U.S. Treasury Markets

Steps Toward Increased Resilience

GROUP OF THIRTY

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Table of Contents

Foreword

The Group of Thirty (G30) presents its latest publication, *U.S. Treasury Markets: Steps Toward Increased Resilience*. Prepared by the G30 Working Group on Treasury Market Liquidity, the report diagnoses the weaknesses in the U.S. Treasury market that became apparent during the period of market stress in March 2020, and lays out steps that can strengthen its resilience in future stress episodes.

The U.S. Treasury market plays a central role in the global system, with Treasury rates providing the fundamental benchmark for pricing of most financial assets. Continued confidence in the market, and in its ability to function efficiently in times of stress, is critical to the stability of the global financial system.

The emergence of the COVID-19 pandemic shook the global economy, and also brought the U.S. Treasury market under strain. This report identifies and analyzes the weaknesses in the market, and makes recommendations that should meaningfully strengthen its resilience. The recommendations are feasible, and should add a greater degree of predictability to the market.

On behalf of the G30, we extend our thanks to Timothy Geithner for his astute leadership of the Working Group behind this important report, and to the members of the Group for their dedication and efforts. We are also grateful to the Project Advisors, Darrell Duffie and Jeremy Stein, for their commitment and considered advice, and to the Project Director, Patrick Parkinson, for bringing his decades of expertise to the task of framing actionable reforms. We also thank Arminio Fraga for extensively sharing his time and insights.

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On behalf of the Group of Thirty (G30), I would like to express great appreciation to those whose time, talent, and energy have driven this project to a successful completion. I would like to thank the members of the Working Group on Treasury Market Liquidity, who guided our collective work at every stage, with special acknowledgement to Arminio Fraga for his support. The intellect and experience of this diverse and deeply knowledgeable team was essential as we sought to craft the report's findings and recommendations to increase the resilience of the bond market and reduce the frequency and scale of extraordinary central bank interventions.

The Working Group must thank the many leaders in the financial community who supported this study and agreed to be interviewed, highlighting how their institutions are leading the economic and fiscal response to the COVID-19 pandemic, and what policy responses are needed moving forward. Furthermore, we would like to thank the various central banks that provided useful data to help us understand how central bank policies may be affecting the resilience of market liquidity.

The G30 extends our deep appreciation to the Project Director, Patrick Parkinson, for his steadfast support and careful drafting of the report, and to the Project Advisors, Darrell Duffie and Jeremy Stein, for their tireless work and contributions to the analysis and formulation of the report.

The coordination of this project and many aspects of project management, Working Group logistics, and report production were centered at the G30 offices in Washington, D.C. This project could not have been completed without the work of the Executive Director, Stuart Mackintosh, and his team, including Desiree Maruca and Emma Prall. We are grateful to them all.

Timothy F. Geithner
Chair
Working Group on Treasury Market Liquidity

Abbreviations

ATS	Alternative Trading System
CCLF	Capped Contingency Liquidity Facility
CCP	Central Counterparty
CFTC	Commodity Futures Trading Commission
COVID-19	Coronavirus Disease 2019
DTCC	Depository Trust & Clearing Corporation
DVP	Delivery Versus Payment
ECB	European Central Bank
FICC	Fixed Income Clearing Corporation
FIMA	Foreign and International Monetary Authority
FINRA	Financial Industry Regulatory Authority
GCF	General Collateral Financing
GSCC	Government Securities Clearing Corporation
GSIBS	Global Systemically Important Banks
IAWG	Interagency Working Group on Treasury Market Surveillance
IDB	Interdealer Broker
MBS	Mortgage-backed Securities
NSCC	National Securities Clearing Corporation
PTFS	Principal Trading Firms
SCI	Systems Compliance and Integrity
SEC	Securities and Exchange Commission
SIFMU	Systemically Important Financial Market Utility
SLR	Supplementary Leverage Ratio
SRF	Standing Repo Facility
TRACE	Trade Reporting and Compliance Engine

Introduction

The U.S. Treasury market is the single most important financial market in the world, as Treasury rates are a fundamental benchmark for pricing virtually all other financial assets. Consequently, confidence in the U.S. Treasury market, and in its ability to function efficiently even in times of stress, is critical to the stability of the global financial system. In normal market conditions the market has functioned and continues to function extremely well. Even under stress, until recently the market had been highly resilient. However, a series of episodes, including the "flash rally" of 2014, the Treasury repo market stress of September 2019, and the COVID-19 shock of March 2020, have created doubts about its continued capacity to absorb shocks and focused attention on factors that may be limiting the resilience of Treasury market liquidity under stress.[1]

The U.S. Treasury market is bifurcated into "interdealer" and dealer-to-client markets. The vast majority of trades in the interdealer markets are trades in a small number of "on-the-run" issues, while trades in the dealer-to-client markets include large volumes of trades in "off-the-run issues.[2] In recent years, a large share of trading in the electronic interdealer markets has been accounted for not by dealers, which are broker-dealers or banks, but by so-called principal trading firms (PTFs), which are not regulated as broker-dealers and not affiliated with banks. Trades in those electronic interdealer markets are anonymous trades that are intermediated by the operator of the trading platform (the interdealer broker or IDB). On those platforms, trades between dealers typically are centrally cleared, but trades involving PTFs typically are not centrally cleared but instead are settled bilaterally with the IDB. Trading in the dealer-to-customer segment is in over-the-counter markets intermediated by dealers (predominantly broker-dealer units of the largest global banks). While there has been increasing use of multidealer trading platforms, trades executed using those platforms are still settled bilaterally between the dealer and the client. There is essentially no central clearing of dealer-to-client trades of Treasuries. Finally, the U.S. Treasury and Treasury repo markets are highly interconnected by arbitrage with the highly liquid Treasury futures market, which, unlike the Treasury market itself, is a centralized market that is centrally cleared and is subject to safeguards, including margin requirements, that apply to all futures transactions.

The root cause of the increasing frequency of episodes of Treasury market dysfunction under stress is that the aggregate amount of capital allocated to market-making by bank-affiliated dealers has not kept pace with the very rapid growth of marketable Treasury debt outstanding,[3] in part because leverage requirements that were introduced as part of the post-global financial crisis bank regulatory regime have discouraged bank-affiliated dealers from allocating capital to relatively low-risk activities like market-making. In the interdealer market, the PTFs have been providing significant liquidity, but they simply do not have the balance sheet capacity to replace the supply of liquidity

1 For a description of these episodes and the questions about Treasury market resilience that they have raised, see Ryan and Toomey (2021).

2 On-the-run issues are the securities that have been issued most recently by the Treasury. All other issues are termed off-the-run issues. On-the run-issues are the most actively traded, accounting for more than half of total trading activity. However, off-the-runs make up more than 95 percent of outstanding marketable Treasury securities. See Clark, Cameron, and Mann (2016).

3 For evidence that the market intermediation capacity of dealers has been shrinking while the size of the Treasury market has been growing dramatically, see Duffie (2020) and Liang and Parkinson (2020).

that bank-affiliated dealers once provided. Nor have other liquidity providers been able to come close to filling the gap in the dealer-to-client market, in part because their ability to supply liquidity has been handicapped by the design of dealer-to-client markets, the lack of post-trade transparency in those markets, and higher costs for repo financing than those faced by the largest bank-affiliated dealers. Finally, the regulation of the U.S. Treasury markets is balkanized,[4] and the need for interagency coordination seems to have slowed the regulatory response to significant changes in the structure and functioning of the Treasury market.

