Brattle Report

SUMMARY OF RESPONSES TO THE 2022 ISDA UST SURVEY REGARDING ONGOING EFFORTS TO INCENTIVIZE AND/OR POTENTIALLY REQUIRE ADDITIONAL CLEARING OF US TREASURY (UST) SECURITIES AND REPOS

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Introduction

1. In light of work by the G30 and US regulators related to additional clearing of U.S. Treasury ("UST") repos and securities, on February 9, 2022, the International Swaps and Derivatives Association, Inc. ("ISDA") conducted a survey open to all market participants to gather views on this work ("the 2022 ISDA UST Survey" or "the Survey").[1] Specifically, the 2022 ISDA UST Survey was intended to gather views on the legal, operational, regulatory, and policy issues associated with UST clearing, with a focus on client clearing and how reforms in this market could impact the derivatives markets.[2] A total of 25 ISDA members and non-members submitted responses to the 2022 ISDA UST Survey. As discussed in this report, respondents represented a diverse group of market participants and expressed a variety of different views in response to the survey questions, even within categories of similarly situated market participants (e.g., not all primary dealers had the same views on all issues).

2. While relatively supportive of clearing in general, respondents expressed different views regarding whether additional clearing would enhance liquidity in the UST cash or repo markets, with some expressly stating that additional clearing would not have addressed the issues that arose in March 2020.

3. Most respondents across all entity types did support incentives to additional clearing, including relief under the supplemental leverage ratio, increased access to indirect clearing for clients who desire it, increased access to direct clearing for firms who meet applicable membership requirements, and the ability to post client collateral to the CCP. Many respondents specifically identified the ability to pass client collateral to the CCP as a key aspect of a functional client clearing model. Respondents across entity types also strongly supported the approval of rules to enable cross-margining between cleared cash and futures markets and expansion of cross-margining to client transactions. Many respondents separately noted that increased clearing by principal trading firms (PTFs) could result in a more efficient UST repo clearing market. Some respondents noted that implementing clearing mandates prior to addressing these concerns could result in departures from the market, which would be a very undesirable result.

4. In general, respondents across entity types expressed very little support for broad clearing mandates, particularly with respect to UST cash and repo client transactions. However, certain respondents were skeptical regarding whether significant additional clearing would occur without a mandate.

5. Respondents expressed different views regarding use of the existing sponsored model at FICC versus a different client clearing model or increased membership in FICC. Among other things, clients expressed

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[1] UST securities and repos refers to the trading of UST securities in the cash and repo markets.
ISDA, "Seeking Views on US Treasury Clearing," February 9, 2022, https://www.isda.org/2022/02/09/seeking-views-on-us-treasury-clearing/.

[2] ISDA, "US Treasury Clearing Survey Deadline Extended," April 6, 2022, https://www.isda.org/2022/04/06/us-treasury-clearing-survey/.

concerns about a lack of recourse under the current sponsored model. Dealers mentioned the costs and risks associated with clearing for clients under this model.

6. Provided that the structural issues and drawbacks mentioned above were addressed, many dealer respondents did generally believe that increased clearing, particularly in the UST repo market, would be beneficial to the overall market. Some dealers also noted that reforms resulting in greater efficiencies in the UST repo market could benefit linked futures and derivatives markets.

7. This report discusses several key aspects of the UST repo and cash markets and provides additional information about the respondents to the 2022 ISDA UST survey. It then goes on to discuss important aspects of the diversity of responses received, including respondents' varied views on the benefits and costs of additional clearing, remarks on the current infrastructure and views related to recommendations in the recent G30 paper[3] and progress report[4]. Given the different views expressed by respondents, the report concludes that incentives to additional clearing should be considered but that additional research and regulatory effort are warranted prior to broad clearing mandates or similar steps. Appendices A and B to this report summarizes respondents' views on each category of questions in the 2022 ISDA UST survey.

Key Themes

8. Survey respondents discussed many benefits of additional clearing of UST client transactions in both the repo and cash markets, including increased liquidity as a result of reduced strain on dealers' balance sheets, improved transparency, greater market stability, and reductions in counterparty and settlement risk. Some of these benefits appear to be more applicable to UST repo than UST cash markets. For example, some respondents viewed the benefit of reduced counterparty credit risk to be minimal in the UST cash client market because, in their view, UST cash transactions have low settlement risk. Similarly, while many respondents commented that additional clearing of UST repo client transactions can increase dealer balance sheet capacity, some respondents cautioned that this same benefit might be minimal in the cash market. However, additional clearing of UST client transactions could, at the same time, increase dealer capital requirements.

9. Respondents also cited several potential costs associated with additional clearing of UST client transactions. The discussion of costs is broadly consistent in both the repo and cash markets, with survey respondents discussing increased transaction costs (in terms of fees, margin requirements, and

[3] Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 8.

[4] Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience, Status Update 2022" June 2022, https://group30.org/images/uploads/publications/G30_Treasury-Mkts-UPDATE_Final_Report.pdf.

other administration costs), additional technology investment requirements, and systemic risk concentration at a single central counterparty ("CCP"). Some respondents also highlighted that additional clearing through a clearing mandate could ultimately lead to exclusion of certain market participants, and thus potentially reduce liquidity.

10. Respondents noted cross-margining (across UST cash and repo markets, and across different instruments and product types), as well as continued and expanded participation by dealers and clients as key aspects of a functional clearing model for client transactions in both the UST repo and UST cash markets. However, in both markets, some respondents cautioned against expanding participation through the use of clearing mandates. In the context of the UST repo client clearing model, survey respondents also highlighted the need for strong oversight of, and risk management by, CCPs as key aspects of a functional clearing model. Further, in the context of a UST cash client clearing model, some survey respondents expressed support for central clearing that can facilitate all-to-all trading (that allows market participants to trade with, and provide liquidity to, one another irrespective of firm type). In both cash and repo markets, survey respondents commented on the current Fixed Income Clearing Corp. ("FICC") sponsorship model, with some expressing satisfaction that the current sponsorship model at FICC has been successful at increasing participation in central clearing. However, in the context of a UST repo client clearing model, some survey respondents discussed a number of limitations of the current FICC sponsorship model, including: sponsoring members having to bear all of the costs and credit risks; margin costs associated with client positions; and the lack of direct recourse to FICC available to clients in the event of transactional failures by sponsoring members. Notwithstanding these limitations of the current FICC sponsorship model, some survey respondents highlighted that they would not support "the erosion" of central clearing for UST repos under the current model in favor of developing a new UST repo client clearing model.

11. The issues surrounding proposed clearing mandates were also brought up in the context of potential reforms to the client clearing models in both the repo and cash markets. While some respondents suggested the use of a clearing mandate to increase clearing, some respondents worried that imposing clearing mandates could do more harm than good and should be undertaken with caution. Some respondents noted the use of incentives to encourage additional clearing as an alternative to establishing a clearing mandate. Opponents of a clearing mandate argued that the potential benefits of mandated clearing were unclear, that mandated clearing would not have addressed the market volatility experienced during the March 2020 COVID-19 shock, and that forcing clearing could be costly to market participants (for example by creating unnecessary burdens as well as legal, technological, and operational costs associated with additional clearing). Note that in the context of UST client cash transactions, some respondents stated that the benefits of additional clearing are unclear and they did not view additional clearing as imperative.

12. A number of respondents also shared their views about the impact of additional clearing of client transactions on Treasury futures and derivatives markets. While some respondents believe there could be greater efficiency, liquidity, stability and transparency in other markets, others cautioned that any impacts could be minimal and are difficult to predict. Further, while some respondents anticipate

clearing reforms could lead to reduced friction and transaction costs (on account of having one CCP able to facilitate cross-margining across different markets), respondents also cautioned against concentration risk at a single CCP.

13. In addition to clearing of client transactions, the Survey also sought market participants' views around potential reforms to the interdealer markets and principal trading firm ("PTF") markets. In the context of UST repo markets, some respondents did not see a need for further reform to clearing under the interdealer model and the PTF model. These respondents noted that the current interdealer clearing via FICC is sufficient. One respondent emphasized that PTF firms can and do join FICC, and therefore there is no need for further reform. Many respondents, however, did suggest potential reforms, which are summarized in the appendices.

14. With regard to reforms to the UST repo interdealer market, many survey respondents discussed cost reduction reforms, such as reducing the cost and paperwork involved in sponsoring new members to FICC, margin costs, and the cost associated with providing backstop liquidity through FICC's Capped Contingency Liquidity Facility ("CCLF"). Others suggested easing the Federal Reserve's supplemental leverage ratio and providing FICC direct access to the Federal Reserve's repo facilities in order to mitigate liquidity risk in the event of a clearing member's default. A few survey respondents suggested that increased repo clearing would result in a more robust relationship between Treasury and swaps markets, particularly during periods of market stress, and that there would be broader trading in SOFR futures due to dealer hedging.

15. With regard to reforms to the UST cash interdealer market, survey respondents mentioned, among other things, lowering clearinghouse membership costs, and reforms that could lead to increased transparency of, and regulation over, PTFs to create a level playing field for participants in the UST cash interdealer market. A respondent elaborated that PTFs are not required to be members of FICC and are not subject to the margin and default requirements of FICC, while broker-dealers are. There were mixed views on whether clearing mandates would be helpful. Also in relation to reforms, one respondent noted that under the current FICC sponsorship model, every sponsored client needs to have a sponsoring member, and so there might be commercial dynamics at play that limit the types of clients accepted for sponsorship by sponsoring members.

16. With regard to reforms to clearing in the UST repo and cash PTF markets, some survey respondents expressed support for additional clearing of PTF transactions. Suggested reforms include instituting a clearing mandate or implementing alternative clearing arrangements, registering PTFs with the SEC to increase transparency, requiring PTFs to hold higher amounts of inventory and permitting cross-margining between futures and cleared repos to improve market liquidity. Survey respondents also, however, suggested caution in pursuing such reforms if they could result in PTFs exiting the market. Some respondents highlighted the need to remove barriers to entry in the current clearing model and the need for empirical evidence for any form of clearing reform. Some respondents suggested that increased clearing of PTF activity in UST markets would improve linkages and provide cross-margining benefits across cash, futures, and derivatives markets.

I. Background

A. Background to the 2022 ISDA UST Survey

17. When announcing the 2022 ISDA UST Survey, ISDA noted that “US authorities are determined to strengthen the resiliency of the US Treasury market after a series of stress events, most recently at the start of coronavirus pandemic, which resulted in severe market dysfunction and disruption,” and that a “key part of the conversation is whether increased central clearing of Treasury securities and repos would help.”[5]

18. In July 2021, the Group of 30 (“G30”) Working Group on Treasury Market Liquidity published a paper (“the 2021 G30 Paper”) on steps toward increased resilience in the UST market. The 2021 G30 Paper recommended that all UST repos be centrally cleared as well as UST securities trading on electronic interdealer trading platforms. Today, only a small portion of the UST cash and UST repo market is centrally cleared.[6] The 2022 ISDA UST Survey focuses on the recommendations in the 2021 G30 Paper pertaining to central clearing.[7]

19. Central clearing is the process by which financial transactions are cleared through a central counterparty (“CCP”) that interposes itself between the original counterparties to a trade.[8] A key function of central clearing is *novation*, whereby the original contract between the buyer and seller of a trade is replaced by two contracts with identical economic terms as the original: one between the buyer and the CCP, and

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[5] ISDA, “Seeking Views on US Treasury Clearing,” February 9, 2022, https://www.isda.org/2022/02/09/seeking-views-on-us-treasury-clearing/.

