Annex E

Canadian Securities Administrators

CSA Consultation Paper 24-402

Policy Considerations for Enhancing Settlement Discipline in a T+2 Settlement Cycle Environment

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Executive summary

The securities industry in Canada is preparing to shorten the standard settlement cycle for equity and long-term debt market trades from three days after the date of a trade (**T+3**) to two days after the date of a trade (**T+2**). As part of the transition to a standard T+2 settlement cycle, there has been a focus by industry on operational improvements that will be needed to manage any risk that the move to T+2 may cause an increase in settlement failures.

In parallel with the industry's efforts, the Canadian Securities Administrators (**CSA** or **we**) believe that it is prudent to solicit stakeholder views on settlement failures in Canada. Market participants and regulators alike must manage the risk that the transition to T+2 might increase settlement failure rates in normal market conditions. We wish to understand whether stakeholders consider current regulatory and other mechanisms adequate to promote and encourage timely settlement of trades in a T+2 settlement environment.

This Consultation Paper provides an overview of existing settlement discipline measures in the Canadian equity and debt markets and raises policy considerations for addressing the risk that the transition to a standard T+2 settlement cycle might increase settlement failures in our markets. We seek comments on whether

1. additional settlement discipline measures might be required, including additional amendments to National Instrument 24-101 — *Institutional Trade Matching and Settlement* (**Instrument**) and Companion Policy 24-101 *Institutional Trade Matching and Settlement* (**Companion Policy**) (the Instrument and Companion Policy collectively, **NI 24-101**); and

2. other settlement discipline mechanisms for the Canadian equity and debt markets would deter settlement failures, such as a settlement-fail "penalty" mechanism or a close-out or forced buy-in requirement.

Any proposal to adopt measures arising from this consultation on policy considerations for enhancing settlement discipline, including proposing any further amendments to NI 24-101, would require a further public comment process.

1. Introduction

The securities industry in Canada is preparing to shorten the standard settlement cycle for equity and long-term debt market trades from three days after the date of a trade (**T+3**) to two days after the date of a trade (**T+2**). The move to a T+2 settlement cycle is expected to occur on September 5, 2017, at the same time as the markets in the United States move to a T+2 settlement cycle.

Efficient clearing and settlement arrangements are critical to successful securities markets. They lie at the core of a securities market and determine, to a large extent, its efficiency and effectiveness.[1] Shortening the settlement cycle to T+2 is intended to mitigate risk in securities clearing and settlement by reducing counterparty exposure between the parties to a trade. However, if the move to T+2 is not properly managed and implemented, it could instead increase settlement fails.

Currently, various regulations and industry rules and standards promote and encourage timely trade settlement. This Consultation Paper refers to them collectively as the **settlement discipline regime**. This regime should help to support a smooth transition to T+2. It includes NI 24-101, which contains principle-based requirements to promote efficient and timely processes for institutional trades occurring after trade execution and prior to settlement (trade confirmation, affirmation, allocations and settlement instructions). We describe these processes as **institutional trade matching** or **ITM**.

1.1 Purpose of consultation

The Canadian securities industry's T+2 initiatives are anticipated to consider operational improvements and identify possible rule changes to manage the risk that the move to T+2 might increase settlement failures. We believe it is also prudent for the CSA to consider whether the current settlement discipline regime for the Canadian equity and debt markets is adequate for a standard T+2 settlement cycle.[2]

This Consultation Paper is intended to solicit for regulatory consideration views about today's settlement discipline regime as well as enhancements or alternatives to that regime, encompassing not only firms' operations but also broader industry processes. This includes whether amendments to NI 24-101, in addition to the proposed amendments described in the Request for Comment Notice (see below), may be necessary to enhance settlement discipline measures. For example, we are asking questions about whether it would be desirable to modify the ITM requirements of NI 24-101 to facilitate higher rates of "same day affirmation" or other improvements to matching and settlement efficiency. We are also seeking feedback on whether additional settlement discipline measures in the Canadian equity and debt markets should be considered to address settlement failures, such as a settlement-fail "penalty"[3] mechanism or a close-out or forced buy-in requirement.

In this Consultation Paper we are not seeking views on whether stakeholders agree or disagree with the move to a T+2 settlement cycle, or on what the expected costs and benefits to the equity and debt markets in Canada may be from shortening the settlement cycle from T+3 to T+2. As we stated in CSA Staff Notice 24-312 – *Preparing for the Implementation of T+2 Settlement* dated April 2, 2015 (**Notice 24-312**), it is important that the Canadian industry move to T+2 at the same time as the U.S. markets. Failure to do so would be detrimental to the Canadian capital markets due to the interconnectedness of our markets.[4]

1.2 Simultaneous Request for Comment Notice on proposed amendments to NI 24-101

This Consultation Paper is being published together with CSA Notice and Request for Comment – "Proposed Amendments to National Instrument 24-101 *Institutional Trade Matching and Settlement* and Proposed Changes to Companion Policy 24-101 *Institutional Trade Matching and Settlement*" (the **Request for Comment Notice**). The Request for Comment Notice seeks comments on proposed amendments to NI 24-101, some of which are in anticipation of the shortening of the settlement cycle. However, while we are not proposing at this time any amendments to NI 24-101's current ITM deadline of noon on T+1, nor to its ITM threshold of 90 percent, we discuss in this Consultation Paper potential additional changes to NI 24-101 that we might consider, and we ask specific questions on such potential changes.

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[1] See *Towards a Legal Framework for Clearing and Settlement in Emerging Markets*, Emerging Markets of the International Organization of Securities Commissions; IOSCO paper November 1997, at 1; available at: http://www.iosco.org/library/pubdocs/pdf/IOSCOPD74.pdf

[2] In this Consultation Paper, a reference to the equity markets includes the markets for exchange-traded funds (**ETFs**).

[3] In this Consultation Paper, we use the expression "penalty" in a broad, colloquial sense only, and not as a formal securities law term. See discussion in Part 6 of this Consultation Paper. For certain CSA jurisdictions, a securities regulatory authority's power to impose fines or penalties for failure to settle a trade on time would have to be explicitly authorized by securities legislation.

[4] See: http://www.osc.gov.on.ca/en/SecuritiesLaw_sn_20150402_24-312_t2-settlement.htm

1.3 Overview of Consultation Paper

Part 2 of this Consultation Paper provides a high-level overview of the recommendations of international standard-setting bodies on settlement cycles, post-trade matching, and the monitoring of failed trades. It summarizes global developments in shortening the standard settlement cycle from T+3 to T+2, and describes the Canadian securities industry's T+2 initiatives. Part 3 and Appendix A discuss information from CDS Clearing and Depository Services Inc. (**CDS**) on average settlement failure rates of equity trades in Canada. Part 4 summarizes our current settlement discipline regime in general terms, and Part 5 focuses on an important part of such regime: NI 24-101. Part 5 describes the history and policy objective of NI 24-101 and discusses a range of factors that should be considered in improving trade-matching performance by market participants, especially as we move to a T+2 settlement cycle. It also incorporates by reference Appendix B to this Consultation Paper, which contains an analysis of aggregate industry ITM rates. Finally, Part 6 discusses potential new settlement discipline measures that regulators or market infrastructures might want to consider implementing to manage settlement risk in moving to T+2.

2. Shortening settlement cycle from T+3 to T+2

2.1 Background

During the last 30 years, policy makers and industry groups have sought to reduce risk (credit, market, and liquidity risk) by shortening the settlement cycle. In 1989, the Group of Thirty (G30) recommended that final settlement of cash transactions should occur on T+3.[5] In 1995, the markets in Canada and the United States successfully shortened the standard settlement cycle to T+3 from five days after the date of trade (T+5), and other markets followed suit. In the early 2000s, the securities industries in both Canada and the U.S. had considered further shortening the settlement cycle from T+3 to one day after the date of trade (T+1). While the industries subsequently abandoned their plans to move to T+1, they actively pursued straight-through processing (**STP**) and other industry-wide initiatives to improve clearing and settlement processes and systems. At the same time, international standard-setting bodies released a number of reports on clearing and settlement arrangements in an effort to reduce systemic risk in the financial system and improve the overall soundness of such arrangements. We discussed these international reports in CSA Discussion Paper 24-401 *Straight-through Processing* published in 2004,[6] and briefly highlight their relevant recommendations below.

The Committee on Payments and Market Infrastructures (**CPMI**)[7] and the International Organization of Securities Commissions (**IOSCO**) released a report in 2001 that made recommendations on, among other things, trade confirmation and settlement cycle.[8] In particular, the RSSS report recommended the following:

- Final settlement of a securities trade should occur no later than T+3, and the benefits and costs of a settlement cycle shorter than T+3 should be evaluated.[9] The report notes that, the longer the period from trade execution to settlement, the greater the risk that one of the parties may become insolvent or default on the trade, the larger the number of unsettled trades, and the greater the opportunity for the prices of the securities to move away from the contract prices – thereby increasing the risk that non-defaulting parties will incur a loss when replacing the unsettled contracts.

- Confirmation of trades between direct market participants should occur as soon as possible after trade execution, but no later than trade date (**T**). Where confirmation of trades by indirect market participants (such as institutional investors) is required, it should occur as soon as possible after trade execution, preferably on T, but no later than T+1.[10]

The CPMI and IOSCO further note that, regardless of the settlement cycle, the frequency and duration of settlement failures should be monitored closely. They suggest that in some markets, the benefits of T+3 settlement are currently not being fully realized because the rate of settlement on the contractual date falls significantly short of 100%. In such circumstances, they note that the risk implications of the fail rates should be analyzed and actions identified that could reduce the rates or mitigate the associated risks.[11]

Building on the recommendations of the RSSS report, the G30 released a report in 2003 that recommended wide-ranging reform of the clearing and settlement process, including creation and implementation of global standards in technological and operational areas and improvements in risk management practices.[12] In particular, the G30 recommended that market participants should collectively develop and use fully

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[5] Group of Thirty, *Clearance and Settlement Systems in the World's Securities Markets* (New York: Group of Thirty, March 1989). The G30 is a private organization sponsored by central banks and major commercial and investment banks that, over the years, has assembled a number of international task forces to study and report on the state of global clearing and settlement. See www.group30.org.
[6] CSA Request for Comment – Discussion Paper 24-401 on Straight-through Processing, April 16, 2004, (2004) 27 OSCB 3977 (**DP 24-401**).
[7] Prior to September 2014, the CPMI was known as the Committee on Payment and Settlement Systems or "CPSS".
[8] *Recommendations for securities settlement systems* - Report of the Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, dated November 2001 (**RSSS report**); available at: http://www.bis.org/cpmi/publ/d46.pdf. In 2012, CPMI and IOSCO reaffirmed the market-wide recommendations in the RSSS report. See Annex C of the April 2012 CPSS-IOSCO report, *Principles for financial market infrastructures* (**PFMI report**); available at: http://www.bis.org/cpmi/publ/d101a.pdf.
[9] Recommendation 3: Settlement cycles.
[10] Recommendation 2: Trade confirmation.
[11] See RSSS report, at para. 3.16. The CPMI and IOSCO suggest that monetary penalties for failing to settle could be imposed contractually or by market authorities; alternatively, failed trades could be marked to market and, if not resolved within a specified timeframe, closed out at market prices.
[12] See *Global Clearing and Settlement: A Plan of Action,* report of the G30 released on January 23, 2003.

compatible and industry-accepted technical and market-practice standards for the automated confirmation and agreement of institutional trade details on T.[13]

2.2 Global T+2 initiatives

The 2007-2008 global financial crisis had highlighted the need to improve risk management and efficiency in clearing and settlement processing. In particular, there has been a sharper focus by industry, regulators and policy makers alike on mitigating counterparty risk exposure for market participants. Various measures have been taken to mitigate such risks in capital markets, including a move to settle trades more quickly.

