

**Settlement Optimization:**

**Recommendation to CDS**

***Date March 23, 2019***

*Written by the Canadian Capital Markets Association (CCMA)*

*on behalf of the participants of CDS.*

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2. **Introduction**

The Canadian Capital Markets Association (CCMA) is a federally incorporated, not-for-profit organization launched in 1999 “to communicate, educate and help co-ordinate the different segments of the investment industry on projects and initiatives spanning multiple parts of Canada’s capital markets. It brings together all parts of the investment industry that would have to be part of any system-wide change in Canadian capital markets. Participating under the CCMA’s co-ordinating umbrella are dealers, custodians, asset managers and industry associations, etc.; key securities infrastructure, such as exchanges, CDS and Fundserv; back-office service providers and vendors; and other stakeholders (e.g., regulators, including self-regulatory organizations (SROs).

Due to close links with, and dependencies on the much larger U.S. capital markets, the CCMA remains in close contact with counterparts – and keenly aware of developments – south of the border. Between 2015 and 2017, the capital markets industry in Canada and the U.S. worked jointly to reduce the time between when a trade is executed and when it is settled from three to two days after trade date. The move from T+3 to T+2 reduced the quantum of trade-to-settlement-date risk and cost, but both parties to a trade remain exposed to credit, counterparty, and operational risks, and must tie up capital to fulfill depository margin requirements. The U.S. has been analyzing options to reduce these risks in a project described as modernizing the country’s equity infrastructure.

The CCMA, as a broad-based, independent, and cost-effective sounding board, was approached by the CDS in 2018to conduct – and the CCMA Board approved that the association undertake – a review with the financial industry of the possibility of a Canadian settlement optimization proposal. The Depository Trust & Clearing Corporation’s (DTCC’s) settlement optimization project is described as an effort “to improve clearing and settlement processing efficiency, promote settlement finality, reduce equity clearing margin requirements, and provide participants with liquidity enhancements.”[[1]](#footnote-1)

The CCMA’s specific assignment was to recommend to CDS, based on consensus from industry members on their preliminary views on implementing – or not – a morning payment exchange on T+2 in Canada, including:

* Identifying potential operational impacts
* Assessing possible financial implications
* Considering the preferred timing of any conversion relative to the TMX’s Atlas project (a redesign of TMX/CDS’s depository and clearing functions)
* Identifying any information gaps
* Assessing the risk of not being in synch with the U.S.: low, medium, high
* Reviewing possible timing: before, at the same time, or after Atlas is fully implemented
* Providing the industry’s recommendation to the CCMA Board for review
* Submitting the recommendation to CDS for its consideration.

The CCMA’s approach to measuring industry interest was to assemble a group of industry experts representing different industry segments, different geographic locations, and different firm types to provide guidance and input.

1. **Background**

For many years, Canadian and U.S. capital markets have been in synch in many ways given the interconnectedness of the two markets[[2]](#footnote-2). In the late 1990s, when the U.S. began planning for a move to a T+1 settlement cycle, the CCMA commissioned Charles River Associates to assess whether the Canadian capital markets should similarly change the settlement cycle at the same time as the U.S. The study[[3]](#footnote-3) (November 1999) concluded that the Canadian capital markets should remain aligned with the U.S., harmonizing settlement cycles neither before, nor after, but at the same time as the U.S. Different settlement dates in Canada and the U.S., the report stated, would increase risk, add to the cost of errors and manual corrections, cause Canadian firms to lose business, be confusing for investors, and potentially reduce client investment options. In September 2017, Canada and the U.S. shortened the common settlement cycle from T+3 to T+2. Regulators in both countries supported the move and intended to consider further developments. Below is a review of work currently underway in both countries with respect to the settlement process.