[6] U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, “Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report,” November 2021, https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf, pp. 29 – 30.

Kahn, R. J., Olson, L. M., “Who Participates in Cleared Repo?,” *Office of Financial Research*, July 8, 2021, https://www.financialresearch.gov/briefs/files/OFRBr_21-01_Repo.pdf, p. 4.

ISDA, “Seeking Views on US Treasury Clearing,” February 9, 2022, https://www.isda.org/2022/02/09/seeking-views-on-us-treasury-clearing/.

[7] Specifically, recommendations 2, 3, 4, and 6. For a list of recommendations, *see* Group of Thirty, “U.S. Treasury Markets, Steps Toward Increased Resilience,” July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 8.

[8] Group of Thirty, “U.S. Treasury Markets, Steps Toward Increased Resilience,” July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 11.

another between the seller and the CCP.[9] Another key function of central clearing is *netting*, whereby the various obligations between the counterparties of several trades are offset, thus "reducing the number and value of payments or deliveries needed to settle a set of transactions."[10] Multilateral netting results in efficiency gains because the overall exposure of all counterparties is reduced.[11] Further, CCPs impose risk mitigants on its members in order to manage counterparty risk, including margin requirements, financial and operational standards, and mandatory contributions to default funds.[12]

B. UST Cash Market Overview

20. The UST cash market comprises the following key market participants: (a) dealers, which include regulated banks and broker-dealers, (b) principal trading firms (PTFs), which are not regulated as banks or broker dealers and which trade directly for their own accounts including using automated trading strategies, and (c) clients, which trade with dealers for their own accounts or as a fiduciary for their clients (e.g., asset managers, pension funds, hedge funds).[13,14,15] The UST cash market can be bifurcated into the *interdealer* market and the *dealer-to-client* market. The interdealer market itself comprises of dealers trading UST securities with each other and dealers trading with PTFs. Most interdealer trading

9 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 11.

10 Bank of International Settlements and International Organization of Securities Commissions, "Principles for financial market infrastructures," April 2012, https://www.bis.org/cpmi/publ/d101a.pdf, p. 24.

11 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 10.

12 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 11.

13 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 1.

14 U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, "Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report," November 2021, https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf, p. 3.

15 Program on International Financial Systems, "Mandatory Central Clearing for U.S. Treasuries and U.S. Treasury Repos," November 2021, https://www.pifsinternational.org/wp-content/uploads/2021/11/PIFS-Mandatory-Central-Clearing-for-U.S.-Treasury-Markets-11.11.2021.pdf, pp. 19-20.

takes place on electronic platforms provided by interdealer brokers (IDBs).[16] In the dealer-to-client market, dealers buy UST securities from and sell UST securities to clients.[17]

21. Central clearing was instituted in the interdealer market following the enactment of the Government Securities Act of 1986 and the establishment of the Government Securities Clearing Corporation ("GSCC"), which served as the CCP for trades in this market.[18,19] Primary dealers[20] of UST securities were required to centrally clear their trades with the GSCC in order to access this market. The GSCC eventually became the Government Securities Division ("GSD") of FICC, which is the central CCP of interdealer trades in the UST cash market today.[21] FICC imposes obligations on its members for access to its central clearing services, such as fees, capital requirements, and margin, liquidity, and loss allocation obligations.[22]

22. PTFs began to enter the interdealer market in the early-to-mid-2000s as interdealer trading of UST securities became increasingly automated and electronic trading platforms gained prominence.[23,24] Since most PTFs are not members of FICC, trading by PTFs—which today comprise a large share of

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16 U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, "Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report," November 2021, https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf, p. 3.

17 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 1.

18 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 9.

19 Program on International Financial Systems, "Mandatory Central Clearing for U.S. Treasuries and U.S. Treasury Repos," November 2021, https://www.pifsinternational.org/wp-content/uploads/2021/11/PIFS-Mandatory-Central-Clearing-for-U.S.-Treasury-Markets-11.11.2021.pdf, p. 20.

20 Primary dealers are broker-dealers and banks designated as trading counterparties of the Federal Reserve Bank of New York ("Federal Reserve") in its implementation of monetary policy. Primary dealers are obligated to participate in all Federal Reserve open market operations and "demonstrate a substantial presence as a market maker that provides two-way liquidity in U.S. government securities, particularly Treasury cash and repo operations." *See* Federal Reserve Bank of New York, "Primary Dealers," https://www.newyorkfed.org/markets/primarydealers.html.

21 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 9.

22 DTCC, "More Clearing, Less Risk: Increasing Centrally Cleared Activity in the U.S. Treasury Cash Market," May 2021, https://www.dtcc.com/-/media/Files/PDFs/DTCC-US-Treasury-Whitepaper.pdf, p. 6.

23 U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, "Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report," November 2021, https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf, pp. 5 – 6.

24 Program on International Financial Systems, "Mandatory Central Clearing for U.S. Treasuries and U.S. Treasury Repos," November 2021, https://www.pifsinternational.org/wp-content/uploads/2021/11/PIFS-Mandatory-Central-Clearing-for-U.S.-Treasury-Markets-11.11.2021.pdf, p. 20.

interdealer UST trading volume—is typically bilateral rather than centrally cleared.[25,26] Trading in the dealer-to-client market has always been bilateral.[27]

C. UST Repo Market Overview

23. In a UST repo transaction, one party sells a UST security to another and commits to repurchase the security at a specified later date (typically the following day) for a higher price.[28] A UST repo transaction is effectively a cash loan collateralized by a UST security. The collateral can be on a specific UST security ("specific collateral") or on any UST security within a specific class ("general collateral").[29]

24. A functioning UST repo market provides dealers in the UST cash market with the cash and access to UST securities they need to operate as effective market-makers.[30] The UST repo market can be bifurcated into: (a) the *bilateral* repo market, in which cash investors and UST security holders trade directly with one another, and (b) the *triparty* repo market, in which a triparty agent (typically a clearing bank) intermediates in the transaction and provides collateral management.[31] In the relatively significant bilateral repo market, investors and collateral providers directly exchange money and UST securities, utilizing a variety of valuation and margining practices. On the other hand, the Bank of New York Mellon

25 U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, "Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report," November 2021, https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf, pp. 3, 6.

26 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 1.

27 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 10.

28 U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, "Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report," November 2021, https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf, p. 3.

29 U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, "Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report," November 2021, https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf, p. 3.

30 SIFMA, "US Repo Markets: A Chart Book," February 2, 2022, https://www.sifma.org/resources/research/us-repo-market-chart-book/.

31 SIFMA, "US Repo Markets: A Chart Book," February 2, 2022, https://www.sifma.org/resources/research/us-repo-market-chart-book/.

("BNYM") is a clearing bank to the triparty repo market.[32] While the BNYM settles repo trades and provides collateral management, it does not become a counterparty to those trades.[33,34]

25. A growing share of the UST repo market is centrally cleared, and FICC serves as the primary CCP.[35,36] FICC centrally clears trades in the bilateral repo market through its Delivery versus Payment ("DVP")[37] service, and in the triparty repo market through its General Collateral Finance ("GCF") service.[38] The GCF service allows repos to trade on a general collateral basis, whereas parties to a DVP repo must agree on a specific security to use as collateral.[39] Further, all GCF repos trade through an IDB, which provides price transparency and anonymizes the identities of both parties to a trade, whereas DVP repos can trade with or without a broker.[40]

26. Central clearing in the UST repo market has grown significantly in recent years due to FICC's Sponsored Service program, which allows FICC members to 'sponsor' non-members, thus allowing non-members to centrally clear with FICC.[41,42] The sponsoring member guarantees all of their sponsored member's

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32 BNY Mellon, "Triparty: An Introduction," 2020, https://www.bnymellon.com/content/dam/bnymellon/documents/pdf/articles/triparty-repo-brochure.pdf.coredownload.pdf.

33 Kahn, R. J., Olson, L. M., "Who Participates in Cleared Repo?," *Office of Financial Research*, July 8, 2021, https://www.financialresearch.gov/briefs/files/OFRBr_21-01_Repo.pdf, p. 3.

34 Bowman, D., Louria, J., McCormick, M., and Styczynski, M., "The Cleared Bilateral Repo Market and Proposed Repo Benchmark Rates," *Board of Governors of the Federal Reserve System*, February 27, 2017, https://www.federalreserve.gov/econresdata/notes/feds-notes/2017/cleared-bilateral-repo-market-and-proposed-repo-benchmark-rates-20170227.html.

35 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, pp. 10 – 11.

36 U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, "Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report," November 2021, https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf, pp. 3 – 4.

37 Kahn, R. J., Olson, L. M., "Who Participates in Cleared Repo?," *Office of Financial Research*, July 8, 2021, https://www.financialresearch.gov/briefs/files/OFRBr_21-01_Repo.pdf, p. 3.

38 Bowman, D., Louria, J., McCormick, M., and Styczynski, M., "The Cleared Bilateral Repo Market and Proposed Repo Benchmark Rates," *Board of Governors of the Federal Reserve System*, February 27, 2017, https://www.federalreserve.gov/econresdata/notes/feds-notes/2017/cleared-bilateral-repo-market-and-proposed-repo-benchmark-rates-20170227.html.

39 Bowman, D., Louria, J., McCormick, M., and Styczynski, M., "The Cleared Bilateral Repo Market and Proposed Repo Benchmark Rates," *Board of Governors of the Federal Reserve System*, February 27, 2017, https://www.federalreserve.gov/econresdata/notes/feds-notes/2017/cleared-bilateral-repo-market-and-proposed-repo-benchmark-rates-20170227.html.

40 Kahn, R. J., Olson, L. M., "Who Participates in Cleared Repo?," *Office of Financial Research*, July 8, 2021, https://www.financialresearch.gov/briefs/files/OFRBr_21-01_Repo.pdf, pp. 3 – 4.

41 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 10.