To be sure, even if far more capital had been allocated to market-making, the Treasury market could not have functioned effectively in March 2020. (Developments in the U.S. Treasury market in March 2020 are discussed in box 1.) The underlying economic uncertainty created by the pandemic and the associated massive and widespread "dash for cash" by holders of Treasury securities was so extreme that no market structure could have provided the capacity to absorb the widespread selling pressures that resulted without some dysfunction, and market functioning could only be restored by massive purchases of Treasuries by the Federal Reserve. However, 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,[5] episodes of market dysfunction are not only likely to continue but to occur with increasing frequency. If they do, investors in Treasuries could lose confidence in the safety and liquidity of Treasury debt, which would both undermine financial stability globally and add materially to the debt-servicing burden on future generations of U.S. taxpayers. Alternatively, if market functioning can be sustained only by frequent, large-scale purchases of Treasuries by the Federal Reserve, market participants could come to believe that fiscal concerns rather than macroeconomic objectives are motivating the purchases.

This report makes recommendations for enhancing the liquidity of the Treasury market under stress. *A central goal of these recommendations is to increase, diversify, and stabilize market-making capacity in the Treasury markets.* The willingness and capacity of firms to make markets is critically dependent on confidence in their ability to fund their holdings of Treasury securities, even during periods of stress. Thus, a key recommendation is that access to repo financing from the Federal Reserve be widened substantially beyond the small group of "primary dealers."[6] Other recommendations address the use of central clearing in the Treasury markets, including the need for central clearing of all trades on anonymous trading platforms operated by interdealer brokers, the desirability of widespread clearing of Treasury repos, and the concomitant need to ensure that existing government authority for oversight of central clearing of Treasuries is exercised vigorously.

Even if implementation of these recommendations encourages more nonbank firms to expand market-making in the Treasury markets, bank-affiliated dealers are likely to remain the predominant suppliers. Consequently, it is essential that banking regulations do not unnecessarily discourage the allocation of bank capital to market-making, which seems to be an unintended consequence of leverage requirements and certain other regulations. Given the importance of the U.S. Treasury markets (and of bond and other financial markets, generally), we recommend that banking regulators should comprehensively review the existing body of relevant regulations and amend those regulations to avoid unnecessary impediments to market-making. At the same time, the robustness of prudential safeguards for broker-dealers that are not affiliated with banks (independent dealers) should be reviewed.

Some important segments of the Treasury market (the dealer-to-client segment of the cash market and much of the Treasury repo market) currently are far less transparent than many other U.S. financial markets. Greater public transparency is needed to better enable investors to assess the quality of trade execution by dealers and trading platforms and to enable additional dealers to supply liquidity to the Treasury market. Last, strengthening the underpinnings of the U.S. Treasury market and maintaining their

4 For a description and sharp critique of existing regulation of the Treasury market, see Yadov (forthcoming).

5 The stock of marketable Treasury debt outstanding more than tripled between 2008 and 2020 and, as of March 2021, the Congressional Budget Office projected that it would double again by 2035.

6 The primary dealers are the trading counterparties of the Federal Reserve Bank of New York in its implementation of monetary policy. As of June 2021, there were 24 primary dealers, including units of domestic and foreign banks and a few independent broker-dealers (dealers not affiliated with banks).

BOX 1: DEVELOPMENTS IN THE U.S. TREASURY MARKET IN MARCH 2020

On March 11, 2020, the World Health Organization announced its "assessment that COVID-19 can be characterized as a pandemic." Over the preceding weeks, financial markets had been showing signs of increased fragility associated with COVID-19 news. Around March 11, the Treasury market became essentially dysfunctional. Heavy investor demands to liquidate Treasury securities overwhelmed the capacity of dealers to intermediate the market. Those demanding large amounts of cash in exchange for Treasuries included relative-value hedge funds, mutual funds, and foreign central banks.

Treasury prices became exceptionally volatile. For example, the 10-year yield spiked 64 basis points between March 9 and 18.[a] The 30-year bond lost 10 percent of its market value over March 16 and 17. Bid-offer spreads quoted by dealers for off-the-run Treasuries increased by over a factor of 10.[b] In the interdealer market, the depth of quoted liquidity for on-the-run 10-year securities dropped from normal levels of about $300 million to about $25 million.[c] The yields of similar-maturity Treasuries were no longer close to each other.[d] Primary dealers reported Treasury settlement failures (trades that failed to settle on the contractual settlement date [typically the next business day after the trade]) at roughly triple their normal levels, totaling approximately $1.5 trillion in fails over the three-week period beginning March 16.

Financing for Treasuries suddenly became scarce. Treasury repo rates spiked in the interdealer market, where the difference between the General Collateral Financing (GCF)[e] rate and the interest rate offered by the Fed on reserves reached 76 basis points on March 16 and 54 basis points on March 17.

In short, U.S. Treasuries did not serve their traditional safe-haven role. Instead, dysfunction in the Treasury market exacerbated the crisis.

In a massive response, the Fed offered essentially unlimited liquidity to primary dealers in the Treasury repo market. While this quelled dysfunction in the Treasury repo market within a few days of mid-March, it was not until late May that conditions in the market for trading Treasury securities had gradually returned to nearly normal. To reduce the quantity of Treasuries impinging on dealer balance sheets, the Fed purchased nearly $1 trillion of Treasuries within the three-week period beginning March 16. Then the Fed continued to buy Treasuries and mortgage-backed securities (MBS) at a high rate.

Among many additional measures,[f] on April 1, the Fed exempted Treasuries and reserves held by bank holding companies from the capital requirement associated with the Supplemental Leverage Ratio (SLR). The Fed and other key bank regulators followed suit on May 15 by extending this exemption to commercial bank subsidiaries subject to the SLR.

Note: a. See Vissing-Jorgensen (2021) for charts of Treasury yields. b. See Clarida, Duygan-Bump, and Scotti (2021, figure 1). c. Depth is measured by Fleming (2020) as the total of quantities quoted at the inside five tiers, averaged across the bid and offer sides of the order book operated by BrokerTec, the largest of the interdealer brokers. d. Duffie (2020, 11). e. GCF repo is a service that allows FICC netting members to trade repos throughout the day and then, after the netting process at the end of the day, allocate specific securities to satisfy the net obligations on a triparty basis at the Bank of New York Mellon (https://www.dtcc.com/clearing-services/ficc-gov/gcf-repo). f. See Clarida, Duygan-Bump, and Scotti (2021).

strength as the Treasury market and the broader financial system evolve will require effective government oversight, which in turn requires clearer accountability and responsibility than has been provided to date by the existing interagency approach to oversight.[7]

We believe that these recommendations would make a material contribution to improving the functioning of the Treasury market, both in normal times and in periods of crisis, reducing systemic risk in the Treasury market and reducing the need for certain types of interventions by the Federal Reserve in crisis. Implementation of each recommendation would help, and, because some are mutually reinforcing (for example, those enabling the provision of liquidity by entities other than the largest bank-affiliated dealers), implementation in tandem would magnify their contribution. That said, their implementation will not eliminate the potential for stress in these markets. They will not eliminate the likelihood of large-scale Fed purchases of Treasury securities or Federal Reserve support for other parts of the U.S. financial system in the most extreme circumstances. They do not address the many other challenges that come from the extent of leverage and maturity mismatches in parts of the nonbank financial system in the United States. Nor would they reduce the risks that come from concerns about the current level of U.S. fiscal deficits and the long-term sustainability of the U.S. fiscal position. But the benefits of these recommendations would be material. And given the importance of the Treasury market to the U.S. and global financial system, even modest improvements in market functioning would have substantial benefits.

