC-GSD's access and exit criteria are publicly disclosed. FICC-GSD requirements for participants' financial resources and credit worthiness are based on the legal nature of the participating entities as well as the services used. FICC-GSD also assesses the participants' operational reliability.

#### *Financial risk management (Rec. 3-6)*

9. FICC-GSD daily measures its exposures to participants and requires payment of contributions to the clearing fund. It can, when deemed appropriate, conduct intraday calls for additional clearing funds. FICC-GSD members' positions are monitored by DTCC risk management system. FICC mitigates its credit exposures on the basis of the clearing fund requirements, as well as cross-guarantee and cross-margining arrangements. The clearing fund is composed of cash and securities. In case of insufficient cash resources, FICC-GSD seeks to liquidate the available collateral via repo arrangements, although they are not committed facilities, and there is no certainty that they would be available in extreme but plausible scenario. The U.S. legal framework ensures the legal enforceability of FICC-GSD's collateral arrangements.

***Custody and investment risks (Rec. 7)***

10. FICC-GSD's securities and cash of the clearing fund are held in dedicated accounts with the two major clearing banks. Cash investments are authorized under a policy, approved by DTC's Audit Committee, which establishes principles for minimizing the risk of losses stemming from unsecured investments. The Audit Committee policy also establishes credit limits by counterparties to ensure that investments do not exceed a certain level of concentration.

***Operational risk (Rec. 8)***

11. FICC-GSD business continuity arrangements are developed at the level of DTCC holding company, including all sites, networks control centers and back-up sites as a unified complex. These arrangements are based on the authorities' requirements. DTCC has in place adequate procedures to identify and minimize the sources of operational risk that may arise in the clearing and settlement process. Contingency plans and back-up facilities are regularly tested and maintained to ensure the resilience of FICC-GSD.

***Money settlements (Rec. 9)***

12. For its end-of-day funds settlement, FICC-GSD uses central bank money with a tiered settlement arrangement relying on DTC as settlement agent. The end of day money settlement occurs via the settlement banks at the Federal Reserve's National Settlement Service (NSS).

***Physical deliveries (Rec. 10)***

13. The FICC-GSD's rules clearly set forth its obligations with respect to securities deliveries. In order to protect itself from principal risk, FICC-GSD continuously monitors participants' exposures and collects margin against failed items.

***Risks in links between CCPs (Rec. 11)***

14. FICC-GSD has set up a cross-margining arrangement with the Chicago Mercantile Exchange (CME) so that eligible positions at the CME are offset against eligible positions at FICC-GSD. For the purpose of this arrangement, a cooperative framework between the Commodity Futures and Exchange Commission (CFTC), overseeing the CME, and the SEC, overseeing the FICC-GSD is in place.

***Efficiency (Rec. 12)***

15. FICC-GSD regularly reviews its pricing levels, which are cost-based. The cost allocation methodology is part of a regular review by both internal and external auditors. FICC-GSD also conducts benchmark studies to assess cost effectiveness in the market. DTCC ensured that each service of the DTCC group does not cross-subsidise the cost and expenses of the others and that the risk management financial resources are not commingled.

***Governance (Rec. 13)***

16. There is a single governance structure for all DTCC subsidiaries, including FICC-GSD. Although DTCC's governance arrangements are made public, not all the relevant information is publicly available. DTCC is currently in the process of reviewing its governance arrangements. Public interest is taken into account in a number of ways, including the requirement that all proposed

rule changes of NSCC be filed with the SEC and noticed for public comment, and by discussion with industry participants.

***Transparency (Rec. 14)***

17. Market participants are provided with sufficient information regarding FICC-GSD risk management. The regulations, rules, and procedures governing FICC-GSD are publicly available, as are annual audited financial statements, and participants receive non audited quarterly financial statements. The FICC-GSD has completed and published on its website a self-assessment following the RCCPs assessment methodology.

***Regulation and oversight (Rec. 15)***

18. The responsibilities and objectives of relevant public authorities with regard to securities clearing and settlement systems are clearly defined and publicly disclosed. The SEC supervises FICC-GSD given its status of registered clearing agency. In conducting its oversight responsibilities, the SEC applies other standards than the RCCPs, although some of the issues covered in the RCCPs are also addressed by the standards under the securities laws that are applied by the SEC. As an affiliate of DTC, the Federal Reserve has the legal power to examine FICC. The SEC and the Federal Reserve have signed exam-specific information sharing arrangements regarding the oversight of FICC-GSD.

**Table 2. Summary of Observance with the CPSS-IOSCO Recommendations**

<b>Responsibility</b>	<b>Assessment</b>
<b>Legal risk</b>	
1. A CCP should have a well founded, transparent, and enforceable legal framework for each aspect of its activities in all relevant jurisdictions.	FICC-GSD's activities are governed by a consistent and transparent set of laws, regulations, and contractual arrangements that form a sound legal basis.
<b>Participation requirement</b>	
2. A CCP should require participants to have sufficient financial resources and robust operational capacity to meet obligations arising from participation in the CCP. A CCP should have procedures in place to monitor that participation requirements are met on an ongoing basis. A CCP's participation requirements should be objective, publicly disclosed, and permit fair and open access.	FICC submitted a rule filing to SEC for expanding its membership to include some buy-side unregistered investment pools (UIP), such as hedge funds, as a new membership category. In its filing to the SEC, FICC stated it will impose additional risk management measures with respect to UIP members, including calculating their Clearing Fund requirements at a higher value at risk confidence level and instituting an additional qualitative assessment requirement.
<b>Measurement and management of credit exposures</b>	
3. A CCP should measure its credit exposures to its participants at least once a day. Through margin requirements, other risk control mechanisms or a combination of both, a CCP should limit its exposure to potential losses from defaults of its participants in	The definition of margins and clearing funds in the published assessment should be made more consistent in line with international usage/practice and the definitions provided in the glossary of the RCCP.



Responsibility	Assessment
normal market conditions so that the operations of the CCP would not be disrupted and non-defaulting participants would not be exposed to losses that they cannot anticipate or control.	
<b>Margin requirements</b>	
4. If a CCP relies on margin requirements to limit its credit exposures to participants, those requirements should be sufficient to cover potential exposures in normal market conditions. The models and parameters used in setting margin requirements should be risk-based and reviewed regularly.	FICC-GSD relies on margin requirements to collect contributions to the clearing fund to cover its exposure vis-à-vis its members. The clearing fund is composed of deposits from the members either in cash or in certain securities. FICC-GSD tests regularly the risk-based margin requirements.
<b>Financial resources</b>	
5. A CCP should maintain sufficient financial resources to withstand, at a minimum, a default by the participant to which it has the largest exposure in extreme but plausible market conditions.	FICC-GSD's liquidity need is highly concentrated to the two major clearing banks.  FICC-GSD's liquidity can be increased by reposing the securities in the clearing fund. However, this arrangement cannot be considered as a committed line, since there is no complete assurance that the repo markets would be effective in extreme market situations.
<b>Default procedures</b>	
6. A CCP's default procedures should be clearly stated, and they should ensure that the CCP can take timely action to contain losses and liquidity pressures and to continue meeting its obligations. Key aspects of the default procedures should be publicly available.	FICC-GSD's default procedures are clearly stated in the system's rules and procedures, which would allow FICC-GSD to suspend or terminate a member from any service, should it become subject to insolvency proceedings or fail to perform its obligations to the system. The U.S. legal framework provides a high degree of assurance with regard to the enforceability of default procedures.
<b>Custody and investment risk</b>	
7. A CCP should hold assets in a manner whereby risk of loss or of delay in its access to them is minimized. Assets invested by a CCP should be held in instruments with minimal credit, market, and liquidity risks.	FICC-GSD's assets are highly concentrated to the two major clearing banks, and not all FICC-GSD investments are secured.
<b>Operational risk</b>	
8. A CCP should identify sources of operational risk and minimize them through the development of appropriate systems, controls, and procedures. Systems should be reliable and secure, and have adequate, scalable capacity. Business continuity plans should allow for timely recovery of operations and fulfillment of a CCP's obligations.	Contingency plans and backup facilities for the failure of key systems are not tested and reviewed with participants (only connectivity is tested with the critical participants).