42 U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, "Recent Disruptions and Potential

obligations to FICC, and covers the costs of clearing on behalf of their sponsored member.[43] Any legal entity in an FICC-approved jurisdiction that satisfies the Qualified Institutional Buyer (QIB) [44] standard can become a sponsored member, while any full-service FICC netting member can become a sponsoring member.[45]

D. Structural Market Developments

27. The UST market's ability to function efficiently, even in times of stress, is critical to the stability of the global financial system.[46] Over the past few years, the UST market has experienced a series of disruptive events that have created doubts about its resilience and capacity to absorb shocks: the October 2014 "flash rally," the September 2019 UST repo market stress, and, most notably, the March 2020 COVID-19 shock.[47] Two key structural developments in the UST market are argued to have increased the frequency of such disruptive events: (a) the rapid growth of US government debt and marketable UST outstanding over the past twenty years, and (b) the limited ability of bank-affiliated dealers to intermediate these rapidly growing UST inventories.[48,49]

28. Leverage requirements introduced after the global financial crisis have constrained the market-making capacity of bank-affiliated dealers by discouraging capital allocation to low-risk activities such as market

Reforms in the U.S. Treasury Market: A Staff Progress Report," November 2021, https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf, p. 4.

43 DTCC, "Sponsored Service," https://www.dtcc.com/clearing-services/ficc-gov/sponsored-membership.

44 "QIBs are the following financial entities: (1) an institution… that owns or invests at least $100 million in securities of non-affiliates; (2) a bank or savings and loan (S&L) association that meets condition (1) and also has an audited net worth of at least $25 million; (3) a broker or dealer registered under the Exchange Act, acting for its own account or for that of QIBs that own and invest at least $10 million in securities of non-affiliates; or (4) an entity whose equity holders are all QIBs." *See* US Federal Reserve Board, "Information and Liquidity of OTC Securities: Evidence from Public Registration of Rule 144A Bonds," June 2018, https://www.federalreserve.gov/econres/feds/files/2018061pap.pdf , p. 1.

45 DTCC, "Sponsored Service," https://www.dtcc.com/clearing-services/ficc-gov/sponsored-membership.

46 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 1.

47 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 1.

48 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 1.

49 U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, "Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report," November 2021, https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf, p. 5.

intermediation. [50,51] Further, while bank-affiliated dealers once dominated UST interdealer markets, PTFs now account for the majority of trading volume on electronic trading platforms. While PTFs provide significant liquidity in these markets during normal periods, PTFs "simply do not have the sufficient balance sheet capacity to replace the supply of liquidity that bank-affiliated dealers once provided,"[52] and have been observed to withdraw from trading markets altogether during highly volatile disruptive events.[53]

29. During recent periods of market stress, as trading volume and demand for liquidity surged, market-makers were constrained in their ability to intermediate these surges.[54] The COVID-19 pandemic in particular caused extreme volatility in the UST market. Prices of UST securities, which are typically seen as safe-haven assets during periods of market stress, fell rapidly in March 2020 as market participants attempted to liquidate their UST positions in a "dash-for-cash."[55] The UST market became essentially dysfunctional as bank-affiliated dealers were unable to absorb the heightened selling pressure, and market liquidity subsequently deteriorated.[56]

30. The 2021 G30 Paper notes that "if intermediation capacity is not increased, and the U.S. government continues the fiscal policies that have been rapidly increasing the stock of Treasury securities outstanding, episodes of market dysfunction are not only likely to continue but to occur with increasing frequency."[57] While not a panacea, it has been said that central clearing may reduce the disruptiveness

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[50] Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 1.

[51] U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, "Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report," November 2021, https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf, p. 5.

[52] Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, pp. 1 – 2.

[53] Liang, N., Parkinson, P. "Enhancing Liquidity of the U.S. Treasury Market Under Stress," *Hutchins Center on Fiscal & Monetary Policy at BROOKINGS*, December 16, 2020, https://www.brookings.edu/wp-content/uploads/2020/12/WP72_Liang-Parkinson.pdf, p. 6.

[54] U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, "Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report," November 2021, https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf, p. 7.

[55] Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, pp. 2 – 3.

[56] U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, "Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report," November 2021, https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf, p. 8.

[57] Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 2.

of such episodes by, among other things: (a) increasing the market-making capacity of bank-affiliated dealers by freeing up balance sheet space through multilateral netting, (b) encouraging the participation of smaller bank-affiliated and independent dealers, thus reducing the strain on bank-affiliated dealers to intermediate the market, and (c) reducing settlement failures through counterparty risk management.[58,59]

II. Demographics of Respondents to the 2022 ISDA UST Survey

31. ISDA received responses from 25 respondents. Table 1 summarizes the self-identified entity type of each respondent based on eleven categories included in the 2022 ISDA UST Survey.

TABLE 1: BREAKDOWN OF RESPONDENTS BY ENTITY TYPE

	Entity Type	Number of Respondents
	[A]	[B]
[1]	Primary dealer	13
[2]	PTF	1
[3]	Asset manager	4
[4]	Corporate	2
[5]	Interdealer broker (IDB)	2
[6]	Central counterparty	3
[7]	Other infrastructure provider	3
[8]	**Total**	**28**
[9]	**Total Number of Respondents**	**25**

Sources and notes:
Entity types represented by the respondents to the 2022 ISDA UST Clearing Survey.
[8] is greater than [9] because some respondents self-identified into more than one category and are therefore counted more than once.

58 Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, pp. 10, 12.

59 U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, "Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report," November 2021, https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf, p. 30.

32. Table 2 summarizes the number of responses to each set of questions in the 2022 ISDA UST Survey. ISDA divided the survey into questions applicable to UST Repo Clearing and UST Cash Clearing, respectively. The survey questions are duplicative across different markets. Within each market, there are three sets of questions applicable to three types of market participants: Client Model, Principal–Interdealer Model, and Principal–PTF Model. Market participants were asked to answer questions that are applicable to their firm.

TABLE 2: BREAKDOWN OF RESPONSES BY QUESTION TOPIC

	Question Topic	Number of Responses
	[A]	[B]
[1]	UST Repo Clearing	22
[2]	Client Model	22
[3]	Principal - Interdealer Model	14
[4]	Principal - PTF Model	12
[5]	UST Cash Clearing	19
[6]	Client Model	19
[7]	Principal - Interdealer Model	14
[8]	Principal - PTF Model	14

Sources and notes:
Question topics answered by the respondents to the 2022 ISDA UST Clearing Survey.

III. Benefits and Costs of Additional Clearing – UST Repo vs. UST Cash

33. Respondents discussed several benefits of additional clearing common to both UST repo and UST cash markets, including enhanced market efficiency, improved transparency, and greater market stability. While many benefits of clearing are common to both markets, there were some notable differences in respondents' discussion of benefits between markets. Specifically, many respondents noted that increased clearing in the UST repo market could reduce strain on dealers' balance sheets by netting out positions; however, respondents perceived this to be a minor benefit to the UST cash market.

34. Survey respondents generally cited similar types of costs of additional clearing in the UST cash and UST repo markets, both monetary costs (such as fees) and non-monetary costs (such as systemic risk). Respondents discussed increased transaction costs (for example, fees, margin requirements, and other administration costs), additional technology investment requirements, and systemic risk concentration at a single central counterparty ("CCP"). Some respondents also highlighted that additional clearing through a clearing mandate could ultimately lead to exclusion of certain market participants, and thus potentially reduce liquidity.

IV. Remarks on Current Infrastructure

35. When asked about the applicability of the current FICC sponsorship model to client transaction clearing, survey respondents expressed varying views in both the UST repo and UST cash markets, as summarized in Appendix A and Appendix B, respectively. In the context of the UST repo markets, many survey respondents noted that the current model has proven effective at encouraging more market participants to centrally clear without a mandate, and that it helps to keep the margining process simple for repo clients. Other survey respondents, however, noted shortcomings in FICC's current sponsorship model. These respondents cited issues, such as the costs and credit risk borne by sponsoring members; the requirement for dealers to post margin for clients; the lack of recourse for clients in the event of sponsoring members failing to return treasuries or cash to their clients; and FICC's selective criteria for approving market participants. Similarly, in the context of UST cash client transactions, some survey respondents again noted that the FICC sponsorship model has proven quite effective. However, respondents also discussed a number of other aspects of a functional clearing model, including cross-margining and the ability to facilitate all-to-all trading.

36. With regard to the current clearing infrastructure via FICC in the UST repo interdealer market, survey respondents generally expressed a positive view. Respondents noted the fact that interdealer activity is already centrally cleared and the current model is efficient. Some respondents, however, expressed support for reforms to increase clearing, as summarized in Appendix A.

37. Similarly, regarding the current clearing infrastructure in the UST repo PTF market, some survey respondents noted that (i) PTFs can and do join FICC, and (ii) they only represent a small fraction of the bilateral repo market. These respondents suggested that the current infrastructure is sufficient without reforms. That said, many respondents expressed support for additional clearing of PTF repo transactions, as summarized Appendix A. These respondents believed that while PTFs play an important role in the market, they might not be well capitalized and can withdraw liquidity from the market during crises. As summarized in Appendix A, survey respondents raised several suggestions to increase clearing in the UST repo PTF market, with respondents also noting the need to balance reforms with the risk that PTFs might exit from the market.

38. With regard to the current clearing infrastructure in the UST cash interdealer market and UST cash PTF market, survey respondents were generally less positive, with many respondents expressing a need for further reforms, as summarized in Appendix B. In the context of interdealer activity, survey respondents raised the issue of high clearinghouse membership costs, which results in a clearing model that does not have broad membership. Some survey respondents also noted the mismatch in requirements whereby broker-dealers, but not PTFs, are required to be members of FICC and therefore are subject to FICC's margin and default fund requirements. In the context of PTF activity, a survey respondent noted that since PTF positions can change quickly, it can be challenging for a sponsor, in the context of a sponsorship model, to track PTF positions in real time so as to price the associated risk. Further, it was also pointed out that PTFs might not be as well capitalized (as other market participants) and therefore might be sensitive to additional margin requirements.

V. Responses to the Relevant Recommendations in the 2021 G30 Paper

39. The 2022 ISDA UST Survey mentioned four recommendations from the 2021 G30 paper.[60] These are:

   a. Recommendation 2: "All trades of Treasury securities and Treasury repos executed on electronic interdealer trading platforms that offer anonymous trading by interposing an interdealer broker between buyers and sellers should be centrally cleared."

   b. Recommendation 3: "Treasury repos should be centrally cleared."

   c. Recommendation 4: "Market participants and regulators should continue to study how dealer-to-client cash trades of Treasuries might best be centrally cleared, including via the sponsored clearing model, and assess the private and public policy cases for central clearing using whatever is the optimal model."

   d. Recommendation 6: "Banking regulators should review how market intermediation is treated in existing regulation, with a view to identifying provisions that could be modified to avoid disincentivizing market intermediation, without weakening overall resilience of the banking system. In particular, U.S. banking regulators should take steps to ensure that risk-insensitive leverage ratios function as backstops to risk-based capital requirements rather than constraints that bind frequently."