Although the focus of this report is on the U.S. Treasury markets, many of the issues discussed here are potentially relevant to bond markets more generally, including other bond markets in the United States and bond markets in other countries.[8] (See box 2 for a brief discussion of developments in March 2020 in government bond markets in other countries and similarities and differences between those markets and the U.S. Treasury market.) Like the U.S. Treasury markets, many of those markets are over-the-counter markets that are intermediated, largely by bank-affiliated dealers, with little or no use of central clearing. Consequently, as in the U.S. Treasury market, there may be insufficient market-making capacity, owing in part to application of a similar post-global financial crisis bank regulatory regime. Also, as in the United States, the resiliency of some of these other bond markets is likely to be challenged by the growing role of nonbank financial institutions. Thus, authorities and market participants in other jurisdictions should consider the applicability of our recommendations. Notably, greater resilience in other bond markets may be beneficial not only for those markets themselves but also for the U.S. Treasury markets, because when other bond markets are illiquid, investors often meet their liquidity needs by selling U.S. Treasury securities.

BOX 2: GOVERNMENT BOND MARKETS IN OTHER COUNTRIES

The events of March 2020 also impacted government bond markets outside the U.S. To provide broader context for this report, the functioning of several government bond markets in March 2020, the resulting policy actions taken, and the standard structural features of those markets were considered.

In general, the picture that emerges is that the dislocations seen in the U.S. were on the extreme end of the spectrum. This is consistent with

7 The Government Securities Act of 1986 gave the Treasury Department broad (but not comprehensive) authority to regulate the Treasury market. In practice, it has delegated much of that authority to other agencies, including the Federal Reserve and the Securities and Exchange Commission (SEC). In recent years, Treasury market oversight by the Treasury, Federal Reserve, SEC, and Commodity Futures Trading Commission (CFTC) has been coordinated through a staff-level Interagency Working Group on Treasury Market Surveillance (IAWG).

8 Indeed, while many of the issues are relevant to other types of U.S. government securities, including securities issued by U.S. government agencies and government-sponsored enterprises, the focus of the analysis and recommendations has been exclusively on the markets for U.S. Treasury securities and Treasury repos.

the idea that the "dash for cash" seen in March 2020 was, to an important extent, an increase in the demand for dollar-denominated reserves, which—prior to a massive increase in the supply of reserves by the Fed—necessitated substantial increases in the yields on dollar-denominated Treasury bonds.

Nevertheless, other countries also experienced qualitatively similar—albeit in some cases considerably milder—disruptions to market functioning and responded with broadly similar policy measures. Moreover, some of the core structural aspects of the U.S. market, such as the dominance of dealer-intermediated over-the-counter trading and an absence of central clearing of many transactions, are also the norm in other jurisdictions.

March 2020 dislocations and policy response. The dislocations resulted in a notable increase in both sovereign bond yields and measures of market illiquidity, such as widened bid-ask spreads, beginning in early March. However, in many cases, the liquidity disruptions were relatively transient, though this was in part due to rapid and aggressive central bank intervention. In the European Union, government bond liquidity was impaired for approximately a week in March. The amount of dislocation was smaller than seen in other jurisdictions at the same time and dissipated quickly.

In the United Kingdom, as in the U.S., investors rushed to sell assets, including government bonds, to acquire cash. Gilt yields rose sharply with the 10-year yield increasing from 26 bps [basis points] to 80 bps in mid-March. Bid/offer spreads increased to roughly four times their usual levels for approximately one week, with peak dysfunction occurring from March 16th–24th. Central bank actions contributed to a significant improvement in conditions. Other jurisdictions saw similar, albeit more moderate developments in March 2020. Switzerland, for example, had higher bid-ask spreads, which pointed to lower secondary market liquidity, but higher trading volumes. This was again due to government bondholders reducing their most liquid positions to rebalance portfolios or to generate cash. In the Swiss case, the overall period of heightened selling pressure lasted only a few days before policy measures stabilized the market.

Similar to the United States, some central banks worked to stabilize their government bond markets with a combination of increased repo financing of bonds, as well as stepped-up outright purchases. In some cases, the bond purchase programs were larger than anything that these central banks had engaged in previously. In the U.K. for example, the Bank of England put in place the largest single purchase program ever launched by the central bank.

Commonalities in market structure. An over-the-counter market structure is the predominant mode of government bond trading. Although a few countries (for example, Germany, Japan, and Switzerland) have exchange listing of government bonds, actual trading volume conducted on exchanges accounts for a small fraction of overall volume. In the European Union, due to regulatory requirements, government bonds are listed on public exchanges but volumes executed in these venues are minimal compared to the OTC (over-the-counter) market.

As in the United States, relatively little central clearing of cash transactions in government bonds takes place in most jurisdictions. Japan appears to be an exception, however. In Japan, the use of CCPs is not mandatory for the sales and purchases of JGBs; however, efforts to increase the use of the JSCC, a CCP, have been made. Consequently, the share of the JSCC in DVP settlements of JGBs has risen to over 80 percent recently, from the level seen during the Global Financial Crisis at just below 50 percent.[a]

Note: a. CCP = central counterparty; DVP = delivery versus payment; JBGs = Japanese government bonds; JSCC = Japan Securities Clearing Corporation.

Key Issues and Recommendations

Consistent with the perspective on weaknesses in the structure of the U.S. Treasury market that was set out in the introduction, the working group focused its attention on developing recommendations to address five key sets of issues: (1) central bank liquidity support for Treasury market functioning, (2) central clearing of trades of Treasury securities and Treasury repos, (3) prudential regulation of dealers, (4) market transparency, and (5) market regulation. Interviews that the working group conducted with 29 market participants, including bank-affiliated and independent dealers, asset managers, central bankers, and operators of market infrastructure, confirmed that these are the key issues, while also revealing diverse views on how those issues should be addressed. Below we discuss the issues and present the rationales for ten recommendations that we believe are the most promising. The recommendations are brought together in box 3.

