



**UNIDROIT Study Group on principles and
rules on the netting of financial
instruments**

Second Meeting

Rome, 13 – 15 September 2011

UNIDROIT 2011
Study LXXVIII C – Doc. 7
Original: English
September 2011

OVERVIEW PAYMENT, CLEARING AND SETTLEMENT SYSTEMS

(prepared by the UNIDROIT Secretariat)

1. The UNIDROIT *Study Group on principles and rules on the netting of financial instruments* invited the Secretariat during its first meeting in Rome from 18 to 21 April 2011 to prepare an overview of the provisions on clearing and settlement systems which might interfere with close-out netting agreements or which apply to similar mechanisms. The Secretariat has focused this overview on some of the major payment, clearing and settlement systems.

I. Payment systems

A. TARGET2

(Trans-European Automated Real-time Gross-settlement Express Transfer System)

2. TARGET2, the real-time gross settlement (RTGS) system for the Euro, is operated by the Eurosystem on a unitary technical platform, the "Single Shared Platform" (SSP).¹ TARGET2 can be used for all credit transfers in Euro and processes both interbank and customer payments without any upper or lower limit on the value of payments.² From a legal perspective, TARGET2 consists of a number of national TARGET2 component systems.

3. Since TARGET2 is a RTGS system, its daily payment transactions do not involve netting mechanisms. The payment transactions are settled on a continuous basis with immediate finality. However, the "Harmonised Conditions" of Annex II to the ECB Guidelines governing TARGET2³,

¹ Art. 1 of Guideline ECB/2007/2 of the ECB of 26 April 2007 as amended by ECB Guideline ECB/2010/12 of 15 September 2010.

² Kokkola, *The payment system* (published by the ECB in 2010), p. 179
(<http://www.ecb.int/pub/pdf/other/paymentsystem200909en.pdf>).

³ Guideline ECB/2007/2 of the ECB of 26 April 2007 on a Trans-European Automated Real-time Gross settlement Express Transfer system (TARGET2), OJ L 237, 8.9.2007, p. 1 as amended by Guidelines ECB/2009/9 of 7 May 2009, ECB/2009/21 of 17 September 2009, ECB/2010/12 and of 15 September 2010 (a consolidated text of Guideline ECB/2007/2 including these three amendments produced by the Publications Office of the European Union on 22.11.2010 can be found here: <http://www.ecb.int/ecb/legal/pdf/02007o0002-20101122-en.pdf>) and as amended by Guideline ECB/2011/2 of 17 March 2011 (http://www.ecb.int/ecb/legal/pdf/l_08620110401en00750076.pdf).

which have to be adopted by the National Central Banks participating in TARGET2 as their Terms and Conditions⁴ contain a netting mechanism⁵ in Art. 36(4)⁶.

Art. 36 (4)

"On the occurrence of:

(a) an event of default, referred to in Article 34(1)⁷; or

(b) any other event of default or event referred to in Article 34(2)⁸ that has led to the termination or suspension of the participant's participation,

notwithstanding the commencement of any insolvency proceedings in respect of a participant and notwithstanding any assignment, judicial or other attachment or other disposition of or in respect of the participant's rights, all obligations of the participant shall be automatically and immediately accelerated, without prior notice and without the need for any prior approval of any authority, so as to be immediately due. In addition, the mutual obligations of the participant and the [insert name of CB] shall automatically be set off against each other, and the party owing the higher amount shall pay to the other the difference."

4. Furthermore, there is an optional liquidity pooling functionality based on Artt. 23-26 of the Harmonised Conditions in Annex II to the ECB Guidelines. The liquidity pooling functionality gives Banking groups the option to view and/or use the liquidity in all of the accounts belonging to the various entities in the group.⁹ Thus, the accounts concerned are grouped together.¹⁰

Article 25

Aggregated liquidity mode

1. The following may use the AL mode:

(a) a credit institution and/or its branches (whether or not such entities participate in the same TARGET2 component system), provided that the entities concerned are established in the euro area and have several PM accounts identified by different BICs;

(b) branches established in the euro area (whether or not such branches participate in the same TARGET2 component system) of a credit institution established outside the euro area, provided that such branches have several PM accounts identified by different BICs; or

(c) two or more credit institutions referred to in subparagraph (a) and/or branches referred to in subparagraph (b) which belong to the same group.

In each case referred in subparagraphs (a) to (c) it shall also be a requirement that the entities concerned have established intraday credit arrangements with the respective participating NCB.

2. Under the AL mode, for the purpose of checking whether a payment order is sufficiently covered, available liquidity on all the AL group members' PM accounts is aggregated. Notwithstanding the above, the bilateral PM account relationship between the AL group

⁴ Cf. Art. 5, 6 and 15 and Preamble/explanatory remark No. 3 of the Guideline ECB/2007/2 as amended by by Guidelines ECB/2009/9, ECB/2009/21, ECB/2010/12 and ECB/2011/2.

⁵ Pursuant to Art. 6 of the Guidelines, the Harmonised Conditions have been adopted by the participating National Central Banks (e.g. for the German Bundesbank in the "Geschäftsbedingungen für die Teilnahme an Tarket2-Bundesbank" http://www.bundesbank.de/download/zahlungsverkehr/agb_target2_bbk.pdf)

⁶ cf. its transposition in Art. 36(2) of the "Geschäftsbedingungen für die Teilnahme an Tarket2-Bundesbank" (http://www.bundesbank.de/download/zahlungsverkehr/agb_target2_bbk.pdf). This provision can also be found in Art. 30(2) of the terms and conditions of TARGET2-ECB set up by ECB decision ECB/2007/7 of 24 July 2007 (http://www.ecb.int/ecb/legal/pdf/l_23720070908en00710107.pdf).

⁷ These are (a) The opening of insolvency proceedings; and/or (b) the participant no longer meets the access criteria laid down in Article 4.

⁸ Art. 34 (2) refers to the events of default defined in Art. 1 of Annex II which are: the opening of/application for insolvency proceedings; the (deemed) inability to pay all or parts of the debts or to meet obligations relating to intraday credit; the entry into agreements with the creditors; a freezing order, attachment or seizure or equivalent procedure on the credit balance or assets; the suspension or termination of the participation in another TARGET2 component system/ancillary system; the assignment of all or substantial parts of the assets or a material false representation. In Addition, Art. 34 (2) also includes a material breach of the Conditions of Annex II and a failure to carry out any material obligation to the relevant Central Bank.

⁹ The service is not available to remote participants or participants located in non-euro area countries (Art. 25(1) of Annex II, cf also Payment and securities settlement systems in the European Union, Blue Book, fourth edition (2007), Volume 1: euro area countries, p. 39 (<http://www.ecb.int/pub/pdf/other/ecbbluebookea200708en.pdf>).

¹⁰ Kokkola, The payment system (published by the ECB in 2010), p. 252 (<http://www.ecb.int/pub/pdf/other/paymentsystem200909en.pdf>).

member and its AL NCB shall continue to be governed by the arrangements of the relevant TARGET2 component system, subject to the modifications set out in the AL agreement. Intraday credit extended to any AL group member on its PM account may be covered by the available liquidity on the other PM accounts held by such AL group member or PM accounts held by any other AL group members with the same or any other AL NCB.

3. In order to use the AL mode, one or more TARGET2 participants meeting the criteria in paragraph 1 shall enter into an AL agreement with the [insert name of CB] and, if applicable, other CB(s) of the TARGET2 component systems in which other AL group members participate. A TARGET2 participant may only enter into one AL agreement in relation to a particular PM account. The AL agreement shall be in conformity with the relevant template in Appendix VII.

[...]

5. Artt. 25a to 26 regulate the consequences of the liquidity pooling functionality in an event of default. Artt. 25a and 25c of the Harmonised Conditions of Annex II to the ECB Guidelines provide that the pledge/floating charge of the Central Bank over the participant's existing and future credit balances on its TARGET accounts under Art. 36(1) and (2) (and thus over its current and future claims arising out of the legal relationship between the parties) shall include the claims against all AL group members arising under the AL-agreement and that the Central Bank shall have the right to realise collateral regarding those claims. Under Artt. 26 and 36 of Annex II¹¹, the AL mode can give rise to a cross-affiliate netting mechanism.¹²

Article 25a

Pledge/enforcement

1. The [insert name of CB]'s current and future claims arising from the legal relationship between an AL group member and the [insert name of CB] and which are secured by the [insert the applicable term: pledge/floating charge] under Article 36(1) and (2) of these Conditions shall include the [insert name of CB]'s claims against such AL group member arising under the AL agreement to which both are party.

[...]

Art. 25c

Enforcement of collateral

Upon occurrence of the enforcement event, the [insert name of the CB] shall have the right to realise collateral under Article 36.]

Article 26

Set-off of claims under Article 36(4) and (5)

On the occurrence of an enforcement event, any claim of the [insert name of CB] against such AL group member shall be automatically and immediately accelerated and shall be subject to Article 36(4) and (5) of these Conditions.

B. EURO1

6. EURO1 is a multilateral net settlement system for domestic and cross-border single payments managed and operated by the EBA Clearing Company. The EBA Clearing Company has been established under French Law by the Euro Banking Association (EBA) and has its registered office in Paris¹³. The system requires any participant or applicant to be a direct participant in an EU RTGS system connected to TARGET2. Even though there are no restrictions as regards the value or

¹¹ Cf. Art. 26(2), 36(2) of the "Geschäftsbedingungen für die Teilnahme an Tarket2-Bundesbank" http://www.bundesbank.de/download/zahlungsverkehr/agb_target2_bbk.pdf.

¹² This is also reflected by Art. 4(3) of the Template for the Aggregated Liquidity Agreement – Variant A in Appendix VII to Annex II which stipulates: "Except on the opening of insolvency proceedings against one or more AL group members, an AL NCB may claim from each of the AL group members the full discharge of all obligations resulting from the settlement of payment orders of any AL group member in the latter's TARGET2 component system."

¹³ Kokkola, The payment system (published by the ECB in 2010), p. 179 (<http://www.ecb.int/pub/pdf/other/paymentsystem200909en.pdf>).

the originator of the credit transfer, the EBA intended EURO1 as a system for large-value commercial and financial payments made by EBA participants.¹⁴

7. EURO 1 operates under the Single Obligation Structure (SOS), a legal structure subject to German law whereby the participants agree to enter into a contractual agreement that on each settlement day, at any given time, each participant will have only one single payment obligation or claim with respect to the community of other participants as joint creditors/debtors. In accordance with the SOS, the processing of payments in EURO 1 will entail no bilateral payments, claims or obligations between participants. Nor will there be any form of setoff, novation or netting resulting from the continuous adjustment of the participants' claim or obligation. Each processed payment leads to an adjustment of the single claim or obligation of the participant. However, settlement of the single claim or obligation occurs only after the cutoff time, and the participants continue to be subject to certain credit and liquidity risks until final settlement in central bank money. The SOS does not allow for any unwinding once a payment has been processed by the system, even in the event of a participant being unable to honour its single obligation when the system is scheduled to settle through TARGET2 at the end of the day.¹⁵

8. EURO 1 settles at the end of the day in central bank money at the ECB. The relevant provisions are set out in the Settlement Service Agreement concluded between the EBA and the ECB. After the cutoff time (4 pm Central European Time), clearing banks with debit positions will pay their single obligations into the EBA settlement account at the ECB through TARGET2. After all amounts due have been received, and upon instruction from the EBA Clearing Company, the ECB will pay the clearing banks with credit positions, also through TARGET2.¹⁶

II. Clearing and Settlement systems

A. Euroclear

9. The Euroclear Group is based on a holding structure with the Euroclear plc, a United Kingdom-based holding company as parent company to the entire group¹⁷. One of its sub-subsidiaries is Euroclear SA/NV, which is incorporated in Belgium. Euroclear SA/NV owns the group's shared securities processing platforms and performs a range of services for the group's depositories. It is itself the parent company to the group's national and international central securities depositories Euroclear Bank, Euroclear France, CRESTCo, Euroclear Nederland and Caisse Interprofessionnelle de Dépôts et de Virements de Titres/ interprofessionele Effectendeposito- en Girokas (CIK), the Belgian CSD for private securities.¹⁸

¹⁴ Payment and settlement systems in selected countries (CPSS - Red Book - 2003), p.91 (www.bis.org/publ/cpss53.pdf).

