SECURITIES AND EXCHANGE COMMISSION

17 CFR Part 240

[Release No. 34–78962; File No. S7–22–16]

RIN 3235–AL86

Amendment to Securities Transaction Settlement Cycle

AGENCY: Securities and Exchange Commission.

ACTION: Proposed rule.

SUMMARY: The Securities and Exchange Commission (''Commission'') proposes to amend Rule 15c6–1(a) under the Securities Exchange Act of 1934 (''Exchange Act'') to shorten the standard settlement cycle for most broker-dealer transactions from three business days after the trade date (''T+3'') to two business days after the trade date (''T+2''). The proposed amendment is designed to reduce a number of risks, including credit risk, market risk, and liquidity risk and, as a result, reduce systemic risk for U.S. market participants.

DATES: Submit comments on or before December 5, 2016.

ADDRESSES: Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/proposed.shtml*); or
- Send an email to *rule-comments@sec.gov*. Please include File Number [-] on the subject line; or
- Use the Federal eRulemaking Portal (*http://www.regulations.gov*). Follow the instructions for submitting comments.

Paper Comments

- Send paper comments to Brent J. Fields, Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090. All submissions should refer to File Number [-].

To help us process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/proposed.shtml*).

Comments are available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly.

Studies, memoranda or other substantive items may be added by the Commission or staff to the comment file during this rulemaking. A notification of the inclusion in the comment file of any such materials will be made available on the Commission's Web site. To ensure direct electronic receipt of such notifications, sign up through the ''Stay Connected'' option at *www.sec.gov* to receive notifications by email.

FOR FURTHER INFORMATION CONTACT: Jeffrey Mooney, Assistant Director, Susan Petersen, Special Counsel, Andrew Shanbrom, Special Counsel, Office of Clearance and Settlement; Justin Pica, Senior Policy Advisor, Office of Market Supervision; Natasha Vij Greiner, Assistant Chief Counsel, Jonathan Shapiro, Special Counsel, Office of Chief Counsel; at 202–551–5550, Division of Trading and Markets, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–7010.

SUPPLEMENTARY INFORMATION: The Commission is proposing an amendment to Rule 15c6–1 of the Exchange Act under the Commission's rulemaking authority set forth in Sections 15(c)(6), 17A and 23(a) of the Exchange Act (15 U.S.C. 78o(c)(6), 78q–1, and 78w(a) respectively).

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I. Introduction

The Commission originally adopted Exchange Act Rule 15c6–1 in 1993 to establish T+3 as the standard settlement cycle for broker-dealer transactions, and in so doing, effectively shortened the settlement cycle for most securities transactions (with certain exceptions), which at the time was generally five business days after the trade date

(''T+5'').[1] The Commission cited a number of reasons for standardizing and shortening the settlement cycle, which included, among others, reducing credit and market risk exposure related to unsettled trades, reducing liquidity risk among derivatives and cash markets, encouraging greater efficiency in the clearance and settlement process, and reducing systemic risk for the U.S. markets.[2]

The Commission now proposes to amend Exchange Act Rule 15c6–1(a) to further shorten the standard settlement cycle from T+3 to T+2. As discussed in greater detail below, the Commission preliminarily believes that there are a number of reasons supporting shortening the standard settlement cycle to T+2 at this time. As an initial matter, the Commission believes that shortening the standard settlement cycle will result in a further reduction of credit, market, and liquidity risk,[3] and as a result a reduction in systemic risk for U.S. market participants.

Since the Commission adopted Rule 15c6–1 in 1993, the financial markets have expanded and evolved significantly.[4] During this period, the Commission has continued to focus on further mitigating and managing risks in the clearance and settlement process, and how those risks relate to managing systemic risk.[5] The Commission also notes that shortening the standard settlement cycle at this time is consistent with the broader focus by the Commission on enhancing the resilience and efficiency of the national clearance and settlement system and the role that certain systemically important financial market utilities (''FMUs''),[6] particularly central counterparties (''CCPs''), play in concentrating and managing risk.[7] In light of this ongoing focus on further mitigating and managing risks in the clearance and settlement process, the Commission preliminarily believes that a transition to a T+2 settlement cycle would yield important benefits for market participants and the national clearance and settlement system.

The Commission preliminarily has considered the costs and benefits attendant to shortening the standard settlement cycle to T+2 and believes that the proposed amendment to Rule 15c6–1(a) will yield benefits that justify the associated costs. The Commission also preliminarily believes that the case for further shortening the standard settlement cycle at this time is supported by certain progress and efficiencies already achieved by market participants since the Commission's adoption of Rule 15c6–1 in 1993, including significant technological developments. The Commission, however, is sensitive to the effects this proposal could have on a wide range of market participants. Accordingly, in addition to specific requests for comment, the Commission seeks generally input on the economic effects associated with shortening the standard settlement cycle to T+2, including any costs, benefits or burdens, and any effects on efficiency, competition and capital formation.

II. Background

Rule 15c6–1(a) of the Exchange Act prohibits broker-dealers from effecting or entering into a contract for the purchase or sale of a security (other than certain exempted securities)[8] 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.[9] Subject to the exceptions enumerated in the rule, the prohibition in paragraph (a) of Rule 15c6–1 applies to all securities. The definition of the term ''security'' in Section 3(a)(10) of the Exchange Act covers, among others, equities, corporate bonds, unit investment trusts (''UITs''), mutual funds, exchange-traded funds (''ETFs''), American depositary receipts (''ADRs''), security-based swaps, and options.[10] Many of

[1] Securities Transactions Settlement, Exchange Act Release No. 33023 (Oct. 6, 1993), 58 FR 52891, 52893 (Oct. 13, 1993) (''T+3 Adopting Release''). Rule 15c6–1 of the Exchange Act prohibits broker-dealers from effecting or entering into a contract for the purchase or sale of a security (other than an exempted security, government security, municipal security, commercial paper, bankers' acceptances, or commercial bills) 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. 17 CFR 240.15c6–1.

[2] T+3 Adopting Release, 58 FR at 52893.

[3] Credit risk refers to the risk that the credit quality of one party to a transaction will deteriorate to the extent that it is unable to fulfill its obligations to its counterparty on settlement date. Market risk refers to the risk that the value of securities bought and sold will change between trade execution and settlement such that the completion of the trade would result in a financial loss. Securities Transactions Settlement, Exchange Act Release No. 31904 (Feb. 23, 1993), 58 FR 11806, 11809 nn.26–27 (Mar. 1, 1993) (''T+3 Proposing Release''). Liquidity risk describes the risk that an entity will be unable to meet financial obligations on time due to an inability to deliver funds or securities in the form required though it may possess sufficient financial resources in other forms. *See* Standards for Covered Clearing Agencies, Exchange Act Release No. 71699 (Mar. 12, 2014), 79 FR 29508, 29531 (May 22, 2014) (''CCA Proposal'').

[4] *See generally* Concept Release on Equity Market Structure, Exchange Act Release No. 61358 (Jan. 14, 2010), 75 FR 3594 (Jan. 21, 2010).

[5] *See generally* Clearing Agency Standards, Exchange Act Release No. 68080 (Oct. 22, 2012), 77 FR 66220, 66221–22 (Nov. 2, 2012) (''Clearing Agency Standards Adopting Release''); CCA Proposal, 79 FR 29508.

[6] Section 803(6)(A) of the Payment, Clearing, and Settlement Supervision Act of 2010 (''Clearing Supervision Act'') enacted by Title VIII of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (''Dodd-Frank Act''), 12 U.S.C. 5301, et seq., defines ''financial market utility'' or ''FMU'' as any person that manages or operates a multilateral system for the purpose of transferring, clearing, or settling payments, securities, or other financial transactions among financial institutions or between financial institutions and the person. 12 U.S.C. 5462(6)(A). Section 803(6)(B)(i) of the Clearing Supervision Act generally excludes certain persons from the definition of FMU including designated contract markets, registered futures associations, swap or security-based swap data repositories, swap execution facilities, national securities exchanges, and alternative trading systems. 12 U.S.C. 5462(6)(B)(i). The term FMU includes not only U.S. registered clearing agencies but also other types of entities that are not U.S. registered clearing agencies.

[7] *See* Clearing Agency Standards Adopting Release, 77 FR at 66221–22.

[8] Rule 15c6–1(a) does not apply to a contract for an exempted security, government security, municipal security, commercial paper, bankers' acceptances, or commercial bills. 17 CFR 240.15c6–1(a). The rule also provides an additional exemption for: (i) Transactions in limited partnership interests that are not listed on an exchange or for which quotations are not disseminated through an automated quotation system of a registered securities association; (ii) contracts for the purchase and sale of securities that the Commission may from time to time, taking into account then existing market practices, exempt by order; and (iii) contracts for the sale of cash securities that priced after 4:30 p.m. (Eastern Standard Time) that are sold by an issuer to an underwriter pursuant to a firm commitment offering registered under the Securities Act of 1933 (''Securities Act'') or the sale to an initial purchaser by a broker-dealer participating in such offering. 17 CFR 240.15c6–1(b) and (c).

Additionally, as discussed further in the T+3 Adopting Release, the Commission determined not to include transactions in municipal securities within the scope of Rule 15c6–1, with the expectation that the Municipal Securities Rulemaking Board (''MSRB'') would take the lead in implementing three-day settlement of municipal securities by the implementation date of the new rule. The Commission requested a report from the MSRB within six months of the Commission's adoption of Rule 15c6–1 outlining the schedule in which the MSRB intended to implement T+3 in the municipal securities market. T+3 Adopting Release, 58 FR at 52899. MSRB rules that established T+3 as the standard settlement cycle for transactions in municipal securities became operative on June 7, 1995, the same date as Exchange Act Rule 15c6–1. *See* Order Approving MSRB Proposed Rule Change Establishing Three Business Day Settlement Time Frame, Exchange Act Release No. 35427 (Feb. 28, 1995), 60 FR 12798 (Mar. 8, 1995).

[9] Although current Rule 15c6–1 establishes a settlement timeframe of no more than three business days after the trade date, certain types of transactions routinely settle on a settlement cycle shorter than T+3, which is permissible under the rule. *See, e.g.,* note 11 *infra.*

[10] 15 U.S.C. 78c(a)(10). Title VII of the Dodd-Frank Wall Street Reform and Consumer Protection Act, Public Law 111–203, 124 Stat. 1376 (2010), amended, among other things, the definition of ''security'' under the Exchange Act to encompass security-based swaps. In July 2011, the Commission granted temporary exemptive relief from compliance with certain provisions of the Exchange Act (including Rule 15c6–1) in connection with the revision of the Exchange Act definition of

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these securities (*e.g.,* options, and certain mutual funds) generally settle on a settlement cycle less than T+3 and therefore will not be impacted by the Commission's current proposal to shorten the standard settlement cycle to T+2. Accordingly, the discussion in this release is primarily focused on securities that currently settle on a T+3 standard settlement cycle.[11] However, the Commission seeks comment on whether and the extent to which other securities, as defined in Section 3(a)(10) of the Exchange Act, will be affected by the amendment to Rule 15c6–1(a), as proposed.

A. Overview of the Clearance and Settlement of Securities Transactions

''Clearance and settlement'' refers generally to the activities that occur following the execution of a trade. These post-trade processes are critical to ensuring that a buyer receives securities and a seller receives proceeds in accordance with the agreed-upon terms by the settlement date. The discussion that follows provides a basic description of the clearance and settlement of securities transactions, and is organized in the following manner: (1) An overview of the statutory framework and goals driving the national clearance and settlement system; (2) an introduction to securities clearing agencies and other key market participants in the clearance and settlement process; (3) an overview of the trade settlement process for the U.S. securities markets; (4) a discussion of how the length of the settlement cycle may impact the presence of credit, market, liquidity and systemic risk in the clearance and settlement process; and (5) an overview of ongoing efforts by market participants to shorten the standard settlement cycle.

1. Statutory Framework

The national clearance and settlement system in place today is largely a product of the difficulties experienced in the U.S. securities markets in the late 1960s and early 1970s. As trading volumes increased during that time period, the manual process associated with transferring certificated securities among market participants in a relatively uncoordinated fashion created what came to be known as the ''Paperwork Crisis.'' The Paperwork Crisis nearly brought the securities industry to a standstill and directly or indirectly caused the failure of a large number of broker-dealers.[12] The breakdown in the handling of paper associated with the clearance and settlement of securities transactions threatened to curtail the flow of debt and equity instruments available for public investment and jeopardized the continued operation of the securities markets.[13]

In light of the experiences of the Paperwork Crisis, and with the objectives of improving the operation of the U.S. clearance and settlement system and protecting investors,[14] Congress amended the Exchange Act in 1975 to, among other things, (i) direct the Commission to facilitate the establishment of a national system for the prompt and accurate clearance and settlement of transactions in securities, and (ii) provide the Commission with the authority to regulate those entities critical to the clearance and settlement process.[15] At the same time, Congress empowered the Commission with direct rulemaking authority over broker or dealer activity in making settlements, payments, transfers, and deliveries of securities.[16] Taken together, these provisions provide the Commission with the authority to regulate entities that are critical to the national clearance and settlement system.[17]

Congress reaffirmed its view of the importance of a strong clearance and settlement system in 2010 with the enactment of the Clearing Supervision Act.[18] Specifically, Congress found that the ''proper functioning of the financial markets is dependent upon safe and efficient arrangements for the clearing and settlement of payments, securities, and other financial transactions.'' [19] Under the Clearing Supervision Act, registered clearing agencies providing CCP and central securities depository (''CSD'') services are FMUs.[20] FMUs centralize clearance and settlement activities and enable market participants to reduce costs, increase operational efficiency, and manage risks more effectively. While an FMU can provide many risk management benefits to participants, the concentration of clearance and settlement activity at an FMU has the potential to disrupt the securities markets if the FMU does not effectively manage the risks in its clearance and settlement activities.[21] To address those risks, the Commission has used its authority under the Exchange Act, as supplemented by the authority set forth under the Clearing Supervision Act, to help ensure that the FMUs under its supervision are subject to robust regulatory requirements.[22]

''security'' to encompass security-based swaps. *See* Order Granting Temporary Exemptions Under the Securities Exchange Act of 1934 In Connection With the Pending Revision of the Definition of ''Security'' To Encompass Security-Based Swaps, Exchange Act Release No. 64795 (July 1, 2011), 76 FR 39927 (July 7, 2011). Certain of the exemptions (including the exemption for Rule 15c6–1) are set to expire on February 5, 2017. *See* Order Extending Temporary Exemptions Under the Securities Exchange Act of 1934 In Connection With the Revision of the Definition of ''Security'' To Encompass Security-Based Swaps, Exchange Act Release No. 71485 (Feb. 5, 2014), 79 FR 7731 (Feb. 10, 2014).

[11] In today's environment, ETFs and certain closed-end funds clear and settle on a T+3 basis. Open-end funds (*i.e.,* mutual funds) generally settle on a T+1 basis, except for certain retail funds which typically settle on T+3. Thus, the proposed amendment to Rule 15c6–1(a) would require ETFs, closed-end funds, and mutual funds settling on a T+3 basis to revise their settlement timeframes. *See infra* notes 213 and 214, regarding ETF secondary market trading, including creation or redemption transactions for authorized participants.

[12] *See* U.S. Securities and Exchange Commission, Study of Unsafe and Unsound Practices of Brokers and Dealers, H.R. Doc. No. 92–231 (1971); *see also* Securities Transactions Settlement, Exchange Act Release No. 49405 (Mar. 11, 2004), 69 FR 12922 (Mar. 18, 2004); *see also* S. Rep. No. 94–75, at 4–5 (1975), *reprinted in* 1975 U.S.C.C.A.N. 179, 183.

[13] *Id.*

[14] *See* 15 U.S.C. 78q–1(a)(1)(A)–(D), which lays out the Congressional findings for Section 17A of the Exchange Act. In particular, Congress found that inefficient clearance and settlement procedures imposed unnecessary costs on investors and those acting on their behalf and that new data processing and communications techniques create the opportunity for more efficient, effective, and safe procedures for clearance and settlement.

[15] 15 U.S.C. 78q–1(a)(2)(A); *see also* S. Rep. No. 94–75, *supra* note 12, at 53. Congress provided the Commission with the authority and responsibility to regulate, coordinate, and direct the operations of all persons involved in processing securities transactions, toward the goal of a national system for the prompt and accurate clearance and settlement of securities transactions. *Id.* at 55.

[16] S. Rep. No. 94–75, at 111. Specifically, Section 15(c)(6) of the Exchange Act prohibits broker-dealers from engaging in or inducing securities transactions in contravention of such rules and regulations as the Commission shall prescribe as necessary or appropriate in the public interest and for the protection of investors or to perfect or remove impediments to a national system for the prompt and accurate clearance and settlement of securities transactions, with respect to the time and method of, and the form and format of documents used in connection with, making settlements of and payments for transactions in securities, making transfers and deliveries of securities, and closing accounts. 15 U.S.C. 78o(c)(6).

[17] *See* 15 U.S.C. 78q–1(b)–(c); 15 U.S.C. 78o(c).

[18] *See* 12 U.S.C. 5301, et seq.

[19] 12 U.S.C. 5461(a)(1).

[20] *See supra* note 6.

[21] *See* CCA Proposal, 79 FR at 29587; *see also* Risk Management Supervision of Designated Clearing Agencies, Joint Report to Senate Committees on Banking, Housing, and Urban Affairs and Agriculture, Nutrition, and Forestry, and the House Committees on Financial Services and Agriculture, from the Board of Governors of the Federal Reserve System, Securities and Exchange Commission, and Commodity Futures Trading Commission (July 2011), *https://www.federalreserve.gov/publications/other-reports/files/risk-management-supervision-report-201107.pdf.*

[22] *See, e.g.,* Clearing Agency Standards Adopting Release, *supra* note 5. In addition, on July 18, 2012, the Financial Stability Oversight Council designated as systemically important the following then-registered clearing agencies: Chicago Mercantile Exchange, Inc. (''CME''); The Depository Trust Company (''DTC''); Fixed Income Clearing Corporation (''FICC''); ICE Clear Credit LLC (''ICC'');

2. Participating Entities

a. FMUs—CCPs and CSDs

Clearance and settlement activities in securities markets are supported by an infrastructure that is comprised of entities that perform a variety of different functions. These functions for the U.S. securities markets are performed in most instances by FMUs that are registered clearing agency [23] subsidiaries of The Depository Trust & Clearing Corporation (''DTCC''): NSCC and DTC.

(1) CCPs

A CCP, following trade execution, interposes itself between the counterparties to a trade, becoming the buyer to each seller and seller to each buyer to ensure the performance of open contracts. One critical function of a CCP is to eliminate bilateral credit risk between individual buyers and sellers.

NSCC is the CCP [24] for trades between broker-dealers involving equity securities, corporate and municipal debt, and UITs in the U.S.[25] NSCC facilitates the management of risk among broker-dealers using a number of tools, which include: (1) Novating and guaranteeing trades to assume the credit risk of the original counterparties; (2) collecting clearing fund contributions from members to help ensure that NSCC has sufficient financial resources in the event that one of the counterparties defaults on its obligations; and (3) netting to reduce NSCC's overall exposure to its counterparties.

In novation, when a CCP member presents a contract to the CCP for clearing, the original contract between the buyer and seller is discharged and two new contracts are created, one between the CCP and the buyer and the other between the CCP and the seller. The CCP thereby assumes the original parties' contractual obligations to each other. NSCC attaches its trade guaranty [26] to novated transactions at midnight on T+1.[27] Through novation and the trade guaranty, the two original trading counterparties to the transaction replace their bilateral credit, market and liquidity risk exposure to each other with risk exposure to NSCC.

NSCC collects clearing fund deposits from its members to maintain sufficient financial resources in the event a member or members default on their obligations to NSCC.[28] NSCC's rules also allow NSCC to adjust and collect additional clearing fund deposits as needed to cover the risks present while a member's trades are unsettled. Each member's required clearing fund deposit is calculated at least once daily pursuant to a formula set forth in NSCC's rules,[29] and is designed to provide sufficient funds to cover NSCC's exposure to the member.[30]

Figure 1 below shows NSCC's clearing fund deposits by quarter. As illustrated in Figure 1, the total amount that NSCC collects to mitigate the risks associated with member defaults has varied from roughly $3 to $6.5 billion for the years 2010 through 2015.[31] The majority of these deposits are held in cash, while a much smaller portion is held in highly liquid securities such as U.S. treasury securities.

National Securities Clearing Corporation (''NSCC''); The Options Clearing Corporation (''OCC''). *See* Press Release, U.S. Department of the Treasury, Financial Stability Oversight Council Makes First Designations in Effort to Protect Against Future Financial Crises (July 18, 2012), *https://www.treasury.gov/press-center/press-releases/Pages/tg1645.aspx.* As such, these clearing agencies are also subject to the Clearing Supervision Act. In addition to its authority to regulate clearing agencies, pursuant to Section 17A of the Exchange Act, the Commission is also the supervisory agency, as that term is defined in Section 803(8) of the Clearing Supervision Act, for DTC, FICC, NSCC, and OCC. The CFTC is the supervisory agency for CME and ICE, and the Federal Reserve Bank of New York oversees DTC's banking and trust company activities. The Commission jointly regulates ICC and OCC with the CFTC.

[23] Section 17A(b) of the Exchange Act requires any clearing agency performing the functions of a clearing agency with respect to any security (other than an exempted security) to be registered with the Commission, unless the Commission has exempted such entity from the registration requirements. 15 U.S.C. 78q–1(b)(1). The term ''clearing agency'' is defined broadly to include any person who: (1) Acts as an intermediary in making payments or deliveries or both in connection with transactions in securities; (2) provides facilities for comparison of data respecting the terms of settlement of securities transactions, to reduce the number of settlements of securities transactions, or for the allocation of securities settlement responsibilities; (3) acts as a custodian of securities in connection with a system for the central handling of securities whereby all securities of a particular class or series of any issuer deposited within the system are treated as fungible and may be transferred, loaned, or pledged by bookkeeping entry, without physical delivery of securities certificates (such as a securities depository); or (4) otherwise permits or facilitates the settlement of securities transactions or the hypothecation or lending of securities without physical delivery of securities certificates (such as a securities depository). A clearing agency may provide, among other things, CCP services and CSD services. *See* 15 U.S.C. 78c(a)(23).

[24] In addition to providing CCP services, NSCC provides a number of other non-CCP services to market participants, including, for example, services that support mutual funds, alternative investments and insurance products.

[25] Certain SRO rules (*e.g.,* Financial Industry Regulatory Authority (''FINRA'') Rule 6350B(b) and FINRA Rule 6274(b)) authorize broker-dealer members to settle transactions outside of the facilities of a registered clearing agency, or ''ex-clearing,'' if both parties agree.

[26] Pursuant to Rule 11 and Addendum K to NSCC's Rules and Procedures, NSCC guarantees the completion of CNS settling trades (''NSCC trade guaranty'') that have reached the later of midnight of T+1 or midnight of the day they are reported to NSCC's members. NSCC also guarantees the completion of shortened process trades, such as same-day and next-day settling trades, upon comparison or trade recording processing. *See* NSCC Rules and Procedures, Rule 11, Section 1(c) and Addendum K (as of July 14, 2016) (''NSCC Rules and Procedures''), *www.dtcc.com/legal/rule-and-procedures.*

[27] NSCC has stated that it is currently in the process of seeking regulatory approval to move its trade guaranty forward to the point of trade validation (for locked-in trades) and comparison (for trades compared through NSCC). This initiative is referred to as the ''Accelerated Trade Guaranty'' or ''ATG.'' *See* NSCC, Disclosures under the Principles for Financial Market Infrastructures, at 17 n.11 (Dec. 2015) (''NSCC PFMI Disclosure Framework''), *http://www.dtcc.com/legal/policy-and-compliance.*

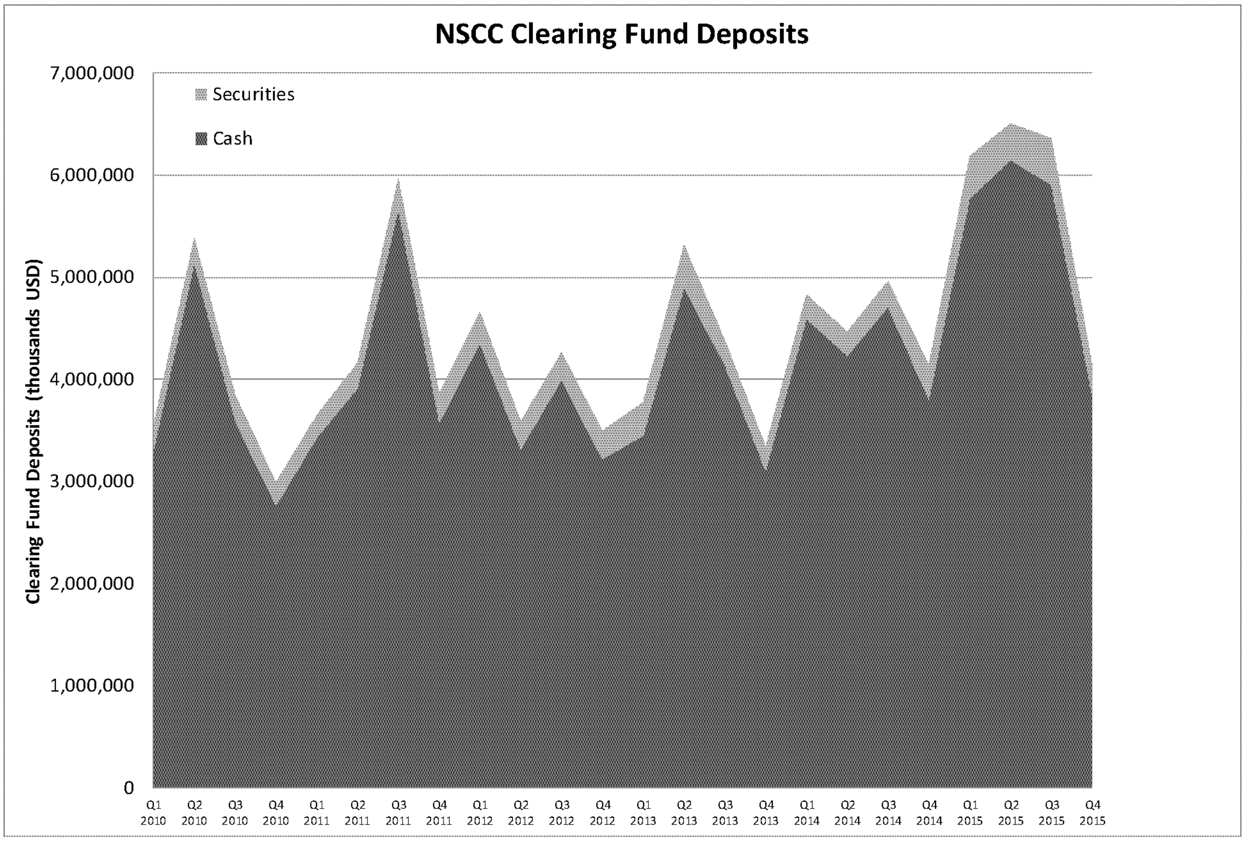
[28] NSCC's clearing fund is comprised of cash, securities, and letters of credit posted by NSCC members to provide NSCC the necessary resources to cover member defaults. The amount and timing of contributions to the clearing fund are determined pursuant to NSCC's rules. *See* NSCC Rules and Procedures, Rules 1 and 4.

[29] *See* NSCC Rules and Procedures, Rule 4 and Procedure XV.

[30] Commission Rules 17Ad–22(b)(1) through (4) require a registered clearing agency that performs CCP services to establish, implement, and maintain policies and procedures reasonably designed to do the following: (1) Measure its credit exposures at least once a day, and use margin requirements to limit its exposures to potential losses from defaults by its participants; (2) use risk-based models and parameters to set margin requirements and to review such requirements at least monthly; (3) maintain sufficient financial resources to withstand a default by the two participant families, if clearing security-based swaps, or one participant family otherwise, to which it has the largest exposure; and (4) provide for an annual model validation process. 17 CFR 240.17Ad 22(b)(1)–(4).

[31] *See* NSCC Quarterly Financial Statements, *http://www.dtcc.com/legal/financial-statements?subsidiary=NSCC&pgs=1.*

Fig 1: Clearing Fund Size



As mentioned above, NSCC also reduces its risk exposure as a CCP through netting. Netting reduces risk in the settlement process by reducing the overall amount of obligations that must be settled. The reduction in the overall amount of unsettled obligations translates into relatively fewer and smaller settlement payments, thereby reducing the cost to trade. Netting also lessens the risk by reducing the number of outstanding unsettled transactions linking market participants, thereby reducing the likelihood that a settlement failure by one market participant will trigger a chain reaction of additional defaults by other market participants. Through the use of NSCC's netting and accounting system, the Continuous Net Settlement System (''CNS''), NSCC nets trades and payments among its participants, reducing the value of securities and payments that need to be exchanged by an average of 97% each day.[32] NSCC accepts trades into CNS[33] for clearing from the nation's major exchanges and other trading venues and uses CNS to net each NSCC member's trades in each security traded that day to a single receive or deliver position for the securities.[34] Throughout the day, cash debit and credit data generated by NSCC's members' activities are recorded, and at the end of the processing day, the debits and credits are netted to produce one aggregate cash debit or credit for each member.[35]

When one of the counterparties does not fulfill its settlement obligations by delivering the required securities, a ''failure to deliver'' occurs in CNS. Failures to deliver may be caused by the NSCC member's failure to receive securities from a customer or counterparty to a previous transaction.[36] For illustration purposes, Figure 2 shows a recent seven-year period of time, in this case, October 23, 2008, through October 23, 2015, with the outstanding failures to deliver as a percentage of the overall shares outstanding for the securities which NSCC clears.[37]

[32] *See* NSCC PFMI Disclosure Framework, *supra* note 27, at 8.

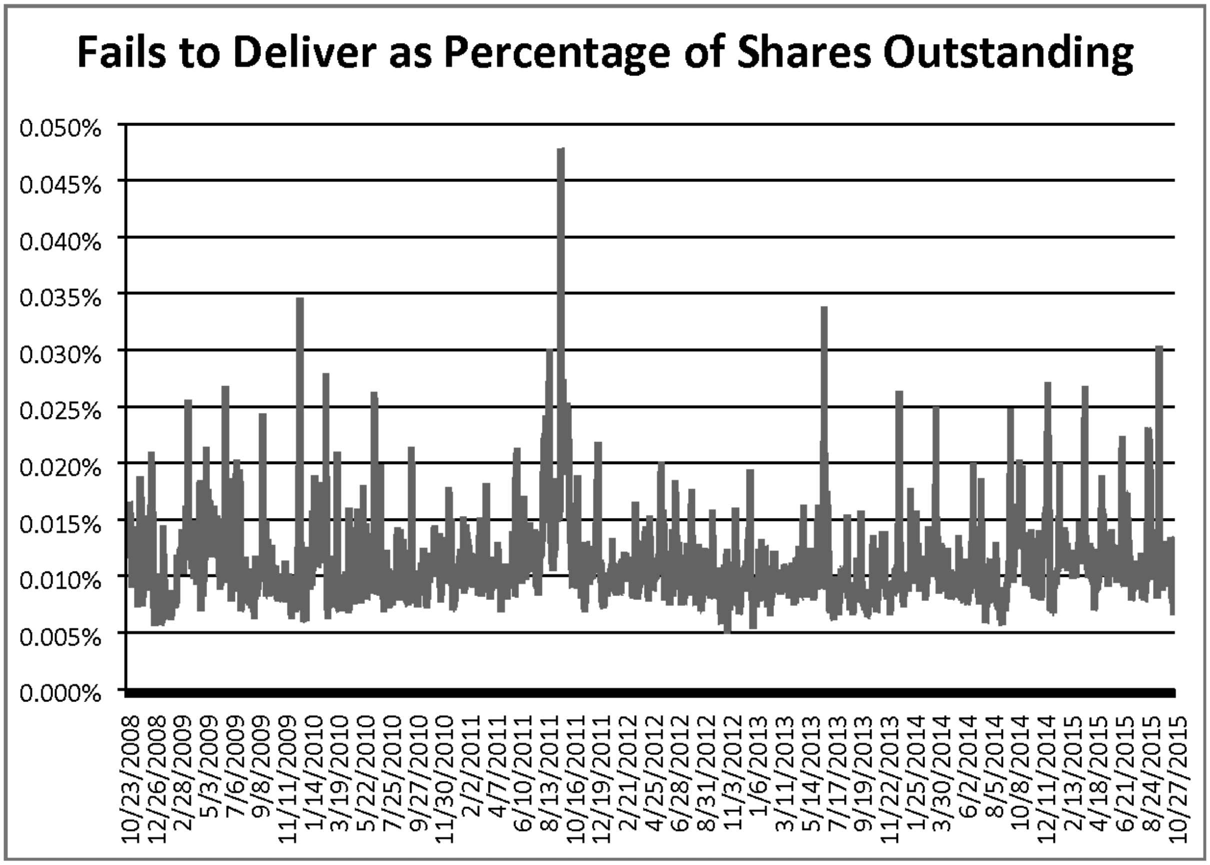
[33] NSCC accepts CNS-eligible securities. To be CNS-eligible, a security must be eligible for book-entry transfer on the books of DTC, and must be capable of being processed in the CNS system. For example, securities may be ineligible for CNS processing due to certain transfer restrictions (*e.g.,* 144A securities) or due to the pendency of certain corporate actions. *See* Rule 1 of NSCC's rules for the definition of CNS-eligible securities, and Rule 3 of NSCC's rules for a list of CNS-eligible securities. NSCC Rules and Procedures, Rules 1 and 3.