<b>Responsibility</b>	<b>Assessment</b>
<b>Money settlements</b>	
9. A CCP should employ money settlement arrangements that eliminate or strictly limit its settlement bank risks, that is, its credit and liquidity risks from the use of banks to effect money settlements with its participants. Funds transfers to a CCP should be final when effected.	FICC-GSD uses the central bank model with a tiered settlement arrangement relying on DTC as settlement agent, for its end-of-day funds settlement.
<b>Physical deliveries</b>	
10. A CCP should clearly state its obligations with respect to physical deliveries. The risks from these obligations should be identified and managed.	FICC-GSD does not have direct access to Fedwire Securities and Fedwire Funds services. Such access would allow FICC-GSD to settle DVP in central bank money and reduce the settlement concentration to the two clearing banks.
<b>Risks in links between CCPs</b>	
11. CCPs that establish links either cross-border or domestically to clear trades should evaluate the potential sources of risks that can arise, and ensure that the risks are managed prudently on an ongoing basis. There should be a framework for cooperation and coordination between the relevant regulators and overseers.	FICC-GSD has appropriate risk management procedures in place to identify and evaluate the risks from the links, and there is a supervisory coordination between CFTC and SEC for the links to CME.
<b>Efficiency</b>	
12. While maintaining safe and secure operations, CCPs should be cost-effective in meeting the requirements of participants.	FICC-GSD regularly reviews its pricing levels, which are cost-based. It also conducts benchmark studies to assess cost effectiveness in the market.
<b>Governance</b>	
13. Governance arrangements for a CCP should be clear and transparent to fulfill public interest requirements and to support the objectives of owners and participants. In particular, they should promote the effectiveness of a CCP's risk management procedures.	FICC-GSD's governance arrangements are not sufficiently specified and transparent, including criteria for the composition and selection of Board members.
<b>Transparency</b>	
14. A CCP should provide market participants with sufficient information for them to identify and evaluate accurately the risks and costs associated with using its services.	The regulations, rules, and procedures governing FICC-GSD are publicly available, as are audited annual financial statements, and participants receive non audited quarterly financial statements.
<b>Regulation and oversight</b>	
15. A CCP should be subject to transparent and effective regulation and oversight. In both a domestic and an international context, central banks and securities regulators should cooperate with each other and with other relevant authorities.	The SEC has not formally required FICC-GSD to perform a self-assessment based on the RCCPs, but compliance with SEC rules ensures compliance with most of the recommendations.

**Table 3. Actions to Improve Compliance**

<b>Reference Recommendation</b>	<b>Recommended Action</b>
Recommendation 3: Credit exposures management	Align the definitions of margins and clearing funds with international standards.
Recommendation 5: Financial resources	Consider an additional liquidity buffer to deal with extreme situations where repo arrangements cannot be used. Minimize FICC-GSD's exposure and concentration risk vis-à-vis the two clearing banks. Consider conducting more frequent stress testing than once a month, in particular, in times of unusual market volatility. Disclose stress testing assumptions to participants.
Recommendation 7: Custody and investment risk	Continue to monitor and mitigate the potential risks, which result from holding assets at only two commercial banks. Avoid unsecured investments to the largest extent possible.
Recommendation 8: Operational risk	Test and review FICC-GSD backup sites to critical participants' backup sites.
Recommendations 10: Physical deliveries	Provide FICC-GSD direct access to Fedwire Securities and Fedwire Funds services to settle DVP transactions in central bank money.
Recommendation 13: Governance	FICC-GSD's governance arrangements should be more clearly specified and transparent, including criteria for the composition and selection of Board members.
Recommendation 15: Regulation and oversight	SEC should formally require FICC-GSD to perform a self-assessment based on the RCCPs. Ensure the compliance of the SEC rules with the RCCPs. Provide legal mandate to the Federal Reserve to oversee FICC-GSD, which is systemically important system, as a complementary function to the SEC regulation and supervision.

#### **IV. AUTHORITIES' RESPONSE TO THE ASSESSMENT**

19. The U.S. authorities welcome the IMF's assessment of the FICC-GSD against the RCCPs. We appreciate the significant undertaking associated with an FSAP review of the biggest financial sector in the world, as well as the challenges that accompany the first assessment of a large advanced country in the wake of the crisis. The authorities are pleased to note that the IMF's assessment reflects the high degree of compliance of FICC-GSD with the RCCPs, and will work with FICC-GSD in considering the assessment's specific comments and recommendations. Again, the authorities appreciate the significant undertaking associated with the assessment of FICC-GSD and the contribution that the assessment process makes to the stability and effective regulation and oversight of systemically-important payment, clearing and settlement systems.



FINANCIAL SECTOR ASSESSMENT PROGRAM  
UNITED STATES OF AMERICA

THE DEPOSITORY TRUST COMPANY'S OBSERVANCE OF THE  
CPSS-IOSCO RECOMMENDATIONS FOR SECURITIES  
SETTLEMENT SYSTEMS

REPORT ON STANDARDS AND  
CODES (ROSC)

JULY 2010

INTERNATIONAL MONETARY FUND  
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**GLOSSARY**

CCP	Central Counterparty
CPSS	Committee on Payment and Settlement Systems
CSD	Central Securities Depository
DTC	Depository Trust Company
DTCC	Depository Trust and Clearing Corporation
DVP	Delivery-versus-Payment
FOP	Free of Payment
FSS	Fedwire Securities Service
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commission
ISO	International Organisation for Standardisation
NSCC	National Securities Clearing Corporation
NSS	National Settlement Service
NYSBD	New York State Banking Department
NYSE	New York Stock Exchange
RCCP	Recommendation for Central Counterparties
RSSS	Recommendation for Securities Settlement Systems
SEC	Securities and Exchange Commission
SWIFT	Society for Worldwide Interbank Financial Telecommunication



## I. INTRODUCTION AND METHODOLOGY

1. The assessment of the Depository Trust Company (DTC) against the CPSS-IOSCO Recommendations for Securities Settlement Systems (RSSSs)<sup>1</sup> reveals that the system observes the recommendations, although some enhancements would allow DTC to increase its compliance level with all the recommendations. More precisely, actions need to be undertaken to improve its risk resilience by strengthening the stress testing, DTC's financial and liquidity resources, in particular, to address the problem that could arise when money market does not work smoothly and equities repo cannot be used to raise equities or cash. Additional improvements would be to enhance governance arrangements, develop procedure for intraday finality for cash settlement.
2. The assessment of DTC was undertaken in the context of the IMF Financial Sector Assessment Program (FSAP).<sup>2</sup> Prior to the mission, DTC conducted a self-assessment following the methodology of the RSSSs published in 2002 by the CPSS-IOSCO. The assessors<sup>3</sup> also benefited from discussion with the Securities and Exchange Commission (SEC), the Federal Reserve Board and Federal Reserve Bank of New York representatives (supervision and oversight), as well as with the operator of DTC and some major participants in the system. Relevant authorities and the operator of the system have been very co-operative in providing additional confidential information and organizing additional meetings, when required.
3. Given the organization of the Depository Trust & Clearing Corporation (DTCC), the assessment of the three entities belonging to the group (The Depository Trust Company – DTC, the National Securities Clearing Corporation – NSCC and the Fixed Income Clearing Corporation – FICC) resulted in almost identical recommendations concerning legal risk (RSSS1 and CCP1), operational risk (RSSS11 and RCCP8) governance (RSSS13 and RCCP13) and efficiency (RSSS 15 and RCCP14).

## II. INSTITUTIONAL AND MARKET STRUCTURE—OVERVIEW

4. DTC is a limited purpose trust company under the New York Banking Law, a clearing agency registered under the Securities Exchange Act, a clearing organization as defined by the Federal Deposit Insurance Corporation Improvement Act, a clearing corporation as defined in the Uniform Commercial Code, and a member bank of the Federal Reserve System. It is a depository and settlement system that effects issuance, transfer, and pledge by computerized book-entry system. DTC, the National Securities Clearing Corporation (NSCC), and the Government Securities Division of the Fixed Income Clearing

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<sup>1</sup> The underlying Detailed Assessment Report was published in May 2010 and is available at <http://www.imf.org/external/pubs/cat/longres.cfm?sk=23870.0>.

<sup>2</sup> For further discussion see the accompanying Financial System Stability Assessment (FSSA), (www.imf.org).

<sup>3</sup> This assessment was carried out by Daniela Russo (external expert) and overseen by Elias Kazarian (IMF).

Corporation (FICC-GSD), assessed in the context of the U.S. FSAP, are all wholly owned subsidiaries of the Depository Trust and Clearing Corporation (DTCC). The key statistics of DTC are provided in Table 1.

**Table 1. Key Statistics of Depository Trust Company (DTC), 2007–09**

	<b>2007</b>	<b>2008</b>	<b>2009</b>
1. Value of transactions processed (USD trillions)	209.8	181.9	121.8
2. Instructions processed (millions)	324.9	316.6	299.5
3. Average value of securities settled (USD billions)	836.0	724.8	483.2
4. Peak value of assets settled (USD billions)	1,322	1,287	791.0
5. Total Value of securities held (USD trillions), of which:	40.0	27.6	33.9
5.1 Commercial paper	26.7	20.9	15.7
5.2 Money market certificates of deposits	10.7	12.1	10.4
5.3 Other money market Instruments securities	20.3	23.3	20.2
6. Number of issues accepted	54,266	53,402	40,067
7. Number of direct participants	467	413	390
8. Overnight credit <sup>2</sup> (USD billions)	1.4	1.9	1.9
9. Collateral provision outstanding (USD millions)	907.00	932.36	1,718.747

Source: DTCC.