¹⁵ Payment and settlement systems in selected countries (CPSS - Red Book - 2003), p. 91 f. (www.bis.org/publ/cpss53.pdf).

¹⁶ Payment and settlement systems in selected countries (CPSS - Red Book - 2003), p. 92 (www.bis.org/publ/cpss53.pdf).

¹⁷ A recent overview over the group structure can be found in the Euroclear Bank Disclosure Framework report - July 2011, .p. 51 (https://www.euroclear.com/site/publishedFile/OP0040_2011_tcm86-224092.pdf?title=Euroclear+Bank+Disclosure+Framework+Report+2011)

¹⁸ Payment and securities settlement systems in the European Union, Blue Book, fourth edition (2007), Volume 1: euro area countries, p. 66 (<http://www.ecb.int/pub/pdf/other/ecbbluebookea200708en.pdf>).

10. In January 2009 the Euroclear depositories of France, Belgium and the Netherlands started the single operating system ESES (short for Euroclear Settlement of Euronext-zone Securities).¹⁹ Euroclear is a delivery versus payment (DVP) settlement system that holds both cash and securities accounts on its books. Intraday finality for the batch processing or immediate finality for the real-time process is achieved through simultaneous book entry on the respective cash and securities accounts.²⁰

11. Euroclear Bank offers its participants additional services. First, participants can arrange flexible credit facilities with Euroclear Bank to support the securities settlement process. Credit facilities granted to participants are uncommitted and are only intended for intraday cash borrowing and commitments in connection with local market settlement and for securities borrowing.²¹ Second, Euroclear Bank offers a securities lending and borrowing program in which it acts as intermediary. In this program, all securities made available by lenders are aggregated in a lending pool and are allocated among lenders according to standard procedures. Euroclear Bank guarantees to each lender the return of lent securities or their cash equivalent in the case of borrower default as well as the payment of the lending fees.²² Third, Euroclear Bank provides triparty services with five collateral management products: triparty repo, securities lending, derivatives support, secured loans and exchange and netting support²³.

12. Euroclear France provides integrated collateral management services²⁴ facilitating collateralisation of all types of exposures from a single pool of collateral. The services support standard market agreements for repos, securities lending, derivatives support and secured loans. A triparty service agreement documenting these services that is specific to each collateral management product must be executed between the collateral giver, the collateral taker and Euroclear, acting as collateral management service agent²⁵. The collateral management securities substitution and selection module Autoselect runs eight times a day during the real-time settlement process.²⁶ The triparty service is based on one single platform for multiple products (cash collateral in repos, collateral in other derivatives, loan collateral in securities lending) and creates a pool that allows collateral holders to pool its collateral resources and collateralise across products. The triparty services are suspended when one counterparty serves a notice of default.

13. Euroclear does not act as a central counterparty but clears and settles securities without interfering with the underlying bilateral trading agreements. Due to the DVP-settlement mechanism, the Euroclear Group structure does not rely on classical netting mechanisms.

¹⁹ http://www.securitiestechologymonitor.com/monday_monitor/-25344-1.html?zkPrintable=true.

²⁰ Payment and settlement systems in selected countries (CPSS - Red Book – 2003), p. 469 (<http://www.bis.org/publ/cpss53p16.pdf>).

²¹ Payment and settlement systems in selected countries (CPSS - Red Book – 2003), p. 470 (<http://www.bis.org/publ/cpss53p16.pdf>).

²² Payment and settlement systems in selected countries (CPSS - Red Book – 2003), p. 468 (<http://www.bis.org/publ/cpss53p16.pdf>).

²³ Cf. Euroclear brochure "Collateral Management Services of 2009, p. 7 (https://www.euroclear.com/site/publishedFile/MA0060+Collateral+management+broch_tcm86-132206.pdf?title=Collateral+management+services+-+maximising+your+liquidity+options+). Under triparty services, Euroclear is only party to the triparty service agreement, but not to the bilateral agreement of the parties. The triparty service agreement does not interfere with the underlying bilateral trading agreement.

²⁴ The service includes marking to market, substitutions, margin calls and other monitoring associated with collateral securities.

²⁵ Euroclear bank acts as a neutral collateral management service provider. It is only party to the triparty service agreement, not to the bilateral agreement of the parties. The triparty service agreement does not interfere with the underlying bilateral trading agreement.

²⁶ Payment and settlement systems in selected countries (CPSS - Red Book – 2003), p. 469 (<http://www.bis.org/publ/cpss53p16.pdf>).

14. However, Art. 14(d) of the Terms and Conditions governing the use of Euroclear²⁷ provides that

"Upon the effectiveness of any termination or resignation, or as soon thereafter as is reasonably practicable, Euroclear Bank shall cause to be returned to such Participant the amounts then held by such Participant in its Cash Accounts and securities credited to its Securities Clearance Accounts, provided, however, that Euroclear Bank, without affecting any other rights it may have, shall have the right

- (i) to set off against or retain from such amounts to be so returned any amounts which are due to, or which may become due to, Euroclear Bank from such Participant and*
- (ii) to retain securities held in such Securities Clearance Accounts to provide for the payment in full of any amounts which are due to, or which may become due to, Euroclear Bank from such Participant.*

No such termination or resignation shall affect any right or liability arising out of events (including any Securities Loss) occurring, or securities delivered, prior to the effectiveness thereof."

15. The Operating Procedures of the Euroclear System²⁸ contains a risk-mitigation technique called "technical netting" (cf. in particular, Sect. 13.2.6.3 (d) on internal settlement procedures):

13.2.6.3 System-Linked instructions (technical netting)

(a) If a Participant inputs two instructions as set out in (b) below in respect of the same Securities Clearance Account ("Pivotal Securities Clearance Account") for securities identified by the same Security Code, then such instructions will be considered as "System-Linked Instructions" for the purposes of cash and securities positioning.

(b) The instructions which may be considered as System-Linked instructions are the following:

- (i) Bridge against payment receipt instruction, and*
- (ii) internal delivery and receipt instruction.*

(c) The amount of securities indicated in the receipt and delivery instructions need not to be the same.

(d) In order for the receipt and delivery instructions to be successfully positioned, the Participant which inputs the System-Linked instructions must have:

- (i) sufficient available securities standing to the credit of its Pivotal Securities Clearance Account to meet the delivery instruction (including the securities to be credited as a result of the execution of the receipt instruction which forms part of the System-Linked instruction);*
- (ii) sufficient funds or provision for such funds of the Settlement Currency in the appropriate subdivision of the Cash Account related to the Pivotal Securities Clearance Account to meet the receipt instruction (including the cash to be credited as a result of the execution of the original delivery instruction).*

(e) This module performs a technical netting of cash movements related to one or more purchase failed for lack of cash or credit (for internal clearances or Bridge receipts) with one or more onward sale failed for lack of securities to another Euroclear Participant account (i.e. an internal clearance). Participants can request a blocking by Euroclear Bank if there are specific securities that they would prefer are not subject to the technical netting procedure.

16. Also, Part IV of the Operating Procedures refers to a netting provision in its Sect. 12 (h) (i) regarding the proceedings under Euroclear France²⁹:

12. Euroclear Bank service concerning bilateral financing and settlement optimization in France (see Section 15)

²⁷ Terms and Conditions governing use of Euroclear – the clearance and settlement system for internationally traded securities (June 2010, https://www.euroclear.com/site/publishedFile/LG310_tcm86-121856.pdf?title=Terms+and+Conditions+governing+use+of+Euroclear).

²⁸ Published 22. August 2001 (cf. https://www.euroclear.com/site/publishedFile/LG001_tcm86-124206.pdf?title=The+Operating+Procedures+of+the+Euroclear+System).

²⁹ Sect. 28.1.11 on exemptions from positioning also refers to the optimization procedure available under Euroclear France.

(a) Besides the standard services offered by Euroclear Bank to Participants on French debt instruments, Euroclear Bank offers to Participants the possibility to settle bilateral financing transactions on French debt instruments with specific processing rules for settlement instructions. Euroclear Bank offers this settlement optimisation service as set forth herein and in the Euroclear Bank service provision titled "Euroclear Bank service offering for bilateral financing and settlement optimisation in France" that is attached to the registration form mentioned below under (c), and only this specific service.

(h) With respect to exemption from positioning, Participants acknowledge and agree that:

(i) external deliveries are positioned in the Participant's Securities Clearance Account. As positioning is done prior to booking of the credit, Euroclear Bank creates a technical reservation in the Participant's Securities Clearance Account in Euroclear Bank. This technical reservation reflects the sending of a delivery instruction to the local market through the Euroclear Bank sub-account dedicated to Participants in Euroclear France while Participants had not yet received a credit booking at the level of Euroclear Bank. Each Participant subscribing to the service contemplated herein agrees and acknowledges that all receipts in Euroclear Bank sub-account dedicated to Participants in Euroclear France are reserved to settle external deliveries. Subsequently, each Participant agrees and acknowledges that those external deliveries have priority over any other pending delivery (internal or cross-border bridge) instructions in Participant's Securities Clearance Account as specified in the Euroclear Bank service offering for bilateral financing and settlement optimisation in France; and

(ii) external deliveries only settle if there are enough securities in Euroclear Bank's sub-account dedicated to Participants in Euroclear France or due to the optimisation in Euroclear France (i.e. technical netting). Failed external deliveries are recycled for next value date. A reservation of securities is made in the relevant participant's Securities Clearance Account for an equivalent nominal amount necessary to the external delivery.

(i) So far as reporting is concerned:

(i) with regard to Participants' Securities Clearance Accounts, Euroclear Bank provides standard reporting to Participants as set forth in Section 7 of the Operating Procedures governing the use of Euroclear Bank; and

(ii) with regard to Euroclear Bank's sub-account in Euroclear France dedicated to Participants, Euroclear Bank does not provide any separate reporting to Participants.

(j) Each Participant acknowledges and agrees that late instructions received by Euroclear Bank from Participants will be processed by Euroclear Bank on a reasonable effort basis.

(k) Euroclear Bank takes no liability for any other services than the ones described herein and in the Euroclear Bank service offering for settlement optimisation in France.

17. The Operating Procedures further prescribe that debit and credit interests are to be netted to produce a single interest amount and thus provide for a form of settlement netting.

2.2.2 Interest computation

(a) Euroclear Bank determines the terms and rates of debit or credit interest applicable to each Settlement Currency in a Cash Account and reserves the right to modify, at any time and without prior notice to the participant, such terms and rates, the periods for which such interest is calculated, the timing of the debit or credit of any such interest, and other relevant modalities. Each Participant waives any right it may have under applicable law to have interest rate information (including interest rates and calculation methods) applicable to a debit balance specified on any statement of the balance in the Participant's account. Euroclear Bank will make applicable interest rate information available on request, in the manner it deems appropriate.

(b) Debit and credit interest are calculated separately by Euroclear Bank on the value dated balances and are netted to produce a single interest amount for the period determined in accordance with the foregoing paragraph, generally for the month, for each Settlement Currency subdivision of a Cash Account.

(c) Debit and credit interest are calculated monthly on a 360 or 365-day basis, following the market practice for each Settlement Currency. Balances or interest amounts calculated in different Settlement Currency subdivisions of a Cash Account are not netted.

(d) Any debit interest payable to Euroclear Bank or any credit interest payable by Euroclear Bank, if calculated on a monthly basis for a particular month, is debited or credited on the fourth Business Day of the following month, value dated the first calendar day of such following month.

