CFTC

COMMODITY FUTURES TRADING COMMISSION

Global Markets Advisory Committee July 17, 2023

Commissioner
Christy Goldsmith Romero

Commissioner
Caroline D. Pham

Commissioner
Kristin N. Johnson

Commissioner
Summer K. Mersinger

COMMODITY FUTURES TRADING COMMISSION

OPENING REMARKS

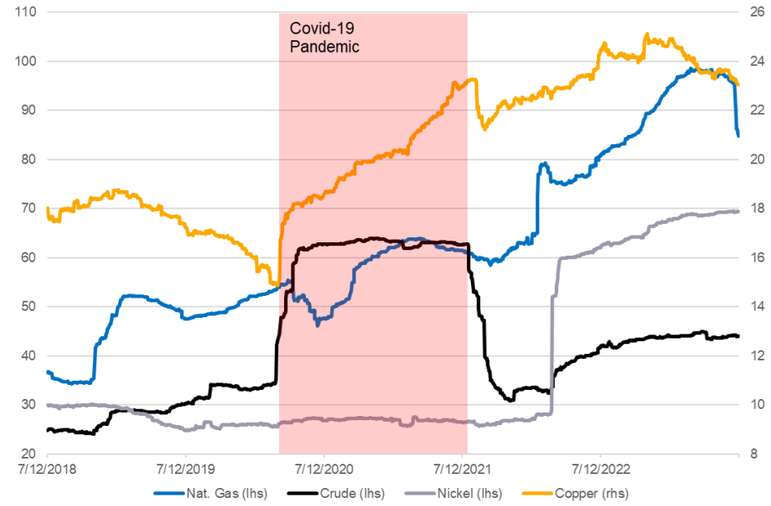
Keynote Speaker: **Lynn Martin, President, NYSE Group and Chair, ICE Fixed Income & Data Services**

GMAC
Global Market Structure Subcommittee

7/17/2023 - Update

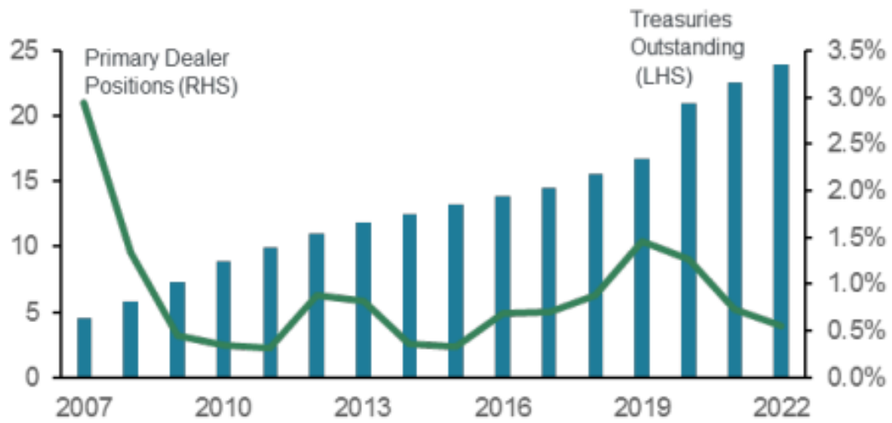
GMAC: Global Market Structure Subcommittee

Commodity Market Volatility



Source: Bloomberg LP

UST Outstanding vs Dealer Balance Sheet

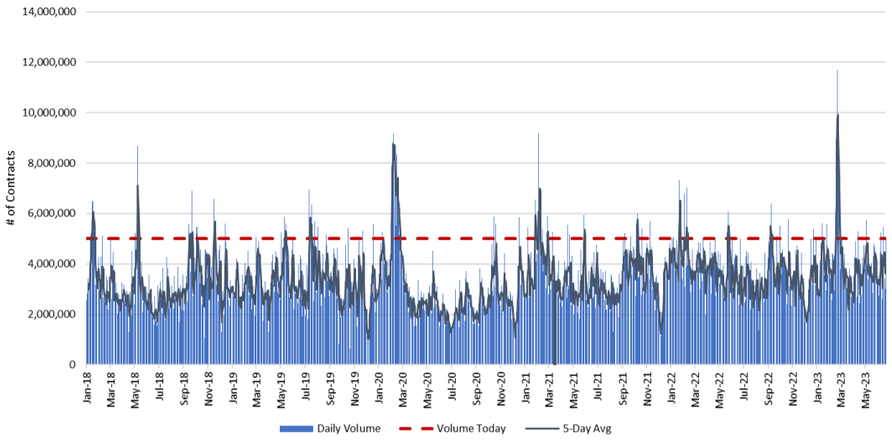


Source: FRB, JPM Research, SIFMA

TU Futures – Cost to Sweep 5k Contracts

Source: Goldman Sachs

UST Futures Volumes



Source: Morgan Stanley

GMAC: Global Market Structure Subcommittee

Subcommittee Work Plan

- *Provide recommendations for global standards and best practices for market volatility controls and circuit breakers*
- *Examine Treasury market reform impact on derivatives markets, including (i) recommendations for cross-margining between futures and cash markets and (ii) changes to derivatives market structure from cash market proposals*
- *Provide recommendations to improve liquidity across asset classes, including commodities, rates, and credit markets, with respect to capital, clearing, and collateral requirements*
- *Examine role of derivatives for proper asset-liability management and functioning of funding markets*
- *Provide recommendations for international alignment of trading and clearing obligations to address market fragmentation, including swap execution facility (SEF)/multilateral trading facility (MTF) requirements*

PANEL I: Treasury Markets Reform: Implications For and Lessons Learned from Derivatives Markets

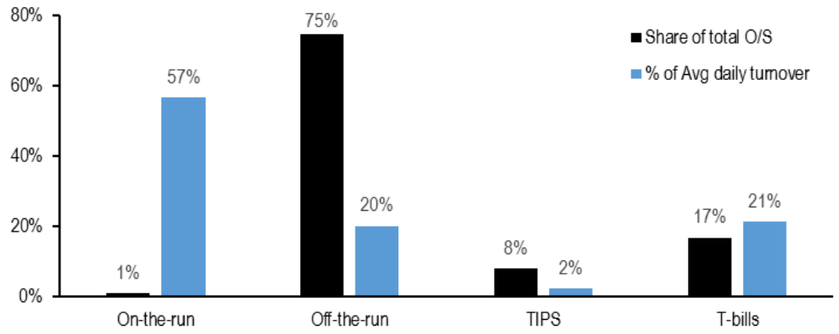
JPMorgan Chase & Co.

GLOBAL MARKETS ADVISORY COMMITTEE PANEL I
JPMorgan Chase & Co.

U.S. Commodity Futures Trading Commission |July 17, 2023

Treasury markets reform: implications for and lessons learned from derivatives markets

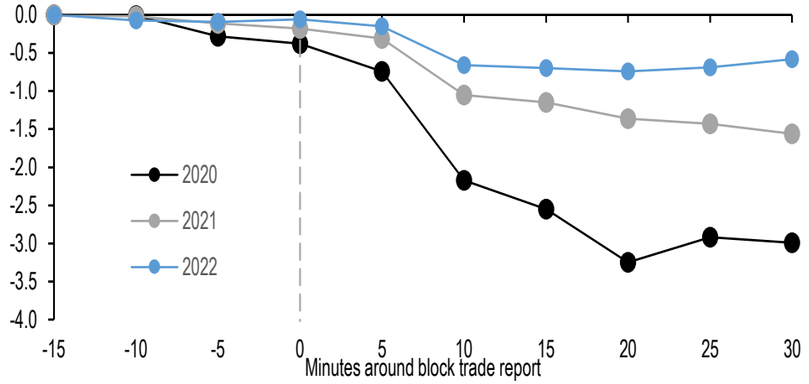
1 **Liquidity is concentrated in the most recently issued securities: the on-the-run market is 1% of total Treasuries outstanding but over 57% of average daily turnover**



Source: JPM Research, TRACE

2 **Treasury future block dissemination price impacts have varied over the years and is largest in times of stress**

Impact in price (in 32nds, negative is against liquidity provider)