1. Value of end of day committed credit facility for USD settlements. The facility was not drawn on for any of the days noted. The current facility is 364 day facility that expires in May of the following year.

2. Value of the Participant Fund (all cash).

5. DTC provides its participants with various settlement services to facilitate the end-of-day settlement of obligations resulting from their trading activity in various markets. Besides the main settlement services, DTC provides a range of settlement, custody, and tax-related services for its members. DTC serves three different markets, namely (i) money market instruments, (ii) equities, and (iii) corporate and municipal bonds (Table 1).

6. The oversight, regulation, and supervision of DTC is conducted by different authorities owing to the organizational structure of DTC: (i) the Federal Reserve Board that derives its supervisory authority from DTC's membership in the Federal Reserve System as a State member bank, (ii) the SEC whose authority stems from DTC's operations as a clearing agency; (iii) the New York Banking State Department (NYSBD) whose supervisory authority derives from DTC's charter as a limited purpose trust company under the New York banking law.

### **III. MAIN FINDINGS**

#### ***Legal Framework (Rec. 1)***

7. DTC's activities are governed by a consistent set of laws, regulations, and contractual arrangements that form a sound legal foundation for clearing, settlement and custody activities, which are publicly available and readily accessible to system participants.

***Pre-settlement Risk (Rec. 2–5)***

8. DTC does not fully offer trade confirmation services, as it is performed at the broker level provided to the NSCC on a “locked-in basis”. OTC equity product and fixed income transactions are not matched at the market place of execution. DTC does not match settlement instructions prior to settlement. DTC does not monitor settlement fails. For trades cleared by NSCC, the CCP monitors settlement fails, the figures of which are available on the SEC’s website, and has put in place incentives to settle in time. The settlement cycle for trades is generally T+3. Cost-benefit analysis for a shorter settlement fail have been conducted under the aegis of SEC. Not all transactions settled by DTC are cleared by NSCC or another CCP. For those transactions not cleared by a CCP, neither market participants nor U.S. regulators conducted a cost-benefit analysis.

***Settlement Risk (Rec. 6–10)***

9. The majority of securities settled in DTC are represented by physical certificates immobilized in the depository, although the trend is towards dematerialization. The vast majority of municipal and corporate debt issues distributed through DTC are in book-entry only form. Transfer of ownership occurs when securities are transferred between participants within the system. DTC relies on a DVP model 2 with securities settled on an intraday gross basis and associated funds on a net basis at the end of the day. All valued transactions in DTC are settled on a DVP basis. Finality of settlement occurs intraday for securities deliveries but at the end of the day for cash transfers outside DTC. To facilitate settlement through the day, DTC provides liquidity to participants, based on rigorous risk management procedures. DVP transactions are processed by debiting the securities from the account of the delivering participant and at the same time crediting the delivering participant the corresponding payment amount. DTC then reflects a payment debit and securities credit in the account of the receiving participant, treating the securities credit as an incomplete transaction. Should a participant default, DTC will be exposed to financial risks depending on its ability to timely liquidate the collateral of the defaulting participant. However, full collateralization of any intraday net debit money positions assures that, should several major participants fail to pay for their net debit money obligations at the end of the day, DTC would have sufficient collateral value (inclusive of haircuts) to cover the participants’ unpaid obligation. For cash settlement, DTC relies on settling banks—settling for their own and other participants—making the payments from and to DTC’s account at the FRBNY. There is a high concentration of payment flows at the top five settling banks in DTC. This concentration is currently not monitored by DTC.

***Operational Risk (Rec. 11)***

10. DTCC has developed business continuity arrangements at the level of the holding company, covering all sites; networks control centres and business sites as a unified complex. In doing so, DTCC has taken into account the requirements of the “Interagency paper on sound practices to strengthen the resiliency of the U.S. financial system”.<sup>4</sup> DTCC

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<sup>4</sup> “Interagency paper on sound practices to strengthen the resiliency of the U.S. financial system”, Federal Reserve Board, Securities and Exchange Commission, Office of the Comptroller of the Currency, 2003.

has in place adequate procedures to identify and minimize the sources of operational risk that may arise in the clearing and settlement process. Contingency plans and back-up facilities are regularly tested and maintained to ensure the resilience of DTC. A risk-based review of the IT system supporting DTCC functioning is performed by independent external auditors. Senior management regularly reviews operational reliability issues.

***Custody Risk (Rec. 12)***

11. DTC operates an indirect holding system where securities (or interest in securities) are registered in the name of the direct participants through nominee accounts rather than in the name of the end beneficiary. Physical and technical controls as well as periodic audits are performed by DTC's regulators and Internal Audit Department.

***Other Issues (Rec. 13–19)***

12. There is a single governance structure for all the subsidiaries of DTCC. Currently, DTCC's Board is composed of 18 members. Members of the Board are elected by the shareholders annually. Although DTCC's governance arrangements are made public on its website, not all the relevant information is publicly available. DTC's access and exit criteria are publicly disclosed and the same eligibility rules apply to all participants depending on the scope of the service used regardless of the type, identity and location of the participant. DTC reviews in the annual budget process its pricing levels which are cost-based. The cost allocation methodology is part of a regular review by both internal and external auditors. DTCC ensured that each service of the DTCC group does not cross-subsidise the cost and expenses of the others. DTC uses international standards for its cross-border linkages with foreign central securities depositories (CSDs). The laws, regulations, rules and procedures governing DTC are publicly available. Moreover, following the Federal Reserve Payment System Risk Policy, DTC has completed a self assessment following the RSSSs assessment methodology.

13. The responsibilities and objectives of relevant public authorities with regard to DTC activities are clearly defined and publicly disclosed. DTC is regulated and overseen by the SEC, the Federal Reserve and the NYSBD. The SEC has entered into memoranda of understanding with foreign regulators to facilitate the exchange of information with authorities of all the countries with which DTC has developed links, except for Peru.

14. DTC maintains links with 13 foreign CSDs, of which two are bilateral, i.e., both inbound link (foreign CSD opened accounts at DTC) and outbound link (DTC opened accounts with a foreign CSD). For inbound links, linked CSDs are treated as other participants in DTC, while for outbound links DTC conducts an assessment of the risks associated with the establishment of the link before allowing its participants to process transactions with a foreign CSD's participants.

**Table 2. Summary of Observance with the CPSS-IOSCO Recommendations**

<i>Responsibility</i>	<i>Assessment</i>
<b>Legal risk</b>	
1. Securities settlement systems should have a well-founded, clear, and transparent legal basis in the relevant jurisdiction.	DTC's activities are governed by a consistent and transparent set of laws, regulations, and contractual arrangements that form a sound legal basis.
<b>Pre-settlement risk</b>	
2. Confirmation of trades between market participants should occur as soon as possible after trade execution, but no later than the trade date (T+0). Where confirmation of trades by indirect market participants (such as institutional investors) is required, it should occur as soon as possible after trade execution, preferably on T+0, but no later than T+1.	To enhance risk management procedures, DTC should explore the possibility to introduce an instructions matching mechanism prior to settlement.
3. Rolling settlement should be adopted in all securities markets. Final settlement should occur no later than T+3. The benefits and costs of a settlement cycle shorter than T+3 should be assessed.	DTC does not fully offer trade confirmation services, and does not match settlement instructions prior to settlement.
4. The benefits and costs of a central counterparty should be assessed. Where such a mechanism is introduced, the central counterparty should rigorously control the risks it assumes.	No cost-benefit analysis of the introduction of a CCP for transactions settled through DTC but not cleared by NSCC has been conducted.
5. Securities lending and borrowing (or repurchase agreements and other economically equivalent transactions) should be encouraged as a method for expediting the settlement of securities transactions. Barriers that inhibit the practice of lending securities for this purpose should be removed.	Securities lending and repurchase arrangements in the U.S. are largely over-the-counter bilateral transactions. It seems that there are no legal impediments to securities loan and repo transactions.
<b>Settlement risk</b>	
6. Securities should be immobilized or dematerialized and transferred by book entry in CSD to the greatest extent possible.	Many securities issued to the public in the U.S. are in the form of physical certificates. However, trend is to issue shares in electronic form.
7. Securities settlement systems should eliminate principal risk by linking securities transfers to funds transfers in a way that achieves delivery versus payment.	DTC operates a DVP Model 2 settlement system, where securities settle on a gross basis intraday and associated funds settle on a net basis at the end of the day.
8. Final settlement on a DVP basis should occur no later than the end of the settlement day. Intra-day or real-time finality should be provided where necessary to reduce risks.	<p>The DVP 2 model is characterized by securities delivered during the day, while finality of cash takes place at the end of day. DTC has in place measures to limit and control the liquidity and credit risks associated with this model.</p> <p>DTC does not provide intraday finality for cash transfer that would allow participants in a net credit position to have earlier access to their liquidity and</p>