FEDERAL RESERVE LIQUIDITY FACILITIES TO SUPPORT TREASURY MARKET FUNCTIONING

The willingness and capacity of firms to make markets is critically dependent on their confidence in their ability to fund inventories of Treasury securities that they may acquire as a result of those activities, even during stress. Ultimately, complete confidence can come only from direct access to liquidity from the Federal Reserve, which has essentially unlimited capacity to provide funding. Currently, only banks (and other insured depository institutions) have direct access to Fed liquidity in normal market conditions. Under stress, access to Federal Reserve liquidity has been extended on an ad-hoc basis to the small group of primary dealers. Without direct access, central bank liquidity support for the U.S. Treasury market, which relies heavily on nonbank financial intermediaries for market liquidity, has been excessively dependent on the willingness and ability of the primary dealers to intermediate between the Federal Reserve and those other nonbank financial intermediaries. In principle, banks and the primary dealers can obtain liquidity from the Fed and on-lend it to others. But in a crisis the willingness of those firms to intermediate has tended to be constrained by a combination of regulations and internal limits on the firms' risk-taking, both of which have tended to tighten under stress.[9]

Consequently, the single most important near-term measure that should be taken to enhance market-making capacity in the Treasury markets under stress is the creation by the Federal Reserve of a Standing Repo Facility (SRF) that would guarantee to a broad range of market participants the availability of repo financing for Treasury securities. In addition, an SRF would limit demands for market liquidity under stress by allowing holders of Treasuries that want cash to obtain the cash by tapping the SRF rather than selling the securities. This would extend the logic behind the repo facility that the Federal Reserve provided to foreign and official monetary institutions at the end of March 2020.[10]

It should be a standing facility, not a discretionary, emergency facility for two reasons. First, unless it is a standing facility, it cannot create the confidence in the availability of repo financing under stress that is needed to broaden

9 As discussed below, increases in bank reserves associated with countercyclical monetary policies produce a procyclical tightening of leverage requirements applicable to banks. At the same time, increases in market volatility effectively tighten banks' internal limits on market risk and counterparty credit risk.

10 https://www.federalreserve.gov/newsevents/pressreleases/fima-repo-facility-faqs.htm.

BOX 3: RECOMMENDATIONS

Recommendation 1: The Federal Reserve should create a Standing Repo Facility (SRF) that provides very broad access to repo financing for U.S. Treasury securities on terms that discourage use of the facility in normal market conditions without stigmatizing its use under stress. It should make permanent its Foreign and International Monetary Authority repo facility.

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.

Recommendation 3: Treasury repos should be centrally cleared.

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.

Recommendation 5: The Treasury Department, after consultation with the Federal Reserve, should organize and take responsibility for a joint review of the design and operation of the Fixed Income Clearing Corporation (FICC) by Treasury, the SEC, the CFTC, and the Federal Reserve, with a view toward ensuring that the supervision and regulation of FICC is sufficiently robust. FICC should be granted access to the SRF.

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.

Recommendation 7: The SEC, in consultation with the Federal Reserve and the Treasury, should review the robustness of the prudential safeguards at broker-dealers (including interdealer brokers) in U.S. Treasury securities and Treasury repos that are not affiliated with banks (independent dealers).

Recommendation 8: The TRACE reporting system should be expanded to capture all transactions in U.S. Treasury securities and Treasury repos, including those of commercial bank dealers and principal trading firms. Furthermore, subject to a cap on the disclosed size of trades, the data should be publicly disclosed in a manner similar to the way that data on corporate bond transactions are currently disclosed.

Recommendation 9: SEC Regulations ATS and SCI should be applied to all significant trading platforms for Treasury securities, including both interdealer and multidealer dealer-to-client platforms.

Recommendation 10: As a first step toward more vigorous oversight of the Treasury market, the Treasury, after consultation with the Federal Reserve, should lead an interagency study that identifies all exemptions of Treasury securities from U.S. securities laws, evaluates their rationales, and, where there is no clear and compelling rationale, recommends measures for applying those laws to Treasury securities. Thereafter, Treasury should prepare an annual report on Treasury market functioning.

and diversify the supply of Treasury market liquidity. Second, delays in introducing a discretionary facility and uncertainty about its terms and the breadth of access to the facility can permit market dysfunction to develop, which tends to feed on itself.

The financing should be provided at a rate that is high enough to discourage extensive use of the facility in normal market conditions but not so high as to stigmatize use of the facility when Treasury repo markets are under stress. Haircuts on securities financed should be set out in advance and should be sufficiently high that the haircuts alone would provide the Federal Reserve with adequate protection against counterparty risk, even in volatile markets. The daily marking-to-market of the collateral in a repo agreement is a powerful risk mitigant that, when combined with prudent haircuts on collateral values, can practically, if not entirely, eliminate counterparty credit risk.

An important concern with respect to creation of an SRF is the potential for it to create moral hazard that would increase systemic risk by encouraging entities with access to the facility to become more highly leveraged. Although assured access to repo financing may encourage some market participants to become more highly leveraged and to engage in more maturity transformation, those incentives would be tempered by the pricing of the financing, which would be unattractive in normal market conditions. At the same time, an SRF would forestall potential runs on repo financing, which are a significant source of systemic risk in the absence of an SRF. Finally, especially if access to an SRF is wide, its existence may also preempt some sales of Treasury securities under stress. In turn, this would reduce the need for the Federal Reserve to purchase Treasuries to restore market functioning. Because Fed purchases, unlike repos, transfer interest rate risk from the private sector to the Federal Reserve, such purchases entail far greater moral hazard than Fed repo lending. Even if creation of an SRF does not increase moral hazard, the use of leverage by investors in the Treasury market needs to be monitored and the policy implications need to be assessed. As discussed below, central clearing of Treasury repos would in principle limit the use of leverage, and the appropriateness of continued exemption of Treasury securities from the coverage of securities margin regulations should be reassessed.

A pragmatic and operationally efficient means by which the Fed could reach a broad range of counterparties would be by clearing its repos through the Fixed Income Clearing Corporation (FICC), which would provide access to many broker-dealers as well as banks.[11] FICC would need to exempt the Federal Reserve from requirements for FICC members to participate in the mutualization of losses from defaults by FICC members. Also, as discussed below, general concerns about the concentration of risk in FICC and specific concerns about FICC's transparency and governance need to be addressed, whether or not the Federal Reserve uses FICC to implement a broad SRF. The Federal Reserve should also make permanent its temporary Foreign and International Monetary Authority (FIMA) repo facility. Longer term, the Federal Reserve should extend access to the SRF as broadly as operationally feasible.

RECOMMENDATION 1: The Federal Reserve should create an SRF that provides very broad access to repo financing for U.S. Treasury securities on terms that discourage use of the facility in normal market conditions without stigmatizing its use under stress. It should make permanent its FIMA repo facility.

CENTRAL CLEARING OF TRADES OF TREASURY SECURITIES AND TREASURY REPOS

A central counterparty for the clearing and settlement of trades in U.S. Treasury securities was established in 1986.[12] When interdealer electronic trading platforms were first launched in the late 1990s, participation was limited to the primary dealers and all of the trades between primary dealers were centrally cleared through that central counterparty (CCP). However, today principal trading firms (PTFs) account for a very large share of trading, and trades between PTFs and the IDBs seldom are centrally cleared

11 FICC currently has about 175 direct members (largely broker-dealers and banks), and thousands more firms have access to FICC indirectly through those direct members. See Pozmanter and Hraska (2021).

