PRIMER ON THE GLOBAL SHORTENING OF THE SETTLEMENT CYCLE

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A CCP GLOBAL PAPER

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The Global Association of Central Counterparties

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List of Abbreviations

APAC	Asia / Pacific region
CCP	Central Counterparty
CNBV	National Banking and Securities Commission
CSA	Canadian Securities Administrators
CSDR	Central Securities Depositories Regulation
DLT	Distributed Ledger Technology
EMEA	Europe, Middle East & Africa region
ESMA	European Securities and Markets Authority
FMI	Financial Market Infrastructure
JGB	Japanese Government Bond
MAS	Monetary Authority of Singapore
SEBI	Securities and Exchange Board of India
SEC	Securities and Exchange Commission

Executive Summary

Equity and bond transactions are subject to a trade settlement cycle, which defines the timeline for the exchange of securities between trading parties. This settlement cycle is a key to the proper functioning of the international markets, despite the non-standardized settlement times set in financial jurisdictions around the world. The lack of standardization is in part due to both the benefits and drawbacks found at any settlement time: the credit, market and liquidity risk mitigation that comes with a shorter settlement cycle may be offset by increased operational risks, such as those arising from the time constraints of trading on opposite ends of the globe; the increased efficiency and reduction of required margin for next day settlement also means a reduced settlement window and a potential increase of pressure on technology.

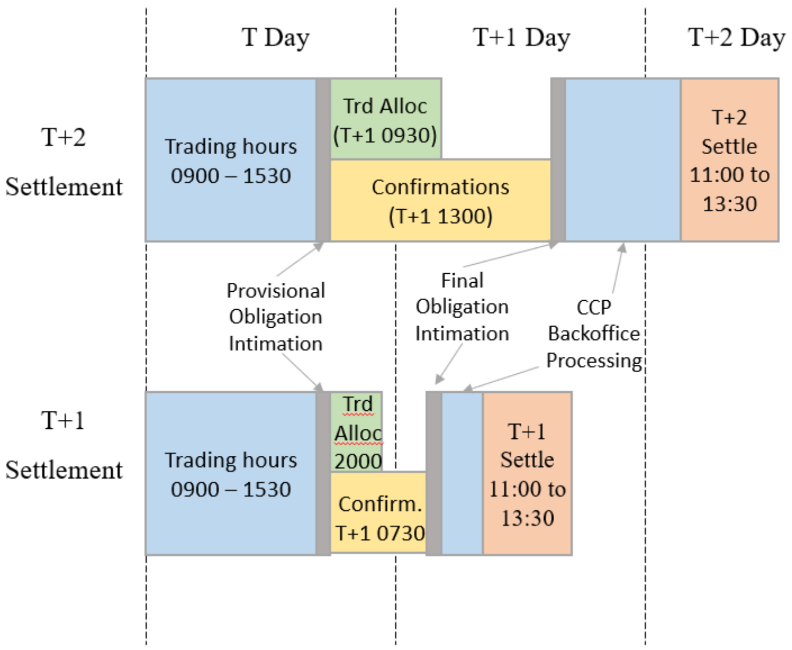
With several countries in the Americas recently shortening the settlement time of securities and/or bonds to T+1, and several other countries around the world already at the shortened settlement period, this paper sets out to explore the key takeaways, challenges, and other observations from the recent discussion on the seemingly trending global shortening of the settlement cycle. The paper introduces the history and current state of the settlement cycle (Section 2), discusses the results of the recently completed CCP Global settlement cycle survey (Section 3), weighs advantages and challenges of a move to T+1 (Section 4), and finally gives our perspective on some of the main points to be considered for T+1 settlement (Section 5).