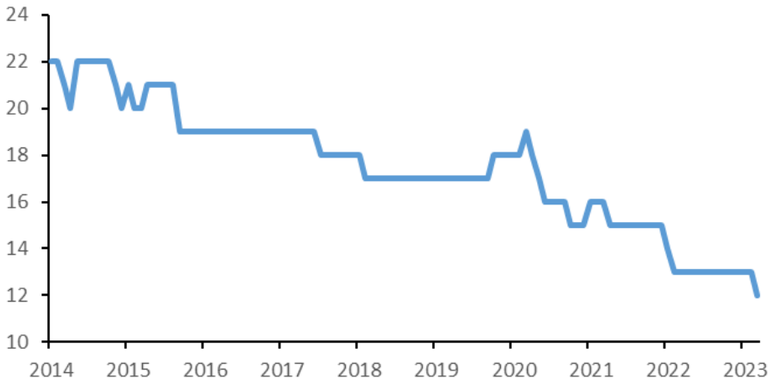
Source: TBAC

3 **Treasury ownership is concentrated. Foreign investors and the FRB own a combined 55% of Treasuries outstanding**

Institution Type	2020	2021	2022	Q1 2023*
Foreign Investors	33.3%	33.9%	33.9%	33.5%
Federal Reserve	24.0%	26.5%	23.4%	22.1%
Money market funds	11.2%	7.9%	4.9%	4.6%
Household	5.4%	2.0%	7.2%	9.3%
Money managers	6.0%	7.0%	6.3%	6.2%
Banking institutions	5.5%	7.2%	7.3%	6.6%
Pension funds	3.8%	3.9%	3.6%	3.6%
State and local govt	4.5%	5.8%	6.8%	6.9%
Others	1.9%	1.7%	1.8%	1.7%
Insurance companies	1.8%	1.8%	1.8%	1.8%
ETFs	1.2%	1.4%	1.9%	2.0%
Broker dealers	1.0%	0.4%	0.8%	1.2%
Corporate	0.3%	0.3%	0.4%	0.4%

Source: JPM Research, Federal Reserve

4 **The number of Futures Commission Merchants (FCMs) holding customer funds for cleared swaps has declined significantly over the last decade**



Source: FIA

Disclaimer

JPMorgan Chase Bank, N.A. is authorized by the Office of the Comptroller of the Currency and is a member of the FDIC. J.P. Morgan Securities LLC ("JPMS") is a registered broker-dealer and registered futures commission merchant subsidiary of JPMorgan Chase & Co. and a member of FINRA, NFA, NYSE and SIPC. J.P. Morgan Securities plc ("JPMS plc") is a member of the London Stock Exchange, is authorized by the Prudential Regulation Authority and is regulated by the Financial Conduct Authority and the Prudential Regulation Authority. Distributed in Singapore by J.P. Morgan Securities Singapore Private Limited (Co. Reg. No.: 199405335R), an entity regulated by the Monetary Authority of Singapore and the Singapore Exchange Derivatives Trading Limited. Distributed in Japan by J.P. Morgan Securities Japan Co., Ltd. (Co. Reg. No.: 197300590K), an entity regulated by the Financial Services Agency in Japan, Tokyo Stock Exchange, Osaka Securities Exchange and Tokyo Financial Exchange. Distributed in Hong Kong by J.P. Morgan Broking (Hong Kong) Limited (CE number AAB027), an entity regulated by the Hong Kong Securities and Futures Commission and is an Exchange Participant of Hong Kong Stock Exchange and Hong Kong Futures Exchange. Distributed in Korea by J.P. Morgan Securities (Far East) Limited Seoul Branch, an entity regulated by Financial Supervisory Service and the Korea Exchange. Distributed in Australia by J.P. Morgan Markets Australia Pty Limited (ABN 79 004 384 687, AFSL 238065), an entity regulated by the Australian Securities and Investments Commission and the Australian Securities Exchange Limited. Distributed in New Zealand by J.P. Morgan Markets Australia Pty Limited, an authorized futures dealer regulated by the New Zealand Financial Markets Authority. Distributed in India by J.P. Morgan India Private Limited, a member of the National Stock Exchange of India Limited and the Bombay Stock Exchange Limited, an entity regulated by the Securities and Exchange Board of India. Distributed in Taiwan by J.P. Morgan Securities (Taiwan) Limited, a market participant and a general clearing member of the Taiwan Futures Exchange Corporation. Distributed in Thailand by J.P. Morgan Securities (Thailand) Limited, a member of the Thailand Futures Exchange. Clients should contact analysts at and execute transactions through a J.P. Morgan entity in their home jurisdiction unless governing law permits otherwise.

"J.P. Morgan" is the marketing name for JPMorgan Chase & Co., and its subsidiaries and affiliates worldwide.

Preparation and Accuracy Disclosure

This commentary has been prepared by personnel of one or more affiliates of J.P. Morgan and is not the product of J.P. Morgan's Research Department. It is not a research report and is not intended as such. Opinions and commentary expressed herein may differ from the opinions and commentary expressed by other areas of J.P. Morgan, including its Research Department. The information contained herein is as of the date referenced above and J.P. Morgan does not undertake any obligation to update such information. Additional information is available upon request. Information has been obtained from sources believed to be reliable but J.P. Morgan does not warrant its completeness or accuracy except with respect to any disclosures relative to JPMS and/or its affiliates.

To the extent referenced herein, all market prices, data and other information are not warranted as to completeness or accuracy and are subject to change without notice. This commentary does not purport to contain all of the information that an interested party may desire and provides only a limited view of the regulatory paradigm affecting a particular market or industry utility.

Intended Purpose Disclosure

This commentary is intended for discussion and informational purposes only and is incomplete without reference to, and should be viewed solely in conjunction with, other materials prepared and provided by J.P. Morgan on the matters covered herein.

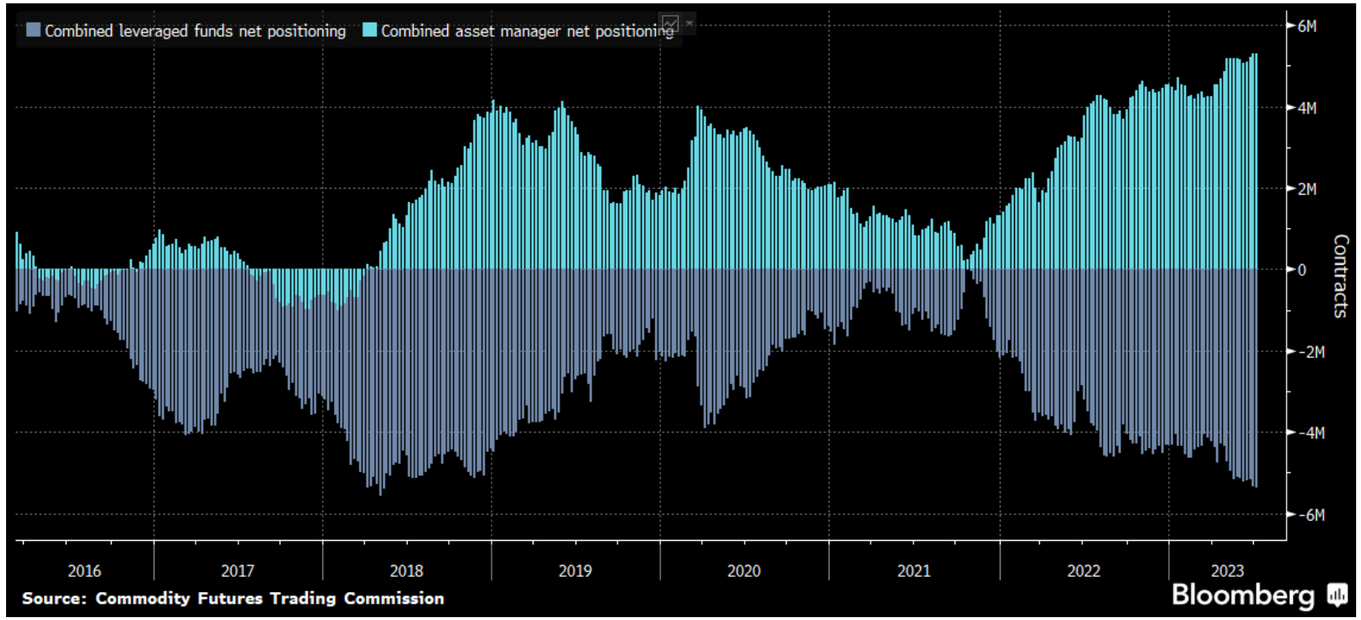
This commentary is not intended as a recommendation or an offer or solicitation to enter into any transaction or for the purchase or sale of any security or financial instrument. Transactions involving securities and financial instruments mentioned herein (including futures, options and swaps) may not be suitable for all investors.

