CME Group
A CME/Chicago Board of Trade/NYMEX Company

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Ms. Melissa Jurgens
Office of the Secretariat
Commodity Futures Trading Commission
Three Lafayette Centre
1155 21st Street, N.W.
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re: Notice of Proposed Rulemaking, Derivatives Clearing Organizations and International Standards, RIN Number 3038-AE06

CME Group Inc. ("CME Group") appreciates the opportunity to comment on the Commodity Futures Trading Commission's ("CFTC" or "Commission") Notice of Proposed Rulemaking, Derivatives Clearing Organizations and International Standards, RIN Number 3038-AE06[1] (the "DCO International Standards Proposal").

CME Group is the parent of Chicago Mercantile Exchange Inc. ("CME"). CME is registered with the CFTC as a derivatives clearing organization ("DCO") and is one of the largest central counterparty ("CCP") clearing services in the world. CME's clearing house division ("CME Clearing") offers clearing and settlement services for exchange-traded futures contracts, as well as over-the-counter ("OTC") derivatives transactions including interest rate swaps ("IRS") and credit default swaps ("CDS").

CME Group appreciates the Commission's efforts to align its DCO regulations with the Principles for Financial Market Infrastructures ("PFMI")[2] to ensure that relevant DCOs are treated as Qualifying Central Counterparties ("QCCP") under Basel III.[3] We also support the CFTC's broader efforts to promote stability in the United States' and global financial systems through comprehensive, yet efficient regulation. We believe that the proposed Regulation 39.40 is of particular merit as it specifically establishes a goal that subpart C of Part 39 be "consistent with section 5b(c) of the Act and the Principles for Financial Market Infrastructures published by the Committee on Payment and Settlement Systems and the Board of the International Organization of Securities Commissions and should be interpreted in that context."[4] This goal should be borne in mind as the Commission implements subpart C of Part 39.

Subpart C of Part 39 is generally consistent with the PFMIs with the exception of the language and interpretation of proposed Regulation 39.33(c)(3)(i), which addresses "qualifying" liquid resources.[5] The resources that would qualify as liquid under proposed Regulation 39.33(c)(3)(i) include cash, committed lines of credit, committed repurchase agreements, committed foreign exchange swaps and US Treasury

[1] Derivatives Clearing Organizations and International Standards, [hereinafter *DCO International Standards Proposal*] 78 Fed. Reg. 50260 (proposed August 16, 2013) (to be codified at 17 C.F.R. pt. 39).
[2] Comm. Payment and Settlement Systems & Technical Comm. Int'l. Org. Securities Comms.(CPSS-IOSCO), Principles for Financial Market Infrastructures [hereinafter *PFMI*] (April 2012), available at http://www.bis.org/publ/cpss101a.pdf.
[3] Basel Comm. Banking Supervision, *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems* [hereinafter *Basel III*] (June 2011).
[4] *See* DCO International Standards Proposal, *supra* note 1, at 50305 (to be codified at 17 C.F.R. § 39.40).
[5] Qualifying liquid resources may be used to meet a Subpart C or SIDCO's minimum liquidity resources requirements as set out in the DCO International Standards Proposal. *See supra* note 1, at 50301 (to be codified at 17 C.F. R. § 39.33(c)(1)).

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and other highly liquid foreign sovereign obligations that are subject to prearranged and highly reliable funding arrangements. We appreciate that the Commission followed the PFMI language by using "prearranged and highly reliable" rather than "committed" when discussing funding arrangements for US Treasury securities and highly liquid foreign sovereigns as we interpret the Commission's language to allow for the use of uncommitted credit lines to support bi-lateral repurchase arrangements to "qualify" US Treasury securities as liquid resources. This provides us with comfort that the Commission both intends to comport with the PFMI requirements which encourage the adoption of international standards to provide for a level competitive landscape and allow for the use of non-committed funding facilities. A different approach may not provide US-based CCPs with appropriate avenues through which to meet their liquid resources requirements. Notwithstanding the foregoing, we must express our unease about the informal conversations on liquidity that we've participated in with the Commission and the Federal Reserve Bank in which doubts have been expressed by both regulators about whether US Treasury securities can be counted as "qualifying" liquid resources where subject to uncommitted repurchase agreements. We believe this position to contradict PFMI 7 and the approach to liquidity taken by non-US regulators.

We are further concerned that the proposed language of Regulation 39.33(c)(3)(i) does not appear to allow for US Treasury securities to be deemed "qualifying" liquid resources without being subject to a prearranged and highly reliable funding arrangement. CME would like to note that the topic of 'liquidity' is a complex one, particularly as it relates to banks and bank-related clearing firms. That said, DCO liquidity requirements are ultimately established under Part 39 regulations[6] and should, minimally, be considered against a regulatory backdrop that includes proposed Basel III standards (for example, the leverage ratio, single counterparty credit limits, and treatment of posted initial margin), and the market for committed credit facilities, discussed more fully below. However, CME would also like to note that in any scenario where liquidity is a material concern (which is to say, in a clearing firm default scenario), CME will, as a standard course of action, attempt to liquidate, in the open market, all forms of collateral for which CME Clearing has a reasonable prospect of obtaining same-day value. This incentive applies most especially to US Treasury securities. We appreciate that a DCO must evaluate its liquidity resource requirements against the backdrop of a stressed market environment, to assert that US Treasuries can only be considered 'liquid' to the extent that they are utilized with pre-arranged and highly reliable funding arrangements is to assert that the liquidity profile of US Treasuries is "zero", which seems unnecessarily extreme. While we understand the complexity of dealing with liquidity risk, we believe the Commission should revise proposed Regulation 39.33(c)(3)(i) to be consistent with the language of PFMI 7, which allows for CCP flexibility for liquidity planning purposes. This flexibility would greatly reduce the cost to CCPs and the market of dealing with liquidity risk, without any material increase in risk to the market.[7]

With this in mind, we encourage the Commission to revise the proposed wording of Regulation 39.33(c)(3)(i) to be consistent with the language of PFMI 7. At minimum, we encourage the Commission to confirm that uncommitted repurchase agreements on US Treasury securities meet the "prearranged and highly reliable"[8] standard of Regulation 39.33(c)(3)(i)(E)(2).[9]

Neglecting to do either would risk weakening Regulation 39.33(c)(3)(i), or inviting unintended negative consequences, or both, in at least three ways:

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[6] For more information on CME's approach to managing its liquidity risk through a carefully crafted policy on collateral acceptance and management, please refer to Appendix 1.

[7] In fact, such flexibility may reduce systemic risk in the marketplace by obviating the risk that all market participants will be taking similar actions (drawing on committed liquidity facilities0 in times of market stress.

[8] In Section 3 below we provide more detail on the reliability of uncommitted repurchase agreements for US Treasury securities.

[9] As noted in more detail below, other jurisdictions have, at a minimum, counted US Treasury securities or similar highly liquid sovereigns as "qualifying" liquid resources where subject to an uncommitted funding facility.

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(a) Without an interpretation of "prearranged and highly reliable" that allows for the use of uncommitted repurchase agreements, Regulation 39.33(c)(3)(i) would be inconsistent with reasonable interpretation of the PFMIs, and with the more flexible implementation of the PFMIs that regulators in other jurisdictions appear to be pursuing (as discussed in Section 1 below).

(b) The attribution of negative liquidity characteristics to US Treasury securities by the CFTC and the Federal Reserve Bank may influence other jurisdictions to treat US Treasury securities as less liquid. This in turn could place securities issues by the US government at a competitive disadvantage compared to other, less liquid governmental securities markets.

(c) Regulation 39.33(c)(3)(i) would be weakened, moreover, were it to take inadequate account of the liquidity characteristics of the US Treasury securities market (Section 2) and the reliability of uncommitted repurchase agreements on US Treasury securities (Section 3).