Many countries already operate under a shortened settlement cycle, or are moving towards it. Most European markets successfully shifted to a T+2 settlement cycle in 2014.[14] Other major markets in the Asia-Pacific region are already on T+2 or T+1. Australia and New Zealand moved to T+2 for their equity markets in March 2016, while Singapore is planning to reduce its settlement cycle to T+2 from T+3 this year.[15] The U.S. markets have committed to moving to a T+2 settlement cycle on September 5, 2017.[16] The Canadian securities industry has also stated its intention of meeting the same target and timelines as the U.S. markets.[17]

There is wide-spread agreement that shortening the settlement cycle by a business day to T+2 should deliver significant benefits, such as reducing counterparty risk for individual investors, market participants and central counterparties. In 1989, the G30 recognized that “to minimize counterparty risk and market exposure associated with securities transactions, same day settlement is the final goal” when it recommended that final settlement of cash transactions should occur on T+3. Shortening the settlement cycle could also help to reduce margin and liquidity needs during times of economic volatility and drive greater post-trade operational process efficiencies and cost savings.[18]

However, shortening the settlement cycle requires a compression of timeframes, which in turn may require a reconfiguration of the trade settlement process and an upgrade of existing systems. CPMI and IOSCO note that, for “markets with a significant share of cross-border trades, substantial system improvements may be essential for shortening settlement cycles”. Canada is such a market because of its extensive cross-border securities trading with the United States. “Without such investments, a move to a shorter cycle could generate increased settlement fails, with a higher proportion of participants unable to agree and exchange settlement data or to acquire the necessary resources for settlement in the time available.”[19]

During the Fall of 2014, in anticipation of the U.S. move to a shorter settlement cycle, staff from the Ontario Securities Commission (**OSC**) conducted a sample of industry interviews to gain a sense of the readiness of the Canadian industry to make the move to T+2. All the industry participants interviewed expressed the view that the Canadian industry must make the move to T+2 at the same time as the U.S. markets. Failure to do so would be detrimental to the Canadian capital markets due to the interconnectedness of our markets (i.e., the large volumes and value of cross-border trades and the large number of inter-listed securities). At the same time, there would appear to be little, or no, benefit to be gained by moving prior to the U.S.[20]

The move to T+2 with the U.S. markets is consistent with previous efforts by the Canadian securities industry to align trade settlement timelines and processes with those of the Unites States.[21] Previous

[13] Recommendation 5: Automate and standardize institutional trade matching.
[14] See Notice 24-312. The migration to a T+2 settlement period in Europe is an important contributory factor in achieving the wider ambitions of “Target2-Securities” (T2S), the European Central Bank initiative to streamline Europe's securities settlement structure.
[15] See ASX, “Shortening the Settlement Cycle in Australia: Transitioning to T+2 for Cash Equities”, Consultation Paper, 25 February 2014 (**ASX Paper**); available at: http://www.asx.com.au/documents/public-consultations/T2_consultation_paper.PDF.
[16] For information on the initiatives of the securities industry in the United States to shorten the settlement cycle to T+2 from the current T+3, see the following website : http://www.ust2.com/. The transition date of September 5, 2017 to move from a T+3 to a T+2 settlement cycle was announced by the U.S. industry on March 7, 2016. See T2 Settlement Media Alert, March 7, 2016 “US T+2 ISC recommends move to shorter settlement cycle on September 5, 2017”; available at: http://www.ust2.com/pdfs/T2-ISC-recommends-shorter-settlement-030716.pdf
[17] See “CCMA announces T+2 Steering Committee”, September 11, 2015 (**CCMA Release**); available at: http://ccma-acmc.ca/en/ccma-announces-t2-steering-committee-t2sc/.
[18] See White Paper “Cost benefit analysis of shortening the settlement cycle,” prepared by The Boston Consulting Group – Commissioned by The Depository Trust and Clearing Corporation, October 2012; available at: http://www.ust2.com/industry-action/
[19] See RSSS report, at para. 3.15.
[20] See Notice 24-312.
[21] See DP 24-401, at p. 3984. We had noted then a 2000 economic analysis conducted by Charles River Associates of the consequences for Canada of not moving to a T+1 settlement cycle in a coordinated manner with the United States.

Canadian industry settlement and STP initiatives have attempted to be consistent with U.S. industry efforts because market practices in both countries are generally the same, and the securities clearing and settlement systems in both countries are closely integrated.[22]

The Canadian Capital Markets Association (**CCMA**)[23] is leading the efforts of the securities industry in Canada to prepare for the migration to a T+2 settlement cycle on September 5, 2017. It has been mandated by industry stakeholders to lead and coordinate the Canadian industry's preparations for the T+2 migration, by ensuring that a cross-section of sell side, buy side, custodial, market infrastructure and back-office vendor representatives are participating on various CCMA sub-committees and working groups. A CCMA T+2 Steering Committee (the **T2SC**) and various working groups are coordinating activities in Canada, including identifying operational improvements (system development, procedures and processes), gaining industry agreement on minimum standards, identifying rule changes, agreeing on timelines, coordinating the completion of tasks, and planning an industry-wide testing that will be needed to ensure overall industry readiness for the migration to T+2.[24]

Among the rules that the CCMA has identified will require amendment are the rules of the Investment Industry Regulatory Organization of Canada (**IIROC**) and the exchanges that specifically mandate a three day settlement cycle or that are keyed to the settlement date and require pre-settlement actions.[25] Timely changes to such rules will be crucial for the industry to accomplish a migration to T+2 and meet the targeted implementation of September 5, 2017. The CCMA has also recommended amending NI 24-101 to remove an extended ITM deadline that accommodates cross-border trades from distant geographical zones. See Part 6 below.

While NI 24-101 neither expressly mandates a T+3 settlement cycle, nor would prevent the T+2 migration, it has a number of provisions that require adjustment to facilitate the move to a T+2 settlement cycle. These are discussed in the Request for Comment Notice.

3. Monitoring failed trades

As noted above, the frequency and duration of settlement failures should be monitored closely, and the risk implications of the fail rates should be analysed and actions identified that could reduce the rates or mitigate the associated risks.

3.1 What is a failed trade?

The term "failed trade" is not defined in securities legislation.[26] However, a failed trade is generally considered to occur when the seller (whether short or long) fails to deliver securities to the buyer when

The analysis demonstrated that, if Canada were to remain at T+3 while the U.S. moves to T+1, our markets would become uncompetitive vis-à-vis the U.S. markets and would suffer harm.

[22] See DP 24-401, at p. 3985. The connection between the CDS and The Depository Trust & Clearing Corporation (**DTCC**) is the most active and sophisticated inter-depository linkage globally. About 40% of trades on Canadian stock exchanges are in inter-listed securities, and Canada-U.S. cross-border transactions make up nearly 25% of the millions of trades processed annually through CDS. See: http://www.ust2.com/news/t2-too-update-from-canada/

[23] The CCMA is a federally incorporated, not-for-profit organization, launched to identify, analyze and recommend ways to meet the challenges and opportunities facing Canadian and international capital markets. See: http://www.ccma-acmc.ca/

[24] See CCMA Release. The T2SC has mandated four working groups to focus on specific areas of expertise. An Operational Working Group is responsible for identifying processes, procedures, and conflicted areas that may prevent T+2 from being successful. A Communication and Education Working Group is tasked with ensuring that T+2 information reaches all areas of the industry and public. A Mutual Fund Working Group is tasked with identifying issues regarding investment funds and similar products (such as segregated funds). A Legal and Regulatory Working Group is tasked with identifying all relevant rules (including the rules of SROs, marketplaces, and clearing agencies) that will need to be investigated for possible change.

[25] On July 28, 2016, IIROC published for comment proposed amendments to IIROC's Universal Market Integrity Rules, Dealer Member Rules, and Form 1 to facilitate the investment industry's move to T+2 settlement. See IIROC Notice 16-0177 *Amendments to facilitate the investment industry's move to T+2*, at: http://www.osc.gov.on.ca/documents/en/Marketplaces/iiroc_20160728_iiroc-notice-16-0177.pdf.

[26] The term "failed trade" is defined in IIROC's Universal Market Integrity Rules (UMIR). UMIR Rule 1.1 defines "failed trade" as a trade resulting from the execution of an order entered on a marketplace on behalf of an "account" and (a) in the case of a sale, other than a short sale, the account failed to make available securities in such number and form; (b) in the case of a short sale, the account failed to make: (i) available securities in such number and form, or (ii) arrangements with the Participant or Access Person to borrow securities in such number and form; and (c) in the case of a purchase, the account failed to make available monies in such amount, as to permit the settlement of the trade at the time on the date contemplated on the execution of the trade. The provision further provides that a trade shall be considered a "failed trade" irrespective of whether the trade has been settled in accordance with the rules or requirements of the clearing agency.

delivery is due (usually on T+3) or the buyer fails to pay the funds when payment is due (usually T+3).[27] In the context of this policy consultation, we refer to failed trades, or settlement fails or failures, as usually meaning a failure to deliver securities, or "fail to deliver". The failure to pay for securities, or "cash fail", is more easily resolvable, as cash is fungible and the party failing to pay may rely on credit facilities.[28] In a fail to deliver, on the other hand, securities need to be delivered in the specific agreed-upon type (ISIN code), which in some cases may not be easily available in the market for purchase or borrowing.[29] Moreover, a fail to deliver may expose a counterparty to replacement cost risk if the value of the securities fluctuates while the transaction remains unsettled.[30] In the context of a clearing agency's operations, a fail to deliver means the non-delivery of securities on "value date" (again, generally on T+3) in a delivery-versus-payment (**DVP**) mechanism. The CPMI and IOSCO suggest that markets should take steps to mitigate both the risks and the implications of failures to deliver securities.[31]

3.2 CNS fails in Canada

Currently, CDS provides data to the OSC on daily cumulative fails to deliver in its continuous net settlement (**CNS**) service. CNS is a central counterparty (**CCP**) service that nets and novates most trades that are executed on marketplaces in Canada, primarily in equity and ETF securities. CNS fails data can be used as a fair proxy for monitoring the settlement efficiency of the Canadian equity markets because they reflect the cumulative number and value of failed equity trades at CDS on any given date. Appendix A to this Consultation Paper contains a brief description and analysis of aggregate CNS fails rates in Canada.