40. Four survey respondents directly referenced the four recommendations from the G30 paper referenced in the Survey.[61] A primary dealer wrote that they "fully support" recommendation 2. Regarding recommendation 3, the same primary dealer noted, "we do not necessarily support 'Recommendation 3: Treasury repos should be centrally cleared.' Primary dealers should not be mandated to centrally clearing for repo markets. If at all, clearing could be mandated if on exchange/don't know counterparties, but not if bilateral arrangements with known counterparties." In relation to recommendation 4, a different primary dealer noted, "[a]ccordingly, we agree with, and support, Recommendation No. 4 of the G30 paper. In terms of specific steps, clearing brokers would need to be able and/or willing to clear UST cash transactions on behalf of a large segment of the client market, and the various CCPs should be able to offer cross-margining arrangements to reduce any potential unnecessary margin requirements on participants." In relation to recommendation 6, a corporate entity

[60] Group of Thirty, "U.S. Treasury Markets, Steps Toward Increased Resilience," July 2021, https://group30.org/images/uploads/publications/G30_U.S_._Treasury_Markets-_Steps_Toward_Increased_Resilience__1.pdf, p. 8.

[61] One respondent also commented on recommendation 5 in the G30 paper. This respondent, a primary dealer, wrote, "The G30's recommendation for FICC to have access to the FRB's Standing Repo Facility could potentially reduce or eliminate the need for CCLF funding."

wrote, "[w]e support Recommendation 6: Banking regulators should review how market intermediation is treated in existing regulation, with a view to identifying provisions that could be modified to avoid disincentivizing market intermediation, without weakening overall resilience of the banking system. In particular, U.S. banking regulators should take steps to ensure that risk-insensitive leverage ratios function as backstops to risk-based capital requirements rather than constraints that bind frequently."

41. While there were not a lot of direct references to the recommendations in the 2021 G30 paper, the feedback from respondents to the 2022 ISDA UST Survey can provide useful insight into the topics underlying the recommendations. For example, many respondents discussed additional central clearing in the interdealer market for UST repos and UST cash, which is related to recommendation 2 and summarized in Appendix A and Appendix B. Appendix A discusses central clearing in the UST repo market, which is related to recommendation 3. Subsection A in Appendix A summarizes respondents' thoughts on the benefits and costs of UST repo client clearing, as well as key aspects of a functional clearing model, potential reforms to clearing infrastructure to increase central clearing, and the impact of such reforms on related markets. Subsection B discusses reforms to clearing infrastructure designed to increase central clearing in the UST repo interdealer market, and the impact of said reforms. Subsection C discusses these topics for UST repo PTF transactions.

VI. Conclusion

42. Respondents to the 2022 ISDA UST Survey discussed central clearing in the UST cash and UST repo markets, including the costs and benefits of increasing central clearing, the key aspects of a functional clearing model, as well as potential reforms to clearing and the effects of such reforms on related markets. Respondents' views about the costs and benefits of central clearing, as well as the need for additional clearing and any associated reforms, vary across different types of respondents as well as different markets. Survey respondents' varying views suggest that additional research and regulatory effort are warranted before further steps can be undertaken. Examples of areas for further research suggested by some respondents include measuring and weighing of the costs and benefits of additional clearing, and documenting empirical evidence supporting the arguments for such costs and benefits (e.g., whether additional clearing could have supported liquidity during past episodes of market turmoil). In the meantime, now may be an appropriate time to consider incentives to additional clearing (e.g., relief under the supplemental leverage ratio, increased access to indirect clearing for clients who desire it, increased access to direct clearing for firms who meet applicable membership requirements, and the ability to post client collateral to the CCP) that were supported by most respondents.

Appendix A: Summary of Responses on UST Repo Clearing

A. UST Repo Client Model

43. This section summarizes the 22 responses to the 2022 ISDA UST Survey that pertained to the UST repo client market. The structure of this section follows the set of questions in the 2022 ISDA UST Survey under ‘UST Repo Clearing, Client Model’. Unless stated otherwise, the discussion in this section primarily applies to the UST repo client market.

1. Benefits of additional clearing

44. The first question pertaining to the UST repo client market asked whether additional clearing of UST repo client transactions would be beneficial, and if so, who would benefit and what the benefits would be. The question also asked whether these benefits can be achieved without additional clearing.

45. A commonly cited benefit of additional clearing of UST repo client transactions was increased market liquidity stemming from increased dealer balance sheet capacity. A primary dealer noted that due to current dealer leverage requirements, “the dealer community doesn’t have enough bandwidth to fully support the ever growing UST repo market.” As an infrastructure provider explained, central clearing of UST repos “would enhance the ability of dealers to provide liquidity to financial markets by reducing the usage of their balance sheet.” An asset manager noted that additional clearing “would benefit both sponsoring clearing members from a balance sheet perspective as well as sponsored end-user clients from an enhanced liquidity standpoint.” According to this asset manager, dealer leverage requirements “have deterred many dealers from entering into short-dated/overnight repo transactions, thus making it challenging for money market funds and other end-users to use these highly liquid instruments as effective cash management and short-term investment tools.” Additional clearing may allow dealers to “have greater capacity to engage in repo transactions with clients,” according to a different asset manager.

46. Another benefit of additional clearing commonly cited by survey respondents was risk reduction. Specifically, market participants identified that additional clearing of UST repo client transactions would reduce counterparty risk, settlement risk, and general market risks. Regarding counterparty risk, one infrastructure provider stated that multilateral netting “would reduce participants[‘] gross exposures to each other and the frequency of settlement failures.” According to a different infrastructure provider, additional clearing reduces counterparty risk “by replacing the original parties to each trade with a [CCP] that is subject to comprehensive regulation.” The same infrastructure provider stated that additional clearing reduces “settlement risk by netting across all CCP members so that each member has a single

delivery or payment obligation." More generally, market participants noted that additional clearing leads to risk reduction through margin requirements, increased transparency and stability, reduced volatility, and the "centralizing of responsibility for hedging and liquidating a defaulting member's positions in a single organization."

47. Survey respondents also cited ways in which additional clearing of UST repo client transactions would improve market efficiency. A primary dealer, for example, noted that central clearing via FICC provides for "consistent settlement instructions," which "could smooth out settlement and provide incentive to avoid fails," making clearing "more operationally efficient." An infrastructure provider noted that additional clearing would make settlement processes more efficient because "multilateral netting, and netted settlement…would reduce overall settlement obligations… ultimately reducing late day settlement and potential settlement fails. This would be particularly important during periods of high market volatility." An asset manager noted that additional central clearing could make UST markets "more robust and efficient provided it is accompanied by effective risk management and regulatory oversight."

48. Another market participant, an infrastructure provider, noted more broadly that additional clearing in the UST repo market will help "facilitate a more sustainable and competitive marketplace... benefit[ing] borrowers, lenders and dealers. Borrowers could source a deeper pool of liquidity than they have access to today, lenders would face a CCP, which would reduce the counterparty risk, and dealers would have increased capacity to net positions and develop new solutions and products for the repo market that would be facilitated by increased market liquidity. The broader financial system would also benefit given the ability to rely on CCP to help maintain liquidity in the repo markets during periods of stress. This would reduce the risk of the repo markets 'drying up' for many market participants during periods of market turmoil."

2. Costs of additional clearing

49. The second question pertaining to the UST repo client market asked what the costs and risks of additional clearing of UST repo client transactions are and how could these be mitigated. The question also asked market participants to explain the costs of any potential mitigation and, if applicable, alternatives that would avoid these costs.

50. Survey respondents commonly discussed financial costs of additional clearing, with many claiming that such costs are greater in centrally cleared transactions than in bilaterally cleared transactions. An infrastructure provider noted that additional clearing would involve "settlement cost to settle into the CCP and Processing costs at the CCP inclusive of additional margin, liquidity, and transactional and position management charges." A number of primary dealers shared this view. One cited "[i]ncreased clearing fees, haircuts, [and] margin requirements…" as costs of additional clearing. Another primary dealer added "initial margin, which, at times, may be in excess of what is currently transacted in the non-cleared / bilateral market, clearing fees, and the cost of the CCLF [Capped Contingency Liquidity

Facility]."[62] A third primary dealer stated "[i]t is apparent that clearing is more costly in terms of fees/margins/administration etc. than bilateral settlement." One respondent noted that "[c]lients would see an increased cost for clearing such transactions as dealers would pass any added costs to the client" and that, assuming clearing under the current model, such clients "would also have the added costs and fees in participating in the sponsored program of a dealer since clients cannot be direct members of the clearing house." Given these costs, this respondent stated that "[c]learing of UST repo transactions may be beneficial for dealers but not clients." Similarly, an asset manager reiterated "additional marginal costs for each cleared trade," such as "CCP fees, CCP margin haircuts, [and] CCP default fund obligations..."

51. Another commonly cited cost of additional clearing is concentration and systemic risk. Many primary dealers highlighted this risk: "greater concentration risk with one centralized clearing facility" and "increase fatty tail exposure;" "systemic risk vis a vis a single CCP is of concern and should be further quantified;" "any increase in clearing would lead to further concentration of risk at the CCP and an increase of the systemic importance of the CCP, along with the potential for pro-cyclical margin requirements at the CCP;" "[c]learing mandates may concentrate risk at CCPs, including substantial liquidity risks…, and margin requirements may be procyclical;" "a clearing mandate would also create systemic risk concentrations at the CCP, including the substantial liquidity demands the CCP may face in the event of a member default." Similarly, an asset manager stated, "[t]he clearinghouse would likely become a systemically important financial institution. If the regulatory framework and risk management frameworks are not effective, that could lead to 'Too Big to Fail' problems, which could increase, not decrease, market instability and moral hazard."

52. A few survey respondents provided suggestions with regard to mitigating systemic risk. For example, a primary dealer noted, "[i]t is critical that the CCP's systemic importance is matched with commensurately robust governance, risk management, and oversight, including appropriate transparency to clearing members who mutualize the risk at the CCP. All members of the CCP should be subject to the same stringent membership requirements to protect the overall resilience of the market." A different primary dealer had a similar suggestion to mitigate this risk, stating "[i]ncrease of volume through FICC in connection with clearing mandates will require that governance and risk management are sufficiently robust and subject to strong supervision. In order not to weaken the risk controls of FICC, clearing membership criteria needs to remain robust and consistent for all market participants to ensure strength of any CCP."

[62] FICC requires its members to finance a liquidity facility that is maintained in order to satisfy funding needs in the event of a member's default. "Capped Contingency Liquidity Facility ("CCLF®") is an integral part of the Fixed Income Clearing Corporation's ("FICC") role as central counterparty under the Government Securities Division ("GSD") and the Mortgage-Backed Securities Division's ("MBSD"). Annually, FICC conducts a mandatory CCLF test with all GSD Netting Members and MBSD Clearing Members in order to satisfy the requirements of a covered clearing agency with respect to its management of liquidity risk." *See* DTCC, "Annual FICC Capped Contingency Liquidity Facility (CCLF®) Test Reference Guide," https://www.dtcc.com/~/media/Files/Downloads/Clearing-Services/FICC/CCLF-Annual-Test-Reference-Doc.pdf, p. 1.