This commentary does not constitute legal, credit, tax, regulatory and/or accounting advice by or on behalf of J.P. Morgan, and nothing in this commentary should be construed as such. No reliance should be placed on the information herein. The recipient of this commentary must make an independent assessment of the matters covered herein and J.P. Morgan assumes no responsibility or liability whatsoever to any person in respect of such matters.

GMAC: Treasury Markets Reform Panel

UST Futures Positioning

UST futures: asset manager long positions have largely been absorbed by levered funds' short positions



Who are Tradition?

- Tradition is a global market intermediary specialising in wholesale markets across all major asset classes
- Tradition occupies a market leading position as a liquidity platform for USD GC Repo markets, Treasury and USD Interest Rate markets
- Tradition is an expert in operational and technical market structure issues as they relate to Pre-trade, trade and Post-trade functions
- Tradition are aggregators of liquidity not providers or users of liquidity

What have we learnt at Tradition ?

It’s all about the plumbing

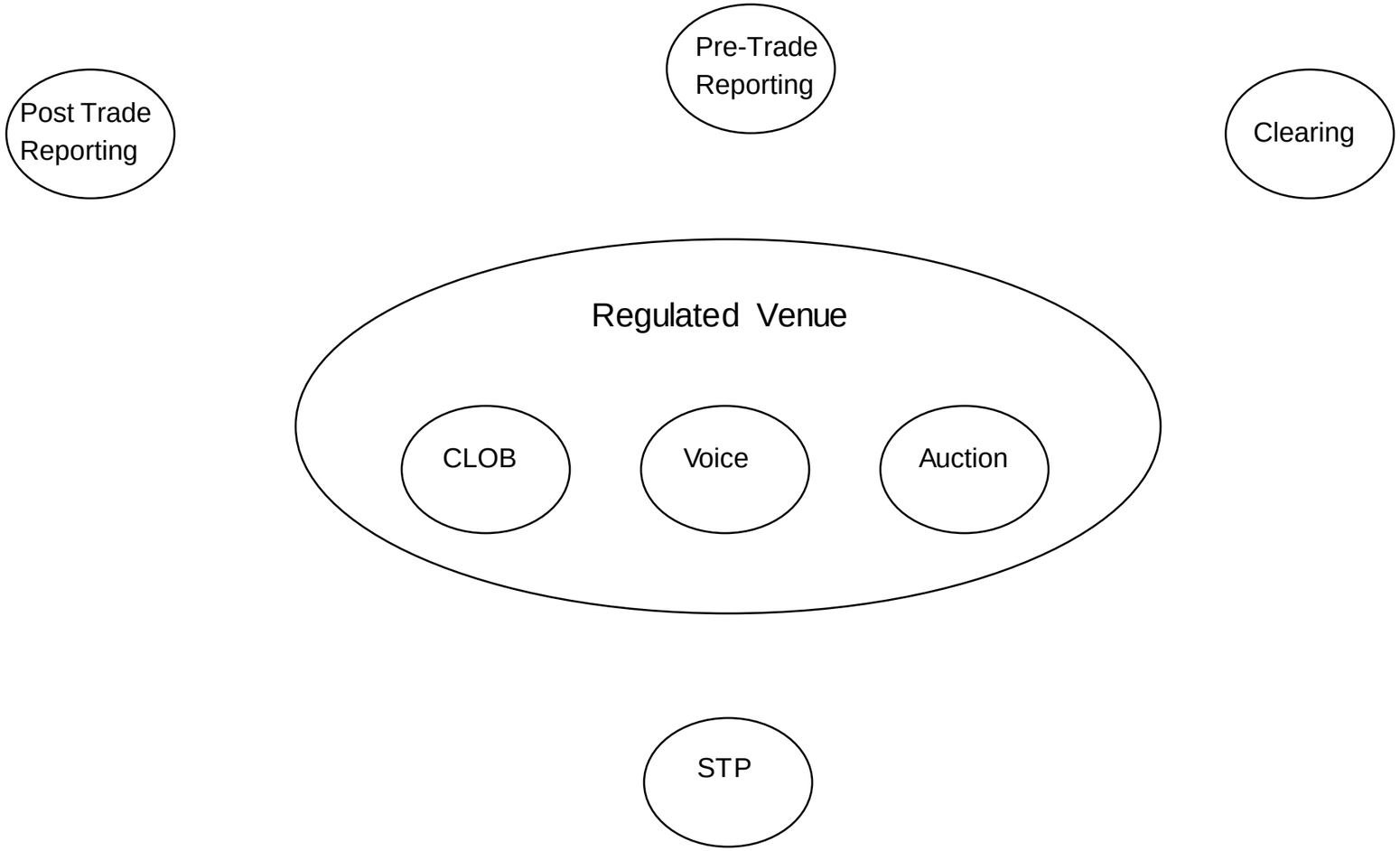
Functions

- Clearing
- Reporting

Implementation

- It takes time
- It needs to be efficient and quick
- New Processes = New Risks (CCP Basis)
- Change management (Libor Transition)

The Plumbing



Stuart Giles
NY CSO
E: stuart.giles@tradition.com
W: + 212 238 5999
M: +1 573 844 4784

MEMBER DISCUSSION

BREAK

PANEL II: Swap Block Implications on Market Structure

CFTC Global Markets Advisory Committee

ISDA Safe, Efficient Markets

July 2023

Block Trade Thresholds and Volume Cap Sizes Methodology

What are Block Trade Thresholds and Volume Cap Sizes?

- Block Trade Threshold: The notional threshold that enables a swap to receive designated delay from real-time public dissemination (i.e., 15 mins or longer depending on the type of swap and type of counterparties). If the swap is subject to the trade execution requirement, reaching the block threshold would also enable the swap to be executed off exchange but subject to the rules of a SEF (e.g., RFQ-to-1 vs RFQ-to-3).
- Volume Cap Size: The notional threshold to which the public reporting of the swap is capped; the full size of the swap is never disseminated to the public.

CFTC 2013 Final Block Rules

- In May 2013, the Commission finalized rules that established block trade thresholds and volume cap sizes for all asset classes and that use a calculation methodology that relies on notional amounts. The 2013 rules required the CFTC to follow a phased-in approach for determining minimum block sizes and initially apply a 50% notional amount calculation.
- Then, after an SDR had collected at least one year of data, the 2013 rules required the CFTC to determine the minimum block size using a 67% notional amount calculation for IRS, CDS, and certain FX and commodities swaps. Under the 2013 rules, the volume caps were set to initially mirror the block thresholds and then intended to move to a 75% notional amount calculation when the block thresholds transitioned to the 67% calculation.
- The rules were designed to re-set the block thresholds and volume caps using the 67% and 75% methodologies, respectively, on an annual basis using the previous year's SDR data. However, the CFTC never transitioned to those methodologies—until now.

CFTC 2020 Final Block Rules

- In 2020, the CFTC proposed and finalized rules that amended the swap categories used to establish block thresholds and volume caps. The CFTC also required block thresholds and volume caps for IRS, CDS and certain FX and commodities swaps to be determined using the 67% and 75% notional amount calculations, respectively.
- Pursuant to the 2020 rules, in April of this year, the Commission published the revised thresholds for all asset classes on their website, with a compliance date of December 4, 2023.

Block Trade Thresholds and Volume Cap Sizes Methodology

What is the methodology?

- All publicly reportable swap transactions within a specific swap category are selected (and converted to the same currency, if applicable). All notional amounts are summed up and the total sum is multiplied by 67%. All transactions are ranked by notional from smallest to greatest. The cumulative sum of the observations is calculated until the cumulative sum is equal to or greater than the 67% of the total notional amount calculated in the prior step. The transaction notional associated with that observation is then selected and set as the threshold.