It is important to emphasize that no specific conclusions can be drawn from the CNS fails data about overall settlement failures in all our cash markets. Daily cumulative CNS fail rates are not a reflection of all settlement fails at CDS, especially fixed income trades, which are mostly processed for settlement through CDS' trade-for-trade service, and not through CNS; nor do they represent aggregate settlement fails at the "account level" in the multitude of securities accounts maintained by dealers, custodians and other securities intermediaries for their customers.[32]

4. Settlement discipline regime

There are a number of rules and industry standards and practices that, together, can be considered to comprise the *settlement discipline* regime in Canada. In addition to basic contractual obligations, most requirements regarding settlement obligations arise from rules imposed by the CSA, self-regulatory organizations (**SROs**), exchanges and clearing agencies. The measures vary and are directly designed to either (i) encourage the timely settlement of a trade by the standard settlement date, or (ii) incentivize or force the timely resolution of a failure to deliver securities on time.[33] While we discuss some of these settlement discipline measures below, we focus in particular on NI 24-101 in Part 5 of this Consultation Paper. We anticipate that industry, through the SROs, clearing agencies and marketplaces, will work to revise a number of these measures to be aligned with a T+2 settlement cycle or otherwise support the transition to T+2.

The CSA are seeking feedback on whether existing arrangements in place for the management of settlement risk, including the settlement discipline regime discussed below, will continue to provide appropriate incentives to promote timely settlement and support market efficiency in a T+2 settlement cycle environment.

4.1 CSA instruments and companion policies

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[27] See also March 2, 2012, Notice of Request for Comment: CSA/IIROC Joint Notice 23-312 - *Transparency of Short Selling and Failed Trades*, (2012) 35 OSCB 2099 (**Notice 23-312**); available at: http://www.osc.gov.on.ca/documents/en/Securities-Category2/csa_20120302_23-312_rfc-trans-short-selling.pdf.

[28] Also, in most markets, cash settlements are greatly facilitated by CCP services and delivery-versus-payment (DVP) securities settlement mechanisms.

[29] See European Central Bank, *Settlement Fails – Report on Securities Settlement Systems (SSS) Measures to Ensure Timely Settlement*, April 1, 2011, at p. 1; available at: ttps://www.ecb.europa.eu/pub/pdf/other/settlementfails042011en.pdf.

[30] See PFMI report, at para. 2.5.

[31] See PFMI report, at para. 3.8.2. CPMI and IOSCO had noted in 2002 that, in assessing whether fails are a significant source of risk, fails should not exceed 5% by value. See November 2002, CPSS and IOSCO, *Assessment methodology for "Recommendations for Securities Settlement Systems"*, at p. 8; available at: http://www.bis.org/cpmi/publ/d51.pdf. However, because CPMI and IOSCO may conduct a full review of the market-wide standards in the RSSS report in the future, it is unclear whether such a percentage would still be viewed today as an appropriate measure. See the PFMI report, at para. 1.7.

[32] See the UMIR definition of "failed trade", *supra*, footnote 26.

[33] In addition to these measures, the ability to transfer ownership of securities efficiently and in a timely manner is critical to a firm in the securities industry and to its clients. Since it is in this firm's own interest to avoid settlement fails, commercial pressures impose a certain degree of discipline on the settlement process.

A number of CSA instruments and companion policies directly address post-trade execution processing. NI 24-101 requires registered firms trading for or with an institutional investor to have policies and procedures designed to match an institutional trade (in the Instrument, described as a **DAP/RAP trade**) as soon as practical after the trade is executed, but no later than noon on T+1. NI 24-101 also requires registered dealers to have policies and procedures designed to facilitate settlement no later than the standard settlement date prescribed by SROs and relevant marketplaces. We discuss NI 24-101 in more detail in Part 5 below.

Also, Companion Policy 23-101CP (**CP 23-101**) to National Instrument 23-101 – *Trading Rules* (**NI 23-101**) states that a person who enters an order to either purchase or sell a security without having the *ability and intention* to settle the trade would be considered to be violating express anti-manipulation/anti-fraud rules in NI 23-101.[34] In addition, under National Instrument 81-102 *Investment Funds* (**NI 81-102**), the payment obligations for mutual fund purchases or redemptions are required to be met within three business days.[35]

Other CSA rules and policies indirectly support the settlement discipline regime. For example, National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations* contains a principle-based rule that requires registered firms to manage the risks associated with their business in accordance with prudent business practices. Implementation of this obligation by registered firms puts in place effective systems and controls to properly manage their risks, including those in relation to settlement of trades. Moreover, National Instrument 24-102 *Clearing Agency Requirements* requires recognized clearing agencies to meet or exceed a number of international risk-management standards associated with the clearing and settlement process.

4.2 Requirements of IIROC

IIROC's dealer member *trading and delivery* rules impose a number of requirements designed to enhance settlement discipline.[36] For example, a rule requires a trade to be settled within a specified settlement cycle, unless alternative terms of settlement are agreed upon in writing.[37] Settlement cycles tend to be shorter for money market instruments and short term government securities (between T and T+2) than for equities and long-term fixed-income securities (normally T+3). Another IIROC rule requires trades among dealer members in non-exchange traded securities (including government debt securities) to be entered or accepted or rejected through the facilities of an "Acceptable Trade Matching Utility" by no later than 6 pm on the day of the trade.[38] In addition, IIROC's "uniform settlement" rule prohibits a dealer member from accepting a trade order from a customer pursuant to an arrangement whereby payment of securities purchased or delivery of securities sold is to be made to or by a settlement agent of the customer (generally, a custodian) unless certain procedures have been followed to facilitate prompt affirmation and settlement of the trade by the settlement agent.[39]

IIROC's Universal Market Integrity Rules (UMIR) and related policies are also relevant. Clause (h) of Part 2 of UMIR Policy 2.2, which interprets the anti-manipulative and deceptive trading provisions of Rule 2.2 of UMIR, provides that entering an order on a marketplace for the sale of a security without, at the time of entering the order, having the *reasonable expectation* of settling any trade that would result from the

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[34] See Section 3.1(3)(f) of Companion Policy 23-101CP. Certain provinces have inserted similar general anti-fraud and market manipulation provisions into their securities laws (e.g., OSA s. 126.1), which generally override the anti-manipulation/anti-fraud rules in NI 23-101.

[35] Payment of the issue price of securities of a mutual fund must be made to the mutual fund on or before the third business day after the pricing date (see section 9.4 of NI 81-102). Also, a mutual fund must pay the redemption proceeds for securities that are the subject of a redemption order within three business days after the date of calculation of the net asset value per security used in establishing the redemption price (see section 10.4 of NI 81-102). These requirements do not prevent a mutual fund from paying the issue price or the redemption proceeds of securities on a shorter period than a T+3 timeframe (e.g. T+2).

[36] IIROC Dealer Member Rule 800: *Trading and Delivery*. IIROC is proposing to amend some of these requirements to facilitate the investment industry's move to T+2 settlement. See, *supra*, footnote 25.

[37] See Rule 800.27. Despite these settlement cycle rules, market practice appears to allow some degree of failures to deliver on time, particularly if caused by "administrative delays or errors"; e.g., improperly endorsed certificates received from a client, back-office glitches or human error. In essence, it seems the SRO/marketplace rules will tolerate the occasional failure by market participants to settle on time, so long as they settle reasonably quickly after T+3.

[38] See Rule 800.49.

[39] See Rule 800.31. Among other things, the dealer must have obtained an agreement from the customer that the customer will furnish its settlement agent with instructions with respect to the receipt or delivery of the securities involved in the transaction promptly upon receipt by the customer of a trade confirmation from the dealer, or the relevant date and information as to each execution, relating to such order (even though such execution represents the purchase or sale of only a part of the order), and that in any event the customer will ensure that its settlement agent affirms the transaction no later than the next business day after the date of execution of the trade to which the confirmation relates. See subpara. (a)(iv).

execution of the order would constitute a manipulative and deceptive trading activity. In addition, Rule 7.10 of UMIR requires "Participants" to report a trade (an "Extended Failed Trade") that has failed to settle on the settlement date if the trade remains unresolved ten trading days following the settlement date.[40] The report must give the reason for the settlement failure. The Participant is also required to update the report once the problem has been rectified.[41]

4.3 Exchanges' T+3 settlement cycle rules

Except for trades with special terms settlement, the exchanges require trades to be settled within T+3.[42]

4.4 Clearing agency and exchange optional buy-in processes

CDS and certain exchanges have "buy-in" rules to enforce settlement, which allow a purchaser, at its discretion, to require the purchase of securities in the market for delivery to the purchaser, with the seller obliged to pay for the costs of the purchase and thereby forcing the settlement obligation of the seller.[43]

Question 1: In your opinion, is the existing settlement discipline regime adequate to promote timely settlement and support market efficiency in a T+2 settlement cycle environment? Please provide reasons for your response, including, if available, any quantitative analysis to support your reasons.

5. National Instrument 24-101 – *Institutional Trade Matching and Settlement*

5.1 Background to, and Purpose of, NI 24-101

NI 24-101 came into force in 2007 and was developed largely to encourage more efficient and timely post-trade execution and pre-settlement ITM processes (trade confirmation, affirmation, allocations and settlement instructions). Under NI 24-101, registered dealers and advisers trading for or with an institutional investor must have ITM policies and procedures designed to match a *DAP/RAP trade* as soon as practical after the trade is executed, but no later than noon on T+1 (**ITM deadline**).[44] The Instrument currently defers the matching deadline to noon on T+2 if the DAP/RAP trade results from an order to buy or sell securities received from an institutional investor whose investment decisions or settlement instructions are usually made in and communicated from a geographical region outside of the North American region (**non-North American trades**).[45] We are proposing to repeal the provision that defers the ITM deadline to noon on T+2 for non-North American trades (see the Request for Comment Notice, and Part 6 below).

Originally, NI 24-101 contained transition provisions that would have eventually imposed, after several years, a requirement to match DAP/RAP trades by no later than midnight on trade date (**midnight on T**). However, in 2010 we amended NI 24-101 to, among other things, halt the transition to midnight on T. In our notice of amendments, we had said that we are maintaining the ITM noon on T+1 deadline in NI 24-101 because, at that time, there were no plans to shorten the T+3 settlement cycle in global markets, and therefore moving to midnight on T would no longer be appropriate. However, we had also noted that we might re-introduce the midnight on T matching deadline into the Instrument through subsequent amendments if circumstances changed, such as from a global shortening of the standard T+3 settlement cycles.[46]

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[40] An Extended Failed Trade is a "failed trade" within the meaning of the UMIR that was not rectified within ten trading days following the date for settlement contemplated on the execution of that trade. See, *supra*, footnote 26 for the UMIR definition of "failed trade".

[41] There are also UMIR requirements that are designed to prevent abusive short selling practices, which can be characterized as settlement discipline measures (such as the UMIR "pre-borrow requirement" in limited circumstances). However, they are generally specific to short sale trades, and since a short sale is not likely to fail to settle any more than a long sale would be likely to fail to settle, we do not discuss these measures in this Consultation Paper. See the "IIROC Trends Study" described in Appendix A to this paper, which confirms at page 32 previous IIROC studies that "a short sale was less likely to fail in settlement than a trade generally".

[42] See, for example, TSX rule 5-103(1) and Aequitas NEO Exchange Rule 12.03(1).

[43] See, for example, CDS Rules 7.3.8(b) and 7.4.8(b) and TSX Rule 5-301. Generally, where a party to a trade fails to deliver within the usual settlement time, the counterparty may issue a buy-in notice to the defaulting party and request the marketplace to execute the buy-in.