53. While a benefit of additional clearing of UST repo client transactions cited by many respondents was increased market liquidity, others have mixed views on whether clearing would help or hurt liquidity. Several respondents claimed that a clearing mandate could exclude certain participants from the UST repo market and reduce liquidity. A primary dealer wrote, “[m]andatory clearing of UST repos could have adverse effects such as potentially discouraging certain market participants which may not be able to become direct clearing members and are limited by operational constraints to settle under a sponsored repo clearing mode.” Another survey respondent cited “[b]arriers to entry for certain counterparties on the client side” and also stated that “volumes would decrease.” Another primary dealer noted that this could lead to “[d]ecreased liquidity based on differences of client base (i.e., institutional clients who prefer greater anonymity).” An asset manager mentioned “[a]cess to [l]iquidity” as a cost of additional clearing.

54. Several respondents also mentioned that additional clearing would require investments in technology from both dealers and clients. A primary dealer wrote, “clients will need tech build out (sponsored Repo custodians would also need some technology enhancements).” An asset manager mentioned “[r]esourcing costs for internal tech build to support clearing to CCP(s)/clearinghouse(s).” Another asset manager cited “[t]echnological investment costs to accommodate greater volume of transactions.”

3. Key aspects of a functional clearing model

55. The third question pertaining to the UST repo client market asked what the key aspects of a functional UST repo client clearing model are and whether they can be achieved via a model akin to the current sponsorship model at FICC, or whether a different model or infrastructure would be required or beneficial.

56. Survey respondents identified several key aspects of a functional UST repo client clearing model. According to one primary dealer, these include “continued and expanded participation by dealers and clients, strong oversight of and risk management by the CCPs, availability of balance sheet efficiencies for the dealers, possibility for cross-margining across cash and repo.” A primary dealer, meanwhile, stated that “[a] key aspect of a functional clearing market is the ability to cross margin in FICC.” This primary dealer explained, “centralizing from multiple 3rd parties to one central party would limit the number of transactions and bookings needed” because cross-margining would reduce the margin needs for offsetting repo and reverse repo transactions. According to another market participant, key aspects of a functional UST repo client clearing model include: “[e]nabling entities that wish to join the CCP as members, and have the financial capacity to be a member, to do so efficiently and in a transparent manner;” “[a]llowing for separation between trading counterparty and/or venue and clearing services for market participants that are not direct members of the CCP (i.e., allow bifurcation between executing party and clearing services);” and “[m]anaging collateral/cash such that settlement cycles can be run efficiently and with confidence multiple times a day.”

57. With regard to the current sponsorship model at FICC, several survey respondents expressed a positive view. A primary dealer, for example, stated, “[w]e believe that a functional UST repo client clearing

model can be achieved via a structure as the current sponsorship model that is currently being deployed by FICC." According to another primary dealer, "[m]arket-based initiatives, such as FICC's growing sponsored repo program, will continue to provide incentives for market participants to use clearing and should be permitted to continue without further regulatory mandates." Another primary dealer added, "FICC's current model is excellent and should be expanded upon." Similarly, an asset manager highlighted that the FICC sponsorship model "has proven quite effective at bringing in more market participants into the central clearing system," and "could be a good model for a UST repo client clearing model." Further, one infrastructure provider pointed to the current FICC sponsorship model as an example when it recommended keeping the margining process "as simple as possible for repo clients… Many clients are probably not fully aware or may not have the necessary systems to margin repo effectively."

58. However, some other survey respondents pointed out limitations of the current FICC sponsorship model. As one primary dealer explained, "[i]t would be hard to implement the FICC sponsored repo model as the clearing structure for the entire market since the costs and credit risk are taken on completely by the sponsoring member." This primary dealer also noted that the current FICC sponsorship model "does not mandate margin from clients, just dealers. If central clearing expands, dealers should be allowed to just pass through margin, not post on client behalf." From the client's perspective, one market participant said that "the current FICC model would not provide recourse for the client once settlement occurs for the transaction between the sponsoring member and FICC. The sponsorship model needs to be revised to permit clients to have recourse directly to FICC if the sponsoring member fails to return treasuries or cash to the final client following sponsoring member's settlement with FICC at an omnibus account level." Meanwhile, one primary dealer recommended that "[i]n the short run, and to further promote the sponsored clearing model, some of the issues with regards to client risk profiles & allow [sic] a wider number of market participants' approval by FICC should be addressed."

59. Survey respondents identified a number of risks associated with developing new UST repo client clearing models. One primary dealer said, "[w]e do not support the erosion of CCP controls (such as membership criteria, clearing fund contributions, operational capacity, etc.) in an effort to develop new 'models' of clearing… the risk-mutualization of CCPs must not be used to favor the development of new participation models by increasing the risk of existing members." This primary dealer went on to say, "[r]estrictions on passing through collateral to a CCP need to be minimized in all models. There are practical limitations on the ability of clearing brokers to provide liquidity, and in a much larger cleared market, the current restrictions…on passing through collateral can act as a disincentive." A different primary dealer noted that "[s]ignificant infrastructure changes may be required to generalize client clearing. Looking at OTC derivatives markets, we believe that the development of client clearing interrelates with the emergence of regulated trading venues… and certain safeguards on 'certainty of clearing'. It is not clear that the repo market has reached this level of maturity." More generally, one infrastructure provider recommended ensuring "sufficient time and access is granted to all clients/participants before any mandate becomes effective. Excluding or not giving sufficient time and

support for clients to be ready could force participants out of the [UST repo] market, reducing overall market liquidity."

4. Reforms to clearing infrastructure

60. The fourth question pertaining to the UST repo client market asked what the most efficient and effective steps to additional clearing of UST repo client transactions would be. The question also asked to identify and discuss all steps that should be taken, including the order in which they should be taken. Suggested steps included to add incentives, remove disincentives, impose a mandate, or implement a structural change.

61. Survey respondents discussed the use of a mandate to increase clearing of UST repo client transactions. One primary dealer said, "[i]mposing a mandate is the most effective way to have trades submit to central clearing." Some survey respondents went further, such as a primary dealer that stated, "[i]mposing a mandate is likely the only way to move all counterparties on to client cleared repo." However, other survey respondents were more cautious, with one primary dealer noting, "[i]n reality, we see little option for increases to UST clearing to emerge without some kind of regulatory intervention. However, this should be undertaken with caution." An asset manager also expressed that, "[w]e would not be supportive of any clearing mandate at this time. The market needs time to develop and expand. Forcing clearing has costs and for MMFs especially, this may place unnecessary burdens where most are only entering into overnight transactions."

62. Survey respondents offered the use of incentives as an alternative to establishing a UST clearing mandate. One primary dealer indicated that "[w]e do not see the need for a mandate for clearing of UST repo client transactions and believe that incentives for client clearing of UST repo are already significant." Other survey respondents shared the view that incentives that were currently in place were sufficient, with an asset manager stating, "[w]e think that current market structure already creates an incentive for clearing and we have seen a large uptick in clearing of repo transactions where it makes sense." Another asset manager also expressed satisfaction with the current market structure, "[t]he current incentives are good because dealers are working to help get more accounts set up in FICC as it reduces their balance sheet costs." One respondent, however, expressed the need for more incentives. This respondent stated, "[t]here has to be added incentives for the banks when facing the client side. If spreads become so thin due to efficient clearing, reduced capital and netting of balance sheet, there would be little motivation to participate so actively in the market and banks will start to allocate resources to other businesses that are more profitable."

63. Some survey respondents also discussed other reforms. For example, various market participants mentioned standardization, as one infrastructure provider said, "[e]nsure margining process is simplified/standardized – this would reduce barrier to entry." A primary dealer also commented, "[i]n addition, a standard industry repo client clearing agreement should be considered." A few other market participants remarked on the role of the Federal Reserve, with one asset manager commenting, "[i]f the Fed were added as clearing member, then it would incentivize everyone to join."

64. Some market participants, however, cautioned that reforms would bring additional costs, such as one primary dealer who said despite there being a number of potential reforms used to encourage clearing, "all of them could result in either higher costs or risks for market participants, which could have an adverse impact on market or funding liquidity or create moral hazard and increase systemic risk." This respondent, however, did not elaborate on the specific reforms and associated costs or risks.

5. Impact of reforms on related markets

65. In answering the fifth question pertaining to the UST repo client market, survey respondents discussed how additional clearing of UST repo client transactions and/or reforms would affect different markets, including the Treasury futures market and/or other derivatives markets.

66. One infrastructure provider stated more generally that "[r]eforms that lead to a broader set of liquidity providers…, increased alternatives on how to source repo financing and greater stability during periods of stress will have material benefits for the Treasury futures markets and other derivatives markets that use Treasuries when managing risk and for the broader derivatives markets when managing margin funds."

67. With regard to the Treasury futures market in particular, this infrastructure provider said that "a broader and more stable repo market will help facilitate greater efficiency and stability in transactions that rely on the 'basis' between Treasury futures and an underlying Treasury security as Treasury repurchase financing is often a key component to these transactions." A primary dealer also said that "[a]dditional cleared UST repo would only help liquidity in the Treasury futures market as dealers have to hold cash positions as a hedge quite often, so maximizing UST repo capacity at tight levels and large volumes will help. In the current state, if there is choppiness in UST repo, that impacts liquidity on Treasury futures." Meanwhile, a different infrastructure provider noted that it was "[d]ifficult to say what the exact impact would be however we would expect greater liquidity and confidence in Treasury Futures Markets and indirectly other derivatives markets, such as the Rates/swap, which would benefit from improved transparency and efficiency."

68. Regarding other derivatives markets, one infrastructure provider said, "[i]n the interest rate swaps market, greater breadth, depth and transparency in the repo markets will help reduce friction costs for buying and/or selling Treasuries when managing duration risk associated with interest rate swaps. For the broader derivatives market, increased use of clearing and enhanced repo market infrastructure will facilitate efficiencies in margin management. The current system given its large reliance on bilateral / tri party agreements and limited settlement windows creates challenges for using repo as a store of value for margin funds." However, a primary dealer cautioned that while "[i]n theory, where the same CCP or exchange is supporting clearing across different products, potential cross product margining can help to decrease transaction cost… other considerations such as concentration risk vis a vis the market facility, etc. need to be reviewed."

B. UST Repo Principal – Interdealer Model

69. This section summarizes the 14 responses to the 2022 ISDA UST Survey that pertained to the UST repo interdealer market.

1. Reforms to clearing infrastructure

70. The first question pertaining to the UST repo interdealer market asked whether any reforms would be helpful to the clearing infrastructure in the UST repo interdealer market, and if so, what the related benefits and costs would be and to whom would they apply.

71. A few survey respondents expressed satisfaction with the current clearing infrastructure and suggested no reforms. One primary dealer, for example, stated that the "[c]urrent model is [a] pretty efficient process today… [and the] most efficient of the three models." A different primary dealer stated that "[i]nterdealer activity is already centrally cleared. This makes sense – [interdealer brokers] and counterparties facing them should absolutely have to clear." One market participant said that the "[i]nterdealer market has a clearing infrastructure in place that works," while another similarly said that "[i]nterdealer clearing is standard via FICC and does not need additional reform."