(d) The Regulation would exert significant negative impact upon markets, to the extent that it conflicts with the Basel III proposals, or pays insufficient heed to the potential unavailability of committed liquidity facilities (Section 4), or imposes, solely on US market participants, the potentially significant costs of complying with overly prescriptive liquidity requirements, which could result in the movement of business to offshore jurisdictions (Section 5).

1. Liquid Resources, the PFMIs and Regulation 39.33(c)

   a. Interpretation of "Qualifying" Liquidity Resources under PFMI 7

      In relation to "qualifying" liquid resources, Explanatory Note 3.7.10 to PFMI 7 states that "[f]or the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at credit worthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repurchase agreements, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions."[10] Two important conclusions immediately follow.

      First, the plain language of PFMI 7 indicates that "qualifying" liquid resources are not limited to cash and committed facilities.[11] In fact, the CPSS-IOSCO would have excluded "highly marketable collateral" and "investments" from PFMI 7 if the intent were permit only cash and committed facilities.[12] Instead, the CPSS-IOSCO added language to PFMI 7 that explicitly contemplates the use of resources other than cash and committed facilities to meet CCPs' liquid resources obligations. Thus, the plain language of PFMI 7 indicates "qualifying" liquid resources are not limited to cash and committed facilities.

      Second, the CPSS-IOSCO distinguishes between "highly marketable collateral held in custody" and "investments that are readily available and convertible into cash with

[10] *See* PFMI, *supra* note 2, at 61 [hereinafter *Explanatory Note 3.7.10*].
[11] We believe that the use of "and" between highly marketable collateral and investments indicates that the CPSS-IOSCO did not believe that highly marketable collateral such as US Treasury securities need to be subject to a funding facility due to their liquidity characteristics.
[12] We assume that the CFTC made the distinction between committed and prearranged and highly reliable funding arrangements for the same reason.

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prearranged and highly reliable funding arrangements" by using the word "and."[13] The logical interpretation of this verbiage is that the CPSS-IOSCO[14] views highly marketable collateral as *prima facie* liquid while investments must be subject to "prearranged and highly reliable" funding arrangements. This viewpoint finds support in the flexible adoption of PFMI 7 by other regulators including Monetary Authority of Singapore ("MAS") and the Reserve Bank of Australia ("RBA"), as discussed in Section 1.c.[15] Since US Treasury securities are among the most liquid resources in the world, they would presumably be included in the definition of highly marketable collateral and thus not require a funding facility to qualify as liquid resources.[16]

Worth note is that even the most conservative interpretation of "qualifying" liquid resources under PFMI 7 would allow for US Treasury securities subject to uncommitted, bilateral repurchase agreements to be deemed liquid resources under the "prearranged and highly reliable" standard. PFMI 7 offers a wider range of collateral options than the CFTC by using the words "highly marketable collateral" and, as noted above, obviously contemplates uncommitted facilities. The Commission should be mindful of this in its interpretation of what constitutes "qualifying" liquid resources under proposed Regulation 39.33(c).

b. Language of Proposed Regulation 39.33(c)(3)

Proposed Regulation 39.33(c)(3) purports to adopt the definition of liquid resources contained in Explanatory Note 3.7.10 of PFMI 7 but significantly deviates from the language used by the CPSS-IOSCO. Specifically, proposed Regulation 39.33(c)(3)(i) defines qualifying liquid resources as:

(A)	Cash in the currency of the requisite obligations, held either at the central bank of issue or at a creditworthy commercial bank;
(B)	Committed lines of credit;
(C)	Committed foreign exchange swaps;
(D)	Committed repurchase agreements; or
(E)	(1) Obligations of the United States Treasury or high quality, liquid, general obligations of a sovereign nation. (2) The assets described in paragraph (c)(3)(i)(E)(1) of this section must be readily available and convertible into cash pursuant to prearranged and highly reliable funding arrangements.

[13] *See* Explanatory Note 3.7.10, *supra* note 9.

[14] Key Consideration 6 to PFMI 7 provides further evidence that the CPSS-IOSCO views US Treasury securities and other collateral similarly pledgeable at central banks as highly liquid, "[e]ven if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed conditions."

[15] We strongly encourage the Commission to consider the implications of potentially taking a less favorable view of the liquidity characteristics of US Treasury securities than regulators in other jurisdictions. Bearing this in mind, it may be useful for the Commission to discuss its approach to "qualifying" liquid resources with fellow members of the Financial Stability Oversight Council ("FSOC") including the Department of the Treasury and the Board of Governors of the Federal Reserve System.

[16] Regulators in Australia and Singapore both taken the position that much less liquid sovereign debt can be counted as "qualifying" liquid resources without being subject to a funding facility. PFMI, *supra* note 2, at 57–58.

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In contrast, PFMI 7 provides that "highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements" will be treated as liquid resources.[17] While the Commission does not necessarily need to adopt the PFMIs verbatim in order to be in conformance with international regulatory norms and to ensure preferential capital treatment for US-based DCOs under Basel III,[18] the regulations must be consistent with the PFMIs to achieve these goals. CME Group believes the best approach for the Commission would be to closely track the more flexible language of the PFMIs in its final rules. However, we are more concerned with an interpretation that is consistent with the intent of the PFMIs and the global regulatory community. To the extent that the Commission decides to maintain the language of Regulation 39.33(c)(3)(i) as proposed, it should interpret the definition of liquid resources in a manner consistent with PFMI 7. One of the questions posed in the DCO International Standards Proposal in reference to prearranged and highly reliable funding facilities is "[s]hould the requirement be for funding arrangements that are committed?"[19] We believe the answer to this question is clearly a case where context matters. If the underlying securities in question, such US Treasury securities or highly liquid sovereigns, are highly marketable and eligible central bank collateral, then the clear answer to this question is no.[20] Requiring "committed" facilities would be contrary to the PFMIs and the approach taken by global CCP regulators in adopting PFMI 7. This approach would also ignore the reliability of uncommitted US Treasury repurchase agreements, the conflicting standards promulgated by the Basel Committee on Banking Supervision ("BCBS"), the US market costs of implementing an overly prescriptive liquidity risk framework and the commercial availability of committed facilities.

c. Adoptive Language and Approach of Global Regulators

In promulgating regulations to conform with the PFMI 7 liquid resources requirement, regulators outside the United States have more closely tracked the language in PFMI 7.

The RBA states in Financial Stability Standard 7 ("FSS 7") that CCPs may, for the purposes of meeting their minimum liquid resource requirement, count "cash at a central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions."[21] The RBA

[17] Emphasis added by CME.

[18] In order for banks to receive preferential, QCCP capital treatment for their exposures to given CCPs, the CCP's primary regulator, among other things, must have implemented the PFMIs by January 1, 2014. The ramifications for failure to achieve QCCP status are onerous for banks' CCP exposures and can result in capital charges on trade exposures that are 10-20 times larger than capital charges for QCCP trade exposures. *See* Basel III, *supra* note 3, at Annex 4.

[19] DCO International Standards Proposal, *supra* note 1, at 50276.

[20] We note that placing faith in committed facilities over US Treasury securities both appears to conflict with the restriction on the CFTC's restriction using letters of credit as initial margin for swaps in Regulation 39.13(g)(10) and may increase interconnectedness in the financial markets by placing significant reliance for liquidity on large, global banks.

[21] Res. Bank Austl. *Guidance—Financial Stability Standards for Central Counterparties* ¶ 7.4 (December 2012).