[44] See subsections 3.1(1) and 3.3(1) of the Instrument. A DAP/RAP trade is a trade executed for a client account that permits settlement on a delivery against payment or receipt against payment basis through the facilities of a clearing agency, and for which settlement is made on behalf of the client by a custodian other than the dealer that executed the trade. See, among other terms, the definitions of "DAP/RAP trade", "T", "T+1" and "T+2" in section 1.1 of the Instrument.

[45] See subsections 3.1(2) and 3.3(2). "North American region" means Canada, the United States, Mexico, Bermuda and the countries of Central America and the Caribbean. See section 1.1.

[46] CSA Notice of Amendments to NI 24-101 Institutional Trade Matching and Settlement and Companion Policy 24-101CP Institutional Trade Matching and Settlement, dated April 16, 2010, (2010) 33 OSCB 3379 (**2010 Notice**), at p. 3380;

In addition, under the Instrument registered firms are required to complete and file exception reports on Form 24-101F1 if they did not meet, with respect to their institutional trades, the ITM matching threshold of 90% (**ITM threshold**) of trades by value and volume matched by noon on T+1 during a calendar quarter.[47] Also, clearing agencies (in particular, CDS) and matching service utilities (**MSUs**) are required to submit quarterly data on the matching of institutional equity and debt trades of their participants. Appendix B to this Consultation Paper contains a brief analysis of aggregate CDS ITM rates.

Finally, NI 24-101 contains a principles-based settlement rule (**settlement rule**) that requires registered dealers to establish, maintain and enforce policies and procedures designed to facilitate settlement of trades by no later than the "standard settlement date" prescribed by SROs and marketplaces.[48]

5.2 ITM processes

The post-trade execution and pre-settlement processes and systems for comparing and matching institutional trade data are complex, and inextricably linked to clearance and settlement. Most ITM in Canada involves many sequential steps after a trade is executed (referred to as "local" matching, which includes: a notice of execution; verification of trade details; confirmation and affirmation of trade; allocation of trade; and settlement instructions to custodian).[49] All the relevant parties[50] in ITM must agree on trade details as soon as possible so that errors and discrepancies in the trades can be discovered early in the clearing and settlement process.[51] Speedy and accurate ITM is an essential pre-condition to avoiding settlement failures in a shortened settlement cycle environment.[52]

Instead of local ITM, some market participants will use the services of a MSU to perform a "centralized" ITM process that is non-sequential. Either party can submit their trade details at any time, and in any order, into the MSU, which would automatically match the trades based on specific criteria and tolerances set up by the investment manager.[53] There are currently two MSUs in Canada that are authorized to provide such services.

5.3 Factors to improve ITM performance and generally to facilitate the move to a T+2 settlement cycle

Despite our decision in 2010 not to transition the ITM deadline to midnight on T, we encouraged the industry to work towards ITM goals that are earlier than noon on T+1.[54] We suggested tools to further improve ITM rates, such as the adoption of order management systems or the use of MSUs, together with moving from end-of-day batch processing to more frequent intra-day or real-time processing.

We strongly encouraged market participants to pursue further technology and processing improvements. Specifically, we encouraged:

- the buy-side to augment their use of front-office automation to enable more timely post-execution operations;
- dealers to continue their efforts to shift from end-of-day batch processing to more frequent intra-day or real time processing;
- custodians to support their clients in greater use of technology and other alternatives to improve ITM, including dissuading clients from manual post-execution activities (e.g., using telephones, fax machines or e-mails to communicate trade details and settlement instructions); and

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available at: http://www.osc.gov.on.ca/documents/en/Securities-Category2/csa_20100416_24-101_notice-amd.pdf. See also: (i) CSA Notice 24-307 – *Exemption from Transitional Rule: Extension of Transitional Phase-In Period in NI 24-101*, dated April 4, 2008, (2008) 31 OSCB 3721 (**2008 Notice**); available at: http://www.osc.gov.on.ca/documents/en/Securities-Category2/csa_20080404_24-307_phase-in-24-101.pdf; and (ii) CSA Notice and Request for Comment – *Proposed Amendments to NI 24-101 Institutional Trade Matching and Settlement and Companion Policy 24-101CP Institutional Trade Matching and Settlement*, dated October 30, 2009, (2009) 32 OSCB 9059 (**2009 Notice**); available at: http://www.osc.gov.on.ca/documents/en/Securities-Category2/rule_20091030_24-101_pro-amd.pdf .

[47] See Part 4 of the Instrument.

[48] The settlement rule applies to all trades, not just DAP/RAP trades. It does not specifically reference "T+3", but instead incorporates the settlement period norms established by the SROs or marketplaces.

[49] See Companion Policy, ss. 1.2(2) and (3).

[50] In NI 24-101, referred to as the "trade-matching parties". See definitions in s. 1 of the Instrument.

[51] See Companion Policy, ss. 1.2(2).

[52] See the RSSS report, at para. 3.10. See also DP 24-401, at p. 3995; and more recently Notice 24-312.

[53] See Omgeo, "Mitigating Operational Risk and Increasing Settlement Efficiency through Same Day Affirmation (SDA)", Industry Discussion Paper, October 2010 (**Omgeo paper**), at p. 16 (footnote 13).

[54] See 2010 Notice, at p. 3380.

- CDS and other back-office service providers to consider modifying their systems to expand their processing schedules and accept matched trades on T later in the processing day to facilitate compressed timelines and accurate measurement of a firm's ITM and settlement performance.

In addition, we noted our view that MSUs could play an important role in bringing all trade-matching parties together to expedite ITM processes. Industry-wide automation and *interoperability* would strengthen the efficiency and integrity of the securities clearing and settlement process and ultimately improve investor protection and the global competitiveness of the markets in Canada.[55]

The actions described above are more important than ever as we move to T+2. Market participants will need to implement improvements to accelerate their ITM timelines and enhance their operational efficiency in post-trade execution processing.

5.3.1 Same day affirmation or "SDA"

Same day affirmation (**SDA**) is achieved when an institutional trade is confirmed and affirmed on the day of the trade. Certain foreign markets and international post-trade execution service providers have identified the importance of achieving higher rates of SDA as a necessary pre-condition to ensure settlement failures do not increase with the introduction of a T+2 settlement cycle.[56] SDA helps speed up the post-trade ITM and settlement processes, by compressing the confirmation-affirmation steps, allowing for more time to complete trade allocations and settlement instructions and address errors and mismatches before trades are due to settle. By agreeing on the details of a trade more quickly, operational risk, costs and inefficiencies can be reduced. Automated trade verification, using electronic systems to match the trade details either locally or centrally, enables timely trade confirmation-affirmation and facilitate higher rates of SDA.[57]

Question 2: Given that international research suggests that achieving SDA rates of over 90 percent may be important in delivering greater settlement efficiency and lower rates of settlement failures,[58] is increasing SDA rates in the Canadian markets an important pre-condition to transitioning to T+2?

Question 3: Is a higher degree of automation in the trade confirmation-affirmation processes the key to delivering higher SDA rates? Please provide reasons for your answer.

5.3.2 Faster allocations and settlement instructions matching

The introduction of a T+2 settlement cycle will require a more rigorous and timely release of the allocations and settlement instructions. Generally, we would expect that higher levels of ITM rates by noon on T+1 should be achieved. See Appendix B for more information on current aggregate ITM rates.

Question 4: What actions could trade-matching parties take to accelerate the timing of the release of allocations and settlement instructions in a T+2 settlement environment?

6. Possible new measures to manage settlement risk

As we move to a T+2 settlement cycle, the CSA believes that it may be appropriate to examine at this time whether new settlement discipline measures may be warranted to help mitigate the risk that settlement failures may increase. We discuss below a number of additional measures to prevent or address settlement fails. Some of the measures also exist in other jurisdictions, such as in the United States, Europe and Australia.

We emphasize that we are not proposing to adopt or mandate the adoption of any of the measures at this time. However, we might consider adopting, or mandate the adoption of, some of them in the future after this consultation process. Commenters who believe that the existing settlement discipline regime is not adequate to promote timely settlement and support market efficiency in a T+2 settlement cycle environment should identify a particular measure that would, in the commenter's view, benefit our markets. In assessing the appropriateness of any of the measures, we ask stakeholders to provide reasons and describe potential benefits and costs to the markets.

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[55] See 2009 Notice, at p. 9064. See also DP 24-401, at p. 3984, for a discussion of *interoperability*.
[56] ASX Paper, at p. 10, citing the Omgeo paper. The Omgeo study found that there was a direct correlation between SDA and shortening settlement cycles, and that SDA leads to greater settlement efficiency.
[57] Ibid. The centralized trade verification and matching facility offered by an MSU enables trades to be automatically matched within compressed time frames, without the usual dependency on sequential steps among the trade-matching parties in a local matching trade-verification process.
[58] See ASX paper, at p. 10, which cites the Omgeo paper.

6.1 Possible ITM rule amendments

Ensuring STP at all levels of the transaction processing chain will help accelerate ITM and improve accuracy, which will be essential pre-conditions to avoiding settlement failures in a T+2 settlement cycle environment. Amending NI 24-101 in one or more ways might help to achieve this goal. For example, the Instrument could require registered dealers and advisers to have ITM policies and procedures designed to match a *DAP/RAP trade* no later than midnight on T instead of noon on T+1, thereby returning the Instrument to its original target deadline. Alternatively, the ITM threshold could be amended to require a registered firm to complete and file an exception report if it fails to meet a threshold of 95 percent (instead of 90 percent) of trades, measured by both value and volume, matched by noon on T+1 during a calendar quarter.

Question 5: Should the ITM deadline be amended, such that the ITM policies and procedures of a registered dealer or adviser would have to be designed to match a *DAP/RAP trade* no later than midnight on T instead of noon on T+1? Please provide reasons for your answer. If you believe the ITM deadline should be amended, but not to a midnight on T deadline, then please give your views on how the Instrument should be amended.

Question 6: Alternatively, should the ITM threshold be amended, such that a registered firm would be required to complete and file an exception report if it fails to meet a threshold of 95% (instead of 90%) of trades, measured by both value and volume, matched by noon on T+1 during a calendar quarter? Please provide reasons for your answer. If you believe the ITM threshold should be amended, but not to a 95% threshold, then please give your views on how the Instrument should be amended.

Question 7: Are there other pre-settlement measures that could be taken to encourage prompt confirmation and affirmation of a trade and communication of allocations and settlement instructions by trade-matching parties? If so, please describe such measures in reasonable detail.

As we mentioned in the Request for Comment Notice, we are proposing to repeal the provisions in NI 24-101 that extend the ITM deadline to noon on T+2 for non-North American trades. Given the move to a standard T+2 settlement cycle, we believe these provisions are no longer useful. The extended deadline of noon on T+2 for non-North American trades leaves insufficient time to solve problems and avoid failed trades; instead, parties need to match earlier on T+1 regardless of the cross-border nature of the trade, so that they have time to address issues and avoid failed trades. We appreciate the fact that transacting globally is complicated due to communication lags, structural challenges, currency differences, mismatches in global settlement cycles, and time zone issues. However, the move to T+2 will align the securities settlement cycle in Canada with the settlement cycles of most of the major foreign markets, including the U.S. and Europe. While several of the complexities with foreign investment and cross-border transactions will continue to exist, market participants will need to review their internal operations and adapt their ITM policies and procedures accordingly to meet the current ITM deadline of noon on T+1. This is consistent with the need for market participants to align their policies and procedures to meet the standard settlement cycle in the U.S., Europe and other T+2 jurisdictions.