## U.S.

Since the completion of T+2 in September of 2017, DTCC in the U.S. began looking at other alternatives for shortening the settlement period.[[4]](#footnote-4) In January 2018, DTCC asked for comments on a document titled [*Modernizing the U.S. Equity Markets Post-trade Infrastructure, a White Paper to the Industry*](http://perspectives.dtcc.com/file-download/2075). It confirmed that there were as yet no formal plans for an industry-wide move to T+1, which was being analyzed, and noted that a co-ordinated comprehensive effort to shorten the cycle could be expensive and years away because equity clearing and settlement is just one part of interconnected financial markets. Accelerating the settlement cycle would have upstream and downstream impacts on other parts of the market structure, including derivatives, securities lending, cash borrowing, foreign exchange and collateral processing, and so would be a much larger endeavour. DTCC then proposed what could be achieved optionally and within its ambit at lower cost, earlier and with greater flexibility to achieve several goals:

* significantly reduce capital margin requirements
* mitigate systemic risk of an unpredictable event affecting the transfer of cash or ownership of securities from the point of execution through settlement
* lower operational costs
* preserve the benefits of the current infrastructure.

The white paper included two major proposals – settlement optimization and accelerated time to settlement[[5]](#footnote-5) – both which would also help prepare for any move to a shorter industry-wide settlement cycle. DTCC’s settlement optimization proposal aims to allow for the intraday movement and settlement of money and securities between the end of the night cycle between T+1 and T+2 and the movement of cash and securities at the end of the business day on T+2 – essentially removing an entire business day of market risk and cost, without a change in the number of calendar days. The CCMA’s analysis for CDS focuses only on two interlinked aspects of the U.S. settlement optimization proposal in the Canadian context.

* **Night-cycle re-engineering:** DTCC investigated restructuring the overnight sequencing of system jobs to maximize the readiness of trades for settlement the following morning. DTCC then began exploring a methodology algorithmically analyzing participants’ available positions to prioritize and control the order in which transactions are processed (taking into account member priorities and instructions) to achieve the optimal percentage of settled transactions.
* **Intraday settlement:** Night-cycle re-engineering was considered a prerequisite to the second part of settlement optimization: intraday settlement. Intraday settlement would see an additional morning funds settlement cycle or ‘slice’ (payment exchange) in DTCC and National Securities Clearing Corporation (NSCC) in addition to the end-of-day payment exchange for transactions settled during the re-engineered night cycle with intraday cross-endorsement (and settlement finality) of each participant’s DTCC and NSCC settlement balances. This would free up liquidity by reducing intraday mark-to-market (MTM) and value-at-risk (VaR) calculations by NSCC, as settled trades are removed from DTCC risk management controls, limiting market exposure to the transactions open as at the end of the latest settlement cycle (or ‘slice’). DTCC expected that this would allow participants to settle as much as 90% of the trades before running the balance (an estimated 10%) of the remaining trades through their risk models for settlement at end-of-day payment exchange.

More recently, DTCC began considering another option:

* **Alternative continuous net settlement (CNS) settlement model:** An alternative CNS settlement model was described as a change that would allow participants to use credits in NSCC to offset debits in DTCC, reducing NSCC margin requirements. CNS transactions would continue to be processed free of payment in DTCC but become subject to DTCC’s normal risk controls. DTCC has been running simulations to quantify the impact of the alternative CNS settlement model, with preliminary findings being that most participants would see a decrease in NSCC margin requirements.

While DTCC has acted to create some early wins for clients and industry stakeholders, and targeted implementation dates in 2019 for both night cycle reengineering and the intraday settlement, some market participants did not expect to see intraday settlement before 2020.

This latest proposal by DTCC would effectively put DTCC participants in exactly the same position as CDS participants are today: that is, within CDS, the participant benefits from having CDS perform together the two functions performed separately (and unnetted) by NSCC and DTCC in the U.S.