The Settlement Cycle

(1) Settlement cycle definition and history

Financial markets generally settle securities transactions (i.e., deliver securities for payment) within a standard maximum number of business days after a transaction is executed. This time period between the date of the trade and the date of settlement is known as the settlement cycle. The initial standardized settlement cycle came about from the two-week period (T+14) required to confirm and close out transactions between the London and Amsterdam Stock Exchanges – the actual travel time from one exchange to the other and back. As travel and technology improved, the settlement cycle shortened, transitioning in most jurisdictions to T+5 by the late 1970s, T+3 by the early 1990s, with a further reduction to T+2 by 2017. Regulatory bodies have played pivotal roles in facilitating these changes, driven by the pursuit of reducing risk and operational efficiency within the financial services sector. The industry now stands on the brink of yet another significant leap, advancing toward a T+1 settlement cycle, propelled by the same core principles.

Most settlement periods globally are now 1-2 days after the transaction date; the graphic below shows an example of both, demonstrating the difference between T+1 and T+2 settlement cycles at the National Securities Exchange in India:



There is no international standard for the length of the settlement cycle; however, there seems to be a generally trending move to T+1, with increased input from regulators from the various financial jurisdictions.

(2) Settlement cycles by region

Americas

In the **United States,** the Securities and Exchange Commission (SEC) adopted a rule amendment in February 2023 to enforce the transition from a T+2 to a T+1 settlement cycle for corporate bond, municipal bond, and equity transactions, with the official transition in May 2024. U.S. Treasuries have already been settling on a T+1 basis. As noted in the Annexes, these types of securities could also settle on a different settlement cycle, depending on the terms negotiated between counterparties of the transaction.

In **Canada**, the Canadian Securities Administrators (CSA) published equivalent final amendments which also came into force in May 2024 for a move to T+1 settlement in all CSA jurisdictions, facilitated by the Canadian Capital Markets Association.

In April 2024, the National Banking and Securities Commission (CNBV) and **Mexico's** central bank (BANXICO) approved changing the settlement cycle to T+1 for equity securities to align with Canada and the US in May 2024, as did Bolsas y Mercados Argentinos in **Argentina**.

In late 2023, **Chile, Colombia, and Peru** had confirmed a planned move to T+1 in Q2 2025, and while a delay until Q2 2027 is also now being discussed, the three countries will move to the shortened settlement cycle in unison.

EMEA

For **EU** markets, the 2014 Central Securities Depositories Regulation (CSDR) standardized settlement time in Europe to no later than T+2. The European Securities and Markets Authority (ESMA) launched a call for evidence on the shortening of the settlement cycle in late 2023, to collect industry views that would inform a cost-benefit analysis for the move to both T+1 and T+0. The European Commission has confirmed it is working on a legislative draft of CSDR which will provide the legal basis for a T+1 transition, while in November 2024 the ESMA report on the topic recommended Q4 2027 (identifying 11 October 2027 as the optimum day) for transition to T+1 in the EU. This is to be coordinated alongside the **UK** (which had established a taskforce in late 2022 with the aim of exploring the move to a shorter cycle) and **Switzerland**.

The settlement cycle for **Saudi Arabian** securities by default is T+2, though negotiated deals allow for different settlement cycles ranging from T+0 to T+5. The standard settlement cycle in the **UAE** is also T+2, while the standard in **South Africa** moved from T+5 to its current T+3 in 2016.

APAC

India opted for a phased transition to a T+1 settlement cycle, which began in February 2022; in March 2024, the Securities and Exchange Board of India (SEBI) introduced an optional T+0 settlement cycle for 25 stocks, which was expanded to the top 500 stocks in January 2025.

Both **Hong Kong** and **Singapore** operate on a T+2 settlement cycle; the Monetary Authority of Singapore (MAS) has not yet formally engaged the market on T+1 readiness, while authorities and FMIs in Hong Kong have recently begun looking into the technological requirements for a move. Within local exchanges in **China**, the settlement timescale is T+0 for securities and T+1 for cash.

In **Japan**, a shortening of JGB settlement cycle to T+1 launched in May 2018; there is no scheduled plan for a move from T+2 settlement in the equity market in the next several years. Authorities in **Australia** have indicated any shortening of the settlement period from the current T+2 would not come until 2030 or beyond, and **New Zealand** has indicated the importance of closely aligning with Australia.