[34] In CNS, compared and recorded transactions in CNS-eligible securities that are scheduled to settle on a common settlement date are netted by specific security issue into one net long (*i.e.,* buy) or net short (*i.e.,* sell) position. CNS then nets those positions further with positions of the same specific security issue that remain open after their originally scheduled settlement date, which are generally referred to as ''Fail Positions.'' The result of the netting process is a single deliver or receive obligation for each NSCC member for each specific security issue in which the member has activity on a given day. *See* NSCC Rules and Procedures, Rule 11 and Procedure VII and X.

[35] *See* NSCC PFMI Disclosure Framework, *supra* note 27, at 9.

[36] For more information on NSCC ''failures to deliver,'' *see generally* Office of Investor Education and Advocacy, U.S. Securities and Exchange Commission, Key Points About Regulation SHO (Apr. 8, 2015), *https://www.sec.gov/investor/pubs/regsho.htm.*

[37] NSCC failure-to-deliver data is publicly available on the Commission's Web site at *https://www.sec.gov/foia/docs/failsdata.htm.*



While NSCC provides final settlement instructions to its members each day, the payment for and transfer of securities ownership occurs at DTC. At the conclusion of each trading day, CNS short positions (*i.e.,* obligations to deliver) at NSCC are compared against the long positions held in the NSCC members' DTC accounts to determine security availability.[38] If securities are available, they are transferred from the NSCC member's account at DTC to NSCC's account at DTC, to cover the NSCC member's CNS short positions. CNS long positions (*i.e.,* the right to receive securities owed to the participant) are transferred from the NSCC account at DTC to the accounts of NSCC members at DTC. On settlement date, NSCC submits instructions to DTC to deliver (*i.e.,* transfer) securities positions for each security netted though CNS for each NSCC member holding a long position in such securities. Cash obligations are settled through DTC by one net payment for each NSCC member at the end of the settlement day.

(2) CSDs

A CSD is an entity that holds securities for its participants either in certificated or uncertificated (dematerialized) form so that ownership can be easily transferred through a book entry (rather than the transfer of physical certificates) and provides central safekeeping and other asset services. Additionally, a CSD may operate a securities settlement system, which is a set of arrangements that enables transfers of securities, either for payment or free of payment, and facilitates the payment process associated with such transfers. DTC serves as the CSD and settlement system for most equity securities and a significant number of debt securities held by U.S. market participants.

In its capacity as a CSD, DTC provides custody and book-entry transfer services for the vast majority of securities transactions in the U.S. market involving equities, corporate and municipal debt, money market instruments, ADRs, and ETFs. In accordance with its rules, DTC accepts deposits of securities from its participants [39] (*i.e.,* mostly broker-dealers and banks), credits those securities to the depositing participants' accounts, and effects book-entry transfer of those securities. The securities deposited with DTC are registered in DTC's nominee name and are held in fungible bulk for the benefit of its participants and their customers. Each participant having an interest in the securities of a given issuer credited to its account has a pro rata interest in the securities of that issuer held by DTC. By immobilizing securities (*e.g.,* holding and transferring ownership of securities positions in book-entry form, with DTC's nominee reflected as the registered owner on the issuer's records) and centralizing and automating securities settlements, DTC substantially reduces the number of physical securities certificates transferred in the U.S. markets, which significantly improves operational efficiencies and

[38] *See* NSCC PFMI Disclosure Framework, *supra* note 27, at 106.

[39] NSCC's rules provide for several categories of membership with different levels of access to NSCC's services. This release uses the term ''member'' when referring to an NSCC member that has full access to NSCC's CCP services. *See* NSCC Rules and Procedures, Rule 1, for the definition of the various membership categories. DTC's rules also provide for different categories of membership, including ''participants.'' This release uses the term ''participant'' when referring to a participant of DTC. *See* Rules, By-Laws, and Organizational Certificate of DTC Rule 1 for the definition of various categories of membership.

reduces risk and costs associated with the processing of physical securities certificates. These benefits not only provide efficiencies to DTC and its participants, but to the investing public as well.

In addition to a securities account at DTC, each DTC participant has a settlement account at a clearing bank to record any net funds obligation for end-of-day settlement, whether payment will be due to or from the participant. During the day, debits and credits are entered into the participant's settlement account. The debits and credits arise from DVP transfers and from other events or transactions involving the transfer of funds, such as principal and interest payments distributed to a participant or intraday settlement progress payments by a participant to DTC.[40] Debits and credits in the participant's settlement account are netted intraday to calculate, at any time, a net debit balance or net credit balance, resulting in an end-of-day settlement obligation or right to receive payment. DTC nets debit and credit balances for participants who are also members of NSCC to reduce funds transfers for settlement, and acts as settlement agent for NSCC in this process. Settlement payments between DTC and DTC's participants' settlement banks are made through the National Settlement System of the Federal Reserve System.[41]

b. Matching/ETC Providers—Exempt Clearing Agencies

Matching/ETC Providers electronically facilitate communication among a broker-dealer, an institutional investor, and the institutional investor's custodian to reach agreement on the details of a securities trade.[42] These entities emerged as a result of efforts by market participants to develop a more efficient and automated matching process that continues to be viewed as a necessary step in achieving straight-through processing (''STP'') [43] for the settlement of institutional trades.[44] Currently, there are three entities that have obtained exemptions from registration as a clearing agency from the Commission to operate as Matching/ETC Providers.[45] The current Matching/ETC Providers use two methods, ''Matching'' and ''ETC,'' to facilitate agreement on the trade details among the parties. When the parties reach agreement, it is generally referred to as an ''affirmed confirmation.''

ETC is a process where the Matching/ETC Provider simply provides the communication facilities to enable a broker-dealer and its institutional investor to send messages back and forth that ultimately results in the agreement of the trade details or affirmed confirmation, which is in turn sent to DTC to effect settlement of the trade.[46] Specifically, the Matching/ETC Provider will send the affirmed confirmations to DTC where the DTC participants who will be delivering securities will authorize the trades for automated settlement.[47]

In contrast, ''Matching'' is a process by which the Matching/ETC Provider compares and reconciles the broker-dealer's trade details with the institutional investor's allocation instructions to determine whether the two descriptions of the trade agree. If the trade details and institutional investor's allocation instructions match, an affirmed confirmation is generated, which also is used to effect settlement of the trade. As with ETC, transmission of the affirmed confirmations by the Matching/ETC Provider to DTC facilitates automated trade settlement.[48]

ETC is considered less efficient than Matching because it is an iterative process where each participant has to wait for a trigger before executing the next step in the process and has to manually re-key trade data into several systems, resulting in delay and redundant flows of non-essential data.[49] Moreover, during this process broker-dealers and their institutional investors often rely on internal systems that lack either automation, common message standards, or both, resulting in a lack of synchronized automated data that can cause errors and discrepancies. Matching, in contrast to ETC, is not an iterative process. Rather, matching eliminates the separate step of producing a confirmation for the institutional investor to review and affirm. Currently, Matching/ETC Providers assist many, but not all, market participants in affirming institutional trade details as soon as possible after trade execution, thereby helping to ensure that a trade will clear and settle by the end of the settlement cycle.[50]

c. Market Participants—Investors, Broker-Dealers, and Custodians

A variety of market participants depend on the clearance and settlement services facilitated by the FMUs and Matching/ETC Providers, including but not limited to institutional and retail investors, broker-dealers, and custodians (*e.g.,* banks). Furthermore, the relevant clearance and settlement

[40] As noted above, a CSD operates a securities settlement system that provides for transfers of securities either free of payment or for payment. When a transfer occurs for payment, typically securities settlement systems provide ''delivery versus payment'' or ''DVP,'' whereby the delivery of the security occurs only if payment occurs. The concept of DVP is sometimes referred to as ''DVP/RVP.'' The term ''receive versus payment'' or ''RVP'' is from the perspective of the seller.

[41] *See* NSCC PFMI Disclosure Framework, *supra* note 27, at 9–10.

[42] Electronic trade confirmation (''ETC'') was originally developed by DTC in the early 1970s as an alternative to the use of phone, fax or other manual processes. To facilitate greater use of ETC by market participants to process institutional trades, the Commission approved rule changes filed by several SROs that required the use of ETC for trades involving institutional investors. *See* Exchange Act Release No. 19227 (Nov. 9, 1982), 47 FR 51658, 51664 (Nov. 18, 1982) (order approving confirmation rules for exchanges and securities association).

[43] The Securities Industry Association (which in 2006 merged with The Bond Markets Association to form the Securities Industry Financial Markets Association) has described STP ''as the seamless integration of systems and processes to automate the trade process from end-to-end—trade execution, confirmation, and settlement—without manual intervention or the re-keying of data.'' Securities Industry Association, Glossary of Terms, *reprinted in part in* Kyle L Brandon, *Prime Brokerage: Of Prime Importance to the Securities Industry* (SIA Res. Rep., Vol. VI, No. 4, New York, N.Y.), Apr. 28, 2005, at 25–26, *http://www.sifma.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=21718&libID=5884.*

[44] Securities Industry Association, Institutional Transaction Processing Model, at 3 (May 2002) (''ITPC 2002 White Paper''). The Securities Industry Association's Institutional Transaction Processing Committee (''ITPC'') published its first white paper in December 1999 with a subsequent version released in February 2001. The ITPC 2002 White Paper was published in May 2002.

[45] The Commission issued an interpretive release in 1998 concluding that matching constitutes comparison of data respecting the terms of settlement of securities transactions, and therefore an entity that provides matching services as an intermediary between a broker-dealer and an institutional customer is a clearing agency within the meaning of Section 3(a)(23) of the Exchange Act and is, therefore, subject to the registration requirements of Section 17A. *See* Confirmation and Affirmation of Securities Trades, Exchange Act Release No. 39829 (Apr. 6, 1998), 63 FR 17943, 17946 (Apr. 13, 1998); Clearing Agency Standards, Exchange Act Release No. 68080 (Oct. 22, 2012), 77 FR 66220, 66228 & n.94 (Nov. 2, 2012) (noting the 1998 interpretive release); *see also* 15 U.S.C. 78c(a)(23) (defining the term ''clearing agency''). The Commission has provided exemptions from registering as a clearing agency to certain entities that operate matching and ETC services. *See* Order Granting Exemption from Registration as a Clearing Agency for Global Joint Venture Matching Services-U.S., LLC, Exchange Act Release No. 44188 (Apr. 17, 2001), 66 FR 20494, 20501 (Apr. 23, 2001); Order Approving Applications for an Exemption from Registration as a Clearing Agency for Bloomberg STP LLC and SS&C Techs., Inc., Exchange Act Release No. 76514 (Nov. 24, 2015), 80 FR 75388, 75413 (Dec. 1, 2015).

[46] ITPC 2002 White Paper, *supra* note 44.

[47] *See* Order Approving Proposed Rule Change by The Depository Trust Company To Allow the Inventory Management System To Accept Real-Time and Late Affirmed Trades from Omgeo, Exchange Act Release No. 54701 (Nov. 3, 2006), 71 FR 65854 (Nov. 9, 2006).

[48] *Id.*

[49] ITPC 2002 White Paper, *supra* note 44, at 3.

[50] *See infra* Part III.A.3. for affirmation rates for certain Matching/ETC Providers.

steps that need to be accomplished by the FMUs, Matching/ETC Providers, and financial service firms within the settlement cycle vary depending on whether an investor is an institutional investor or a retail investor.

Institutional investors are entities such as mutual funds, pension funds, hedge funds, bank trust departments, and insurance companies. Transactions involving institutional investors are often more complex than those for and with retail investors due to the volume and size of the transactions, the entities involved in facilitating the execution and settlement of the trade, including Matching/ETC Providers and custodians, and the need to manage certain regulatory or business obligations.[51] Trades involving retail investors are typically smaller in size than institutional trades, and the settlement of retail investor trades generally occurs directly with the investor's or their intermediary's broker-dealer and does not involve a separate custodian bank.

To clear and settle securities transactions directly through a registered clearing agency, the rules of the clearing agencies provide that a broker-dealer or other type of market participant must become a direct member of that clearing agency.[52] Generally broker-dealers that are direct members of clearing agencies are referred to as ''clearing broker-dealers.'' Clearing broker-dealers must comply with the rules of the clearing agency, including but not limited to rules relating to operational and financial requirements. Broker-dealers that submit transactions to a clearing agency through a clearing broker-dealer are generally referred to as ''introducing broker-dealers.'' In general, broker-dealers executing trades on a registered securities exchange are required to clear those transactions through a registered clearing agency.[53] Additionally, pursuant to certain self-regulatory organization (''SRO'') rules, broker-dealers that effect transactions in municipal and corporate debt securities are required to clear and settle those transactions through a registered clearing agency.[54] Broker-dealers executing trades outside the auspices of a trading venue (*e.g.,* on an internalized basis) may clear through a clearing agency, may choose to settle those trades through mechanisms internal to that broker-dealer, or may settle the trades bilaterally.[55] Post-trade processing of securities transactions by broker-dealers generally occurs in the back office and entails the following functions: (1) Order management, which keeps track of the orders that are sent to the various markets and of the subsequent related executions that are received; (2) purchases and sales, which works closely with the appropriate clearing agency to ensure the transactions have been accurately cleared and settled and to reconcile the broker-dealer's position; (3) cashiering, which is responsible for receiving and delivering securities; and (4) asset servicing activities related to the processing of dividends, stock splits, and other corporate actions.

Often, due to regulatory or business obligations, an institutional investor will not use its executing broker-dealer to custody the institutional investors' securities at DTC, but rather will use a custodian bank for the safekeeping and administration of both their securities and cash.[56] The custodian may also provide other administrative services, such as: (1) Acting as an agent or fiduciary; (2) monitoring the purchase and sale of securities by the executing broker-dealers; and (3) collecting dividends and interest.

3. Overview of Trade Settlement Processes

As described further below, the proposed amendment to paragraph (a) of Rule 15c6–1 would prohibit a broker or dealer from entering into a securities contract that settles later than the second business day after the date of the contract unless expressly agreed upon by both parties at the time of the transaction, subject to certain exceptions enumerated in the rule. To provide context for understanding the proposed amendment and the related economic analysis that follows, this section provides an overview of the current state of trade settlement processes under current Rule 15c6–1. Given the differences in the clearance and settlement processes for trades by retail and some institutional investors, the proposed amendment may have differing economic effects on different market participants involved in these transactions. Accordingly, the current clearance and settlement processes are discussed below separately.[57]

a. Retail Investor Trade Settlement Process

Trade comparison, which consists of reporting, comparing, matching, and validating the buy and sell sides of a trade is the first step in the clearance and settlement of retail investor transactions. At the trading venue, such as an exchange or non-exchange trading venue (*e.g.,* alternative trading system or electronic communication network), a buy order is electronically matched against a sell order. If the details of the trade submitted by the counterparties agree (*e.g.,* the security price and quantity), the trade is considered ''locked in'' and then sent from the

[51] The distinction between ''retail investor'' and ''institutional investor'' is made only for the purpose of illustrating the manner in which these types of entities generally clear and settle their securities transactions. For purposes of this release, the term ''retail investor'' includes any entity that settles their securities transactions in a manner described in Part II.A.3.a. Similarly, the term ''institutional investor'' is used to describe any entity that is permitted and chooses to settle their securities transactions in the manner described in Part II.A.3.b.

[52] Due to the financial and operational obligations of entities submitting trades to a clearing agency, all clearing agencies have established specific requirements for initial membership and ongoing participation in the clearing agency. *See, e.g.,* NSCC Rules and Procedures, *supra* note 26, Rules 2A and 2B (discussing initial and ongoing requirements for membership).

[53] *See, e.g.,* FINRA Rules 6350A(a) and 6350B(a) (requiring that FINRA members must clear and settle transactions in ''designated securities'' (*i.e.,* NMS stocks) through the facilities of a registered clearing agency that uses a continuous net settlement system). In addition, FINRA Rule 6274(a) requires that a member must clear and settle transactions ''effected on'' the Alternative Display Facility in ADF-eligible securities (*i.e.,* NMS stocks) that are eligible for net settlement through the facilities of a registered clearing agency that uses a continuous net settlement system. Notwithstanding the requirements in Rules 6350A(a), 6350B(a) and 6274(a), transactions in designated securities and transactions in ADF-eligible securities may be settled ''ex-clearing'' provided that both parties to the transaction agree to the same. *See* FINRA Rules 6350A(b), 6350B(b), 6274(b).

[54] *See* MSRB Rule G–12(f); FINRA Rule 11900.

[55] *See generally* FINRA Rules 6350A, 6350B and 6274.

[56] Section 17(f) of the Investment Company Act of 1940 (the ''Investment Company Act'') and the rules thereunder govern the safekeeping of a registered investment company's assets, and generally provide that a registered investment company must place and maintain its securities and similar instruments only with certain qualified custodians. Section 17(f)(1)(A) of the Investment Company Act permits certain banks to maintain custody of registered investment company assets subject to Commission rules. *See* 15 U.S.C. 80a–17(f).

[57] Although trades in open-ended investment company securities (*i.e.,* mutual funds) are subject to Rule 15c6–1, trades in these securities (other than ETFs and other types of exchange-traded products) are generally not executed in the secondary market, but rather between issuers and their broker-dealer distributors. As a non-CCP service, NSCC administers an electronic communication system, Fund/SERV, that centralizes and standardizes order entry, confirmation, registration and money settlement for mutual fund companies, broker-dealers, banks and trust companies, third party administrators and other intermediaries involved in the purchase and sale of mutual fund shares. Pursuant to NSCC rules, an NSCC member may roll up their daily cash obligation from Fund/SERV transactions into the member's daily net obligations at NSCC. NSCC Rules and Procedures, *supra* note 26, Rules 7, 12 and 52.

trading venue to NSCC.[58] The following is a high level description and illustration of what generally occurs each day following execution of a retail investor trade and submission of the trade to NSCC:

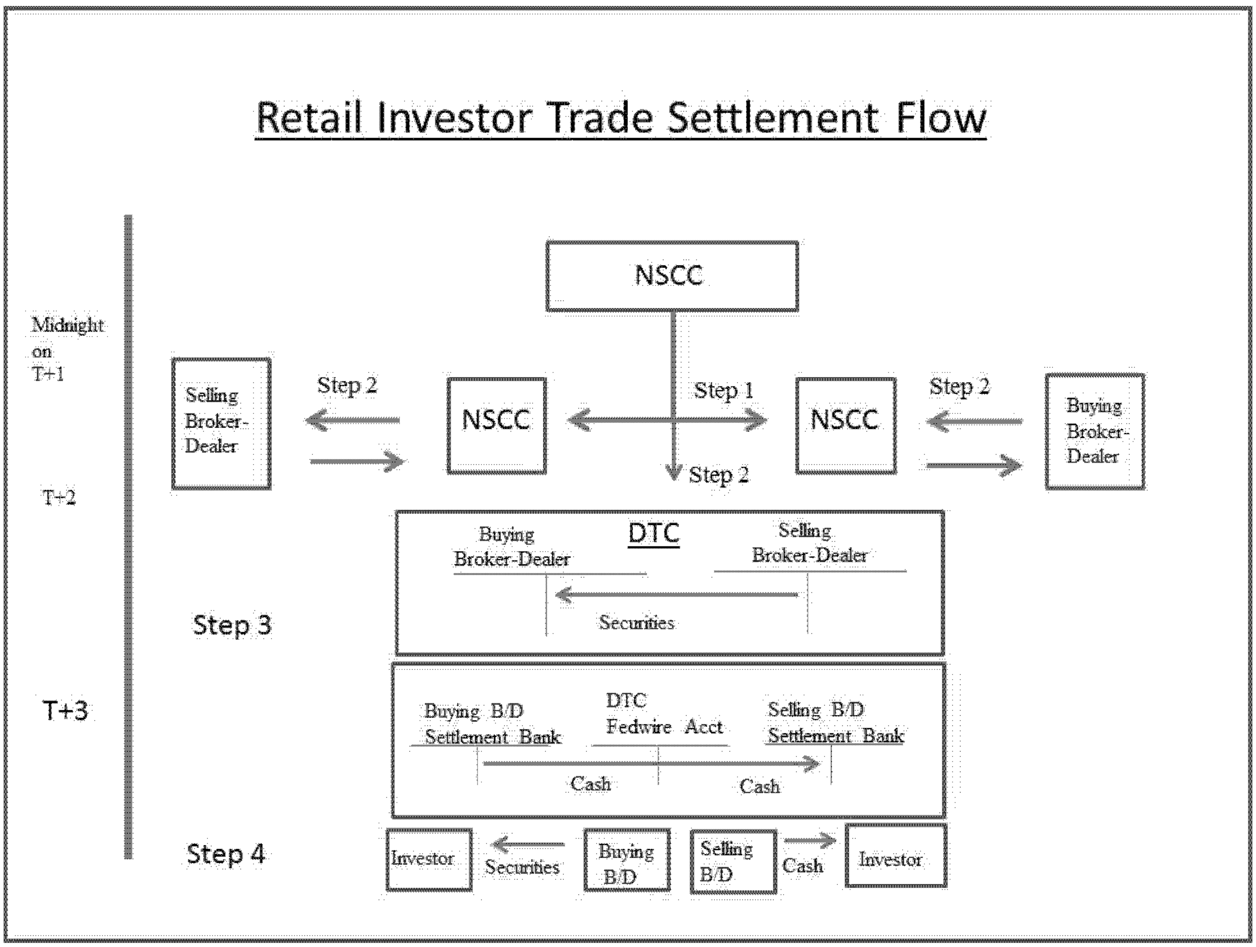
Trade Date—NSCC validates trade data received from the trading venue and confirms receipt of the transaction details by electronically sending communication to NSCC members that are counterparties to the trade. This communication legally commits the members to complete the trade.[59]

T+1—At midnight on T+1, NSCC novates the trade, becoming the buyer to the selling broker-dealer, and the seller to the buying broker-dealer and attaches a trade guaranty.[60] (Step 1)

T+2—NSCC issues a trade summary report to its members with a summary of all securities transactions and cash to be settled the following day, specifically indicating the net positions of securities and the net cash amount owed by the member or to be received by the member. NSCC also sends an electronic instruction to DTC detailing the net positions and cash that need to be settled for each member/participant. (Step 2)

T+3—DTC transfers the securities electronically between the buying and selling broker-dealer accounts at DTC. The participant broker-dealers instruct their settlement banks to send money to, or receive money from, DTC to complete the transaction.[61] (Step 3) Investors receive securities and cash from their respective broker-dealers. (Step 4)

Figure 3: Retail Investor Trade Settlement Flow



[58] Trade comparison can be completed at NSCC, through a trading venue, or through a Qualified Special Representative (''QSR'') (as defined in Rule 1 of NSCC's Rules and Procedures) on behalf of NSCC members, as permitted by clearing agency rules. Currently, over 99% of the trade data received by NSCC is received from a trading venue or QSR on a locked-in basis (*i.e.,* already compared by the marketplace of execution). However, NSCC provides comparison services for transactions in fixed income securities (*i.e.,* corporate and municipal bonds) and for over-the-counter transactions that are not otherwise generally matched through other facilities. NSCC performs its comparison process on the same timeline as locked-in trade submissions. *See* NSCC PFMI Disclosure Framework, *supra* note 27, at 7.

[59] NSCC Rules and Procedures, *supra* note 26, Rule 5, Section 1.

[60] NSCC accepts transactions for clearance on business days. Pursuant to Rule 1 of NSCC's Rules and Procedures, the term ''business day'' means any day on which NSCC is open for business. However, on any business day that banks or transfer agencies in New York State are closed or a qualified securities depository is closed, no deliveries of securities and no payments of money shall be made through NSCC.

[61] Both NSCC and DTC jointly provide all members/participants and their settling banks with reports throughout the day indicating their net debit and net credit amounts for individual members/participants as well as a net-net amount for each settling bank. Each NSCC member is required to select a settling bank to handle the electronic payment or receipt of payments through the Federal Reserve Bank's Fedwire system.

b. Institutional Investor Trade Settlement Process

Institutional trade processing typically starts when an institutional customer or its agent (sometimes referred to as the ''buy side'') places an order to buy or sell securities with its broker-dealer. The broker-dealer will advise the institutional customer of the trade details, who in turn may advise its broker-dealer how the trade should be allocated among its various accounts.[62] The process of verifying the allocation is completed through the confirmation/affirmation procedures described in Part II.A.2.b., which discusses the automated post-trade pre-settlement processing of institutional investor trades.

Institutional investors may choose to trade through an executing broker-dealer that clears and settles its securities transactions though NSCC and DTC. However, depending on the size and complexity of the trade and the number of trading partners involved in the transaction, institutional investors may also choose to avail themselves of processes specifically designed to address the unique aspects of their trades. Specifically, these transactions can be processed on a trade-for-trade basis through a prime broker-dealer and settled on an RVP/DVP basis through DTC[63] and the institutional customer's custodial bank.[64]

The following is a high level description and illustration of what generally occurs each day following execution of an institutional investor trade and submission of the trade to DTC:

Trade Date through T+2—The institutional investor sends to the Matching/ETC Provider, its broker-dealer, and its custodian the allocation information for the trade. (Step 1) The broker-dealer then submits to the Matching/ETC Provider trade data corresponding to each allocation, including settlement instructions and, as applicable, commissions, taxes, and fees. (Step 2)

If the transaction is processed through a matching service, the Matching/ETC Provider compares the institutional investor's allocation information with the broker-dealer's trade data to determine whether the information contained in each field matches. If all required fields match, the Matching/ETC Provider generates a matched confirmation and sends it to the broker-dealer, the institutional investor, and other entities designated by the institutional investor (*e.g.,* the institutional investor's custodian). (Step 3)

If the institutional investor uses the ETC process, instead of comparing the institutional investor's allocation information with the broker's trade data, the Matching/ETC Provider would transmit the information to the broker-dealer and institutional investor so that each party could verify that the trade was executed and allocated correctly and produce an affirmed confirmation.

T+2—After the Matching/ETC Provider creates the matched confirmation (whether by ETC or matching), the matching service submits it to DTC as an ''affirmed confirmation.'' After the affirmed confirmation has been submitted, DTC participants that are delivering securities then authorize the trades for automated settlement. DTC currently processes transactions in real-time from approximately 8:30 p.m. on the night before settlement day (T+2) until 3:30 p.m. on settlement day (T+3) for DVP transactions and until 6:35 p.m. for free of payment transactions.

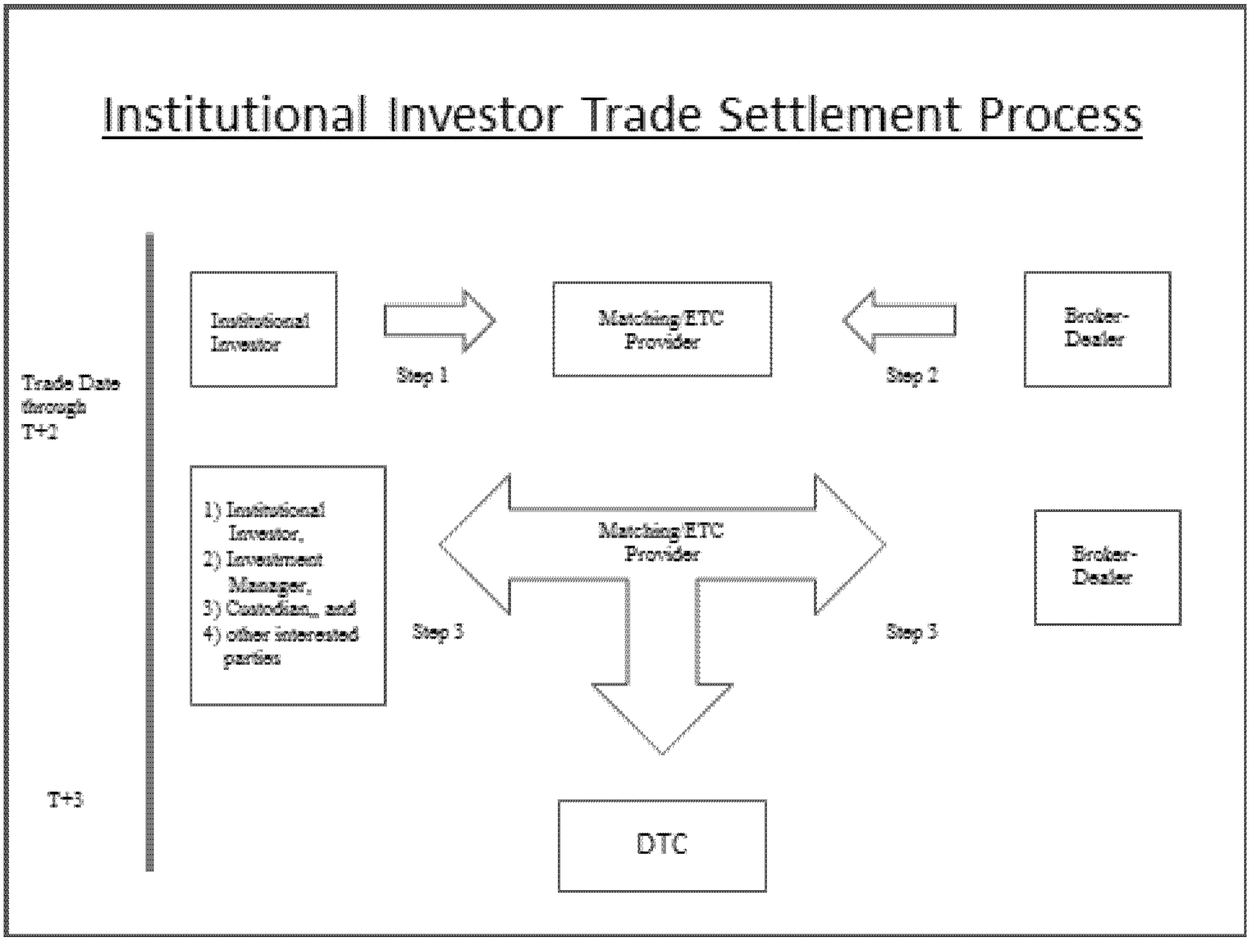
T+3—DTC transfers the securities electronically between the buying and selling broker-dealer accounts at DTC. The participant broker-dealers instruct their settlement banks to send money to, or receive money from, DTC to complete the transaction.

[62] In instances where an institutional investor submits an order on behalf of other parties (*e.g.,* an investment manager on behalf of several mutual funds), the institutional investor will instruct its broker-dealer as to how to allocate the transactions among the underlying entities. The broker-dealer will reply by sending details of, or confirming, each allocation and if correct, the institutional investor will affirm.