<b>Responsibility</b>	<b>Assessment</b>
	move them out of DTC.
9. CSDs that extend intraday credit to participants, including CSDs that operate net settlement systems, should institute risk controls that, at a minimum, ensure timely settlement in the event that the participant with the largest payment obligation is unable to settle. The most reliable set of controls is a combination of collateral requirements and limits.	Although DTC currently has sufficient liquidity resources to protect against the failure of the largest affiliated family of participants, more extreme cases of multiple failures could test DTC's liquidity resources.
10. Assets used to settle the ultimate payment obligations arising from securities transactions should carry little or no credit or liquidity risk. If Central Bank money is not used, steps must be taken to protect CSD members from potential losses and liquidity pressures arising from the failure of the cash settlement agent whose assets are used for that purpose	<p>There is a high concentration of payment flows at the top five settling banks, which increases credit risk exposures of the settlement banks. Moreover, DTC relies on a single bank for the cash settlement for Canadian dollar.</p> <p>The self-assessment of the Federal Reserve's NSS against the CPSIPS has not been reviewed by the relevant authorities and is not public.</p>
<b>Operational risk</b>	
11. Sources of operational risk arising in the clearing and settlement process should be identified and minimized through the development of appropriate systems, controls, and procedures. Systems should be reliable and secure, and have adequate, scalable capacity. Contingency plans and back-up facilities should be established to allow for timely recovery of operations and completion of the settlement process.	Contingency plans and backup facilities for the failure of key systems are not tested and reviewed with participants (only connectivity is tested with the critical participants).
<b>Custody risk</b>	
12. Entities holding securities in custody should employ accounting practices and safekeeping procedures that fully protect customers' securities. It is essential that customers' securities be protected against the claims of a custodian's creditors.	DTC has adequate procedures and measures in place to ensure the protection of customers' securities.
<b>Other issues</b>	
13. Governance arrangements for CSDs and central counterparties should be designed to fulfill public interest requirements and to promote the objectives of owners and users.	The governance arrangements for DTC could be more transparent, including criteria for the composition and selection of Board members. Only limited information is available to the public.
14. CSDs and central counterparties should have objectives and publicly disclosed criteria for participation that permit fair and open access.	DTC's rules and by-laws, which are available on its website, provide objective access rules and criteria.
15. While maintaining safe and secure operations, securities settlement systems should be cost-	DTC's fees are cost based and DTC returns to its users excess net revenues not needed to fund its

<i>Responsibility</i>	<i>Assessment</i>
effective in meeting the requirements of users.	operations via rebates or other refunds. DTCC performs periodic benchmarking studies to assess cost effectiveness in the market place.
16. Securities settlement systems should use or accommodate the relevant international communication procedures and standards in order to facilitate efficient settlement of cross-border transactions.	DTC uses ISO 15022 for cross-border linkages with CSDs. The messages (ISO-based and Message Queuing) are sent and received over DTC's proprietary system as well as SWIFT.
17. CSDs and central counterparties should provide market participants with sufficient information for them to accurately identify the risks and costs associated with using the CSD or central counterparty services.	DTC's rules and procedures, including its service guides, are publicly available on its website.
18. Securities settlement systems should be subject to regulation and oversight. The responsibilities and objectives of the securities regulator and the central bank with respect to SSSs should be clearly defined, and their roles and major policies should be publicly disclosed. They should have the ability and resources to perform their responsibilities, including assessing and promoting implementation of these recommendations. They should cooperate with each other and with other relevant authorities.	<p>The Fed's oversight of DTC is not based on a general statutory payment systems oversight authority, but rather on DTC's status as a State Member Bank of the Fed and the Fed's consequent role as banking supervisor. The banking supervision and the oversight functions have two different objectives and use different tools.</p> <p>The SEC has not yet required DTC to perform a self assessment with respect to RSSs, but SEC staff would consider recommending to the Commission to require such a self-assessment.</p>
19. CSDs that establish links to settle cross-border trades should design and operate such links to reduce effectively the risks associated with cross-border settlement.	DTC has adequate measures and procedures to handle the risk associated with links.

**Table 3. Actions to Improve Compliance**

<i>Reference Recommendation</i>	<i>Recommended Action</i>
Recommendation 2: Trade confirmation	DTC should explore the possibility introducing an instructions matching mechanism prior to settlement.
Recommendation 4: CCPs	A cost-benefit analysis of the introduction of a CCP for transactions not cleared by NSCC should be conducted.
	DTC should consider conducting additional net funds settlement batches during the day in order to provide intraday finality for cash transfers.
Recommendation 9: Risk controls	DTC should be given access to central bank liquidity facilities.

<b>Reference Recommendation</b>	<b>Recommended Action</b>
Recommendation 10: Cash settlement	<p>DTC should continue to monitor the financial conditions and should begin monitoring the exposures of the settlement banks.</p> <p>DTC needs to reduce the concentration of settlement cash for Canadian dollar.</p> <p>DTC may explore the possibility of becoming a direct participant of the Canadian RTGS system.</p> <p>The self-assessment of the Federal Reserve's NSS against the CPSIPS should be reviewed by the relevant authorities and made public.</p>
Recommendation 11: operational risk	DTCC should test its back-up sites to critical participants' backup sites.
Recommendation 13: Governance	DTC's governance arrangements should be more clearly specified and transparent, including criteria for the composition and selection of Board members.
Recommendation 18: Oversight and regulation	<p>Formal co-operation with Authorities in Peru needs to be established.</p> <p>It would be more effective and transparent to legally entrust the Fed the role of overseer of financial market infrastructure, and to separate between the banking supervision and the oversight functions.</p> <p>SEC is encouraged to require clearing agencies to perform self-assessments against the CPSS-IOSCO recommendations by rules or in a policy statement.</p>
Recommendation 19: Risks in links	DTC should update the information on links on DTCC's website to reflect the current status.

#### **IV. AUTHORITIES' RESPONSE TO THE ASSESSMENT**

15. The U.S. authorities welcome the IMF's assessment of DTC against the RSSs. We appreciate the significant undertaking associated with an FSAP review of the biggest financial sector in the world, as well as the challenges that accompany the first assessment of a large advanced country in the wake of the crisis. The authorities are pleased to note that the IMF's assessment reflects the high degree of compliance of DTC with the RSSs, and are largely in agreement with the assessment's comments and recommendations, which the authorities will share with DTC.

16. Again, the authorities appreciate the significant undertaking associated with the assessment of DTC and the contribution that the assessment process makes to the stability and effective regulation and oversight of systemically important payment, clearing and settlement systems.



FINANCIAL SECTOR ASSESSMENT PROGRAM

# UNITED STATES OF AMERICA

THE NATIONAL SECURITIES CLEARING CORPORATION  
OBSERVANCE OF THE CPSS/IOSCO RECOMMENDATIONS FOR  
CENTRAL COUNTERPARTIES

## REPORT ON STANDARDS AND CODES (ROSC)

JULY 2010

INTERNATIONAL MONETARY FUND  
MONETARY AND CAPITAL MARKETS DEPARTMENT



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**GLOSSARY**

BCP	Business Continuity Plan
BITS	Banking, Infrastructure and Technology Services
CCP	Central Counterparty
CPSS	Committee on Payment and Settlement Systems
DTC	Depository Trust Company
DTCC	Depository Trust and Clearing Corporation
DVP	Delivery-versus-Payment
FDIA	Federal Deposit Insurance Act
FDICIA	Federal Deposit Insurance Corporation Improvement Act
FDIC	Federal Deposit Insurance Corporation
FICC-GSD	Fixed Income Clearing Corporation – Government Securities Division
FICC-MSBD	Fixed Income Clearing Corporation – Mortgage Backed Securities Division
FR	Federal Reserve
FRA	Federal Reserve Act
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commission
ISO	International Organisation for Standardisation
JPMC	JP Morgan Chase
NSCC	National Securities Clearing Corporation
NSS	National Settlement Service
RCCP	Recommendation for Central Counterparties
RSSS	Recommendation for Securities Settlement Systems
SEC	Securities and Exchange Commission
SIFMA	Securities Industry and Financial Markets Association
TRADES	Treasury/Reserve Automated Debt Entry System
UCC	Uniform Commercial Code

## I. INTRODUCTION AND METHODOLOGY

1. The National Securities Clearing Corporation (NSCC) observes or broadly observes most of the CPSS-IOSCO Recommendations for CCP (RCCPs).<sup>1</sup> The system properly addresses legal, credit, custody, and operational risks. Some measures to improve resilience against financial risks have been identified, including measures to enhance governance arrangements. It is however important that NSCC effectively addresses issues concerning financial resources, money settlement (including DVP arrangements), and links between CCPs. It would also be beneficial that the Securities and Exchange Commission (SEC) require NSCC's compliance with RCCPs and that the Federal Reserve is provided with a legal mandate to oversee the NSCC, which is a systemically important system, as a complementary function to the existing SEC regulation and supervision.
2. The assessment of the NSCC was undertaken in the context of the IMF Financial Sector Assessment Program (FSAP).<sup>2</sup> Prior to the mission, NSCC conducted a self-assessment following the methodology of the RCCPs published by the CPSS-IOSCO in 2004. The assessment also benefited from discussions with the SEC, the Federal Reserve Board and Federal Reserve Bank of New York representatives, as well as the operator of the NSCC and some major participants in the system.<sup>3</sup> Relevant authorities and the operator of the system have been very co-operative in providing additional confidential information and organizing additional meetings, when required.
3. Given the organization of the Depository Trust & Clearing Corporation (DTCC), the assessment of the three entities belonging to the group: The Depository Trust Company (DTC), the NSCC, and the Fixed Income Clearing Corporation (FICC) is almost identical for the recommendations on legal risk (RSSH1 and CCP1), operational risk (RSSH11 and RCCP8) governance (RSSH13 and RCCP13), efficiency (RSSH15 and RCCP14) and links (RSSH19 and RCCP11).