B. Clearstream

18. The Clearstream Group is controlled by the Deutsche Börse AG through the Clearstream Holding AG (Frankfurt), which is the parent company to the Clearstream International SA. Clearstream International SA is incorporated in Luxembourg and has three main subsidiaries: Clearstream Banking Luxembourg (CBL), Clearstream Banking Frankfurt (CBF) and Clearstream Services Luxembourg. CBF offers settlement facilities for the German securities markets. CBL provides on the one hand settlement services for global and international securities as an International Central Securities Depository and operates LuxClear on the other hand, which is the national CSD of Luxembourg. CBF and CBL use the same platform for the settlement of international securities in commercial bank money. Clearstream Services Luxembourg is the technical service provider for the Group.³⁰

19. CBL also uses a DVP mechanism. From a legal point of view, the default of a participant under this mechanism does not have any impact on the property rights of its counterparties as regards securities transactions settled prior to the time of the court order. Art. 46 of the General Terms and Conditions of CBL³¹ provides that securities transferred to a counterparty under a pledge agreement may from the moment of default be used without written notice to meet any of the defaulting party's obligations. Under Art. 53 of the CBL Terms and Conditions, the underlying assets are to be regarded as inter-related. Also, under repo agreements, the default of one participant does not adversely affect the property rights of the owner of securities.³²

Article 46

Except to the extent specifically agreed between CBL and the Customer in writing to the contrary and except to the extent that any credit balance on any account of the Customer is, or represents, an asset which the Customer hold on behalf of its clients:

- i) all accounts of a Customer shall be considered, in fact and in law, to be the elements of one sole and indivisible account;*
- ii) CBL may at any time set off, in whole or in part, credit and debit balances of the Customer; and*
- iii) CBL reserves the right to transfer the balance of any account or subdivision in credit to any account or subdivision in debit at any time and without any prior notice, even if such accounts or sub-divisions are maintained in different currencies, or, if the transactions therein are reported in different statements of account. CBL shall be authorised to sell any securities, precious metals or other assets standing to the credit of the Customer for this purpose, and may also for this purpose effect all conversions into a currency of its choice at the rate of exchange existing on the date of such conversion.*

CBL will promptly notify the Customer of any such setoff, transfer, sale or conversion.

Article 53

Unless to the extent specifically waived in whole or in part by CBL, CBL may regard all transactions conducted by a Customer with or through CBL as inter-related. Consequently, CBL may, except to such extent, decline to provide services or perform any obligation if the Customer does not fulfil its obligations under the Governing Documents or any other agreement between CBL and the Customer.

Article 55

Either party may terminate the Customer's use of the services provided by the CBL system upon not less than one month's written notice. The terminating party shall have no obligation to disclose its reasons for such termination. Notwithstanding the foregoing, CBL reserves the right to terminate or suspend the provision of services to the Customer with immediate effect, and

³⁰ Kokkola, The payment system (published by the ECB in 2010), p. 228 (<http://www.ecb.int/pub/pdf/other/paymentsystem200909en.pdf>).

³¹ General Terms and Conditions of July 2008 (http://www.cedelgroup.lu/ci/dispatch/en/listcontent/ci_content_pool/60_publications/20000_customer_information/5000_general_terms_conditions/terms_and_conditions_CBL_en.pdf).

³² Payment and settlement systems in selected countries (CPSS - Red Book – 2003), p. 473 (<http://www.bis.org/publ/cpss53p16.pdf>).

without prior notice, if in CBL's opinion the Customer is in material breach of any obligation incumbent upon it under the Governing Documents or any other agreement between CBL and the Customer.

This also applies if circumstances arise which CBL reasonably believes would materially affect the Customer's ability to fulfil the obligations incumbent upon it under the Governing Documents or any other agreement between CBL and the Customer, including, but not limited to, the occurrence of any of the following events:

- i) the commencement by the Customer, or by any other person (including any supervisory or regulatory authority) with respect to the Customer, of a case or other proceeding seeking liquidation, reorganisation or other similar relief with respect to the Customer or its debts under any bankruptcy, composition, receivership, conservatorship, insolvency or other similar law now, or hereafter, in effect or seeking the appointment of a trustee, receiver, conservator, liquidator, custodian, administrator or other similar official of it or any substantial part of its property under any such law;*
- ii) the authorisation of a measure described in (i) by a corporate governing body of the Customer;*
- iii) an admission by the Customer of its inability to pay its debts generally as they become due;*
- iv) the calling by the Customer of a general meeting of its creditors for the purpose of seeking a compromise of its debts;*
- v) a general assignment by the Customer for the benefit of its creditors;*
- vi) the attachment or execution upon or against any asset or property of the Customer; vii) the suspension of operations, the assumption or substitution of management, or any other change in control in the affairs of the Customer resulting from the action of any court, tribunal, government, governmental authority, regulatory or administrative agency or governmental commission; or*
- viii) any other reason that CBL may determine.*

20. As additional service, CBL manages three different types of optional securities lending programmes: Automated Securities Lending (ASL), Disclosed Securities Lending, and Strategic Securities Lending (SSL). CBL further manages two types of credit facilities against collateral: the Unconfirmed Funds Facility (UFF) and the Technical Overdraft Facility (TOF).³³

C. The Depository Trust & Clearing Corporation (DTCC)

21. The Depository Trust & Clearing Company (DTCC) was established in 1999 as a holding company to combine the Depository Trust Company (DTC, 1.) and National Securities Clearing Corporation (NSCC, 2.). It was set up to provide an efficient and safe way for buyers to clear and settle their transactions. Today, DTCC operates through 10 subsidiaries, each of which serves a specific segment and risk profile: Deriv/Serv LLC provides clearing for credit, equity and interest rate derivatives; EuroCCP is a UK-incorporated Clearing House regulated by the UK's Financial Services Authority; the Fixed Income Clearing Corporation (FICC) provides real-time trade matching, risk-management and netting for traders in US Government debt issues in its Government Services Division and for the mortgage-backed securities market in its Mortgage-Backed Securities Division.³⁴

1. The Depository Trust Company (DTC) for Asset Services

22. The Depository Trust Company (DTC) is a subsidiary of (DTCC). It is organised as a limited purpose trust company under New York banking law. DTC is a member of the Federal Reserve System and a registered clearing agency with the Securities and Exchange Commission (SEC).³⁵

³³ Payment and settlement systems in selected countries (CPSS - Red Book - 2003), p. 473 (<http://www.bis.org/publ/cpss53p16.pdf>).

³⁴ <http://www.dtcc.com/about/business/>.

³⁵ Payment and settlement systems in selected countries - The United States (CPSS - Red Book - 2003), p. 449 (<http://www.bis.org/publ/cpss53p15us.pdf>).

23. DTC provides settlements for institutional trades (which typically involve money and securities transfers between custodian banks and brokers/dealers) and for money market instruments.³⁶ It also provides security movements for net settlements produced by another subsidiary of DTCC, the National Securities Clearing Corporation (NSCC) under Rule 9(D) and (E) of DTC's Rules and By-Laws³⁷:

RULE 9(D)

SETTLING BANKS

A Settling Bank shall settle for itself and may settle for other Participants. Each Settling Bank shall agree to abide by these Rules and the Procedures and shall enter into a separate Settling Bank Agreement with the Corporation and each Participant which the Settling Bank represents.

Each Settling Bank shall have the communications facilities with the Corporation specified in the Procedures, shall meet any other requirements specified in the Procedures and shall have on-line access to the Fedwire.

Each Settling Bank shall settle with the Corporation on a net-net basis on each Business Day. The Net Credit Balance of each Participant which settles through a Settling Bank and has a Net Credit Balance on that Business Day and the Net Debit Balance of each Participant which settles through the same Settling Bank and has Net Debit Balance on that Business Day shall be aggregated with the Net Debit Balance or Net Credit Balance on that Business Day of the Settling Bank itself and all such balances shall be netted to a single "Net-Net Debit Balance" or "Net-Net Credit Balance" for the Settling Bank for that Business Day. Throughout each Business Day, the Corporation shall provide each Settling Bank with reports of the Net Debit Balance or Net Credit Balance of each Participant which the Settling Bank represents and the algebraic sum of these amounts. The Settling Bank shall be responsible for collecting the Net Debit Balances from, and paying the Net Credit Balances to, the Participants represented by the Settling Bank.

[...]

Notwithstanding anything else contained herein, the Corporation shall have no obligation to any Participant for any obligation of a Settling Bank or Back-Up Settling Bank to a Participant, including any obligation of the Settling Bank or Back-Up Settling Bank to remit to the Participant the amount of any Net Credit Balance of the Participant included in the net-net settlement between such Settling Bank or Back-Up Settling Bank and the Corporation.

RULE 9(E)

CLEARING AGENCY AGREEMENTS

Section 1. All of the terms, conditions and provisions of any Clearing Agency Agreement between the Corporation and any other clearing agency are hereby incorporated by reference in and shall be a part of these Rules, and, subject to Section 2 of this Rule, in the event of any conflict between the terms, conditions and provisions of such Clearing Agency Agreement and any other Rules, the terms, conditions and provisions of the Clearing Agency Agreement shall prevail.

Section 2. Notwithstanding any other provisions of these Rules, including Section 1 of this Rule, the Corporation shall have no obligation to make any payment to a Participant other than a payment of the balance which remains after any Net Credit Balance of the Participant has been applied as required by and in accordance with any Clearing Agency Agreement, and such obligation may be satisfied by a payment to the Participant by either the Corporation or the other clearing agency.

Section 3. If the Corporation is required to make a payment to another clearing agency pursuant to a Clearing Agency Agreement on account of a Participant, the Participant shall have an obligation to the Corporation in an amount equal to such payment, and the Corporation may debit the Settlement Account of the Participant in the amount of such payment.

24. DTC's Rules and By-Laws provide three different forms of transactions. Rule 9(A) provides for transactions in securities and money payments a DVP mechanism that includes elements of settlement netting.

³⁶ The US Model for Clearing and Settlement, An Overview of DTCC, p. 4 (Published by DTCC under <http://www.dtcc.com/downloads/about/US%20Model%20for%20Clearing%20and%20Settlement.pdf>).

³⁷ Rules, By-Laws and Organisation Certificate of DTC of June 2011 (http://www.dtcc.com/legal/rules_proc/dtc_rules.pdf).

RULE 9(A)TRANSACTIONS IN SECURITIES AND MONEY PAYMENTS

Section 1. Deliveries of Securities through the facilities of the Corporation³⁸ shall be made in accordance with these Rules and the Procedures.

Any Participant making a Delivery Versus Payment of Securities through the facilities of the Corporation shall provide the Corporation with an instruction specifying the amount of the payment therefor in accordance with the Procedures. After receipt of such instruction (or upon its own initiative pursuant to Section 1 of Rule 9(C)), the Corporation is authorized to, and shall (subject to the right of the Corporation to cease to act for a Participant pursuant to these Rules and the Procedures), credit the Account of the Deliverer with the amount specified and debit the Account of the Receiver with the same amount.

[...]

Section 2. Except as otherwise provided in the Procedures, payments between Participants pursuant to Section 1 of this Rule shall be made through the facilities of the Corporation as provided in this Section 2. In addition to the debit or credit of amounts pursuant to Section 1 of this Rule, the Corporation shall debit or credit itself, Participants and Pledges with other amounts receivable and payable in accordance with these Rules and the Procedures. On each Business Day, the Corporation shall net all of the debits and credits to all of the Accounts of each Participant and Pledgee. Any agreement between the Participant and the Corporation to the contrary notwithstanding, if a Participant has multiple Accounts, the Corporation may treat them as one Account for the purposes of this Rule.

[...]

Section 3. If the Account of a Payee is credited and the Account of a Payor is debited with an amount of money as provided in Section 1 of this Rule, and the Payor shall fail to make payment to the Corporation of such amount or, having made payment thereof, the Corporation shall be required to return such payment to the Payor or its representative, the Payee shall be obligated to return to the Corporation the amount that was not paid by the Payor to the Corporation or the amount required to be returned by the Corporation to the Payor or its representative, and the Corporation shall be entitled to debit the Account of the Payee for such amount at any time.