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goes on to provide additional guidance that assets eligible to be pledged to the central bank of issue "are generally the most reliable source of liquidity and should form a substantial part of a central counterparty's qualifying liquid resources."[22] Finally, Guidance Note 7.4.2 to FSS 7 mentions that "[i]n addition to outright holdings of qualifying instruments, a central counterparty may negotiate committed lines of credit and repos on commercial terms...."[23]

Clearly, the RBA expects that assets pledgeable to the central bank, in the case of an Australian CCP this would obviously include Australian sovereign debt, will make up a large amount of a CCP's liquid resources while contemplating that other types of resources might be used where they are subject to committed funding facilities. Further, it appears that Australian sovereign debt and other pledgeable assets count towards a CCP's liquid resources under the RBA regulations without any funding mechanism, committed or otherwise. The RBA's approach provides evidence that the CPSS-IOSCO intended to provide the flexibility to local regulators to reduce liquidity risk while applying a reasonable interpretation that such as Australian sovereigns and US Treasury securities count as liquid resources even where not subject to a funding facility.

The European Securities and Markets Authority ("ESMA") has also adopted liquidity language that is more consistent with PFMI 7. In addition to cash and committed facilities, Article 33 of the European Market Infrastructure Regulation Regulatory Technical Standards ("EMIR RTS")[24] allows EU-based CCPs to count "highly marketable financial instruments that satisfy the requirements of Article 45 and 46 and that the CCP can demonstrate are readily available and convertible into cash on a same day basis using prearranged and highly reliable funding arrangements, including in stressed market conditions."[25] This clearly allows for a broader range of eligible instruments than US Treasury securities and highly liquid foreign sovereign debt which provides greater flexibility to EU-based CCPs. This flexibility is important with an issue as complex as liquidity risk and likely drove the decisions of the CPSS-IOSCO in crafting the language of PFMI 7. CME's CCP affiliate in the United Kingdom ("UK") has informed it that the Bank of England has taken advantage of the flexibility provided under EMIR by deeming a liquidity resource "qualifying" where a UK CCP can demonstrate its ability to liquidate the resource for same day cash. In addition, it is our understanding that such prearranged and highly reliable funding arrangements need not be committed under ESMA's interpretation of the EMIR liquid resources requirements.

The MAS appears to have also adopted a flexible standard to define "qualifying" liquid resources as in Australia and the EU. Singapore Exchange Derivatives Clearing ("SGX-DC"), in its PFMI Disclosure document,[26] has included all margin collateral as "qualifying"

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[22] *Id.* at ¶ 7.4.1.
[23] *Id.* at ¶ 7.4.2.
[24] European Market Infrastructure Regulation Regulatory Technical Standards (EMIR RTS), Commission Delegated Regulation (EU) No 153/2013, art. 33(1)(e).
[25] Articles 45 and 46 of EMIR address concentration limits and the use of non-cash collateral. *See* European Market Infrastructure Regulation (EMIR), Regulation (EU) No 648/2012, arts. 45–46.
[26] *See* Singapore Exchange Derivatives Clearing Limited (SGX-DC), *Making SGX Derivatives Clearing Transparent for Market Participants: Disclosure Document for SGX Derivatives Clearing's Services* 55–56 (July 9, 2013), *available at* http://www.sgx.com/wps/wcm/connect/b5eb250040469f579ca9fd08c81da5fb/SGXDC+PFMI+Disclosure+Document_final+080713.pdf?MOD=AJPERES.

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liquid resources. Acceptable margin collateral for derivatives clearing with SGX-DC includes, but is not limited to, sovereign debt from Singapore, the US, Japan, France and Germany. In addition, certain equity securities listed on the Singapore Exchange count as acceptable collateral under SGX-DC's clearing house rules.

All clearing houses applying for approval, and that are currently approved, in Singapore must meet the requirements promulgated by the MAS in Form 1: Application for Approval as an Approved Clearing House or Recognition as a Recognised Clearing House ("MAS Clearing House Application Form"). Considering that the MAS Clearing House Application Form was last revised on August 1, 2013 and specifically requires all applicants to address liquidity risk as contemplated in PFMI 7, it is expected that SGX-DC's approach of using a wide range of margin collateral meets the MAS requirements under PFMI 7.[27] The fact that SGX-DC does not mention any funding facilities associated with its margin collateral, or "qualifying" liquid resources, in its PFMI disclosure document indicates that the MAS does not require committed or uncommitted facilities of its CCPs.

The MAS, RBA and ESMA regulations on liquid resources referenced above clearly evidence that other global regulators have taken a more flexible approach to "qualifying" liquid resources, and in some cases do not require highly marketable collateral such as US Treasury securities to be subject to committed, or possibly even highly reliable, funding facilities. CME Group strongly believes that interpretation and implementation of rules among regulators in relation to a global business such as derivatives clearing is important to ensure appropriate risk management and a level and competitive playing field for clearing industry participants. Considering the fact that proposed Regulation 39.40 specifically states that the Commission intends to adopt regulations under subpart C of Part 39 that are consistent with the PFMIs, it appears that the Commission agrees. As such, we are confident that committed funding facilities will not be required under Regulation 39.33(c)(3)(i)(E)(2) as long as the CCP can demonstrate its liquid resources are highly marketable collateral, readily available and convertible into cash on a same day basis. All of these qualities are applicable to the US Treasury market..

2. Treasury Market Liquidity

The US Treasury market is the world's global standard for reliable liquidity. In Treasury bills and fixed principal notes and bonds (i.e., excluding Treasury inflation indexed securities) average daily trading volume mediated by recognized primary dealers since January 1,2008 exceeds $500 billion.[28] Such depth and reliability of liquidity are among the reasons that the US dollar serves as the world's reserve currency, due to the ease with which dollar buyers may invest their monies, or exit such investments when unwinding their foreign currency transactions.[29] Although the standard settlement schedule for US Treasury securities is T+1 (i.e., the US bank business day following the day of transaction), it is CME's experience in the market that same-day

[27] Securities & Futures Act (SFA) Cap. 289, Regulation 6, Form 1, *Application for Approval as an Approved Clearing House or Recognition as a Recognised Clearing House* at 7 (August 2013).

[28] Please see http://www.newyorkfed.org/markets/statrel.html for an online search tool offering access to historical data regarding primary dealer positions, transactions, financing and fails.

[29] CME is greatly concerned that any implication by US governmental agencies that US Treasury securities lack strong liquidity characteristics could have a detrimental impact on the view of the US dollar in the world currency markets.

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settlement is reliably available in material sizes for a negligible yield concession of 1-2 basis points per annum.

The size of the market and the modest cost differential for same day settlement provide comfort to CME (and apparently, other regulators and global standard setting bodies) that US Treasury securities are extremely liquid, particularly during times of market stress. Trading volume data for primary dealers in the US Treasury securities market lend support to this view. Appendix 3, Exhibit 1 illustrates trading volume for Treasury bills and fixed principal notes and bonds. At key points of crisis during 2008, for example, trading activity for US Treasury securities either sustained itself at high levels (i.e., between approximately $500 billion and $800 billion per day) or, in some instances, increased due to their flight to quality characteristics.[30]

That said, treasury securities trading volumes have been known to abate in response to severe infrastructural impairments, such as those that occurred during the 9/11 attacks in September 2001 or Superstorm Sandy in October 2012. Yet even in these dire instances, trading activity persisted between $250 billion and $400 billion per day. During our analysis, CME searched for times of decreased liquidity in the US Treasury market and found that even in 2013 when a small dip in the liquidity in 10 year notes occurred, as evidenced by Appendix 3, Exhibit 2, it was due to decreased dealer supply rather than any dip in demand. In fact, CME's experience with the US Treasury market has shaped a strong preference in favor of relying on US Treasury securities on deposit from clearing members for liquidity in times of market stress rather than committed liquidity facilities from commercial banks.

Further, CME notes that banks are permitted to classify US Treasury securities as 'High Quality Liquid Assets (HQLA)' under Basel III.[31] We support the Basel III requirements for HQLA and believe CCPs should receive similar treatment when assessing the fundamental and market-related characteristics of assets constituting their liquidity resources. The characteristics of HQLAs, which clearly apply to US Treasury securities, under Basel III are included in Appendix 2.