## Canada

An account of Canada’s successful move to T+2 with the U.S. can be found summarized in the CCMA’s [T+2 Project:  Post-Mortem Report](http://ccma-acmc.ca/en/wp-content/uploads/T2-Project-Post-Mortem-Report-April-19-2018.pdf), published on April 19, 2018. Since then, the CCMA was asked to help co-ordinate the Post-Trade Modernization Advisory Council working with participants of CDS and CDCC to co-ordinate, educate and communicate the work and efforts associated with the [TSX/CDS two-part modernization](http://ccma-acmc.ca/en/wp-content/uploads/CCMA-announces-the-creation-of-Advisory-Council-seeks-members-1.pdf) of its clearing, settlement, entitlement and corporate action systems: project Atlas will replace TMX/CDS’s current depository and clearing functions while project Mercury will replace TMX/CDS’s legacy entitlements and corporate actions processing systems, as well as issuance eligibility applications.

CDS last summer undertook a limited internal assessment of payment-exchange-related change options at a high level in light of changes under consideration in the U.S. While CDSX already has the capability for intraday settlement/payment exchanges, there would need to be mainframe changes at CDS and a major issue to consider is impacts on up- and down-stream jobs at participants. There are several scenarios that could be considered:

Adding an additional settlement payment exchange in CDSX identical to the end-of-day payment exchange as under consideration in the U.S.: Certain assumptions would have to be made and impacts considered:

* 1. If the morning payment exchange were to take place at, say, 8:30 a.m., the process at CDS would have to start at 7:30 a.m. to allow the hour required to generate reports for participant review, implying:
     + - an earlier start for participant staff OR
       - arrangements with third parties to manage the results for participants not changing internal processes OR
       - the additional payment exchange being optional – which may lead to additional issues.
  2. All operational cut-offs leading to the morning payment exchange would have to be identified by CDS and discussed with participants to determine operational impacts. In particular, the interplay between Canadian and U.S. cut-offs and equivalent processing in The Depository Trust Company (DTC) and NSCC in the U.S., including the cross-guarantees between these two, would need to be studied.
  3. Participants would need to adjust their overnight processes to send in settlement instructions earlier to ensure their net debit balances are covered by credits. In the event that trades are not confirmed before the morning payment exchange, they would then need to be completed during the daytime and be included in the end of day payment exchange.
  4. Participants’ Funds Accounts would start at $0 after the new morning payment exchange.
  5. Once morning payment exchange is complete, the system would ‘renew trades’ that did not settle; they would remain for settlement at end-of-day payment exchange.
  6. A number of other considerations would need to be addressed, for example, would mark-to-market calculations be affected and reflected in the morning or afternoon payment exchange? Would entitlements be excluded from the early morning payment exchange? Could the morning payment exchange be limited to certain transactions only?

*Note:* As noted above, DTCC and CDS settlement processes differ in an important respect: all of a participant’s transactions in CDS are effectively netted during the day in a single funds account, whereas in the U.S. there are separate funds accounts for NSCC/CNS and for DTCC, which are netted only at payment exchange. In other words, if a participant had $1 million in surplus funds in NSCC/CNS but owed $1.5 million in DTCC, the U.S. participant would have to collateralize the $1.5 million whereas a similar series of transactions in CDS would see a participant only need to collateralize the net amount of $.5 million.

## Global trends

On August 23, 2017, the European Commission’s Directorate General of Financial Stability, Financial Services and Capital Markets Union launched public consultations (European Commission [[Public Consultation](https://ec.europa.eu/info/consultations/finance-2017-post-trade_en)](http://ccma-acmc.ca/en/wp-content/uploads/European-Commission-Public-Consultation-on-post-trade-in-a-Capital-Market-Union-dismantling-barriers-and-strategy-for-the-future-August-23-2017.pdf) on post-trade in a Capital Market Union: dismantling barriers and strategy for the future). Following the consultation period in 2017, the European Commission published in October 2018 a summary of comments[[6]](#footnote-6) received regarding a future EU strategy for post-trade services, with most respondents believing that five years was too short a period within which to envisage substantial changes to post-trade processing, and ten years too long a timeframe to conceptualize. In a March 11, 2019 e-mail, European Commission representatives confirmed that “At this stage, there are no plans to further shorten the settlement cycle in CSDR. More generally, the requirements of CSDR will however be assessed during a review of CSDR at a later stage.”