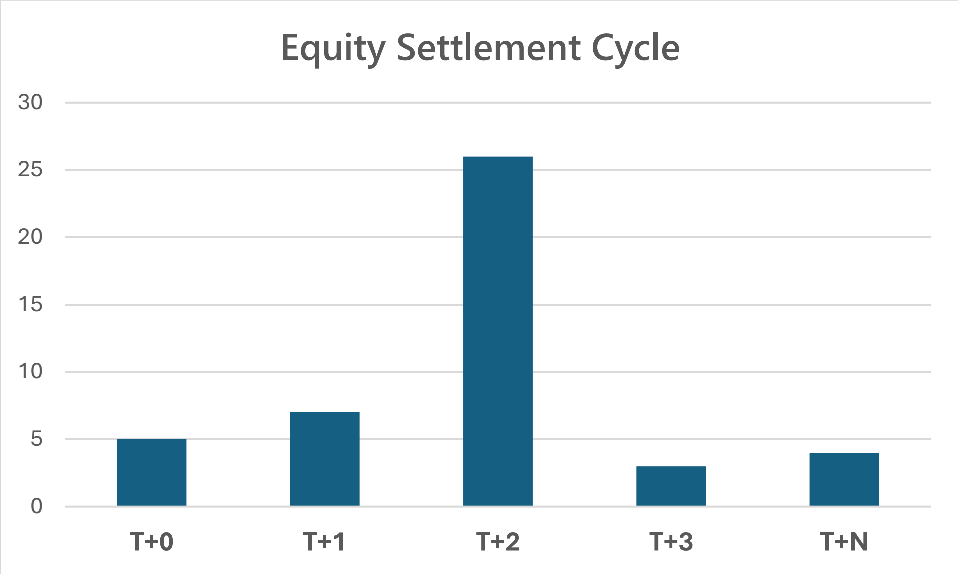
CCP Global Settlement Cycle Survey Results

At the end of 2024, CCP Global conducted a member survey in order to gain a closer look at how settlement cycles operate around the world. Members were asked to provide details on the timing of both the equity and bond settlement cycle at their institutions.

(1) Equity

CCP Global received responses from 30 institutions, including 7 from the Americas, 11 from EMEA, and 12 from the APAC region. Members were asked whether their institution's equity settlement cycle operated on a T+0, T+1, T+2, T+3, or customized T+N basis. The specific details can be found in Annex 1.

The T+2 settlement cycle stands out with the highest number of adopters, followed by T+1; several institutions offer multiple settlement options, including the customized T+N settlement times. This variance provides insight into the perceived advantages and challenges of the different settlement timeframes in the securities market.



The T+2 settlement cycle is the most popular among the institutions in the dataset, with 25 institutions currently offering the settlement time. The popularity of T+2 settlement likely stems from its ability to provide a comprehensive settlement process, as well as its status as the industry standard for several years. The allotted time allows for thorough verification of securities ownership, more efficient handling of cross-border transactions (where different time zones and regulatory requirements may be involved), and coordination among multiple parties in a trade.

T+1 has certain applications: There are 7 institutions already offering a T+1 settlement cycle, indicating that T+1 can not only balance the verification and cross-border considerations for settlement, but also meet the needs of investors for timely delivery of funds and securities. The members who have already completed the transition to T+1 settlement were also able to offer valuable insight into the creation of this publication.