12 It was known as the Government Securities Clearing Corporation (GSCC) until 2003, when it became known as the Government Securities Division of the Fixed Income Clearing Corporation (FICC). The GSCC extended its services to Treasury repos in 1995. Ingber (2017) discusses the historical development of central clearing of U.S. Treasury and other U.S. government securities.

but instead are cleared and settled bilaterally between the IDBs and the PTFs. In the dealer-to-client segment of the Treasury market, trades of Treasury securities have never been centrally cleared and instead are cleared and settled bilaterally between the dealers and their clients. Overall, only a little more than 20 percent of purchases and sales of Treasuries have been centrally cleared in recent years.[13] By contrast, a higher and growing share of Treasury repos are centrally cleared, with recent growth in the share principally attributable to the expansion by FICC of its sponsored repo service, which enables money funds, hedge funds, and other entities that are not members of FICC to centrally clear their repos through sponsors that are FICC members.[14]

The small and declining share of centrally cleared trades in Treasuries and the progress in clearing a growing share of Treasury repos has spurred a debate about the potential public policy benefits and costs of wider central clearing of Treasuries and Treasury repos.[15] Importantly, the benefits and costs differ for different market segments and transaction types, so the analysis of, and recommendations regarding, wider central clearing must take those differences into account.

In general, the benefits of wider central clearing include greater transparency of counterparty risks and counterparty risk management, reduction of counterparty credit and liquidity risks through netting of counterparty exposures and application of margin requirements and other risk mitigants, the creation of additional market-making capacity at all dealers as a result of recognition of the reduction of exposures achieved though multilateral netting, the enhancement of the competitive position of smaller bank-affiliated and independent dealers, and the facilitation of all-to-all trading, which can improve the quality of trade execution in normal market conditions and broaden and stabilize the supply of market liquidity under stress. 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, the potential for PTFs and the large incumbent dealers to reduce their supply of liquidity in response to enhanced competition and, perhaps most important, costs associated with potential risk management failures by the central counterparty, which would increase with the expansion of central clearing. Under stress CCPs will inevitably be seen as guaranteed by the government. (These benefits and costs are elaborated in box 4.)

Counterparty credit risks on trades in U.S. Treasury securities are not as large as those in other U.S. financial markets, because the contractual settlement cycle for U.S. Treasury securities is shorter (usually one day) and Treasury security prices generally are less volatile than other securities prices. But liquidity risks are relatively large because of large daily settlement volumes for purchases and sales and especially for repos. When markets are under stress, the risks can be significant. Furthermore, because the risks seem to be underappreciated by some market participants, risk management practices may be suboptimal.[16]

The management of counterparty risk on trades that are cleared and settled bilaterally with IDBs (largely trades with PTFs and some trades with hedge funds) is not transparent. While such trades are settled on a delivery versus payment (DVP) basis and the IDBs apparently bilaterally net their trades with platform users, in volatile markets counterparty credit and liquidity risks and operational risks can still be substantial.[17] In effect, an IDB in an anonymous electronic trading platform acts as a central counterparty, in that it is the buyer to every seller and a seller to every buyer. Consequently, as in the case of any CCP, a financial or operational problem at an IDB could disrupt trading in the interdealer markets and the fallout would extend to the dealer-to-client markets. However, under existing U.S. law and regulation, an IDB is not regulated as a CCP. Central clearing of all trades with IDBs through FICC would make those risks and the associated risk management practices more transparent and subject to enhanced regulation.

13 Derived from Treasury Market Practices Group (2018, 11). According to the TPMG report, for about 12.7 percent of U.S. Treasury transactions both counterparties clear the trade. For another 19.4 percent of transactions, one side is centrally cleared but the other side is cleared bilaterally between an IDB and the original trade counterparty.

14 See https://www.dtcc.com/clearing-services/ficc-gov/sponsored-membership.

15 See Duffie (2020), Fleming and Keane (2021), and Pozmanter and Hraska (2021), among others.

16 Treasury Market Practices Group (2018, 2).

17 Treasury Market Practices Group (2018, 3).

BOX 4: CENTRAL CLEARING

Central clearing is clearing through a central counterparty (CCP) that interposes itself between the original counterparties to a trade. In the United States, this is accomplished by novation, a process through which the original contract between the buyer and seller is replaced with two contracts, one between the buyer and the CCP and the other between the seller and the CCP, with the economic terms of the new contracts identical to those in the original contract. The primary purpose of central clearing is the reduction of counterparty risk, which is accomplished primarily by:

1. Netting all transactions between the CCP and each of its members. For example, if clearing member A buys 120 units of a financial instrument from member B and sells 100 units to member C, central clearing reduces the commitments of A to a purchase of 20 units from the CCP.

2. The CCP imposing a standard set of risk mitigants with respect to its exposures to its members, including financial and operational standards for membership, margin requirements, the mutualization of risk from counterparty defaults through requirements that the CCP's members help cover losses and liquidity pressures resulting from such defaults, and the centralized monitoring of counterparty risks and management of the liquidation of defaulting members' positions.[a]

Central clearing is ubiquitous in exchange-traded markets for derivatives and equities. The Dodd-Frank Act included a regulatory requirement to centrally clear many standardized swap contracts. Central clearing is less common in bond markets, which typically are decentralized, over-the-counter markets intermediated by banks.

The Fixed Income Clearing Corporation (FICC), a division of the Depository Trust & Clearing Corporation (DTCC), is a CCP for Treasury repos and government securities trades between its member dealers, as depicted in figure 1. Primary dealers are required to centrally clear the cash trades of Treasury securities. But many other broker-dealers and banks voluntarily participate in FICC to share in the benefits of central clearing.

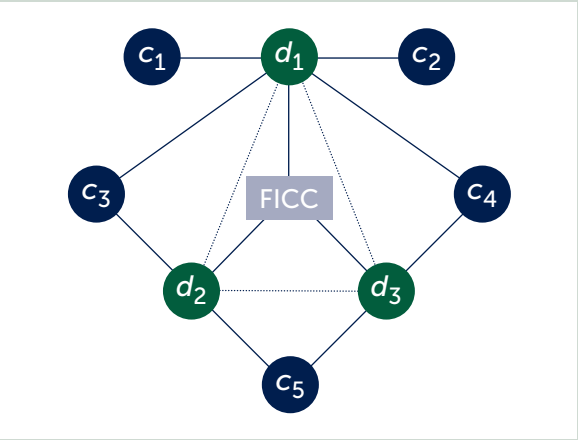

Figure 1. A schematic of central clearing in the U.S. Treasury market

Note: Dotted lines indicate trades that are centrally cleared. As illustrated, trades between major dealers are centrally cleared at FICC, as are some (but by no means all) other interdealer trades. Trades between dealers and their customers are not centrally cleared, with the exception that some dealer-to-customer Treasury repos are centrally cleared via a sponsoring clearing member of FICC, as will be discussed below.

Roughly 20 percent of commitments to settle Treasury security trades are cleared through FICC.[b] Daily volumes of FICC-cleared Treasury

trades, including cash trades and repos, are typically about $4.2 trillion. Daily volumes of cleared sponsored Treasury repos in May 2021 were between $200 billion and $300 billion. Total daily volumes of cleared repos of government securities, including Treasuries and mortgage-backed securities (MBS), have been about $3.7 trillion.