[63] DTC operates a DVP settlement system for settlement of securities on a gross basis and settlement of funds on a net basis. Deliveries of securities are subject to DTC's risk management controls, which are designed so that DTC may complete system-wide settlement notwithstanding the failure to settle of its largest participant or affiliated family of participants. *See* DTC, Disclosure under the PFMI Disclosure Framework, at 10 (Dec. 2015), *http://www.dtcc.com/legal/policy-and-compliance.*

[64] Through its ID Net Service, DTC allows its participant broker-dealers to net their institutional investor customer transactions with the broker-dealer's other transactions (including the broker's retail trades) to reduce the aggregate securities movement while still retaining the trade-for-trade settlement between the DTC participant and the custodian bank. This service also allows the banks to maintain their responsibility to pay for only those trades where all the shares are delivered, while at the same time providing brokers with the benefits of netting through NSCC's CNS system.

Figure 4: Institutional Investor Trade Settlement Flow



4. Impact of the Settlement Cycle

The length of the settlement cycle has varying degrees of impact across the range of market participants described above. That impact stems, in large part, from the type of risk exposure each entity brings to the clearance and settlement process and the nature of its processes and systems for operating within the existing framework.

From the perspective of a CCP, such as NSCC, the length of the settlement cycle may affect the CCP's exposure to credit, market and liquidity risk that arises once a transaction has been novated and the CCP takes offsetting (and guaranteed) positions as a substituted counterparty for each of the parties to the original transaction.[65] A CCP takes a number of measures to manage this credit risk to its members, including through financial resource contributions from members and netting down the total outstanding exposure it may have to a particular member.

However, the extent to which a CCP must apply these risk mitigation tools depends in large part on the length of time it is exposed to the risk that one or more of its members may default on their settlement obligations, which in turn is driven by the length of the settlement cycle.

The settlement cycle similarly determines the period of time during which a CCP faces market risk following novation. Market risk, as a general matter, can arise for a CCP where a member has defaulted during the settlement cycle, and the CCP faces the risk that the defaulted member's positions and other resources the CCP holds (*i.e.,* defaulted member collateral, such as clearing fund deposits) decline in market value as the CCP seeks to liquidate, transfer, or otherwise dispose of those assets to minimize losses.[66] Finally, the settlement cycle can also impact the amount of liquidity risk a CCP may need to anticipate for purposes of settling an open transaction (the CCP often relies on incoming payments from some members to facilitate payments to other members) or otherwise deploying financial resources to cover losses that may result from a member's default.[67] A DTCC paper published in 2011 notes that shortening the settlement cycle may result in reduced liquidity obligations for NSCC.[68] In addition, that study, which was conducted from October 19, 2010, through August 31, 2011, indicated certain procyclical benefits to a reduced settlement cycle in observing how NSCC clearing fund requirements

[65] *See* CCA Proposal, 79 FR at 29524, which provides an overview discussion of financial risks faced by clearing agencies.

[66] *See id.*

[67] *See id.* Credit and liquidity risk may also be relevant to the functioning of a CSD, given that the CSD will rely on incoming payments or deliveries of securities from certain participants to make payments or deliveries to other participants. Where a CSD participant defaults, or where a CCP or a CSD participant faces liquidity pressure, the CSD itself may need to deploy financial resources to cover the shortfall. For example, the CSD may maintain a participant fund (similar in function to a clearing fund) or have available lines of credit to access in such instances.

[68] DTCC, Proposal to Launch a New Cost-Benefit Analysis on Shortening the Settlement Cycle, at 7 (Dec. 2011) (''DTCC Proposal to Launch a Cost-Benefit Analysis''), *http://www.dtcc.com/en/news/2011/december/01/proposal-to-launch-a-new-cost-benefit-analysis-on-shortening-the-settlement-cycle.aspx.*

would decline if the settlement cycle was shortened.[69] The results of the study are reflected in the tables below.

Settlement cycle	Average daily clearing fund requirement ($MM)
T+3	4,012 (100%)
T+2	3,421 (−15%)
T+1	2,994 (−25%)

According to the study, clearing fund savings (for NSCC's members) resulting from shorter settlement cycles are more pronounced during periods of high volatility.[70] By showing the same data for August 2011, a period of high volatility, the study shows a greater decrease in NSCC's clearing fund requirements.[71]

Settlement cycle	Average daily clearing fund for August 2011 ($MM)
T+3	7,281 (100%)
T+2	5,517 (−24%)
T+1	4,619 (−37%)

NSCC also conducted a study from April 2011 to September 2011 that indicated that shortening the settlement cycle would reduce NSCC's liquidity obligations significantly. According to the study, in a T+2 settlement cycle, NSCC's average liquidity obligations would decline by 20%, thereby reducing members' required clearing fund deposits.[72]

For broker-dealers and investors, the impact of the length of the settlement cycle can be understood in most cases through the perspective of liquidity risk. Over the course of the settlement cycle, broker-dealers and investors will generally seek to manage two forms of liquidity risk—(i) sudden or unexpected liquidity demands that may arise due to the CCP's ongoing management of credit, market and liquidity risk exposure during the settlement cycle,[73] and (ii) the need to timely obtain and deliver cash or securities to settle outstanding trades, as well as using cash or securities to engage in trading activity across other markets with mismatched settlement cycles, such as non-U.S. markets.

Broker-dealers that are CCP members (including broker-dealers that are NSCC members) have financial resource obligations which the CCP may collect for risk management purposes.[74] These financial resource obligations may be at issue where a CCP member defaults and the CCP requires the defaulting member's resources or the other members' mutualized resources to address any credit, market and liquidity risk the CCP faces as it seeks to liquidate, transfer or otherwise dispose of the defaulted positions and related collateral of the defaulting member.[75] These financial resource obligations may also be incurred within a settlement cycle where a CCP seeks additional resources to address potential risk that may increase due to changing or otherwise volatile market conditions that can also be procyclical.[76] In such instances, the CCP member's obligation to make available financial resources to the CCP keys off of the period of time during which the CCP faces the member. Therefore, the length of the settlement cycle can impact the amount and types (*e.g.,* stable, highly liquid assets) of financial resources a CCP may require of its members, which in turn creates liquidity risk exposure and capital costs for the member in terms of obtaining and delivering to the CCP the necessary financial resources in a timely manner.

Further, for NSCC members/DTC participants, the length of the settlement cycle determines the deadline by which cash or securities must be delivered into the member/participant's DTC account for settlement purposes. Thus, a member/participant may face liquidity risk in obtaining (or recalling) from other markets with mismatched settlement cycles the necessary resources to deliver in time for settlement. Similarly, the length of the settlement cycle governs the time when the proceeds of a securities transaction may be made available to the member/participant. A mismatch in timing between the settlement cycle for the securities transaction and the settlement cycle for another market transaction, such as in the derivatives or a non-U.S. market with a different settlement cycle, can lead in turn to liquidity risk for the member in meeting all of its settlement obligations across markets.[77]

Broker-dealers that are not members of a CCP may similarly face certain of the liquidity risks described above because the clearing broker-dealer may pass on related costs through margin charges, as well as other charges and fees (which may, in some cases, be incorporated in the clearing broker-dealer's management of its credit risk to the non-clearing broker-dealer). These costs may also, in turn, be applied to or passed on to both institutional and retail investors by their executing or clearing broker-dealers.[78] For example, an industry study noted that some NSCC members carry the exposure of their customers' open positions during the settlement cycle and that each day's reduction in the settlement cycle could lessen these open exposures by 25%.[79] Therefore, the length of the settlement cycle can potentially affect the size and type of financial resource demands broker-dealers may pass on to investors.

The impact that the length of the settlement cycle may have on the credit, market and liquidity risk exposure faced by market participants can also lead to impacts on systemic risk. First, the length of the settlement cycle will determine the number of unsettled transactions present in the settlement system at any given point in time, and consequently the level of exposure to credit, market and liquidity risks faced by market participants. This attendant credit, market and liquidity risk, in turn, can affect the potential likelihood of a market participant defaulting. In the event of a default of a major market participant, the default may entail losses so large as to create widespread or systemic problems. Further, the default of one member may lead to the default of one or more other members, exacerbating any financial stress a CCP

[69] *See id.* at 8–9.

[70] *See id.*

[71] *See id.*

[72] *See id.* at 7.

[73] In this respect, the liquidity risk can be linked to market risk faced by the CCP and its member arising from the open position between the CCP and the member, as well as any collateral posted by the member to the CCP to cover the CCP's credit risk exposure to the member. Where the market value of these open positions or the posted collateral fluctuates, the CCP may seek additional margin or other financial resources from the member. *See* CCA Proposal, 79 FR 29524.

[74] *See supra* Part II.A.2.a.(1) for additional discussion regarding the use of financial resource requirements for risk management purposes. *See also* NSCC Rules and Procedures, *supra* note 26, Rules 4 and 4(A).

[75] *See* CCA Proposal, 79 FR at 29524.

[76] *See* DTCC, DTCC Recommends Shortening the U.S. Trade Settlement Cycle (Apr. 2014), *http://www.ust2.com/industry-action/.*

[77] For example and as noted earlier, the settlement cycle timeframe for open-end mutual funds that settle through NSCC is generally T+1. However, the settlement cycle timeframe for many underlying portfolio securities held by mutual funds is T+3. Settlement timeframes for securities with non-standard settlements held by these funds may be longer than T+3. This mismatch in timing presents potential liquidity risks for such funds as market participants with respect to the receipt of portfolio proceeds and in satisfying their investor redemption obligations. *See* Investment Company Act Release No. 31835 (Sept. 22, 2015), 80 FR 62273, 62282–83 (Oct. 15, 2015); *see also, e.g.,* PricewaterhouseCoopers LLP, Shortening the Settlement Cycle: The Move to T+2, at 13 n.18 (2015) (''ISC White Paper''), *http://www.ust2.com/pdfs/ssc.pdf.*

[78] For further discussion on the downstream effects of liquidity risk costs, *see infra* Part VI.C.4.

[79] *See* DTCC Proposal to Launch a Cost-Benefit Analysis, *supra* note 68, at 7.

or other market infrastructure may be experiencing because of the default.[80]

As a more general matter, market participants rely on CCPs for prompt clearance and settlement of transactions and the receipt of proceeds from those transactions. Thus, a significant disruption in the clearance and settlement process and transmission of these proceeds could potentially harm other market participants, particularly in instances where market participants in centrally cleared and settled markets are linked through intermediation chains to each other and to participants in uncleared markets (as is the case in the U.S. clearance and settlement system). Shortening the settlement cycle is therefore one of the primary methods for reducing this risk.[81]

5. Post-Rule 15c6–1 Adoption

Since the adoption of Rule 15c6–1, the Commission and various market participants have, as described in greater detail below, explored the possibility of shortening the standard settlement cycle further. Below is a description of these efforts.

a. SIA T+1 Initiative

After the implementation of the T+3 settlement cycle, the Securities Industry Association (''SIA'') led an effort to shorten the settlement cycle to T+1 and implement STP.[82] In 2000, the SIA published its T+1 Business Case Final Report (''SIA Business Case Report'') which concluded that the case for moving to a T+1 settlement cycle in the U.S. was ''strong'' based upon several factors.[83] According to the SIA Business Case Report: (i) The move from T+3 to T+1 would dramatically reduce the settlement risk exposure of the U.S. securities industry; [84] (ii) the transition to a T+1 settlement cycle would enable the U.S. market to continue to maintain its global competitiveness by serving as the catalyst for enhancing the current post-trade processing and settlement process; [85] and (iii) the move to T+1 would serve the interests of U.S. investors by synchronizing the clearance and settlement process across asset classes, thus enabling more fungible, flexible trading and investing.[86]

The SIA Business Case Report also identified ten ''building blocks'' essential to realizing the goal of improving the speed, safety, and efficiency of the trade settlement process, and included a cost benefit analysis for transitioning to T+1.[87] The implementation of these building blocks, the report noted, would ensure that the transition to a T+1 settlement cycle would be accomplished in an orderly and risk-effective manner.[88]

In July 2002, the SIA shifted the principal focus of its initiative from shortening the settlement cycle to achieving industry-wide STP and planned to reconsider the need to pursue a reduction in the settlement cycle in 2004.[89] At that time, the SIA believed more work was needed on improving operational processing to achieve STP before a transition to T+1 could be considered.[90] The SIA's reasoning for this shift in focus stemmed largely from an operational risk concern, observing that while a shorter settlement cycle would be expected to decrease the gross amount of unsettled trades subject to credit or market risk, it could increase operational risk at that time by reducing the time available to correct errors prior to settlement. The SIA therefore argued that the industry priority should be to ensure that a higher amount and rate of trades were affirmed/confirmed on an earlier basis via STP, which in turn would be useful for a later consideration of compressing the settlement cycle in an environment less prone to the likelihood of operational risk.[91]

b. Securities Transaction Concept Release

In March 2004, the Commission published a concept release (''Concept Release'') seeking comment on methods to improve the safety and operational efficiency of the U.S. clearance and settlement system and to help the U.S. securities industry achieve STP.[92] Specifically, the Commission sought comment on, among other things, (i) the benefits and costs of shortening the settlement cycle to a timeframe less than T+3; (ii) whether the Commission should adopt a new rule or the SROs should be required to amend their existing rules to require the completion of the confirmation/affirmation process on trade date (''T+0''); and (iii) reducing the use of physical securities.[93] The purpose of the Concept Release was to build upon the domestic initiatives and continue the exploration of methods to improve the operations of the national clearance and settlement system. The Commission received sixty-three comment letters from a wide variety of commenters, both domestic and international, including but not limited to, broker-dealers, transfer agents, issuers, individual and institutional investors, academics, service providers, and industry associations.[94] While the comments were informative and relevant at the time, technological, operational and regulatory changes in the interim have addressed many of the issues raised by the commenters.

The Commission received thirty-four comment letters expressing a position on shortening the settlement cycle,[95] with the majority of the commenters

[80] *See* T+3 Adopting Release, 58 FR at 52894; *see also* Clearing Agency Standards Adopting Release, 77 FR at 66254 (discussing the need for default procedures to allow the clearing agency to take action resulting from one or more member defaults in order to contain resultant losses and liquidity pressures).

[81] *See* Christopher L. Culp, *Risk Management by Securities Settlement Agents,* 10 J. Applied Corp. Fin. 96 (Fall 1997), *http://www.rmcsinc.com/articles/JACF103.pdf.*

[82] The SIA (which has since merged with other industry groups to form the Securities Industry Financial Markets Association) was a trade association that represented U.S. broker-dealers.

[83] SIA, T+1 Business Case Final Report (July 2000) (''SIA Business Case Report''), *http://www.sifma.org/issues/item.aspx?id=8589939820.*

[84] *Id.* at 1, 7. The SIA Business Case Report did not explicitly define the term ''settlement risk.'' However, the report argued that a move to a T+1 settlement cycle would reduce credit risk exposure and operational risk exposure. *See id.* at 39–41.

[85] *Id.*

[86] *Id.; see also infra* Part VI.D.1. for a discussion of the alternative of shifting to a T+1 settlement cycle.

[87] *See id.* at 2–3. The 10 Building Blocks identified in the report are as follows: (1) Modify internal processes at broker-dealers, asset managers, and custodians to ensure compliance with compressed settlement deadlines; (2) identify and comply with accelerated deadlines for submission of trades to the clearing and settlement systems; (3) amend NSCC's trade guaranty process so that guaranty is provided on trade date; (4) report trades to clearing corporations in locked-in format and revise clearing corporations' output; (5) rewrite CNS processes at NSCC to enhance speed and efficiency; (6) reduce reliance on checks and use alternative means of payment, such as automatic debits allowed by the National Automated Clearing House Association; (7) immobilize securities shares prior to conducting transactions; (8) revise the prospectus delivery rules and procedures for initial public offerings; (9) develop industry matching utilities and linkages for all asset classes; and (10) standardize reference data and move to standardized industry protocols for broker-dealers, asset managers, and custodians.

[88] *Id.* at 2.

[89] Press Release, SIA, SIA Board Endorses Program to Modernize Clearing and Settlement Process for Securities, STP Connections (July 18, 2002) (statement from the SIA Board of Directors endorsing straight-through processing); *see also* Letter from Jeffrey C. Bernstein, Chairman, SIA STP Steering Committee, SIA (June 16, 2004) (commenting on the Commission's 2004 Securities Transaction Settlement Concept Release, Exchange Act Release No. 49405 (Mar. 11, 2004), 69 FR 12922, 12923 (Mar. 18, 2004)).

[90] *Id.* at 3.

[91] *Id.* at 7.

[92] Securities Transactions Settlements, Exchange Act Release No 49405 (Mar. 11, 2004), 69 FR 12922 (Mar. 18, 2004).

[93] *Id.*

[94] The comment letters submitted pursuant to the Commission's request for comment in the Concept Release are available at *https://www.sec.gov/rules/concept/s71304.shtml.*

[95] Letters from Bruce Barrett (Mar. 13, 2004); David Patch (Mar. 13, 2004, and May 18, 2004);

either: (i) Supporting shortening the settlement cycle to a timeframe less than T+3 (primarily T+1); (ii) supporting implementation of STP prior to shortening the settlement cycle; (iii) supporting implementation of STP in lieu of shortening the settlement cycle (in part because STP would derivatively drive shorter cycles) or (iv) expressing no opinion on either T+1 or STP, but rather discussing the need to address other post trade processing issues (*e.g.,* streamlining the institutional transactional processing model, using RVP/DVP processing for both retail and institutional trades, addressing fails in the clearance and settlement system, and dematerializing securities certificates in the U.S. settlement cycle) prior to a regulatory mandate to shorten the U.S. settlement cycle.[96] The comment letters that supported the implementation of a T+1 settlement cycle noted the benefits of a shortened settlement cycle, including reducing risks, reducing costs, improving efficiencies, and making accurate information more quickly available to investors. Several of the commenters also noted that T+1 would remove systemic risk and enable clients to have accurate information about their assets with finality the next trading day.[97] Several commenters based their general support on the view that currently available technology (as it existed in 2004) would support a T+1 or T+0 settlement cycle,[98] or that the operating costs of real time software would be dramatically lower than the staff it would replace.[99] One of these commenters stated that even if the current technology facilitating ''real time settlement'' was not currently cost effective, it would be in the future as technology develops and advances.[100] If real time settlement were feasible, this commenter noted, the market architecture would make sure that the securities and cash were available in good deliverable form for instant settlement before the execution of the trade, thereby eliminating failures to deliver or pay for securities, as well as totally eliminate systemic and counterparty risk.[101]

Of the thirty-four comments on shortening the settlement cycle, fourteen commenters expressed a preference to defer a decision on changing the settlement cycle until the industry could implement STP or other complementary processes.[102] Reasons for deferring the decision varied, but generally focused on the need for additional information or additional time for the industry to implement STP successfully.[103] Some of these commenters also raised concerns about the costs associated with implementation of a shorter settlement cycle and regulatory costs that may arise

Robert Goldberg, President, e3m Investments Inc. (Apr. 5, 2004); James J. Angel, Ph.D., CFA, Associate Professor of Finance, McDonough School of Business, Georgetown University (Apr. 9, 2004); Michael Sweeney, Vice President, Custody Services, Sumitomo Trust & Banking, Co. (USA) (May 20, 2004); James Nesfield (May 23, 2004); Martin Wilson (May 27, 2004); Sennett Kirk (May 27, 2004); Adam J. Bryan, President and CEO, Omgeo LLC (June 4, 2004); David G. Tittsworth, Executive Director, Investment Counsel Association of America (June 11, 2004); Michael Atkin, Vice President and Director, Financial Information Services Division, Software & Information Industry Association (June 13, 2004); Donald J. Kenney, Chairman, President, and Chief Executive Officer, EquiServe, Inc. (June 14, 2004); Jeff Potter, Vice President, The Northern Trust Company (June 14, 2004); John T. W. Pace, President, Cape Securities, Inc. (June 14, 2004); Thomas Sargant, President, Regional Municipal Operations Association (June 14, 2004); Steven G. Nelson, President and Chairman of the Board, Continental Stock Transfer & Trust Company (June 15, 2004); Will DuMond, Metropolitan College of New York—School of Business (June 15, 2004); Diane M. Butler, Director—Transfer Agency & International Operations, Investment Company Institute (June 16, 2004); Fionnuala Martin, STP Program Manager, BMO Nesbitt Burns (June 16, 2004); Frank DiMarco, Merrill Lynch & Co., Inc., Chair, STP Steering Committee, The Bond Market Association (June 16, 2004); Ian Gilholey, The Canadian Depository for Securities Limited (June 16, 2004); Jeffrey C. Bernstein, Chairman, SIA STP Steering Committee, SIA (June 16, 2004); Kevin R. Smith, Chair, ISITC–IOA (North America) (June16, 2004); Michael J. Alexander, Senior Vice President, Charles Schwab & Co., Inc. (June 16, 2004); Michael O'Conor, Chairman, Global Steering Committee and Peter Randall, Executive Director, FIX Protocol Limited (June 16, 2004); Norman Eaker, Principal, Edward Jones (June 16, 2004); W. Leo McBlain, Chairman and Thomas J. Jordan, Executive Director, Financial Information Forum (June 16, 2004); Jill M. Considine, Chairman and Chief Executive Officer, The Depository Trust and Clearing Corporation (June 23, 2004); Margaret R. Blake, Counsel to the Association, and Dan W. Schneider, Counsel to the Association, The Association of Global Custodians (June 28, 2004); Ed Morgan (Mar. 31, 2006); Jim Mulkey (June 10, 2006); Charles V. Rossi, President, The Securities Transfer Association (June 15, 2006); and Gene Finn (July 25, 2012, and Aug. 2, 2012).

96 Letters from Robert Goldberg, President, e3m Investments Inc. (Apr. 5, 2004); James J. Angel, Ph.D., CFA, Associate Professor of Finance, McDonough School of Business, Georgetown University (Apr. 9, 2004); James Nesfield (May 23, 2004); Adam J. Bryan, President and CEO, Omgeo LLC (June 4, 2004); Donald J. Kenney, Chairman, President, and Chief Executive Officer, EquiServe, Inc. (June 14, 2004); Diane M. Butler, Director—Transfer Agency & International Operations, Investment Company Institute (June 16, 2004); Fionnuala Martin, STP Program Manager, BMO Nesbitt Burns (June 16, 2004); Frank DiMarco, Merrill Lynch & Co., Inc., Chair, STP Steering Committee, The Bond Market Association (June 16, 2004); Jeffrey C. Bernstein, Chairman, SIA STP Steering Committee, SIA (June 16, 2004); Kevin R. Smith, Chair, ISITC–IOA (North America) (June 16, 2004); Michael J. Alexander, Senior Vice President, Charles Schwab & Co., Inc. (June 16, 2004); Norman Eaker, Principal, Edward Jones (June 16, 2004); W. Leo McBlain, Chairman and Thomas J. Jordan, Executive Director, Financial Information Forum (June 16, 2004); Jill M. Considine, Chairman and Chief Executive Officer, The Depository Trust and Clearing Corporation (June 23, 2004); Margaret R. Blake, Counsel to the Association, and Dan W. Schneider, Counsel to the Association, The Association of Global Custodians (June 28, 2004); Ed Morgan (Mar. 31, 2006); Jim Mulkey (June 10, 2006); Charles V. Rossi, President, The Securities Transfer Association (June 15, 2006); and Gene Finn (July 25, 2012, and Aug. 2, 2012).

97 Letters from Robert Goldberg, President, e3m Investments Inc. (Apr. 5, 2004); and Fionnuala Martin, STP Program Manager, BMO Nesbitt Burns (June 16, 2004).

98 Letters from Robert Goldberg, President, e3m Investments Inc. (Apr. 5, 2004); James J. Angel, Ph.D., CFA, Associate Professor of Finance, McDonough School of Business, Georgetown University (Apr. 9, 2004); James Nesfield (May 23, 2004); and Jim Mulkey (June 10, 2006).

99 Letter from Robert Goldberg, President, e3m Investments Inc. (Apr. 5, 2004).

100 James J. Angel, Ph.D., CFA, Associate Professor of Finance, McDonough School of Business, Georgetown University (Apr. 9, 2004).

101 *Id.*

102 Letters from Adam J. Bryan, President and CEO, Omgeo LLC (June 4, 2004); David G. Tittsworth, Executive Director, Investment Counsel Association of America (June 11, 2004); Jeff Potter, Vice President, The Northern Trust Company (June 14, 2004); Thomas Sargant, President, Regional Municipal Operations Association (June 14, 2004); Charles V. Rossi, President, The Securities Transfer Association (June 15, 2004); Frank DiMarco, Merrill Lynch & Co., Inc., Chair, STP Steering Committee, The Bond Market Association (June 16, 2004); Ian Gilholey, The Canadian Depository for Securities Limited (June 16, 2004); Jeffrey C. Bernstein, Chairman, SIA STP Steering Committee, SIA (June 16, 2004); Michael J. Alexander, Senior Vice President, Charles Schwab & Co., Inc. (June 16, 2004); Michael O'Conor, Chairman, Global Steering Committee and Peter Randall, Executive Director, FIX Protocol Limited (June 16, 2004); Norman Eaker, Principal, Edward Jones (June 16, 2004); W. Leo McBlain, Chairman and Thomas J. Jordan, Executive Director, Financial Information Forum (June 16, 2004); Jill M. Considine, Chairman and Chief Executive Officer, The Depository Trust and Clearing Corporation (June 23, 2004); and Margaret R. Blake, Counsel to the Association, and Dan W. Schneider, Counsel to the Association, The Association of Global Custodians (June 28, 2004).

103 Letters from Adam J. Bryan, President and CEO, Omgeo LLC (June 4, 2004); David G. Tittsworth, Executive Director, Investment Counsel Association of America (June 11, 2004); Jeff Potter, Vice President, The Northern Trust Company (June 14, 2004); Thomas Sargant, President, Regional Municipal Operations Association (June 14, 2004); Charles V. Rossi, President, The Securities Transfer Association (June 15, 2004); Frank DiMarco, Merrill Lynch & Co., Inc., Chair, STP Steering Committee, The Bond Market Association (June 16, 2004); Ian Gilholey, The Canadian Depository for Securities Limited (June 16, 2004); Jeffrey C. Bernstein, Chairman, SIA STP Steering Committee, SIA (June 16, 2004); Michael J. Alexander, Senior Vice President, Charles Schwab & Co., Inc. (June 16, 2004); Michael O'Conor, Chairman, Global Steering Committee and Peter Randall, Executive Director, FIX Protocol Limited (June 16, 2004); Norman Eaker, Principal, Edward Jones (June 16, 2004); W. Leo McBlain, Chairman and Thomas J. Jordan, Executive Director, Financial Information Forum (June 16, 2004); Jill M. Considine, Chairman and Chief Executive Officer, The Depository Trust and Clearing Corporation (June 23, 2004); and Margaret R. Blake, Counsel to the Association, and Dan W. Schneider, Counsel to the Association, The Association of Global Custodians (June 28, 2004).

from the switch to T+1.[104] One commenter, in particular, noted that a regulatory mandate for a shortened settlement cycle was not warranted by the SIA's cost benefit analysis and thought a better approach would be to encourage the development of market-driven initiatives to promote advances in STP.[105]

c. Current Efforts To Shorten the Settlement Cycle in the U.S.

Since the publication of the SIA Business Case Report in 2000 and the publication of the Concept Release in 2004, the Commission and market participants have continued to consider the possibility of further shortening the settlement cycle while observing significant changes in the securities industry with respect to post-trade processes and technology. Below is a discussion of a number of recent significant industry initiatives that have considered the question of whether and when to further shorten the standard settlement cycle and that have informed the Commission's proposal.

(1) BCG Study

In May 2012, DTCC commissioned a study to examine and evaluate the necessary investments and resulting benefits associated with a shortened settlement cycle for U.S. equities and corporate and municipal bonds.[106] The study, which was conducted by the Boston Consulting Group (''BCG'') and published in October 2012, analyzed the costs, benefits, opportunities and challenges associated with shortening the settlement cycle in the U.S. securities markets to either T+1 or T+2, respectively.[107]

The scope of BCG's analysis included U.S. equities, corporate bonds, and municipal bonds settling at DTC.[108] The study covered clearing and settlement processes at various types of market participants (*e.g.,* broker-dealers, buy-side firms, and custodian banks), in addition to processes closely related to clearance and settlement (such as corporate action processing and securities lending) and specific situations (such as post-trade processes for cross-border transactions involving securities lending in the U.S.).[109]

The BCG Study did not advocate any specific approach to shortening the settlement cycle, but noted that moving to a T+2 settlement cycle would be significantly less costly and take less time to implement than either an immediate or gradual transition to T+1, while still delivering significant benefits.[110]

The BCG Study noted that market participants were aware that a T+2 settlement cycle could be accomplished through mere compression of timeframes and corresponding rule changes but that implementing a transition to T+2 without certain building blocks or enablers would limit the amount of savings that would be realized across the industry.[111] In particular, BCG identified the following T+2 enablers: (i) Migration to trade data matching; [112] (ii) a cross-industry settlement instruction solution; (iii) dematerialization of physical securities; (iv) ''access equals delivery'' [113] for all products,[114] and (v) increased penalties for fails.[115] The study further concluded that T+1 could be built on the aforementioned T+2 enablers but would also require infrastructure for near-real-time trade processing, and transforming securities lending and foreign buyer processes.[116]

In addition, BCG noted that acceleration of retail client funding processes ''may'' need to take place to enable T+1 settlement.[117] Finally, BCG identified certain changes it believed that regulators, including the Commission, DTCC, FINRA, the MSRB, and NYSE, would need to make to their rules to enable a shorter settlement cycle.[118] These changes included, among others, amending Exchange Act Rule 15c6–1.[119]

Based on the foregoing, in April 2014, DTCC recommended shortening the U.S. trade settlement cycle for equities, municipal bonds, and unit investment trusts to T+2 and stated it would work with the industry to establish an implementation timeline.[120] Once achieved, DTCC recommended a pause and further assessment of industry readiness and appetite for a future move to T+1.[121] The recommendation was based on: (1) Results from risk studies that measure exposure and NSCC's liquidity needs; (2) the results of the BCG Study; (3) input from industry associations; and (4) one-on-one interviews with more than 50 firms across the securities industry, which helped DTCC define behavioral and system changes required to shorten the settlement cycle.[122]

(2) Industry Steering Committee and Industry Planning

In October 2014, DTCC, in collaboration with the Investment Company Institute (''ICI''), the Securities Industry and Financial Markets Association (''SIFMA''), and other market participants, formed an Industry Steering Group (''ISC'') and an industry working group to facilitate the transition to a T+2 settlement cycle for U.S. trades in equities, corporate and municipal bonds, and UITs.[123] The impetus for moving to a T+2 settlement cycle, as stated by the ISC, was to (i) reduce credit and liquidity risks to the industry and investors, (ii) reduce operational risk; (iii) reduce liquidity costs and free up capital for broker-dealers by reducing the required NSCC clearing fund contributions; (iv) enable investors to gain quicker access to funds and securities following a trade

[104] *See, e.g.,* Letter from Michael J. Alexander, Senior Vice President, Charles Schwab & Co., Inc. (June 16, 2004).

[105] Letter from David G. Tittsworth, Executive Director, the Investment Counsel Association of America (June 11, 2004) (commenting on the Concept Release).

[106] *See* DTCC Proposal to Launch a Cost-Benefit Analysis, *supra* note 68.

[107] The Boston Consulting Group, Cost Benefit Analysis of Shortening the Settlement Cycle, (Oct. 2012) (''BCG Study''), *http://www.dtcc.com/~/media/Files/Downloads/WhitePapers/CBA_BCG_Shortening_the_Settlement_Cycle_October2012.pdf.* The BCG Study also noted a ''T+0'' settlement cycle (*i.e.,* settlement on trade date) ''was ruled out as infeasible for the industry to accomplish at this time, given the exceptional changes required to achieve it and weak support across the industry.'' Id. at 8. The BCG Study notes that a T+0 settlement cycle would result in major challenges with processes such as such as trade reconciliation and exception management, securities lending and transactions with foreign counterparties (especially where time zones are least aligned). Id. at 20. Moreover, the BCG Study concluded that payment systems utilized for final settlement would also need to be significantly altered to enable transactions late into the day. *Id.* For further discussion on the BCG Study and some of the study's limitations, *see infra* Part VI.C.5.a.