## II. INSTITUTIONAL AND MARKET STRUCTURE—OVERVIEW

4. The NSCC is registered as a clearing agency with the Securities and Exchange Commission (SEC) and subject to the SEC's oversight. It was established in 1976 as a New York business corporation, and since 1999 it became a wholly-owned subsidiary of the Depository Trust & Clearing Corporation (DTCC).
5. NSCC provides central counterparty services for certain transactions for the vast majority of broker-to-broker trades involving equities, corporate and municipal bonds. In

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<sup>1</sup> The underlying Detailed Assessment Report was published in May 2010 and is available at <http://www.imf.org/external/pubs/cat/longres.cfm?sk=23871.0>.

<sup>2</sup> For further discussion see the accompanying Financial Stability Assessment (FSSA), ([www.imf.org](http://www.imf.org)).

<sup>3</sup> This assessment was carried out by Daniela Russo (external expert) and overseen by Elias Kazarian (IMF).

addition, NSCC provides a range of other services to its members, namely wealth management and insurance services, automated customer account transfer services and risk management. As of December 2009, NSCC had 206 clearing members, including 3 foreign institutions Table 1.

**Table 1. Key Statistics of NSCC, 2007–09**

	<b>2007</b>	<b>2008</b>	<b>2009</b>
1. Number of contracts and transactions cleared (millions)	13,537	21,877	23,254
2. Value of contracts and transaction cleared (USD billions)	283,200	315,100	209,690
3. Average daily value of transactions (USD billions)	1,137	1,255	835
4. Peak value of transactions (USD billions)	2,230	3,373	1,091
5. Total number of clearing members, of which:	226	221	206
5.1 Foreign clearing members	3	4	3
6. Clearing fund (USD millions) <sup>1</sup>	4,866.6	6,620.4	2,941.0

Source: DTCC.

1. Includes the value of cash and securities.

### III. MAIN FINDINGS

#### *Legal Framework (Rec. 1)*

6. NSCC's activities are governed by a consistent set of laws, regulations and contractual arrangements that form a sound legal foundation for clearing, settlement and custody activities, which are publically available and readily accessible to system participants.

#### *Participation requirements (Rec. 2)*

7. The NSCC's access and exit criteria are publicly disclosed. NSCC requirements for participants' financial resources and credit worthiness are based on the legal nature of the participating entities as well as the services that these entities will use. The NSCC also assesses the participants' financial strength and operational reliability.

#### *Financial risk management (Rec. 3–6)*

8. The NSCC measures its exposures to participants daily and requires payment of contributions to the clearing fund. It can, when deemed appropriate, conduct intraday calls for additional clearing funds. The NSCC mitigates its credit exposures on the basis of the clearing fund requirements as well as cross-guarantee and cross-margining arrangements. The NSCC conducts stress testing monthly, on the basis of scenarios selected from the past ten years together with specific historic events. NSCC's liquidity resources are composed of cash and securities and committed credit facility by some banks. In case of insufficient cash resources, the NSCC seeks to liquidate the available collateral via repo arrangements. NSCC's default procedures are clearly stated in the system's rules and procedures.

***Custody and investment risks (Rec. 7)***

9. NSCC's securities and cash of the clearing fund are held in dedicated accounts with the two major clearing banks. Cash investments are authorized under a policy, approved by DTC's Audit Committee, which outlines principles for mitigating the risk of losses stemming from unsecured investments. The NSCC assets are held under tri-party custodial arrangements. When repos are not available, the assets are invested in overnight commercial paper in bank sweep accounts.

***Operational risk (Rec. 8)***

10. NSCC business continuity arrangements are developed at the level of DTCC holding company, including all sites, networks control centres, and back-up sites as a unified complex. These arrangements are based on the authorities' requirements. DTCC has in place adequate procedures to identify and mitigate the sources of operational risk. Contingency plans and back-up facilities are regularly tested and maintained to ensure the resilience of NSCC.

***Money settlements (Rec. 9)***

11. The NSCC settles its money obligations in commercial bank money.

***Physical deliveries (Rec. 10)***

12. The NSCC rules clearly set forth its obligations with respect to securities deliveries. In order to protect itself from principal risk linked to market movements, NSCC continuously monitors participants' exposures and collect margins when required. The NSCC uses a "modified" DVP mechanism, under which securities are delivered with finality to the participants only if the NSCC has received the cash or is in a credit position vis-à-vis the relevant clearing member.

***Risks in links between CCPs (Rec. 11)***

13. The NSCC has established three links to the Option Clearing Corporation (OCC) and the Canadian Clearing and Depository Services Inc (CDS). According to the NSCC, an assessment of the associated risks with these links has been conducted.

***Efficiency (Rec. 12)***

14. The NSCC regularly reviews its pricing levels, which are based on cost recovery. The cost allocation methodology is part of a regular review by both internal and external auditors. NSCC also conducts benchmark studies to assess cost effectiveness in the market. According to DTCC, internal auditors ensure that each service provided by DTCC group does not cross-subsidise the cost and expenses of the others, and that the risk management financial resources are not commingled.

### ***Governance (Rec. 13)***

15. There is a single governance structure for all DTCC subsidiaries, including the NSCC. Although DTCC's governance arrangements are made public, not all the relevant information is publicly available. DTCC is currently in the process of reviewing its governance arrangements. Public interest is taken into account in a number of ways, including the requirement that all proposed rule changes of NSCC be filed with the SEC and noticed for public comment, and by discussion with industry participants.

### ***Transparency (Rec. 14)***

16. Market participants are provided with sufficient information regarding NSCC risk management. The regulations, rules and procedures governing the NSCC are publicly available, as are audited annual financial statements, and participants receive non audited quarterly financial statements. The NSCC has completed and publishes on its website a self assessment following the RCCPs assessment methodology.

### ***Regulation and oversight (Rec. 15)***

17. The responsibilities and objectives of relevant public authorities with regard to securities clearing and settlement systems are clearly defined and publicly disclosed. The SEC supervises the NSCC given its status of a registered clearing agency. In conducting its responsibilities, the SEC applies other standards than the RCCPs, although some of the issues covered by the RCCPs are also addressed by the standards under the securities laws that are applied by the SEC. The Federal Reserve has the authority to examine the NSCC as an affiliate of DTC. The SEC and the Federal Reserve have signed exam-specific information sharing arrangements regarding the oversight of NSCC. A cooperation framework (MoU) between the SEC and the Canadian authorities has been set for the supervision of the links, while there is no such arrangement with the Monetary Authority in Singapore (MAS).