3. Reliability of Uncommitted Repurchase Agreements for US Treasuries

To the extent that US Treasury securities are not deemed liquid without any funding arrangements, CME strongly believes that uncommitted repurchase agreements for US Treasury securities should be deemed "highly reliable." Due to their robust liquidity and eligibility to be pledged at the Federal Reserve Bank discount window, US Treasury securities are extremely safe for banks to accept under uncommitted repurchase agreements. By way of example, while most securities used in the bilateral repurchase market have suffered haircuts since the 2009 financial crisis, US Treasury securities have not experienced any haircuts in value.

As with Treasury securities transaction volumes mediated by primary dealers, our estimation of market integrity and robustness in the repurchase market finds ample support in historical data. Volumes of repurchase agreements carried by dealers, either for inventory financing or for lending, appear to have been impervious to pivotal events during the banking crisis of 2008. As Appendix 3, Exhibit 3 depicts, it was only in the wake of those events that the scale of financing market activity gradually retrenched to approximately $1.5 trillion (or over 100 times the amount of US Treasury securities CME would be required to liquidate due to the default of its largest clearing member). Less catastrophic times of market stress, such as infrastructural crises,

[30] Please refer to Appendix 3 for more information on the flight to quality characteristics of the US Treasury market.
[31] *See* Basel III, *supra* note 3, at ¶¶ 34–38.

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including the 9/11 attacks or Superstorm Sandy, have had an imperceptible impact on the US Treasury repurchase market.

The reliability of the US Treasury securities market, including the market in US Treasury repurchase agreements, was significantly improved by the implementation of a "fails charge" in the middle of 2009.[32] The Federal Reserve Bank of New York estimates that fails in the US Treasury repurchase agreement market after the implementation of the "fails charge" declined by over 60% to a negligible amount, primarily driven by communication issues.[33]

Not only did this measure increase the trade certainty to the market for repurchase agreements, it appears to have exerted a salutary impact upon the scale and depth of that market. Prior to implementation of the fails charge, both primary dealers' financing of Treasury securities inventories via repurchase agreements ("securities out") and their lending to counterparties via Treasury repurchase agreements ("securities in") equaled approximately $1.6 trillion per day. Since implementation of the fails charge, both securities-out and securities-in repurchase transactions carried by Treasury primary dealers have increased to the neighborhood of $1.8 trillion per day – more than adequate to absorb the needs of CME Clearing (or any other DCO that carries US Treasury securities as collateral) in the event of crisis.

In view of these facts, we are confident that the size and liquidity of the market for US Treasury repurchase agreements is sufficiently robust to allow an uncommitted repurchase agreement for US Treasury securities to meet the CFTC requirement that funding facilities be "highly reliable." Reliability can be further enhanced through the execution of uncommitted US Treasury repurchase agreements with multiple counterparties. These liquidity providers will also be subject to routine reliability reviews by subpart C DCOs and SIDCOs pursuant to their obligations under proposed Regulation 39.33(d). During these reviews, subpart C DCOs and SIDCOs must confirm that their liquidity providers have sufficient information to understand and manage their liquidity risk, the capacity to perform their commitments and, where applicable, access to central bank money. These reviews will further bolster the reliability of the uncommitted repurchase agreements utilized by subpart C DCOs and SIDCOs to meet their obligations under proposed Regulation 39.33(c).

4. Negative Externalities Associated with Requiring Unnecessary Committed Facilities

   a. Basel III Capital Issues

      The BCBS has made numerous proposals under the auspices of Basel III to mitigate risks to the financial system. Those proposals include capital charges applied to banks based on their various exposures to CCPs. More specifically, banks must take capital charges on the initial margin they post to CCPs depending on whether they can demonstrate that the initial margin is bankruptcy remote from the CCP. Preliminary analysis by numerous market participants indicate that cash collateral presents difficulties from a bankruptcy remoteness standpoint. Consequently, banks may be required to take higher capital charges for cash collateral than other types of collateral posted with CCPs, including US Treasury securities. Currently, CME holds approximately $60 billion in US

[32] Kenneth D. Garbade, Frank M. Keane, Lorie Logan, Amanda Stokes & Jennifer Wolgemuth, *The Introduction of the TMPG Fails Charge for U.S. Treasury Securities* 16 FED. RES. BANK N.Y. ECON POLICY REV. 45 (October 2010), *available at* http://www.newyorkfed.org/research/epr/10v16n2/1010garb.pdf.

[33] The "fails charge" was not intended to eliminate all settlement fails such as those attributable to miscommunication.

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Treasury securities on deposit from its clearing members to meet initial margin requirements, and $4 billion to meet their guaranty fund requirements.

Should the Commission decide to require committed funding facilities for US Treasury securities in contravention of the approach taken by the CPSS-IOSCO and other financial regulators, CME would be required to take steps to adjust the composition of the collateral it accepts for initial margin and its guaranty fund. The impact of these collateral changes would result in more cash and fewer US Treasury securities on deposit from CME's clearing members, so that CME's liquidity profile would be deemed adequate. In addition to the potential impacts from the decreased demand for US Treasury securities, CME's bank clearing members would be forced to post cash collateral with CME. From a capital standpoint, posting collateral without the confirmed bankruptcy remoteness may be punitive for bank clearing members under Basel III by resulting in a capital charge on non-bankruptcy remote collateral of 2-4%. In contrast, bankruptcy remote collateral receives a 0% capital charge.[34] Effectively, the combination of the capital charge on cash[35] and a requirement that all US Treasury funding facilities be committed, may result in a conflict between the actions required of CME due to the liquidity requirements of DCO International Standards Proposal and the ability of CME's bank clearing members to operate in a capital efficient manner.

Please also note, CME clears derivatives that settle in 14 currencies. Proposed Regulation 39.33 requires that the DCO demonstrate liquidity in all currencies. This requirement poses its own set of challenges. While CME is relatively confident that it could reasonably achieve compliance with a committed liquidity standard for G-7 currencies through the utilization of committed credit facilities, other currencies pose challenges of a different order. Hence, we are compelled to the immediate conclusion that in order to comply with regulatory liquidity requirements, it is possible that CME would be forced to require a restrictive set of margin policies to assure that margin requirements for a subset of cleared derivatives must be met by 'native currency' cash margin.[36] Requiring native currency as cash margin in these cases would only exacerbate the potentially increased capital charges faced by CME's bank affiliated clearing members for cash collateral since it may be difficult for cash collateral to receive bankruptcy remote treatment unless posted with a central bank.

Additionally, proposed Basel III requirements penalize banks for commitments to credit facilities by requiring capital to support the full value of the commitment through the leverage ratio and liquidity coverage ratio. The BCBS states that banks should assume a 100% drawdown of the undrawn portion of committed liquidity facilities and, therefore, must reserve 'high quality liquidity assets' against the commitment.[37] The BCBS further states that commitments to liquidity facilities must be incorporated into the exposure

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[34] Even assuming that cash posted by a CCP to the Federal Reserve Bank receives bankruptcy remote treatment, the potential bankruptcy remoteness issue may not be solved for customers based on CME's understanding that the Federal Reserve would refuse to sign the CFTC mandated segregation letters for customer collateral which would prevent CCPs from posting customer collateral to the Reserve Bank.

[35] *See generally* Basel Comm. Banking Supervision, *Consultative Document: Capital Treatment of Bank Exposures to Central Counterparties* (July 2013).

[36] We also note that for tail events CME requiring all cash margin may not completely address FX liquidity and thus, CME may be required to make payment in kind to clearing members for obligations in smaller currencies. We believe that such an approach should be permitted under CFTC regulations and there is precedent for a systemically important payment system to make payment in kind based on the long standing practice at CLS.

[37] Interestingly, these assets include US Treasury securities. *See* Basel Comm. Banking Supervision, *Basel III: The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools* ¶ 131 (January 2013).