72. However, a number of respondents discussed the need for reforms. One primary dealer stated, "[o]n the whole, we favour an increase in UST clearing across all market segments. It is apparent that the UST market... has grown too big for the current structure and, as illustrated by a number of episodes in the markets in recent years… some changes could be beneficial." However, other respondents also discussed obstacles to such reforms. According to one respondent, "[d]ealers argue that the biggest impediment to expanding central clearing is the margin cost and the expense of providing backstop liquidity through the CCLF… Dealers… also note that the cost and paperwork involved in getting new participants sponsored onto the CCP is time consuming and expensive."

73. Regarding specific reform suggestions, some survey respondents recommended providing FICC access to the Federal Reserve's repo facilities. One primary dealer stated, "given the importance of FICC to the resiliency of the market, we support giving FICC direct access to the standing repo facility which would mitigate liquidity risk faced by a CCP in the event of a clearing member default." Another primary dealer similarly said that "[i]f FICC could gain access to the Fed repo facilities, it would further strengthen the credit of the CCP. This would allow for institutions to have a possible larger exposure to the CCP as a viable liquidity back stop is in place." The same primary dealer also recommends "a review and easing of the supplemental leverage ratio. Under the SLR, [UST] repo receives equal weight to far riskier assets. This is a binding constraint to the institutions within the interdealer market… If there was an easing of the current SLR and firms were able to recognize offsetting positions and risk mitigating collateral related to [USTs] it would improve liquidity."

2. Impact of reforms on related markets

74. The second question pertaining to the UST repo interdealer market asked how the reforms mentioned impact the Treasury futures market and/or other derivatives markets.

75. With this question, one primary dealer said it would expect increased repo clearing to result in "broader trading in SOFR futures as dealers with higher gross activity need to hedge their match books." Meanwhile, one infrastructure provider said it "would anticipate more robust relationships between Treasury and swaps markets, specifically in periods of stress, which would reduce systemic risk in both while controlling for contagion risks. For example, the greater confidence in permanent and continuous repo market liquidity brought about by increased use of cleared UST repo could help to reduce risk premia charged in the interest rate swaps markets expressed as spreads to UST yields, which could in turn lower issuance costs for borrowers in bond and loan markets."

C. UST Repo Principal – PTF Model

76. This section summarizes the 12 responses to the 2022 ISDA UST Survey that pertained to the UST repo PTF market.

1. Reforms to clearing infrastructure

77. The first question pertaining to the UST repo PTF market asked whether any reforms would be helpful to the clearing infrastructure in the UST repo PTF market, and if so, what the related benefits and costs would be and to whom would they apply.

78. A few survey respondents did not see a need for any further reform to the current clearing infrastructure, with one primary dealer saying that "PTF firms can and do join FICC, no further reform needed," and another saying that currently, "PTFs do not have a material footprint in the bilateral repo market." According to one respondent, "[w]e don't believe there is a 'PTF market'. PTFs transact in both the repo and cash UST market for a variety of reasons in a variety of ways using a variety of trading strategies on both the interdealer electronic trading venues and directly with dealers as clients in the dealer to customer market."

79. Other survey respondents, however, signaled overall support for additional clearing of UST repo PTF transactions. According to one primary dealer, "[t]he role of PTFs in the UST market is important and necessary. However, a good part of their activity remains bilateral and it is open to question whether these firms are suitably capitalized. In addition, we have seen episodes in the markets where PTFs have withdrawn their liquidity. It is probable that a market structure under which PTFs clear their activity would represent a step forward from today." Some survey respondents pointed to mandates as a way to promote additional clearing. One primary dealer said, "[m]andates for PTFs to become clearing members or implement alternative clearing arrangements should be considered," and "registration of

PTFs in order to increase transparency in the market would be a welcome development." Another primary dealer similarly expressed that "[w]e think it will be difficult to create PTF clearing without a mandate." An infrastructure provider, meanwhile, suggested that "[o]fficial sector action could potentially take the form of requiring firms that make markets in U.S. Treasury securities, and/or whose U.S. Treasury cash activity satisfies certain liquidity and/or volume thresholds, to centrally clear such activity."

80. Survey respondents also identified risks associated with reforming the PTF clearing infrastructure. As one primary dealer explained, "[t]he costs of adding PTFs to the clearing landscape need to be viable to ensure that PTFs don't exit the market. Our initial analysis suggests an exodus of PTFs from the market, even if that market was cleared, would be a retrograde and unwelcome step." This primary dealer also suggested developing PTF clearing activity "in such a way as to be compatible with either a) clearing broker capacity to support these firms or b) the ability for these firms to access the CCP directly without compromising the overall integrity of the CCP."

81. Survey respondents also made a number of general recommendations. One primary noted that "[i]f PTFs altered their business model to hold higher amounts of inventory, cross-margining between futures and cleared repo would be helpful as it would reduce the overall amount of initial margin and reduce the variable margin moves during large market moves, which could impact market liquidity provision."

2. Impact of reforms on related markets

82. The second question pertaining to the UST repo PTF market asked how the reforms mentioned impact the Treasury futures market and other derivatives markets.

83. A number of survey respondents did not believe their suggested reforms would impact the Treasury futures market and/or other derivatives markets. Nevertheless, one market participant explained, "[a]nything that makes repo more available and secure improves the linkage between futures/derivatives markets." An infrastructure provider said that increased clearing of PTF UST activity "would set the stage for that activity to obtain cross margining benefit across the cleared cash and derivatives markets." According to this infrastructure provider, "FICC is currently proposing to enhance its existing cross-margining capabilities[63] to improve margin efficiencies for common full-service members with respect to their proprietary positions, which proposal is subject to regulatory approval."

[63] "CME Clearing is an intermediary between buyers and sellers in the derivatives market. As the intermediary, or counterparty, to every trade, CME Clearing acts as the buyer for every seller and the seller for every buyer for every trade." *See* CME Group, "Clearing," https://www.cmegroup.com/clearing.html.

Appendix B: Summary of Responses on UST Cash Clearing

A. UST Cash Client Model

84. This section summarizes the 19 responses to the 2022 ISDA UST Survey that pertained to the UST cash client market. The structure of this section follows the set of questions set out in the 2022 ISDA UST Survey under 'UST Cash Clearing, Client Model'. Unless stated otherwise, the discussion in this section primarily applies to the UST cash client market.

1. Benefits of additional clearing

85. The first question relating to the UST cash client market asked if additional clearing would be beneficial, and if so, what would those benefits be. The question also asked whether these benefits can be achieved without additional clearing.

86. A frequently discussed benefit is risk reduction. One infrastructure provider listed a number of ways in which increased clearing would reduce risk: "Reducing counterparty credit risk by replacing the original parties to each trade with a central counterparty (CCP) that is subject to comprehensive regulation;" "[r]educing settlement risk by netting across all CCP members so that each member has a single delivery of payment obligation;" "[l]imiting the ability of sudden market movements to cause a default by collecting margin twice daily (or more frequently as needed) through standardized processing;" and "[r]educing the risk of market disorder and fire sales by centralizing responsibility for hedging and liquidating a defaulting member's positions in a single organization." However, other survey respondents perceived the benefit of risk reduction as minimal.

87. The second benefit of central clearing mentioned by survey respondents was increased transparency. An infrastructure provider said, "[i]ncreased Transparency & market confidence – Central clearing would increase transparency for participants and regulators to identify and address vulnerabilities and allow for CCPs to ensure participants have adequate resources available (via initial and variation margin) to mitigate major counterparty failure, increasing market confidence." An asset manager echoed this sentiment, "[i]t would increase the transparency of the market, which could have a positive impact on counterparty settlement and systemic risk."

88. Survey respondents also commented on the netting impact of central clearing, though some were cautious about the magnitude of the associated benefits. One asset manager noted, "[i]t could reduce the capital requirements for dealer banks that warehouse trade flows on their balance sheets as a result of improved netting, although this would be a minor benefit for cash-market trades because those trades do not have to be recorded on a dealer's balance sheet unless they fail to settle." Similarly, a

primary dealer responded, "[a]dditional clearing in the cash market may provide some netting of settlement activity, but it is not clear that such netting will feed through to additional balance sheet or capital capacity, particularly for the less liquid segments of the UST market or when flows are highly directional."

2. Costs of additional clearing

89. The second question in the UST cash client section asked what the costs and risks associated with additional clearing are and how they might be mitigated.

90. A key theme raised by survey respondents was the increase in costs, including transaction costs, clearing fees, and margin requirements. An asset manager noted that "[c]osts would include, but not be limited to, new clearing and execution fees and charges, potential clearing limits being imposed on trading, potential margin requirements." A primary dealer reiterated, "[a]dditional clearing of UST cash client transactions would require increased margin and default fund payment obligations on the part of all clearing members." Another asset manager said, "[c]lient clearing would most likely involve transactional costs (commissions, CCP fees) not experienced in bilat[eral] markets." Making specific reference to the G30 paper, a primary dealer said, "[a]gree with the G30 paper that the costs of wider central clearing include: higher costs in normal market conditions, including clearing fees and the costs of meeting generally higher margin requirements."

91. Survey respondents also discussed costs beyond transaction-related costs or clearing fees. These costs broadly relate to setting up the infrastructure and processes required for central clearing. As one asset manager described, "[t]his would require a lot of effort to manage the clearing and margin process on a daily basis. Additional costs include: Resourcing costs required for onboarding/account setup across counterparties/CCPs (IMs with large client base = heavier/costly lift); Resourcing costs for internal tech build to support clearing to CCP(s)/clearinghouse(s); Resourcing costs for building a clearing team for this product(similar to futures clearing team)." Another asset manager also mentioned "additional legal, technology and operational expenses to document the new clearing and give-up relationships and implement the necessary pipes, credit checks, and other infrastructural changes." Another asset manager noted, "same costs would apply to UST clearing for less benefit" as in the UST repo market, and "[t]he scale of such costs would also be much bigger in the event of a mandate given the scale of the cash UST market." This respondent noted that such costs include "[t]he internal and external legal costs" and "T-Costs: CCP fees, CCP margin haircuts, CCP default fund obligations (applicable to clearing members) create additional marginal cost for each cleared trade."

92. Survey respondents also highlighted CCP concentration risk. For example, one primary dealer noted that "[a]s with UST repo clearing, costs associated with cash clearing include: increased concentration at CCPs, potential limiting of client access, and broader increased costs. Clearing concentrates risk at CCPs including liquidity risks which increases the importance of governance and risk management frameworks." An asset manager noted, "[i]t would require a transition period during which there may be market disruptions. The clearinghouse would likely become a systemically important financial

institution. If the regulatory framework is not effective, that could lead to 'Too Big to Fail' problems, which could increase, not decrease, market instability and moral hazard. It could increase settlement risk if the clearinghouse were to fail."