In addition to reducing counterparty risk, clearing improves market transparency by giving market participants and regulators more information about counterparty exposures and greater common knowledge of practices for trade settlement and margin. Central clearing also reduces settlement failures that propagate via "daisy chains," by which A fails to deliver securities to B, who consequently fails to deliver to C, and so on.[c] The margin requirements of a CCP also impose a uniform cap on the leverage of centrally cleared positions.

One of the disadvantages of broader central clearing is that this increases the systemic nature of the CCP, increasing the importance of strong regulatory oversight. It may contribute to a perception that the CCP is too big to fail, which in the absence of effective government oversight, could increase systemic risk. For those market participants that are not margining their uncleared trades, a shift to central clearing also increases the cost of financing margins.

Broad central clearing could encourage trade-platform operators to open their venues to a wider set of market participants, or even all-to-all trade. This would improve competition and reduce the amount of dealer balance sheet space needed to intermediate the market. But with reduced market shares and bid-offer spreads, dealers might lower their commitments of capital to the market. It is not a sure thing that other investors would step in to absorb large trade flows to the extent that dealers would.

Note: a. For a thorough discussion of risk management by CCPs, see Committee on Payments and Market Infrastructures and Board of the International Organization of Securities Commissions (2017). b. See footnote 14, above. c. See Fleming and Keane (2021, 23–27).

To be sure, central clearing of their trades with IDBs would impose additional costs on PTFs, which could induce some of them to pull back from providing liquidity in markets for on-the-run Treasuries, where they are a significant source of liquidity in normal market conditions. But most PTFs already have broker-dealer affiliates that are clearing members of the National Securities Clearing Corporation (NSCC) and some have broker-dealer affiliates that are FICC members. It is not clear why they could not clear through their affiliates and, if it is possible for them to clear through their affiliates, why the marginal costs of clearing would be so large as to prompt a significant decline in their liquidity provision. PTFs are major participants in other markets where central clearing is required, including the exchange-traded futures and options markets, so central clearing of their trades does not seem to be fundamentally incompatible with their business model. FICC has adjusted its fee structure to try to make central clearing more attractive to PTFs, but further adjustments to those fees may be needed to ensure that they are not an unnecessary impediment to clearing PTF trades. As discussed below, legitimate concerns about further concentration of risk in FICC can and should be addressed by robust government regulation of FICC, for which ample authority exists under U.S. law.

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.

Wider central clearing of Treasury repos to include dealers' trades with buyside firms, including money funds and hedge funds, greatly expands the capacity of dealers to intermediate under existing accounting and regulatory capital rules by achieving netting of repos and reverse repos that currently bloat dealers' balance sheets. Buyside firms benefit because dealers are willing to intermediate cleared repos at narrower spreads, which are reflected in part in higher rates paid to buyside repo investors on cleared repos than on uncleared repos and in part in lower rates charged to repo borrowers (including hedge funds and smaller broker-dealers) on cleared repos. Those benefits may be enough to provide adequate incentives for continued expansion of repo clearing. Indeed, buyside clearing had been increasing very rapidly through expanded use of FICC's sponsored repo service until early 2020,[18] and many market participants expect that growth to resume, especially if, as proposed by FICC,[19] FICC's sponsored repo service is broadened to include triparty repos as well as DVP repos.

The combination of an SRF and wider repo clearing would expand and make access to repo financing cheaper and more stable for a broad range of potential liquidity providers to the Treasury markets. It might even lead to all-to-all trading of repos, which would allow a wider group of liquidity providers to obtain funding directly from the money funds and other highly risk-averse repo investors that are the ultimate source of repo financing, rather than relying on the largest bank-affiliated dealers for repo financing, which likely would increase the reliability of access to funding under stress for alternative liquidity providers. As a result, the overall supply of liquidity to the Treasury markets would likely increase and would become better diversified and more stable. However, most of the largest bank-affiliated dealers are primary dealers and these measures may erode some of the benefit of being a primary dealer. But it is not clear that the erosion would be so large as to cause the costs to exceed the benefits. In any event, continued heavy reliance on the small number of primary dealers for liquidity in both the secondary and primary markets is undesirable.

In principle, if all repos were centrally cleared, the minimum margin requirements established by FICC would apply marketwide, which would stop competitive pressures from driving haircuts down (sometimes to zero), which reportedly has been the case in recent years. However, in its sponsored repo service, FICC does not require sponsors to collect margin from the participants they sponsor. Regulators should critically examine the implications of this policy to ensure that central clearing of repos through the sponsored repo service actually achieves the benefits envisioned.

RECOMMENDATION 3: Treasury repos should be centrally cleared.

The public policy case for central clearing of dealer-to-client cash trades is not as strong as the case for central clearing of IDB trades or Treasury repos. The risks of bilateral settlements of such trades are not as large or as concentrated as the risks of uncleared IDB trades. And central clearing of cash trades would not free up nearly as much dealer balance sheet as central clearing of repos.[20] But, as demonstrated by a recent Federal Reserve Bank of New York study, it would substantially reduce dealers' daily settlement obligations,[21] which would reduce liquidity risks associated with those settlements and counterparty credit risks associated with failures to deliver on the contractual settlement date, not only for the dealers but also for FICC. It likely also would enable smaller dealers to compete more effectively with larger dealers. Finally, it would facilitate all-to-all trading, which would have benefits for market efficiency and enable the provision of market liquidity by investors. But all-to-all trading can also occur without central clearing, as demonstrated by the success of some all-to-all trading platforms for corporate bonds. By contrast, the success of central clearing of repos via the sponsored clearing model suggests that the costs of dealer-to-client central clearing are not an insurmountable barrier, at least

18 https://www.dtcc.com/charts/membership.

19 https://www.sec.gov/rules/sro/ficc/2021/34-92014.pdf.

20 In effect, accounting rules allow purchases and sales of the same security to be netted but do not allow reverse repos and repos of the same security to be netted, unless the repo and reverse repo are with the same counterparty and the trades have been documented under a master netting agreement.

21 Fleming and Keane (2021) estimated that wider central clearing would have lowered dealers' daily settlement obligations by 60 percent in the weeks before and after the market disruptions of March 2020, and 70 percent during the market disruptions, when trading was at its highest.

when the services are provided by an existing CCP that facilitates clearing of client trades through intermediaries that are CCP members. These points reinforce the need for continued study of the benefits and costs of central clearing of dealer-to-client cash trades.

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.

Central clearing necessarily concentrates risk and responsibility for risk management in the central counterparty (CCP). FICC, the existing central counterparty for U.S. Treasury securities and Treasury repos, is an SEC-regulated clearing agency and has been appropriately designated as a Systemically Important Financial Market Utility (SIFMU).[22] Wider central clearing would make its safety and efficiency even more important to the functioning of the Treasury market and to U.S. and global financial stability. Consequently, it would be more important than ever that the regulatory authority over FICC is exercised effectively.