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measure for off-balance sheet items. These proposed changes to banks' capital treatment of committed liquidity facilities may tighten the already constrained environment for corporations such as CME to obtain committed liquidity facilities in excess of $10 billion.[38]

The proposals of BCBS[39] and many local prudential regulators to limit bank exposures to CCPs will also be implicated if the Commission required committed liquidity facilities for US Treasury securities. Unsurprisingly, there is overlap between the organizations that are clearing members with CME and the participants in CME's committed liquidity facility. As clearing member trade exposures increase in tandem with CME's liquidity requirements (where funding facilities for US Treasury securities must be committed), banks risk breaching their single counterparty exposure limits if they provide liquidity facilities to CME. Consequently, banks may be prevented from participating in large committed liquidity facilities with CCPs even where they receive highly favorable commercial terms. Another more dire possibility would be that banks reduce their customer clearing business to stay below the single counterparty exposure limit. This could increase the cost to customers of clearing their transactions (due to decreased competition) or potentially prevent customers from taking advantage of the risk mitigating benefits of central clearing. Once again, these possibilities demonstrate the consequences of allowing US Treasury securities to count as "qualifying" liquid resources only where subject to committed funding facilities and clearly argues in favor of the Commission conforming with global standards which, at most, require prearranged and highly reliable funding facilities for highly marketable collateral such as US Treasury securities.

b. Constrained Commercial Market for Committed Credit Facilities

Another measure CME might be required to take if the Commission moves to a committed standard would be to obtain a committed liquidity facility in excess of its cover 1 liquidity requirement. Currently, CME's committed liquidity facility is $5 billion with an option to expand to $7 billion. Based on CME's analysis of the commercial availability of committed liquidity facilities, we believe it would be difficult to obtain a facility in excess of $10 billion to help meet Cover 1 liquidity requirements even if we were willing to pay above market rates due to the large size relative to the market and the lack of obligation by the banks to provide such facilities.[40] Currently, the total size of the committed credit facility market is approximately $1.2 trillion, which is comprised of 1,800 facilities. Of the 1,800 facilities, 485 are equal to or greater than $1 billion and only 12 facilities are equal to or greater than $10 billion. The largest committed liquidity facility arranged in 2013 is $17.3 billion for Glencore, an enterprise with $211 billion in revenue in fiscal year 2012.[41]

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[38] *See* Basel Comm. Banking Supervision, *Revised Basel III Leverage Ratio Framework and Disclosure Requirements* ¶ 40 (June 2013). Please also refer to section 4.b. below for more information.

[39] *See generally* Basel Comm. Banking Supervision, *Consultative Document: Supervisory Framework for Measuring and Controlling Large Exposures* (March 2013).

[40] By way of example, when CME attempted to renew its 364-day committed syndicated credit facility for the existing amount of $800 million to be effective October 10, 2008, four banks declined to participate, resulting in a reduction of commitments to $610 million. CME also experienced significant resistance with other banks but was able to leverage long term relationships as a means of securing the remaining commitments.

[41] *See* Bloomberg, *Global Syndicated Loans 1st Half 2013* 11 (July 1, 2013), *available at* http://www.bloomberg.com/professional/files/2012/08/GLOBAL-LOANS-2013-H1-final.pdf.

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The obstacles to CME obtaining committed liquidity facilities large enough to cover its liquidity requirements will only be exacerbated in the future as the cleared OTC market grows, which in turn will increase CME's liquidity resources obligations. The G-20's commitment to central clearing plain vanilla OTC derivatives has resulted in the Commission imposing a clearing mandate for certain OTC derivatives.[42] Since the clearing mandate for plain vanilla IRS and CDS products was first implemented in March 2013, the notional value of instruments being cleared at CCPs such as CME has increased dramatically.[43] We expect this to continue in the future as more products and jurisdictions are subject to clearing mandates.

The likely result will be increasing bank exposures to CCPs and in turn increasing the size of CCPs' liquid resources requirements.[44] Assuming this comes to pass, CME has significant concerns about the market's ability to scale committed liquidity facilities to meet the liquidity resources obligations of large CCPs. Obviously, the constraints of the market for committed liquidity facilities presents will present issues for US based CCPs if committed facilities are required. These potential constraints may result in CME adopting a variety of other potential means of compliance which may impose significant costs on the marketplace. [45]

5. Cost Estimate for Committed Facilities Requirement

Pursuant to the Commission's request that commenters analyze the potential costs of implementation of the DCO International Standards Proposal, CME is providing an estimate of the cost to the marketplace of complying with a requirement that the only "qualifying" liquid resources are cash or committed facilities.[46] CCPs calculating their liquidity resources

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[42] Other jurisdictions including Europe, Japan, Singapore, Hong Kong and Australia expect to implement their own clearing mandates in the near to medium term.

[43] The open notional in IRS at CME increased from approximately $2.2 trillion to over $5.5 trillion between June 10, 2013 (the date the clearing mandate went into effect for Category 2 entities) and September 10, 2013.

[44] As noted above, CME is considering rules that would convert its various guaranty funds to 'all cash' vehicles, and also considering more stringent criteria for its clearing membership to pursue as relates to the posting of cash margin (in a variety of currencies). CME is also considering the potential for enacting rules that would require, as a sort of 'liquidity fail safe', non-defaulting clearing members to accept a pro rata share of a defaulted clearing firm's Treasury/sovereign securities, in exchange for cash (i.e., a rules based repo arrangement). In this vein, CME may also implement a rules-based approach towards payment in kind, particularly in the context of obligations denominated in various foreign currencies. Finally, CME could utilize a rules-based approach towards requiring clearing firm participation in committed credit facilities. All of these mechanisms would impose significant costs and constraints on intermediaries which will be passed on to clients and may limit their access to central clearing. This would be particularly unfortunate since the risk management benefit of obtaining committed facilities for US Treasury securities is questionable at best.

[45] We also note proposed CFTC Regulation 39.33(c)(ii), which states that SIDCOs and subpart C DCOs "must take appropriate steps to verify that such arrangements [committed facilities] do not include material adverse change provisions and are enforceable, and will be highly reliable, in extreme, but plausible market conditions." See DCO International Standards Proposal, *supra* note 1, at 50301 (to be codified at 17 C.F.R. § 39.33). To prevent market confusion, CME suggests that the Commission clarify that such committed facilities cannot contain material adverse change provisions that are applicable after a committed facility has closed and to confirm that such liquidity facilities can be subject to standard industry covenants which serve an important risk protection for lenders. We note that many committed facilities contain such provisions that are applicable between the date of the borrower's last audited financials and the closing of the facility. These provisions are meant to protect the syndicate from material adverse changes prior to closing but do not have any impact on the reliability of the facility. Eliminating these provisions would likely make it even more difficult to obtain committed facilities without any beneficial impact on reliability. To avoid this negative outcome, the CFTC should clarify that committed facilities may continue to include material adverse change provisions that are only applicable prior to the closing of the facility.

[46] While we assume that the CFTC will appropriately determine that US Treasury securities are prima facie liquid or that "prearranged and highly reliable" funding facilities may include uncommitted repurchase agreements, we decided to provide a cost estimate for complying with a world where only cash and committed facilities are deemed liquid.

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requirements[47] can only reduce the stress result by the amount of cash on deposit to support the potential defaulting clearing member's obligation. This restriction differs from the stress testing exercise required to determine the size of the CCP's default fund as the CCP can reduce the stress result by the total amount of collateral on deposit to support the potential defaulting clearing member's obligation, which includes securities such as US Treasuries. Therefore, the CCP's liquidity needs will likely be significantly larger than the size of their default fund requirements.

CME estimates that liquidity facility costs, would approximately double, which it would likely be forced to pass on to market participants if only committed facilities were permitted to ensure it can meet its liquidity obligations in times of market stress. This is based on an assumption that the cost of committed liquidity or committed repurchase facilities is approximately $3 million for every $1 billion of required committed facilities. These costs include upfront fees, commitment fees, legal fees and collateral agent fees.[48] Given the nascent state of OTC clearing, CME estimates the global clearing mandate slated to take effect over the next 2 years will result in significant increase its liquidity requirements. This would potentially result in CME's liquidity costs increasing to $120 to $160 million per annum if costs remain consistent. However, CME expects that if the market could bear such large increases in its liquidity needs (unlikely at best) that the cost each $1 billion in committed facilities would increase substantially. In all circumstances, CME would likely be forced to pass on all increased costs to market participants.