93. Some survey respondents cautioned that central clearing might not help to alleviate situations of stress, like that which occurred in March 2020. One primary dealer stated, "[t]his may be counterintuitive given that clearing would provide some marginal relief to dealers' balance sheets. But rather than 'bank' freed balance sheet for future UST trading activity, we think it's more likely that any excess balance sheet is simply redeployed elsewhere – especially in the face of tighter bid/ask spreads and more competition in UST space. These are decisions that can't (and won't) be quickly reversed in the face of a stress scenario....In the end, to avoid situations like March 2020, you still need two-way flow and in times of stress end users are generally one-way. Central clearing may enable more pass-through intermediation, but does nothing to help (and may even deplete) private market shock absorption which is the only thing that would prevent the official sector from having to step in and take the other side of a broad risk transfer."

3. Key aspects of a functional clearing model

94. The third question pertaining to the UST cash client market asked what the key aspects of a functional UST cash client clearing model are and whether they can be achieved via an expansion of the current sponsorship model at FICC, or whether a different model and/or different infrastructure would be required or beneficial.

95. Several survey respondents emphasized an approach towards expanding clearing that would not result in reduced participation in the UST cash market. As one primary dealer said, "[a]dditional central clearing in the cash Treasury market should be examined with a careful measuring/weighing of the costs and benefits before any mandates for increased clearing are put in place. If more mandated clearing is adopted as a policy, a targeted approach to cash Treasury clearing is preferred (e.g., covering interdealer market) rather than a market wide mandate as the latter would create barriers and costs for smaller market participants." An asset manager similarly expressed that "[w]e'd need to understand what would be the proposed clearing structure… before we could assess any potential synergies… We have a broad base of dealers with whom we trade UST… and we would not want to be limited to only trading with dealers with whom we have clearing agreements…with." One primary dealer said that "[t]he UST market is very fragmented," while another noted, "[t]he key aspects to a cash client model would be to ensure that all market participants that currently trade USTs would not face barriers that would cause them to change behavior… The diverse set of end users of USTs creates a requirement that all participant's needs are evaluated when considering any shifts in client settlement optionality."

96. Some survey respondents discussed the applicability of the current FICC sponsorship model in clearing UST cash client transactions. One asset manager said that "[t]he FICC sponsoring model has proven quite effective at bringing in more market participants into the central clearing system." An infrastructure provider elaborated by explaining that FICC offers "an open-access model which accepts

for clearing, eligible transactions executed by its members through multiple trading modalities such as direct membership, limited membership via support from a sponsor, or non-member agented access via a prime broker or correspondent clearer... In many cases, clients prefer to bundle their clearing and trading relationships so as to avoid the need to pay fees for clearing services separate from execution-related costs. Such fees can be problematic for [money market funds] or other institutions that are subject to stringent treasury, operational or regulatory limitations… Given the nature of the diversity in this market, it is essential that there are multiple access models to support the different client demographics with regards to legal and regulatory structure as well as trading styles."

97. Survey respondents also discussed cross-margining as a key aspect of a functional clearing model. One primary dealer said that in theory, cross-margining would "benefit market participants that maintain exposure across multiple instruments and product types but a realization of margin benefits would require coordination across various CCPs, regulatory approval, and would need to be reviewed for feasibility of implementation and robustness of risk management framework." An asset manager said that "[c]ross margining could work, but much of the benefit would require the clearing houses communicating that with each other." This asset manager recommended having the "ability to clear with multiple counterparties." An infrastructure provider similarly noted that "[c]ompetition amongst CCPs is healthy, it promotes innovation and potentially still provides for multilateral netting benefits by having interoperability arrangements in place."

98. A number of survey respondents expressed support for an all-to-all trading market wherein market participants are able to trade with and provide liquidity to one another irrespective of firm type. One infrastructure provider recommended a clearing model that allows for all to all trading, explaining that "[c]entral clearing could open the ability for market participants to trade with anyone, increasing competition, lowering costs, and enhancing market liquidity." An asset manager also noted that "[t]he primary market structure where a clearing model would work best for UST cash trades is an all-to-all market," which "could in theory help to expand market participation." A primary dealer, meanwhile, emphasized that "[a] key aspect of a functional UST cash client clearing model is the willingness of clearing brokers to clear on behalf of the client market. If clearing brokers are not willing or able to act in such a capacity, or only in limited instances which do not represent a significant segment of the client market, then the benefits of a clearing model would likely go unrealized."

4. Reforms to clearing infrastructure

99. The fourth question pertaining to the UST cash client market asked what the most efficient and effective steps to additional clearing of UST cash client transactions would be. The question also asked to identify and discuss all steps that should be taken, including the order in which they should be taken. Suggested steps include adding incentives, removing disincentives, imposing a mandate, or implementing a structural change.

100. A few survey respondents do not support additional clearing of UST cash client transactions. A primary dealer said, "[w]e do not believe that additional clearing of UST cash client transactions is a policy

imperative given that the potential benefits are unclear," while an asset manager said more specifically that "[w]e do not believe clearing… of UST transactions is warranted at this time and would not address the volatility experienced in the markets in March 2020 from happening again. Instead, we believe the markets would significantly benefit from changes in the banking regulations to allow banks to be more elastic and dynamic during periods of higher market volatility and stress." A different asset manager further explained, "[w]e would strongly oppose a clearing mandate for dealer-to-client trades. The scale of legal and operational costs associated with would be enormous given the scale of participants in the UST cash markets… Many UST cash market participants… are not accustomed to putting in place the legal documentation and operational infrastructure associated with clearing… Costs associated with CCP fees, CCP capital contributions, CCP margin also apply in this case eroding returns for investors without material benefit to investors or markets."

101. Among the survey respondents that do support additional clearing, a number of them suggested the use of incentives. An asset manager said that "[a]n all-to-all market structure would be the biggest incentive to move towards a UST cash clearing market. To move to all-to-all dealers would need to support it, but they currently have no incentive to change the market structure since the current structure allows them to control risk transfer and see the flow." This asset manager also suggested to "[i]ncentivize by lower[ing] clearing costs for high volume/high [open interest] participants." A primary dealer suggested to "provide incentives to those that apply… in the form of fee reductions or reduced regulatory requirements."

102. However, one infrastructure provider highlighted the limited incentives available to dealers for centrally clearing UST cash transactions, but stated: "[t]o the extent a dealer is making cash markets and ends up with a relatively flat cash position at the end of the day, its balance sheet would not accumulate in the same manner as it would if that dealer were making markets in repo… That said, where economic incentives favoring central clearing are weak as is the case with respect to cash activity in the U.S. Treasury market… official sector action will ultimately be required in order to see this activity migrate into the CCP," such as "requiring firms that make markets in U.S. Treasury securities, and/or whose U.S. Treasury cash activity satisfies certain liquidity and/or volume thresholds, be required to centrally clear such activity." Other survey respondents discussing actions by the official sector included an infrastructure provider that recommended "[i]mpos[ing] a mandate with sufficient lead time for participants to adopt the cleared model," and a primary dealer that recommended "[a]ssurances that all end users of Treasuries would be able to efficiently access clearing would be an important exercise to consider prior to implementing any mandate."

103. Survey respondents also made other recommendations. One primary dealer noted, "[r]eforms to FICC, such as on the treatment of client margin, availability of cross-margining, and structure of the default waterfall, could encourage further adoption of clearing." Another primary dealer noted that "[t]here will be intra-day liquidity implications of clearing, and as the Fed shrinks reserves intra-day liquidity will become a much more relevant constraint. Changes should be made in intra-day liquidity requirements/models to avoid bottlenecks." Meanwhile, a primary dealer cautioned that further reform to expand clearing in the UST cash market "should be properly calibrated to ensure broad market

adhesion and address current limitation of the sponsored clearing model. It is important to harmonize the clearing framework by regulatory authorities in various jurisdictions… this mitigates different treatment when measuring financial resources and potential unleveled playing field."

5. Impact of reforms on related markets

104. The fifth question pertaining to the UST cash client market asked how the reforms mentioned impact the Treasury futures market and other derivatives markets.

105. A few survey respondents did not anticipate any material impact on other markets, with one primary dealer explaining that "[w]e don't see any meaningful impact, as the risk from Treasury clearing lasts for a much shorter period than the risk in futures/derivatives." A different primary dealer said, "[c]urrently, limited impact is anticipated but ability to net across CCPs could produce considerable netting benefits." One infrastructure provider provided a mixed view: "it is hard to predict exactly what the effects of additional clearing of transactions would be. In general, central clearing in the Treasury market might be a tool enabling more efficiency and confidence in other markets, including the derivatives (e.g. rates/swaps) market, which might ultimately benefit from increased liquidity and transparency and therefore from lower frictional (execution) costs. At the same time, any shock that may stem from the Treasury market might have repercussions on other markets, including derivatives market."

106. Survey respondents pointed to cross-margining, but also provided mixed views. A primary dealer stated, "[c]lient clearing may provide clients cross-margin benefits against other Swap or Future related position to further allow capital efficiencies. However, this may exacerbate treasury market stress as treasuries are often liquidated first to meet cash needs." An asset manager said that while cross-margining was a possible benefit of clearing reforms, "there is no guarantee that this would help avoid double margining as we currently see via the CME [Chicago Mercantile Exchange] vs [London Clearing House] for cleared swaps." A different respondent, meanwhile, pointed out that "[o]ne obvious specific benefit to increased client level clearing in UST markets would be the ability to increase the population of clients who could potentially benefit from cross-margining between treasury futures and cash treasuries. Current cross-margining programs in the treasury space are limited to house accounts."

107. More generally, one primary dealer cautioned that "[i]f costs of trading and clearing USTs increase or if the clearing model implemented is not attractive it may lead to those end-users with the flexibility to trade interest rates products in other forms like swaps or futures to favor that implementation over trading cash USTs which given the importance of the Treasury market would not be a desirable outcome."

B. UST Cash Principal – Interdealer Model

108. This section summarizes the 14 responses to the 2022 ISDA UST Survey that pertained to the UST cash interdealer market.

1. Reforms to clearing infrastructure

109. The first question pertaining to the UST cash interdealer market asked whether any reforms would be helpful to the clearing infrastructure in the UST cash interdealer market, and if so, what the related benefits and costs would be and to whom would they apply.

110. Survey respondents identified a number of ways in which the clearing infrastructure of the UST cash interdealer market could be reformed. One interdealer broker highlighted membership costs, noting that "[t]he cost of membership to [the current UST] clearinghouse is very high and clearing members effectively only clear their own trades," resulting in a clearing infrastructure that "does not have a very broad membership. Many market participants do not join and clear directly because it is not efficient for them to do so or it is not legally possible for them to do so." This interdealer broker also pushed back against clearing mandates, saying that "[t]he proper objective should be to increase the amount of clearing in the UST markets – not to require clearing," and that unless "clearing becomes an option to all market segments, it is more harmful than beneficial to contemplate any type of mandate or clearing requirement." In contrast, a primary dealer expressed interest in an interdealer clearing mandate, noting that it "could benefit the Treasury market as a whole by improving financial stability and mitigating settlement and liquidity risk in the system," which would "primarily be impactful for PTFs… many of which are not clearing today."