6.2 Possible settlement rule amendment

In 2004, the CSA had asked whether it should mandate a T+3 settlement cycle.[59] The initial proposed NI 24-101 contained a rule that required a dealer who executes a trade in depository eligible securities "to take all necessary steps to settle the trade no later than the end of T+3".[60] We had expressed the view that, although current rules of the SROs and exchanges had already mandated a standard T+3 settlement cycle period for equity and long term debt securities, a general T+3 settlement cycle rule enshrined in provincial securities legislation would strengthen the clearing and settlement system in Canada.

However, a majority of commenters were of the view that the CSA should not mandate a T+3 settlement cycle.[61] Instead, we included in the final version of NI 24-101 the current principles-based settlement rule that requires a registered dealer to establish, maintain and enforce policies and procedures designed to

[59] See DP 24-401, at p. 3998.
[60] See Part 5 of the Instrument, as first published on April 16, 2004, in *Proposed National Instrument 24-101 Post-trade Matching and Settlement*, (2004) 27 OSCB 4010; available at: http://www.osc.gov.on.ca/documents/en/Securities-Category2/rule_20040416_24-101_ni-roc.pdf.
[61] See CSA Staff Notice 24-301 - *Responses to Comments Received on Discussion Paper 24-401 on Straight-through Processing, Proposed National Instrument 24-101 Post-trade Matching and Settlement, and Proposed Companion Policy 24-101CP to National Instrument 24-101 Post-trade Matching and Settlement*; February 11, 2005, (2005) 28 OSCB 1509; available at: http://www.osc.gov.on.ca/documents/en/Securities-Category2/csa_20050211_24-301_not-resp-comments.pdf.

facilitate settlement of trades by no later than the “standard settlement date”, as prescribed by the rules of the SROs and marketplaces.

A prescriptive T+2 rule would be consistent with the U.S. Securities and Exchange Commission’s (**SEC**) Rule 15c6-1[62] and the European Union’s “CSDR regulation” that mandates a T+2 settlement cycle.[63]

Question 8: Should NI-24-101’s current principles-based settlement rule be amended to incorporate a prescriptive T+2 rule? Please provide reasons for your answer.

6.3 Possible mechanisms to address settlement fails

A number of foreign jurisdictions have put in place “penalties” associated with settlement failures, or have proposed such penalties, to serve as an incentive for participants that cause settlement fails to resolve them expeditiously. Such penalties operate as monetary incentives (or disincentives) to settle on time, or to resolve fails quickly (e.g., fines or interest charges). They can be explicit (e.g., imposed by an SRO or clearing agency rule) or implicit (e.g., adopted as market practice by industry). The international experience indicates that introducing a minimum penalty discourages settlement fails.[64]

For example, under its CSDR regulation, European Union (EU) authorities are proposing to require central securities depositories (**CSDs**) to establish procedures that impose a cash penalty for participants that cause fails.[65] The cash penalties are to be calculated on a daily basis for each business day that a transaction fails to be settled after its “intended settlement date” (usually, T+2) until the moment of the actual settlement date or until the end of a mandatory buy-in process required to be initiated pursuant to the same regulation. Details of the implementation of the CSDR penalty regime and related operational processing have not yet been finalized.

In Australia, under the settlement disciplinary regime established by the securities exchange ASX, participants that fail to deliver securities on the scheduled settlement date are levied a daily fine.[66] The current fine is 0.1% of the trade value outstanding, with a floor of AU$100 and a cap of AU$5,000. ASX did not propose to increase the financial penalties with the introduction of a T+2 settlement cycle.

To encourage prompt delivery of U.S. government and agency securities in a trade, the CCP for fixed income trades in the U.S. collects interest at an annual rate of 3% on the settlement value of the trade that has failed to deliver in the CCP (minus the “Target Fed” funds rate in effect the day before the settlement day).[67]

In addition, a number of foreign jurisdictions have close-out (or forced buy-in) procedures that require the failing participant to remedy a failed trade as quickly as possible.

In Australia, the ASX Settlement Operating Rules require a settlement participant to close out settlement shortfalls that remain after batch settlement on T+5 by purchasing or borrowing securities needed to complete settlement.[68] With the introduction of a T+2 settlement cycle, ASX is proposing to change its settlement operating rules so that settlement disciplinary milestones are also reduced by one business day (that is, financial penalties will be levied for settlement fails on T+2, and the automatic close-out requirement would apply for settlement shortfalls that remain after batch settlement on T+4).

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[62] 17 CFR 240.15c6-1 - Settlement cycle. The rule requires a broker or dealer not to effect or enter into a contract for the purchase or sale of a security that provides for payment of funds and delivery of securities later than the third business day after the date of the contract unless otherwise expressly agreed to by the parties at the time of the transaction. The SEC is intending to amend its rule to require settlement no later than T+2. See letter from the Chair of the SEC to the U.S. industry, dated September 16, 2015, available at: http://www.ust2.com/news/sec-endorsements/

[63] Regulation (EU) No. 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories and amending Directives 98/26/EC and 2014/65/EU and Regulation (EU) No 236/2012 (**CSDR regulation**).

[64] See Bank of Canada, “Securities Financing and Bond Market Liquidity”, *Financial System Review,* June 2016, at p. 44; available at: http://www.bankofcanada.ca/2016/06/fsr-june-2016/

[65] See CSDR regulation, Article 7 – Measures to address settlement fails.

[66] See ASX paper, at p. 13.

[67] See the following documents published by The Treasury Market Practices Group (TMPG), revised February 2016: *U.S. Treasury Securities Fails Charge Trading Practice* and *Agency Debt and Agency Mortgage-Backed Securities Fails Charge Trading Practice*; both available on the Website of the Federal Reserve Bank of New York, at: https://www.newyorkfed.org/tmpg/about.html. The TMPG is composed of senior business managers and legal and compliance professionals from a variety of institutions — including securities dealers, banks, buy-side firms, market utilities and others — and is sponsored by the Federal Reserve Bank of New York. The U.S. CCP for fixed income trades is Fixed Income Clearing Corporation, a wholly owned subsidiary of DTCC.

[68] ASX paper, at p. 13.

In the U.S., SEC Rule 204 requires brokers and dealers that are participants of a registered clearing agency to take action to close out failure to deliver positions.[69] Closing out under Rule 204 requires the broker or dealer to purchase or borrow securities of like kind and quantity. The participant must close out a failure to deliver for a short sale transaction by no later than the beginning of regular trading hours on the settlement day following the settlement date (currently T+4, but will become T+3 in a T+2 settlement cycle environment). A failure to deliver for a long sale transaction, or for a trade that is attributable to bona fide market making activities, must be closed out by no later than the beginning of regular trading hours on the third consecutive settlement day following the settlement date (currently T+6, but will become T+5 in a T+2 settlement cycle environment).[70]

In Europe, under the CSDR regulation EU authorities are proposing to require CCPs, CSDs or trading venues to put in place a forced "buy-in" process for fails in many types of securities transactions that would be triggered generally within a certain period after the intended settlement date.[71] This period would be dependent on the asset type and liquidity of the relevant security; for example, up to four days for liquid securities, seven days for illiquid securities, and 15 days for transactions on SME growth markets.

Question 9: Is the current settlement discipline regime in Canada sufficient to resolve settlement failures expeditiously or are other mechanisms needed?

- **If other mechanisms should be imposed, what should those mechanisms be?**
- **To which types of trades, securities or markets should such mechanisms apply?**
- **How would a settlement failure be determined or defined for the purposes of such mechanisms?**
- **Who should establish and administer such mechanisms (for example, an SRO, clearing agency or CSA regulator)?**

6.4 Other potential impediments to ensuring timely settlement of trades

We seek stakeholder views on whether any other aspect of the securities clearing and settlement processing chain not discussed above may be a source of delay in meeting a T+2 settlement timeline. It is important that stakeholders identify the weak links in the processing chain so that regulators can consider whether additional settlement discipline measures may be needed to address such weak links.[72] For example, we are interested in knowing whether any services or systems currently used by investors, issuers or other market participants for the clearance and settlement of securities transactions, the maintenance of securities accounts, and the safeguarding of securities may not be able to support a shorter T+2 settlement environment. The reasons for this could be varied, including because the service or system is too dependent on manual processes and is not sufficiently automated.

Question 10: Are there other aspects of the securities transaction processing chain that may be a source of delay in meeting a T+2 settlement timeline? If so, please describe them and identify any additional settlement discipline measures that could be taken to address such delays. Please describe such measures in reasonable detail.

[69] 17 CFR 242.204 - Close-out requirement.
[70] If the position is not closed out, the broker or dealer and any broker or dealer for which it clears transactions (for example, an introducing broker) may not effect further short sales in that security without borrowing or entering into a bona fide agreement to borrow the security (known as the "pre-borrowing" requirement) until the broker or dealer purchases shares to close out the position and the purchase clears and settles.
[71] See CSDR regulation, Article 7 – Measures to address settlement fails.
[72] A discussion of the potential for emerging technologies, such as the blockchain concept and distributed ledgers, to radically transform current clearing and settlement processes and systems is beyond the scope of this policy consultation.

Conclusion

In this Consultation Paper, we briefly describe the Canadian securities industry's efforts to prepare for shortening the standard settlement cycle from T+3 to T+2. The move to T+2 is expected to occur on September 5, 2017, at the same time as the markets in the United States move to T+2. We provide an overview of existing settlement discipline measures in the Canadian equity and debt markets.

The Consultation Paper raises certain policy considerations for addressing the risk that the transition to a standard T+2 settlement cycle may increase settlement failures in our markets. We are seeking feedback on whether existing arrangements in place for the management of settlement risk will continue to provide appropriate incentives to promote timely settlement and support market efficiency in a T+2 settlement cycle environment. As we move to a T+2 settlement cycle, to help mitigate the risk that settlement failures may increase, it might be prudent to consider adopting, or mandate the adoption of, new measures to enhance the settlement discipline regime in a T+2 settlement environment.

We seek feedback on any aspect of this Consultation Paper and, in particular, on the following specific questions:

Question 1: In your opinion, is the existing settlement discipline regime adequate to promote timely settlement and support market efficiency in a T+2 settlement cycle environment? Please provide reasons for your response, including, if available, any quantitative analysis to support your reasons.

Question 2: Given that international research suggests that achieving SDA rates of over 90 percent may be important in delivering greater settlement efficiency and lower rates of settlement failures, is increasing SDA rates in the Canadian markets an important pre-condition to transitioning to T+2?

Question 3: Is a higher degree of automation in the trade confirmation-affirmation processes the key to delivering higher SDA rates? Please provide reasons for your answer.

Question 4: What actions could trade-matching parties take to accelerate the timing of the release of allocations and settlement instructions in a T+2 settlement environment?