In an effort to reduce its demand for committed liquidity facilities, CME could limit the amount of non-cash collateral it is willing to accept. Unfortunately, this would also result in an increased cost to clearing members as they would need to transform securities used by customers to meet margin requirements into cash.[49] In addition, bank affiliated clearing members would likely be required to pay higher capital costs for the cash collateral they deposit due to the Basel III bankruptcy remoteness issues addressed in Section 5.a. above. Finally, the opportunity costs of potentially no longer receiving interest on collateral, if no interest bearing facility for cash is available, could place increased strain on the already constrained business model for futures commission merchants. These increased costs would likely either be passed on to end customers or cause many clearing members to exit the customer clearing business entirely.

Since these costs will not be applicable in offshore jurisdictions, another potential impact of allowing only committed facilities and cash under proposed Part 39 could be to move a significant portion of the clearing market to offshore CCPs. For example, CME may be forced to move a significant portion of its business offshore to maintain cost parity with its non-US competitors. This would likely cause a knock on effect of market participants moving their own business offshore which would result in a significantly larger negative impact on the local and national economy than CME alone being forced to move its business.

6. Conclusion

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[47] Subpart C DCOs and SIDCOs must maintain eligible liquidity resources that, at a minimum, will enable them to meet their intraday, same-day, and multiday obligations to perform settlements with a high degree of confidence under a wide range of stress scenarios that should include, but not be limited to, a default by the clearing member creating the largest aggregate liquidity obligation in extreme but plausible market conditions. *See* DCO International Standards Proposal, *supra* note 1, at 50301 (to be codified at 17 C.F.R. § 39.33).

[48] We believe these costs would be broadly consistent for all CCPs.

[49] We note that access to markets required for collateral transformation varies significantly across futures commission merchants ("FCM") such that smaller FCMs and their largely retail clients, including small farmers and ranchers using the market for hedging purposes, would likely bear the highest costs.

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The approaches taken by other global regulators on liquidity risk and the language used by the CPSS-IOSCO clearly call for the Commission to either treat US Treasury securities as prima facie "qualifying" liquid resources or interpret the prearranged and highly reliable requirement in a manner that deems US Treasury securities to be "qualifying" liquid resources where they are subject to uncommitted repurchase agreements. Any other approach would:

a. ignore the size, depth, liquidity and reliability of the US Treasury market;
b. potentially conflict with the bank capital framework being implemented by the BCBS;
c. result in unforeseen consequences on the US Treasury market,[50] including possible increases in rates, due to decreased demand for treasuries from non-US market participants, CME, its clearing members and their customers;
d. impose costs on US market participants and US CCPs that would be inconsistent with the requirements in other jurisdictions, and could significantly tilt the competitive balance in favor of CCPs located outside of the United States;
e. risk negatively impacting the US economy and taxpayers[51] by moving significant business and jobs associated with futures and OTC markets to foreign jurisdictions and potentially increasing the cost that taxpayers bear to finance government debt.

CME Group thanks the Commission for the opportunity to comment on this matter. Should you have any comments or questions regarding this letter, please contact Kim Taylor, President, CME Clearing, at (312) 930-3156 and kim.taylor@cmegroup.com, or Sean Downey, Senior Director & Associate General Counsel, at (312) 930-8167.

Sincerely,

Kim Taylor, President, CME Clearing

[50] We reiterate our suggestion in Footnote 16 that the Commission consult with other members of FSOC including the Department of Treasury and the Board of Governors of the Federal Reserve System prior to promulgating any rules that may adversely impact the US Treasury market.
[51] CME notes that the government is better placed to quantify the exact impact of such actions.

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APPENDIX 1

CME LIQUIDITY AND COLLATERAL MANAGEMENT

CME employs a sound risk-management framework for comprehensively managing liquidity risk. The framework serves to effectively measure, monitor, and manage liquidity risk on an ongoing basis. The framework includes assessment and maintenance of sufficient liquid resources to effect same-day settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios, including the default of the clearing member and its affiliates that would generate the largest aggregate liquidity obligation under extreme but plausible market conditions.

CME manages liquidity risk through utilization of high-quality liquid assets, defined as assets that can be converted to cash easily and immediately in times of stress and are central bank eligible. High-quality liquid assets must have: a low risk profile with low correlation to assets of a high risk profile, low volatility, an active and sizable secondary market, ease and certainty of valuation, flight to quality, and a high degree of certainty for same day liquidation.

CME establishes collateral eligibility criteria with the goal of promoting asset diversification, while minimizing credit risk, liquidity risk, and market risk. To mitigate such risks, CME establishes appropriately conservative haircuts and concentration limits. Accepting a diverse pool of assets reduces the need for clearing members to transform ineligible assets to eligible assets, a practice that may concentrate liquidity risk at the clearing member-level. This diversity of collateral assets serves to enhance the ability of CME to liquidate collateral by reducing the likelihood that CME's actions will have a material impact on pricing and liquidity in any one market due to capacity issues. For eligible collateral that does not have a natural same-day settlement horizon, CME ensures liquidation arrangements are in place to support the rapid deployment of collateral in the event of a clearing member default. Additionally, CME places limits on these types of assets to ensure adequacy market capacity for liquidation. Traditionally, CME has not placed limits on eligible collateral that can be liquidated to cash on a same-day basis. This includes obligations of the U.S. Treasury with the exception of Treasury Inflation Protected Securities (TIPS).

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APPENDIX 2

CHARACTERISTICS OF HIGH QUALITY LIQUID ASSETS PER BASEL

(i) Fundamental characteristics

- Low risk: assets that are less risky tend to have higher liquidity. High credit standing of the issuer and a low degree of subordination increase an asset's liquidity. Low duration, low legal risk, low inflation risk and denomination in a convertible currency with low foreign exchange risk all enhance an asset's liquidity.
- Ease and certainty of valuation: an asset's liquidity increases if market participants are more likely to agree on its valuation. Assets with more standardized, homogenous and simple structures tend to be more fungible, promoting liquidity. The pricing formula of a high-quality liquid asset must be easy to calculate and not depend on strong assumptions. The inputs into the pricing formula must also be publicly available. In practice, this should rule out the inclusion of most structured or exotic products.
- Low correlation with risky assets: the stock of HQLA should not be subject to wrong-way (highly correlated) risk. For example, assets issued by financial institutions are more likely to be illiquid in times of liquidity stress in the banking sector.
- Listed on a developed and recognized exchange: being listed increases an asset's transparency.

(ii) Market-related characteristics

- Active and sizable market: the asset should have active outright sale or repurchase agreement markets at all times (which means having a large number of market participants and a high trading volume). There should be historical evidence of market breadth (price impact per unit of liquidity) and market depth (units of the asset that can be traded for a given price impact).
- Presence of committed market makers: quotes will most likely be available for buying and/or selling a high-quality liquid asset.
- Low market concentration: a diverse group of buyers and sellers in an asset's market increases the reliability of its liquidity.
- Flight to quality: historically, the market has shown tendencies to move into these types of assets in a systemic crisis.