111. Other market participants also discussed PTF activity in the interdealer market. One primary dealer said, "[r]egulatory reforms that lead to increased transparency of, and regulation over, PTFs would help to create a level playing field for participants in the UST cash interdealer market. Unlike typical broker-dealers, PTFs are not required to be, and are not, as well-capitalized… [and] are not required to be members of FICC, whereas most broker-dealers are, and therefore subject to the margin and default fund requirements of FICC." Another primary dealer said that "[t]he extension of credit from lightly capitalized brokers to even more lightly capitalized PTFs does raise[] our concerns about our risk to the brokers and the risk of a liquidity vacuum being caused by credit issues at a broker. Eliminating the mismatch between the dealer leg of a trade (which gets quickly passed to FICC) and the PTF leg of a trade (which remains with the broker) would reduce this risk." One respondent recommended that "PTFs should be required to contribute to the liquidity and margin resources of the CCP as direct members rather than through remote access."

112. One market participant suggested reforms to the current FICC sponsorship model, noting that "[a]lthough the existing clearinghouse has already rolled out certain 'sponsored' models that are designed to facilitate more indirect (i.e., client level) trades being cleared, there are still important limitations on the models that are currently available. The current models do not yet address all the underlying problems and certain important segments of the market do not believe these new 'sponsored' models accommodate all their needs yet. For example, every sponsored client needs a sponsor, and there are commercial dynamics at play that limit the types of clients that will be accepted for sponsorship by the current population of sponsoring firms."

2. Impact of reforms on related markets

113. The second question pertaining to the UST cash interdealer market asked how the reforms mentioned in the previous question impact the Treasury futures market and other derivatives markets.

114. Several survey respondents did not anticipate a material impact of their suggested reforms on related markets. A primary dealer, for example, said that reforming the clearing infrastructure of the interdealer market would have "little impact on the trading markets and strategies of futures/derivatives, but could reduce concerns about counterparty risk." Another primary dealer explained, "[t]he amount of additional balance sheet netting that might be available is unclear. Pending UST settlement is not a significant driver of balance sheet or capital usage for banks. There is nothing material being freed up for sheet allocation into other markets."

115. Other survey respondents did suggest potential impacts on related markets, with one primary dealer noting, "[i]n theory, where the same CCP or exchange is supporting clearing across different products, potential cross product margining can help to decrease transaction cost." An infrastructure provider noted more generally that "central clearing in the Treasury market might be a tool enabling more efficiency and confidence in other markets, including the derivatives (e.g., swaps) market, which might ultimately benefit from increased liquidity and transparency."

C. UST Cash Principal – PTF Model

116. This section summarizes the 14 responses to the 2022 ISDA UST Survey that pertained to the UST cash PTF market.

1. Benefits of additional clearing

117. The first question pertaining to the UST cash PTF market asked whether additional clearing of UST cash PTF transactions would be beneficial, and if so, who would benefit and what the benefits would be. The question also asked whether these benefits could be achieved without additional clearing.

118. Several respondents noted issues with the current state of UST cash PTF clearing, and suggested that additional clearing could improve market stability and reduce risk. A primary dealer stated, "[t]he core worry about current PTF clearing is that the broker is left with a mismatch—the dealer leg of the trade has already moved to FICC well before the PTF leg settles. That extension of credit from the broker to the PTF creates liquidity risk for the market as a whole (as the major brokers have significant market share)." Similarly, another primary dealer wrote that "[a]dditional [c]learing of USTs would be beneficial to the fluidity of the overall UST market and would relieve any worry that a member could not fulfill their obligations." Another primary dealer also mentioned increased market stability, stating that "[c]learing would improve financial stability by ensuring that these participants [PTFs] are operating under a consistent framework as other participants." An infrastructure provider also touched on the risk

reduction benefits of additional clearing, citing, "[l]imiting the ability of sudden market movements to cause a default by collecting margin twice daily (or more frequently as needed) through standardized processing." An asset manager concurred, writing, "due to the scale of PTFs and their role in the marketplace, mitigating risks associated with a PTF default by clearing is worthy of consideration."

119. Some respondents noted that additional clearing could increase market transparency. An infrastructure provider wrote, "[e]nhanced financial stability and transparency would benefit the system as a whole." Another infrastructure provider responded similarly, listing "[i]mproving financial stability by providing greater transparency" as a benefit.

2. Costs of additional clearing

120. The second question pertaining to the UST cash PTF market asked what the costs and risks of additional clearing UST cash PTF transactions are and how could they be mitigated. The question also asked market participants to explain the costs of any potential mitigation and, if applicable, alternatives that would avoid these costs.

121. Many respondents discussed transaction costs, primarily in the form of fees and margin requirements for PTFs.

    a. For example, a primary dealer mentioned "clearing fees" as a cost. An infrastructure provider expanded on this, citing "settlement cost to settle into the CCP and [p]rocessing costs at the CCP inclusive of additional margin, liquidity and transactional and position management charges." However, this same respondent also noted that PTFs might not face such steep costs due to their relatively flat exposure, noting, "FICC has made substantial modifications to its fees to simplify them and make them more economical for market participants who have relatively flat intraday and end of day exposures – like the PTFs – to participate in central clearing." Another infrastructure provider simply mentioned that "costs of clearing" would increase. A primary dealer noted, "PTFs would bear additional costs of funding the Capped Contingency Liquidity Facility and contributing to the clearing fund."

    b. With regard to margin requirements for PTFs, a primary dealer anticipated that "increased margin requirements" would result in "increased costs for PTFs vs. their current trading costs today." This respondent further wrote, "[t]hese cost increases may favor the larger scale PTF players vs. smaller market participants." Another primary dealer simply cited "margin requirements" as a cost of additional clearing. One respondent weighed in on the issue of margin, stating "[i]t is imperative that cross margining be available to more than just the house accounts of direct clearing members." An infrastructure provider wrote that margin requirements could decrease liquidity, stating, "[t]here is a risk of decreased liquidity in US Treasury markets through a requirement to put up margin in advance of settlement."

3. Key aspects of a functional clearing model

122. The third question concerning the UST cash PTF market asked survey respondents to determine the key aspects of a functional clearing model within this market. Entities were also asked whether the current sponsorship model should be expanded or if another model would be beneficial.

123. Regarding the current FICC sponsorship model, survey respondents gave conflicting views on whether it should be expanded. While discussing the merits of the current market structure, including the sponsorship model, one infrastructure provider said, "[a]s a post-trade infrastructure, FICC has never dictated how its members execute U.S Treasury transactions submitted for central clearing, so long as each counterparty to the transaction is either an FICC full-service or limited member. Given the nature of the diversity in this market, it is essential that there are multiple access models to support the different client demographics with regards to legal and regulatory structure as well as trading styles." A primary dealer, however, noted that "[t]he challenge in a sponsor approach to PTF clearing is that PTF positions can change extremely quickly, making it difficult to price. The sponsor would need to be able to track PTF positions in real time in order to appropriately price the risk."

124. Regarding additional clearing of PTF transactions, a primary dealer pointed out that "PTF participants may be more lightly capitalized than other market participants and as such will likely be highly sensitized to additional margin requirements. This structural increase cost may force firms to evaluate the profitability of trading USTs under a new cost structure and thus make decisions on how to optimally deploy capital available." Another primary dealer recommended that "[a]lignment to interdealer market for PTFs and [a] mandate to put in place clearing arrangements should be considered (in addition to consideration about registration / cartography of PTFs…)." A different primary dealer suggested that additional clearing of PTF transactions "could be achieved through the current FICC model but having a central clearing model would probably be more efficient in the long run."

4. Reforms to clearing infrastructure

125. The fourth question pertaining to the UST cash PTF market asked what the most efficient and effective steps to additional clearing of UST cash PTF transactions would be, such as adding incentives, removing disincentives, imposing a mandate, or implementing structural changes.

126. Several respondents encouraged a mandate for the PTF market. One primary dealers expressed that "[h]ere it might be possible/desired to impose some type of mandate. While mandates on end users may prevent some investors from freely accessing the markets, ensuring PTFs (who can run extremely large intraday positions, but are not generally holders of risk) are adequately buffered against settlement or counterparty risk (even if it disadvantages some smaller firms) might be desirable." Another primary dealer said, "[i]t will be difficult to create PTF clearing without a mandate—the mandate would only be needed for trades on intra-dealer brokers."

127. Some survey respondents felt more hesitant towards a mandate and suggested other reforms to the current clearing infrastructure. A primary dealer emphasized the need for empirical evidence for any

form of clearing reform, noting that "[t]here is no empirical evidence that additional clearing in the Cash Treasury Market would have alone supported liquidity during March 2020 turmoil. Any further reform on that front should be properly calibrated to ensure broad market adhesion and address current limitation of the sponsored clearing model." One respondent expressed that "[the] first step is to remove barriers to entry in the current clearing model. We believe addressing those issues first and evaluating the market impact before moving forward with additional steps is warranted. With respect to any sort of clearing mandate, we believe that any mandate regulators choose to proceed with should be market-wide after all structural issues are dealt [with]... A mandate for certain parts of the market (i.e. only the interdealer market) should be avoided."

128. A primary dealer said more generally that "[i]t is important to harmonize the clearing framework by regulatory authorities in various jurisdictions (such as recognition, equivalence etc), this mitigates different treatment when measuring financial resources and potential unleveled playing field."

5. Impact of reforms on related markets

129. The fifth question pertaining to the UST cash PTF market asked how the reforms mentioned above would impact the Treasury futures market and other derivatives markets.

130. While a few survey respondents believed there would be no significant impact, several respondents discussed the impact on trading costs. A primary dealer noted that "[w]here a CCP is supporting clearing across different products, potential cross product margining can help to decrease transaction cost." A different primary dealer highlighted, "PTFs have flexibility to transact across the set of products they choose thus making the switching costs of trading different products lower than for other market participants." One respondent further emphasized the importance of cross-margining, stating, "[c]learing without cross-margining (beyond house accounts) and other improvements to the existing model would unnecessarily increase the cost of futures basis trading." An infrastructure provider elaborated on ongoing developments in the market with regard to cross-margining: "[t]o the extent PTF UST activity was in clearing it would set the stage for that activity to obtain cross margining benefit across the cleared cash and derivatives markets. FICC is currently proposing to enhance its existing cross-margining capabilities to improve margin efficiencies for common full-service members with respect to their proprietary positions, which proposal is subject to regulatory approval."

131. Survey respondents also discussed the impact of potential reforms on execution outcomes and transparency of related markets. A primary dealer pointed out that "[i]t's possible this could decrease optical liquidity in futures markets, but actually improve execution outcomes for end users/dealers given that cross-trading of the two markets by PFTs might be reduced." Another primary dealer, meanwhile, suggested that there would be "more transparency in the futures and derivatives market with these proposed reforms."