1. **Analysis**

***Note:*** While the U.S. project was referred to by DTCC as Equity Infrastructure Modernization, Canadian participants indicated that they would expect all financial instruments to be included – CNS and TFT, equity and debt – should a morning payment exchange be implemented.

## Assess the need to stay in sync with the U.S.

* Staying in sync with the U.S is critical from a settlement date perspective. However, there is less certainty that this is an absolute requirement in terms of matching payment exchanges within the same settlement date. Although the two systems operate similarly at a high level, there are many nuances to each system that effectively make them completely different from an operational perspective. Consequently, either country could or could not stay in sync with the other. Either way, as long as they line up at the end of the day in terms of total settlement payments, both countries would be comfortable, even if there is variation during the day.
* We believe that there would be material effort required by industry infrastructure providers if CDS were to implement a morning payment exchange, in terms of messaging, timing of overnight jobs, new internal jobs to run, file transmissions and report distributions.

## Determine the operational impact

* Implementing an early morning payment exchange would have no impact on collateral requirements for the CNS and TFT collateral pools, since CDS currently excludes the trades completed in the Batch Net Settlement that runs early in the morning.
* However, by running a payment exchange in the morning, participants would benefit from increased aggregate collateral value (ACV) within the system. Today, they receive ACV for trades that settle, however, the ACV is reduced by a ‘haircut’ based on the risk tolerance of the security. Consequently many/some participants must make a funds deposit to increase their ACV. The completion of a morning payment exchange would free up ACV value for the full value of the securities within the General Account (GA).
* The only exception to the second point above is that bank ‘family’ members are capped at $100 million of ACV for the securities held within their GA (refer CDS Financial Risk Model – Version 11.0 - November 2018 - Section 6.2.2 - Sector Limits for ACV).
* Implementing an additional payment exchange in the morning would potentially allow for participants to segregate securities for regulatory requirements earlier in the day.
* Any potential savings by CDS participants may be partially or completely offset by increased collateral requirements by Large Value Transfer System (LVTS) users making payments into the morning payment exchange.
* An earlier payment exchange may allow for the clearing agency to detect other problems earlier in the day (e.g., participant default).
* There will need to be assessments of many systems before any decision can be made to add a morning payment exchange at CDS.
  + Issue of LVTS, continuous linked settlement (CLS) for foreign exchange, other changes, timing.
  + Impact on CDSX-DTCC/NSCC interface.
  + Issue of CNS trades offset by institutional trades that may not get confirmed in the night cycle that might increase fails.
  + Need for an earlier start for staff or arrangements with third parties.
  + How early is “too early” for participants and LVTS participants out west?

## Determine the financial impact

* Collateral requirements: There are no reductions in collateral requirements expected should a morning payment exchange be introduced in Canada, since CDS already excludes trades from attracting collateral if they were completed during the overnight Batch Net Settlement process.
* ACV requirements: Additional ACV would be available to participants once the payment exchange is completed. This could substantially reduce or eliminate the need to make a funds deposit during the day to create the required ACV to complete the balance of trades by the end of the day.
* Development (staff and cost) impacts: It was identified that this initiative would only require small to medium development effort (i.e., less than $500K per firm) if it was recommended for implementation.
* Ongoing costs: While no specific numbers are provided at this time, should a morning payment exchange be introduced in Canada, participants would need to consider adding earlier start times for operational staff, as well as potentially staff from risk management, borrowing/lending, and cash management, etc. Other cost implications would include the cost of funding a morning payment exchange until credits could be received in the afternoon payment exchange and the cost of collateral to fund the LVTS payments (by paying agents) in the morning.