[108] *Id.* at 13.

[109] *Id.*

[110] *Id.* at 8–11, 29–44.

[111] *Id.* at 9.

[112] This migration would essentially entail a mandated ''match to settle.'' Mandated ''match to settle'' would require institutional trades to be matched before settlement at DTC could occur. *See* BCG Study, *supra* note 107, at 65.

[113] In 2005, the Commission adopted Securities Act Rule 172, which, with certain exclusions, provides an ''access equals delivery'' model that permits final prospectus delivery obligations to be satisfied by the filing of the final prospectus with the Commission, rather than delivery of the prospectus to purchasers. *See* Securities Offering Reform, Exchange Act Release No. 52056 (July 19, 2005), 70 FR 44722, 44783–85 (Aug. 3, 2005).

[114] BCG Study, at 9, 64–68.

[115] BCG Study, at 9, 69–70.

[116] *Id.* at 9, 70–72.

[117] *Id.* at 25.

[118] *Id.* at 26, 50, 68–69.

[119] *Id.* at 50, 68. *See also, infra* Part III.B. for a discussion of the impact of other Commission rules.

[120] *See* DTCC Recommends Shortening the U.S. Trade Settlement Cycle, *supra* note 76.

[121] *Id.* at 2.

[122] *Id.*

[123] Press Release, DTCC, Industry Steering Committee and Working Group Formed to Drive Implementation of T+2 in the U.S. (Oct. 2014), *http://www.dtcc.com/news/2014/october/16/ust2.aspx.*

execution, and better protect investors from the risk of a broker-dealer default between trade date and settlement date; (v) reduce operational costs; and (vi) increase global harmonization.[124]

In June 2015, PricewaterhouseCoopers LLP, in conjunction with the ISC, published a white paper,[125] which included certain ''industry-level requirements'' and ''sub-requirements'' that the ISC believed would be required for a successful migration to a T+2 settlement cycle to occur. The ISC White Paper also included an implementation timeline that targeted the transition to T+2 by the end of the third quarter of 2017.

Deloitte & Touche LLP, in conjunction with the ISC, published the *T+2 Industry Implementation Playbook* (''T+2 Playbook'') in December 2015, which sets forth the requested implementation timeline with milestones and dependencies, as well as detailing ''remedial activities'' that impacted market participants should consider to prepare for migration to the T+2 settlement cycle.[126] Each of the remedial activities identified in the T+2 Playbook reference specific industry-level requirements and sub-requirements that were identified in the ISC White Paper.

Consistent with the ISC White Paper, the timeline provided in the T+2 Playbook targeted the third quarter of 2017 for completing the migration to a T+2 settlement cycle.[127] In addition to providing an implementation schedule, the T+2 Playbook was intended to serve as an industry resource for individual firms as they make the necessary changes to procedures and technology for transition to a T+2 settlement cycle.[128]

(3) Investor Advisory Committee Recommendations

In February 2015, the Commission's Investor Advisory Committee (''IAC'')[129] issued a public statement noting that shortening the settlement cycle will mitigate operational and systemic risk, as well as ''reduce credit, liquidity, and counterparty exposure risks,'' which will benefit both the securities industry and individual investors.[130] In its recommendation, the IAC stated that it ''strongly endorsed the direction of the recommendation by DTCC'' to shorten the settlement cycle to T+2, but recommended implementing a T+1 settlement cycle (rather than a T+2 settlement cycle), noting that retail investors would significantly benefit from a T+1 settlement cycle.[131] In the event that a T+2 standard settlement cycle is pursued, the IAC recommended that the Commission work with industry participants to create a clear plan for moving to T+1 shortly thereafter.[132]

B. Transition to T+2 in Non-U.S. Securities Markets

As market participants have worked to develop plans to shorten the standard settlement cycle in the U.S. to T+2, several non-U.S. securities markets have already shifted to a T+2 settlement cycle, and certain other non-U.S. securities markets have announced plans to transition to a T+2 settlement cycle.[133] These efforts to transition to a T+2 settlement cycle in markets outside the U.S. have been driven in part by considerations specific to the needs of the particular geographic region or market structure, as well as certain considerations identified by policy makers, market participants, and industry experts as to how shortening the settlement cycle to T+2 would reduce risk in the relevant market and increase the operational efficiency of post-trade processes. The Commission preliminarily believes that many of the reasons motivating efforts in other jurisdictions to shorten the settlement cycle to T+2 are, in principle, similar to those identified by the Commission in this proposal.

For example, national markets in the European Union (''EU'') moved to a harmonized settlement cycle of T+2[134] to both achieve a successful integration of settlement infrastructures across the EU as well as realize perceived benefits a shorter settlement cycle would bring in reducing counterparty credit risk (and associated market and liquidity risks), greater automation of back-office processes and reduced collateral requirements, and reduced costs for market participants.[135]

Australia and New Zealand transitioned to a T+2 settlement cycle in March 2016. Industry support in those markets was predicated on the widespread agreement that shortening the settlement cycle to T+2 would reduce counterparty, credit and operational risks, increase market liquidity, reduce CCP margin requirements and reduce capital requirements for broker-dealers and their clients.[136] In addition, the major Australian and New Zealand exchanges acknowledged the existence of a global

[124] *Id.*

[125] ISC White Paper, *supra* note 77.

[126] Deloitte & Touche LLP & ISC, T+2 Industry Implementation Playbook (Dec. 2015), *http://www.ust2.com/pdfs/T2-Playbook-12-21-15.pdf.* For a further discussion on the T+2 Playbook, *see infra* Part VI.C.5.b.

[127] *Id.* at 8.

[128] *Id.* at 16.

[129] Section 911 of the Dodd-Frank Act established the IAC to advise the Commission on regulatory priorities, the regulation of securities products, trading strategies, fee structures, the effectiveness of disclosure, and initiatives to protect investor interests, and to promote investor confidence and the integrity of the securities marketplace. *See* 15 U.S.C. 78pp. The Dodd-Frank Act authorizes the IAC to submit findings and recommendations for review and consideration by the Commission. *Id.*

[130] Investor Advisory Committee, U.S. Securities and Exchange Commission, Recommendation of the Investor Advisory Committee: Shortening the Settlement Cycle in U.S. Financial Markets (Feb. 12, 2015), *http://www.sec.gov/spotlight/investor-advisory-committee-2012/settlement-cycle-recommendation-final.pdf.*

[131] *Id.* According to the IAC, moving to a T+1 settlement cycle, matching the settlement cycle that already exists for treasuries and mutual funds, would greatly reduce systemic risk and benefit investors. *See also* Committee on Payment and Settlement Systems, Technical Committee of the International Organization of Securities Commissions, Recommendations for Securities Settlement Systems (Nov. 2001), at 4, 10, *http://www.bis.org/cpmi/publ/d46.pdf* (recommending that the benefits and costs of a settlement cycle shorter than T+3 should be evaluated).

[132] *Id.*

[133] In addition to the non-U.S. markets that have moved to a T+2 settlement cycle, certain non-U.S. markets are on a settlement cycle shorter than T+2, including Israel, Chile, and Saudi Arabia, which are on a T+0 cycle, and China, which is on a T+1 cycle.

[134] Prior to the so-called ''big bang'' migration to a T+2 settlement cycle on October 6, 2014, the standard settlement cycle for exchange-traded shares was T+3 in all European securities markets except Germany, Slovenia and Bulgaria, which already operated on a T+2 settlement cycle. The 29 national markets that moved to a T+2 settlement cycle on October 6, 2014 were: Austria, Belgium, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Iceland, Italy, Ireland, the Netherlands, Latvia, Lichtenstein, Lithuania, Luxembourg, Malta, Norway, Poland, Portugal, Romania, Slovakia, Spain (certain fixed income trades only), Sweden, Switzerland, and the United Kingdom. *See also,* ''A very smooth transition to T+2'', European Central Securities Depositories Association (Oct. 2014), *http://ecsda.eu/archives/3793* (discussing the European markets transition from T+3 to T+2 settlement cycle).

[135] *See* European Commission, Commission Staff Working Document Impact Assessment COD 2012/0029 (Mar. 7, 2012), *http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012SC0022&from=EN; see also* CESAME II Harmonization of Settlement Cycles Working Group (''CESAME II''), The Case for Harmonizing Settlement Cycles (Oct. 5, 2010), *http://ec.europa.eu/internal_market/financial-markets/docs/cesame2/subgroup/20100921_case_en.pdf;* CESAME II, The Role of Settlement Cycles in Corporate Actions Processing (Oct. 5, 2010), *http://ec.europa.eu/internal_market/financial-markets/docs/cesame2/subgroup/20100921_hsc_role_en.pdf.*

[136] *See ASX Ltd.,* Shortening the Settlement Cycle in Australia: Transitioning to T+2 for Cash Equities (Feb. 25, 2014), *http://www.asx.com.au/documents/public-consultations/T2_consultation_paper.PDF; see also* NZX Ltd., Shortening of the Settlement Cycle: The Move to T+2 (Nov. 12, 2014), *https://nzx.com/files/static/cms-documents/FINAL%20T%202%20Consultation%20Paper%2012%20November%202014.pdf;* GBST Holding Ltd. & Stockbrokers Association of Australia, Introducing T+2 for the Australian Equities Market (Jan. 30, 2014), *http://www.gbst.com/wp-content/uploads/2016/02/GBST-SAA-Tplus2-in-Australia-Whitepaper.pdf.*

move toward shortened settlement cycles and the importance of international harmonization with respect to shortened settlement cycles.[137] Japanese and Canadian policy makers, regulators and market participants are also considering a transition to a T+2 settlement cycle,[138] with Canadian market participants of the view that, given the interconnectedness between the Canadian and U.S. securities markets, a transition in Canada to a T+2 settlement cycle should occur at the same time such a transition is achieved in the U.S. markets.[139]

III. Discussion

A. Proposal

1. Current Rule 15c6–1

The Commission's adoption of Exchange Act Rule 15c6–1 created a standard settlement cycle for broker-dealer transactions.[140] The Commission took this step in part because it believed that implementing faster settlement of securities transactions and improving the clearance and settlement process would better protect investors.[141] Rule 15c6–1(a) provides that, unless otherwise expressly agreed by the parties at the time of the transaction, a broker-dealer is prohibited from entering into a contract for the purchase or sale of a security (other than an exempted security, government security, municipal security, commercial paper, bankers' acceptances, or commercial bills) that provides for payment of funds and delivery of securities later than the third business day after the date of the contract.[142] Rule 15c6–1(a) covers all securities except for the exempted securities enumerated in paragraph (a)(1) of the rule. The Commission extended application of Rule 15c6–1(a) to the purchase and sale of securities issued by investment companies (including mutual funds),[143] private-label mortgage-backed securities, and limited partnership interests that are listed on an exchange.[144] The rule also allows a broker-dealer to agree that settlement will take place in more or less than three business days, provided that such an agreement is express and reached at the time of the transaction.[145]

Rule 15c6–1(b) provides an exclusion for contracts involving the purchase or sale of limited partnership interests that are not listed on an exchange or for which quotations are not disseminated through an automated quotation system of a registered securities association. In recognition of the fact that the Commission may not have identified all situations or types of trades where settlement on T+3 would be problematic, paragraph (b) of the rule also provides that the Commission may exempt by order additional types of trades from the requirements of the T+3 settlement timeframe, either unconditionally or on specified terms and conditions, if the Commission determines that such an exemption is consistent with the public interest and the protection of investors.[146]

Pursuant to Rule 15c6–1(b), the Commission has granted an exemption for securities that do not generally trade in the U.S.[147] Under this exemptive order, all transactions in securities that do not have transfer or delivery facilities in the U.S. are exempt from the scope of Rule 15c6–1. Furthermore, if less than 10% of the annual trading volume in a security that has U.S. transfer or deliver facilities occurs in the U.S., the transaction in such security will be exempt from the rule unless the parties clearly intend T+3 settlement to apply. In addition, an ADR is considered a separate security from the underlying security. Thus, if there are no transfer facilities in the U.S. for a foreign security but there are transfer facilities for an ADR receipt based on such foreign security, under the order, only the foreign security will be exempt from Rule 15c6–1. The Commission has also granted an exemption for contracts for the purchase or sale of any security issued by an insurance company (as defined in Section 2(a)(17) of the Investment Company Act [148]) that is funded by or participates in a ''separate account'' (as defined in Section 2(a)(37) of the Investment Company Act [149]), including a variable annuity contract or a variable life insurance contract, or any other insurance contract registered as a security under the Securities Act.[150]

Rule 15c6–1(c) provides a T+4 settlement cycle in firm commitment underwritings for securities that are priced after 4:30 p.m. Eastern time. [151] Specifically, paragraph (c) states that the three-day settlement requirement in paragraph (a) does not apply to contracts for the sale of securities that are priced after 4:30 p.m. Eastern time on the date that such securities are priced and that are sold by an issuer to an underwriter pursuant to a firm commitment offering registered under the Securities Act or sold to an initial purchaser by a broker-dealer participating in such offering provided that the broker or dealer does not effect or enter into a contract for the purchase or sale of those securities that provides for payment of funds and delivery of securities later than the fourth business day after the date of the contract unless otherwise expressly agreed to by the parties at the time of the transaction.

Rule 15c6–1(d) provides that, for purposes of paragraphs (a) and (c) of the rule, parties to a contract shall be deemed to have expressly agreed to an alternate date for payment of funds and

[137] *See ASX Ltd.,* Shortening the Settlement Cycle in Australia: Transitioning to T+2 for Cash Equities (Feb. 25, 2014), *http://www.asx.com.au/documents/public-consultations/T2_consultation_paper.PDF; see also* NZX Ltd., Shortening of the Settlement Cycle: The Move to T+2 (Nov. 12, 2014), *https://nzx.com/files/static/cms-documents/FINAL%20T%202%20Consultation%20Paper%2012%20November%202014.pdf.*

[138] *See* Japan Securities Dealers Association, Move to T+2 Settlement in Japan, *http://www.jsda.or.jp/en/activities/research-studies/files/t2_en_cyukan_201603.pdf; see also* Canadian Securities Administrators, Staff Notice 24–312 (Apr. 2, 2015), *http://www.osc.gov.on.ca/en/SecuritiesLaw_sn_20150402_24-312_t2-settlement.htm.*

[139] *See* Canadian Securities Administrators, Staff Notice 24–312 (Apr. 2, 2015), *http://www.osc.gov.on.ca/en/SecuritiesLaw_sn_20150402_24-312_t2-settlement.htm.*

[140] *See* T+3 Adopting Release, 58 FR 52891; *see also* Securities Transactions Settlement, Exchange Act Release No. 34952 (Nov. 9, 1994), 59 FR 59137 (Nov. 16, 1994) (extending effective date for Rule 15c6–1 from June 1, 1995 to June 7, 1995).

[141] *See* T+3 Adopting Release, 58 FR 52891.

[142] 17 CFR 240.15c6–1(a).

[143] The Commission applied Rule 15c6–1 to broker-dealer contracts for the purchase and sale of securities issued by investment companies, including mutual funds, because the Commission recognized that these securities represented a significant and growing percentage of broker-dealer transactions. *See* T+3 Adopting Release, 58 FR at 52900.

[144] With regard to limited partnerships, the Commission excluded non-listed limited partnerships due to complexities related to processing the trades in these securities and the lack of an active secondary market. In contrast, the Commission included listed limited partnerships primarily to ensure exclusion of these securities would not unnecessarily contribute to the bifurcation of the settlement cycle for listed securities generally. *See* T+3 Adopting Release, 58 FR at 52899.

[145] 17 CFR 240.15c6–1(a).

[146] 17 CFR 240.15c6–1(b).

[147] *See* Securities Transactions Settlement, Exchange Act Release No. 35750 (May 22, 1995), 60 FR 27994, 27995 (May 26, 1995) (granting exemption for certain transactions in foreign securities).

[148] 15 U.S.C. 80a–2(a)(17).

[149] 15 U.S.C. 80a–2(a)(37).

[150] *See* Securities Transactions Settlement, Exchange Act Release No. 35815 (June 6, 1995), 60 FR 30906, 30907 (June 12, 1995) (granting exemption for transactions involving certain insurance contracts). Certain insurance contracts, including variable annuity contracts and variable life insurance contracts, have been deemed to be securities under the Securities Act. *SEC* v. *Variable Annuity Life Ins. Co. of America,* 359 U.S. 65 (1959) (variable annuity contracts are ''securities'' which must be registered with the Commission under the Securities Act); Adoption of Rule 3c–4 under the Investment Company Act of 1940, Exchange Act Release No. 9972, 1 SEC Docket 17 (Jan. 31, 1973) (a public offering of variable life insurance contracts involved an offering of securities required to be registered under the Securities Act).

[151] 17 CFR 240.15c6–1(c).

delivery of securities at the time of the transaction for a contract for the sale for cash of securities pursuant to a firm commitment offering if the managing underwriter and the issuer have agreed to such date for all securities sold pursuant to such offering and the parties to the contract have not expressly agreed to another date for payment of funds and delivery of securities at the time of the transaction.[152]

2. Proposed Amendment to Rule 15c6–1 to Shorten the Standard Settlement Cycle to T+2

The Commission proposes to amend Rule 15c6–1(a) to prohibit a broker-dealer from effecting or entering into a contract for the purchase or sale of a security (other than an exempted security, government security, municipal security, commercial paper, bankers' acceptances, or commercial bills) that provides for payment of funds and delivery of securities later than the second business day after the date of the contract unless otherwise expressly agreed to by the parties at the time of the transaction.[153]

3. Reasons to Transition from T+3 to T+2

As previously discussed, the length of the settlement cycle can impact the nature and level of risk exposure for various market participants.[154] The Commission preliminarily believes that the proposal to shorten the standard settlement cycle from three days to two days would potentially offer market participants (*e.g.,* CCPs, broker-dealers, custodians, and investors) significant benefits through the reduction of exposure to credit, market, and liquidity risk, as well as related reductions to systemic risk. Assuming current levels of trading activity remain constant, shortening the time period between trade execution and trade settlement decreases the total number of unsettled trades that exists at any point in time, as well as the total market value of all unsettled trades. This reduction in the number and total value of unsettled trades should, in turn, correspond to a reduction in market participants' exposure to credit, market, liquidity and systemic risk arising from those unsettled transactions. The reduction of these risks should, in turn, improve the stability of the U.S. markets, and ultimately enhance investor protection.

In the case of a CCP, fewer unsettled trades and a reduced time period of exposure to such trades will reduce the CCP's credit, market and liquidity risk exposure to its members. As discussed earlier, a CCP, through novation, acts as the counterparty to its members and faces resultant credit risk in that a clearing member, both on behalf of purchasers of securities who may fail to deliver the payment, and on behalf of sellers of securities who may fail to deliver the securities. In each case, the CCP is required to meet its obligation to its members, which in respect of the buyer is to deliver securities, and in respect of the seller is to deliver cash.

The CCP also faces market risk where, during the settlement cycle, a member defaults and the CCP may be forced to liquidate open positions of the defaulting member and any financial resources of the member it may hold (*i.e.,* collateral) to cover losses and expenses in adverse market circumstances. For example, if the market value of the securities has increased in the interim between trade date and settlement date, the CCP may be forced to obtain the replacement securities in the market at a higher price.

Finally, the CCP can face liquidity risks during the settlement cycle when a member defaults, resulting in the CCP deploying financial resources to meet the CCP's end-of-day settlement obligations.[155] In each instance, the amount and period of risk to which the CCP is exposed is a function of the length of the settlement cycle, and therefore shortening the settlement cycle should reduce the CCP's overall exposure to those risks.

The Commission preliminarily believes that shortening the standard settlement cycle to T+2 will also result in related reductions in liquidity risk for broker-dealers that are CCP members, and by extension introducing broker-dealers and investors that clear their trades through CCP members.[156] As noted earlier, a CCP may take a number of measures to manage the risks its members present, including through member financial resource contributions and netting down the total outstanding exposure of a particular member. However, the extent to which a CCP must apply these risk mitigation tools is dictated by the amount of unsettled trades that remain outstanding as well as the time during which the CCP remains exposed to these risks. Thus, by reducing the amount of unsettled trades and the period of time during which the CCP is exposed to such trades, the Commission preliminarily anticipates a reduction in financial resource obligations for CCP members. This anticipated benefit to CCP members should have, in turn, a positive impact on the liquidity risks and costs faced by broker-dealers and investors. First, it should reduce the amount of financial resources that CCP member broker-dealers may have to provide for the CCP's risk management process, both on an ordinary course basis as well as in less predictable or procyclical instances where adverse general market conditions or a CCP member default results in a sudden liquidity demand by the CCP for additional financial resources from market participants.[157] This reduction in the potential need for financial resources should, in turn, reduce the liquidity costs and capital demands clearing broker-dealers face in the current environment.

Second, this anticipated reduction in CCP financial resource demands on its members may, in turn, result in reduced margin charges and other fees that clearing broker-dealers may pass down to introducing broker-dealers, institutional investors and retail investors, thereby reducing trading costs and freeing up capital for deployment elsewhere in the markets by those entities. Third, a shorter settlement cycle should enable market participants to gain quicker access to funds and securities following trade execution, which should further reduce liquidity risks and financing costs faced by market participants who may use those proceeds to transact in other markets,

[152] 17 CFR 240.15c6–1(d).

[153] Rule 15c6–1(a) provides that the payment of funds and delivery of securities (other than certain securities exempted) must occur no later than T+3, unless otherwise expressly agreed to by the parties at the time of the transaction. At the time that Rule 15c6–1(a) was adopted, the Commission stated its belief that usage of this provision "was intended to apply only to unusual transactions, such as seller's option trades that typically settle as many as sixty days after execution as specified by the parties to the trade at execution." T+3 Adopting Release, 58 FR at 52902. The Commission preliminarily believes that use of this provision should continue to be applied in limited cases to ensure that the settlement cycle set by Rule 15c6–1(a) remains a standard settlement cycle.

[154] For a more detailed discussion on risk, *see supra* Part II.A.4.

[155] The costs associated with deploying such resources are ultimately borne by the CCP members, both in the ordinary course of the CCP's daily risk management process and in the event of an extraordinary event where members may be subject to additional liquidity assessments. As discussed earlier, these costs may be passed on through the CCP members to broker-dealers and investors.

[156] *See supra* note 77 (discussing mutual fund settlement timeframes and related liquidity risk, which may be exacerbated during times of stress). The Commission preliminarily believes that shortening settlement timeframes for portfolio securities to T+2 will assist in reducing liquidity and other risks for funds that must satisfy investor redemption requests subject to shorter settlement timeframes (*e.g.,* T+1).

[157] *See supra* Part II.A.4. for a discussion regarding procyclicality. *See also* DTCC Recommends Shortening the U.S. Trade Settlement Cycle, *supra* note 76.

including the derivatives markets and non-U.S. markets, that operate on a mismatched settlement cycle. Similarly, by more closely aligning and harmonizing the settlement cycles across markets, the rule would reduce the degree and period of time during which market participants are exposed to credit, market and liquidity risk arising from unsettled transactions.

The Commission also preliminarily believes that the reduction in credit, market and liquidity risks described above should reduce systemic risk. Because of the procyclicality of financial resource and other liquidity demands by CCPs and other market participants during times of market volatility and stress, efforts to reduce these liquidity demands through a shorter settlement cycle are expected to reduce systemic risk.[158] As the Commission noted in adopting Rule 15c6–1 in 1993, reducing the total volume and value of outstanding obligations in the settlement pipeline at any point in time will better insulate the financial sector from the potential systemic consequences of serious market disruptions.[159] The Commission believes these views are even more apt today given the increasing interconnectivity and interdependencies among markets and market participants.[160] In addition, reducing the period of time during which a CCP is exposed to credit, market and liquidity risk should enhance the overall ability of the CCP to serve as a source of stability and efficiency in the national clearance and settlement system, thereby reducing the likelihood that disruptions in the clearance and settlement process will trigger consequential disruptions that extend beyond the cleared markets.[161]

Lastly, the Commission preliminarily believes that significant advances in technology and substantive changes in market infrastructures and operations that have occurred since 1993, and which we believe are widely assimilated into market practices, provide a basis to accommodate a further reduction in the standard settlement cycle to two days. For example, the market has improved the confirmation/affirmation and matching process through the emergence and integration of Matching/ETC Providers into the national clearance and settlement infrastructure. According to statistics published by DTCC in 2011 regarding affirmation rates achieved through industry utilization of a certain Matching/ETC Provider, on average, 45% of trades were affirmed on trade date, while 90% were affirmed on T+1, and 92% were affirmed by noon on T+2.[162] Additionally, the number of securities immobilized or dematerialized in U.S. markets has continued to substantially increase in recent years.[163]

The Commission notes that progress by market participants in this respect has become particularly evident in recent years. For example, DTCC published in 2011 a report that included a review of the status of the building blocks originally identified in the SIA Business Case Report.[164] According to the DTCC report, many of the impediments identified in the SIA Business Case Report have since been resolved and significant progress has been made toward achieving many of the building blocks. Since that 2011 report was published, the Commission has observed that market participants have begun to accelerate collective progress, largely under the auspices of the ISC, to prepare for a transition to a T+2 settlement cycle.[165]

More recently, the ISC, through its T+2 Playbook, has mapped out the technological and operational changes necessary to support a two day settlement cycle. In many cases, these changes require only incremental modifications to existing market infrastructures and systems and processes. For example, the Commission preliminarily anticipates that a shortened settlement cycle may require incremental increases in utilization by certain market participants of Matching/ETC Providers, with a focus on improving and accelerating affirmation/confirmation processes, as well as relative enhancements to efficiencies in the services and operations of the Matching/ETC Providers themselves. The Commission preliminarily expects that these changes may be necessary in a T+2 environment because certain steps related to the allocation, confirmation, and affirmation of institutional trades will need to occur earlier in the settlement cycle compared to in a T+3 environment.[166] The Commission also notes that market participants have raised a number of additional anticipated benefits that may arise from shortening the settlement cycle to T+2. In particular, the Commission observes that the ISC identified the reduction in operational costs as an additional reason to move to a T+2 settlement cycle at this time.[167]

For all the reasons cited above, the Commission preliminarily believes that it is appropriate to shorten the standard settlement cycle from T+3 to T+2. The Commission, however, seeks public comment on these, and other potential benefits, that may be realized in the current market structure by shortening the standard settlement cycle to T+2.

Notwithstanding the Commission's preliminary expectation of the risk-reducing benefits noted above, the Commission also understands that the standard settlement cycle can have a significant influence upon the activities and operations of a wide range of market participants—from individual investors to financial services professionals to systemically important FMUs, such as certain registered clearing agencies. When the Commission proposed Rule 15c6–1 in 1993, a number of commenters raised for consideration potential costs and burdens that various market participants would have to assume to ensure compliance with an orderly transition

[158] *See* DTCC Recommends Shortening the U.S. Trade Settlement Cycle, 2, 3, *supra* note 76. *See also, infra* Part VI.C.1.

[159] *See* T+3 Adopting Release, 58 FR at 52894; *see also* ISC White Paper, *supra* note 77 (noting the benefits associated with shortening the settlement cycle); BCG Study, *supra* note 107 (discussing systemic risk).

[160] *See* Clearing Agency Standards Adopting Release, 77 FR at 66254 (discussing the need for default procedures to allow the clearing agency to take action resulting from one or more member defaults in order to contain resultant losses and liquidity pressures). Also, for a discussion on issues related to interconnectivity and interdependence of market participants, *see* DTCC, Understanding Interconnectedness Risks—To Build a More Resilient Financial System (Oct. 2015), *http://www.dtcc.com/news/2015/october/12/understanding-interconnectedness-risks-article.*

[161] *See* CCA Proposal, 79 FR at 29598. Clearing members are often members of larger financial networks, and the ability of a covered clearing agency to meet payment obligations to its members can directly affect its members' ability to meet payment obligations outside of the cleared market. Thus, management of liquidity risk may mitigate the risk of contagion between asset markets.

[162] DTCC Proposal to Launch a Cost-Benefit Analysis, *supra* note 68, at 12.

[163] *See generally* DTCC, Strengthening the U.S Financial Markets: A Proposal to Fully Dematerialize Physical Securities, Eliminating the Cost and Risks They Incur, A White Paper to the Industry, at 1, 3–6 (July 2012), *http://www.dtcc.com/news/2012/july/01/proposal-to-fully-dematerialize-physical-securities-eliminating-the-costs-and-risks-they-incur.*

[164] *See* DTCC Proposal to Launch a Cost-Benefit Analysis, at 12–15.

[165] *See generally* the industry documentation available via the T+2 Settlement Project Web site (*www.UST2.com*) established by the ISC in 2014 as a public information hub for information relating to the T+2 initiative, including details pertaining to the progress being made to move toward a T+2 settlement cycle by the ISC and working groups. *See also, infra* Part VI.C.5.a. for a discussion of the impact of technological improvements on costs estimates to comply with a shorter standard settlement cycle.

[166] *See generally* BCG Study, *supra* note 107.

[167] *See* Press Release, DTCC, Industry Steering Committee and Working Group Formed to Drive Implementation of T+2 in the U.S. (Oct. 2014), *http://www.dtcc.com/news/2014/october/16/ust2.aspx.*

from T+5 to T+3.[168] In adopting the final rule and establishing a standard settlement cycle of T+3, the Commission acknowledged the likelihood of market participant costs and burdens, but ultimately determined, based on consideration of the anticipated benefits and contemporaneous industry initiatives to achieve a T+3 environment, to adopt the rule.[169] In addition, the Commission noted that calibrating the final rule's implementation date to afford market participants sufficient time to prepare for a T+3 environment was an important measure to address commenters' concerns about burdens and costs.[170]

For the purposes of its current proposal, the Commission acknowledges that a transition from a T+3 to T+2 standard settlement cycle, and implementation of the necessary operational, technical, and business changes, will likely result in varying burdens, costs and benefits for a wide range of market participants. According to the BCG Study published in 2012, the total industry investments would be $550 million for a T+2 settlement cycle and nearly $1.8 billion for a T+1 settlement cycle.[171] The Commission has remained mindful and observant of industry initiatives and progress targeted at facilitating an environment where a shortened standard settlement cycle could be achieved in a manner that reduces risk for market participants while also minimizing the likelihood of disruptive burdens and costs.

Having taken these industry initiatives and their relative progress into careful consideration, the Commission preliminarily believes there has been collective progress by market participants sufficient to facilitate a transition to a T+2 environment[172] and believes that this progress will continue, such as through the increased use of the matching services provided by Matching/ETC Providers to achieve STP.[173] Therefore, the Commission preliminarily believes that the risk-reducing benefits described above justify the anticipated burdens and costs of moving to a T+2 settlement cycle at this time.

Accordingly, similar to the approach taken when Rule 15c6–1 was adopted, the Commission anticipates providing a compliance date that would afford market participants sufficient time to complete any outstanding preparations in a manner that minimizes transition risks and avoids disruptive or inefficient burdens and costs. The Commission, however, is seeking public comment on the burdens and costs associated with implementing this proposal.

4. Consideration of Settlement Cycle Shorter than T+2

The Commission recognizes that amending Rule 15c6–1(a) to shorten the standard settlement cycle further than T+2 (*i.e.,* T+1 or T+0) could potentially result in further risk reduction in the national clearance and settlement system, and accordingly seeks input from commenters on a future shortening of the settlement cycle, including relevant factors.[174]

Such potential risk reduction notwithstanding, the Commission preliminarily believes that shortening the standard settlement cycle to T+2 is the appropriate step to take at this time for several reasons. Information from market participants regarding the technologies and processes used to settle securities transactions in the U.S. indicates that a successful transition to a settlement cycle that is shorter than T+2 would comparatively require larger investments by market participants to adopt new systems and processes.[175] In particular, transitioning to a settlement cycle that is shorter than T+2 would require near real-time capabilities for certain settlement processes, such as institutional matching.