**Table 2. Summary of Observance with the CPSS-IOSCO Recommendations**

Responsibility	Assessment
<b>Legal risk</b>	
1. Central counterparties should have a well-founded, clear and transparent legal basis in the relevant jurisdiction.	NSCC's activities are governed by a consistent and transparent set of laws, regulations and contractual arrangements that form a sound legal basis.
<b>Participation requirement</b>	
2. A CCP should require participants to have sufficient financial resources and robust operational capacity to meet obligations arising from participation in the CCP. A	The NSCC has adequate financial requirements for participants, which are based on the type of the entity and the provided services. NSCC defines a



Responsibility	Assessment
<p>CCP should have procedures in place to monitor that participation requirements are met in an on-going basis. A CCP's participation requirements should be objectives, publicly disclosed, and permit fair and open access.</p>	<p>net capital requirement, which is above the minimum capital requirement imposed by the SEC. Moreover, all members contribute to the Clearing Fund, with the amount defined by the NSCC.</p> <p>The NSCC assesses participants' financial and operational capability, including: (a) sufficient financial ability to make anticipated contributions to the Clearing Fund and to meet obligations to the NSCC; (b) an established business history of a minimum of six months or personnel with sufficient operational background and experience; (c) appropriate settling bank arrangements; and (d) appropriate communication procedures.</p>
<b>Measurement and management of credit exposures</b>	
<p>3. A CCP should measure its credit exposure to its participants at least once a day. Through margin requirements, other risk control mechanisms or a combination of both, a CCP should limit its exposure to potential losses from defaults of its participants in normal market conditions so that the operation of the CCP would not be disrupted and non-defaulting participants would not be exposed to losses that they cannot anticipate or control.</p>	<p>The definition of margins and clearing funds in the published assessment is not consistent with international usage/practice and the definitions provided in the glossary of the RCCPs.</p>
<b>Margin requirements</b>	
<p>4. If a CCP relies on margin requirements to limit its credit exposures to participants, these requirements should be sufficient to cover potential exposures in normal market conditions. The models and parameters used in setting margin requirements should be risk-based and reviewed regularly.</p>	<p>The NSCC relies on margin requirements to collect contributions to the clearing fund to cover its exposure vis-à-vis its members. The NSCC tests regularly participants' exposures as a basis to determine the contributions to the clearing fund.</p>
<b>Financial resources</b>	
<p>5. A CCP should maintain sufficient financial resources to withstand, at a minimum, the default of a participant to which it has the largest exposure in extreme but plausible market conditions.</p>	<p>NSCC's liquidity can be increased by reposing the securities in the clearing fund. However, this arrangement cannot be considered as a committed line, since there is no complete assurance that the repo markets would be effective in extreme market situations.</p>
<b>Default procedures</b>	
<p>6. A CCP default procedures should be clearly stated, and should ensure that the CCP can take timely action to contain losses and liquidity pressure and to continue meeting its obligations. Key aspects of the default procedures should be publicly available.</p>	<p>NSCC's default procedures are clearly stated in the system's rules and procedures, which would allow the NSCC to suspend or terminate a member for any service, should it become subject to insolvency proceedings or fail to perform its obligations to the</p>

Responsibility	Assessment
	system. The U.S. legal framework provides a high degree of assurance with regard to the enforceability of default procedures.
<b>Custody and investment risk</b>	
7. A CCP should hold assets in a manner whereby risk of loss or of delay in its access to them is minimized. Assets invested by a CCP should be held in instruments with minimal credit, market and liquidity risks.	NSCC's assets are highly concentrated in two major commercial banks, and not all NSCC's investments are secured.
<b>Operational risk</b>	
8. A CCP should identify sources of operational risk and minimize them through the development of appropriate systems, controls and procedures and procedures. Systems should be reliable and secure, and have adequate, scalable capacity. Business continuity plans should allow for timely recovery of operations and fulfilment of a CCP's obligations.	Contingency plans and backup facilities for the failure of key systems are not tested and reviewed with participants (only connectivity is tested with the critical participants).
<b>Money settlements</b>	
9. A CCP should employ money settlement arrangements that should eliminate or strictly limit its settlement bank risks, that is, its credit and liquidity risk from the use of banks to effect money settlements with its participants. Funds transfers to a CCP should be final when effected.	The NSCC relies on a settlement agent to settle end-of-day funds in central bank money since it does not have access to Federal Reserve accounts. Access to central bank would require either the NSCC being chartered as a bank or statutory changes to grant the Federal Reserve legal authority to provide accounts to the NSCC.
<b>Physical deliveries</b>	
10. A CCP should clearly state its obligations with respect to physical deliveries. The risks from these obligations should be identified and managed.	Securities delivered to the NSCC are promptly redelivered to parties that are entitled to receive them through an allocation algorithm.
<b>Risks in links between CCPs</b>	
11. CCPs that establish links either cross-border or domestically to clear trades should evaluate the potential sources of risks that can arise, and ensure that the risks are managed prudently on an ongoing basis. There should be a framework for cooperation and coordination among the relevant regulators and overseers.	The NSCC has appropriate risk management procedures in place to identify and evaluate the risks from the links. A framework for cooperation (MoU) between the SEC and the Canadian authorities has been set for the link to the Canadian system.
<b>Efficiency</b>	
12. While maintaining safe and secure operations, CCPs should be cost-effective in meeting the requirements of participants.	The NSCC regularly reviews its pricing levels, which are cost-based. It also conducts benchmark studies to assess cost effectiveness in the market.
<b>Governance</b>	
13. Governance arrangements for a CCP should be clear and transparent to fulfil public interest requirements and to support the objectives of owners	The NSCC governance arrangements are not sufficiently specified and transparent, including criteria for the composition and selection

and participants. In particular, they should promote the effectiveness of a CCP's risk management procedures.	of Board members.
<b>Transparency</b>	
14. A CCP should provide market participants with sufficient information for them to identify and evaluate accurately the costs and risks associated with using its services.	The regulations, rules, and procedures governing NSCC are publicly available, as are annual audited financial statements, and participants receive unaudited quarterly financial statements.
<b>Regulation and oversight</b>	
15. A CCP should be subject to transparent and effective regulation and oversight. In both a domestic and an international context, central banks and securities regulators should co-operate with each other and with other relevant authorities.	The SEC has not formally required NSCC to perform self-assessment based on the RCCPs.  The Federal Reserve does not have a legal mandate to oversee the NSCC, other than its authority to examine NSCC as an affiliate of DTC.

**Table 3. Actions to Improve Compliance**

<b>Reference Recommendation</b>	<b>Recommended Action</b>
Recommendation 3: Credit exposures management	Align the definitions of margins and clearing funds with international standards.
Recommendation 5: Financial resources	Consider additional liquidity buffer to deal with extreme situations where repo arrangements cannot be used.  Consider conducting more frequently stress testing than once a month, in particular, in times of unusual market volatility.  Disclose stress testing assumptions to participants.
Recommendation 7: Custody and investment risk	Continue to monitor and mitigate the potential risks, which result from holding assets at only two commercial banks.  Avoid to the largest extent possible unsecured investments.
Recommendation 8: Operational risk	Test and review NSCC's backup sites to critical participants' backup sites.
Recommendation 9: Money settlements	Give NSCC access to central bank accounts and Fedwire Securities Services.
Recommendation 13: Governance	NSCC's governance arrangements should be more clearly specified and transparent, including criteria for the composition and selection of board members.
Recommendation 15: Regulation and oversight	SEC should formally required NSCC to perform a self-assessment based on RCCPs.  Ensure the compliance of the SEC rules with the RCCPs.  Provide legal mandate to the Federal Reserve to oversee NSCC, as a complement to the SEC regulation and supervision.

#### **IV. AUTHORITIES' RESPONSE TO THE ASSESSMENT**

18. The U.S. authorities welcome the IMF's assessment of the NSCC against the RCCP. We appreciate the significant undertaking associated with an FSAP review of the biggest financial sector in the world, as well as the challenges that accompany the first assessment of a large advanced country in the wake of the crisis. The authorities are pleased to note that the IMF's assessment reflects the high degree of compliance of the NSCC with the RCCPs, and will work with the NSCC in considering the assessment's specific comments and recommendations. Again, the authorities appreciate the significant undertaking associated with the assessment of the NSCC and the contribution that the assessment process makes to the stability and effective regulation and oversight of systemically-important payment, clearing and settlement systems.

FINANCIAL SECTOR ASSESSMENT PROGRAM

# UNITED STATES OF AMERICA

THE FEDWIRE SECURITIES SERVICE'S OBSERVANCE'S OF THE  
CPSS-IOSCO RECOMMENDATIONS FOR SECURITIES  
SETTLEMENT SYSTEMS

## REPORT ON STANDARDS AND CODES (ROSC)

JULY 2010

INTERNATIONAL MONETARY FUND  
MONETARY AND CAPITAL MARKETS DEPARTMENT



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**GLOSSARY**

CCP	Central Counterparty
CPSS	Committee on Payment and Settlement Systems
CSD	Central Securities Depository
DTC	Depository Trust Company
DTCC	Depository Trust and Clearing Corporation
DVP	Delivery-versus-Payment
FSS	Fedwire Securities Service
FICC	Fixed Income Clearing Corporation
FICC-GSD	Fixed Income Clearing Corporation – Government Securities Division
FICC-MSBD	Fixed Income Clearing Corporation – Mortgage Backed Securities Division
GSE	Government Sponsored Entity
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commission
ISO	International Organization for Standardization
NSCC	National Securities Clearing Corporation
PSPAC	Payment System Policy Advisory Committee
RCCP	Recommendation for Central Counterparties
RSSS	Recommendation for Securities Settlement Systems
SEC	Securities and Exchange Commission
SWIFT	Society for Worldwide Interbank Financial Telecommunication
WPO	Wholesale Product Office



## I. INTRODUCTION AND METHODOLOGY

1. The assessment of the Fedwire Securities Service (FSS),<sup>1</sup> owned and operated by the Federal Reserve System, against the CPSS-IOSCO Recommendations for Securities Settlement Systems (RSSSs) reveals that the system is sound, efficient, and reliable. For operational risks, the U.S. requirements go beyond those of the RSSSs. However, some regulatory changes are needed to ensure “fair” and open access to the system by other entities than U.S. banks. Although the Federal Reserve Board oversees the system based on its supervisory responsibility for the Banks, it would be beneficial and effective to have an explicit legal basis for oversight of all systemically important securities clearing and settlement systems.