CFTC-Stated Policy Objectives

When proposing the notional amount calculation in 2012, the CFTC outlined the following policy objectives:

- "The proposed 67-percent notional amount calculation is intended to ensure that within a swap category, approximately two-thirds of the sum total of all notional amounts are reported on a real-time basis"
- "[T]his approach would ensure that market participants have a timely view of a substantial portion of swap transaction and pricing data to assist them in determining, inter alia, the competitive price for swaps within a relevant swap category."
- "[The CFTC] anticipates that enhanced price transparency would encourage market participants to provide liquidity (e.g., through the posting of bids and offers), particularly when transaction prices moves away from the competitive price. The Commission also anticipates that enhanced price transparency thereby would improve market integrity and price discovery, while also reducing information asymmetries enjoyed by market makers in predominately opaque swap markets."
- "In the Commission's view, using the proposed 67-percent notional amount calculation also would minimize the potential impact of real-time public reporting on liquidity risk."
- "The Commission believes that its methodology represents a more tailored and incremental step . . . towards achieving the goal of 'a vast majority' of swap transactions becoming subject to real-time public reporting."

Current Block Trade Thresholds and Volume Cap Sizes for Interest Rate Swaps

Currency group	Tenor	50% Notional (millions)
Super-Major (USD, EUR, GBP, JPY)	Tenor ≤ 46 Days	6,400
	46D < Tenor ≤ 3M	2,100
	3M < Tenor ≤ 6M	1,200
	6M < Tenor ≤ 1Y	1,100
	1Y < Tenor ≤ 2Y	460
	2Y < Tenor ≤ 5Y	240
	5Y < Tenor ≤ 10Y	170
	10Y < Tenor ≤ 30Y	120
	Tenor > 30Y	67
Major (AUD, CHF, CAD, ZAR, KRW, SEK, NZD, NOK, DKK)	Tenor ≤ 46 Days	2,200
	46D < Tenor ≤ 3M	580
	3M < Tenor ≤ 6M	440
	6M < Tenor ≤ 1Y	220
	1Y < Tenor ≤ 2Y	130
	2Y < Tenor ≤ 5Y	88
	5Y < Tenor ≤ 10Y	49
	10Y < Tenor ≤ 30Y	37
	Tenor > 30Y	15
Non-Major	Tenor ≤ 46 Days	230
	46D < Tenor ≤ 3M	230
	3M < Tenor ≤ 6M	150
	6M < Tenor ≤ 1Y	110
	1Y < Tenor ≤ 2Y	54
	2Y < Tenor ≤ 5Y	27
	5Y < Tenor ≤ 10Y	15
	10Y < Tenor ≤ 30Y	16
	Tenor > 30Y	15

Revised Block Trade Thresholds for Interest Rate Swaps

Block Trade Thresholds	USD		EUR		GBP		JPY		CAD		AUD		BRL		CZK	
Tenor	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)
Tenor ≤ 46 Days	8,800	38%	7,800	22%	5,500	-14%	1,200	-81%	2,300	5%	3,400	55%	3,700	1509%	1,300	465%
46D < Tenor ≤ 3M	3,300	57%	3,100	48%	4,700	124%	1,900	-10%	1,300	124%	1,050	81%	550	139%	420	83%
3M < Tenor ≤ 6M	1,100	-8%	700	-42%	2,500	108%	1,800	50%	2,100	377%	280	-36%	500	233%	410	173%
6M < Tenor ≤ 1Y	1,600	45%	1,200	9%	1,300	18%	1,050	-5%	550	150%	400	82%	380	245%	120	9%
1Y < Tenor ≤ 2Y	850	85%	550	20%	360	-22%	450	-2%	290	123%	210	62%	350	548%	83	54%
2Y < Tenor ≤ 5Y	400	67%	270	13%	190	-21%	210	-13%	160	82%	130	48%	160	493%	47	74%
5Y < Tenor ≤ 10Y	290	71%	200	18%	150	-12%	180	6%	100	104%	59	20%	56	273%	31	107%
10Y < Tenor ≤ 30Y	210	75%	130	8%	98	-18%	94	-22%	39	5%	37	0%	34	113%	23	44%
Tenor > 30Y	260	288%	56	-16%	56	-16%	42	-37%	22	47%	18	20%	0	-100%	0	-100%

Block Trade Thresholds	ZAR		KRW		INR		MXN		CLP		SEK		NZD	
Tenor	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)
Tenor ≤ 46 Days	0	-100%	0	-100%	250	9%	0	-100%	410	78%	0	-100%	2,000	-9%
46D < Tenor ≤ 3M	420	-28%	480	-17%	320	39%	700	204%	310	35%	950	64%	1,300	124%
3M < Tenor ≤ 6M	47	-89%	310	-30%	280	87%	370	147%	210	40%	110	-75%	500	14%
6M < Tenor ≤ 1Y	140	-36%	220	0%	200	82%	210	91%	120	9%	270	23%	270	23%
1Y < Tenor ≤ 2Y	84	-35%	120	-8%	140	159%	110	104%	57	6%	160	23%	140	8%
2Y < Tenor ≤ 5Y	50	-43%	68	-23%	74	174%	51	89%	37	37%	79	-10%	66	-25%
5Y < Tenor ≤ 10Y	31	-37%	38	-22%	35	133%	24	60%	17	13%	78	59%	48	-2%
10Y < Tenor ≤ 30Y	22	-41%	44	19%	0	-100%	25	56%	8	-50%	32	-14%	28	-24%
Tenor > 30Y	0	-100%	0	-100%	0	-100%	0	-100%	0	-100%	0	-100%	0	-100%

Revised Volume Cap Sizes for Interest Rate Swaps

Volume Caps Sizes	USD		EUR		GBP		JPY		CAD		AUD		BRL		CZK	
Tenor	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)
Tenor ≤ 46 Days	13,000	103%	8,700	36%	6,000	-6%	1,200	-81%	2,300	5%	3,800	73%	4,900	1860%	1,300	420%
46D < Tenor ≤ 3M	4,100	95%	3,800	81%	5,200	148%	2,200	5%	1,600	176%	1,300	124%	850	240%	430	72%
3M < Tenor ≤ 6M	1,600	33%	900	-25%	3,000	150%	1,900	58%	3,200	627%	350	-20%	600	140%	420	68%
6M < Tenor ≤ 1Y	2,100	91%	1,500	36%	1,700	55%	1,400	27%	700	180%	550	120%	600	140%	140	-44%
1Y < Tenor ≤ 2Y	1,100	139%	650	41%	550	20%	600	30%	370	48%	260	4%	450	80%	120	-52%
2Y < Tenor ≤ 5Y	550	129%	350	46%	250	4%	270	13%	200	100%	170	70%	210	110%	59	-41%
5Y < Tenor ≤ 10Y	410	141%	260	53%	220	29%	230	35%	140	40%	71	-29%	73	-27%	36	-64%
10Y < Tenor ≤ 30Y	270	125%	190	58%	140	17%	150	25%	41	-45%	50	-33%	44	-41%	26	-65%
Tenor > 30Y	340	353%	73	-3%	75	0%	45	-40%	25	-67%	18	-76%	0	-100%	0	-100%

Volume Caps Sizes	ZAR		KRW		INR		MXN		CLP		SEK		NZD	
Tenor	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)	New (millions)	Change (%)
Tenor ≤ 46 Days	0	-100%	0	-100%	250	0%	0	-100%	600	140%	0	-100%	2,300	5%
46D < Tenor ≤ 3M	450	-22%	480	-17%	400	60%	900	260%	410	64%	1,050	81%	1,600	176%
3M < Tenor ≤ 6M	47	-89%	340	-23%	320	28%	600	140%	220	-12%	110	-75%	510	16%
6M < Tenor ≤ 1Y	160	-36%	250	0%	250	0%	260	4%	120	-52%	340	36%	300	20%
1Y < Tenor ≤ 2Y	120	-52%	140	-44%	170	-32%	130	-48%	72	-71%	220	-12%	160	-36%
2Y < Tenor ≤ 5Y	62	-38%	87	-13%	120	20%	62	-38%	43	-57%	99	-1%	81	-19%
5Y < Tenor ≤ 10Y	38	-62%	46	-54%	36	-64%	32	-68%	21	-79%	120	20%	67	-33%
10Y < Tenor ≤ 30Y	29	-61%	56	-25%	0	-100%	30	-60%	12	-84%	36	-52%	29	-61%
Tenor > 30Y	0	-100%	0	-100%	0	-100%	0	-100%	0	-100%	0	-100%	0	-100%