25. Rule 9(B) provides a different mechanism including elements of settlement netting for services provided by the Corporation:

RULE 9(B)TRANSACTIONS IN ELIGIBLE SECURITIES³⁹

This Rule applies to all services provided by the Corporation, including the services provided by the Corporation in the MMI Program.

Section 1. The Corporation shall not act on an instruction received by the Corporation from an Instructor to effect a Delivery, Pledge, Release or Withdrawal, or any other transaction affecting the Account of the Instructor or another Participant or Pledgee (other than a transaction classified in the Procedures as exempt from this Section), unless the Securities (if the transaction involves Securities) are, prior to the transaction, Deposited Securities or Pledged Securities reflected in the Account of the Instructor, as specified in the Procedures, and:

- (a) immediately after the transaction, the Collateral Monitor for the Account Family of the Instructor which includes the Account from which the Securities subject of the instruction are Delivered, Pledged or Withdrawn, as reduced by the amount of the Largest Provisional Net Credit (as defined below) for such Account Family, will not be negative and the Family Net Debit for that Account Family, as increased by the amount of such Largest Provisional Net Credit, will not exceed the Net Debit Cap for such Account Family;
- (b) immediately after the transaction, if the transaction subject of the instruction affects an Account in the Account Family of another Participant or Pledgee or an Account in the same or another Account Family of the Instructor (in either case, a "Contra Party"), the

³⁸ Pursuant to the definition in Rule 1 Sec. 1, the term "Corporation" means the Depository Trust Company.

³⁹ Pursuant to Rule 5 Sec. 1 Eligible Securities are Securities accepted by the Corporation. The same section clarifies that "The Corporation shall accept a Security as an Eligible Security only (a) upon a determination by the Corporation that it has the operational capability and can obtain information regarding the Security necessary to permit it to provide its services to Participants and Pledges when such Security is Deposited and (b) upon the inquiry, or based upon such criteria, as the Corporation may, in its sole discretion, determine from time to time. The timing of additions of such issues shall be on a non-discriminatory basis consistent with the Corporation's objective to provide the maximum practical degree of service in facilitating the prompt and orderly settlement of Securities transactions."

Collateral Monitor for the Account Family of the Contra Party, as reduced by the amount of the Largest Provisional Net Credit for such Account Family, will not be negative and the Family Net Debit for that Account Family, as increased by the amount of such Largest Provisional Net Credit, will not exceed the Net Debit Cap for such Account Family; and

- (c) *if the transaction subject of the instruction involves a Free Delivery, Pledge or Release of Securities or a Delivery, Pledge or Release of Securities substantially undervalued, as specified in the Procedures, the Securities subject of the instruction shall not be MMI Securities subject of an Incomplete Transaction.*

The term "Largest Provisional Net Credit" means the aggregate net credit to an Account Family attributable to transactions in the MMI Securities of an issuer which is largest of any aggregate net credit to such Account Family attributable to transactions in the MMI Securities of any issuer; provided, however, that the reductions in the Collateral Monitor and increases in the Family Net Debit described in clauses (a) and (b) above shall be effected only during the time period each Business Day specified in the Procedures.

If the transaction subject of the instruction is a Free Delivery, Pledge or Release to a Contra Party and the applicable tests in clauses (a), (b) and (c) of the first paragraph of this Section are satisfied, the transaction shall be an effective transaction as to the Contra Party.

If the transaction subject of the instruction is a Delivery, Pledge or Release Versus Payment to a Contra Party and the applicable tests in clauses (a), (b) and (c) of the first paragraph of this Section are satisfied, the instruction of the Instructor shall constitute an instruction to make the following entries on the books of the Corporation.

- (a) *the Account of the Instructor is debited, and the Account of the Corporation is credited, by the amount of the obligation or the number of shares or rights subject of the instruction (whereby the Corporation shall be the holder of the Securities subject of the instruction);*
- (b) *the Account of the Instructor is credited, and the Account of the Corporation is debited, by the amount of the payment specified in the instruction; and*
- (c) *as specified in the Procedures, (i) the debits and credits to the Accounts of the Corporation are replicated as Incomplete Transactions in the Accounts of the Contra Party and (ii) the Collateral Monitor for the Contra Party is appropriately adjusted.*

An Incomplete Transaction made on a Business Day shall be converted to an effective transaction as to the Contra Party, as specified in the Procedures, at the earliest of:

- (a) *the time it is finally determined by the Corporation on that Business Day that the balance in the Settlement Account of the Contra Party for that Business Day is not negative;*
- (b) *the time the Contra Party pays the amount of the negative balance in its Settlement Account, as finally determined by the Corporation for that Business Day, to the Corporation, as provided in these Rules and as specified in the Procedures; or*
- (c) *the time during that Business Day when:*
- (1) *in the case of a Delivery Versus Payment, the Contra Party instructs the Corporation to effect a Delivery, Pledge or Withdrawal of the Securities;*
 - (2) *in the case of a Pledge Versus Payment, the Contra Party instructs the Corporation to effect a Delivery, Release or Withdrawal of Securities;*
 - (3) *in the case of a Release Versus Payment, the Contra Party instructs the Corporation to effect a Delivery, Pledge or Withdrawal of Securities; and*
 - (4) *in each case, the applicable tests in clauses (a), (b) and (c) of the first paragraph of this Section are satisfied.*

If the Corporation receives an instruction from a Pledgee to effect a Delivery or Withdrawal of Pledged Securities, such instruction shall have the effect of notifying the Corporation that the Pledgee elects not to Release the Pledged Securities but, rather, to assert its Control over the Pledged Securities by the transfer of a greater interest in the Pledged Securities to itself or another Person. The Corporation shall accept such an instruction as a representation that the Pledgee is acting in accordance with applicable law, rules or regulations, agreements or any adjudication thereof.

A Participant may at any time during a Business Day wire Federal funds to the account of the Corporation at the Federal Reserve Bank of New York by Fedwire in order to reduce or eliminate a negative balance or create a positive balance in its Settlement Account.

Each Participant and the Corporation shall settle the balance of the Settlement Account of the Participant on a daily basis in accordance with these Rules and the Procedures. Except as provided in the Procedures, the Corporation shall not be obligated to make any settlement payments to any Participants until the Corporation has received all of the settlement payments that Settling Banks and Participants are required to make to the Corporation.

Section 2. In the manner and for the purposes set forth in these Rules and the Procedures, and subject to applicable law, (i) the Corporation shall hold the entire interest in, and shall have the authority of a holder of Securities to act, in its sole discretion, with respect to any Securities

Delivered Versus Payment, which are the subject of an Incomplete Transaction, to issue or transfer the entire interest in such Securities, including the authority to sell, Pledge or otherwise dispose of such Securities, (ii) the Corporation shall hold a security interest in any Securities Pledged or Released Versus Payment, which are the subject of an Incomplete Transaction, to Pledge for value or Release for value a security interest in such Securities, and shall have the authority of a secured party to sell, Pledge or otherwise dispose of such Securities, and (iii) the Corporation, acting as agent and attorney-in-fact for its Participants, shall have the authority to Pledge or sell on their behalf any of their shares of Preferred Stock.

If a Participant fails to pay the amount of a negative balance in its Settlement Account, as finally determined by the Corporation on a Business Day, at the time and in the manner provided in these Rules and as specified in the Procedures, or if the Corporation determines that, in light of the financial or operating condition of a Participant, it is in the best interests of the Corporation, other Participants or Pledgees not to complete certain transactions with respect to the Participant, although it does not cease to act therefor, or the Corporation terminates or suspends some or all of the transactions of a Participant in the MMI Program with respect to some or all MMI Securities subject of those transactions, during the Business Day, the Corporation may, with respect to any such Participant (a "Defaulting Participant"), in such order and in such amounts as the Corporation shall determine, in its sole discretion:

- (a) Pledge any or all Net Additions and Preferred Stock of the Defaulting Participant to secure a loan to the Corporation; or*
- (b) sell any or all Net Additions and Preferred Stock of the Defaulting Participant in the manner specified in Section 4 of this Rule.*

The Corporation may Pledge or sell any or all Net Additions of a Defaulting Participant notwithstanding the fact that the proceeds may exceed the negative balance in the Settlement Account of the Defaulting Participant. The proceeds of any Pledge or sale shall be applied as provided in these Rules and as specified in the Procedures.

The Corporation may Pledge or sell any or all shares of the Preferred Stock of a Defaulting Participant notwithstanding the fact that the proceeds may exceed the negative balance in the Settlement Account of the Defaulting Participant. The proceeds of any Pledge or sale shall be applied as provided in these Rules and as specified in the Procedures.

Each Defaulting Participant which fails to settle its Settlement Account at the time specified in the Procedures shall be charged interest on the amount of the required payment. The Corporation may also assess penalties against the Defaulting Participant, as specified in the Procedures, if the Defaulting Participant fails to settle.

The Corporation may borrow from some or all of its Participants, in the manner and to the extent specified in the Procedures, an amount up to the entire amount of the Gross Credit Balances of such Participants on the Business Day on which one or more Participants fails to settle its Net Debit Balance. Such borrowing shall be secured by the Pledge, to the lending Participants, on the books of the Corporation, of the Net Additions of the Defaulting Participant or Participants which failed to settle, in the manner specified in Section 2 of Rule 4(A).

Section 3. A Participant may, during a Business Day, instruct the Corporation to transfer Securities from its Minimum Amount to its Net Additions and from its Net Additions to its Minimum Amount. If a Deliverer instructs the Corporation to Deliver Securities to a Receiver and the instruction cannot be satisfied out of the Net Additions of the Deliverer, the instruction shall be deemed to be an instruction to first transfer from the Minimum Amount of the Deliverer to the Net Additions of the Deliverer sufficient Securities so that the instruction to Deliver Securities from the Deliverer to the Receiver can be satisfied out of the Net Additions of the Deliverer. An instruction to transfer Securities from the Minimum Amount of a Deliverer to the Net Additions of the Deliverer, or which is deemed to be such an instruction, shall constitute a representation by the Deliverer that it has full authority, under applicable law, to do so.

Notwithstanding any other provisions of this Rule, a Participant may restrict Deliveries to its Account by other Participants in the manner specified in the Procedures, and the Corporation may restrict Deliveries in the manner specified in the Procedures if the Corporation determines, in its sole discretion, that a Delivery is overvalued or for other reasons.

A Participant with more than one Account may, in the manner specified in the Procedures, (a) group one or more of its Accounts into one or more Account Families, (b) designate the portion of its Collateral to be allocated to each of its Account Families and (c) designate the portion of its Net Debit Cap to be allocated to each of its Account Families. The Corporation shall not be obligated to make any allocations in accordance with such instructions if the Corporation determines, in its sole discretion, that such action might result in financial loss to the Corporation, other Participants or Pledgees. The Corporation may allocate, in the manner specified in the Procedures, any portion of the Collateral of a Participant or its Net Debit Cap which is not allocated by the Participant. If a Participant has more than one Account but does not group its Accounts into one or more Account Families, the Corporation shall group all of the Accounts of the Participant into one Account Family.

The Corporation is authorized to establish priorities for the completion of any transaction the Participant instructs the Corporation to make but which is not completed because of limitations set forth in these Rules.

Each Participant shall settle through its Settling Bank or Back-Up Settling Bank, if any, or, if its Settling Bank or Back-Up Settling Bank, if any, refuses to settle on its behalf, the Participant shall settle with the Corporation directly.

26. Rule 9(C) provides again a different transaction mechanism for services provided in an MMI Program as defined in Rule 9(C) itself.