Additionally, the lead time and level of coordination by market participants required to implement the changes to technology and post-trade processes that would enable a transition to a T+1 standard settlement cycle could be longer and greater than the time and coordination required to move to a T+2 settlement cycle in the near term.[176] Accordingly, the additional time that market participants may need to transition to T+1 settlement cycle in a coordinated fashion would delay the realization of the expected risk-reducing benefits of shortening the settlement cycle.

Also, movement towards adoption of a standard settlement cycle that is shorter than T+2 at this time may increase funding costs for market participants who rely on the settlement of foreign currency exchange (or ''FX'') transactions to fund securities transactions that settle regular way. Because the settlement of FX transactions occurs on T+2, market participants who seek to fund a cross-border securities transaction with the proceeds of an FX transaction would, in a T+1 or T+0 environment, be required to fund the securities transaction before the FX transaction settled. Finally, the Commission preliminarily believes that shortening the settlement cycle to T+2 would assist market participants with the settlement of cross-border transactions because the U.S. settlement cycle would be harmonized with non-U.S. markets that have already transitioned to a T+2 settlement cycle.[177]

B. Impact on Other Commission Rules

1. General

The Commission has reviewed its existing regulatory framework to consider the potential impact a T+2 standard settlement cycle may have on other Commission rules. Based on this review, the Commission preliminarily believes that no amendments to other Commission rules are required at this time. However, shortening the standard settlement cycle to T+2 could have ancillary consequences for how market participants comply with existing regulatory obligations. In this regard, some Commission rules require market participants to perform certain regulatory obligations on settlement date, within a specified number of business days after the settlement date, or are otherwise keyed off of settlement date. Below are examples, by way of illustration, of such rules. If the standard settlement cycle is shortened by one day, as proposed, market participants will have to perform those regulatory obligations within a shorter time period, and as a result it may become necessary to implement changes to existing internal policies and processes.[178] The Commission requests comment on whether it is necessary to amend or provide interpretive guidance

[168] T+3 Adopting Release, 58 FR at 52895. As discussed more fully in the release, cost issues included, but were not limited to, costs associated with the receipt of confirmations, payments by check, financing costs, interest expenses, and hiring additional personnel.

[169] *Id.*

[170] *Id.* at 52897.

[171] *See* BCG Study, *supra* note 107, at 9, 40. *See also, infra* Part VI.C.5.1.a. for discussion of certain limitations of the BCG Study.

[172] *See supra* note 87 for a list of the ten building blocks identified in the July 2000 SIA Business Case Report.

[173] *See infra* Part VI.A. for a discussion of certain market frictions related to investments required to implement a shorter settlement cycle.

[174] *See infra* Part V for related requests for comment.

[175] *See* BCG Study, *supra* note 107. *See also, infra* Part VI.D.1. for a discussion on the BCG Study in the context of a T+1 settlement cycle alternative.

[176] *See* BCG study, *supra* note 107, at 11, 48–49.

[177] For further discussion regarding the potential benefits of harmonization of settlement cycles for market participants engaging in cross-border transactions, *see infra* Part VI.C.1.

[178] For a discussion of the economic implications of shortening the standard settlement cycle to T+2 on other Commission rules, see Part VI.C.3. of this release.

concerning any other Commission rules that may be impacted by shortening the standard settlement cycle to T+2. The Commission also requests comment on the proposed amended Regulation SHO interpretation set forth below.[179]

2. Regulation SHO

Shortening the standard settlement cycle to T+2 would reduce the timeframes to effect a close-out under Rule 204 of Regulation SHO (''Rule 204'').[180] Rule 204 provides that a participant [181] of a registered clearing agency must deliver securities to a registered clearing agency for clearance and settlement on a long or short sale in any equity security by settlement date, or if a participant has a fail to deliver position, the participant shall, by no later than the beginning of regular trading hours on the applicable close-out date, immediately close-out the fail to deliver position by borrowing or purchasing securities of like kind and quantity.[182] If a fail to deliver position results from a short sale, the participant must close-out the fail to deliver position by no later than the beginning of regular trading hours on the settlement day following the settlement date.[183] Under the current T+3 standard settlement cycle, the close-out for short sales is required by the beginning of regular trading hours on T+4. If a fail to deliver position results from a long sale or bona fide market making activity, the participant must close-out the fail to deliver position by no later than the beginning of regular trading hours on the third consecutive settlement day following the settlement date.[184] Under the current T+3 standard settlement cycle, the close-out for long sales or bona fide market making activity is required by the beginning of regular trading hours on T+6. However, if a T+2 settlement cycle is implemented, the existing close-out requirement for fail to deliver positions resulting from short sales would be reduced from T+4 to T+3 based on the existing definition of settlement date in Rule 204.[185] Similarly, with regard to fail to deliver positions resulting from long sales or bona fide market making activity, the existing close-out requirement would be reduced from T+6 to T+5.

Shortening the standard settlement cycle to T+2 may also impact the application of other provisions in Regulation SHO. Under Rule 200(g) of Regulation SHO,[186] a broker-dealer may only mark a sale as ''long'' if the seller is ''deemed to own'' the security being sold under paragraphs (a) through (f) of Rule 200 [187] and either (i) the security is in the broker-dealer's physical possession or control; or (ii) it is reasonably expected that the security will be in the broker-dealer's possession or control by settlement of the transaction.[188] In the Rule 204 Adopting Release,[189] the Commission stated that ''if a person that has loaned a security to another person sells the security and a bona fide recall of the security is initiated within two business days after trade date, the person that has loaned the security will be 'deemed to own' the security for purposes of Rule 200(g)(1) of Regulation SHO, and such sale will not be treated as a short sale . . . . In addition, a broker-dealer may mark such orders as 'long' sales provided such marking is also in compliance with Rule 200(c) of Regulation SHO.'' [190] Thus, broker-dealers that initiate bona fide recalls [191] on T+2 of loaned securities that sellers are ''deemed to own'' under paragraphs (a) through (f) of Rule 200 may currently mark such orders as ''long.'' [192] The Commission limited this interpretation of Rule 200(g)(1) regarding the marking of sales of loaned securities ''long'' to those in which bona fide recalls are initiated on or before the business day preceding settlement date under the current T+3 settlement cycle because such recalls would likely be delivered, under the industry standard for loaned but recalled securities,[193] within three business days after initiation of a recall. As a result, such recalled securities would be available by T+5 to close-out the fail to deliver on a ''long'' sale, or before the close-out for fails on sales marked ''long'' is otherwise required by Rule 204 (*i.e.,* no later than the beginning of regular trading hours on T+6).

However, if a T+2 standard settlement cycle is implemented, bona fide recalls initiated on T+2 (per footnote 55 in the Rule 204 Adopting Release described above) would likely not be delivered before the close-out requirement for fails on sales marked ''long'' under Rule 204 (*i.e.,* no later than the beginning of regular trading hours on T+5 under a T+2 settlement cycle).[194] Accordingly, the Commission preliminarily believes that it would be appropriate to modify its interpretation to account for a T+2 standard settlement cycle to help ensure that such loaned but recalled securities would be available by T+4 before the

[179] The Commission further notes that certain SRO rules reference Rule 15c6–1 or currently define ''regular way'' settlement as occurring on T+3 and, as such, may need to be amended in connection with shortening the standard settlement cycle to T+2. Further, certain timeframes or deadlines in SRO rules key off of the current settlement date, either expressly or indirectly. In such cases, the SROs may need to amend these rules in connection with shortening the standard settlement cycle to T+2.

[180] 17 CFR 242.204.

[181] For purposes of Regulation SHO, the term ''participant'' has the same meaning as in Section 3(a)(24) of the Exchange Act, 15 U.S.C. 78c(a)(24). *See* Amendments to Regulation SHO, Exchange Act Release No. 60388 (July 27, 2009), 74 FR 38266, 38268 n.34 (July 31, 2009) (''Rule 204 Adopting Release'').

[182] 17 CFR 242.204(a).

[183] *Id.*

[184] *See* 17 CFR 242.204(a)(1) and (a)(3).

[185] *See* 17 CFR 242.204(g)(1).

[186] *See* 17 CFR 242.200(g).

[187] *See* 17 CFR 242.200(a)–(f).

[188] *See* 17 CFR 242.200(g)(1).

[189] *See* Rule 204 Adopting Release, 74 FR at 38270.

[190] *Id.* at 38270 n.55 (citations omitted).

[191] Because a recall must be initiated by no later than the business day preceding the settlement date to be delivered prior to the required Rule 204 close-out, any cancellation or modification of a recall of a security would not constitute a bona fide recall.

[192] In the release adopting the ''naked'' short selling antifraud rule, Rule 10b–21, 17 CFR 240.10b–21, we stated that ''a seller would not be making a representation at the time it submits an order to sell a security that it can or intends to deliver securities on the date delivery is due if the seller submits an order to sell securities that are held in a margin account but the broker-dealer has loaned out the shares pursuant to the margin agreement. Under such circumstances, it would be reasonable for the seller to expect that the securities will be in the broker-dealer's physical possession or control by settlement date.'' *See* ''Naked'' Short Selling Antifraud Rule, Exchange Act Release No. 58774 (Oct. 14, 2008), 73 FR 61666, 61672 (Oct. 17, 2008). Thus, a seller of securities would not be deemed to be deceiving a broker-dealer under Rule 10b–21 if the seller submits a sell order to an executing broker-dealer and informs the executing broker-dealer that the seller's shares are in the physical possession or control of a prime broker, but neither the seller nor the executing broker-dealer knows or has reason to know that the prime broker has loaned out the securities pursuant to a margin agreement. We note that this interpretation, which concerns whether a seller has made a misrepresentation regarding the deliverability of its securities in time for settlement, does not apply to rules other than Rule 10b–21.

[193] *See* Master Securities Loan Agreement (''MSLA''), Paragraph 6.1(a), discussing the termination of a loan of securities (''Unless otherwise agreed, either party may terminate a Loan on a termination date established by notice given to the other party prior to the Close of Business on a Business Day. The termination date established by a termination notice shall be a date no earlier than the standard settlement date that would apply to a purchase or sale of the Loaned Securities (in the case of notice given by Lender) or the noncash Collateral securing the Loan (in the case of a notice given by Borrower) entered into at the time of such notice, which date shall, unless Borrower and Lender agree to the contrary, be (i) in the case of Government Securities, the next Business Day following such notice and (ii) in the case of all other Securities, the third Business Day following such notice''). A sample MSLA can be found at: *http://www.sec.gov/Archives/edgar/data/59440/000095014405003873/g94498exv10w1.htm.*

[194] We note that a participant may not offset the amount of its fail to deliver position with shares that the participant receives or will receive during the applicable close-out date (*i.e.,* during T+4 or T+6, as applicable) but must take affirmative action, by borrowing or purchasing securities of like kind and quantity, at or before the beginning of regular trading hours on the applicable close-out date. *See* Rule 204 Adopting Release, *supra* note 181, 74 FR at 38272.

close-out period for fails on sales marked ''long'' would otherwise be required by Rule 204 (*i.e.,* no later than the beginning of regular trading hours on T+5). Specifically, if a T+2 standard settlement cycle is implemented, a broker-dealer seeking to mark an order ''long'' using this interpretation would need to initiate a bona fide recall of a security on the settlement day before the settlement date (*i.e.,* T+1), provided the seller is also net long under Rule 200(c) of Regulation SHO. Otherwise, the general requirements of Rule 200 of Regulation SHO would govern, and sales of loaned securities could only be marked ''long'' if the seller is ''deemed to own'' the security being sold and either (i) the security is in the broker-dealer's physical possession or control; or (ii) it is reasonably expected that the security will be in the broker-dealer's possession or control by settlement of the transaction.[195]

3. Financial Responsibility Rules Under the Exchange Act

Certain provisions of the Commission's broker-dealer financial responsibility rules [196] reference explicitly or implicitly the settlement date of a securities transaction. For example, paragraph (m) of Exchange Act Rule 15c3–3 uses settlement date to prescribe the timeframe in which a broker-dealer must complete certain sell orders on behalf of customers.[197] As another example, settlement date is incorporated into paragraph (c)(9) of Exchange Act Rule 15c3–1,[198] which explains what it means to ''promptly transmit'' funds and ''promptly deliver'' securities within the meaning of paragraphs (a)(2)(i) and (a)(2)(v) of Rule 15c3–1.[199] Further, the concepts of promptly transmitting funds and promptly delivering securities are incorporated in other provisions of the financial responsibility rules, including paragraphs (k)(1)(iii), (k)(2)(i), and (k)(2)(ii) of Rule 15c3–3,[200] paragraph (e)(1)(A) of Rule 17a–5,[201] and paragraph (a)(3) of Rule 17a–13.[202] The Commission is seeking comment regarding the potential impact that shortening the standard settlement cycle from T+3 to T+2 may have on the ability of broker-dealers to comply with the Commission's financial responsibility rules.

4. Exchange Act Rule 10b–10

Providing customers with confirmations pursuant to Exchange Act Rule 10b–10 serves a significant investor protection function. Confirmations provide customers with a means of verifying the terms of their transactions, alerting investors to potential conflicts of interest with their broker-dealers, acting as a safeguard against fraud, and providing investors a means to evaluate the costs of their transactions and the quality of their broker-dealers' execution.[203]

Rule 10b–10 requires that a broker-dealer send a customer a written confirmation disclosing information relevant to the transaction ''at or before completion'' of the transaction.[204] Generally, Rule 15c1–1 defines ''completion of the transaction'' to mean the time when: (i) A customer is required to deliver the security being sold; (ii) a customer is required to pay for the security being purchased; or (iii) a broker-dealer makes a bookkeeping entry showing a transfer of the security from the customer's account or payment by the customer of the purchase price.[205]

While the confirmation must be sent ''at or before completion'' of the transaction, Commission rules do not require that the customer receive a confirmation prior to settlement. In connection with the adoption of amendments to Rule 15c6–1 in 1993 to establish a T+3 standard settlement cycle, the Commission at that time noted that broker-dealers typically send customer confirmations on the day after trade date. Today, the Commission understands that, while broker-dealers may continue to send physical customer confirmations on the day after trade date, broker-dealers may also send electronic confirmations to customers on trade date. Accordingly, the Commission preliminarily believes that implementation of a T+2 settlement cycle will not create problems with regard to a broker-dealer's ability to comply with the requirement under Rule 10b–10 to send a confirmation ''at or before completion'' of the transaction. Nonetheless, the Commission notes that broker-dealers will have a shorter timeframe to comply with the requirements of Rule 10b–10 in a T+2 settlement cycle.

IV. Compliance Date

The Commission recognizes that the compliance date for the proposed amendment to Rule 15c6–1(a) must allow sufficient time for broker-dealers, clearing agencies, and other market participants to plan for, implement and test the changes to their systems, operations, policies and procedures in a manner that allows for an orderly transition to a T+2 standard settlement cycle, taking into account any burdens on broker-dealers, clearing agencies, institutional and retail investors and others, and any potential disruptions in the securities markets. In addition, the Commission recognizes that a compliance date should provide sufficient time for broker-dealers to address concerns regarding the potential for the transition to a T+2 settlement cycle to inconvenience certain retail investors.[206] As previously mentioned, failure to appropriately implement a transition to T+2 settlement may heighten certain operational risks for the markets.

On the other hand, delaying the transition to a T+2 standard settlement cycle further than is necessary for these activities to occur would delay realization of the benefits that are expected to result from shortening the settlement cycle.

As of March 2016, the industry identified September 5, 2017 as the target date for the transition to a T+2 settlement cycle to occur,[207] and, as noted above, the ISC has proposed a timeline for implementing the necessary industry changes. The September 5, 2017 T+2 implementation date was based on a timeline reflected in the T+2 Playbook, which identified certain regulatory and industry contingencies

[195] *See* 17 CFR 242.200(g).

[196] The term ''financial responsibility rules,'' for purposes of this release, includes any rule adopted by the Commission pursuant to Sections 8, 15(c)(3), 17(a) or 17(e)(1)(A) of the Exchange Act, any rule adopted by the Commission relating to hypothecation or lending of customer securities, or any rule adopted by the Commission relating to the protection of funds or securities. The Commission's broker-dealer financial responsibility rules include Exchange Act Rules 15c3–1 (17 CFR 240.15c3–1), 15c3–3 (17 CFR 240.15c3–3), 17a–3 (17 CFR 240.17a–3), 17a–4 (17 CFR 240.17a–4), 17a–5 (17 CFR 240.17a–5), 17a–11 (17 CFR 240.17a–11), and 17a–13 (17 CFR 240.17a–13).

[197] 17 CFR 240.15c3–3(m).

[198] 17 CFR 240.15c3–1(c)(9).

[199] 17 CFR 240.15c3–1(a)(2)(i), (a)(2)(v).

[200] 17 CFR 240.15c3–3(k)(1)(iii), (k)(2)(i), (k)(2)(ii).

[201] 17 CFR 240.17a–5(e)(1)(A).

[202] 17 CFR 240.17a–13(a)(3).

[203] *See* Confirmation Requirements for Transactions of Security Futures Products Effected in Futures Accounts, Exchange Act Release No. 46471 (Sept. 6, 2002), 67 FR 58302, 58303 (Sept. 13, 2002).

[204] *See* 17 CFR 240.10b–10(a).

[205] *See* 17 CFR 240.15c1–1(b).

[206] A shortened settlement cycle may require, for example, certain retail investors to fund their securities transactions earlier, and may require broker-dealers to educate their customers, update communications, and take other steps to minimize potential burdens on retail investors.

[207] *See* Press Release, ISC, US T+2 ISC Recommends Move to Shorter Settlement Cycle On September 5, 2017 (Mar. 7, 2016), *http://www.ust2.com/pdfs/T2-ISC-recommends-shorter-settlement-030716.pdf.* In this press release, the ISC noted that ''[t]he T+2 implementation date was chosen by the T+2 ISC after careful consideration, input from industry participants and consultation with other markets globally.'' *Id.*

that would have to transpire, including necessary regulatory actions, over a period of approximately a year and a half.[208] If the proposed amendment to Rule 15c6–1(a) is adopted, the Commission then would consider that date as well as other dates in setting a compliance date.[209] The Commission would take into consideration such factors as any investor outreach efforts and other changes that firms may need to undertake to address concerns that the transition may temporarily inconvenience retail investors. The compliance date would be set at an appropriate time to help avoid, in light of the scope of the industry changes that will be required, setting a transition occurring too quickly, which could have negative consequences for the industry and investors, and could result in disruptions to the securities markets.

V. Request for Comment

The Commission is requesting comment regarding all aspects of the proposed amendment to Rule 15c6–1(a) that would shorten the current T+3 standard settlement cycle to T+2 for securities transactions, subject to the exceptions in the rule. The Commission also seeks comment on the particular questions set forth below, and encourages commenters to submit any relevant data or analysis in connection with their answers.

1. The Commission invites commenters to address the merits of the proposed amendment to Rule 15c6–1(a). Is it appropriate to amend Rule 15c6–1 to shorten the standard settlement cycle to T+2? Why or why not?

2. The Commission invites commenters to provide their views on whether the standard settlement cycle should instead be shortened to T+1 or some other shorter settlement cycle. Why or why not?

3. Is the current scope of securities covered by Rule 15c6–1, including the exemptions provided in Rule 15c6–1(a), still appropriate in light of the Commission's proposal to shorten the standard settlement cycle to T+2? Are there any asset classes, securities as defined in Section 3(a)(10) of the Exchange Act, or types of securities transactions for which the proposed amendment to Rule 15c6–1(a) would present compliance problems for broker-dealers? What would be the quantitative and qualitative impacts of maintaining those exemptions?

4. Are there market participants today that agree to settle securities transactions later than T+3? If so, to what extent does this occur and what are the circumstances that motivate these market participants to settle later than T+3? If Rule 15c6–1(a) is amended to shorten the standard settlement cycle from T+3 to T+2, is it anticipated that these market participants would continue to settle securities transactions on a longer settlement cycle and/or is it anticipated that additional market participants would settle securities transactions later than T+2? Conversely, are there circumstances where expedited settlements (on timeframes less than T+3) are conducted, and if so, how often and under what circumstances? What are the circumstances that motivate earlier settlements? If Rule 15c6–1(a) is amended to shorten the standard settlement cycle from T+3 to T+2, how will the proposed amendment affect these expedited settlement decisions?

5. Should the temporary exemptive relief from compliance with Rule 15c6–1 for transactions in security-based swaps be extended?[210] If so, why or why not?

6. Should the Commission consider any amendments to other provisions of Rule 15c6–1 for the purposes of shortening the standard settlement cycle to T+2? If so, which provisions and why?

7. In conjunction with a change to the standard settlement cycle from T+3 to T+2 under Rule 15c6–1(a), should the Commission amend the settlement cycle timeframe under Rule 15c6–1(c) for firm commitment offerings priced after 4:30 p.m. Eastern Time from the current requirement of T+4 to a settlement cycle timeframe shorter than T+4, such as T+3 or T+2? If so, what settlement timeframe would be appropriate for transactions covered by Rule 15c6–1(c)? What would be the impact on risk, costs or operations of retaining the current provision for firm commitment offerings but shortening the settlement cycle to T+2 for regular-way transactions, as proposed? What would be the impact on risk, costs or operations of shortening the settlement cycle for such offerings to a T+3 or T+2 timeframe? Please provide data to the extent feasible on the costs/burdens that might be incurred/borne, and benefits that may be realized, by market participants as a result of shortening settlement cycle for firm commitment offerings priced after 4:30 p.m. Eastern Time.

8. Are the conditions set forth in the Commission's exemptive order for securities traded outside the United States still appropriate?[211] If not, why not? If the exemption should be modified, how should it be modified and why? Are the conditions set forth in the Commission's exemptive order for variable annuity contracts still appropriate?[212] If not, why not? If the exemption should be modified, how should it be modified and why? Are there other securities or types of transactions for which the Commission should consider providing exemptive relief under Rule 15c6–1(b)?

9. Commenters are invited to provide data on the costs/burdens that may be incurred/borne, and benefits that may be realized, by any category of persons as a result of the proposed amendment to Rule 15c6–1(a), including, without limitation, broker-dealers, clearing agencies, custodians, institutional investors, retail investors, and others.

10. Would shortening the standard settlement cycle to T+2 as proposed create difficulties for broker-dealers to comply with the requirements of Rule 15c6–1? Please provide examples.

11. How would retail investors be impacted by new processes that broker-dealers may implement in support of a T+2 standard settlement cycle? For example, would broker-dealers require retail investors to have a funded cash account prior to trade execution? Would shortening the standard settlement cycle to T+2 result in retail investors encountering ongoing costs due to a delay in their ability to make investments? Would shortening the standard settlement cycle to T+2 result in any benefits to retail investors?

12. In addition to the prospective impact on costs/burdens, the Commission seeks comments related to the credit, market, liquidity, legal, and operational risks (increase or decrease) associated with shortening the standard settlement cycle, and in particular, quantification of such risks.

13. What impact, if any, would the proposed amendment to Rule 15c6–1(a) have on market participants who engage in cross-border transactions? To what extent would harmonization of the U.S. settlement cycle with other markets that are on a T+2 settlement cycle result in increased or decreased operational costs to market participants? To what extent

[208] *See* T+2 Industry Playbook, *supra* note 126.

[209] The Commission understands that since the publication of the T+2 Playbook in December 2015, industry planning and preparation for a move to T+2 has continued. In considering an appropriate compliance date, should the Commission determine to adopt the proposed amendment discussed herein, the Commission could take into account the current status of industry preparation at that time, including progress that has occurred since the publication of the T+2 Playbook timeline.

[210] As noted in note 10, *supra,* certain of the exemptions included in the Commission's 2011 exemptive order (including the exemption for Rule 15c6–1) are set to expire on February 5, 2017.

[211] *See supra* note 147 and accompanying text.

[212] *See supra* note 150 and accompanying text.

would harmonization increase or decrease risks associated with cross-border transactions or related transactions, such as financing transactions?

14. What impact, if any, would the proposed amendment to Rule 15c6–1(a) have on market participants who engage in trading activity across various financial product classes, including derivatives and ETPs? [213] For example, would shortening the settlement cycle for ETPs affect the costs, such as net capital charges related to collateral requirements, of creating or redeeming shares in ETPs that hold portfolio securities that are on a different settlement cycle? [214] If so, would such a change in costs affect the efficiency or effectiveness of the arbitrage between an ETP's secondary market price and the value of its underlying assets?

15. To what extent, if any, would a T+2 standard settlement cycle impact the interaction of the creation and redemption process with the clearance and settlement process?

16. What impact, if any, would shortening the standard settlement cycle to T+2 have on the levels of liquidity risk that currently exist as a result of mismatches between the settlement cycles for different markets? For example, would shortening the standard settlement cycle to T+2 reduce the level of liquidity risk mutual funds face as a result of the mismatch between the current T+1 settlement cycle for transactions in open-end mutual fund shares that are settled through NSCC and the T+3 settlement cycle that is applicable to many portfolio securities held by mutual funds?

17. The Commission seeks comment on the status and readiness of the technology and processes in the industry that could support a T+2 or shorter settlement cycle at this time, including data metrics used to substantiate such support. The Commission also seeks comment on the additional costs, including changes to business processes, associated with the transition to T+1 or a shorter standard settlement cycle relative to the costs with respect to a transition to a T+2 standard settlement cycle, as well as any operational or technological obstacles that market participants may need to overcome before such shorter standard settlement cycle could be implemented effectively. In addition, the Commission seeks comment on the additional benefits that may be realized by market participants as a result of shortening the standard settlement cycle to T+1 or a shorter settlement cycle relative to benefits with respect to a T+2 standard settlement cycle, as well as the time that market participants would need to make necessary system changes in support of a transition to a T+1 standard settlement cycle.

18. Which, if any, Commission rules would need to be amended, and is there a need to provide interpretive guidance concerning any Commission rules, to accommodate a T+2 standard settlement cycle? The Commission invites commenters to describe any concerns they may have regarding such prospective changes to Commission rules and/or new interpretive guidance.

19. If a T+2 standard settlement cycle is adopted, the Commission's Regulation SHO marking interpretation would necessitate loaned but recalled securities being recalled on T+1 instead of T+2. What operational issues might arise if this were the case? Would specific operational difficulties arise for persons that lend securities?

20. What impact, if any, would the proposed amendment to Rule 15c6–1(a) have on the ability of broker-dealers to comply with existing requirements under the Commission's financial responsibility rules? In particular, would a T+2 standard settlement cycle or a shorter standard settlement cycle create operational difficulties or other problems for broker-dealers that may impact their ability to comply with the Commission's financial responsibility rules? In addition, would the proposed amendment to Rule 15c6–1(a) increase the costs and burdens that broker-dealers may incur in order to comply with the Commission's financial responsibility rules?

21. Would a T+2 standard settlement cycle create compliance or operational problems with regard to a broker-dealer's ability to meet the requirement under Rule 10b–10 to send a confirmation ''at or before completion'' of the transaction?

22. Would the adoption of a T+2 settlement cycle create any legal or operational concerns for issuers or broker-dealers in their ability to comply with the prospectus delivery obligations under Rule 172? [215]

23. Is the status of the building blocks toward implementing a T+1 settlement cycle, as discussed in the DTCC Proposal to Launch a Cost-Benefit Analysis, accurate and, if not, what efforts would need to be made to advance the building blocks to support a T+2 settlement cycle?

24. What parameters should guide the Commission in identifying an appropriate compliance date for the proposed amendment to Rule 15c6–1? Please provide analysis to support your position. The Commission encourages commenters to include in their responses discussion regarding the implementation date proposed by the ISC (*i.e.,* September 5, 2017). Specifically, the Commission notes that there are a number of milestones and dependencies described in the T+2 Playbook, and solicits comment on the length of the compliance period that would be needed to provide enough lead time for these industry preparations to be completed and ensure an orderly transition from a T+3 to a T+2 settlement cycle.

25. Should the compliance date occur immediately following a weekend (including a holiday weekend), with the view that two or three non-business days would provide additional time for performing any final system changes or testing in anticipation of the transition to a T+2 settlement cycle? If not, which day of the week would be most suitable for the transition to occur? Are there times of the month or year that should be avoided in order to facilitate a successful implementation of the system changes necessary to support a T+2 settlement cycle?

26. A new technology, known as ''blockchain'' or ''distributed ledger'' technology, is being tested in a variety of settings to determine whether it has utility in the securities industry.[216]

[213] ETPs constitute a diverse class of financial products that seek to provide investors with exposure to financial instruments, financial benchmarks, or investment strategies across a wide range of asset classes. ETP trading occurs on national securities exchanges and other secondary markets that are regulated by the Commission under the Exchange Act, making ETPs widely available to market participants, from individual investors to institutional investors, including hedge funds and pension funds. The largest category of ETPs is comprised of ETFs, which are open-end fund vehicles or unit investment trusts that are registered as investment companies under the Investment Company Act. *See* Request for Comment on Exchange-Traded Products, Exchange Act Release No. 75165 (June 12, 2015), 80 FR 34729 (June 17, 2015).

[214] For example, the way a market participant executes a creation or redemption of an ETF share resembles a stock trade in the secondary market. A market participant typically referred to as an ''Authorized Participant'' or ''AP'' submits an order to create or redeem (''CR'') ETF shares much like an investor submits an order to his broker to buy or sell a stock. Also, similar to a stock trade, the CR order settles on a T+3 settlement cycle through NSCC. *See* ICI, ICI Research Perspective Vol. 20 No. 5, 14 (Sept. 2014), *https://www.ici.org/pdf/per20-05.pdf; see also* DTCC, Exchange Traded Fund (ETF) Processing, *http://www.dtcc.com/clearing-services/equities-trade-capture/etf;* DTCC, ETFs and CNS Processing, *https://www.dtcclearning.com/learning/clearance/topics/exchange-traded-funds-etf/about-etf/etfs-and-cns-processing.html.*

[215] For a more detailed discussion regarding Rule 172 and the ''access equals delivery'' model, *see supra* note 113.

[216] *See generally,* DTCC, ''Embracing Disruption, Tapping the Potential of Disrupted Ledgers to

Continued

What utility, if any, would a distributed ledger system or such related technology have in the context of a shortened settlement cycle, and if any, how would it be used? What regulatory actions, if any, would be necessary to facilitate the use of that technology? How would market participants ensure their use of or interaction with such technology would comply and be consistent with federal securities laws and regulations? Please explain.

VI. Economic Analysis

The following economic analysis begins with a discussion of the risks inherent in the settlement cycle and how a reduction in the length of the settlement cycle may impact the management and mitigation of these risks. Next, it discusses market frictions that potentially impair the ability of market participants to shorten the settlement cycle in the absence of a Commission rule. These settlement cycle risks and market frictions frame our analysis of the rule's benefits and costs in later sections. The Commission preliminarily believes that the proposed amendment to Rule 15c6–1(a) ameliorates these market frictions and thus reduces the risks inherent in settlement.

This discussion of the economic effects of the proposed amendment to Rule 15c6–1(a) begins with a baseline of current practices. The economic analysis then discusses the likely economic effects of the proposed amendment, such as the costs and benefits of the proposed amendment as well as its effects on efficiency, competition, and capital formation.[217] The Commission has, where possible, attempted to quantify the economic effects expected to result from this proposal. In many cases, and as noted below in further detail, the Commission is unable to quantify the economic effects of the proposed amendment to Rule 15c6–1(a) and solicits comment, including estimates and data from interested parties, that could help it form useful estimates of the economic effects of the proposed amendment.

A. Background

The proposed amendment to Rule 15c6–1(a) would prohibit a broker-dealer from effecting or entering into a contract for the purchase or sale of a security (other than an exempted security, government security, municipal security, commercial paper, bankers' acceptances, or commercial bills) that provides for payment of funds and delivery of securities later than the second business day after the date of the contract unless otherwise expressly agreed to by both parties at the time of the transaction, subject to certain exceptions provided in the rule. In its analysis of the economic impacts of the proposal, the Commission has considered the risks that market participants, including broker-dealers, clearing agencies, and institutional and retail investors are exposed to during the settlement cycle and how those risks change with the length of the settlement cycle.