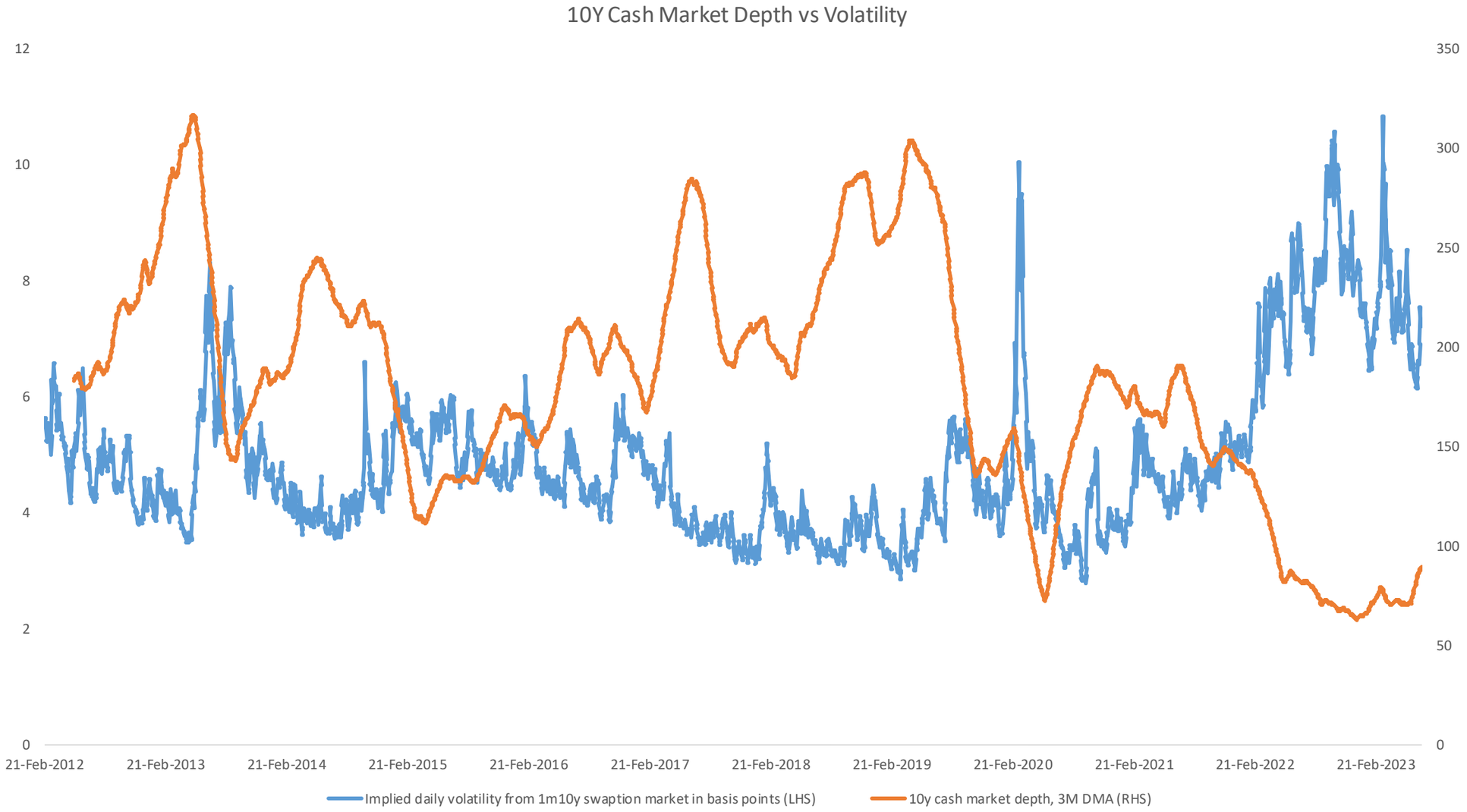
Current and Revised Block Trade Thresholds and Volume Cap Sizes for Credit Default Swaps

Block Trade Thresholds	Current (millions)	New (millions)	Change (%)
CDX IG	110	250	127%
CDX HY	26	75	188%
CDX EM	32	52	63%
iTraxx Europe	110	265	141%
iTraxx Crossover	26	69	165%
iTraxx Senior Financial	110	350	218%

Volume Caps Sizes	Current (millions)	New (millions)	Change (%)
CDX IG	110	300	173%
CDX HY	100	100	0%
CDX EM	100	95	-5%
iTraxx Europe	110	386	251%
iTraxx Crossover	100	104	4%
iTraxx Senior Financial	110	510	364%