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APPENDIX 3

THE US TREASURY FLIGHT TO SAFETY DURING THE 2008 CRISIS

The US Treasury market flight to quality characteristics are an important aspect to the ability to rely on the securities during a time of market stress. CME's sizing of liquidity resources take into account a severe market stress event in which the largest clearing member defaults. The market characteristics of this type of event is highly likely to resemble shifts in assets that occurred during the 2008 financial crisis in which riskier assets are predominately shifted to cash at banks and into treasury securities. Due to the impact of a large default CME would want to employ an immediate liquidation of treasury securities to position liquidity resources to mainly cash to meet variation payments that could require settlement for a defaulted member. CME believes that the liquidation of securities would reduce systemic risk by utilizing counterparties that have received inflows of cash and that have adequate liquidity reserves from the stress event. CME also believes that providing immediate delivery for settlement of securities to dealers that need collateral to meet other delivery obligations to reduce the level of fails that occur during times of stress due to increased demand for high quality collateral would reduce systemic risk.

A recent Federal Reserve Bank of New York staff report highlights the flight to safety characteristics in US treasury securities during the 2008 financial crisis[52]. The report highlights the characteristics of increased volume and shift in market demand from net seller to net buyers during times of crisis.

Table 8: Average Daily Trading Volume and Number of Trades on FTS and non-FTS days

	2 Year Treasury Note		5 Year Treasury Note		10 Year Treasury Note	
	Non FTS	FTS	Non FTS	FTS	Non FTS	FTS
Trading Volume ($M of Par)	33,775	57,425	30,627	39,946	25,971	31,440
Buyer-Initiated Volume	16,561	29,185	15,081	19,862	12,825	15,889
Seller-Initiated Volume	17,214	28,240	15,546	20,084	13,146	15,551
Net Volume (Buy - Sell)	-652	945	-465	-222	-321	338
Number of Trades	7,264	13,190	12,532	18,419	12,041	17,602
Number of Buy Trades	3,580	6,767	6,194	9,267	5,963	8,934
Number of Sell Trades	3,683	6,423	6,338	9,151	6,078	8,668
Net Number of Trades (Buy - Sell)	-103	344	-144	116	-116	266

This table shows the average daily trading volume and number of trades on days with a flight to safety ("FTS") and days without such an episode ("non FTS"), using BrokerTec trade data for the 2006-2010Q2 period. Flights are identified by a large positive return on the Treasury note and a large negative return on the S&P500 index, based on a 1.5 standard deviation threshold. Daily trading volume is the total volume exchanged during the 7:00-17:00 time period. Similarly, daily number of trades is the total number of order executions during the same time period.

CME also tracked the yield during the reports FTS (Flight to Safety) events and found that the securities yield decreased during the extreme FTS events that were noted in the report to affect all three securities. This provides increased reliability in that the price of treasury securities increased during the extreme events during the 2008 financial crisis. Chart 1 shows the yield and the extreme FTS events from the report that impacted all three treasury securities, which would be most representative of an extreme event of the largest clearing member default.

[52] Liquidity, Volatility and Flights to Safety in the U.S. Treasury Market: Evidence From A New Class of Dynamic Order Book Models- December 18, 2012, by Engle, Fleming, Ghysles, and Nguyen

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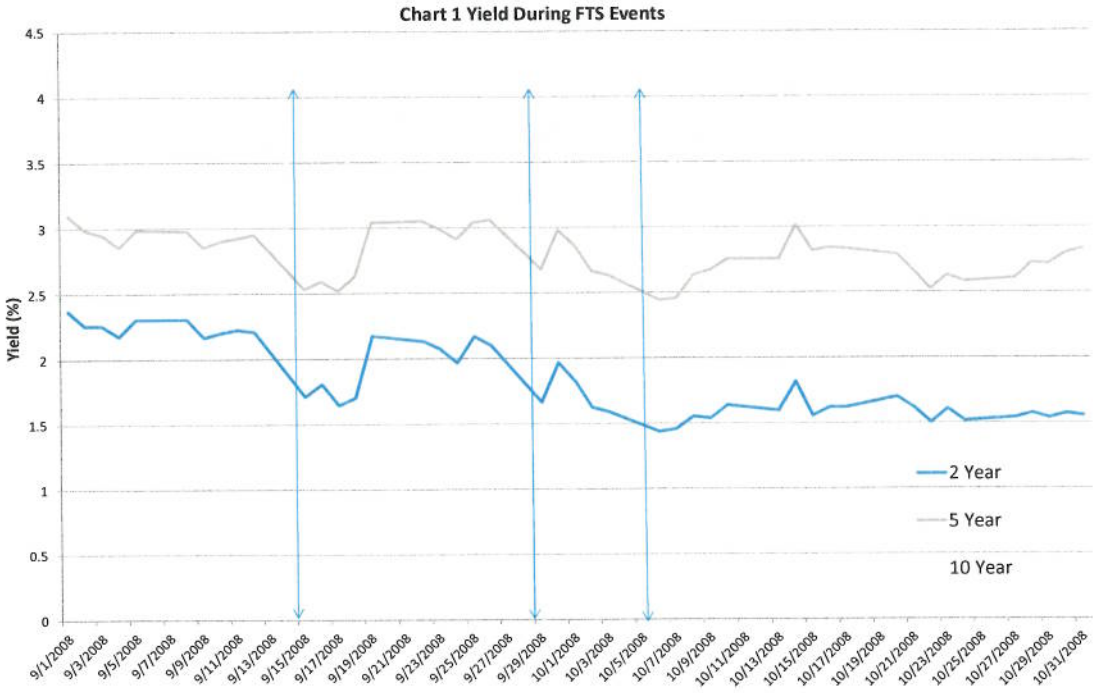

The report also makes reference to market depth declines, these are most likely related to an increase in bid ask spreads during FTS events, which remained low and are shown to increase at most 1.5 ticks in the report . These characteristics seem appropriate for the uncertainty that dealers have during executing orders during times of stress related to price volatility, uncertainty of price movements, and the premium that can be charged depending on a dealer's liquidity position during the stress event. The additional charges on execution most likely relate to amount executed at the best price (report definition of depth), when compared to a normal market environment when prices are less volatile and dealers rely more heavily on price to remain competitive for execution. The amount executed at the best bid/ask could also be a function of demand shift which is great than supply available, this could also be seen in the increased number of delivery fails during the crisis. Additional research in relation to order flow shift from electronic to phone brokered during stressed events might provide additional detail during FTS events. Treasury securities have shown increased demand, volume, price, and small bid ask spreads during extreme stress events and provide for a highly reliable resource.

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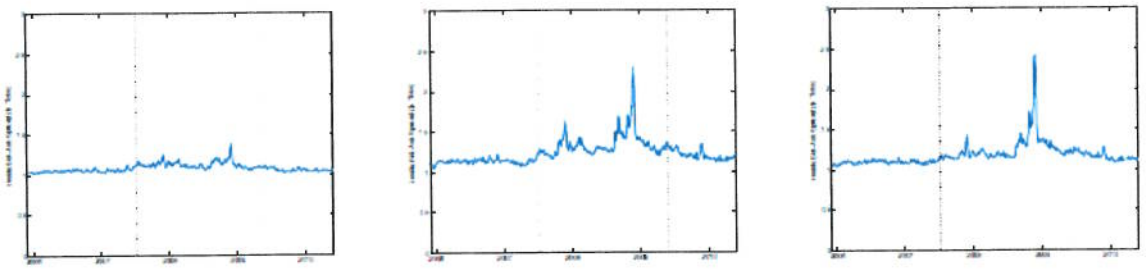
Figure 2: Daily Bid Ask Spread at First Price Tier



(a) 2 Year Treasury (b) 5 Year Treasury (c) 10 Year Treasury

This figure shows the daily average bid–ask spread at the first price tier for the 2 , 5 and 10 year Treasury notes, using BrokerTec order book data over the period 2006–2010Q2. The spread is standardized by the relevant tick size, i.e. 1/128th of a point for the 2– and 5 year notes, and 1/64th of a point for the 10–year note. Two vertical dotted lines mark the beginning (August 9, 2007) and ending (June 30, 2009) of the crisis. The series are smoothed using a 5–day moving average for better viewing of the trend.