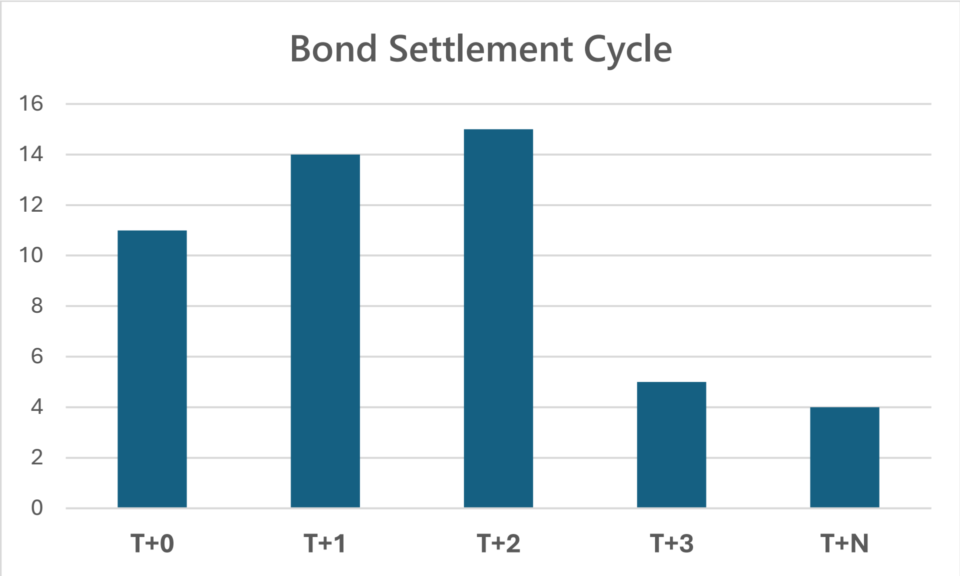
The T+0, T+3 and T+N settlement cycles are less used: 5 institutions offer the T+0 settlement cycle. T+0 means that the delivery of funds and securities can be completed on the trading day itself, which enhances the efficiency of fund utilization and the immediacy of transactions; however, its application scope is relatively narrow. This may be due to the extremely short buffer time for market fluctuations. At the same time, it requires extremely high real-time processing capabilities of the settlement system and strong technical support and risk management.

Only 3 respondents use a T+3 settlement cycle; from an efficiency standpoint, a longer settlement cycle will lead to an increase in the occupation time of funds and securities, which may not be conducive to the active market and the effective allocation of resources. However, it does provide additional time to address any shortfalls during settlement.

There are 4 institutions that currently offer a variable T+N settlement cycle, indicating that there are some special trading scenarios or institutional needs, and the settlement cycle needs to be customized. This may be due to factors such as the complexity of the transaction, the specific product type, or the specific customer needs.

(2) Bonds

CCP Global received responses from 28 institutions, including 8 in the Americas, 10 in EMEA, and 10 in APAC. Members were asked whether their institution's bond settlement cycle operated on a T+0, T+1, T+2, T+3, or customized T+N basis. The specific details can be found in Annex 2.



T+1 and T+2 are the most popular choices. The two options give the market an acceptable amount of time to handle various details in the transaction, such as confirming the ownership of bonds and the arrival of funds, reducing the probability of transaction errors. For institutional investors with a moderate risk preference, like the bond investment departments of ordinary commercial banks, these settlement cycles meet the demand for a trading efficiency while also controlling the associated risks.

Many institutions also use T+0. The T+0 settlement is much more popular in the bond market than the equity market. This real-time settlement method allows investors to quickly achieve capital turnover and bond transfers, which is attractive to some institutions that need to quickly allocate assets. However, this settlement cycle places high demands on an institution's fund management and risk control capabilities. Since there is no time buffer, if an unexpected situation occurs in the market, it may face increased risks, which may limit certain institutions from using T+0.

T+3 and T+N are limited. In the modern financial market, a longer settlement cycle of T+3 or higher can increase the occupation time of funds and bonds, reducing market liquidity. This settlement cycle may be chosen for specific cases, such as when a transaction involves very complex legal procedures or bond varieties that require more time for compliance review. For example, some private bond transactions may require a longer time to complete the settlement process due to their special issuance and trading rules.

The T+N settlement cycle is likely designed to meet the needs of special bond transactions. It could be used for transactions involving unique bond structures, special investor agreements, or emerging types of bond-related business. The flexibility of T+N allows these institutions to adapt the settlement time according to the specific requirements of the transaction, but it also brings more complex operational and risk management challenges as it deviates from the standard settlement cycles.