Market Observations

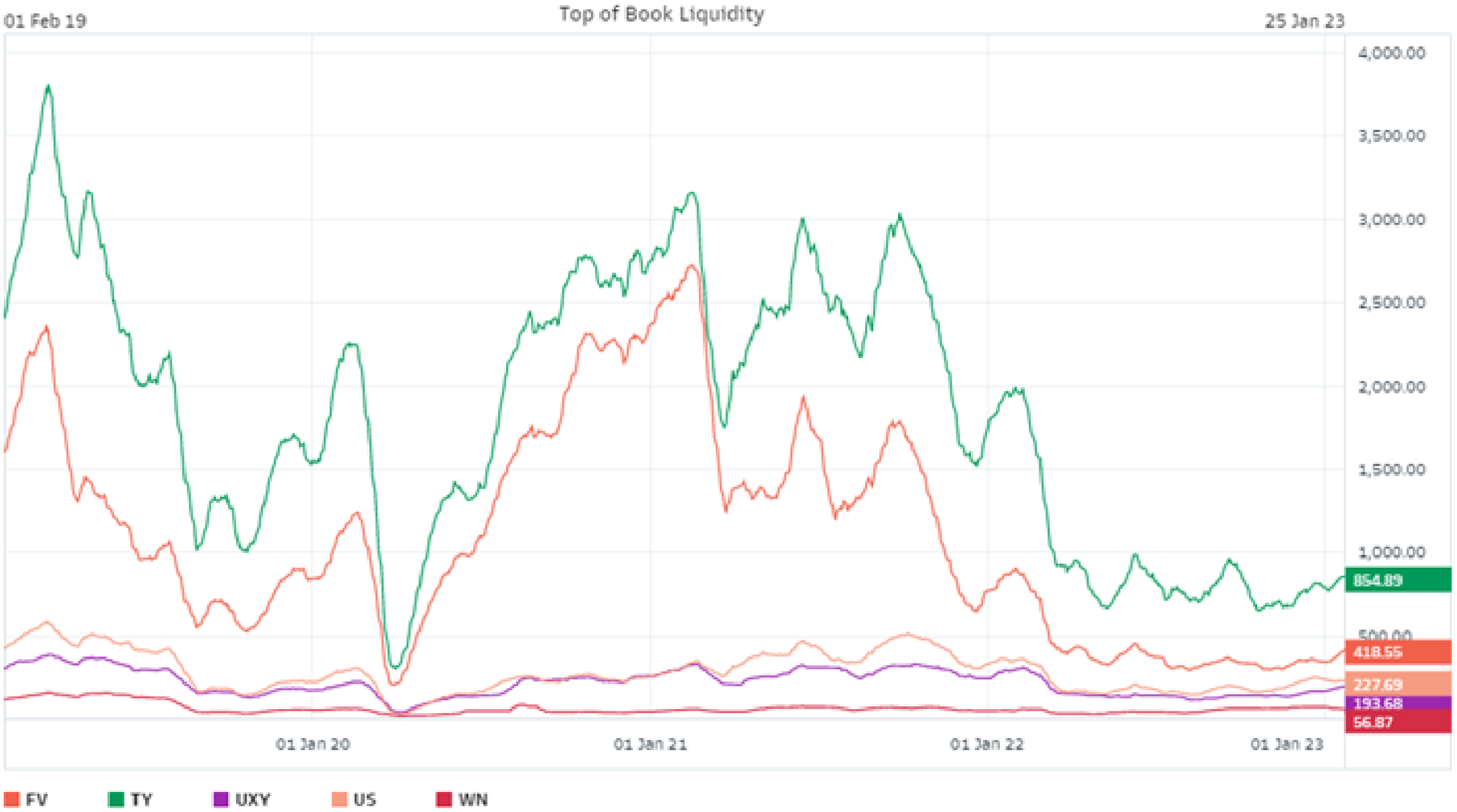
Market Depth vs Volatility



Source: JPM DataQuery

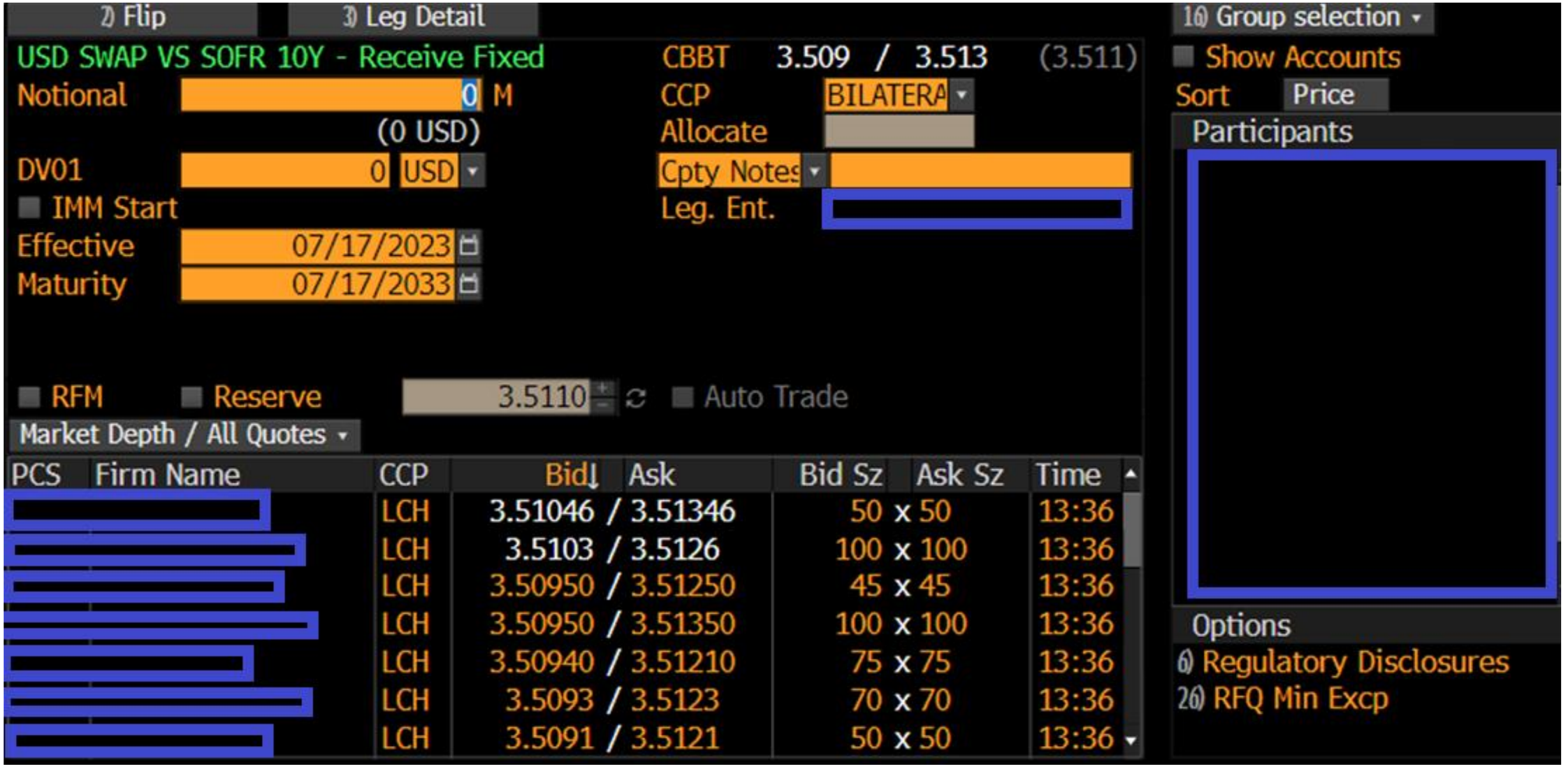
Market depth: cash market depth is the average of the top 3 bids and offers on hot-run Treasuries in the inter-dealer broker CLOB, averaged between 8:30am and 10:30am daily

Market Depth – UST Futures Top of Book Liquidity



Source: GS Marquee PlotTool Pro as of 26 Jan 2023, past performance is not indicative of future returns

New forms of Pre-Trade Price Transparency – Streaming Quotes



Source: BBG

Swap Block Implications on Market Structure: SEF Perspective

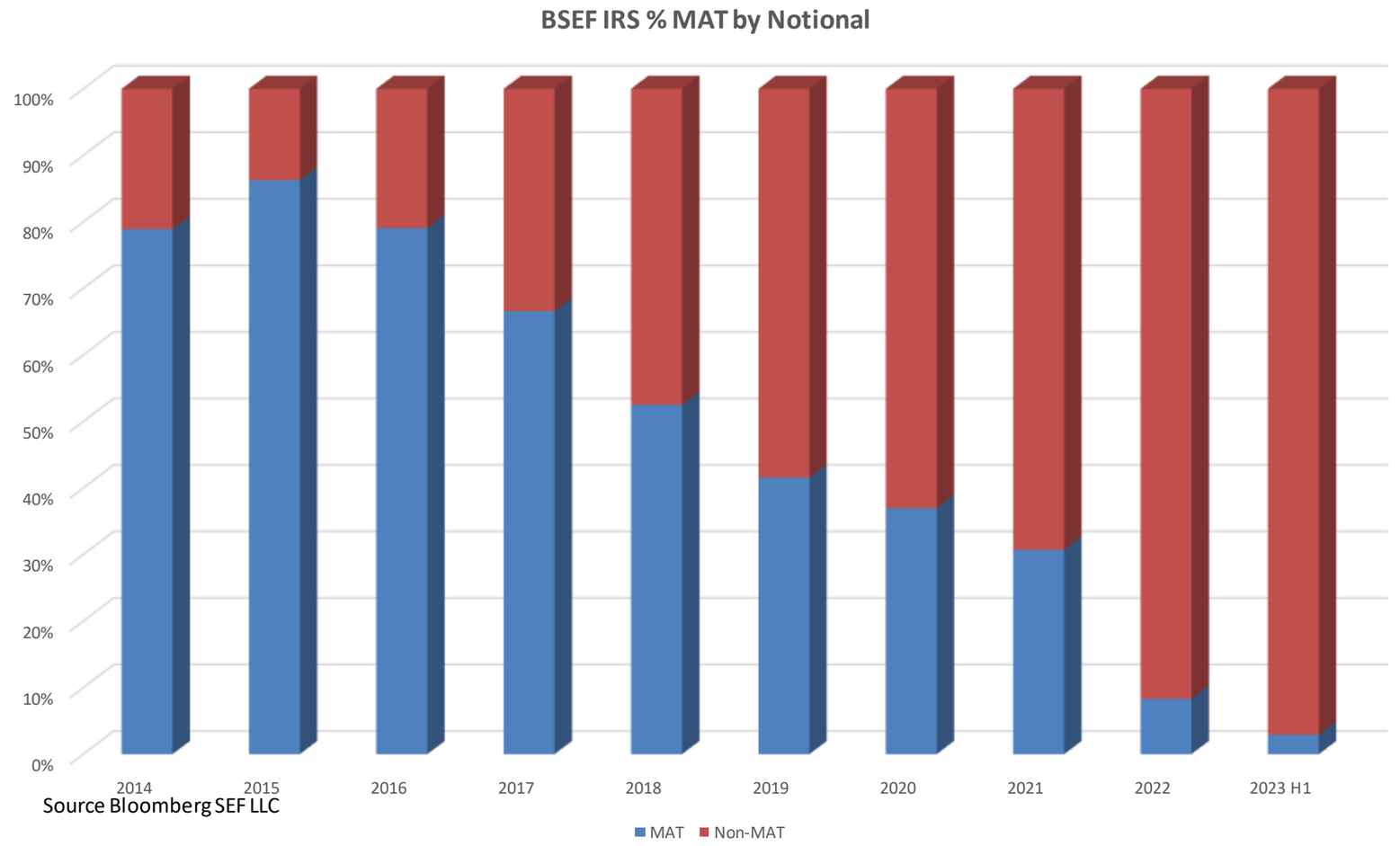
Adam Lister
Interest Rate Swaps Electronic Trading Product Manager
Bloomberg SEF LLC