RULE 9(C)

TRANSACTIONS IN MMI SECURITIES

This Rule applies only to the services provided by the Corporation in the MMI Program:

Section 1. *Each MMI Issuing Agent and MMI Paying Agent shall maintain one or more Accounts for its issuing agent activity and its paying agent activity with respect to the issues of MMI Securities for which it acts in that capacity, as specified in the Procedures. One Account may serve a Participant acting in both capacities but that Account shall be governed in each capacity by any Rule relating to that function of the Account as follows:*

(a) *The Issuing Agent Account with respect to an issue of MMI Securities shall comprise the Account which records the Delivery of such issue of MMI Securities by that MMI Issuing Agent and the Account to which payments therefor are credited as provided in this Rule and as specified in the Procedures.*

(b) *The Paying Agent Account with respect to an issue of MMI Securities shall comprise the Account to which payments for Presentments with respect to MMI Securities of that issue are debited and the Account to which MMI Securities of that issue which are the subject of Maturity Presentments or Reorganization Presentments are Delivered.*

The instruction of an MMI Issuing Agent to the Corporation to Deliver MMI Securities in connection with their issuance shall constitute a representation that such MMI Securities are issued in accordance with applicable law. MMI Securities may be subject of a Free Delivery or a Delivery Versus Payment.

If, in connection with their issuance, MMI Securities are subject of a Free Delivery, upon the instruction of an MMI Issuing Agent, the MMI Securities shall be credited to the Account of the Receiver designated by the MMI Issuing Agent and, simultaneously, a memo entry shall be made to the Issuing Agent Account reflecting that the MMI Securities have been Delivered as instructed.

If, in connection with their issuance, MMI Securities are subject of a Delivery Versus Payment, such Delivery shall be effected as otherwise provided for Deliveries of Securities subject of Incomplete Transactions in Rule 9(B), subject to the further controls provided in Section 2 of this Rule; provided, however, that instead of a debit to the Issuing Agent Account, a memo entry shall be made reflecting that the MMI Securities have been entered on the Account of the Corporation as Securities subject of an Incomplete Transaction and that the credit of payment therefore to the Issuing Agent Account is subject to the further controls provided in Section 2 of this Rule.

A Presentment with respect to MMI Securities may be initiated by the Corporation or by a Presenting Participant, as specified in the Procedures; if a Delivery Versus Payment is so initiated by the Corporation, the instruction therefore shall be deemed to have been given by the Presenting Participant pursuant to these Rules and the Procedures.

A Delivery of MMI Securities may be initiated by the Corporation or by a Presenting Participant, as specified in the Procedures; if a Delivery Versus Payment is initiated by the Corporation, the instruction therefore shall be deemed to have been given by the Presenting Participant pursuant to these Rules and the Procedures for the Delivery to be effected as otherwise provided for Deliveries of Securities subject of Incomplete Transactions in Rule 9(B), subject to the further controls provided in Section 2 of this Rule.

Section 2. *Presentments with respect to MMI Securities, including any Deliveries of MMI Securities pursuant to Maturity Presentments and Reorganization Presentments, shall be subject to the following additional controls:*

(a) *On the day of an issuer's insolvency, as defined in Rule 12, or a Payment Refusal, as specified in the Procedures, the Corporation shall not complete any Incomplete Transaction or other transaction (including any instruction with respect to future Delivery) in the MMI Securities of that issuer newly issued that day. Any credits to the Issuing Agent Account of the MMI Issuing Agent or to any intermediate re-Delivering Participant with respect to the new issue shall be cancelled and each potential Receiver of the new issue shall be re-credited in the amount of its payment therefore. The provisional entry of the associated MMI Securities to the Account of a Receiver shall simultaneously be cancelled and every transaction in those MMI Securities, including any re-Delivery by a Receiver, shall be null and void and of no effect. The parties to the transactions affected thereby shall resolve their respective rights and obligations outside the Corporation. Where the MMI Securities*

- of that issuer newly issued that day are subject of an Incomplete Transaction, the credit of the MMI Securities to the Account of the Corporation and debit of payment to the Account of the Corporation shall likewise be cancelled and the Corporation shall be under no obligation to complete the transaction.*
- (b) *On the day of an issuer's insolvency, as defined in Rule 12, or a Payment Refusal, as specified in the Procedures, the Corporation shall not complete any Maturity Presentment or Reorganization Presentment or Incomplete Transaction in the MMI Securities of that issuer. Any credits to the Accounts of Presenting Participants on account of such Presentment shall be cancelled, the provisional credit of the subject MMI Securities to the Paying Agent Account and debit to the Account of the Presenting Participant shall simultaneously be cancelled and the transactions shall be null and void and of no effect. The parties to the transactions shall resolve their respective rights and obligations outside the Corporation. Where the MMI Securities subject of a Maturity Presentment or Reorganization Presentment are subject of an Incomplete Transaction, the credit of the MMI Securities to the Account of the Corporation and the debit of payment to the Account of the Corporation shall likewise be cancelled and the Corporation shall be under no obligation to complete the transaction.*
- (c) *On the day of an issuer's insolvency, as defined in Rule 12, or a Payment Refusal, as specified in the Procedures, the Corporation shall not complete any Income Presentment or Principal Presentment in the MMI Securities of that issuer. Any credits to the Accounts of the Corporation and Participants, and any debits to the Paying Agent Account on account of such Presentments, shall be cancelled and the transactions shall be null and void and of no effect. The parties to the transactions shall resolve their respective rights and obligations outside the Corporation. If all of the Presentments the corporation did not complete pursuant to paragraphs (a) and (b) of this Section and the first two sentences of this paragraph are Income Presentments, and if the issuer is not insolvent, as defined in Rule 12, on the Business Day next following the Payment Refusal, the Corporation may re-initiate such Income Presentments and any Incomplete Transactions in newly issued MMI Securities of the issuer that the Corporation did not complete pursuant to the first sentence of paragraph (a) of this Section. If there is another Payment Refusal with respect to the MMI Securities of the issuer on such Business Day, the Corporation may then take the actions described in paragraphs (a) and (b) of this Section and the first two sentences of this paragraph, and all other actions authorized by these Rules.*
- (d) *The credit cancellations provided in paragraphs (a), (b) and (c) of this Section may increase the Family Net Debit of the parties to such transactions over and above their Net Debit Caps. The Participants affected thereby are nevertheless fully obligated to satisfy any Net Debit Balances outstanding. The cancellation of debits and credits of payments and of debits and credits of MMI Securities, under the circumstances provided in these Rules and as specified in the Procedures, are not intended to affect or prejudice the underlying rights and obligations of the parties to the transactions as such rights and obligations may be determined outside the Corporation, subject to applicable law, rules or regulations, agreements or any adjudication thereof.*
- (e) *All MMI Securities of an issuer which is insolvent, as defined in Rule 12, or subject of a Payment Refusal of a MMI Paying Agent, as specified in the Procedures, shall, at the time of such insolvency or Payment Refusal, be Devalued to a Collateral Value of zero and shall not collateralize any transaction. This Devaluation is intended to serve only to protect the integrity of the MMI Program without prejudice to the underlying rights and obligations of the parties to the transactions as such rights and obligations may be determined outside the Corporation, subject to applicable law, rules or regulations, agreements and any adjudication thereof.*
- (f) *A Delivery Versus Payment of MMI Securities shall be effected only if the principal amount of the MMI Securities being Delivered does not exceed the designated amount specified in the Procedures.*
- (g) *In the event that a Receiver fails to settle its Net Debit Balance, the Corporation shall resolve the obligations of the parties to the transaction pursuant to the Failure to Settle Procedure included in the Procedures, as such Procedures may apply particularly to MMI Securities, including but not limited to the obligation of Participants (i) to lend to the Corporation, secured by a Pledge of Securities, and (ii) to repurchase Securities from the Corporation, if so required.*

27. Rule 12, Sec. 4 of the Rules and By-Laws regulates the consequences of insolvency⁴⁰.

⁴⁰ Rule 12, sec. 2 defines that a participant is insolvent if it has notified the Corporation about its inability to perform the contracts or obligations under sec. 1, if it is a member of the Securities Investor Protection

*RULE 12**INSOLVENCY**[...]*

Section 4. After the Corporation has ceased to act for a Participant with respect to a Program, so far as that Program is concerned, except as provided by the Board of Directors in any particular case:

(a) The Corporation shall decline to accept instructions from other Participants with respect to any Delivery of Deposited Securities to the Participant and shall decline to accept instructions from the Participant with respect to the Delivery of Deposited Securities to other Participants or Pledgees.

(b) The Corporation shall not give effect to the net result to date of the aggregation of instructions between the Participant and any other Participant pursuant to the fourth or fifth paragraph of Section 1 of Rule 9(A), and shall provide the Participant and any such other Participant with a list of the net quantity of each issue of Securities with respect to which the Corporation shall not in the future effect such instructions. The Participant shall be free to seek such remedies as shall be available to it from any such other Participant for any loss it may suffer because such instructions were not effected by the Corporation. The Corporation shall not, however, have any liability with respect to any such loss (provided that the loss is not caused by the Corporation's gross negligence or willful misconduct).⁴¹

Notwithstanding the foregoing, the Corporation shall Deliver to the insolvent Participant any Securities that have been Pledged by such Participant to a Pledgee upon the instructions of such Pledgee.

2. National Securities Clearing Corporation (NSCC)

28. The National Securities Clearing Corporation (NSCC) is another subsidiary of DTCC. It provides clearing, settlement, risk management, central counterparty services and a guarantee of completion for all broker-to-broker trades involving equities, corporate and municipal debt, American depository receipts, exchange-traded funds and unit investment trusts. NSCC clears and settles trades on a T+3 basis⁴² and nets trades and payments among its participants.⁴³

29. Rule 11 of NTCC's Rules & Procedures⁴⁴ provides a Continuous Net Settlement of Securities.

RULE 11. CNS SYSTEM

SEC. 1.(a) The CNS System is a system for accounting for and settling CNS Contracts whereby a Member's Settling Trades in CNS Securities are netted so that with respect to each issue of CNS Securities in which the Member has activity, the Member is either obligated to deliver units of that

Corporation under Sec. 5(b)(1)(A) (i)-(v) of the Securities Investor Protection Act of 1970 or if it is held to be insolvent by a competent agency, court order/decision.

⁴¹ Please note that Rule 10, Sec. 4 provides an identical provision for any decision by the Corporation to cease to act for a Participant. According to Rule 10, Sec. 1, the Corporation may cease to act for a Participant for the following causes: failure to make payments for a period of ten Business days after demand; failure to make required deposits, to pay a fine, fee or charge; violation of Rules of DTC, of Securities, Exchange or Investment legislation; involvement in crime, fraud or fraudulent acts by the Participant or its Controlling management; a temporary stay is ordered by a competent authority or court; the exclusion or suspension from national securities associations or exchanges; in case of a statutory disqualification under Sec. 3(a)(39) of the Securities Exchange Act of 1934 or any order with similar effect.

⁴² The T+3 post-trade clearance and settlement cycle begins on the date the trade is executed (Trade Date = T). On this date (T), NSCC sends participants automated reports, which are legally binding documents that show trade details and confirm that transactions have entered the clearance and settlement processing stream. At midnight between T+1 and T+2 NSCC assumes the role of central counter party, taking on the buyer's credit risk and the seller's delivery risk. On T+2, NSCC issues broker/dealers summaries of all compared trades, including information on the net positions of each security due or owed for settlement. On T+3 the settlement occurs: securities are transferred to net buyers and payments of money are transferred to net sellers by the Depository Trust Company (DTC) which serves as NSCC's agent. (cf. <http://www.dtcc.com/about/business/tplus3.php>).

⁴³ The US Model for Clearing and Settlement, An Overview of DTCC, p. 3 (Published by DTCC under <http://www.dtcc.com/downloads/about/US%20Model%20for%20Clearing%20and%20Settlement.pdf>).