Potential Advantages and Challenges

Potential Advantages

A T+1 settlement cycle brings a number of advantages when properly implemented, both from an efficiency and risk mitigation standpoint:

Improve Market Efficiency

- **Accelerate Capital Turnover**: A shorter settlement cycle means that funds can be released from one transaction more quickly and then be reinvested in the next transaction or other investment opportunities. This supports the efficiency of capital utilization and the speed of capital turnover. Market participants may be able to allocate funds more flexibly, increasing the potential investment opportunities and returns.

- **Boost Trading Activity**: Shortening the settlement cycle reduces the time required to complete a transaction. Investors can complete buying and selling operations more rapidly, potentially increasing the trading frequency. As a result, the overall activity of the securities and bond markets is enhanced.

- **Enhance Market Liquidity**: Timely settlement enables securities and bonds to circulate more rapidly among different investors, increasing the number of tradable securities and bonds in the market. This can improve market liquidity, allowing market prices to more closely reflect supply and demand relationships, potentially reduce the bid-ask spread, and enhance the market's pricing efficiency.

- **Reduce Margin Requirement:** Reducing the settlement cycle from T+2 to T+1 can also lead to margin efficiencies, allowing firms to potentially enhance their liquidity and capital management.

Reduce Risks

- **Credit Risk**: During a longer settlement cycle, both parties may face various uncertainties, such as the default or financial problems of one party. Shortening the settlement cycle can reduce such uncertainties within this time span, lower the credit risk of counterparties, support more timely delivery of funds and securities between the two parties, and reduce the exposure time to default risks. With shorter settlement times, there is less time for a counterparty to default on a trade, reducing counterparty risk.

- **Market Risk**: Market prices may fluctuate significantly during the settlement cycle, presenting market risks to investors. Shorter settlement cycles reduce the time period during which investors are exposed to market price fluctuations, and thus, the risk of losses due to adverse price movements is also correspondingly decreased.

- **Liquidity Risk**: Market participants are exposed to less liquidity risk, as an accelerated settlement reduces the number of unsettled positions as funds and securities are exchanged more quickly. However, it also requires greater preparedness on said market participants to properly position liquidity strategies on a shorter timeframe.

Comply with Industry Development Trends

- **Conform to Industry Trends**: With the continuous development of financial technology, shortening the settlement cycles has become a development trend in the international financial market. By conforming to this trend, a country's domestic securities and bond markets can further connect with the related international market, and enhance the overall development of the industry.

Potential Challenges

Although shortening the settlement cycle of securities and bonds has many advantages, it also presents challenges:

Technical System Upgrade Dilemmas

- **Infrastructure Transformation Pressure**: Shortening the settlement cycle requires trading and clearing systems to process massive trading data within a shorter window. It may be necessary to upgrade hardware to cope with the higher data processing volume and faster response speed, although this is not necessarily a requirement, depending on the existing technology at an institution. Software systems, including trading matching algorithms and clearing calculation models, may also need to be optimized to ensure the accuracy and efficiency of settlement continues under the shortened cycle. However, an upgrade to a single, specific type of technology is not required.

- **Data Processing and Transmission Bottlenecks**: In a shorter settlement cycle, the real-time nature and accuracy of data is crucial. Settlement involves interaction among market stakeholders, including brokers, exchanges, and financial market infrastructures, and challenges could result in delays beyond the intended one-day settlement window.

Coordination of Market Participants

- **Negotiation Challenges with Counterparties**: A shorter settlement window may necessitate changes to the capital arrangements and risk management strategies of participants, but this will vary across counterparties. Some counterparties may be resistant to a reduced settlement cycle due to their own operational rhythms or financial conditions. This may be amplified when the two counterparties are from different jurisdictions with different regulatory standards on settlement.

- **Time constraints across the global market:** Managing time constraints becomes crucial, especially in the context of global trading. Counterparties may be in different time zones, potentially limiting the available time window for communication and issue resolution. Organizations must effectively coordinate and communicate globally to prevent settlement delays and ensure smooth operations across borders.