Question 5: Should the ITM deadline be amended, such that the ITM policies and procedures of a registered dealer or adviser would have to be designed to match a *DAP/RAP trade* no later than midnight on T instead of noon on T+1? Please provide reasons for your answer. If you believe the ITM deadline should be amended, but not to a midnight on T deadline, then please give your views on how the Instrument should be amended.

Question 6: Alternatively, should the ITM threshold be amended, such that a registered firm would be required to complete and file an exception report if it fails to meet a threshold of 95% (instead of 90%) of trades, measured by both value and volume, matched by noon on T+1 during a calendar quarter? Please provide reasons for your answer. If you believe the ITM threshold should be amended, but not to a 95% threshold, then please give your views on how the Instrument should be amended.

Question 7: Are there other pre-settlement measures that could be taken to encourage prompt confirmation and affirmation of a trade and communication of allocations and settlement instructions by trade-matching parties? If so, please describe such measures in reasonable detail.

Question 8: Should NI-24-101's current principles-based settlement rule be amended to incorporate a prescriptive T+2 rule? Please provide reasons for your answer.

Question 9: Is the current settlement discipline regime in Canada sufficient to resolve settlement failures expeditiously or are other mechanisms needed?

- **If other mechanisms should be imposed, what should those mechanisms be?**
- **To which types of trades, securities or markets should such mechanisms apply?**
- **How would a settlement failure be determined or defined for the purposes of such mechanisms?**
- **Who should establish and administer such mechanisms (for example, an SRO, clearing agency or CSA regulator)?**

Question 10: Are there other aspects of the securities transaction processing chain that may be a source of delay in meeting a T+2 settlement timeline? If so, please describe them and identify any additional settlement discipline measures that could be taken to address such delays. Please describe such measures in reasonable detail.

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APPENDIX A
Aggregate CNS Fails Rates

CDS measures aggregate fails to deliver in its CNS system based on the aggregate value of securities that fail to settle on T+3. CDS acts as central counterparty to each trade processed through the CNS system (generally, most equity trades on marketplaces). In the CNS system, each CNS participant's daily purchases and sales of a security, based on trade date, are automatically netted into one long position (right to receive securities from CDS) or one short position (obligation to deliver securities to CDS) for each issue purchased and sold.

Where a CNS participant fails to deliver securities to CDS on T+3, a fail to deliver occurs. A number of CNS participants could be in a short position at any one time, and fail to deliver on T+3. All fails to deliver in a particular issue of securities on a given day are a cumulative number of all fails outstanding until that day, plus new fails that occur that day, less fails that settle that day. The figure is not a daily amount of fails, but a combined figure that includes both new fails on the reporting day as well as existing fails. In other words, these numbers reflect aggregate fails as of a specific point in time (the CNS system does not track the length of time that a fail to deliver remains outstanding or "age" of a fail).

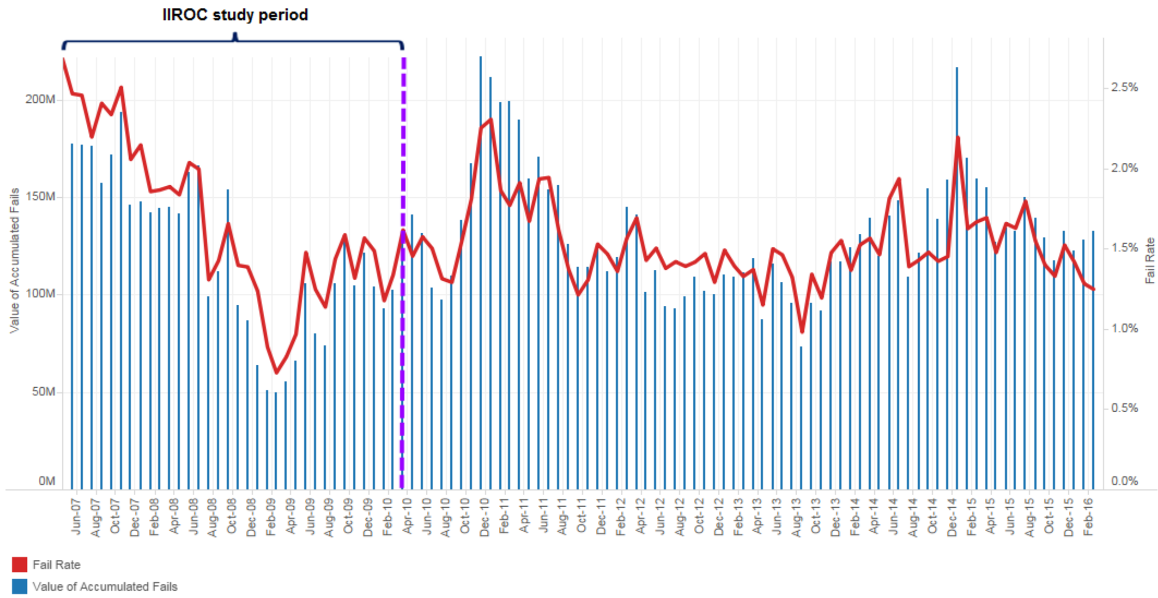
The aggregate value of accumulated fails to deliver on a particular day in the CNS system is then compared to the aggregate value of all trades that settle on "value date" in CNS on that day. The value of trades eligible for CNS is lagged by three days such that the trade-date data are matched to the failures associated with that trade date on a T+3 basis. In order to "smooth" out the effects of the failure of an individual large block trade or of unusual levels of trading activity (such as trading days on Canadian marketplaces when markets in the United States are closed), CDS calculates 20-day rolling averages for both measures.

Using the CNS fails data received from CDS, OSC staff have compiled the information to create Chart A-1, as well as set out the data in Table A-1 below. Table A-1 and the chart reflect daily aggregate CNS fails from May 1, 2007 to March 31, 2016. A part of this period, i.e., from May 2007 to April 2010 (**IIROC study period**) was analyzed by IIROC in a February 2011 report entitled *Trends in Trading Activity, Short Sales and Failed Trades – For the period May 1, 2007 to April 30, 2010* (**IIROC Trends Study**).[73] IIROC concluded that, overall during the IIROC study period, there was a general downward trend in the value of accumulated fails as a percentage of the aggregate value of trades processed in CNS, with the exception of a "spike" in trade failures that occurred in September 2008 during the financial crisis.[74] According to IIROC, the decline may have been attributable to two factors:

- general decline in the length of time that a "failed" trade remains outstanding; or
- a general decline in the rate of trade failures.

Chart A-1 – Daily CNS fails rate

[73] The IIROC Trends Study is available at: http://www.iiroc.ca/Documents/2011/cee8bc8c-a639-44de-bcfc-f2e499676f43_en.pdf.
[74] See the IIROC Trends Study, at p. 27-28. According to IIROC, this spike was "due to the bankruptcy of a major U.S. investment dealer that was the ultimate counter-party to a significant volume of trades".



From May 1, 2010 onwards (i.e., after the end of the IIROC study period) the declining trend in CNS fail rates appears to have abated, with cumulative CNS fails remaining relatively stable and generally below 2% of the aggregate value of trades processed through CNS.[75] The average of aggregate CNS fails during the entire period May 1, 2007 to March 31, 2016 is 1.58%. See Table A-1 below.

While the CNS fails data does not provide information on the causes of fails, previous IIROC studies have found that the "predominant cause of failed trades is administrative delay or error".[76] Even if the data is unable to tell us whether a fail at the clearing agency level (i.e, a delivery failure caused by a direct participant of the clearing agency) is caused by a corresponding fail at a dealer's or custodian's client-account level, it is probable that many fails to settle trades at the clearing agency are the direct or indirect result of fails in such underlying accounts maintained at one or more tiers of such intermediaries.

With respect to average fail rates in markets outside of Canada, different markets apply different methodologies for calculating fail rates, so it is also difficult to draw comparisons with foreign markets. The IIROC Trends Study contains a brief comparative analysis with fails in the United States. Based on information from the SEC's Office of Economic Analysis,[77] IIROC suggested that "fail rates in the United States may be somewhat higher than in Canada after taking into account differences in the size of the respective markets".[78]

[75] However, there are some exceptions to this general observation: it also appears that certain unexplained, but temporary, increases or spikes in fails to deliver occurred in late 2010/early 2011 and early 2015 when the fail rate increased above the 2% mark.
[76] See the IIROC Trends Study, at p. 5-6.
[77] See Office of Economic Analysis, *Impact of recent SHO Rule Changes on Fails to Deliver* (April 16, 2009). A revised version of this document dated November 4, 2009 is available at: https://www.sec.gov/spotlight/shortsales/oeamemo110409.pdf.
[78] It is interesting to note that, in Australia, the settlement failure rate for cash equities is extremely low, with an average daily settlement failure rate of 0.339% over the December 2013 quarter. See ASX Paper, at p. 13. It is unclear whether this percentage is based on number of securities or the value of the securities that fail to settle on time. The ASX says that the high level of settlement efficiency in Australia is demonstrated by both average daily settlement completion rate of 99.7% and the fact that 77.8% of settlements which failed on T+3 were completed by T+4. Ninety three percent of the settlements that failed on T+3 over Q4 2013 involved securities outside the top 50 ASX-listed securities.