CFTC Global Markets Advisory Committee
Jul 17, 2023

Benefits of SEF Electronic Trading

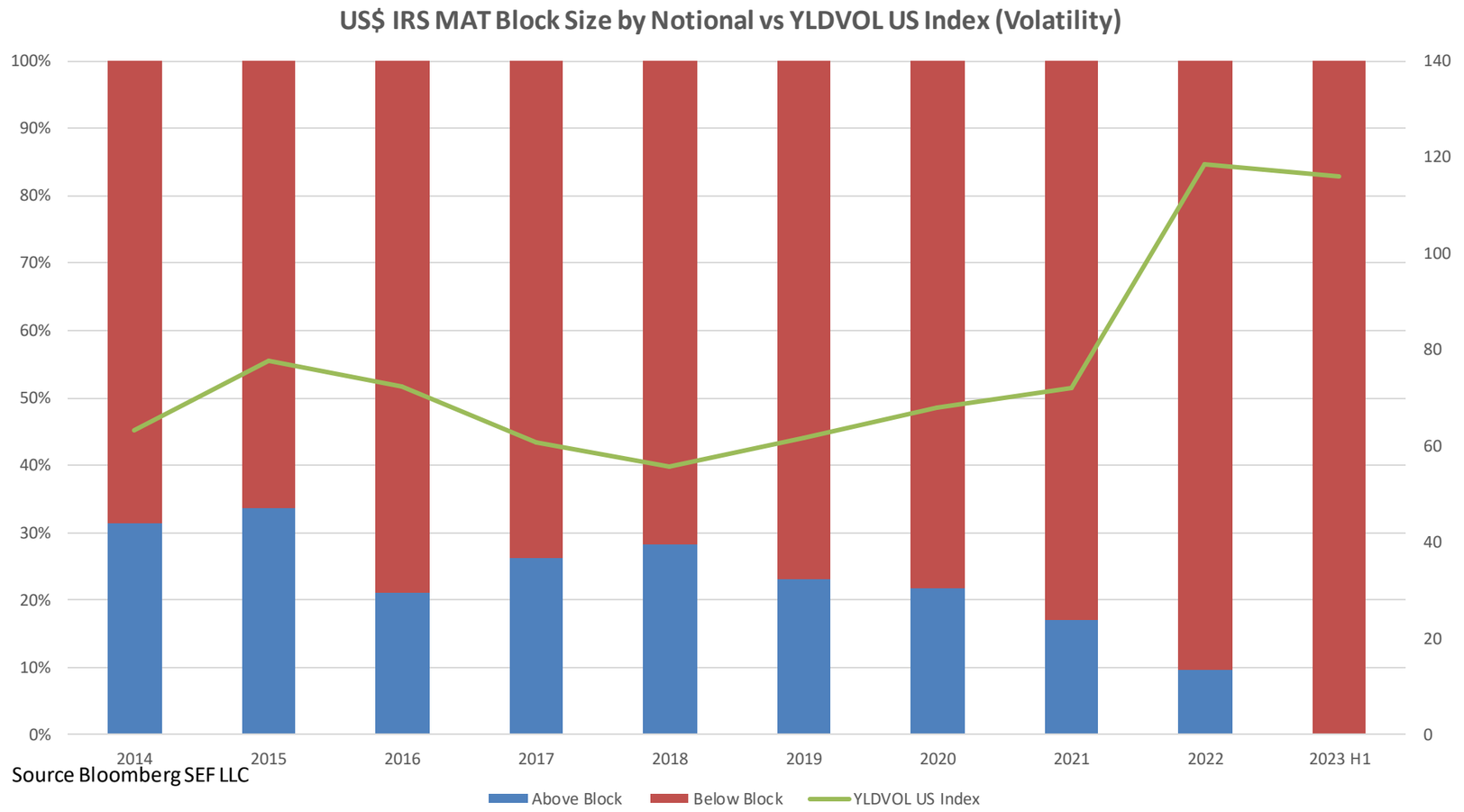
- Pre-Trade Transparency
- Standardized Pricing (Clearing Mandate)
- Impartial Access to Liquidity Sources (Pre-Trade Credit Check)
- Ease of Execution
- Hyper-efficient Post Trade Processing