⁴⁴ National Securities Clearing Corporation Rules & Procedures, effective as of 1 September 2011 (http://www.dtcc.com/legal/rules_proc/nscc_rules.pdf).

security (a "Short Position") or is entitled to receive units of that security (a "Long Position"), the delivery obligation being to the Corporation and the right to receive being against the Corporation as more specifically set forth in paragraphs (b) and (c) below; whereby Short Positions or Long Positions outstanding in respect of prior activity are brought forward on a perpetual basis and, together with stock dividends or distributions payable or receivable in respect of Short Positions or Long Positions, miscellaneous entries and CNS Securities delivered to or by Members, are merged, netted and carried forward, leaving in each Member's account all transactions which have failed in delivery or receipt; and whereby the contract money of all Settling Trades is netted with cash dividends or distributions receivable and payable and increases and decreases in obligations to the Clearing Fund, if applicable, and miscellaneous items resulting in the closing CNS System money balance for each Member which, for the purpose of computing the CNS System money settlement (including marking any Long or Short Position of a Member at the close of business to the Current Market Price), is adjusted by the net market value of all Closing Positions.

(b) Each obligation of any Member (the "Receiving Member") to pay for securities delivered to that Member by another Member (the "Delivering Member") under a transaction which (i) has been compared or reported by the Corporation and (ii) will be subject to the CNS Accounting Operation (each a "CNS Transaction"), and each obligation of any Delivering Member to deliver securities to any Receiving Member under any such transaction, shall be assumed by the Corporation at the point in the clearance and settlement process determined as set forth in paragraph (c) below. Simultaneously with the assumption of any such obligations by the Corporation, the related rights of the Receiving Member to receive securities from the Delivering Member and the related rights of the Delivering Member to receive payment from the Receiving Member for securities delivered shall be assigned to the Corporation. The assumption of these obligations and the assignment of these rights with respect to any CNS Transaction places the Corporation between the Delivering Member and the Receiving Member, creating an obligation on the part of the Delivering Member to deliver securities to the Corporation and on the part of the Receiving Member to receive and pay for securities delivered by the Corporation, as well as an obligation on the part of the Corporation to receive and pay for securities delivered by the Delivering Member and to deliver securities to the Receiving Member.

(c) The assumptions and assignments referred to in the paragraph (b) of this Section for any CNS Transaction of any Member shall occur when the Corporation's guarantee to complete the transaction becomes effective. For purposes of the preceding sentence, the Corporation shall be deemed to have guaranteed completion of a CNS Transaction when the clearance and settlement process for the transaction has reached the stage at which the Corporation will complete the CNS Accounting Operation for such transaction notwithstanding that the Corporation may cease to act for the Member. This stage may be designated in the Corporation's Rules or Procedures or in any interpretation or statement of policy relating thereto, and it may be different for different types of transactions.

(d) Whenever the Corporation shall be required to exit or delete any CNS Transaction from the CNS System, the obligation to deliver and/or the obligation to pay for securities delivered, as well as the correlative rights to receive securities and/or to receive payment for securities delivered, shall be further assumed by and assigned to such Members as may be designated by the Corporation, in accordance with its Rules and Procedures, in the appropriate Balance Orders, security orders, reports or as otherwise may be appropriate.

(e) All rights and liabilities with respect to any CNS Transaction other than those specifically assigned and assumed by the Corporation as set forth in paragraph (b) of this subsection shall be retained by the Members who are the original contra-parties to the transaction as compared or reported by the Corporation. It is specifically understood that the rights and liabilities retained by such Members shall not include ownership rights in the securities delivered to the Corporation pursuant to CNS Transactions (all of which ownership rights shall be in the Corporation) and any other rights and liabilities that cannot be legally separated from the rights and liabilities assigned and assumed by the Corporation.

SEC. 2. The Corporation will maintain a position for each Member in each CNS Security for which the Member has a Short Position (reflecting units which the Member is obligated to deliver to the Corporation) or a Long Position (reflecting units which the Member is entitled to receive from the Corporation).

SEC. 3. Pursuant to the instructions of each Member given in the manner prescribed in the Procedures and on the basis of information provided to the Member by the Corporation and information otherwise available to the Member, the Corporation will instruct the Qualified Securities Depository designated by the Member in the manner prescribed by the Corporation to deliver to the Corporation's account at the Qualified Securities Depository on each Settlement Date CNS Securities credited to the Member's account for the purpose of reducing or eliminating Short Positions of the Member; and the Corporation will instruct the Qualified Securities Depository to deliver from the Corporation's account at the Qualified Securities Depository, in accordance with the priorities specified in the Procedures, CNS Securities so received into the Corporation's account at the Qualified Securities Depository to the Member necessary to reduce

or eliminate Long Positions of the Member. Notwithstanding the foregoing, deliveries and receipts of securities may also be effected in such other manner as may be prescribed in the Procedures.

SEC. 4. On each settlement day the Corporation will issue to each Member reports which will show each CNS position in each security due to settle that day and on the next settlement day and such other information as the Corporation may deem advisable. With respect to obligations due to settle on the next settlement day, the obligation of a Member to receive and pay for CNS Securities and the obligation of a Member to deliver CNS Securities pursuant to the CNS Contracts shall be fixed at the time the applicable report is made available to the Member, although it may not in fact have been received by such Member. With respect to obligations due to settle that day, the obligation of a Member to receive and pay for CNS Securities and the obligation of a Member to deliver CNS Securities shall be fixed at each time a net settling position is determined for that Member in accordance with the CNS processing and information in respect of that new net settling position is made available.

SEC. 5. (a) On the morning of each settlement day the Corporation will issue to each Member a Cash Reconciliation Statement showing the amount receivable or payable by the Member in respect of the CNS System for that settlement day on the basis of settlement activity completed prior to the preparation of the Cash Reconciliation Statement. On the morning of each settlement day the Corporation will also issue to each Member a statement which will reflect the receipts and deliveries of securities in settlement of Long or Short Positions for that date which shall have been completed prior to the preparation of the Cash Reconciliation Statement. Thereafter on such settlement day the Corporation will issue to each Member a statement or statements of other receipts and deliveries of securities in settlement of Long or Short Positions which are completed on that date. The Member, on the basis of such statements, shall determine the final amount receivable or payable by the Member in respect of the CNS system for that settlement day in the manner specified in the Procedures.

(b) On each settlement day the Corporation will issue to each Member an accounting summary which will reflect each CNS Security in which there was activity or in which the Member had an opening Long or Short Position, the Member's opening Long or Short Position, the Member's activity in such CNS Securities for that day, the transactions into and out of its Qualified Securities Depository account or receipts and deliveries otherwise effected as described in Section 3 of this Rule or in the Procedures, the Closing Position for that day in each CNS Security and the Closing Position valued at the Current Market Price, resulting in a net long market value or short market value in CNS Securities. The accounting summary also will show the Member's money activity for that settlement day.

SEC. 6. The Corporation may, when it deems it necessary for the protection of Members in view of the price fluctuations in or volatility or lack of liquidity of any security require all Members to make additional mark-to-the-market payments on any Long or Short Position in respect of such security or to make mark-to-the-market payments in respect of all transactions in such security prior to the Settlement Date for such transaction.

SEC. 7. (a) In the event a Member has a Long Position in a CNS Security, the Member (the "originator") may demand immediate delivery thereof by filing, at or before the time specified in the Procedures, with the Corporation a Notice of Intention to Buy-In, in the form prescribed by the Procedures. The originator will be given priority, in the manner prescribed by the Procedures, in respect of the allocation by the Corporation of securities covered by the Notice of Intention to Buy-In, in the settlement on the settlement day prior to the expiration of the buy-in and if the securities are not allocated to the originator in that settlement, in the settlement on the settlement day the buy-in expires¹.

(b) In the event that less than all the securities covered by the Notice of Intention to Buy-In are received by the originator prior to the time specified in the Procedures, the Corporation shall as promptly as possible, but not later than the settlement day after the Notice of Intention to Buy-In is filed with the Corporation, transmit to the Member or Members, determined in accordance with the priorities specified in the Procedures, CNS Retransmittal Notices specifying the originator and the total amount called for in the Notice of Intention to Buy-In which has not been received by the originator pursuant to paragraph (a) of this section (the "remaining securities") and demanding delivery from each such Member of a specified quantity of securities determined in accordance with the Procedures. CNS Retransmittal Notices shall include such information pertaining to the Buy-In as the Corporation may determine from time to time.

(c) Prior to the execution of a Buy-In, the originator must accept and pay for any portion or all the remaining securities delivered to the originator and, if the originator does not so receive all the remaining securities at the opening of business on the settlement day after which the Corporation transmits Retransmittal Notices pursuant to paragraph (b) of this Section, the originator may order the purchase of the portion remaining undelivered in the manner specified in the Procedures.

(d) In the event that a Notice of Intention to Buy-In is presented and sufficient securities are not delivered as provided in paragraph (b) of this Section and subsequently the originator does not order the purchase of the remaining securities, a charge may be levied against the originator in the amount of \$250.

SEC. 8. After receipt of notice by the Corporation that the issuer of a CNS Security has declared a stock or cash dividend on such security or has authorized a stock-split or a distribution of rights or other property with respect to a CNS Security, the Corporation will issue a Record Date Report which will show each Member's record date Long or Short Position in the security at the close of business on the Record Date (herein called "Record Date Position").

(a) On the payable date for a cash dividend (or, if the payable date is not a settlement day, then on the settlement day immediately following such payable date) each Member shall be obligated to pay an amount equal to the dividend on any Short Position included in the Member's Record Date Position and shall be entitled to receive an amount equal to the dividend on any Long Position included in the Member's Record Date Position.

(b) On the payable date for a stock dividend (or, if the payable date is not a settlement day, then on the settlement day immediately following such payable date), the securities position of each Member shall be adjusted to reflect the Member's obligation to deliver the amount of the stock dividend on any Short Position included in the Member's Record Date Position to the Corporation or to reflect the Member's right to receive the amount of the stock dividend on any Long Position included in the Member's Record Date Position from the Corporation. Fractional shares shall not be added to any Short or Long Position in respect of any stock dividend or other distribution. In lieu thereof, the Corporation shall credit or debit, as the case may be, an amount of cash in respect of fractional shares based on the Current Market Price of the security.

(c) The procedure set forth in paragraph (b) shall apply to distributions other than dividends, provided, however, that in the case of stock-splits or distributions in respect of which a CNS Security is traded with due bills after the record date for such stock-split or distribution, the securities position of each Member in such CNS Security shall be adjusted to reflect the Member's obligation to deliver the amount of the stock split or distribution on its Short Position at the close of business on the due bill redemption date (the "Due Bill Redemption Date") to the Corporation or to reflect the Member's right to receive the amount of the stock-split or distribution on its Long Position at the close of business on the Due Bill Redemption Date from the Corporation.

(d) An "as of" trade entered at least two settlement days prior to the payable date in respect of a cash or stock dividend or other distribution not trading with due bills after the record date, provided the original trade date for the trade is before the exdividend date for such dividend, will be subject to the same procedures as those set forth above; an "as of" trade entered at least one settlement day prior to the Due Bill Redemption Date in respect of other distributions which trade with due bills after the record date will be subject to the same procedures as those set forth above. Any such trades entered less than two settlement days or one business day, as the case may be, prior to the payable date or the Due Bill Redemption Date shall not be accorded dividend protection in the CNS System.

(e) When a dividend or distribution in securities which are not CNS Securities is declared on a CNS Security or rights which are not CNS Securities are issued in respect of a CNS Security, the items will be reported to each Member having a Long or Short Position in the CNS Security on the close of business on Record Date. Such dividends, distributions or rights shall not, however, be settled in the CNS System; the Corporation shall match the Short and Long Positions in respect thereof in that manner which the Corporation in its discretion may provide and issue receive and deliver security orders in respect thereof, which orders shall have the same status as security balance orders issued in connection with the Balance Order Accounting Operation and will be subject to those provisions of these Rules pertaining to such security balance orders unless otherwise specified by the Corporation.