2. The assessment of FSS was undertaken in the context of the IMF Financial Sector Assessment Program (FSAP).<sup>2</sup> Prior to the mission, the Federal Reserve Board assessed the FSS following the RSSSs methodology published in 2002 by the CPSS-IOSCO. The assessment has been based on the self assessment, and a review of the relevant rules and regulations. The assessment also benefited from discussion with the operator of the system and meetings with market participants arranged by the authorities. Relevant authorities have been very co-operative in providing additional confidential information and organizing additional meetings, when required.<sup>3</sup>

## II. INSTITUTIONAL AND MARKET STRUCTURE—OVERVIEW

3. The Reserve Banks operate FSS on a consolidated basis through the Federal Reserve Bank of New York’s Wholesale Product Office. In their capacity as fiscal agents, the Federal Reserve Banks act as the central securities depositories (CSD) for securities issued by the Treasury, federal agencies, government sponsored entities, and certain institutional organizations. The FSS is also the key interbank settlement system for Fedwire-eligible securities. FSS’ participants include depository institutions and certain other institutions, including U.S. branches and agencies of foreign banks. The key statistics of FSS are provided in Table 1.

4. Various institutional and market arrangements facilitate the issuance, trading, clearing, and settlement of Fedwire-eligible securities. The Reserve Banks, through FSS, provide key issuance and settlement services. In addition, the FICC and the two clearing banks, JP Morgan Chase (JPMC) and Bank of New York Mellon (BoNY), perform clearance and settlement functions for market participants. A large share of settlement of Government

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<sup>1</sup> The underlying Detailed Assessment Report was published in May 2010 and is available at <http://www.imf.org/external/pubs/cat/longres.cfm?sk=23869.0>.

<sup>2</sup> For further discussion see the accompanying Financial System Stability Assessment (FSSA), ([www.imf.org](http://www.imf.org)).

<sup>3</sup> This assessment was carried out by Daniela Russo (external expert) and overseen by Elias Kazarian (IMF).

securities is internalized in the two clearing banks. No official figure is available on internalization.

5. The FSS is overseen by the Federal Reserve Board, which regularly assesses the FSS against the RSSs. The assessments have been made publicly available since 2007. Furthermore, the Federal Reserve banking supervisors, the Securities Exchange Commission (SEC), and the Treasury provide relevant perspectives on the market context in which Fedwire operates. In particular, the SEC is the regulator of many participants in the government securities market and the central counterparty (CCP).

**Table 1. Key Statistics of FSS, 2007–09**

	2007	2008	2009
1. Turnover (USD trillions)	435.6	419.3	295.7
2. Instructions processed (millions, total for the year)	24.2	25.0	21.1
3. Average daily value of transfers (USD trillions)	1.73	1.66	1.17
4. Peak daily value of securities settled (USD trillions)	2.60	2.81	2.55
5. Total value of securities held (USD trillions), of which:	43.18	47.27	52.58
5.1 Treasury securities	4.54	5.80	7.27
5.2 Securities issues by federal agencies	2.78	3.12	3.82
5.3 Securities issued by GSE	35.81	38.28	40.41
6. Number of new issues (thousands)	98.4	100.8	74.5
7. Number of participants, of which:	7,500	6,700	6,300
7.1. Number of active participants	2,645	2,558	2,566

Source: The Federal Reserve.

### III. MAIN FINDINGS

#### *Legal Framework (Rec. 1)*

6. The FSS activities are governed by a consistent set of laws, regulations, and contractual arrangements that form a sound legal foundation for clearing, settlement, and custody activities. This set of law and regulations is public and readily accessible to system's participants.

#### *Pre-settlement Risk (Rec. 2–5)*

7. Confirmation services for FSS eligible securities to direct participants that are cleared by CCP are provided by FICC. The FSS does not require settlement instructions to be matched prior to settlement. The settlement cycle for FSS eligible securities is generally shorter than T+3 with the exception of mortgage backed securities (MBS) that occurs on a monthly basis. The costs/benefits of the reduction of the settlement cycle have been assessed, and market participants considered establishing the CCP more appropriate than reducing the settlement cycle.

***Settlement Risk (Rec. 6–10)***

8. Securities settled in FSS are issued on a dematerialized basis (except for a limited number of securities that can be immobilized). Transfer of ownership occurs when securities are transferred between participants within the system. The FSS enables delivery versus payment (DVP) on a real time basis. The transfer of securities and cash occurs simultaneously and is final when the securities and cash accounts are credited and debited.

***Operational Risk (Rec. 11)***

9. The FSS has in place adequate procedures to identify and minimize the sources of operational risk that may arise in the settlement process. Contingency plans and back-up facilities are regularly tested and maintained to ensure the resilience of the FSS. The business continuity plan takes into account the dependence between FSS and Fedwire Funds. A risk-based review of the IT system supporting the FSS functioning is conducted by independent external auditors. Senior management regularly monitors operational reliability issues.

***Custody Risk (Rec. 12)***

10. The FSS operates an indirect holding system where securities (or interest in securities) are held for the sole benefit of the direct participants whose account has been credited and not for the benefit of any other party. Physical and technical controls as well as periodic audits are performed to ensure that the Reserve Banks records are accurate and to ensure that customers' securities are adequately managed.

***Other Issues (Rec. 13–19)***

11. The FSS access and exit criteria are publicly disclosed. Currently, some key market participants such as nonbank broker-dealers are not allowed to access the FSS on the basis of non-risk related criteria. Furthermore, entities not physically present in the United States, cannot have access to FSS, as they are not covered by U.S. banking supervision authorities. Following the Monetary Control Act (1980), the Federal Reserve Banks are required to recover direct but also imputed costs that would have been incurred if a private firm was offering this service. The FSS uses a proprietary message format, which can be translated to and from international message standards. It is currently not envisaged to use instead SWIFT or ISO standards. Market participants are provided with sufficient information on FSS, including laws, regulations, rules, and procedures. Moreover, the FSS has completed a self assessment following the RSSSs assessment methodology. The self assessments are disclosed on the Federal Reserve website. The responsibilities and objectives of relevant public authorities with regard to securities settlement systems are clearly defined and publicly disclosed. The Federal Reserve Board is exercising oversight over the FSS, based on its supervisory responsibility for the Reserve Banks. The Government and Accountability Office have the legal power to audit the FSS as a Treasury Agent.

**Table 2. Summary of Observance with the CPSS-IOSCO Recommendations**

Responsibility	Assessment
<b>Legal risk</b>	
1. Securities settlement systems should have a well-founded, clear, and transparent legal basis in the relevant jurisdiction.	The FSS activities are governed by a consistent and transparent set of laws, regulations, and contractual arrangements that form a sound legal basis.
<b>Pre-settlement risk</b>	
2. Confirmation of trades between market participants should occur as soon as possible after trade execution, but no later than the trade date (T+0). Where confirmation of trades by indirect market participants (such as institutional investors) is required, it should occur as soon as possible after trade execution, preferably on T+0, but no later than T+1.	The FSS should explore the possibility of introducing an instructions matching mechanism prior to settlement.
3. Rolling settlement should be adopted in all securities markets. Final settlement should occur no later than T+3. The benefits and costs of a settlement cycle shorter than T+3 should be assessed.	The settlement of government bonds occurs on T+1 while the settlement of the MBS occurs on fixed monthly dates. For the compliance with this recommendation, MBS should be settled no later than T+3.
4. The benefits and costs of a central counterparty should be assessed. Where such a mechanism is introduced, the central counterparty should rigorously control the risks it assumes.	FICC-GSD acts as CCP for all FSS eligible securities except for agency MBS. In this regard, FICC has filed a proposed rule change with the SEC to allow FICC-MBSD to act as CCP for agency MBS.
5. Securities lending and borrowing (or repurchase agreements and other economically equivalent transactions) should be encouraged as a method for expediting the settlement of securities transactions. Barriers that inhibit the practice of lending securities for this purpose should be removed.	FSS does not provide a securities lending facility to its participants, although there is a well-functioning market for securities lending in the United States.
<b>Settlement risk</b>	
6. Securities should be immobilized or dematerialized and transferred by book entry in CSD to the greatest extent possible.	The vast majority of securities settled held in custody by FSS are issued in a dematerialized form.
7. Securities settlement systems should eliminate principal risk by linking securities transfers to funds transfers in a way that achieves delivery versus payment.	The FSS enables delivery versus payment (DVP) on a real time basis.
8. Final settlement on a DVP basis should occur no later than the end of the settlement day. Intra-day or real-time finality should be provided where necessary to reduce risks.	The finality of securities and cash transfers occur simultaneously and finality is achieved on real time when the securities and cash accounts are credited and debited.
9. CSDs that extend intraday credit to	The Fed's net debit caps set limits on the amount of