The settlement cycle spans the length of time between when a trade is executed and when cash and securities are delivered to the seller and buyer, respectively. During this period of time, each party to a trade faces the risk that its counterparty may fail to meet its obligations to deliver cash or securities. When a counterparty defaults or fails to meet its obligations to deliver cash or securities, the trade must be closed-out. Regardless of whether the non-defaulting party chooses to enter into a new transaction as a result of the failed trade, it is likely to bear costs as a result of counterparty default. For example, a party that chooses to enter into a new transaction must find a new counterparty to contract with and must trade at a price that may not be the same as the price of the original trade.[218] The length of the settlement cycle influences this risk in two ways: (i) Through its effect on counterparty exposures to price volatility, and (ii) through its effect on the value of outstanding obligations.

First, additional time allows asset prices to move further away from the price of the original trade. For example, if daily asset returns are statistically independent, then the variance of prices over t days is equal to t multiplied by the daily variance of asset returns. Thus when daily returns are independent and daily variance of returns is constant, the variance of returns increases linearly in the number of days.[219] In other words, the more days that elapse between when a trade is executed and when a counterparty defaults, the larger the variance of prices will be, and the more likely it will be that the difference between execution price and the price ultimately paid will be larger. For example, if a buyer whose counterparty fails decides to enter into a new transaction to buy the same security, the buyer faces the risk that the price of the security will have deviated from the price of the original transaction. The price change could be positive or negative, but in the event of a price increase, the buyer must pay more than the original execution price; in the event of a price decrease, the buyer may buy the security for less than the original execution price.[220]

Second, the length of the settlement cycle directly influences the quantity of transactions awaiting settlement. For example, assuming no change in transaction volumes, the volume of unsettled trades under a T+2 settlement cycle is two-thirds the volume of unsettled trades under T+3 settlement cycle. Thus, counterparties would have to enter into a new transaction, or otherwise close out two-thirds the number of trades in a T+2 standard settlement cycle due to counterparty defaults than in a T+3 standard settlement cycle. This means that for a given adverse move in prices, the financial losses resulting from counterparty default will be two-thirds as large under a T+2 standard settlement cycle than under a T+3 standard settlement cycle.

Market participants manage and mitigate settlement risk in a number of specific ways that are discussed in Part II.A. of this release. Generally, these

Improve the Post-Trade Landscape,'' (Jan. 2016), *https://www.gpo.gov/fdsys/pkg/FR-2015-12-31/pdf/2015-32755.pdf. See also* Nasdaq, ''Building on the Blockchain'' (Mar. 23, 2016), *http://business.nasdaq.com/marketinsite/2016/Building-on-the-Blockchain.html* (discussing the future use of Blockchain technology in the markets); Matthew Leising, ''Blockchain Potential for Markets Grabs Exchange CEOs' Attention'', Bloomberg Business (Nov. 4, 2015), *http://www.bloomberg.com/news/articles/2015-11-04/futures-market-ceos-says-blockchain-shows-serious-potential* (discussing financial services industry's interest in blockchain technology).

[217] Section 3(f) of the Exchange Act requires the Commission, when engaging in rulemaking that requires the Commission to consider or determine whether an action is necessary or appropriate in the public interest, to consider, in addition to the protection of investors, whether the action will promote efficiency, competition, and capital formation. 15 U.S.C. 78c(f). Further, Section 23(a)(2) of the Exchange Act requires the Commission, when adopting rules under the Exchange Act, to consider the impact that any new rule would have on competition, and provides that the Commission shall not adopt any rule that would impose a burden on competition that is not necessary or appropriate in furtherance of the purposes of the Exchange Act. 15 U.S.C. 78w(a)(2).

[218] As described above, in its role as a CCP, NSCC becomes counterparty to both initial parties to a transaction. In the case of cleared transactions, while each initial party is not exposed to the risk that their original counterparty defaults, both are exposed to the risk of CCP default. Similarly, the CCP is exposed to the risk that either initial party defaults.

[219] More generally, because total variance over multiple days is equal to the sum of daily variances and variables related to the correlation between daily returns, total variance increases with time so long as daily returns are not highly negatively correlated. *See, e.g.,* Morris H. DeGroot, *Probability and Statistics* 216 (Addison-Wesley Publishing Co. 1986).

[220] Similarly, a seller whose counterparty fails faces similar risks with respect to the security, albeit in opposite directions.

methods entail costs to market participants. In some cases, these costs may be explicit. For instance, broker-dealers may explicitly charge customers for providing them with the implicit option to default on payment or delivery obligations. Other costs are implicit, such as the opportunity cost of assets posted as collateral, or limitations on the amount of credit that broker-dealers are willing to provide to their customers.

By shortening the standard settlement cycle, each trade will be subject to credit and market risk for a shorter amount of time, allowing for less time between trade execution and settlement for the transactions to generate losses. In addition, a shorter standard settlement cycle would reduce liquidity risks that could arise between derivative and cash markets by allowing investors to obtain the proceeds of securities transactions sooner. These are risks that affect all market participants, are difficult to diversify away, and require resources to manage and mitigate. CCPs and clearing members require participants to post financial resources in order to secure members' obligations to deliver cash and securities to the CCP. To the extent that collateral is posted to CCPs and clearing members for the purposes of mitigating the risks of the clearance and settlement process, that may represent an allocative inefficiency.

This allocative inefficiency could take on several forms. First, financial resources that are used to mitigate the risks of the clearance and settlement process could have been put to alternative uses, such as investment in less liquid assets. Second, assets that are valuable because they are particularly suited to meeting financial resource obligations may have been better allocated to market participants that hold these assets for their fundamental risk and return characteristics. These allocative inefficiencies may reduce capital formation. Reducing the financial risks associated with the overall clearance and settlement process would thereby reduce the amount of collateral required to mitigate these risks, which would reduce the costs that market participants bear to manage and mitigate these risks and the allocative inefficiencies that may stem from risk management practices.[221] Hence, the Commission preliminarily believes that these benefits generally provide securities market participants with incentives to shorten the settlement cycle.

However, the Commission acknowledges that certain market frictions may prevent securities markets from shortening the settlement cycle in the absence of regulatory intervention. The Commission has considered two key market frictions related to investments required to implement a shorter settlement cycle. The first is a coordination problem that arises when some of the benefits of actions taken by market participants are only realized when other market participants take a similar action. For example, absent regulatory intervention such as the proposed amendment to Rule 15c6–1(a), if a particular institutional investor makes a technological investment necessary to reduce the time it requires to match and allocate trades while its clearing broker-dealers do not, the institutional investor cannot fully realize the benefits of its investment, as the settlement process is limited by the capabilities of the clearing agency for trade matching and allocation. More generally, when each market participant must bear the costs of an upgrade in order for the entire market to enjoy a benefit, the result is a coordination problem, where each market participant is reluctant to make the necessary investments until it can be sure that others will also do so. In general, these coordination problems may be resolved if all parties can credibly commit to the necessary infrastructure investments. Regulatory intervention is one possible way of coordinating market participants to undertake the investments necessary to support a shorter settlement cycle. Such intervention could come through Commission rulemaking or through a coordinated set of SRO rule changes.

In addition to coordination problems, a second market friction related to the settlement cycle involves situations where one market participant's investments result in benefits for other market participants. For example, if a market participant invests in a technology that reduces the error rate in its trade matching, not only does it benefit from fewer errors, but its counterparties and other market participants may also benefit from more robust trade matching. However, because market participants do not necessarily take into account the benefits that may accrue to other market participants (also known as "externalities") when market participants choose the level of investment in their systems, the level of investment in technologies that reduce errors might be less than efficient for the entire market. More generally, underinvestment may result because each participant only takes into account its own costs and benefits when choosing which infrastructure improvements or investments to make, and does not take into account the costs and benefits that may accrue to its counterparties, other market participants, or other financial markets.

Moreover, because market participants that incur similar costs to enable a move to a shorter settlement cycle may nevertheless experience different levels of economic benefits, there is likely heterogeneity across market participants in the demand for a shorter settlement cycle. This heterogeneity may exacerbate coordination problems and underinvestment. Market participants that do not expect to receive direct benefits from settling transactions earlier may lack incentives to invest in infrastructure to support a shorter settlement cycle and thus could make it difficult for the market as a whole to realize the overall risk reduction that the Commission preliminarily believes a shorter settlement cycle may bring.

For example, the level and nature of settlement risk exposures vary across different types of market participants. A market participant's characteristics and trading strategies can influence the level of settlement risk it faces. For example, large market participants will generally be exposed to more settlement risk than small market participants because they trade in larger volume. However, large market participants also trade across a larger variety of assets and may face less idiosyncratic risk in the event of counterparty default if the portfolio of trades that would have to be remade is diversified.[222] As a corollary, a market participant who trades a single security in a single direction against a given counterparty may face more idiosyncratic risk in the event of counterparty failure than a market participant who trades in both directions with that counterparty.

Further, the extent to which a market participant experiences any economic benefits that may stem from a shortened standard settlement cycle likely depends on the market participant's relative bargaining power. While large intermediaries, such as clearing broker-dealers, may experience direct benefits

[221] *See infra* Part VI.B. for further discussion of financial resources collected to mitigate and manage financial risks; *see also, infra* Part VI.C. for more information about risk reduction.

[222] *See* Ananth Madhavan, Morris Mendelson & Junius W. Peake, *Risky Business: The Clearance and Settlement of Financial Transactions,* (Wharton Sch. Rodney L. White Ctr. for Fin. Research, Working Paper No. 40–88, 1988); *see also* John H. Cochrane, *Asset Pricing* (Princeton University Press rev. ed. 2009), at 15 (defining the idiosyncratic component of any payoff as the part that is uncorrelated with the discount factor).

from a shorter settlement cycle as a result of being required to post less collateral with a CCP, if they do not effectively compete for customers through fees and services as a result of market power, they may pass only a portion of these cost savings through to their customers.[223]

In light of the above, the Commission preliminarily believes that the proposed amendment to Rule 15c6–1(a), which would shorten the standard settlement cycle from T+3 to T+2 may mitigate the market frictions of coordination and underinvestment described above. The Commission preliminarily believes that by mitigating these market frictions, the transition to a shorter standard settlement cycle will reduce the risks inherent in the clearance and settlement process.

The shorter standard settlement cycle might also have an impact on the level of operational risk that exists in the U.S. clearance and settlement system as a result of existing clearance and settlement processes. By shortening the settlement cycle by one day, market participants involved in a securities transaction will have one less day to resolve any errors that might occur in the clearance and settlement process. As a result, tighter operational timeframes and linkages required under a shorter standard settlement cycle might introduce new fragility that could impact financial market participants, specifically an increased risk that operational issues could impact transaction processing and related securities settlement.[224]

Market participants may incur initial costs for the investments necessary to comply with a shorter standard settlement cycle.[225] However, these costs may differ across market participants and these differences may exacerbate coordination problems. First, differences in operational costs across clearing agency members may be driven by member transaction volume, and so the extent to which many of the upgrades necessary for a T+2 standard settlement cycle are optimal for a member to adopt unilaterally may depend on its transaction volume. For example, certain upgrades necessary for a T+2 standard settlement cycle may result in economies of scale, where large clearing members are able to comply with the proposed amendment to Rule 15c6–1(a) at a lower per transaction cost than smaller members. As a result, larger members might take a short time to recover their initial costs for upgrades; smaller members with lower transaction volumes might take longer to recover their initial cost outlays and might be more reluctant to make the upgrades in the absence of the proposed amendment.

In addition, the Commission acknowledges that the upgrades necessary to implement a shorter standard settlement cycle may produce indirect economic effects. We analyze some of these indirect effects, such as the impact on competition and third-party service providers, in the following section. However, other indirect effects, such as the ancillary benefits and costs mentioned in the BCG Study,[226] of investments and changes to market practices that enhance the speed and efficiency of the settlement process, but which are unrelated to a shorter standard settlement cycle, are not within the scope of the economic analysis of this release.

B. Baseline

In order to perform its analysis of the likely economic effects of the proposed amendment to Rule 15c6–1(a), as well as the proposed amendment's effects on efficiency, competition, and capital formation, the Commission uses as its baseline the clearance and settlement process as it exists at the time of this proposal. In addition to the current process that is described in Part II.A.3., the baseline includes rules adopted by the Commission, including rules governing the clearance and settlement system, SRO rules,[227] as well as rules adopted by regulators in other jurisdictions to regulate securities settlement in those jurisdictions.[228] The following section discusses several additional elements of the baseline that are relevant for the economic analysis of the proposed amendment to Rule 15c6–1(a) because they are related to the financial risks faced by market participants that clear and settle transactions and the specific means by which market participants manage these risks.

1. Clearing Agencies

As discussed above, one way NSCC mitigates the credit, market, and liquidity risk it assumes through its novation and guaranty of trades is via multilateral netting of the delivery and payment obligations across clearing members. By offsetting these obligations, NSCC reduces the aggregate market value of securities and cash it must deliver to clearing members after the trade is novated and the trade guaranty attaches. While netting reduces NSCC's settlement obligations by an average of 97% on each day, it does not fully eliminate the risk posed by unsettled trades because NSCC is still responsible for payments or deliveries on trades it cannot fully net. NSCC reported clearing an average of approximately $872 billion each day during the fourth quarter of 2015,[229] suggesting an average net settlement obligation of approximately $26.2 billion each day.[230] Based on these estimates, and given that, under current practices, NSCC's trade guaranty attaches at midnight on T+1, the average notional value of unsettled trades approaches $52.3 billion.[231]

The aggregate settlement risk faced by NSCC is also a function of the probability of clearing member default. NSCC manages the risk of clearing member default by imposing certain financial responsibility requirements on its members. For example, as of 2015, broker-dealer members of NSCC that are not municipal securities brokers and do not intend to clear and settle transactions for other broker-dealers must have excess net capital over the minimum net capital requirement imposed by the Commission in the amount of $500,000.[232] Further, each NSCC member is subject to ongoing membership requirements, including a requirement to furnish NSCC with assurances of the member's financial responsibility and operational capability, including, but not limited to, periodic reports of its financial and operational condition.[233]

In addition to managing the risk of member default, clearing agencies also take steps to mitigate the risks generated by member default. For example, in the normal course of business, CCPs are not exposed to market or liquidity risk because they expect to receive every security from a seller they are obligated to deliver to a buyer and they expect to

[223] *See infra* Parts VI.C.1. and VI.C.2.

[224] For example, the ability to compute an accurate net asset value ("NAV") within the settlement timeframe is a key component for settlement of ETF transactions. *See, e.g.,* Barrington Partners, An Extraordinary Week: Shared Experiences from Inside the Fund Accounting Systems Failure of 2015, at 10 (Nov. 2015), *http://www.mfdf.org/images/uploads/blog_files/SharedExperiencefromFASystemFailure2015.pdf.*

[225] *See infra* Part VI.C.2.

[226] *See* BCG Study, *supra* note 107, at 8.

[227] *See supra* note 179.

[228] *See supra* Part II.B.

[229] *See* NSCC, Q4 2015 Fixed Income Clearing Corporation and NSCC Quantitative Disclosure for Central Counterparties, at 14 (Mar. 2016), *http://www.dtcc.com/legal/policy-and-compliance.*

[230] Calculated as $872 billion × 3% = $26.16 billion.

[231] Calculated as $26.16 billion × 2 days between attachment of the trade guaranty and settlement on T+3 = $52.32 billion.

[232] *See* NSCC Rules and Procedures, *supra* note 26, Rule 2A, Section 1A, and Addendum B, Section 1.B.1.

[233] *See, e.g., id.,* Rule 15, Section 2.

receive every payment from a buyer that they are obligated to deliver to a seller. However, when a clearing member defaults, the CCP can no longer expect the defaulting member to deliver securities or make payments. CCPs mitigate this risk by requiring clearing members to make contributions of financial resources to the CCP. The level of financial resources CCPs require clearing members to post may be based on, among other things, the market and liquidity risk of a member's portfolio, the correlation between the assets in the member's portfolio and the member's own default probability, and the liquidity of the collateral assets.

2. Market Participants—Investors, Broker-Dealers, and Custodians

As discussed in Part II.A.3., broker-dealers serve both retail and institutional customers. Aggregate statistics from the Board of Governors of the Federal Reserve System suggest that at the end of 2015, U.S. households held approximately 39% of the value of corporate equity outstanding, and 50% of the value of mutual fund shares outstanding, which provide a general picture of the share of holdings by retail investors.[234]

In the fourth quarter of 2015, approximately 4,100 broker-dealers filed FOCUS Reports [235] with FINRA. These firms varied in size, with median assets of approximately $700,000 and average assets of nearly $1 billion dollars. Approximately 30 broker-dealers held 80% of the assets of broker-dealers overall, indicating a high degree of concentration in the industry. Of the 4,100 filers, 186 reported self-clearing public customer accounts, while 1,497 reported acting as an introducing broker and sending orders to another broker-dealer for clearing. Broker-dealers that identified themselves as self-clearing broker-dealers, on average, had higher total assets than broker-dealers that identified themselves as introducing broker-dealers. While the decision to self-clear may be based on many factors, this evidence is consistent with the argument that there may currently be high barriers to entry for providing clearing services as a broker-dealer.

Clearing broker-dealers face liquidity risks as they are obligated to make payments to clearing agencies on behalf of customers who purchase securities. As discussed in more detail below, from the perspective of clearing broker-dealers, customers have an option to default on their payment obligations, particularly when the price of a purchased security declines during the settlement cycle.[236] Therefore, clearing broker-dealers take measures to reduce the risks posed by their customers. For example, clearing broker-dealers may require customers to contribute financial resources in the form of margin to margin accounts, to pre-fund purchases in cash accounts, or may restrict the use of unsettled funds. These measures are in many ways analogous to measures taken by clearing agencies to reduce and mitigate the risks posed by their clearing members. In addition, clearing broker-dealers may also mitigate the risks posed by customers by charging higher transaction fees that reflect the value of the customer's option to default, thereby causing customers to internalize the cost of the default options inherent in the settlement process.[237] While not directly reducing the risk posed by customers to clearing members, these higher transaction fees at least allocate to customers the direct expected costs of customer default.

Another way the settlement cycle may affect transaction prices is related to the use of funds during the settlement cycle. To the extent that buyers may use the cash to purchase securities during the settlement cycle for other purposes, they may derive value from the length of time it takes to settle a transaction. Testing this hypothesis, studies have found that sellers demand compensation for the benefit that buyers receive from deferring payment during the settlement cycle and that this compensation is incorporated in equity returns.[238]

The settlement process also exposes investors to certain risks. The length of the settlement cycle sets the minimum amount of time between when an investor places an order to sell securities and when the customer can expect to have access to the proceeds of that sale. Investors take this into account when they plan transactions to meet liquidity needs. For example, under T+3 settlement, investors who experience liquidity shocks, such as unexpected expenses that must be met within two days, could not rely on obtaining funding solely through a sale of securities because the proceeds of the sale would be available in three days, at the earliest, and not two. One possible strategy to deal with such a shock under T+3 settlement would be to borrow cash on day two to meet payment obligations on day two and repay the loan on day three with the proceeds from a sale of securities, incurring the cost of one day of interest on the short-term loan. Another strategy that investors may use is to hold financial resources to insure themselves from liquidity shocks.

3. Investment Companies

As noted above,[239] shares issued by investment companies settle on different timeframes. ETFs and certain closed-end funds generally settle on T+3. By contrast, mutual funds generally settle on a T+1 basis, except for certain retail funds which settle on T+3. Mutual funds that settle on a T+1 basis currently face liquidity risk as a result of a mismatch between the timing of mutual fund transaction order settlements and the timing of fund portfolio security transaction order settlements. Mutual funds may manage these particular liquidity needs by, among other methods, using cash reserves, back-up lines of credit, or interfund lending facilities to provide cash to cover the settlement mismatch.[240] As of the end of 2015, there were 9,156 open-end funds (excluding money market funds, but including ETFs).[241] The assets of these funds were approximately $14.95 trillion.[242] Within these figures, there were 1,521 ETFs with $2.1 trillion in assets.[243]

Under Section 22(e) of the Investment Company Act, an open-end fund is required to pay shareholders who tender shares for redemption within seven days

[234] *See* Board of Governors of the Federal Reserve System, Statistical Release Z.1 Financial Accounts of the United States, Flow of Funds, Balance Sheets, and Integrated Macroeconomic Accounts, at tables L.223 and L.224 (First Quarter 2016), *http://www.federalreserve.gov/releases/z1/20151210/z1.pdf.*

[235] FOCUS Reports, or ''Financial and Operational Combined Uniform Single'' Reports, are monthly, quarterly, and annual reports that broker-dealers generally are required to file with the Commission and/or SROs pursuant to Exchange Act Rule 17a–5, 17 CFR 240.17a–5.

[236] *See id.*

[237] *See infra* Part VI.C.2. and Part VI.C.4.

[238] *See* Victoria Lynn Messman, *Securities Processing: The Effects of a T+3 System on Security Prices* (May 2011) (Ph.D. dissertation, University of Tennessee—Knoxville), *http://trace.tennessee.edu/utk_graddiss/1002/;* Josef Lakonishok & Maurice Levi, *Weekend Effects on Stock Returns: A Note,* 37 J. Fin. 883 (1982), *https://www.jstor.org/stable/pdf/2327716.pdf;* Ramon P. DeGennaro, *The Effect of Payment Delays on Stock Prices,* 13 J. Fin. Res. 133 (1990), *http://onlinelibrary.wiley.com/doi/10.1111/j.1475-6803.1990.tb00543.x/abstract.*

[239] *See supra* note 11.

[240] *See* Open-End Fund Liquidity Risk Management Programs; Swing Pricing; Re-Opening of Comment Period for Investment Company Reporting Modernization Release, Investment Company Act Release No. 31835 (Sept. 22, 2015), 80 FR 62274, 62285 n.100 (Oct. 15, 2015).

[241] *See* ICI, 2015 Investment Company Fact Book (2016), at 176, 183 (''2016 ICI Fact Book''), *http://www.ici.org/pdf/2016_factbook.pdf.*

[242] *See id.* at 174, 182.

[243] *See id.* at 182–83.

of their tender.[244] In addition to this requirement, as a practical matter open-end funds that are sold through broker-dealers meet redemptions within three days because broker-dealers are subject to Rule 15c6–1(a). Furthermore, Rule 22c–1 under the Investment Company Act,[245] the ''forward pricing'' rule, requires funds, their principal underwriters, and dealers to sell and redeem fund shares at a price based on the current NAV next computed after receipt of an order to purchase or redeem fund shares, even though cash proceeds from purchases may be invested or fund assets may be sold in subsequent days in order to satisfy purchase requests or meet redemption obligations.

4. The Current Market for Clearance and Settlement Services

As described in Part II.A.2., two affiliated entities, NSCC and DTC, facilitate clearance and settlement activities in U.S. securities markets in most instances. There is limited competition in the provision of the services that these entities provide. NSCC is the CCP for trades between broker-dealers involving equity securities, corporate and municipal debt, and UITs for the U.S. market. DTC is the CSD that provides custody and book-entry transfer services for the vast majority of securities transactions in the U.S. market involving equities, corporate and municipal debt, money market instruments, ADRs, and ETFs. There is also limited competition in the provision of Matching/ETC services—three entities that have obtained exemptions from registration as a clearing agency from the Commission to operate as Matching/ETC Providers.[246]

Broker-dealers compete to provide services to retail and institutional customers. Based on the large number of broker-dealers, there is likely a high degree of competition among broker-dealers. However, the markets that broker-dealers serve may be segmented along lines relevant for the analysis of competitive impacts of the proposed amendment to Rule 15c6–1(a). As noted above, the set of broker-dealers that indicate they clear public customer accounts by self-clearing tends to be smaller than the set of broker-dealers that indicate they do so by introducing and not self-clearing. This could mean that introducing broker-dealers compete more intensively for customers than clearing broker-dealers. Further, clearing broker-dealers must meet requirements set by NSCC and DTC, such as financial responsibility requirements and clearing fund requirements. These requirements may represent barriers to entry for clearing broker-dealers, limiting competition among these entities.

Competition for customers impacts how the costs associated with the clearance and settlement process are allocated among market participants. In managing the expected costs of risks from their customers and the costs of compliance with SRO and Commission rules, clearing broker-dealers decide what fraction of these costs to pass through to their customers in the form of fees and margin requirements, and what fraction of these costs to bear themselves. The level of competition that a clearing broker-dealer faces for customers will dictate the extent to which it is able to exercise market power in passing through these costs to their customers; a clearing broker-dealer with little competition for customers is likely to pass on a majority of its costs to its customers, while one with heavy competition is likely to choose to bear the cost internally to avoid losing market share.

In addition, several factors impact the current levels of efficiency and capital formation in this market. First, at a general level, market participants occupying various positions in the clearance and settlement system must post or hold liquid financial resources, and the level of these resources is a function of the length of the settlement cycle. For example, NSCC collects clearing fund contributions from members to ensure that it has sufficient financial resources in the event that one of its members defaults on its obligations to NSCC. As discussed above, the length of the settlement cycle is one determinant of the size of NSCC's exposure to clearing members. As another example, mutual funds may manage liquidity needs by, among other methods, using cash reserves, back-up lines of credit, or interfund lending facilities to provide cash. These liquidity needs, in turn, are related to the mismatch between the timing of mutual fund transaction order settlements and the timing of fund portfolio security transaction order settlements.

Holding liquid assets solely for the purpose of mitigating counterparty risk or liquidity needs that arise as part of the settlement process could represent an allocative inefficiency, as discussed above, both because firms that are required to hold these assets might prefer to put them to alternative uses and because these assets may be more efficiently allocated to other market participants who value them for their fundamental risk and return characteristics rather than for their collateral value. To the extent that intermediaries bear costs as a result of inefficient allocation of collateral assets, these may be reflected in transaction costs.

The settlement cycle may also have more direct impacts on transaction costs. As noted above, clearing broker-dealers may charge higher transaction fees to reflect the value of the customer's option to default and these fees may cause customers to internalize the cost of the default options inherent in the settlement process. However, these fees also make transactions costly and may, at the margin, influence the willingness of market participants to efficiently share risks or to supply liquidity to securities markets. Taken together, inefficiencies in the allocation of resources and risks across market participants may serve to impair capital formation.

Finally, market participants may make processing errors in the clearance and settlement process.[247] Industry participants have commented that a lack of automation and manual processing have led to processing errors. Although some of these errors may be resolved within the settlement cycle and not result in a failed trade, those that are not may result in failed trades, which appear in the failure to deliver data above.[248] Further, market participants may incorporate the likelihood that processing errors result in delays in payments or deliveries into securities prices.[249] Although errors and the correction of errors are a part of current market practices in a clearance and settlement system, the Commission does not have data available to estimate the rate of processing errors and the time needed to correct these processing errors, but invites commenters to provide relevant qualitative and quantitative information to inform our analysis of these errors.

[244] *See* 15 CFR 270.80a–22(e).

[245] 17 CFR 270.22c–1.

[246] *See supra* note 45.

[247] *See, e.g.,* Omgeo, Mitigating Operational Risk and Increasing Settlement Efficiency through Same Day Affirmation (SDA), at 12 (Oct. 2010), *http://www.omgeo.com/page/sda_whitepaper.*

[248] *See supra* Part II.A.2(1); *see also* Statement by The Depository Trust & Clearing Corporation, U.S. Securities and Exchange Commission, Securities Lending and Short Sales Roundtable, at 3 (Sept. 30, 2009), *https://www.sec.gov/comments/4-590/4590-32.pdf.*

[249] *See* Messman, *supra* note 238.

C. Analysis of Benefits, Costs, and Impact on Efficiency, Competition, and Capital Formation

1. Benefits

The proposed amendment is likely to yield benefits associated with the reduction of risk in the settlement cycle. By shortening the settlement cycle, the proposed amendment would reduce both the aggregate market value of all unsettled trades and the amount of time that CCPs or the counterparties to a trade may be subject to market and credit risk from an unsettled trade.[250] First, holding transaction volumes constant, the market value of transactions awaiting settlement at any given point in time under a T+2 settlement cycle will be approximately one third lower than under a T+3 settlement cycle. In addition, given that most trades are novated and guaranteed by NSCC at midnight on T+1, unsettled trades are currently guaranteed for two days. Shortening the settlement cycle by one day would reduce the time that unsettled transactions are guaranteed by NSCC by approximately one half. Using the risk mitigation framework described in Part VI.B.1., based on published statistics from the last quarter of 2015 [251] and holding average dollar volumes constant, the aggregate notional value of unsettled transactions at NSCC would fall from nearly $52.3 billion to approximately $26.2 billion.[252]

Second, a market participant that experiences counterparty default and enters into a new transaction under a T+3 settlement cycle is exposed to more market risk than would be the case under a T+2 settlement cycle. As a result, market participants that are exposed to market, credit, and liquidity risks would be exposed to less risk under a T+2 settlement cycle. This reduction in risk may also extend to mutual fund transactions conducted with broker-dealers that currently settle on a T+3 basis.[253] To the extent that these transactions currently give rise to counterparty risk exposures between mutual funds and broker-dealers, these exposures may decrease as a consequence of a shorter settlement cycle.

The Commission notes that industry participants have suggested further benefits of a T+2 standard settlement cycle relative to a T+3 standard settlement cycle as a result of reduced procyclicality of counterparty exposures and clearing fund requirements, and presented an analysis consistent with such benefits.[254] These benefits depend on the assumptions that underlie models of counterparty exposures and clearing fund requirements.

A portion of the savings by intermediaries from less costly risk management under a T+2 standard settlement cycle relative to a T+3 standard settlement cycle may flow through to investors. Intermediaries such as broker-dealers may mitigate settlement risks through collateral requirements on their customers in the form of securities or cash. Such protection is likely to require less collateral to manage settlement risks when settlement cycles are shorter. To the extent that lower collateral needs result in lower collateral requirements, investors may be able to profitably redeploy financial resources once used to satisfy collateral requirements by, for example, converting them into less-liquid assets that offer higher returns in exchange for bearing additional liquidity risk.

Industry participants might also individually benefit through reduced clearing fund deposit requirements. In 2012, the BCG Study estimated that cost reductions related to reduced clearing fund contributions would amount to $25 million per year.[255] In addition, a shorter settlement cycle might reduce liquidity risk by allowing investors to obtain the proceeds of their securities transactions sooner. Reduced liquidity risk may be a benefit to individual investors, but it may also reduce the volatility of securities markets by reducing liquidity demands in times of adverse market conditions, potentially reducing the correlation between market prices and the risk management practices of market participants.[256]

In addition, the harmonization of settlement cycles may reduce the need for some market participants engaging in cross-border and cross-asset transactions to hedge risks stemming from mismatched settlement cycles, resulting in additional benefits. For example, under the current T+3 settlement cycle, a market participant selling a security in U.S. equity markets to fund a purchase of securities in European markets would face a one day lag between settlement in Europe and settlement in the U.S. The participant could choose between bearing an additional day of market risk in the European trading markets by delaying the purchase by a day, or funding the purchase of European shares with short-term borrowing. Additionally, because the FX market has a T+2 settlement cycle,[257] the participant would also be faced with a choice between bearing an additional day of currency risk due to the need to purchase Euros as part of the transaction, or to incur the cost related to hedging away this risk in the forward market. Synchronization of settlement cycles across U.S. equity markets, currency markets, and European equity markets and other markets would remove the need for market participants to bear additional risk or incur costs related to borrowing or hedging risks.

The benefits of harmonized settlement cycles may also accrue to mutual funds. As described above,[258] transactions in mutual fund shares typically settle on a T+1 basis even when transactions in their portfolio securities settle on a T+3 basis. As a result, there is a two-day mismatch between when these funds make payments to shareholders that redeem shares and when they receive cash proceeds for portfolio securities they sell. This mismatch represents a source of liquidity risk for mutual funds. Shortening the settlement cycle by one day will reduce the length of this mismatch. As a result, mutual funds that settle on a T+1 basis may be able to reduce the size of cash reserves or the size of back up credit facilities that some currently use to manage liquidity risk from the mismatch in settlement cycles.