To address concerns about the greater concentration of risk that would result from implementation of the recommendations made above, a thorough and independent review of the design and operation of FICC should be undertaken. The review should take into account the fact that FICC differs qualitatively from other CCPs in that counterparty credit risks are relatively small but liquidity risks in the event of member defaults could be extraordinarily large. If the Federal Reserve creates an SRF with broad access, FICC certainly should have access to that facility. Access to the SRF would avoid the strains on FICC participants' liquidity positions that recourse to FICC's existing Capped Contingency Liquidity Facility (CCLF)[23] would cause in the event of defaults by large FICC participants. And, because the SRF would employ conservative collateral haircuts, it would do so without posing counterparty credit risk to the Federal Reserve and therefore without transferring the risk of losses from such defaults from FICC and its members to the Federal Reserve. Regulators would need to ensure that FICC would have Treasury securities whose value (net of the haircuts required for SRF repo financing) was sufficient to fully meet its liquidity needs under the liquidity regulations applicable to a SIFMU.

The review of FICC should be comprehensive but should pay special attention to management of FICC's credit and liquidity exposures to its largest members (including members acting as sponsors of nonmembers),[24] and the robustness and transparency of its models for setting margin requirements. Another issue that warrants exploration is whether the governance of FICC effectively promotes the interests of all of its participants and the public interest. In the interviews with market participants that informed this report's findings and recommendations, several nonbank participants expressed concern that a handful of large banks dominate FICC's governance, to the detriment of other participants and the public interest. Although the legitimacy of this concern is unclear, FICC governance is sufficiently important that the review should evaluate its legitimacy. Finally, the review should examine impediments to the use of the cross-margining service that FICC and the Chicago Mercantile Exchange have had in place since 2004.[25] Wider use of cross-margining would reduce the risk that increases in initial margin requirements on the futures leg of cash-futures basis trades result in forced sales of Treasury securities,[26] which may have contributed to selling pressures in the Treasury market in March 2020.[27]

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22 The criteria for SIFMU designation, the designation process, and the regulatory consequences are set out on the Federal Reserve Board's website (https://www.federalreserve.gov/paymentsystems/designated_fmu_about.htm).

23 The CCLF facility is made up of committed credit lines extended to FICC by its member firms. In the event of a member's default, FICC would, if necessary, draw on those lines, thereby transmitting the liquidity strains created by the default to its non-defaulting member firms.

24 Regulators should also assess sponsors' management of their credit exposures to sponsored members, especially if the sponsors are not passing through the margin requirements that FICC requires for repos.

25 https://www.dtcc.com/-/media/Files/Downloads/Clearing-Services/FICC/GOV/cmptcptagmtcmeficcaffdmember.pdf.

26 See Younger (2021).

27 The significance of this source of selling pressures is unclear. See Barth and Kahn (2021).

RECOMMENDATION 5: The Treasury Department, after consultation with the Federal Reserve, should organize and take responsibility for a joint review of the design and operation of FICC by Treasury, the SEC, the CFTC, and the Federal Reserve, with a view toward ensuring that the supervision and regulation of FICC is sufficiently robust. FICC should be granted access to the SRF.

PRUDENTIAL REGULATION OF DEALERS IN U.S. TREASURY SECURITIES

Although the recommendations in this report are intended to broaden and diversify market intermediation and reduce reliance on a small number of very large broker-dealer affiliates of U.S. global systemically important banks (GSIBs), in the near term the liquidity of the Treasury markets under stress is likely to remain reliant on those bank-affiliated broker-dealers. Thus, it is critical that any unnecessary disincentives to market intermediation by those dealers be addressed promptly. At the same time, banking regulators should not seek to incentivize market-making through the adoption of measures that weaken the overall resiliency of the banking system.

Post-global financial crisis reforms have ensured that banks have adequate capital, even under stress, but certain provisions may be discouraging market-making in U.S. Treasury securities and Treasury repos, both in normal times and especially under stress. The most significant of those provisions is the Basel III leverage ratio, which in the United States is called the Supplementary Leverage Ratio (SLR) because all banks in the United States (not just internationally active banks) are subject to an additional "Tier 1" leverage ratio. The SLR was put in place because of legitimate concerns that risk-based capital regulations, especially those that relied on banks' own internal measures of risk, could be manipulated by banks. But the SLR was intended to be a backstop to risk-based capital measures, and to be the binding constraint on a bank's capital only when risk-weighted asset (RWA) calculations were suspiciously low. Contrary to that intention, the SLR has recently been binding or nearly binding for many large banks, especially in the United States, because regulators did not anticipate the massive growth in those banks' holdings of reserve balances at central banks that has been forced upon them by subsequent massive growth in the asset holdings of some central banks including, notably, the Federal Reserve.[28] Furthermore, U.S. regulators have required U.S. GSIBs to maintain on top of the minimum SLR a 2 percent capital conservation buffer (called the enhanced SLR [eSLR]), which materially exceeds the buffer that has been agreed internationally.[29] When the SLR is binding or even when there is a significant chance that it will be binding in the future, banks are discouraged from allocating capital to relatively low-risk activities because the SLR requires too much capital to support those activities. And market-making in the U.S. Treasury markets is a prime example of a low-risk activity to which banks have been allocating less capital since the SLR was put in place.

Changes to the SLR (or to risk-based requirements) are needed to ensure that the SLR functions as a backstop rather than a constraint that binds frequently. In the absence of such changes, banks are highly unlikely to allocate more capital to market-making in the Treasury and Treasury repo markets, and thus a regulation that was intended to be stabilizing will continue to undermine the stability of market intermediation. Those changes should be designed in such a way that overall capital in the banking system is not reduced. For example, risk-based requirements might need to be tightened to offset any adverse impact of SLR changes.

Banking regulators should also review certain aspects of the GSIB capital surcharge methodology that may unnecessarily discourage market-making by bank-affiliated dealers, including aspects that create cliff effects (bucketing of surcharges and reliance on quarterly or year-end data rather than quarterly or annual averages), as well as what appears to be punitive treatment of repos.

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28 When the Federal Reserve finalized the SLR at an open meeting in April 2014, several Board members questioned whether reserves should be included in the denominator of the leverage ratio. The staff noted that reserves were expected to decline to negligible amounts as the Federal Reserve executed its plan to normalize (that is, reduce the size of) its balance sheet. Contrary to that expectation, its balance sheet (and the level of reserves that the banking system is holding) is now vastly larger than in April 2014. See https://www.federalreserve.gov/mediacenter/files/open-board-meeting-transcript-20140409.pdf.

29 The 2 percent buffer applies to the holding companies of these banks. Their bank subsidiaries have been required to maintain an even higher buffer (3 percent). By contrast, when fully implemented Basel III will require a buffer equal to half of a GSIB's risk-based capital surcharge, which currently would imply buffers ranging from 0.5 percent to 1.75 percent.

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.

As banks have reduced the capital allocated to market-making in the Treasury markets, others outside the perimeter of banking regulation, notably the PTFs but also some independent broker-dealers, have stepped up their market-making activity. And some of the measures recommended above, including the SRF and the central clearing recommendations, are intended to remove impediments to market-making by independent broker-dealers (including broker-dealer affiliates of PTFs).[30] The increasing supply of market liquidity by such firms should be considered a welcome development, but one that heightens the importance of ensuring the robustness of the SEC's prudential requirements for broker-dealers that provide liquidity to the Treasury and Treasury repo markets. Those requirements are quite different from prudential requirements for banks and, given the concern that the bank standards have been discouraging market-making, that is not altogether a bad thing. But a review of the SEC's requirements to ensure that they are sufficiently robust is appropriate as a complement to the other measures recommended in this report.