Table A-1 – Value of Accumulated Fails in CNS

Table A-1 – Value of Accumulated Fails					
Month	20-Day Rolling Average of				Value of Accumulated Fails as % of Trade Value
	Continuous Net Settlement Trade Value		Value of Accumulated Fails		
May-07	$	7,072,864,788	$	190,530,817	2.69%
Jun-07	$	7,175,899,218	$	177,079,299	2.47%
Jul-07	$	7,186,423,091	$	176,816,985	2.46%
Aug-07	$	8,016,228,401	$	176,485,419	2.20%
Sep-07	$	6,523,189,147	$	157,141,611	2.41%
Oct-07	$	7,349,209,434	$	171,706,634	2.34%
Nov-07	$	7,714,020,926	$	193,563,475	2.51%
Dec-07	$	7,063,445,146	$	145,759,967	2.06%
Jan-08	$	6,884,294,114	$	147,751,865	2.15%
Feb-08	$	7,629,710,520	$	141,827,181	1.86%
Mar-08	$	7,723,931,327	$	144,401,989	1.87%
Apr-08	$	7,683,901,472	$	144,996,218	1.89%
May-08	$	7,695,119,932	$	141,500,208	1.84%
Jun-08	$	7,990,506,163	$	163,049,106	2.04%
Jul-08	$	8,300,632,652	$	165,949,115	2.00%
Aug-08	$	7,566,027,689	$	98,967,891	1.31%
Sep-08	$	7,765,134,588	$	111,699,872	1.43%
Oct-08	$	9,265,502,773	$	153,736,905	1.66%
Nov-08	$	6,730,676,331	$	94,520,509	1.40%
Dec-08	$	6,242,704,936	$	86,917,132	1.39%
Jan-09	$	5,140,145,092	$	63,994,026	1.24%
Feb-09	$	5,712,182,858	$	50,783,628	0.89%
Mar-09	$	6,637,664,169	$	50,053,832	0.73%
Apr-09	$	6,690,814,518	$	55,662,309	0.83%
May-09	$	6,866,748,063	$	66,107,911	0.97%
Jun-09	$	7,140,039,142	$	105,592,566	1.48%
Jul-09	$	6,330,705,081	$	80,248,484	1.25%
Aug-09	$	6,524,151,799	$	73,859,488	1.14%
Sep-09	$	7,499,492,432	$	105,980,101	1.44%
Oct-09	$	8,010,051,153	$	128,256,855	1.59%
Nov-09	$	7,867,282,950	$	104,376,622	1.32%
Dec-09	$	7,755,872,818	$	121,610,483	1.57%
Jan-10	$	7,015,269,830	$	104,335,029	1.49%
Feb-10	$	7,854,569,053	$	92,934,069	1.18%
Mar-10	$	7,673,630,354	$	102,195,128	1.34%
Apr-10	$	8,228,071,445	$	133,018,447	1.62%
May-10	$	9,680,483,463	$	141,053,179	1.46%
Jun-10	$	8,332,890,633	$	131,457,722	1.58%
Jul-10	$	6,863,386,601	$	103,316,906	1.51%
Aug-10	$	7,400,363,281	$	97,441,461	1.32%
Sep-10	$	8,486,406,274	$	109,836,461	1.29%
Oct-10	$	8,942,465,332	$	138,031,677	1.54%
Nov-10	$	9,216,966,639	$	167,228,840	1.81%
Dec-10	$	9,847,801,045	$	222,187,757	2.26%
Jan-11	$	9,161,265,959	$	211,598,802	2.31%
Feb-11	$	10,649,798,759	$	198,685,634	1.87%
Mar-11	$	11,221,033,494	$	199,034,117	1.77%
Apr-11	$	9,905,815,097	$	189,657,100	1.91%
May-11	$	9,504,509,917	$	159,198,189	1.67%
Jun-11	$	8,814,514,979	$	170,858,690	1.94%
Jul-11	$	7,906,422,785	$	153,942,946	1.95%
Aug-11	$	9,645,711,225	$	156,234,934	1.62%
Sep-11	$	9,136,409,948	$	125,736,996	1.38%
Oct-11	$	9,379,516,927	$	114,059,066	1.22%
Nov-11	$	8,731,360,061	$	114,310,999	1.31%
Dec-11	$	8,209,229,504	$	125,748,021	1.53%
Jan-12	$	7,627,146,676	$	112,114,440	1.47%

Table A-1 – Value of Accumulated Fails			
Month	20-Day Rolling Average of		Value of Accumulated Fails as % of Trade Value
	Continuous Net Settlement Trade Value	Value of Accumulated Fails	
Feb-12	$ 8,752,801,479	$ 119,229,480	1.36%
Mar-12	$ 9,254,526,183	$ 145,092,895	1.57%
Apr-12	$ 8,326,839,455	$ 141,150,535	1.70%
May-12	$ 7,060,215,801	$ 101,068,837	1.43%
Jun-12	$ 7,472,308,216	$ 112,567,935	1.51%
Jul-12	$ 6,793,008,979	$ 93,821,758	1.38%
Aug-12	$ 6,537,526,483	$ 92,989,892	1.42%
Sep-12	$ 7,114,775,151	$ 99,175,350	1.39%
Oct-12	$ 7,664,088,294	$ 108,878,215	1.42%
Nov-12	$ 6,903,115,514	$ 101,685,366	1.47%
Dec-12	$ 7,754,502,011	$ 100,380,386	1.29%
Jan-13	$ 7,361,459,898	$ 110,013,649	1.49%
Feb-13	$ 7,825,580,622	$ 109,151,397	1.39%
Mar-13	$ 8,369,051,413	$ 111,398,558	1.33%
Apr-13	$ 8,626,141,145	$ 118,459,809	1.37%
May-13	$ 7,549,909,603	$ 87,034,523	1.15%
Jun-13	$ 7,708,191,934	$ 115,808,064	1.50%
Jul-13	$ 7,249,298,529	$ 106,239,613	1.47%
Aug-13	$ 7,222,839,903	$ 95,762,354	1.33%
Sep-13	$ 7,467,273,049	$ 73,458,972	0.98%
Oct-13	$ 7,134,066,435	$ 95,895,171	1.34%
Nov-13	$ 7,647,258,002	$ 91,523,310	1.20%
Dec-13	$ 7,899,019,895	$ 116,860,952	1.48%
Jan-14	$ 7,520,037,956	$ 116,866,404	1.55%
Feb-14	$ 9,068,268,939	$ 124,202,397	1.37%
Mar-14	$ 8,584,955,918	$ 131,110,465	1.53%
Apr-14	$ 8,883,557,953	$ 139,317,479	1.57%
May-14	$ 8,164,086,538	$ 119,730,161	1.47%
Jun-14	$ 7,722,030,302	$ 140,318,789	1.82%
Jul-14	$ 7,657,546,131	$ 148,530,599	1.94%
Aug-14	$ 7,852,382,868	$ 109,286,911	1.39%
Sep-14	$ 8,464,405,954	$ 121,268,376	1.43%
Oct-14	$ 10,437,412,125	$ 154,583,284	1.48%
Nov-14	$ 9,730,735,609	$ 138,721,246	1.43%
Dec-14	$ 10,928,812,528	$ 159,046,647	1.46%
Jan-15	$ 9,851,185,673	$ 216,597,828	2.20%
Feb-15	$ 10,443,117,192	$ 170,100,474	1.63%
Mar-15	$ 9,539,542,128	$ 159,427,943	1.67%
Apr-15	$ 9,139,613,831	$ 155,047,935	1.70%
May-15	$ 8,594,193,281	$ 127,206,751	1.48%
Jun-15	$ 8,093,983,952	$ 134,392,981	1.66%
Jul-15	$ 8,128,056,379	$ 132,644,452	1.63%
Aug-15	$ 8,339,300,943	$ 150,044,043	1.80%
Sep-15	$ 8,960,875,588	$ 139,050,902	1.55%
Oct-15	$ 9,226,858,931	$ 129,445,026	1.40%
Nov-15	$ 8,798,002,637	$ 117,217,762	1.33%
Dec-15	$ 8,687,635,347	$ 132,572,379	1.53%
Jan-16	$ 8,611,974,623	$ 122,258,166	1.42%
Feb-16	$ 9,970,479,116	$ 128,119,896	1.28%
Mar-16	$ 10,618,968,915	$ 132,864,132	1.25%
Period Average	**$ 8,120,574,125**	**$ 128,623,977**	**1.58%**

Source: CDS

APPENDIX B
Aggregate ITM Rates

As we had stated in previous CSA notices in 2008, 2009 and 2010,[79] during the period from 2004 to 2009, we believe NI 24-101 had successfully encouraged market participants to address ITM middle and back-office problems and generally improve their clearing and settlement processes and systems. Many processes were re-engineered and became automated, resulting in efficiency gains and STP. Overall ITM rates at T and at T+1 had improved significantly from April 2004 to June 2009.[80] Specifically, the combined equity and debt industry ITM rate at midnight on T improved from 2.98% in April 2004 to 48.24% in June 2009, representing an increase of over 45 percentage points. The ITM rate at midnight on T+1 also improved significantly, from 47.14% in April 2004 to 90.85% in June 2009, representing an increase of almost 44 percentage points. Moreover, the industry ITM rate at noon on T+1 increased from 61.89% in June 2007 (when CDS first began measuring ITM rates at noon on T+1) to 85.18% in June 2009, representing an increase of over 23 percentage points during this two-year period. We also noted that NI 24-101 may have contributed to the overall decline of the fails-to-deliver rates in Canada since April 2007, when the Instrument came into force.[81]

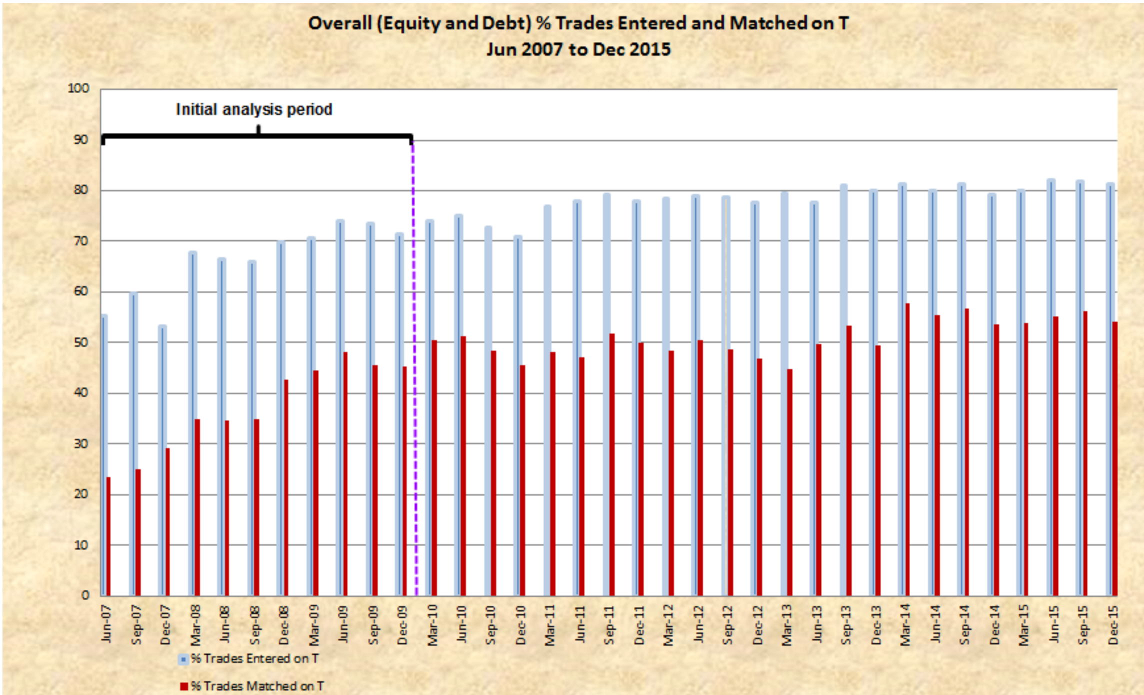
With the 2010 Notice, we published a report entitled *CSA Staff Report on Industry Compliance with the Institutional Trade Matching Requirements of National Instrument 24-101* (**2010 Analysis**).[82] The 2010 Analysis summarized our review of the ITM data from April 2007 to December 2009 (**initial analysis period**). Our findings showed that, while the industry had made steady progress in meeting the ITM target during the initial analysis period, many market participants had reached a "significant ceiling" in their ability to meet the ITM deadline in mid-2009. The increasing trend in ITM rates at noon on T+1 appeared to have flattened for the last two quarters of 2009. The average percentage of trades entered (submitted) by noon on T+1 into CDS had remained around 90%, and the average percentage of matched trades had fluctuated from 80% to 86%. This indicated that market participants had stopped investing in or improving their ITM policies and procedures, or that reaching the ITM target had become less of a focus for market participants. The 2010 Analysis had set forth in table format the industry aggregate ITM rates (quarterly),[83] and included charts[84] and data tables showing the industry trends in equity and debt ITM rates.