The Commission preliminarily believes that these benefits are unlikely to be substantially mitigated by the exceptions to Rule 15c6–1(a) discussed in Part III.A.1. Market participants that rely on Rule 15c6–1(b) in order to transact in limited partnership interests that are not listed on an exchange or for which quotations are not disseminated through an automated quotation system of a registered securities association are likely to continue to make use of that exception under the proposed amendment to Rule 15c6–1(a). Similarly, market participants involved

[250] *See supra* Part III.A.3.

[251] *See* Q4 2015 Fixed Income Clearing Corporation and NSCC Quantitative Disclosure for Central Counterparties, *supra* note 229, at 14.

[252] *See supra* note 230. Calculated as $52.32 billion/2 days = $26.16 billion.

[253] *See supra* note 11 and Part VI.B.3, and *infra* Part VI.C.1.

[254] *See* DTCC Recommends Shortening the U.S. Trade Settlement Cycle, *supra* note 76, at 2–3.

[255] *See* BCG Study, *supra* note 107, at 10.

[256] *See* Peter F. Christoffersen & Francis X. Diebold, *How Relevant is Volatility Forecasting for Financial Risk Management?,* 82 Rev. Econ. & Stat. 12 (2000), *http://www.mitpressjournals.org/doi/abs/10.1162/003465300558597#.V6xeL_nR-JA.* The paper shows that volatility can be predicted in the short run, and concludes that short run forecastable volatility would be useful for risk management practices.

[257] *See, e.g.,* John W. McPartland, *Foreign exchange trading and settlement: Past and present,* The Federal Reserve Bank of Chicago, Essays on Issues No. 223 (Feb. 2006), *https://www.chicagofed.org/~/media/publications/chicago-fed-letter/2006/cflfebruary2006-223-pdf.pdf.*

[258] *See supra* note 9 and Part VI.B.3.

in offerings that currently settle by the fourth business day under Rule 15c6–1(c) will likely continue to settle by T+4. There may be transactions covered by Rules 15c6–1(b) and (c) that in the past did not make use of these exceptions because they settled within three business days, but that may require use of these exceptions under the proposed amendment because they require more than two days to settle. However, these markets are opaque and the Commission does not have data on transactions in these categories that currently settle within three days but that might make use of this exception under the proposed amendment. In addition, market participants involved in transactions which now voluntarily settle in two days or less may experience fewer risk reduction benefits as a result of the proposed amendment to Rule 15c6–1(a) than market participants that currently settle in the standard three business days.

Finally, the extent to which different types of market participants experience any benefits that stem from the proposed amendment to Rule 15c6–1(a) may depend on their market power. As shown in the discussion and diagrams above,[259] the clearance and settlement system involves a number of intermediaries that provide a range of services between the ultimate buyer and seller of a security. Those market participants that have a greater ability to negotiate with customers or service providers may be able to retain a larger portion of the operational cost savings from a shorter settlement cycle than others, as they may be able to use their market power to avoid passing along the cost savings to their clients.

2. Costs

The Commission preliminarily believes that compliance with a T+2 standard settlement cycle will involve initial fixed costs to update systems and processes.[260] While the Commission does not have all of the data necessary to form its own estimates of the costs of updates to systems and processes, the Commission has used inputs provided by industry studies discussed in this release to quantify these costs to the extent possible in Part VI.C.5.

The operational cost burdens associated with the proposed amendment to Rule 15c6–1(a) for different market participants might vary depending on each participant's degree of direct or indirect inter-connectivity to the clearance and settlement process, regardless of size.[261] For example, market participants that internally manage more of their own post-trade processes will directly incur more of the upfront operational costs associated with the proposed amendment to Rule 15c6–1(a), because they must directly undertake more of the upgrades and testing necessary for a T+2 standard settlement cycle. As mentioned in Part II.A.2.c., other market participants might outsource the clearance and settlement of their transactions to third-party providers of back-office services. The exposures to the operational costs associated with shortening the standard settlement cycle will be indirect to the extent that third-party service providers pass through the costs of infrastructure upgrades to their customers. The degree to which customers bear operational costs depends on their bargaining position relative to third-party providers. Large customers with market power may be able to avoid internalizing these costs, while small customers in a weaker negotiation position relative to service providers may bear the bulk of these costs.

Further, changes to initial and ongoing operational costs may make some self-clearing market participants alter their decision to continue internally managing the clearance and settlement of their transactions. Entities that currently internally manage their clearance and settlement activity may prefer to restructure their businesses to rely instead on third-party providers of clearance and settlement services that may be able to amortize the initial fixed cost of upgrade across a much larger volume of transaction activity.

The way that different market participants are likely to bear costs as a result of the proposed amendment to Rule 15c6–1(a) may also vary based on their business structure. For example, a shorter standard settlement cycle will require payment for securities that settle regular-way by T+2 rather than T+3 (subject to the exceptions in the rule). Generally, regardless of current funding arrangements between investors and broker-dealers, removing a day between execution and settlement would mean that broker-dealers could choose between requiring investors to fund the purchase of securities one day earlier while extending the same level of credit they do under T+3 settlement, or providing an additional day of funding to investors. In other words, broker-dealers could pass through some of the costs of a shorter standard settlement cycle by imposing the same shorter cycle on investors, or they could pass these costs on to investors by raising transactions fees to compensate for the additional day of funding the broker-dealer may choose to provide. The extent to which these costs get passed through to customers may depend on, among other things, the market power of the broker-dealer. At most, the broker-dealer might pass through the entire initial investment cost to its customers, while if the broker-dealer faces perfect competition for its customers, the broker-dealer may not pass along any of these costs to its customers.[262]

However, broker-dealers that predominantly serve retail investors may experience the burden of an earlier payment requirement differently from broker-dealers with more institutional clients or large custodian banks because of the way retail investors fund their accounts. Retail investors may find it difficult to accelerate payments associated with their transactions, which may cause broker-dealers who are unwilling to extend additional credit to retail investors to instead require that these investors pre-fund their transactions.[263] These broker-dealers may also experience costs unrelated to funding choices. For instance, retail investors may require additional or different services such as education regarding the impact of the shorter standard settlement cycle.

At the same time, some market participants may face lower implementation costs as a result of their current business structure and practices. As mentioned earlier, 2011 DTCC affirmation data show that, on average, 45% of trades were affirmed on trade date, while 90% were affirmed on T+1.[264] In addition, market participants that trade in markets that have already implemented a T+2 settlement cycle may face lower costs in transitioning to a T+2 cycle in the U.S., as many of the systems and process improvements may already have been adopted in order to support settlement in other markets.

Finally, a shorter settlement cycle may result in higher costs associated with liquidating a defaulting member's position, as a shorter horizon may result

[259] *See supra* Part II.A.3. for diagrams of retail and institutional trade settlement flow.

[260] Industry estimates have suggested some updates to systems and processes might yield operational cost savings after the initial update. *See infra* Part VI.C.5.a. for industry estimates of the costs and benefits of the proposed amendment to Rule 15c6–1(a).

[261] *See infra* Part VI.C.5.b. for more detail of the specific operational cost burdens that each type of market participant may incur.

[262] *See supra* Part VI.C.1. for more on the impact of broker-dealer market power. *See infra* Part VI.C.5.b.3. for quantitative estimates of the costs to broker-dealers.

[263] *See infra* Part VI.C.5.b.(3) for more on retail investors and their broker-dealers.

[264] *See supra* Part VI.C.5(5) for discussion of foreign broker-dealers.

in larger price impacts, particularly for less liquid assets. For example, when a clearing member defaults, NSCC is obligated to fulfill its trade guaranty with the defaulting member's counterparty. One way it accomplishes this is by liquidating assets from clearing fund contributions from clearing members. However, the liquidation of assets in a short period of time may have an adverse impact on the price of an asset. Shortening the standard settlement cycle from three days to two days would reduce the amount of time that NSCC would have to liquidate its assets, which may exacerbate the price impact of liquidation.

3. Economic Implications Through Other Commission Rules

In Part 0., the Commission noted that the proposed amendment to Rule 15c6–1(a), by shortening the standard settlement cycle, could have ancillary consequences for how market participants comply with existing regulatory obligations that relate to the settlement timeframe. The Commission also provided illustrative examples of specific Commission rules that include such requirements or are otherwise are keyed-off of settlement date, including Regulation SHO,[265] and certain provisions included in the Commission's financial responsibility rules.[266]

Financial markets and regulatory requirements have evolved significantly since the Commission adopted Rule 15c6–1 in 1993. Market participants have responded to these developments in diverse ways, including implementing a variety of systems and processes, some of which may be unique to the market participant and its business, and some of which may be integrated throughout the market participant's operations. Because of the broad variety of ways in which market participants currently satisfy regulatory obligations pursuant to Commission rules, in most circumstances it is difficult to identify with precision those practices that market participants will need to change in order to meet these other obligations. Under these circumstances, and without additional information, the Commission is unable to provide an estimate of these ancillary economic consequences. The Commission invites commenters to provide quantitative and qualitative information about these potential economic consequences.

[265] 17 CFR 242.200 *et seq.*

[266] *See supra* Part III.B.3.

In certain cases, based on information about current market practices, the Commission preliminarily believes that the proposed amendment to Rule 15c6–1(a) is unlikely to change the means by which market participants comply with existing regulatory requirements. For example, under the proposed amendment, broker-dealers will have a shorter timeframe to comply with the customer confirmation requirements of Rule 10b–10. However, it is the Commission's understanding that broker-dealers typically send physical customer confirmations on the day after trade date and many broker-dealers send electronic confirmations to customers on trade date. The Commission preliminarily believes that because of the lack of ancillary consequences in these cases, market participants are unlikely to bear additional costs to comply with these requirements under a shorter standard settlement cycle.

In certain cases, however, the proposed amendment may incrementally increase the costs associated with complying with other Commission rules where those rules potentially require broker-dealers to engage in purchases of securities. Two examples of these types of rules are Regulation SHO and the Commission's financial responsibility rules. In most instances, Regulation SHO governs the timeframe in which a ''participant'' of a registered clearing agency must close out a fail to deliver position by purchasing or borrowing securities. Similarly, some of the Commission's financial responsibility rules relate to actions or notifications that reference the settlement date of a transaction. For example, Rule 15c3–3(m) [267] uses settlement date to prescribe the timeframe in which a broker-dealer must complete certain sell orders on behalf of customers. As noted above, settlement date is also incorporated into paragraph (c)(9) of Rule 15c3–1,[268] which explains what it means to ''promptly transmit'' funds and ''promptly deliver'' securities within the meaning of paragraphs (a)(2)(i) and (a)(2)(v) of Rule 15c3–1. As explained above, the concepts of promptly transmitting funds and promptly delivering securities are incorporated in other provisions of the financial responsibility rules.[269] Under the proposed amendment to Rule 15c6–1(a), the timeframes included in these rules will be one day closer to the trade date.

[267] 17 CFR 240.15c3–3(m).

[268] 17 CFR 240.15c3–1(c)(9).

[269] *See, e.g.,* 17 CFR 240.15c3–1(a)(2)(i), (a)(2)(v); 17 CFR 240.15c3–3(k)(1)(iii), (k)(2)(i), (k)(2)(ii); 17 CFR 240.17a–5(e)(1)(A); 17 CFR 240.17a–13(a)(3).

The Commission preliminarily believes that shortening these timeframes will not materially affect the costs that broker-dealers are likely to incur to meet their Regulation SHO obligations and obligations under the Commission's financial responsibility rules after the settlement date. Nevertheless, the Commission acknowledges that a shorter settlement cycle could affect the processes by which broker-dealers manage the likelihood of incurring these obligations. For example, broker-dealers may currently have in place inventory management systems that help them avoid failing to deliver securities by T+3. Broker-dealers may incur incremental costs in order to update these systems to support a shorter settlement cycle.

In cases where market participants will need to adjust the way in which they comply with other Commission rules, the magnitude of the costs associated with these adjustments is difficult to quantify. As noted above, market participants employ a wide variety of strategies to meet regulatory obligations. For example, broker-dealers may ensure that they have securities available to meet their obligations by using inventory management systems or they may choose instead to borrow securities. An estimate of costs is further complicated by the possibility that market participants could change their compliance strategies as a result of shortening the standard settlement cycle.

The Commission invites commenters to provide quantitative and qualitative information about the impact of the proposed amendment to Rule 15c6–1(a) on the costs associated with compliance with other Commission rules.

4. Effect on Efficiency, Competition, and Capital Formation

A shorter settlement cycle might improve the efficiency of the clearance and settlement process through several channels. The Commission preliminarily believes that the primary effect that a shorter settlement cycle would have on the efficiency of the settlement process would be a reduction in the credit, market, and liquidity risks that broker-dealers, CCPs, and other market participants are subject to during the standard settlement cycle. A shorter standard settlement cycle will generally reduce the volume of unsettled transactions that could potentially pose settlement risk to counterparties. By shortening the period between trade execution and settlement, trades can be settled with less aggregate risk to counterparties or the CCP. A shorter standard settlement cycle may also decrease liquidity risk by enabling market participants to access the proceeds of their transactions sooner, which may reduce the cost market participants incur to handle idiosyncratic liquidity shocks (*i.e.,* liquidity shocks that are uncorrelated with the market). That is, because the time interval between a purchase/sale of securities and payment is reduced by one day, market participants with immediate payment obligations that they could cover by selling securities would be required to obtain short-term funding for one less day.[270] As a result of reduced cost associated with covering their liquidity needs, market participants may, under particular circumstances, be able to shift assets that would otherwise be held as liquid collateral towards more productive uses, improving allocative efficiency.[271]

In addition, a shorter standard settlement cycle may increase price efficiency through its effect on credit risk exposures between financial intermediaries and their customers. In particular, a prior study noted that certain intermediaries that transact on behalf of investors, such as broker-dealers, may be exposed to the risk that their customers default on payment obligations when the price of purchased securities declines during the settlement cycle.[272] As a result of the option to default on payment obligations, customers' payoffs from securities purchases resemble European call options and, from a theoretical standpoint, can be valued as such. Notably, the value of European call options are increasing in the time to maturity [273] suggesting that the value of call options held by customers who purchase securities is increasing in the length of the settlement cycle. In order to compensate itself for the call option that it writes, an intermediary may include the cost of these call options as part of its transaction fee and this cost may become a component of bid-ask spreads for securities transactions. By reducing the value of customers' option to default by reducing the option's time to maturity, a shorter standard settlement cycle may reduce transaction costs in U.S. securities markets. In addition, to the extent that any benefit buyers receive from deferring payment during the settlement cycle is incorporated in securities returns,[274] the proposed amendment may reduce the extent to which these returns deviate from returns consistent with changes to fundamentals.

As discussed in more detail above, the Commission preliminarily believes that the proposed amendment to Rule 15c6–1(a) will likely require market participants to incur costs related to infrastructure upgrades and will likely yield benefits to market participants, largely in the form of reduced financial risks related to settlement. As a result, the Commission preliminarily believes that the proposed amendment to Rule 15c6–1(a) could affect competition in a number of different, and potentially offsetting, ways.

The prospective reduction in financial risks related to shortening the standard settlement cycle may represent a reduction in barriers to entry for certain market participants. Reductions in the financial resources required to cover an NSCC member's clearing fund requirements that result from a shorter standard settlement cycle could encourage financial firms that currently clear transactions through NSCC clearing members to become clearing members themselves. Their entry into the market could promote competition among clearing members at NSCC. Furthermore, if a reduction in settlement risks results in lower transaction costs for the reasons discussed above, market participants that were, on the margin, discouraged from supplying liquidity to securities markets due to these costs could choose to enter the market for liquidity suppliers, increasing competition.

At the same time, the Commission acknowledges that the process improvements required to enable a shorter standard settlement cycle could adversely affect competition. Among clearing members, where such process improvements might be necessary to comply with the shorter standard settlement cycle required under the proposed amendment to Rule 15c6–1(a), the cost associated with compliance might create barriers to entry, because new firms will incur higher fixed costs associated with a shorter standard settlement cycle if they wish to enter the market. Clearing members might choose to comply by upgrading their systems and processes or may choose instead to exit the market for clearing services. The exit of clearing members could have negative consequences for competition between clearing members. Clearing activity tends to be concentrated among larger broker-dealers.[275] Clearing member exit could result in further concentration and additional market power for those clearing members that remain.

Alternatively, some current clearing members may choose to comply by ceasing to be clearing members and instead outsourcing their operational needs to third-party service providers. Use of third-party service providers may represent a reasonable response to the operational costs associated with the proposed amendment to Rule 15c6–1(a). To the extent that third-party service providers are able to spread the fixed costs of compliance across a larger volume of transactions than their clients, the Commission preliminarily believes that the use of third-party service providers might impose a smaller compliance cost on clearing members, including smaller broker-dealers, than if these firms directly bore the costs of compliance. The Commission preliminarily believes that this impact may stretch beyond just clearing members. The use of third-party service providers may mitigate the extent to which the proposed amendment to Rule 15c6–1(a) raises barriers to entry for broker-dealers. Because these barriers to entry may have adverse effects on competition between clearing members, we preliminarily believe that the use of third-party service providers may mitigate the adverse effects of the proposed amendment to Rule 15c6–1(a) on competition between broker-dealers.

Existing market power may also affect the distribution of competitive impacts stemming from the proposed amendment to Rule 15c6–1(a) across different types of market participants. While, as noted above, reductions in settlement risk could promote competition among clearing members and liquidity suppliers, these groups may benefit to differing degrees, depending on the extent to which they are able to capture the benefits of a shortened standard settlement cycle. For example, clearing brokers tend to be larger than other broker-dealers,[276] and may generally be able to appropriate more of the savings from clearing fund deposit reductions for themselves if they have market power relative to their customers by passing only a small portion of savings through to their customers through fees or transactions costs. However, those that predominantly serve retail investors may be in a better bargaining position

[270] *See supra* Part VI.B.2.

[271] *See supra* Part VI.A. for more on collateral and allocative efficiency.

[272] *See* Madhavan et al., *supra* note 222.

[273] All other things equal, an option with a longer time to maturity is more likely to be in the money given that the variance of the underlying security's price at the exercise date is higher.

[274] *See supra* Part Part VI.B.2.

[275] *See id.*

[276] *Id.*

relative to those that predominantly serve institutional investors, and therefore may capture more of the benefits stemming from the proposed amendment to Rule 15c6–1(a). Broker-dealers that serve retail investors may similarly be able to use their market power relative to their customers to retain more of the clearing fund deposit reduction as profits by maintaining their transaction costs and fees instead of passing these through to their customers. Institutional investors may be in a relatively better bargaining position by virtue of their large size and may be more likely to successfully negotiate lower fees or transaction costs and share in the savings associated with lower clearing fund deposits.

Finally, a shorter standard settlement cycle might also improve the capital efficiency of the clearance and settlement process, which would promote capital formation in U.S. securities markets and in the financial system generally.[277] A shorter standard settlement cycle would reduce the amount of time that collateral must be held for a given trade, thus freeing the collateral to be used elsewhere earlier. For a given quantity of trading activity, collateral would be committed to clearing fund deposits for a shorter amount of time. The greater collateral efficiency promoted by a shorter settlement cycle might also indirectly promote capital formation for market participants in the financial system in general, because the improved capital efficiency of a shorter settlement cycle means that a given amount of collateral can support a larger amount of economic activity.

5. Quantification of Direct and Indirect Effects of a T+2 Settlement Cycle

As mentioned previously, several industry groups have released cost estimates for compliance with a shorter standard settlement cycle, including the SIA, the ISC, and BCG. However, only the BCG Study performed a cost-benefit analysis of a T+2 standard settlement cycle. We first summarize the cost estimates in the BCG Study in the subsection immediately below and then, in the following subsections, we provide our own evaluation of these estimates as part of our discussion of the potential direct and indirect compliance costs related to the proposed amendment to Rule 15c6–1(a). In addition, the Commission encourages commenters to provide additional information to help quantify the economic effects that we are currently unable to quantify due to data limitations.

a. Industry Estimates of Costs and Benefits

The BCG Study concluded that the transition to a T+2 settlement cycle would cost approximately $550 million in incremental initial investments across industry constituent groups,[278] which would result in annual operating savings of $170 million and $25 million in annual return on reinvested capital from clearing fund reductions.[279]

The BCG Study also estimated that the average level of required investments per firm could range from $1 to 5 million, with large institutional broker-dealers incurring the largest amount of investments on a per-firm basis, and buy side firms at the lower end of the spectrum.[280] The investment costs for ''other'' entities, including DTCC, Omgeo, service bureaus, RIAs and non-self-clearing broker-dealers totaled $70 million for the entire group. Within this $70 million, DTCC and Omgeo were estimated to have a compliance cost of $10 million each. The operational cost savings per entity ranged from $30–55 million per year, with broker-dealers serving retail investors saving the largest absolute amount, and buy side firms saving the least. Custodian banks were estimated to save approximately $40 million per year.[281]

The BCG Study also estimated the annual clearing fund reductions resulting from reductions in clearing firms' clearing funds requirements to be $25 million per year. The study estimated this by considering the reduction in clearing fund requirements and multiplied it by the average Federal Funds target rate for the 10-year period up until 2008 (3.5%). The BCG Study also estimated the value of the risk reduction in buy side exposure to the sell side. The implied savings were estimated to be $200 million per year, but these values were not included in the overall cost-benefit calculations.

Several factors limit the usefulness of the BCG Study's estimates of potential costs and benefits of the proposed amendment to Rule 15c6–1(a). First, technological improvements, such as the increased use of computers and automation in post-trade processes, that have been made since 2012, when the report was first published, may have reduced the cost of the upgrades necessary to comply with a shorter settlement cycle. While this may, in turn, reduce the costs associated with the proposed amendment, it may also reduce the scope of investments required by the proposed amendment,[282] as a larger portion of market participants may have already adopted many processes that would reduce the cost of a transition to a T+2 settlement cycle. In addition, the BCG Study considered as a part of its cost estimates operational cost savings as a result of improvements to operational efficiency, which the Commission preliminarily considers an ancillary benefit of a shorter settlement cycle.

Lastly, the BCG Study was premised on survey responses by a subset of market participants that may be affected by the rule—surveys were sent to 270 market participants and 70 responses were received, including 20 institutional broker-dealers, prime brokers and correspondent clearers; 12 retail broker-dealers; 17 buy side firms; 14 registered investment advisors (RIAs); and seven custodian banks. Given the low response rate, as well as the uncertainty regarding the sample of market participants that was asked to complete the survey, we cannot conclude that the cost estimates in the BCG Study are representative of the costs of all market participants.[283]

b. Commission Estimates of Costs

The proposed amendment might generate direct and indirect costs for market participants, who may need to change multiple systems and processes to comply with a T+2 standard settlement cycle. As noted in Part II.A.5.c.(2), the T+2 Playbook included a timeline with milestones and dependencies necessary for a transition to a T+2 settlement cycle, as well as activities that market participants should consider in preparation for the transition. The Commission preliminarily believes that the majority of activities for migration to a T+2 settlement cycle will stem from behavior modification of market participants and systems testing, and thus the majority of the costs of

[277] *See supra* Part VI.A. and Part VI.C.4. for more discussion about capital formation and efficiency.

[278] The BCG Study generally refers to ''institutional broker-dealers,'' ''retail broker-dealers,'' ''buy side'' firms, and ''custodian banks,'' without defining these particular groups. The Commission uses these terms when referring to estimates provided by the BCG Study but notes that its own definitions of various affected parties may differ from those in the BCG Study.

[279] *See* BCG Study, at 9–10.

[280] *Id.* at 30–31.

[281] *See id.* at 41.

[282] *See supra* Part VI.A. While market participants may have already made investments consistent with implementing a shorter settlement cycle, the fact that these investments have not resulted in a shorter settlement cycle is consistent with the existence of coordination problems among market participants.

[283] *See* BCG Study, *supra* note 103, at 15.

migration will be from labor.[284] These modifications may include a compression of the settlement timeline, as well as an increase in the fees that brokers may impose on their customers for trade failures. Although the T+2 Playbook does not include any direct estimates of the compliance costs for a T+2 settlement cycle, we utilize the timeline in the T+2 Playbook for specific actions necessary to migrate to a T+2 settlement cycle to directly estimate the inputs needed for migration, and form preliminary compliance cost estimates in the next section.

In addition, the T+2 Playbook, the ISC White Paper, and the BCG Study identify several categories of actions that market participants might need to take to comply with a T+2 settlement cycle—processing, asset servicing, and documentation.[285] While the following cost estimates for these remedial activities span industry-wide requirements for a migration to a T+2 settlement cycle, we do not anticipate each market participant directly undertaking all of these activities for several reasons. First, as noted in Part II.A.2.c., some market participants work with third-party service providers for activities such as trade processing and asset servicing, and thus may only indirectly bear the costs of the requirements. Second, certain costs might only fall on specific categories of entities—for example, the costs of updating the CNS and ID Net system would only directly fall on NSCC, DTC, and members/participants of those clearing agencies. Finally, some market participants may already have the processes and systems in place to accommodate a T+2 settlement cycle or would be able to adjust to a T+2 settlement cycle with minimal cost. For example, some market participants may already have the systems and processes to reduce the amount of time needed for trade affirmation and matching.[286] These market participants may thus bear a significantly lower cost to update their trade affirmation to comply with a T+2 standard settlement cycle.[287]

In the following section, we examine several categories of market participants and estimate the compliance costs for each category. Our estimate of the number and type of personnel is based on the scope of activities necessary for the participant to migrate to a T+2 settlement cycle, the participant's role within the clearance and settlement process, and the amount of testing required to ensure an error-free migration.[288] Hourly salaries for personnel are from SIFMA's *Management and Professional Earnings in the Securities Industry 2013*.[289] Our estimates use the timeline from the T+2 Playbook to determine the length of time personnel would work on the activities necessary to support a T+2 settlement cycle. The timeline provides an indirect method to estimate the inputs necessary to migrate to a T+2 settlement cycle, rather than relying directly on survey response estimates. We acknowledge many entities are already undertaking activities to support a migration to a T+2 settlement cycle in anticipation of the proposed amendment. However, to the extent that the costs of these activities have already been incurred, we consider these costs sunk, and do not include them in our analysis.

(1) FMUs—CCPs and CSDs

CNS, NSCC/DTC's ID Net service, and other systems will require adjustment to support a T+2 standard settlement cycle. According to the T+2 Playbook and the ISC White Paper, regulation-dependent planning, implementation, testing, and migration activities associated with the transition to a T+2 settlement cycle could last up to five quarters.[290] We preliminarily believe that these activities will impose a one-time compliance cost of $10.9 million [291] for DTC and NSCC each. After this initial compliance cost, we preliminarily expect that both DTCC and NSCC will incur minimal ongoing costs from the transition to a T+2 settlement cycle, because we believe that the majority of costs will stem from pre-migration activities, such as implementation, updates, and testing.

(2) Matching/ETC Providers—Exempt Clearing Agencies

Matching/ETC Providers may need to adapt their trade processing systems to comply with a T+2 settlement cycle. This may include actions such as updating reference data, configuring trade match systems, and configuring trade affirmation systems to affirm trades by 12:00 p.m. on T+1. Matching/ETC Providers will also need to conduct testing and assess post-migration activities. We preliminarily estimate that these activities will impose a one-time compliance cost of up to $10.9 million [292] for each Matching/ETC Provider. However, we acknowledge that some ETC providers may have a higher cost burden than others based on the volume of transactions that they process. We expect that ETC providers will incur minimal ongoing costs after the initial transition to a T+2 settlement cycle because we preliminarily believe that the majority of the costs of migration to a T+2 settlement cycle entail behavioral changes of market participants and pre-migration testing.

(3) Market Participants—Investors, Broker-Dealers, and Custodians

The overall compliance costs that a market participant incurs will depend on the extent to which it is directly involved in functions related to trade confirmation/affirmation, clearance and settlement, asset servicing, and other activities. For example, retail investors may bear few (if any) direct costs in a transition to a T+2 standard settlement cycle, because their respective broker-dealer handles the back-office functions of each transaction. However, as is discussed below, this does not imply that retail investors will not face indirect costs from the transition, such

[284] *See id.* at 15.

[285] *See* T+2 Playbook, *supra* note 126, at 11.

[286] *See* BCG Study, *supra* note 107, at 23.

[287] The BCG Study, as it is based on survey responses from market participants, does reflect the heterogeneity of compliance costs for market participants. However, for reasons mentioned in Part VI.C.5.a., we are not able to fully accept the BCG Study's cost estimates.

[288] For example, FMUs that play a critical role in the clearance and settlement infrastructure will require more testing associated with a T+2 settlement cycle than institutional investors.

[289] To monetize the internal costs, the Commission staff used data from SIFMA publications, modified by Commission staff to account for an 1800 hour work-year and multiplied by 5.35 (professionals) or 2.93 (office) to account for bonuses, firm size, employee benefits and overhead. *See* SIFMA, Management and Professional Earnings in the Security Industry—2013 (Oct. 7, 2013), *http://www.sifma.org/research/item.aspx?id=8589940603;* SIFMA, Office Salaries in the Securities Industry—2013 (Oct. 7, 2013), *http://www.sifma.org/research/item.aspx?id=8589940608.* These figures have been adjusted for inflation using data published by the Bureau of Labor Statistics.

[290] *See* T+2 Playbook, *supra* note 126, at 11. To monetize the internal costs, Commission staff used data from the SIFMA publications. Our time estimates account for the fact that a portion of the timeline has already elapsed in anticipation of a transition to a T+2 standard settlement cycle, and those costs are already sunk.

[291] The estimate is based on the T+2 Playbook timeline, which estimates regulation-dependent implementation activity, industry testing, and migration lasting five quarters. We assume 10 operations specialists (at $129 per hour), 10 programmers (at $256 per hour), and 1 senior operations manager (at $345/hour), working 40 hours per week. $(10 \times \$129 + 10 \times \$256 + 1 \times \$345) \times 5 \times 13 \times 40 = \$10{,}907{,}000$.

[292] The estimate is based on the T+2 Playbook timeline, which estimates regulation-dependent implementation activity for trade systems, matching, affirmation, testing, and post-migration testing lasting five quarters. We assume 10 operations specialists (at $129 per hour), 10 programmers (at $256 per hour), and 1 senior operations manager (at $345/hour), working 40 hours per week. $(10 \times \$129 + 10 \times \$256 + 1 \times \$345) \times 5 \times 13 \times 40 = \$10{,}907{,}000$.

as those passed through from broker-dealers or banks.

Institutional investors may need to configure systems and update reference data, which may also include updates to trade funding and processing mechanisms, to operate in a T+2 environment. The Commission preliminarily estimates that this will require an initial expenditure of $2.32 million per entity.[293] However, these costs may vary depending on the extent to which a particular institutional investor has already automated their trade processes. We preliminarily expect institutional investors will incur minimal ongoing direct compliance costs after the initial transition to a T+2 standard settlement cycle.

Broker-dealers that serve institutional investors will not only need to configure their trading systems and update reference data, but may also need to update trade confirmation/affirmation systems, documentation, cashiering and asset servicing functions, depending on the roles they assume with respect to their clients. We preliminarily estimate that, on average, each of these broker-dealers will incur an initial compliance cost of $4.72 million.[294] We preliminarily expect that these broker-dealers will incur minimal ongoing direct compliance costs after the initial transition to a T+2 standard settlement cycle.

Broker-dealers that serve retail investors may also need to spend significant resources to educate their clients about the shorter settlement cycle. We preliminarily estimate that these broker-dealers will incur an initial compliance cost of $8.6 million each.[295] However, unlike previously mentioned market participants, we expect that broker-dealers that serve retail investors may face significant one-time compliance costs after the initial transition to T+2. Retail investors may require additional education and customer service, which may impose costs on their broker-dealers. The Commission preliminarily believes that a reasonable upper bound for the costs associated with this requirement is $30,000 per broker-dealer.[296] Assuming all clearing and introducing broker-dealers must educate retail customers, the upper bound for the costs of retail investor education would be approximately $50.5 million.[297]

Custodian banks will need to update their asset servicing functions to comply with a shorter settlement cycle. We preliminarily estimate that custodian banks will incur an initial compliance cost of $1.16 million,[298] and expect them to incur minimal ongoing compliance costs after the initial transition because we preliminarily believe most of the costs will stem from pre-migration updates and testing.