Responsibility	Assessment
<p>participants, including CSDs that operate net settlement systems, should institute risk controls that, at a minimum, ensure timely settlement in the event that the participant with the largest payment obligation is unable to settle. The most reliable set of controls is a combination of collateral requirements and limits.</p>	<p>intraday credit used by participants, which reduces the Fed total exposures to credit risk. The Fed provides uncollateralized intraday credit in order to expedite DVP settlement.</p>
<p>10. Assets used to settle the ultimate payment obligations arising from securities transactions should carry little or no credit or liquidity risk. If central bank money is not used, steps must be taken to protect CSD members from potential losses and liquidity pressures arising from the failure of the cash settlement agent whose assets are used for that purpose.</p>	<p>There is a high concentration of securities clearing and settlement in the two clearing banks, JPMC and BoNY, which also serve as the two settlement banks for the FICC. Moreover, in order to facilitate settlement of buy-sell transactions, dealers heavily rely on intraday credit provided by JPMC and BoNY. This intraday credit is uncommitted but collateralized.</p> <p>A problem at one of the clearing banks or a refusal to extend credit to a market participant could be disruptive to the functioning of the tri-party repo market and the settlement of securities transactions.</p>
<p><b>Operational risk</b></p>	
<p>11. Sources of operational risk arising in the clearing and settlement process should be identified and minimized through the development of appropriate systems, controls, and procedures. Systems should be reliable and secure, and have adequate, scalable capacity. Contingency plans and back-up facilities should be established to allow for timely recovery of operations and completion of the settlement process.</p>	<p>The FSS has in place adequate procedures to identify and minimize the sources of operational risk, and contingency plans and back-up facilities to ensure business continuity. A risk-based review of the IT system supporting the FSS functioning is conducted by independent external auditors. Senior management regularly monitors operational reliability issues.</p>
<p><b>Custody risk</b></p>	
<p>12. Entities holding securities in custody should employ accounting practices and safekeeping procedures that fully protect customers' securities. It is essential that customers' securities be protected against the claims of a custodian's creditors.</p>	<p>Physical and technical controls as well as periodic audits are performed to ensure custody risk is minimized by checking, among other things, that the Reserve Banks records are accurate and customers' securities are adequately managed.</p>
<p><b>Other issues</b></p>	
<p>13. Governance arrangements for CSDs and central counterparties should be designed to fulfill public interest requirements and to promote the objectives of owners and users.</p>	<p>The WPO does not include representatives of smaller and midsize participants, but rather rely on feedback provided through the financial services website. This arrangement may not ensure that the needs and interests of different kinds of participants are taken into account.</p>
<p>14. CSDs and central counterparties should have objectives and publicly disclosed criteria for participation that permit fair and open access.</p>	<p>Certain key market participants such as nonbank broker dealers are not eligible to maintain accounts at the Federal Reserve. This prevents these participants from settling their trades in central bank</p>

Responsibility	Assessment
	money thereby increasing settlement risk. Moreover, some key infrastructures are not chartered as banks, and as a consequence they cannot use directly the services of FSS.
15. While maintaining safe and secure operations, securities settlement systems should be cost-effective in meeting the requirements of users.	The operating hours of FSS are relatively short when compared to operating hours of other CSDs.
16. Securities settlement systems should use or accommodate the relevant international communication procedures and standards in order to facilitate efficient settlement of cross-border transactions.	Since FSS participation requirements prevent direct remote access from foreign participants (banks or other infrastructure) the requirement for the use of international communication procedures for cross-border transactions is not as relevant. However, international standards could become relevant should remote access of other infrastructure be allowed. In general terms, global co-operation calls for adoption of (or compatibility with) common global standards for major infrastructures at the global level.
17. CSDs and central counterparties should provide market participants with sufficient information for them to accurately identify the risks and costs associated with using the CSD or central counterparty services.	Laws, regulations, system rules, and fees are part of the contractual agreements signed by participants. In particular, participants' rights, obligations, and costs are defined in these agreements, which are also available on the Fed website.
18. Securities settlement systems should be subject to regulation and oversight. The responsibilities and objectives of the securities regulator and the central bank with respect to SSSs should be clearly defined, and their roles and major policies should be publicly disclosed. They should have the ability and resources to perform their responsibilities, including assessing and promoting implementation of these recommendations. They should cooperate with each other and with other relevant authorities.	A clear legal basis for the Federal Reserve Board's supervision of FSS exists. However, it is based on its banking supervisory responsibility rather than a legal responsibility for clearing and settlement.
19. CSDs that establish links to settle cross-border trades should design and operate such links to reduce effectively the risks associated with cross-border settlement.	<p>No cross-border link is in place because foreign CSDs without a legal presence in the United States and a banking license are not allowed to open accounts at the Fed.</p> <p>The Fed does not monitor the functioning of indirect links, where major custodians are involved in cross-border transfers of FSS eligible securities between FSS and foreign CSDs. The RSSS assessment methodology, however, does not provide clear indications on how assessment of indirect links should be conducted.</p>

**Table 3. Recommended Action plan to Improve Observance of CPSS-IOSCO Recommendations**

Reference Recommendation	Recommended Action
Recommendation 2: Trade confirmation	The FSS should explore the possibility of introducing an instructions matching mechanism prior to settlement.
Recommendation 3: Settlement cycles	MBS should be settled no later than T+3.
Recommendation 9: Risk controls	In view of eliminating the residual risk taken by the Fed when executing DVP whose cash leg is funded by Fed using uncollateralized intraday credit, the Fed should continue to monitor these risks and assess whether additional mitigation tools such as collateral is needed.
Recommendation 13: Governance	In order to ensure that the needs and interests of different kinds of participants are taken into account, the WPO should include representatives of smaller and midsize participants in its advisory group.
Recommendation 14: Assess	The Federal Reserve should be given the legal authority to open accounts and provide services, at a minimum, for other payment clearing and settlement infrastructures.
Recommendation 15: Efficiency	The Fed should re-assess the operating hours of FSS.
Recommendation 16: Communication	International standards could become relevant should remote access of other infrastructure be allowed. In general terms, global co-operation calls for adoption of (or compatibility with) common global standards for major infrastructures at the global level.
Recommendation 18 : Regulation and oversight	The Fed should be provided the legal basis to oversee systemically important payment, clearing, and settlement infrastructures.
Recommendation 19 : Cross-border links	Fed should consider monitoring the functioning of indirect links, where major custodians are involved in cross-border transfers of FSS eligible securities between FSS and foreign CSDs.

#### IV. AUTHORITIES' RESPONSE TO THE ASSESSMENT

12. The U.S. authorities strongly support the FSAP program, welcome this independent review, and thank the assessors for all the work to produce this report. They appreciate the significant undertaking associated with a review of the biggest financial sector in the world, as well as the challenges that accompany the first assessment of a large advanced country in the wake of the crisis.

13. The authorities are pleased to note the assessment reflects the high degree of compliance of the Fedwire securities service with the RSSs, and are largely in agreement with the assessment's comments and recommendations. The authorities will explore the possibility of introducing settlement instruction matching in the Fedwire securities service, taking into account the relevant costs and benefits associated with such a matching feature.

The authorities will also reassess the business case for extending FSS service operating hours and seek ways to ensure that the needs and interests of smaller and midsize participants continue to be taken into account.

14. The assessment also recommends that a rolling settlement period of no later than T+3 be adopted in the U.S. mortgage-backed securities (MBS) market. While the authorities agree in principle that reducing the settlement period reduces settlement risk, they note that such a change for the U.S. MBS market requires careful study and close consultation with market participants given the characteristics of the instruments being settled, existing trading practices, and significant operational changes that are likely to be needed. The U.S. authorities believe that near-term risk reduction efforts should focus on the industry proposal to implement a central counterparty for mortgage-backed securities.

15. With regard to the recommendation concerning residual risks associated with the provision of intraday credit to participants in the Fedwire securities service, the authorities note that a rigorous program for assessing, monitoring, and mitigating the risks associated with the provision of intraday credit to Fedwire accountholders is in place. Nevertheless, the authorities are further strengthening this program as a result of a comprehensive policy review conducted from 2006 to 2008 and the planned implementation of an explicit collateralization policy in late 2010 or early 2011. As a result, the authorities are confident that the residual risks noted in the assessment are adequately monitored and controlled.