Increased Complexity of Risk Management

- **Liquidity Risk**: Shortening the settlement cycle requires market participants to have efficient funds management capabilities. Market participants capital reserves and liquidity management strategies must be aligned to the shorter settlement cycle, as if they are not, they may face a shortage of funds on the settlement date. This could also lead to complications with FX management, especially across certain time zones, as T+1 shortens the window in which the FX funding to settle transactions must occur; this issue could be further complicated by the potential of increased trading hours/days, as discussed in recent conversations around 24/5 and 24/7 trading.

- **Operational Risks**: Shortening the settlement cycle makes the operation process more compact. Firms face greater time pressure when handling transactions, potentially increasing the risk of operational mistakes or outages (e.g., cyber or other operational incidents), with less time to fix them. Systems must also be built to address higher-frequency data processing and trading instructions in order to avoid increasing the probability of systems failures.

Our Perspective

Technology

A move to T+1 is not dependent on any one technological approach; some relatively new approaches may be slow (e.g. true distributed checking), while other “older” technology has been used for T+1 (or even T+0) settlement for years. Automation is advantageous if not a critical necessity as settlement cycles compress, but a *particular* technology is not a requisite nor a precondition to a particular cycle. However, general updates to existing systems may be required for the change.

Risk Trade-Off

A shorter settlement cycle concludes trades faster, potentially reducing credit and market risk; however, a shorter settlement cycle also reduces operational leeway and necessitates greater preparedness on participants to position liquidity and securities, potentially increasing operational and liquidity risk. There is always a trade-off, and faster settlement means more liquidity pressure.

Time Zone & Currency Issues

Settlement across time zones already reduces the available time to resolve issues, such as the pre-positioning of liquidity and securities; this can be exacerbated by a move to a shorter settlement cycle. This is particularly pronounced for currencies with what may be conceived as inconvenient time zones, opening times or even exchange controls. It has been noted that several jurisdictions in the eastern APAC region are not planning the switch to T+1 for the next several years, and this is heavily driven by the time zone factor facing these countries.

Outlook

The shift to a T+1 settlement cycle marks a significant advance toward a more agile and responsive capital market. A continued implementation of the shortened settlement cycle over the next few years would see wider implementation of T+1 settlement in EMEA by the end of 2027, with certain countries in the eastern region of APAC possibly becoming the last to move. While it does come with its challenges, especially for legacy platforms, it also paves the way for the exploration of even shorter settlement cycles, potentially leading to standardized same-day settlement of T+0. This represents a pivotal moment in the evolution of capital markets, and market stakeholders must adapt their operations and strategies to thrive in this accelerated settlement landscape.

About CCP Global

CCP Global is the global association for CCPs, representing 42 members who operate over 60 individual CCPs across the Americas, EMEA, and the Asia-Pacific region.

CCP Global promotes effective, practical, and appropriate risk management and operational standards for CCPs to ensure the safety and efficiency of the financial markets it represents. CCP Global leads and assesses global regulatory and industry initiatives that concern CCPs to form consensus views, while also actively engaging with regulatory agencies and industry constituents through consultation responses, forum discussions, and position papers.

For more information, please contact the office by e-mail at office@ccp-global.org, or through our website by visiting www.ccp-global.org.

CCP Global Members

Annex 1 - Equity

#	CCPG Members	Legal CCPs	Shares				
			T+0	T+1	T+2	T+3	T+N
1	Bursa Malaysia Berhad	Bursa Malaysia Securities Clearing (BMSC)			√		
2	B3	B3 Clearinghouse			√		
3	Cboe Clear	Cboe Clear Europe			√		
4	Camara de Riesgo Central de Contraparte de Colombia, S.A.	CRCC			√		
5	Comder, contraparte Central S.A	ComDer			√		
6	Depository Trust & Clearing Corporation	National Securities Clearing Corporation (NSCC)	√	√	√	√	√
7	Dubai Commodities Clearing Corporation	DCCC		√			
8	Dubai Clear LLC	Dubai Clear			√		
9	ECAG	Eurex Clearing Group		√	√	√	√Supported only for Off-book Trading (max. T+89)
10	Hong Kong Exchanges and Clearing Limited	Hong Kong Securities Clearing Company Limited (HKSCC)	√		√		
11	Indonesia Clearing and Guarantee Corporation	IDClear	√		√		√Negotiated Market
12	Japan Securities Clearing Corporation	Japan Securities Clearing Corporation			√		
13	JSE Clear Pty (Ltd.)	JSE Clear				√	