(4) Indirect Costs

In estimating these implementation costs, we note that market participants who bear the direct costs of the actions they undertake to comply with Rule 15c6–1 may pass these costs on to their customers. For example, retail and institutional investors might not directly bear the cost of all of the necessary upgrades for a T+2 settlement cycle, but might indirectly bear these costs as their broker-dealers might increase their fees to amortize the costs of updates among their customers. We are unable to quantify the overall magnitude of the indirect costs that retail and institutional investors may bear, because it will depend on the market power of each broker-dealer, and its willingness to pass on the costs of migration to a T+2 standard settlement cycle to their customers. However, we preliminarily believe that in situations where broker-dealers have little or no competition, broker-dealers may at most pass on the entire cost of the initial investment to their customers. As discussed above, this could be as high as $4.72 million for broker-dealers that serve institutional investors, and $8.6 million for broker-dealers that serve retail investors. However, in situations where broker-dealers face heavy competition for customers, broker-dealers may bear the costs of the initial investment entirely, and avoid passing on these costs to their customers.

As noted in Part VI.B.4., the ability of market participants to pass implementation costs on to customers likely depends on their relative bargaining power. For example, CCPs, like many other utilities, exhibit many of the characteristics of natural monopolies and, as a result, may have market power, particularly relative to broker-dealers who submit trades for clearing. This means that they may be able to share implementation costs they directly face related to shortening the settlement cycle with broker-dealers through higher clearing fees. Conversely, if institutional investors have market power relative to broker-dealers, broker-dealers may not be in a position to impose indirect costs on them.

(5) Industry-Wide Costs

To estimate the aggregate, industry-wide cost of a transition to a T+2 standard settlement cycle, we take our per-entity estimates and multiply them by our estimate of the respective number of entities. The Commission preliminarily estimates that there are 965 buy-side firms, 186 broker-dealers, and 53 custodian banks.[299] Additionally, as noted in Part II.A.2.b., there are three Matching/ETC Providers, and 1,683 broker-dealers that will incur investor education costs. One way to establish a total industry initial compliance cost estimate would be to multiply each estimated per-entity cost by the respective number of entities and sum these values, which would result in an estimate of $4.0 billion.[300] The

[293] The estimate is based on the T+2 Playbook timeline, which estimates regulation-dependent implementation activity for trade systems, reference data, and testing activity to last four quarters. We assume 2 operations specialists (at $129 per hour), 2 programmers (at $256 per hour), and 1 senior operations manager (at $345 per hour), working 40 hours per week. $(2 \times \$129 + 2 \times \$256 + 1 \times \$345) \times 4 \times 13 \times 40 = \$2{,}319{,}200$.

[294] The estimate is based on the T+2 Playbook timeline, which estimates regulation-dependent implementation activity for trade systems, reference data, documentation, asset servicing, and testing to last four quarters. We assume 5 operations specialists (at $129 per hour), 5 programmers (at $256 per hour), and 1 senior operations manager (at $345 per hour), working 40 hours per week. $(5 \times \$129 + 5 \times \$256 + 1 \times \$345) \times 4 \times 13 \times 40 = \$4{,}721{,}600$.

[295] The estimate is based on the T+2 Playbook timeline, which estimates regulation-dependent implementation activity for trade systems, reference data, documentation, asset servicing, customer education and testing to last five quarters. We assume 5 operations specialists (at $129 per hour), 5 programmers (at $256 per hour), 5 trainers (at $208 per hour) and 1 senior operations manager (at $345 per hour), working 40 hours per week. $(5 \times \$129 + 5 \times \$256 + 5 \times \$208 + 1 \times \$345) \times 5 \times 13 \times 40 = \$8{,}606{,}000$.

[296] This estimate is based on the assumption that a broker-dealer chooses to educate customers using a 10-minute view that takes at most $3,000 per minute to produce. *See* Crowdfunding, Exchange Act Release No. 76324 (Oct. 30, 2015), 80 FR 71388, 71529 & n.1683 (Nov. 16, 2015).

[297] Calculated as $30,000 per broker-dealer × (186 broker-dealers reporting as self-clearing + 1,497 broker-dealers reporting as introducing but not self-clearing) = $50,490,000.

[298] The estimate is based on the T+2 Playbook timeline, which estimates regulation-dependent implementation activity for asset servicing and testing to last two quarters. We assume 2 operations specialists (at $129 per hour), 2 programmers (at $256 per hour), and 1 senior operations manager (at $345 per hour), working 40 hours per week. $(2 \times \$129 + 2 \times \$256 + 1 \times \$345) \times 2 \times 13 \times 40 = \$1{,}159{,}600$.

[299] The estimate for the number of buy-side firms is based on the Commission's 13(f) holdings information filers with over $1 billion in assets under management, as of December 31, 2015. The estimate for the number of broker-dealers is based on FINRA FOCUS Reports of firms reporting as self-clearing. *See supra* note 235 and accompanying text. The estimate for the number of custodian banks is based on the number of ''settling banks'' listed in DTC's Member Directories, available at *http://www.dtcc.com/client-center/dtc-directories.*

[300] Calculated as 186 broker-dealers (self-clearing) × $8,606,000 + 1683 broker-dealers (self-clearing

Continued

Commission, however, preliminarily believes that this estimate is likely to overstate the true initial cost of transition to a T+2 settlement cycle for a number of reasons. First, our per-entity estimates do not account for the heterogeneity in market participant size, which may have a significant impact on the costs that market participants face. While the BCG Study included both estimates of the number of entities in different size categories as well as estimates of costs that an entity in each size category is likely to incur, it did not provide sufficient underlying information to allow the Commission to estimate the relationship between participant size and compliance cost and thus we cannot produce comparable estimates. The Commission seeks comment on the extent to which market participants believe that the compliance costs for the proposed rule will scale with market participant size.

Second, the Commission's estimate assumes that broker-dealers will not repurpose existing systems that allow them to participate in foreign markets that require settlement by T+2. For example, approximately 99 of the broker-dealers that reported self-clearing also reported that they were affiliates or subsidiaries of foreign broker-dealers or banks. To the extent that a broker-dealer has a foreign affiliate or parent that already has systems in place to support T+2 settlement in foreign markets, it may bear lower costs under the proposed amendment to Rule 15c6–1(a) than the estimate above. Removing all 99 of these broker-dealers from the computation of total industry initial compliance cost estimate presented above results in a reduction of this estimate to approximately $3.2 billion.[301] The Commission seeks comment on the extent to which participants believe that the compliance costs for the proposed rule may be less for those broker-dealers that can repurpose existing systems that they currently use for their activities in foreign markets.

Third, investments by third-party service providers may mean that many of the estimated compliance costs for market participants are duplicated. The BCG Study suggests that ''leverage'' from service providers may yield a savings of $194 million, reducing aggregate costs by approximately 29%.[302] Based on information gathered from the recent available financial reports of service providers, the Commission preliminarily believes that a reasonable range of estimates for the average cost reduction associated with service providers across all entities could be between 16% and 32%.[303] However, the Commission seeks further comment on the extent to which the efficiencies generated by the investments of service providers might reduce the compliance costs of market participants. Applying this range to the total industry initial compliance cost estimate presented above yields a range of total industry initial compliance cost estimates between $2.7 billion and $3.4 billion.

Taking into account potential cost reductions due to repurposing existing systems and using service providers as described above, the Commission preliminarily believes that $2.1 billion to $4.2 billion represents a reasonable range for the total industry initial compliance costs.[304]

In addition to these initial costs, a transition to a shorter settlement cycle may also result in certain ongoing industry-wide costs. Though we preliminarily believe that a move to a shorter settlement cycle will generally bring with it a reduced reliance on manual processing, a shorter settlement cycle may also exacerbate remaining operational risk. This is because a shorter settlement cycle would provide market participants with less time to resolve errors. For example, if there is an entry error in the trade match details sent by either counterparty for a trade, both counterparties would have one extra day to resolve the error under the baseline than in a T+2 environment. For these errors, a shorter settlement cycle may increase the probability that the error ultimately results in a settlement fail. However, given the variety of operational errors that are possible in the clearance and settlement process and the low probability of some of these errors, we are unable to quantify the impact that a shorter settlement cycle may have on the ongoing industry-wide costs stemming from a potential increase in operational risk.

Another industry-wide potential cost of shortening the settlement cycle is related to CCP member default. A shorter settlement cycle may provide CCPs with a shorter horizon in which to manage a defaulting member's outstanding settlement obligations. Besides potentially increasing the operational risks associated with default management, a shorter settlement cycle may also have implications for CCPs that must liquidate a defaulting member's securities and, if circumstances require, the securities of non-defaulting members, in order to meet payment obligations for unsettled trades. A shorter settlement cycle leaves a CCP with less time in which to liquidate the securities and may increase the price impact associated with liquidation.

Current margin models at CCPs may account for the price impact associated with liquidating collateral. Although a CCP's margining algorithm may account for the additional impact generated by a shorter liquidation horizon for the defaulting member's clearing fund deposits, margin requirements may not reflect the costs that a liquidation over a shorter horizon may impose on other market participants. For example, a CCP may impose haircuts on collateral to account for the costs of liquidating collateral in the event of a clearing member default, causing clearing members to internalize a portion of the cost of liquidating illiquid assets. While the haircut may mitigate the risk that the price impact associated with liquidation of collateral assets over a shorter period of time causes the CCP to fail to meet its settlement obligations, the reduction in the price of collateral assets may affect other market participants who may be sensitive to the value of these assets.

D. Alternatives

1. Shift to a T+1 Standard Settlement Cycle

The Commission has considered the consequences of a shift to a T+1 standard settlement cycle.[305] The Commission preliminarily believes that

and introducing) × $30,000 + 53 custodian banks × $1,159,000 + 965 buy-side firms × $2,319,000 + 3 Matching/ETC Providers × $10,900,000 + 2 FMUs × $10,900,000 = $ 4,005,034,800.

[301] Calculated as 87 broker-dealers (self-clearing) × $8,606,000 + 1683 broker-dealers (self-clearing and introducing) × $30,000 + 53 custodian banks × $1,159,000 + 965 buy-side firms × $2,319,000 + 3 Matching/ETC Providers × $10,900,000 + 2 FMUs × $10,900,000 = $ 3,153,040,800.

[302] *See* BCG Study *supra* note 107, at 79.

[303] Commission Staff hand collected information on operating margins for business segments related to settlement services of three large service providers for fiscal years 2013, 2014, and 2015. The median estimate was 16.4%. To arrive at the lower bound of 16%, the Commission assumes service providers capture all of the cost reduction they provide; to arrive at the upper bound, the Commission assumes that service providers share half of the overall cost reduction with their customers. Generally, the extent to which service providers share the efficiencies they provide with their customers may depend on service providers' bargaining power. *See, e.g.,* Binmore, Ken, Ariel Rubinstein, and Asher Wolinsky, *The Nash Bargaining Solution In Economic Modelling,* The RAND Journal of Economics, 17, no. 2, Summer, 1986, at 176–188.

[304] The lower bound of this range is calculated as ($4.0 billion − $0.9 billion cost reduction related to broker-dealers with foreign parents or affiliates) − (1 − 0.32) = $2.1 billion.

[305] *See supra* Part III.A.4. for a discussion on the consideration of a settlement cycle shorter than T+2.

although a move to a T+1 standard settlement cycle could have similar qualitative benefits of market, credit, and liquidity risk reduction as a move to a T+2 standard settlement cycle, the types of necessary investments and changes necessary to move to a T+1 standard settlement cycle also introduce greater costs for market participants.

As stated earlier, a T+1 standard settlement cycle might result in a larger reduction in certain settlement risks than would result from a T+2 standard settlement cycle because, as explained above, the risks associated with counterparty default tend to increase with time. Price volatility, as measured by the standard deviation of the price, is concave in time, which means that as a period of time increases, volatility will increase, but at a decreasing rate. This suggests that the reduction in price volatility from moving from T+2 settlement to T+1 settlement is larger than the reduction in price volatility from moving from T+3 settlement to T+2 settlement. Similarly, assuming constant trading volume, the volume of unsettled trades for a T+1 settlement cycle would be reduced again by one-third, and, as a result, for any given adverse movement in prices, the financial losses resulting from counterparty default will be two-thirds less than those under a T+3 settlement cycle.

At the same time, the Commission preliminarily believes that the initial costs of complying with a T+1 settlement cycle will be greater than with a T+2 settlement cycle. Successful transition to a settlement cycle that is shorter than T+2 could require significantly larger investments by market participants to adopt new systems and processes. The upgrades necessary for a T+1 settlement cycle might include changes such as a transformation of lending and foreign buyer processes, real-time or near real-time trade processing capabilities, as well as a further acceleration of the retail funding timeline, which would require larger structural changes to the settlement process and more cross-industry coordination than the upgrades for a T+2 settlement cycle would. Because these upgrades could require more changes across multiple markets and settlement systems, they may be more expensive to implement than the upgrades necessary for T+2 settlement. Additionally, the lead time and level of coordination by market participants required to implement such changes to transition to a T+1 standard settlement cycle would be longer and greater than the time and coordination required to move to a T+2 standard settlement cycle, which could delay the realization of the risk-reducing benefits of shortening the settlement cycle and increase the risk that market participants would not be able to transition to T+1 in a coordinated fashion.

Further, and as noted above, a move to a T+1 standard settlement cycle could introduce additional financial risks and costs as a result of its impact on transactions in certain foreign markets. Because settlement of spot FX transactions occurs on T+2, market participants who transact in an environment with a shorter settlement cycle would be required to pre-fund securities transactions in foreign currencies. Under these circumstances, a market participant would either incur opportunity costs and currency risk associated with holding FX reserves or be exposed to price volatility by delaying securities transactions by one day to coordinate settlement of the securities and FX legs. In addition, shortening the settlement cycle to T+1 may make it more difficult for market participants to timely settle cross-border transactions because the U.S. settlement cycle would not be harmonized with non-U.S. markets that have already transitioned to a T+2 settlement cycle.[306] The disparity between the settlement cycles would most likely increase the costs associated with such cross-border transactions.

The BCG Study estimated that the transition to a T+1 settlement cycle would cost the industry $1.77 billion in incremental investments (compared to $550 million for a T+2 settlement cycle), with an annual operational cost savings of $175 million per year and $35 million from clearing fund reductions (compared to $170 million and $25 million per year in a T+2 settlement cycle, respectively). Risk reduction benefits were estimated to be $410 million for a T+1 settlement cycle (compared to $200 million per year in a T+2 settlement cycle).[307] Although the Commission preliminarily believes that these numbers cannot be fully accepted as cost estimates for the proposed amendment,[308] the magnitude of the difference between the BCG Study's T+2 and T+1 cost and benefit estimates likely indicate additional larger structural changes necessary to transition to a T+1 settlement cycle.

In addition, the SIA T+1 Report estimated the initial investment costs of a shortened standard settlement cycle of T+1 to be $8 billion, with net annual benefits of $2.7 billion per year. The report estimated that broker-dealers would have an initial investment of $5.4 billion, with net annual benefits of $2.1 billion per year; asset managers would have an initial investment of $1.7 billion, with net annual benefits of $403 million per year; custodians would have an initial investment of $600 million, with net annual benefits of $307 million per year; and infrastructure service providers would have an initial investment of $237 million, with net annual loss of $81 million per year. Although these estimates have higher costs and benefits than the estimates in the BCG Study, the SIA estimates were made in 2000, and are much older than the BCG Study estimates, which were made in 2012. In the sixteen years since the publication of the SIA T+1 Report, significant technological and industry changes may have affected the costs and benefits of a T+1 standard settlement cycle, which may limit the usefulness of the report's estimates for assessing the costs and benefits of a T+1 standard settlement cycle today.[309]

2. Straight-Through Processing Requirement

The Commission has also considered the consequences of mandating specific clearance and settlement practices, such as straight-through processing, in lieu of the proposed rules. STP involves the electronic entry of trade details during the settlement process, which avoids the manual entry and re-entry of trade details. By avoiding the manual entry of trade details, STP can speed up the settlement process as well as reduce error rates. However, the Commission preliminarily believes that although many of the costs and benefits of a T+2 standard settlement cycle could be achieved by mandating specific clearance and settlement practices, there are several reasons why mandating a shorter settlement cycle may substantively differ from a specific practice requirement.

First, the Commission preliminarily believes that many of the proposed rule's benefits stem directly from the fact that the length of the settlement cycle has been shortened, and not from the particular practices used to comply with the proposed rule. As discussed above in Part VI.C., the Commission preliminarily believes that shortening the settlement cycle is likely to reduce a number of risks associated with securities settlement, including credit and market risks that stem from

[306] For further discussion regarding the potential benefits of harmonization of settlement cycles for market participants engaging in cross-border transactions, *see infra* Part III.A.4.

[307] *See* BCG Study, *supra* note 107, at 41.

[308] *See supra* Part VI.C.5.a.

[309] *See* SIA Business Case Report at 3.

counterparty exposures. Moreover, the Commission preliminarily believes that intermediaries that manage these types of risk as a result of their role in the clearance and settlement system may share a portion of potential cost savings associated with reduced risks with financial market participants. While the Commission acknowledges that an alternative approach that primarily focuses on mandating STP may achieve some of the operational benefits associated with a shortened settlement cycles, such an approach may not reduce counterparty exposures and attendant risks.

Furthermore, the Commission recognizes that STP may be a natural enabler for a shorter settlement cycle, but it may not be the most efficient enabler. The Commission preliminarily believes that market participants may have a variety of methods to comply with the proposed rule, and may prefer the least costly method of shortening the settlement cycle. By allowing market participants to choose how to comply with a shorter settlement cycle, rather than mandating a specific practice, the proposed rules may allow the market to realize the benefits of a shorter settlement cycle at the lowest cost to market participants.

Additionally, mandating specific clearance and settlement practices instead of mandating a shortened settlement cycle may have adverse effects on competition in the market for back-office services. Back-office service providers may have a variety of methods to help their clients comply with a shorter settlement cycle, and mandating specific clearance and settlement practices may adversely affect the number of providers that market participants might use, and a reduction in competition among back-office service providers that can comply with required practices may result in higher compliance costs for market participants.

E. Request for Comment

The Commission seeks comment on the potential economic impact of the proposed amendment to Rule 15c6–1(a). In addition, the Commission seeks comment on related issues that may inform the Commission's views regarding the economic impact of the proposed amendment to Rule 15c6–1(a), as well as alternatives to the proposed amendment. The Commission in particular seeks comment on the following:

1. The Commission invites commenters to provide additional data on the time it takes to complete each step within the current clearance and settlement process. What are current constraints or impediments for each step within the clearance and settlement process that would limit the ability to shorten the settlement cycle from T+3 to T+2? Are there similar or additional limitations for shortening the settlement cycle beyond T+2? Do these constraints or impediments vary by market participant type?

2. The Commission invites commenters to provide additional data on the current timing of trade matching. What portion of trades is affirmed on trade date? What portion of trades is currently matched such that they could already be settled on a T+2 settlement cycle? How does the timing of trade matching vary by the type of market participant?

3. The Commission invites commenters to discuss the costs and benefits of the industry changes (*e.g.,* technology changes and business practices) necessary to comply with a T+2 standard settlement cycle related to trade matching. What are the costs of implementing such changes? What cost-savings would these changes yield? What operational risks might these changes create?

4. The Commission invites commenters to provide additional data on the expected collateral efficiency gains from a T+2 standard settlement cycle. How would clearing fund deposits change as a result of the proposed amendment? To what extent does this change fully represent the change to the level of risk associated with the settlement cycle for securities transactions?

5. The Commission invites commenters to discuss the impact of a T+2 settlement cycle on broker-dealers and their customers. What types of adaptations will be necessary to comply with a T+2 settlement cycle, and what are their relative costs and benefits?

6. The Commission invites commenters to discuss the potential impact of a T+2 standard settlement cycle with respect to cross-border and cross-asset class transactions. What are the costs and benefits of harmonizing with certain markets' settlement cycles? Would a T+2 standard settlement cycle make any cross-border or cross-asset transactions more or less difficult?

7. The Commission invites commenters to discuss the anticipated market changes, if any, if the proposed amendment to Rule 15c6–1(a) were not adopted. Which activities necessary for compliance with a T+2 standard settlement cycle would occur in the absence of the proposed rule amendment? Which market participants, if any, would move to a T+2 settlement cycle in the absence of the proposed rule amendment?

8. The Commission seeks comment on the alternative of shifting to a T+1 standard settlement cycle. Would such an alternative be appropriate and preferable to a T+2 standard settlement cycle? Why or why not? What are the costs and benefits of such an alternative relative to the baseline and the proposal?

9. The Commission seeks comment on the alternative of mandating specific clearance and settlement practices, such as STP. Would such an alternative be appropriate and preferable to a T+2 standard settlement cycle? Why or why not? What are the costs and benefits of such an alternative relative to the baseline and the proposal?

10. The Commission seeks comment on several topics related to the response of market participants to the shift to a T+2 settlement cycle in certain foreign markets. The Commission seeks comment on the following:

- Commenters are invited to discuss the impact that the shift to a T+2 settlement cycle in certain foreign markets (*e.g.,* E.U. markets) has had on their clearance and settlement operations. Are there any responses to changes in the settlement cycle of these markets that may alter the costs or benefits of adopting a T+2 standard settlement cycle in the U.S.?
- Commenters are invited to discuss their preparations for upcoming migrations to a T+2 settlement cycle in foreign markets. Do these preparations alter the costs and benefits of adapting to a T+2 standard settlement cycle in the U.S.?
- Has the experience of migrating to a T+2 settlement cycle in certain foreign markets allowed commenters to make any other observations relevant to the proposal to adopt a T+2 standard settlement cycle in the United States?

VII. Small Business Regulatory Enforcement Fairness Act

Under the Small Business Regulatory Enforcement Fairness Act of 1996,[310] a rule is ''major'' if it has resulted, or is likely to result in:

- An annual effect on the economy of $100 million or more;
- A major increase in costs or prices for consumers or individual industries; or
- Significant adverse effects on competition, investment, or innovation.

The Commission requests comment on whether the proposed amendment to Rule 15c6–1(a) would be a ''major'' rule

[310] Public Law 104–121, Title II, 110 Stat. 857 (1996).

for purposes of the Small Business Regulatory Enforcement Fairness Act. In addition, the Commission solicits comment and empirical data on:

• The potential effect on the U.S. economy on annual basis;

• Any potential increase in costs or prices for consumer or individual industries; and

• Any potential effect on competition, investment, or innovation.

VIII. Initial Regulatory Flexibility Analysis

The Regulatory Flexibility Act (''RFA'') requires the Commission, in promulgating rules, to consider the impact of those rules on small entities.[311] Section 603(a) of the Administrative Procedure Act,[312] as amended by the RFA, generally requires the Commission to prepare and make available for public comment an initial regulatory flexibility analysis of all proposed rules to determine the impact of such rulemaking on ''small entities.'' [313] Section 605(b) of the RFA states that this requirement shall not apply to any proposed rule which, if adopted, would not have a significant economic impact on a substantial number of small entities.[314]

The Commission has prepared the following initial regulatory flexibility analysis in accordance with Section 603(a) of the RFA in relation to the proposed amendment to Exchange Act Rule 15c6–1(a).

A. Reasons for, and Objectives of, the Proposed Action

The Commission is proposing to amend Exchange Act Rule 15c6–1(a) to shorten the standard settlement cycle for securities transactions (other than those excluded by the rule) from T+3 to T+2. The Commission believes that proposing the amendment to Rule 15c6–1(a) to shorten the standard settlement cycle from three days to two days could potentially offer market participants significant benefits through the reduction of exposure to credit, market, and liquidity risk, as well as related reductions to systemic risk.

B. Legal Basis

The Commission is proposing an amendment to Rule 15c6–1(a) under the authority set forth in the Exchange Act, particularly under Sections 15(c)(6),[315] 17A,[316] and 23(a) [317] of the Exchange Act.

C. Small Entities Subject to the Rule and Rule Amendment

Paragraph (c) of Exchange Act Rule 0–10 provides that, for purposes of Commission rulemaking in accordance with the provisions of the RFA, when used with reference to a broker or dealer, the Commission has defined the term ''small entity'' to mean a broker or dealer: (1) With total capital (net worth plus subordinated liabilities) of less than $500,000 on the date in the prior fiscal year as of which its audited financial statements were prepared pursuant to Rule 17a–5(d) under the Exchange Act,[318] or if not required to file such statements, a broker-dealer with total capital (net worth plus subordinated liabilities) of less than $500,000 on the last business day of the preceding fiscal year (or in the time that it has been in business, if shorter); and (2) is not affiliated with any person (other than a natural person) that is not a small business or small organization.[319]

The proposed amendment to Rule 15c6–1(a) would prohibit broker-dealers, including those that are small entities, from effecting or entering into a contract for the purchase or sale of a security (other than an exempted security, government security, municipal security, commercial paper, bankers' acceptances, or commercial bills) that provides for payment of funds and delivery of securities no later than the second business day after the date of the contract unless otherwise expressly agreed to by the parties at the time of the transaction. Currently, based on FOCUS Report [320] data, as of December 31, 2015, we estimate that there are 1,235 broker-dealers that may be considered small entities.

D. Projected Reporting, Recordkeeping and Other Compliance Requirements

The proposed amendment to Rule 15c6–1(a) would not impose any new reporting or recordkeeping requirements on broker-dealers that are small entities. However, the proposed amendment to Rule 15c6–1(a) may impact certain broker-dealers, including those that are small entities, to the extent that broker-dealers may need to make changes to their business operations and incur certain costs in order to operate in a T+2 environment.

For example, conversion to a T+2 standard settlement cycle may require broker-dealers, including those that are small entities, to make changes to their business practices, as well as to their computer systems, and/or to deploy new technology solutions. Implementation of these changes may require broker-dealers to incur new or increased costs, which may vary based on the business model of individual broker-dealers as well as other factors.

Additionally, conversion to a T+2 standard settlement cycle may also result in an increase in costs to certain broker-dealers who finance the purchase of customer securities until the broker-dealer receives payment from its customers. To pay for securities purchases, many customers liquidate other securities or money fund balances held for them by their broker-dealers in consolidated accounts such as cash management accounts. However, some broker-dealers may elect to finance the purchase of customer securities until the broker-dealer receives payment from its customers for those customers that do not choose to liquidate other securities or have a sufficient money fund balance prior to trade execution to pay for securities purchases. Broker-dealers that elect to finance the purchase of customer securities may incur an increase in costs in a T+2 environment resulting from settlement occurring one day earlier unless the broker-dealer can expedite customer payments.

E. Duplicative, Overlapping or Conflicting Federal Rules

The Commission believes that there are no federal rules that duplicate, overlap or conflict with the proposed amendment to Rule 15c6–1(a).

F. Significant Alternatives

The RFA requires that the Commission include in its regulatory flexibility analysis a description of any significant alternatives to the proposed rule which would accomplish the stated objectives of applicable statutes and which would minimize any significant economic impact of the proposed rule on small entities.[321] Pursuant to Section 3(a) of the RFA, the Commission's initial regulatory flexibility analysis must consider certain types of alternatives, including: (a) The establishment of differing compliance or reporting requirements or timetables that take into account the resources

[311] *See* 5 U.S.C. 601 *et seq.*

[312] 5 U.S.C. 603(a).

[313] Section 601(b) of the RFA permits agencies to formulate their own definitions of ''small entities.'' *See* 5 U.S.C. 601(b). The Commission has adopted certain definitions for the terms ''small business'' and ''small organization'' for the purposes of rulemaking in accordance with the RFA. These definitions, as relevant to this proposed rulemaking, are set forth in Rule 0–10, 17 CFR 240.0–10.

[314] *See* 5 U.S.C. 605(b).

[315] 15 U.S.C. 78o(c)(6).

[316] 15 U.S.C. 78q–1.

[317] 15 U.S.C. 78w(a).

[318] 17 CFR 240.17a–5(c).

[319] 17 CFR 240.0–10(d).

[320] *See supra* note 235.

[321] 5 U.S.C. 603(c).

available to small entities; (b) the clarification, consolidation, or simplification of the compliance and reporting requirements under the rule for small entities; (c) the use of performance rather than design standards; and (d) an exemption from coverage of the rule, or any part of thereof, for such small entities.[322]

The Commission considered alternatives to the proposed rule amendment that would accomplish the stated objectives of the amendment without disproportionately burdening broker-dealers that are small entities, including: differing compliance requirements or timetables; clarifying, consolidating or simplifying the compliance requirements; using performance rather than design standards; or providing an exemption for certain or all broker-dealers that are small entities. The purpose of Rule 15c6–1(a) is to establish a standard settlement cycle for broker-dealer transactions. Alternatives, such as different compliance requirements or timetables, or exemptions, for Rule 15c6–1(a), or any part thereof, for small entities would undermine the purpose of establishing a standard settlement cycle. For example, allowing small entities to settle at a time later than T+2 could create a two-tiered market that could work to the detriment of small entities whose order flow would not coincide with that of other firms operating on a T+2 settlement cycle. Additionally, the Commission believes that establishing a single timetable (*i.e.,* compliance date) for all broker-dealers, including small entities, to comply with the amendment is necessary to ensure that the transition to a T+2 standard settlement cycle takes place in an orderly manner that minimizes undue disruptions in the securities markets. With respect to using performance rather than design standards, the Commission used performance standards to the extent appropriate under the statute. For example, broker-dealers have the flexibility to settle transactions under a standard settlement cycle shorter than T+2. In addition, under the proposed rule amendment, broker-dealers have the flexibility to tailor their systems and processes, and generally to choose how, to comply with the rule.

G. Request for Comment

The Commission encourages written comments on matters discussed in the initial RFA. In particular, the Commission seeks comment on the number of small entities that would be affected by the proposed amendment to Rule 15c6–1(a) and whether the effect(s) on small entities would be economically significant. Commenters are asked to describe the nature of any effect(s) the proposed amendment to Rule 15c6–1(a) may have on small entities, and to provide empirical data to support their views.

IX. Statutory Authority and Text of the Proposed Amendment to Rule 15c6–1

The Commission is proposing an amendment to Rule 15c6–1 under the Commission's rulemaking authority set forth in Sections 15(c)(6), 17A and 23(a) of the Exchange Act [15 U.S.C. 78o(c)(6), 78q–1, and 78w(a) respectively]. For the reasons stated in the preamble, Title 17, Chapter II of the Code of Federal Regulations is proposed to be amended as follows:

PART 240—GENERAL RULES AND REGULATIONS, SECURITIES ACT OF 1934

■ 1. The general authority citation for part 240 continues to read as follows:

Authority: 15 U.S.C. 77c, 77d, 77g, 77j, 77s, 77z–2, 77z–3, 77eee, 77ggg, 77nnn, 77sss, 77ttt, 78c, 78c–3, 78c–5, 78d, 78e, 78f, 78g, 78i, 78j, 78j–1, 78k, 78k–1, 78*l,* 78m, 78n, 78n–1, 78*o,* 78*o*–4, 78*o*–10, 78p, 78q, 78q–1, 78s, 78u–5, 78w, 78x, 78*ll,* 78mm, 80a–20, 80a–23, 80a–29, 80a–37, 80b–3, 80b–4, 80b–11, 7201 *et seq.,* and 8302; 7 U.S.C. 2(c)(2)(E); 12 U.S.C. 5221(e)(3); 18 U.S.C. 1350; Pub. L. 111–203, 939A, 124 Stat. 1376 (2010); and Pub. L. 112–106, sec. 503 and 602, 126 Stat. 326 (2012), unless otherwise noted.

* * * * *

■ 2. Amend § 240.15c6–1 by revising paragraph (a) to read as follows:

The proposed amendment reads as follows:

§ 240.15c6–1 Settlement Cycle.

(a) Except as provided in paragraphs (b), (c), and (d) of this section, a broker or dealer shall not effect or enter into a contract for the purchase or sale of a security (other than an exempted security, government security, municipal security, commercial paper, bankers' acceptances, or commercial bills) that provides for payment of funds and delivery of securities later than the second business day after the date of the contract unless otherwise expressly agreed to by the parties at the time of the transaction.

* * * * *

By the Commission.

Dated: September 28, 2016.

Robert W. Errett,

Deputy Secretary.

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[322] *Id.*