(f) Dividends which may be paid in the form of securities or cash at the election of the holder will be processed in the manner prescribed in the Procedures.

(g) Notwithstanding the foregoing provisions of this subsection 8, the Corporation may adopt any procedures deemed appropriate by it in respect of any transaction to which such provisions are not fully applicable.

SEC. 9. A trade in a CNS Security or Balance Order Security may be designated a Special Trade in which case it will be cleared and settled on a Member-to-Member basis; the parties to the Special Trade shall notify the Corporation at the time and in manner specified in the Procedures, and the Corporation shall issue receive and deliver security orders in respect thereof, which orders shall be settled by the parties directly. To the extent such Special Trade is for a security that is eligible for book-entry transfer on the books of DTC, and the deliverer has filed with the Corporation a standing instruction, the Corporation will issue an instruction on file to DTC specifying the quantity of such security to be delivered from the deliverer to the receiver and the money settlement amount related thereto. The Corporation may enter obligations arising from such Special Trades into the Obligation Warehouse service in accordance with timeframes as determined by the Corporation from time to time.

SEC. 10. A CNS Security shall be removed from the list of CNS Securities upon receipt by the Corporation of written notice from a Qualified Securities Depository that the security is no longer eligible under its rules for transfer by book-entry. A CNS Security may be removed from the list of CNS Securities if in the judgment of the Corporation Members may lose important rights by reason of its continued status as a CNS Security. Any such removal shall be promptly

communicated to all Members by the Corporation. In such event, the Corporation shall, on the first settlement day on which such securities are not deliverable through the facilities of all Qualified Securities Depositories and on each subsequent settlement day for any CNS Contracts entered in the CNS Accounting Operation prior to the effective date of removal, or upon such removal, match with respect to each such settlement day opening Short or Long Positions in such security in that manner which the Corporation in its discretion may provide, issue receive and deliver security orders in respect thereof for any such day, which orders shall have the same status as security balance orders issued in connection with the Balance Order Accounting Operation and will be subject to those provisions of these Rules pertaining to such security balance orders unless otherwise specified by the Corporation and close out such positions in the CNS System.

SEC. 11. (a) A Member with a long position or a long Settling Trade position in a CNS Security to which an exercise privilege attaches who wishes to exercise that privilege (the "originator") may file with the Corporation, at or before the time specified in the Procedures, a Notice of Intention to Exercise in the form prescribed by the Procedures.

(b) In the event that the securities covered by the Notice of Intention to Exercise are not received by the originator prior to the time specified in the Procedures, the Corporation will remove the position from CNS and will remove a corresponding short position(s) representing the short Member(s) with the oldest position(s). The Corporation will issue, in the time specified in the Procedures, CNS receive and deliver instructions naming a failing to receive Member and a failing to deliver Member.

30. Rule 12 provides the settlement mechanism for money payments. The payment settlement mechanism of Rule 12 applies also to NTCC's money only related charges⁴⁵, to dividend settlements⁴⁶ and so-called warehouse and fail obligations⁴⁷.

⁴⁵ **RULE 41. FUNDS ONLY SETTLEMENT SERVICE**

SEC. 1. The Corporation will process and settle money only related charges submitted by Members in accordance with the provisions of these Rules, other than such money only charges as permitted by the Corporation to be processed through other services of the Corporation. Money only charges which are processed in accordance with the provisions of this Rule shall be known as FOSS charges. [...]

SEC 13. Settlement of money payments between Members arising out of this Rule shall be made in accordance with Rule 12 and other provisions of these Rules.

⁴⁶ **RULE 43. DIVIDEND SETTLEMENT SERVICE**

[...] Settlement of money payments between the Corporation and Members and between Members arising out of or based upon transactions or matters covered by this Rule shall be made through the Corporation in accordance with Rule 12 and the other provisions of these Rules.

⁴⁷ **RULE 51. OBLIGATION WAREHOUSE**

SEC. 1. General

The Corporation may offer a service to Members for: (i) the comparison of securities transactions that are not otherwise submitted by or on behalf of Members for trade comparison or recording through other NSCC systems or services, (ii) tracking, storage and maintenance of obligations either compared through the service, or forwarded to it from other NSCC accounting operations or services in accordance with the Rules and Procedures through the time of settlement of such obligations (such obligations shall collectively be referred to as "OW Obligations"), and (iii) the repricing and updating of fail obligations. As regards to tracking and maintenance, the Corporation will cause CNS-eligible OW Obligations to be entered into the CNS Accounting Operation on a regular basis.¹ This service shall be known as the "Obligation Warehouse" service. In addition, in accordance with this Rule and the Obligation Warehouse Procedure, a Member shall submit to the Obligation Warehouse for repricing, netting and allotting, fail data with respect to transactions already compared through the facilities of the Corporation or other facilities.

[...]

SEC. 3. Non-Guaranteed Service and Settlement

The Obligation Warehouse shall not be a guaranteed service of the Corporation. Except with respect to: (i) OW Obligations that have been forwarded to the CNS Accounting Operation in accordance with Procedure II A. and Procedure VII, and (ii) any cash adjustment forwarded to the settlement system of the Corporation in accordance with the Obligation Warehouse Procedure, the settlement of OW Obligations shall occur between the parties themselves. Any obligations (settlement or otherwise) arising from OW Obligations shall be the sole responsibility of the Members that are parties to the obligation. In the event of the default of a Member, the Corporation within such time frames as determined from time to time and whether before or after settlement on any business day, may: (i) exit all OW Obligations of such Member, (ii) reverse all credits and debits for the Member relating to OW Obligations that have entered the CNS Accounting Operation, and (iii) reverse any cash adjustment of the Member forwarded to settlement pursuant to the Obligation Warehouse Procedures.

RULE 12. SETTLEMENT

SEC. 1. Settlement of money payments with respect to transactions or matters covered by these Rules, shall be made as provided in this Rule or, with respect to settlement of money payments with respect to the AIP Service ("AIP Settlement"), as provided in Rule 53. The Corporation shall debit or credit itself, Members, Mutual Fund/Insurance Services Members, Insurance Carrier/Retirement Services Members, Fund Members and AIP Members with the amounts payable and receivable in accordance with the provisions of such Rules. AIP Settlement shall not be subject to the remaining provisions of this Rule 12 and shall be subject to the provisions of Rule 53.

At such time as determined by the Corporation, the Corporation shall produce, each business day, a settlement statement which will reflect the debits and credits which have been entered into a Member's, Mutual Fund/Insurance Services Member, Insurance Carrier/Retirement Services Member's or Fund Member's (each hereinafter referred to as a "participant" for purposes of this Rule 12) account with respect to matters or transactions covered by these Rules, plus debits or credits, if any, reflecting amounts that the Corporation will pay to or receive from any entity under any Clearing Agency Cross-Guaranty Agreement, and shall reflect a net amount payable to or payable by the Corporation. Each such participant shall settle, by such time as established by the Corporation, through a Settling Bank (unless the Corporation permits otherwise), by Federal Funds payment in the manner provided in the Procedures, the net amount reflected on such settlement statement.

A participant will be deemed to have failed to settle when the Corporation receives a Refusal from such participant's Settling Bank and the participant has failed to pay its Net Debit Balance (or it has failed to pay its Net Debit Balance if permitted by the Corporation to settle otherwise than through a Settling Bank), or when its Settling Bank has failed to pay the Settling Bank's net-net debit balance by the time specified by the Corporation from time to time.

If the Corporation does not produce such settlement statement each such participant shall settle with the Corporation by a Federal Funds wire transfer, by determining the amount payable to or by such participant as reflected on such participant's records. A participant that fails to timely settle may be subject to action by the Corporation pursuant to Rule 46 or 48. Such participant shall also be subject to such fines as the Corporation deems appropriate pursuant to these Rules. Any difference between said amount and the actual net settlement amount which is not settled on that business day, shall be settled on the next business day by Federal Funds payment by such time as determined by the Corporation.

[...]

31. Rule 10 of NTCC's Rules & Procedures regulates that NTCC may buy-in securities as replacement for securities a participant fails to deliver.

RULE 10. FAILURE TO DELIVER ON SECURITY BALANCE ORDERS

If a Member shall not make delivery of all the Cleared Securities to be delivered pursuant to a security balance order by the time on business days specified by the Corporation, the Member to whom the Cleared Securities are to be delivered may cause such securities as are not so delivered to be bought-in as provided for in the Procedures.

D. LCH.Clearnet

32. The LCH.Clearnet Group is a holding structure serving major international exchanges and platforms, as well as a range of OTC market. LCH.Clearnet Group Limited is incorporated in the UK and regulated as Compagnie financière by the Autorité de Contrôle Prudenciel (ACP) in France. It has two subsidiaries, the LCH.Clearnet Limited and LCH.Clearnet SA. The LCH.Clearnet Ltd is incorporated in the UK and regulated as a Recognised Clearing House by the UK Financial Services Authority, as a Derivatives Clearing Organization by the US Commodity Futures Trading Commission and runs a payment system that is overseen by the Bank of England. LCH.Clearnet SA is incorporated in France and regulated as a Credit Institution and Clearing House by a regulatory college consisting of market regulators and central banks from France, the Netherlands, Belgium

and Portugal and as a Recognised Overseas Clearing House by the UK Financial Services Authority.⁴⁸

33. LCH.Clearnet Ltd is a central counterparty clearing house serving the interest rate swap market, and is clearer of bonds and repos, providing services across 13 government markets. It serves all major international exchanges and platforms as well as a range of OTC markets and has an embedded payment arrangement (the Protected Payment System, PPS), which is used to transfer funds to and from its members. LCH.Clearnet Ltd novates trades as soon as they have been conducted and have been received by the system.⁴⁹ LCH.Clearnet Ltd clears a broad range of asset classes including: commodities, securities, exchange traded derivatives, CDS, energy and freight. In addition to clearing trades in equities, derivatives and energy commodities conducted on the London markets, the UK-based LCH.Clearnet Ltd provides (through Repoclear) clearing services for OTC repo and cash trades in European government and international bonds, including trades on some MTS markets (i.e. MTS Netherlands, MTS Austria, MTS Belgium, MTS Germany, MTS Finland, MTS Ireland and EuroMTS) and trades through BrokerTec. Moreover, through Equityclear, LCH.Clearnet Ltd provides services for products (including euro-denominated products) traded on Virt-X.⁵⁰

34. The Default Rules⁵¹ of the rulebook⁵² LCH.Clearnet Ltd provide a resolution mechanism based on netting elements in Sec. 6 ff in case of a default pursuant to Sec. 3 and 5:

6.

The steps which may be taken by the Clearing House under Rule 3 in respect of the defaulter or otherwise are -

(a) to register an original contract or an FCM SwapClear Transaction (as the case may be) in the name of the defaulter or to decline to register an original contract or an FCM SwapClear Transaction (as the case may be) in the name of the defaulter or otherwise to exercise the Clearing House's discretion with regard to the defaulter under Regulation 9(c) or, in the case of an FCM Clearing Member, FCM Regulation 5(h);

(b) to effect a closing-out in respect of an open contract of the defaulter (whether by the entering into of a closing-out contract or otherwise) and at the option of the Clearing House to settle such contracts or to effect the transfer or termination, close-out and cash-settlement of an open contract of the defaulter by applying a price determined by the Clearing House in its discretion;

(c) to settle any open contract of which settlement might have been requested by the defaulter pursuant to Regulation 15(e) or 16;

(d) to invoice a Contract, other than a SwapClear Contract or an FCM SwapClear Contract, of the defaulter back by way of compulsory settlement in accordance with Regulation 28 at a price or premium determined under paragraph (d) of that Regulation;

(e) to sell any security deposited by the defaulter pursuant to Regulation 12 or, in the case of a defaulter who is an FCM Clearing Member, FCM Regulation 10, or any agreement made between the defaulter and the Clearing House by public or private sale for account of the defaulter without being obliged to obtain the defaulter's consent or any order of a court of law, and to appoint any person to execute any document for such purpose in the name and on behalf of the defaulter;

(f) subject to the Procedures, to exercise an option of the defaulter on its behalf notwithstanding that such exercise may take place on a day which is not a day prescribed for such exercise by any relevant Exchange Rules;

(g) to transfer an open contract of the defaulter to the account of another Clearing Member or to close-out and terminate such open contract and re-establish it with another Clearing Member,

⁴⁸ http://www.lchclearnet.com/about_us/corporate_governance/legal_and_regulatory_structure.asp.