## Assess the preferred timing of a conversion, if desired

* Since DTCC is no longer considering a similar move in the U.S., CDS does not need to consider aligning with DTCC.
* It seems to make the most sense that if a morning payment exchange is to be considered, then from a timing perspective, it should be implemented either with Atlas (if that makes sense from a development point of view) or sometime after Atlas.
* If this were to be considered, it should be determined if this should be for an industry-wide move vs optional at the participant level.

1. **Recommendation**

Late in the Fall of 2018, the CCMA was asked to engage with the industry to determine if CDS should implement a morning payment exchange to align the Canadian market with the proposals being considered by DTCC for the U.S. market. However, since the CCMA commenced with our review, DTCC and their members have concluded that a morning settlement process in the U.S. was not an appropriate use of resources at this time. Instead they are now considering another alternative that would only require a minimal amount of work to be completed by DTCC and essentially none by DTCC participants. This new alternative, while not as effective as a morning settlement slice, is expected to provide much of the collateral relief DTCC and its participants had hoped to achieve.

However, the CDS participants wanted to complete their review since much of the work had nearly been completed when DTCC changed their approach. Consequently, several more meetings were held to determine if CDS could introduce a morning payment exchange without the U.S., AND gain the benefit of reduced collateral requirements being demanded by CDS. Our review concluded that since CDS does not collect collateral for trades that settle in the overnight Batch Net Settlement process, the only benefit that could be realized is an increase in ACV for member firms.

The conclusion determined by the CCMA committee is that without material collateral reduction being realized by member firms, a morning payment exchange does not add material enough benefits to warrant work on implementation at this time.

1. “Modernizing the U.S. Equity Markets Post-Trade Infrastructure – A White Paper to the Industry”, DTCC, January 2018.docx, <https://dtcclearning.com/documents/settlement-optimization/settlement-optimization-resources/documentation-1/2820-modernizing-the-u-s-equity-post-trade-infrastructure/file.html> (accessed February 10, 2019) [↑](#footnote-ref-1)
2. When the Canadian and U.S. examined a move to T+1 settlement in the late 1990s, 40% of trades on Canadian stock exchanges were in securities inter-listed on both Canadian and American exchanges and Canada-U.S. cross-border transactions made up nearly 25% of the millions of trades processed annually through CDS. [↑](#footnote-ref-2)
3. “Free-Riding, Under-investment and Competition: The Economic Case for Canada to Move to T+1”, Charles River Associates, November 10, 2000, <http://ccma-acmc.ca/en/wp-content/uploads/Charles-River-Report-Nov10.pdf> (accessed February 15, 2019) [↑](#footnote-ref-3)
4. SEC 17 CFR Part 240 [Release No. [34-80295](http://ccma-acmc.ca/en/wp-content/uploads/Shortened_Settlement_Cycle_Final_Rule_34-80295_20170322.pdf); File No. S7-22-16] RIN 3235-AL86 – Amendment to Securities Transaction Settlement Cycle, required a report on the impacts of the move to T+2, potential impacts of a move to a shorter settlement cycle, technology and operational improvements that could facilitate such a move, and related cross-market (including international) impacts within three years from September 5, 2017. [↑](#footnote-ref-4)
5. The goal of Accelerated Time to Settlement was to extend the benefits of NSCC T+0/T+1 settlement to more transactions, without losing the major benefits of either centralized netting and risk management/capital or operational efficiency. The white paper notes that a move to real-time gross settlement could have major implications on market liquidity and operations, requiring significant capital and securities on hand to make trade-for-trade deliveries. Pre-funding all trades without recognizing offsetting ones would substantially increase trade execution costs for end users, as well as operational and financial risks. A July 31, 2018 DTCC article refers to discussions with several trading venues that would send matched T+1 trades to the clearinghouse. [↑](#footnote-ref-5)
6. “Post-trade in a Capital Market Union: dismantling barriers and strategy for the future 2017 Public Consultation: Summary of contributions”; October 2018, <https://ec.europa.eu/info/sites/info/files/2017-post-trade-feedback-statement_en.pdf> (accessed February 15, 2019) [↑](#footnote-ref-6)