14	KELER CCP Central Counterparty Ltd.	Keler CCP			√		
15	KDPW_CCP S.A.	KDPW_CCP	√		√		
16	Korea Exchange	KRX			√		
17	London Stock Exchange	LCH Ltd		√	√		OTC Trading (T+1 - T+5 or greater)
18		LCH SA			√		
19	The Securities Clearing Center Company	Muqassa			√		T+0 – T+5 available for Negotiated Deals
20	Nasdaq Clearing AB	NASDAQ Clearing			√		
21	NSE Clearing Limited	NSE	√Optional	√			
22	New Zealand Clearing and Depository Corporation Limited	NZX Clearing			√		
23	Singapore Exchange Limited	The Central Depository (CDP)			√		
24	Taipei Exchange	TPEX			√		
25	Takasbank	Takasbank			√		
26	Taiwan Stock Exchange	TWSE			√		
27	Thailand Clearing House	TCH			√		
28	TMX Group	Canadian Depository for Securities Limited (CDS)		√			
29		Canadian Derivatives Clearing Corporation (CDCC)		√			
31	Kazakhstan Stock Exchange JSC	KACC			√		

Annex 2 - Bonds

#	CCPG Members	Legal CCPs	Bond				
			T+0	T+1	T+2	T+3	T+N
1	B3	B3 Clearinghouse		√			
2	Camara de Riesgo Central de Contraparte de Colombia, S.A.	CRCC	√				
3	Comder, contraparte Central S.A	ComDer		√			
4	Depository Trust & Clearing Corporation	National Securities Clearing Corporation (NSCC)		√			√ For corporate and municipal bonds, regular way trades up to T+53; when issued up to T+735 (2 years).
5		Fixed Income Clearing Corporation (FICC)		√			√ For US Treasuries, buy/sell transactions up to T+365; repos/reverse repo transactions that are overnight, forward-starting, or term repos up to T+735 (2 years).
6	Dubai Clear LLC	Dubai Clear			√		
7	ECAG	Eurex Clearing Group		√	√	√	√ Supported only for Off-book Trading (max. T+89)
8	Hong Kong Exchanges and Clearing Limited	Hong Kong Securities Clearing Company Limited (HKSCC)			√		
9	Indonesia Clearing and Guarantee Corporation	IDClear	√	√	√	√	T+0 - T+7 (determined bilaterally)
10	Japan Securities Clearing Corporation	Japan Securities Clearing Corporation		√			
11	JSE Clear Pty (Ltd.)	JSE Clear				√	

12	KELER CCP Central Counterparty Ltd.	Keler CCP			√		
13	KDPW_CCP S.A.	KDPW_CCP	√		√		
14	Korea Exchange	KRX		√			
15	London Stock Exchange	LCH Ltd	√				
16		LCH SA	√	√	√	√	√ （From T+0 to T+N）
17	The Securities Clearing Center Company	Muqassa			√		
18	Nasdaq Clearing AB	NASDAQ Clearing			√		√ T+4 Swedish bonds
19	NSE Clearing Limited	NSE	√	√	√		
20	New Zealand Clearing and Depository Corporation Limited	NZX Clearing			√		
21	Shanghai Clearing House	SHCH	√	√			
22	Singapore Exchange Limited	The Central Depository (CDP)			√		
23	Taipei Exchange	TPEX	√		√	√	
24	Takasbank	Takasbank	√				
25	Thailand Clearing House	TCH			√		
26	TMX Group	Canadian Depository for Securities Limited (CDS)		√			
27		Canadian Derivatives Clearing Corporation (CDCC)		√			
28	Kazakhstan Stock Exchange JSC	KACC			√		