OSC staff have continued to examine this data, and have updated the charts and tables to extend the initial analysis period to the end of December 2015. Charts B-1 and B-2 and the data in Tables B-1 to B-3 below reflect aggregate ITM rates from April 2007 to December 2015. Based on OSC staff's observations, the trend in industry aggregate ITM rates increased at a much slower pace between January 2010 and December 2015, when compared to the initial analysis period. Specifically, the aggregate industry ITM rate increased by approximately 5 percentage points at noon on T+1 during this period.

Based on the data in Tables B-2 and B-3, the aggregate ITM rates for debt trades seem to lag the ITM rates for equity trades at noon on T+1. Currently, debt trades appear to be consistently matched below the 90% threshold, while equity trades are matched at, or slightly above, the 90% threshold. This may be due to the differences in how these transactions are processed. While equity transactions are processed on a more straight-through processing basis, the processing of trades in fixed-income securities tends to rely more on manual intervention. Specifically, certain details on debt transactions are not always readily available (e.g., CUSIP numbers for new issues) and, therefore, the parties to the trade have to manually input these details, which results in additional processing time.

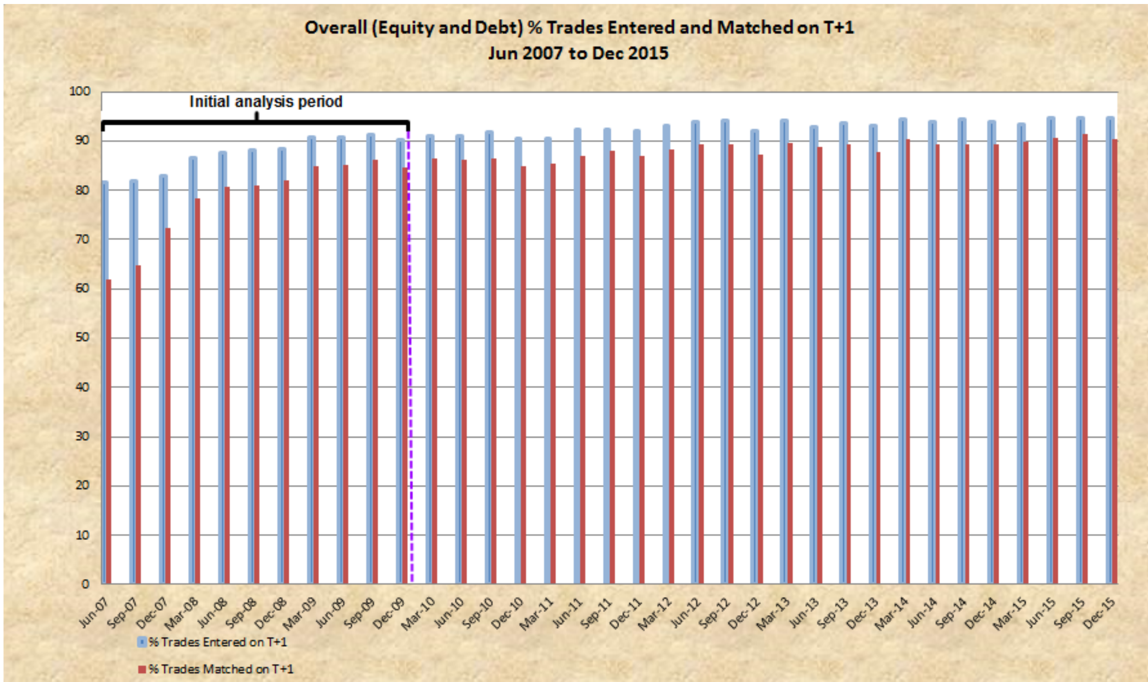
[79] See the 2008 Notice, 2009 Notice and 2010 Notice.
[80] NI 24-101 was first published for comment on April 16, 2004, together with DP 24-401. While NI 24-101 only came in force in April 2007, market participants were likely influenced or encouraged to upgrade systems, improve processes, and change behaviours since April 2004 by the prospect of NI 24-101 coming into force.
[81] See the 2009 Notice, at p. 9065. This view was expressed by IIROC as well.
[82] See the 2010 Notice, at p. 3396.
[83] See Tables A-1 to A-3 in the Appendix to the 2010 Analysis.
[84] See Charts 1 and 2 of the 2010 Analysis.

Chart B-1. Overall equity and debt ITM rates from CDS data based on volume – entered vs. matched midnight on T



Source: CDS

Chart B-2. Overall equity and debt ITM rates from CDS data based on volume – entered vs. matched noon on T+1



Source: CDS

Table B-1 – Overall ITM Rates (combined equity and debt) from CDS data based on volume – percentage entered into CDS during the quarter

Quarter Ending	Entered Midnight on T	Matched Midnight on T	Entered Noon T+1	Matched Noon T+1
Dec-15	81.27	54.17	94.56	90.36
Sep-15	81.85	56.20	94.70	91.32
Jun-15	81.99	55.19	94.75	90.62
Mar-15	79.95	53.88	93.48	89.86
Dec-14	79.35	53.51	93.83	89.40
Sep-14	81.20	56.79	94.37	89.32
Jun-14	79.96	55.52	93.90	89.45
Mar-14	81.24	57.83	94.45	90.32
Dec-13	79.93	49.56	93.02	87.75
Sep-13	80.91	53.43	93.63	89.33
Jun-13	77.76	49.85	92.97	88.80
Mar-13	79.37	44.72	94.24	89.65
Dec-12	77.75	46.78	92.18	87.25
Sep-12	78.96	48.75	94.09	89.37
Jun-12	78.97	50.48	93.82	89.20
Mar-12	78.40	48.41	93.04	88.31
Dec-11	78.03	50.09	91.98	86.87
Sep-11	79.12	51.74	92.44	88.13
Jun-11	77.81	47.09	92.37	86.86
Mar-11	76.94	48.10	90.61	85.45
Dec-10	70.79	45.47	90.44	84.82
Sep-10	72.70	48.34	91.78	86.55
Jun-10	74.94	51.25	91.00	86.17
Mar-10	74.07	50.54	90.89	86.34
Dec-09	71.43	45.24	90.20	84.70
Sep-09	73.45	45.47	91.40	86.30
Jun-09	73.96	48.24	90.70	85.20
Mar-09	70.55	44.59	90.80	84.80
Dec-08	69.78	42.72	88.30	82.00
Sep-08	65.97	34.96	88.10	80.90
Jun-08	66.48	34.62	87.50	80.60
Mar-08	67.69	34.84	86.70	78.40
Dec-07	53.34	29.28	82.90	72.30
Sep-07	59.74	25.18	81.80	64.80
Jun-07	55.32	23.48	81.70	61.90
Apr-07	39.72	14.30		

Table B-2 – Overall ITM Rates (equity only) from CDS data based on volume – percentage entered into CDS during the quarter

Quarter Ending	Entered Midnight on T	Matched Midnight on T	Entered Noon T+1	Matched Noon T+1

Quarter Ending	Entered Midnight on T	Matched Midnight on T	Entered Noon T+1	Matched Noon T+1
Dec-15	81.72	53.34	94.84	90.73
Sep-15	82.42	55.09	95.21	92.16
Jun-15	82.60	53.89	95.27	91.32
Mar-15	80.40	52.98	93.73	90.55
Dec-14	79.71	52.55	94.31	90.21
Sep-14	81.39	55.57	94.78	89.81
Jun-14	80.48	54.61	94.59	90.46
Mar-14	81.63	56.86	94.96	91.02
Dec-13	80.24	47.24	93.43	88.30
Sep-13	81.30	50.43	94.25	90.26
Jun-13	78.01	46.51	93.44	89.63
Mar-13	79.37	44.72	94.24	89.65
Dec-12	78.24	44.60	92.52	87.95
Sep-12	78.96	45.72	94.57	90.03
Jun-12	78.84	46.94	94.12	89.63
Mar-12	78.03	45.04	93.10	88.41
Dec-11	78.22	48.35	92.20	87.40
Sep-11	79.14	50.09	92.56	88.56
Jun-11	77.25	44.12	92.33	87.10
Mar-11	76.59	45.85	90.48	85.61
Dec-10	70.36	43.77	90.53	85.19
Sep-10	71.90	46.33	91.93	86.93
Jun-10	74.44	50.35	67.79	44.59
Mar-10	73.70	49.33	91.10	86.87
Dec-09	70.06	43.40	90.30	85.20
Sep-09	73.00	43.50	91.60	86.80
Jun-09	73.70	46.60	90.90	85.90
Mar-09	69.60	42.50	90.90	85.40
Dec-08	69.20	41.30	88.10	82.20
Sep-08	64.10	32.00	87.80	80.10
Jun-08	65.50	32.70	87.50	81.10
Mar-08	66.50	32.30	86.40	78.40
Dec-07	54.40	27.20	82.90	73.00
Sep-07	58.20	22.40	81.20	65.10
Jun-07	53.50	21.70	81.20	62.90
Apr-07	39.50	13.10		

Table B-3 – Overall ITM Rates (debt only) from CDS data based on volume – percentage entered into CDS during the quarter

Quarter Ending	Entered Midnight on T	Matched Midnight on T	Entered Noon T+1	Matched Noon T+1
Dec-15	78.56	59.09	92.92	88.14
Sep-15	79.09	61.55	92.25	87.36

Quarter Ending	Entered Midnight on T	Matched Midnight on T	Entered Noon T+1	Matched Noon T+1
Jun-15	79.21	61.05	92.40	87.46
Mar-15	77.44	58.61	92.11	86.18
Dec-14	77.11	59.21	90.83	84.62
Sep-14	80.31	62.52	92.41	87.07
Jun-14	77.56	59.60	90.69	84.97
Mar-14	79.36	62.59	92.01	86.96
Dec-13	78.32	61.11	90.88	84.98
Sep-13	79.42	64.38	91.26	85.92
Jun-13	76.76	63.04	91.08	85.52
Mar-13	79.18	64.95	92.75	87.12
Dec-12	75.25	57.68	90.44	83.78
Sep-12	77.96	62.92	91.67	86.25
Jun-12	79.59	64.99	92.53	87.45
Mar-12	80.38	64.87	92.73	87.79
Dec-11	76.90	59.53	90.69	83.98
Sep-11	79.00	60.87	91.76	85.68
Jun-11	80.61	60.98	92.57	85.71
Mar-11	79.09	61.70	91.40	84.48
Dec-10	73.34	55.47	89.85	82.57
Sep-10	76.95	58.92	90.94	84.58
Jun-10	77.33	55.68	90.30	83.33
Mar-10	75.92	56.79	89.85	83.63
Dec-09	75.70	55.50	89.30	81.70
Sep-09	78.90	56.30	90.80	83.20
Jun-09	75.50	55.90	90.00	82.10
Mar-09	75.42	55.36	90.06	81.76
Dec-08	73.33	50.95	89.32	80.60
Sep-08	76.52	51.79	90.09	82.98
Jun-08	71.74	45.61	87.21	77.86
Mar-08	74.10	49.13	88.36	78.09
Dec-07	66.00	39.60	82.60	68.80
Sep-07	67.00	38.60	84.80	63.50
Jun-07	63.20	31.40	63.50	57.50
Apr-07	41.00	20.90		

Source: CDS