⁴⁹ Assessment of LCH.Clearnet Limited against the CPSS-IOSCO recommendations for Central Counterparties 21 December 2009 (http://www.lchclearnet.com/images/2009%20cpss-iosco%20assessment%20of%20lch%20clearnet%20ltd_tcm6-53977.pdf)

⁵⁰ Kokkola, The payment system (published by the ECB in 2010), p. 219 (<http://www.ecb.int/pub/pdf/other/paymentsystem200909en.pdf>).

⁵¹ LCH.Clearnet Ltd Default Rules (of 25 February 2011) http://www.lchclearnet.com/Images/Default%20Rules_tcm6-43736.pdf.

⁵² All parts of the rulebook are available under http://www.lchclearnet.com/rules_and_regulations/ltd/default.asp.

being a Clearing Member entitled and willing to have such open contract registered in its name or to transfer an open contract from the account of another Clearing Member to the account of the defaulter for the purposes of closing out an open contract registered in an account of the defaulter or for any other reason which the Clearing House considers appropriate in the circumstances without requiring the consent of any relevant Exchange;

(h) to take such steps as may be desirable, including crediting or debiting of accounts (including margin accounts), entry into new contracts, transfer of existing contracts, reversal of contracts, or termination, close-out and re-establishment of contracts, or any other step, to preserve as far as possible the position of any client of the Clearing Member. Where an open contract is transferred or closed-out, terminated, and re-established under paragraph (g), without requiring the consent of the relevant Exchange, to transfer (whether by way of transfer or by way of termination, close-out and re-establishment of positions) to the Clearing Member to whom the open contract is transferred (or with whom the replacement open contract is re-established) such cover held as security for the defaulter's obligations to the Clearing House on that account as the Clearing House may deem appropriate;

(i) to tender or receive a tender in the defaulter's name;

(j) to perform an open contract subject to tender or a delivery contract by either delivery of or accepting delivery of the commodity the subject of such contract to or from, as the case may be, the defaulter, its agent or a third party in any manner permitted by the terms of the Contract and the Exchange Rules (if any);

(k) where the defaulter is party to an open contract subject to tender, to declare the defaulter's rights and liabilities in respect of performance thereof discharged, whereupon the provisions of Rule 7 shall apply to the defaulter in respect of the open contract;

(l) to make or procure the making of one or more contracts, including (without limitation) original contracts for the purpose of hedging market risk to which the defaulter is exposed, and to register the same in the defaulter's name under the Regulations or the FCM Regulations (as the case may be);

(m) to make or procure the making of one or more contracts, whether or not in the terms of exchange contracts, for the sale, purchase or other disposition of a commodity, and to register the same in the defaulter's name under the Regulations;

(n) to designate a currency as a currency of account, and at the defaulter's expense to convert any sum payable by or to the defaulter in another currency into the currency of account;

(o) to take any step which in the circumstances is open to the Clearing House under any applicable Exchange Rules including, without limitation, to transfer (whether by way of transfer or by way of termination, close-out and re-establishment) an open contract of the defaulter to a Participating Exchange to be registered at the Participating Exchange in accordance with its rules;

(p) without prejudice to any other right of the Clearing House under the Regulations, to take such action as the Clearing House may deem necessary for its protection in the name and at the expense of the defaulter with regard to any open contract standing in its name;

(q) in respect of Contracts standing in the defaulter's name, to charge to its account the amount (or, if the amount is not finally known, the estimated amount) of any expenses incurred by the Clearing House with regard to or in consequence of the circumstances mentioned in Rule 3 or the steps which are or may be taken under this Rule, the Regulations or the FCM Regulations (as the case may be) and any expenses incurred with regard thereto under Rule 11 and the amount of any losses, costs or expenses incurred or suffered by the Clearing House referred to in paragraph (g) of Regulation 42 and any other amounts referred to in such paragraph;

(r) any other step calculated by the Clearing House to complete the process set out in Rule 8; and

(s) to obtain such advice or assistance, whether legal advice or otherwise, as the Clearing House may deem necessary and at the expense of the defaulter for any matter arising out of or in connection with the default,

PROVIDED that in the case of SwapClear Contracts, the steps which shall be taken by the Clearing House shall be set out in the relevant DMPA and, in the case of SwapClear Clearing Client Business, the steps which shall be taken by the Clearing House shall be set out in the relevant DMPA and the relevant Default Management Process Agreement Amendment Agreement.

7.

(a) Where the Clearing House declares the defaulter's rights and liabilities under an open contract subject to tender discharged under Rule 6(k) –

(i) those rights and liabilities and the rights and liabilities of the Clearing House under the open contract shall be discharged, and,

(ii) there shall arise between the defaulter and the Clearing House in respect of the open contract an obligation to account, as directed by the Clearing House, for a settlement amount determined by the relevant Board under this Rule.

(b) The settlement amount referred to in paragraph (a) shall be an amount which, at the request of the Clearing House, the relevant Board determines to represent adequate compensation (in the circumstances known to the Board) for the discharge of the mutual rights and liabilities of the defaulter and the Clearing House under the open contract. The Board's determination shall be conclusive. The Clearing House shall direct how the settlement amount is to be accounted for between the defaulter and itself.

(c) Neither the Clearing House nor any relevant Board or Exchange shall have any liability whatsoever for anything done or omitted in the determination of a settlement amount under this Rule.

8.

Upon the discharge of the defaulter's rights and liabilities under or in respect of all Contracts to which it is party the following process shall be completed by the Clearing House –

(a) there shall be brought into account all sums payable: (i) by or to a defaulter in respect of Contracts (other than FCM SwapClear Contracts); any other sum due under the Regulations; any sum due in respect of any breach of the Regulations; (except, if the Clearing House so determines at its discretion, any sum payable under a Contract as the price for the commodity the subject of such Contract delivered or to be delivered to the Clearing House by or on behalf of the defaulter); and/or any amount due from the defaulter to the Clearing House in respect of any Treasury Contract; or (ii) by or to a defaulter in respect of FCM SwapClear Contracts; any other sum due under the FCM Regulations; and/or any sum due in respect of any breach of the FCM Regulations;

(b) the sums so payable shall be aggregated or set off so as to produce a net sum or as many net sums as required by Rule 10; and

(c) such net sum, or each such net sum, –

(i) if payable by the defaulter to the Clearing House, shall be set off against any cover standing to the credit of the defaulter's account so as to produce a further net sum, or shall be aggregated with any debit balance of the defaulter's account, or

(ii) if payable by the Clearing House to the defaulter, shall be aggregated with any cover standing to the credit of the defaulter's account, or shall be set off against any debit balance of the defaulter's account so as to produce a further net sum.

(d) Where an amount is payable by the Clearing House to the defaulter in respect of a balance on its Proprietary Account or accounts, and there are amounts due to the Clearing House in respect of any client account or any FCM Omnibus OTC Client Account with LCH (as the case may be) operated by it, the balance on the Proprietary Account or accounts may be applied to meet the shortfall on the client account or accounts or on the FCM Omnibus OTC Client Account(s) with LCH (as the case may be) in any way which the Clearing House may determine.

For the purposes of paragraph (a) of this Rule the Clearing House may assess the sum payable by or to the defaulter in respect of any breach of the Regulations or the FCM Regulations (as the case may be) in such reasonable manner as it thinks fit.

9.

The sum, or each sum, finally payable by the defaulter to the Clearing House or by the Clearing House to the defaulter, or the fact that no sum is finally payable by either such party to the other, as the case may be upon completion of the process set out in Rule 8, shall be forthwith certified by the Clearing House. The certificate of the Clearing House under this Rule shall be conclusive as to the discharge of the defaulter's rights and liabilities in respect of the Contracts to which it relates. The Clearing House shall, as soon as practicable after issuing a Default Notice in respect of a Clearing Member, appoint a day on which any net sums certified under this Rule to be due to the defaulter are to be paid by the Clearing House. The day so appointed may fall before or after the effective date of termination of the defaulter's Clearing Membership Agreement but shall not fall on a day before the process specified in Rule 8 can be completed.

10.

(a) Where the defaulter has more than one account with the Clearing House, the defaulter's accounts shall be combined for the purpose of Rules 8 and 9 as follows: an account which is an FCM Omnibus OTC Client Account with LCH of the defaulter may only be combined with other FCM Omnibus OTC Client Accounts with LCH of the defaulter; an account which is a Proprietary Account of the defaulter may be combined with any other Proprietary Accounts of the defaulter and (if the Clearing House so elects) Treasury Accounts of the defaulter (subject to Rule 8(d) and 10(d) of the Default Rules); and an account which is a Treasury Account of the defaulter may only be combined with other treasury Accounts and (if the Clearing House so elects) Proprietary Accounts of the defaulter. Notwithstanding the foregoing, in no circumstances may an account which is an Individual Segregated Account of the defaulter or an Omnibus Net Segregated Account of the defaulter be combined with any other account of the defaulter.

(b) For the purposes of this Rule 10, each Individual Segregated Account of the defaulter and each Omnibus Net Segregated Account of the defaulter shall constitute a separate "kind of account". Where the defaulter has more than one kind of account with the Clearing House, the process set out in Rule 8 shall be separately completed in respect of each kind of account. In the case of each kind of account of the defaulter which is not an Omnibus Net Segregated Account, the sum finally payable in respect of that kind of account following completion of the process set out in Rule 8 shall be separately certified under Rule 9. In the case of each kind of account of the defaulter which is an Omnibus Net Segregated Account, the sum finally payable in respect of that kind of account following completion of the process set out in Rule 8 will be allocated by the Clearing House (pro rata as it sees fit in its sole discretion) between the Omnibus Net Segregated Clearing Clients sharing in that Omnibus Net Segregated Account. Each sum so allocated to an Omnibus Net Segregated Clearing Client shall be separately certified under Rule 9.

(c) In Rule 8(c) the "defaulter's account" means -

- (i) with regard to a net sum produced by reference to Contracts registered in an Individual Segregated Account of the defaulter, that Individual Segregated Account;
- (ii) with regard to a net sum produced by reference to Contracts registered in an Omnibus Net Segregated Account of the defaulter, that Omnibus Net Segregated Account;
- (iii) with regard to a net sum produced by reference to FCM SwapClear Contracts registered in one or more FCM Omnibus OTC Client Accounts with LCH of the defaulter, that FCM Omnibus OTC Client Account with LCH, or (if there is more than one) all those FCM Omnibus OTC Client Accounts with LCH combined;
- (iv) with regard to a net sum produced by reference to Contracts registered in one or more Proprietary Accounts of the defaulter, that Proprietary Account or those Proprietary Accounts combined and (if the Clearing House has elected in accordance with Rule 10(a)) any Treasury Accounts of the defaulter; and (v) with regard to a net sum produced by reference to one or more Treasury Accounts of the defaulter, that Treasury Account or those Treasury Accounts combined, and (if the Clearing House has elected in accordance with Rule 10(a)) Proprietary Accounts.

(d) Notwithstanding any provision of the Rulebook to the contrary, any loss which relates to a Treasury Account may not be treated as a Default Loss (as defined in Rule 23(b)), whether or not cover has been applied in respect of such loss. Nothing in this Rule 10(d) requires the Clearing House to apply cover in respect of any such loss instead of any other amount referred to in Rule 8(a), except that the Clearing House may not apply cover in respect of any such loss to the extent that doing so would give rise to an Excess Loss (as defined in Rule 15).