RECOMMENDATION 7: The SEC, in consultation with the Federal Reserve and the Treasury, should review the robustness of the prudential safeguards at dealers (including IDBs) in U.S. Treasury securities and Treasury repos that are not affiliated with banks (independent dealers).

MARKET TRANSPARENCY

Since 2017, Treasury transaction data have been collected by the Financial Industry Regulatory Authority (FINRA)[31] from its broker-dealer members through its TRACE[32] reporting system and have been shared with the SEC, Treasury, the Federal Reserve, and the CFTC.[33] The Federal Reserve has been developing a proposal that would require commercial banks that are significant dealers to report the same information.[34] However, FINRA does not collect data on Treasury repos, and regulators do not have comprehensive data on Treasury repos.[35] Furthermore, FINRA has released only aggregate data to the public, unlike TRACE data on individual corporate bond trades, most of which are made available to the public within 15 minutes of the trade.

TRACE needs to be expanded to provide comprehensive coverage of all Treasury transactions, regardless of whether a FINRA member firm is a counterparty to the trade. Some commercial banks are significant dealers in these markets. Thus, the Fed needs to bring such commercial banks into the reporting system. Also, trades involving PTFs need to be captured. Given the importance of the Treasury repo markets, comprehensive data on transactions in that market also should be collected. Rather than continuing to cobble together data from a variety of sources, a better approach would be to collect data on Treasury repo transactions through TRACE.

Regarding public transparency of the TRACE data, as the SEC's then-chairman said in 2016, the question should be "...'how best' to deliver public transparency, not 'whether' to do so."[36] Greater post-trade transparency would facilitate evaluation of existing methods of trade execution and encourage greater use of electronic trading platforms that facilitate competitive trade execution among existing dealers and enable additional dealers to supply liquidity to those platforms. It would also facilitate counterparty risk management, both bilaterally and by FICC, by increasing the accuracy of

30 The SEC should also consider whether PTFs themselves should be considered dealers for purposes of SEC rules, as Commissioner Roisman (2020) has suggested. That they are not considered dealers seems a mystery to all but securities lawyers.

31 FINRA is a self-regulatory organization that is overseen by the SEC.

32 TRACE = Trade Reporting and Compliance Engine.

33 For information regarding the TRACE data on Treasury market transactions, see Brain et al. (2018).

34 https://www.federalreserve.gov/boarddocs/press/foiadocs/2021/20210121/foia20210121.pdf.

35 See Baklanova et al. 2016.

36 White (2016, 2).

prices used to measure counterparty exposures and determine the appropriate size of margin calls. To be sure, public disclosures would need to address legitimate concerns that market-makers would be discouraged from providing liquidity for large trades in illiquid off-the-run issues, contrary to the overarching goal of the recommendations in this report. But those concerns could be addressed by imposing a cap on the size of reported trades (indicating that it is a large trade but not exactly how large). Such a cap would prohibit other market participants from trading against a market-maker that has acquired a large position and is seeking to offload that position. Otherwise, public disclosure of TRACE data for Treasuries should be similar if not identical to public disclosure of TRACE corporate bond data.

Pre-trade transparency as well as post-trade transparency is important. Currently, pre-trade transparency reportedly is quite good in the interdealer market. But pre-trade transparency in the bilateral dealer-to-client market is more limited. Post-trade transparency likely would promote greater pre-trade transparency, as clients would be able to better evaluate the quality of trade execution, including the potential benefits of using multidealer trading platforms, especially those that display prices that are executable rather than merely indicative.

RECOMMENDATION 8: FINRA's TRACE reporting system should be expanded to capture all transactions in U.S. Treasury securities and Treasury repos, including those of commercial bank dealers and PTFs. Furthermore, subject to a cap on the disclosed size of trades, the data should be publicly disclosed in a manner similar to the way that data on corporate bond transactions are currently disclosed.

Another important dimension of market transparency is with respect to the rules of trading platforms. Trading platforms for Treasuries and other U.S. government securities have been exempted from certain regulations (Regulations ATS and SCI[37]) that apply to trading platforms for equities.[38] In September 2020, the SEC issued a proposal that would end this exemption and require platform operators to make publicly available key information on how trades on the platform are executed, cleared, and settled, consistent with the requirements of Regulation ATS. It would also require platforms with significant trading activity to conform to a fair access rule that would require them to establish written standards for access and not to apply those standards in an unfair or discriminatory manner. The proposal would apply to the leading interdealer trading platforms for Treasury securities. However, the proposal evidently would not cover multidealer platforms that use request for quote (RFQ) or streaming quote protocols, which are used by the leading multidealer dealer-to-client trading platforms. The proposed rules should apply to all major trading platforms for Treasuries and Treasury repos, including those for dealer-to-client trades. Broad application of the fair access rule, in particular, would enable a wider range of liquidity providers to compete with the primary dealers and thereby contribute to the goal of increasing, broadening, and diversifying the supply of liquidity in the Treasury markets.

RECOMMENDATION 9: Regulations ATS and SCI should be applied to all significant trading platforms for Treasury securities, including both interdealer and multidealer dealer-to-client platforms.

MARKET REGULATION

The most important financial market in the world should be subject to comprehensive regulatory authority that is effectively exercised. However, the U.S. Treasury markets have been exempted by law or regulation from many provisions of the U.S. securities laws, including those designed to ensure the safety and efficiency of markets. For example, the Federal Reserve's authority to set minimum margin requirements for securities purchases does not extend to Treasury securities. While many of those exemptions seemed reasonable in the 1930s, when those laws were enacted, some may no longer be appropriate, given that the Treasury markets are now far larger and far more important, not only to U.S. government finance but to the execution of monetary policy and to U.S. and global financial stability. As noted above, the Government Securities Act of 1986

37 ATS = alternative trading systems; SCI = Systems Compliance and Integrity.

38 See Owens, Newman, and Weldon (2020).

gave the Treasury Department overarching authority for regulation of the Treasury market. With respect to the exercise of that authority, given its other responsibilities and its expertise, Treasury may appropriately decide to delegate its authority to other regulators. But this cannot be allowed to blur responsibility and accountability for regulation or to unnecessarily delay regulatory responses to developments that require regulatory adjustments. Treasury is accountable for the decisions and actions of the other regulators subject to its delegated authority, so it needs to take an active interest in those decisions and actions. With input from the Federal Reserve, SEC, and CFTC, the Treasury should prepare an annual report evaluating the functioning of the Treasury markets and identifying any concerns about weaknesses in market underpinnings.

RECOMMENDATION 10: As a first step toward more vigorous oversight of the Treasury market, the Treasury, after consultation with the Federal Reserve, should lead an interagency study that identifies all exemptions of Treasury securities from U.S. securities laws, evaluates their rationales, and, where there is no clear and compelling rationale, recommends measures for applying those laws to Treasury securities. Thereafter, Treasury should prepare an annual report on Treasury market functioning.

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