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EXHIBIT 1

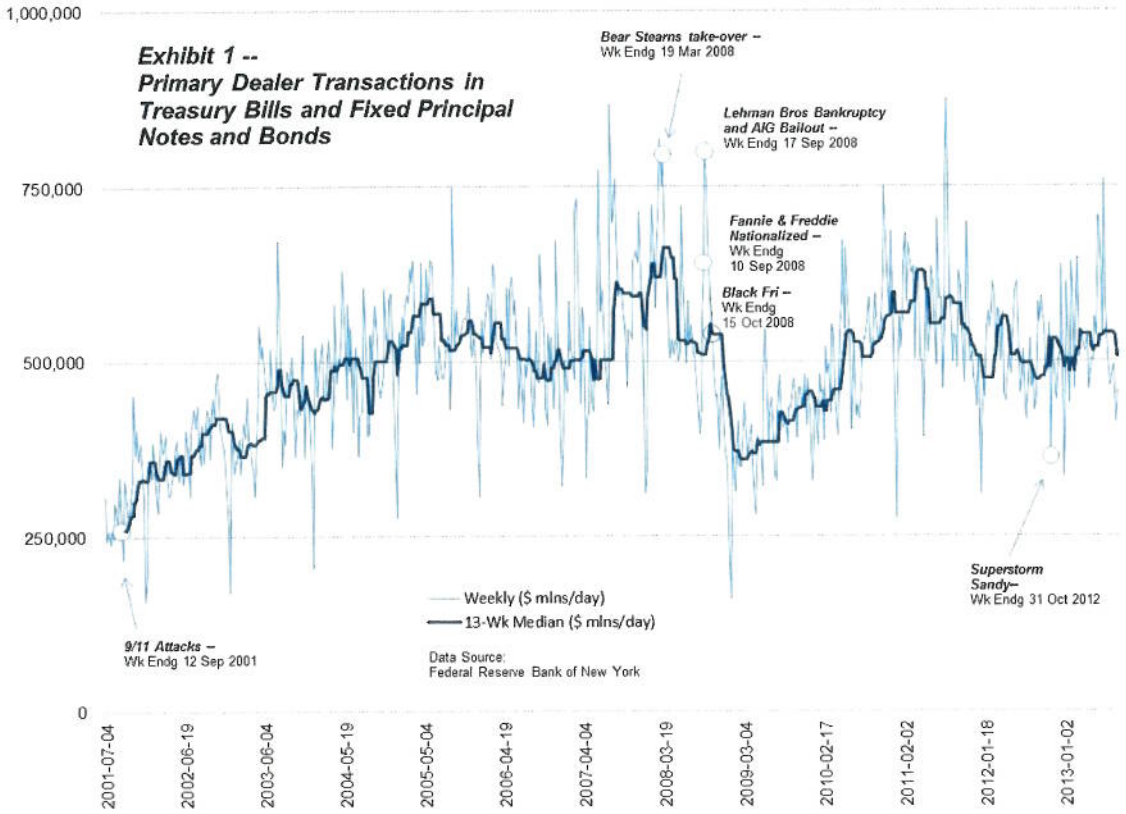

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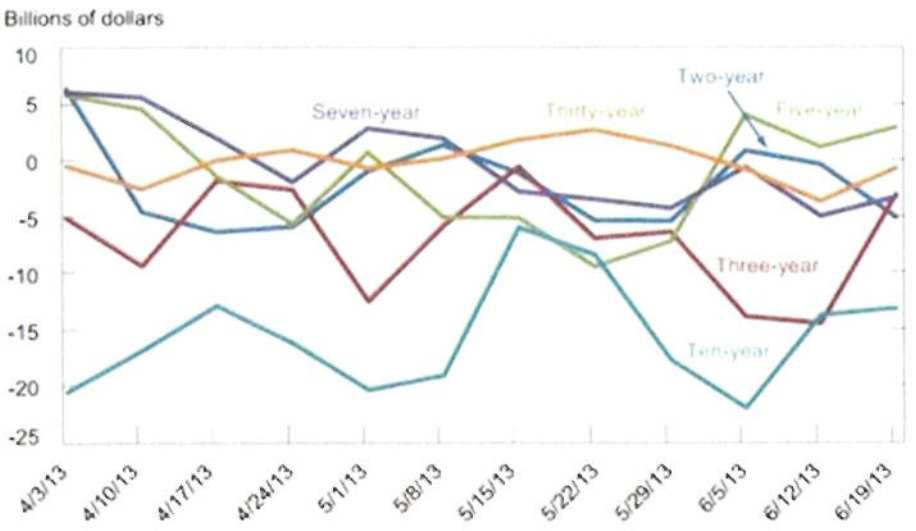
EXHIBIT 2

Dealers have recently been short the ten-year note



Source: Federal Reserve Bank of New York

Note: The chart plots primary dealers' aggregate net positions by week in the most recently issued Treasury securities of a given maturity.

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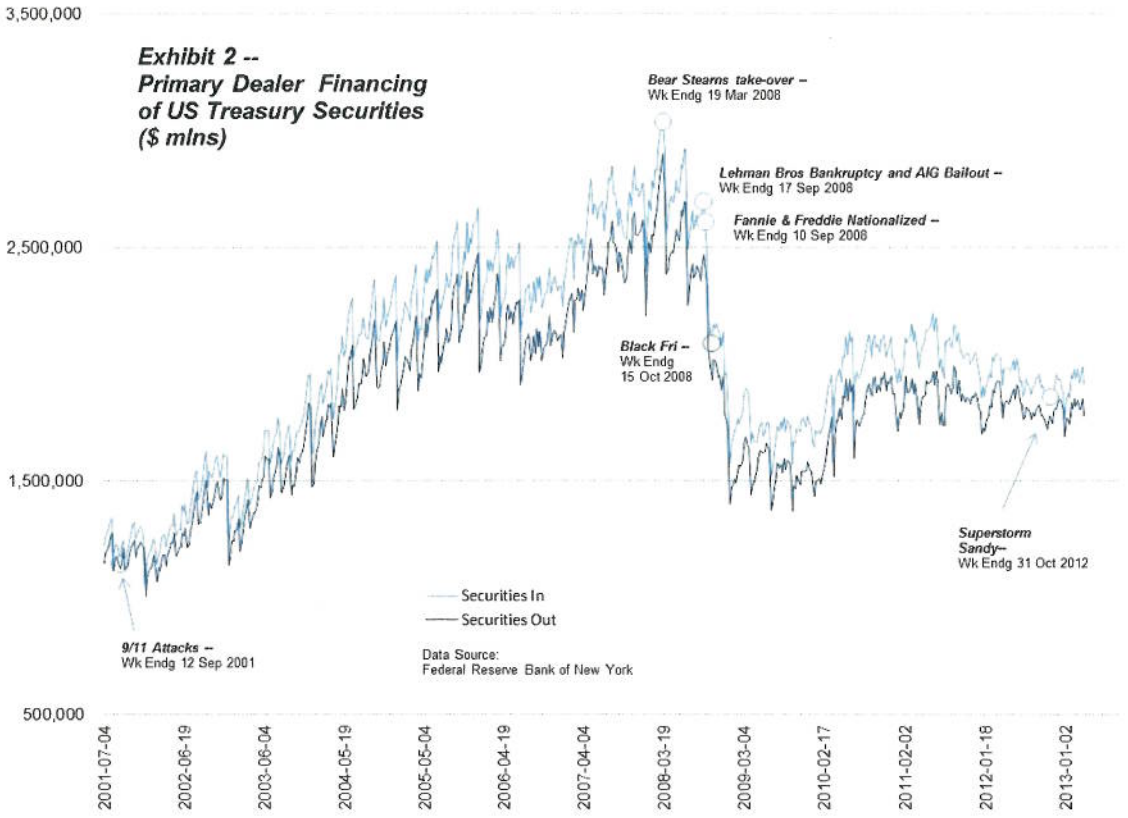
EXHIBIT 3



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