Made Available to Trade IRS BSEF Activity



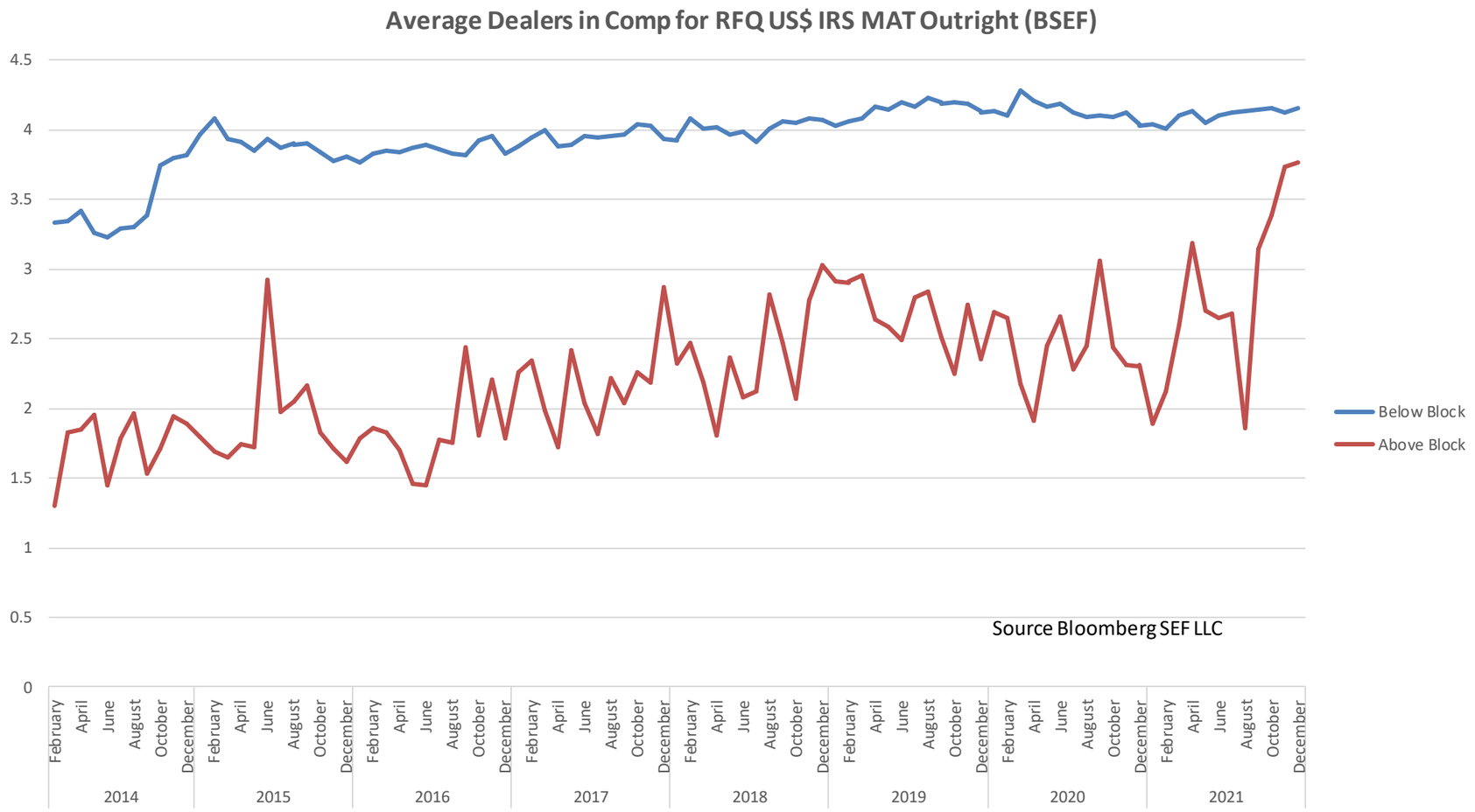
Source Bloomberg SEF LLC

US$ IRS MAT Block Size Activity

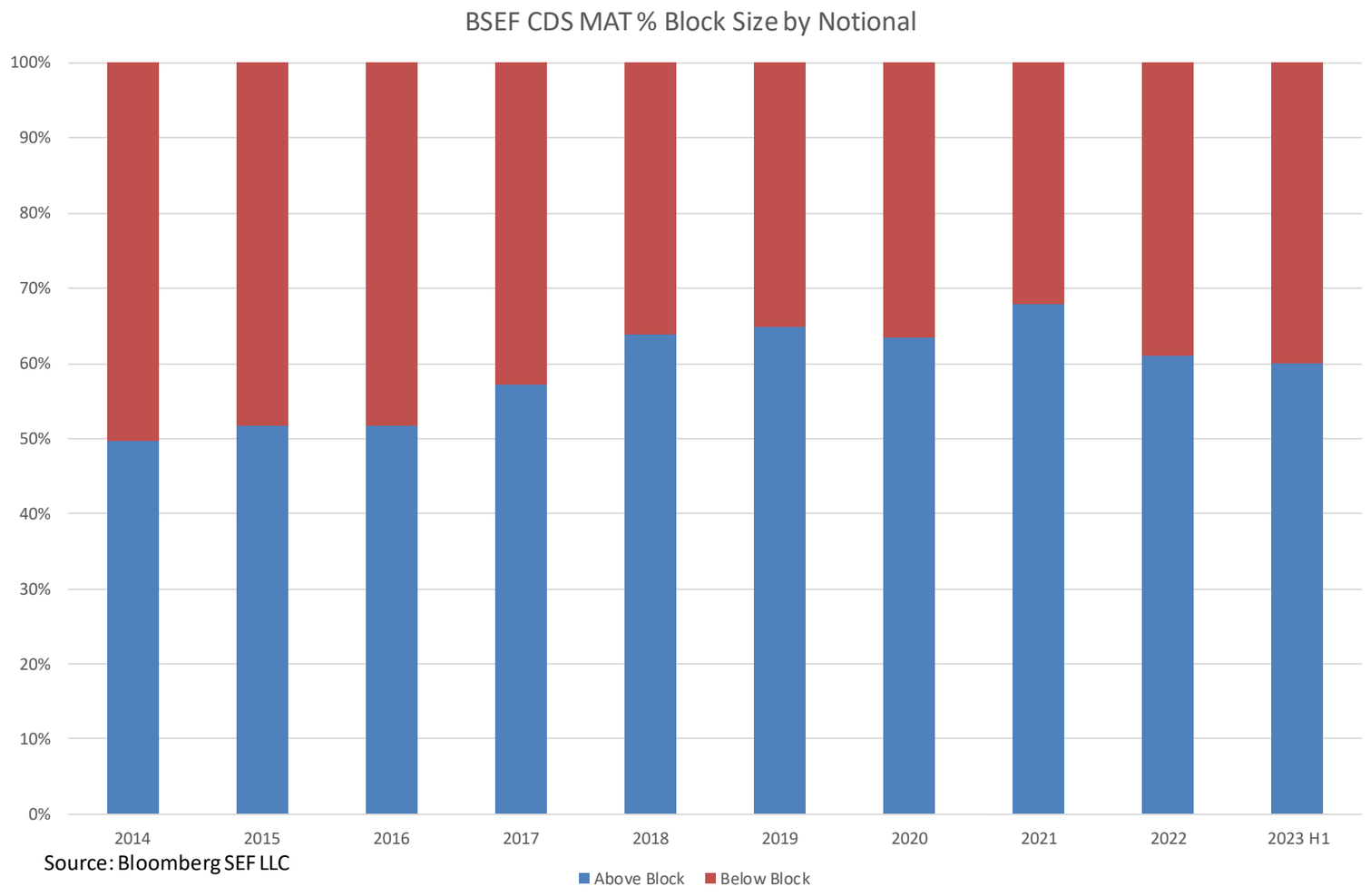


Source Bloomberg SEF LLC

Average Number of Dealers in Competition



CDS MAT Block Size Activity



Source: Bloomberg SEF LLC

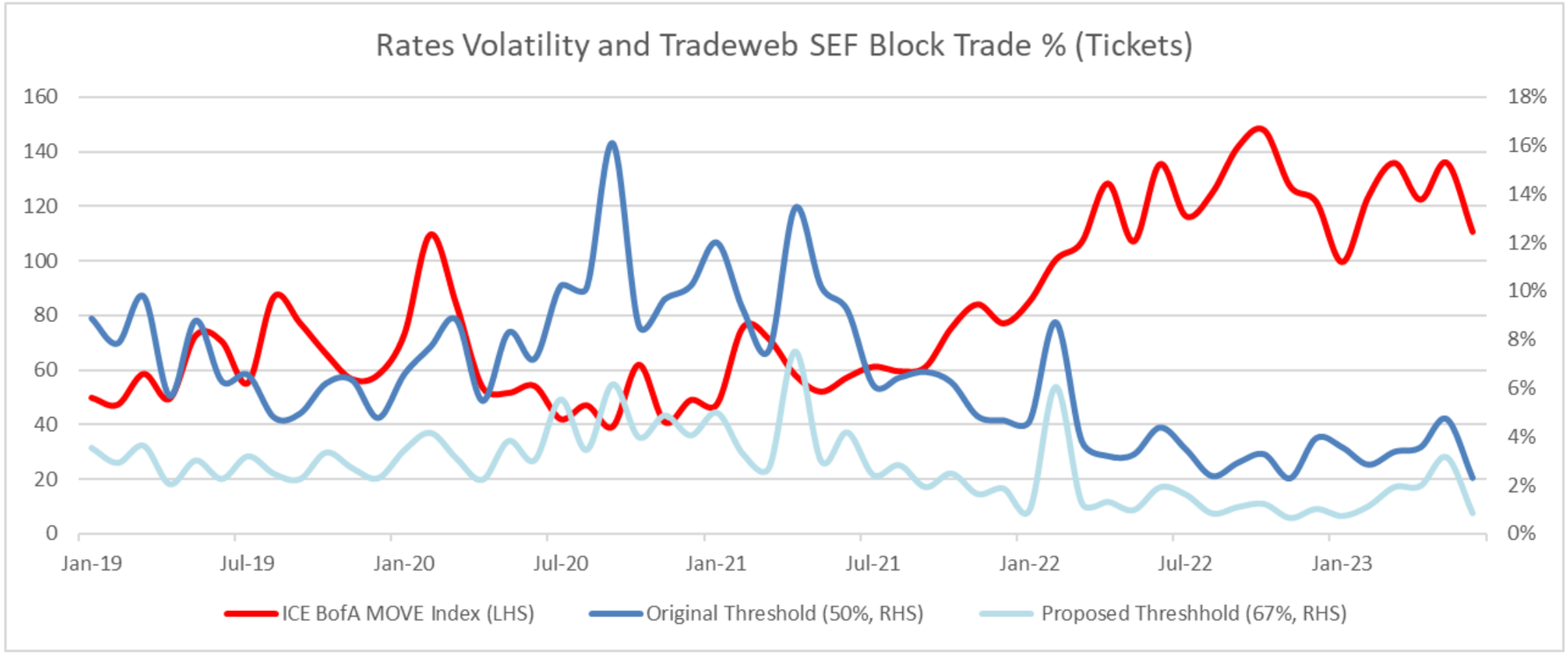
Conclusions

- Decrease in MAT IRS Activity as Percentage of Total Activity – SEFs used for more than MAT
- Downward Trend in Block Size IRS Activity as Percentage of Total Activity
- Reduced Block Size Activity in IRS but increasing number of dealers in competition
- Status of SOFR trading off-facility (block and non-block) not yet easily observable versus SEF data. Difficult to predict impact of proposed threshold increase without knowing ‘how’ they’re traded
- Data in SOFR to become more readily available by SEF from August as MAT trade execution requirement enters into force to help understand behaviors

TW SEF SWAPS
BLOCK SIZE ANALYSIS

Rates Volatility and TW SEF Block Trades

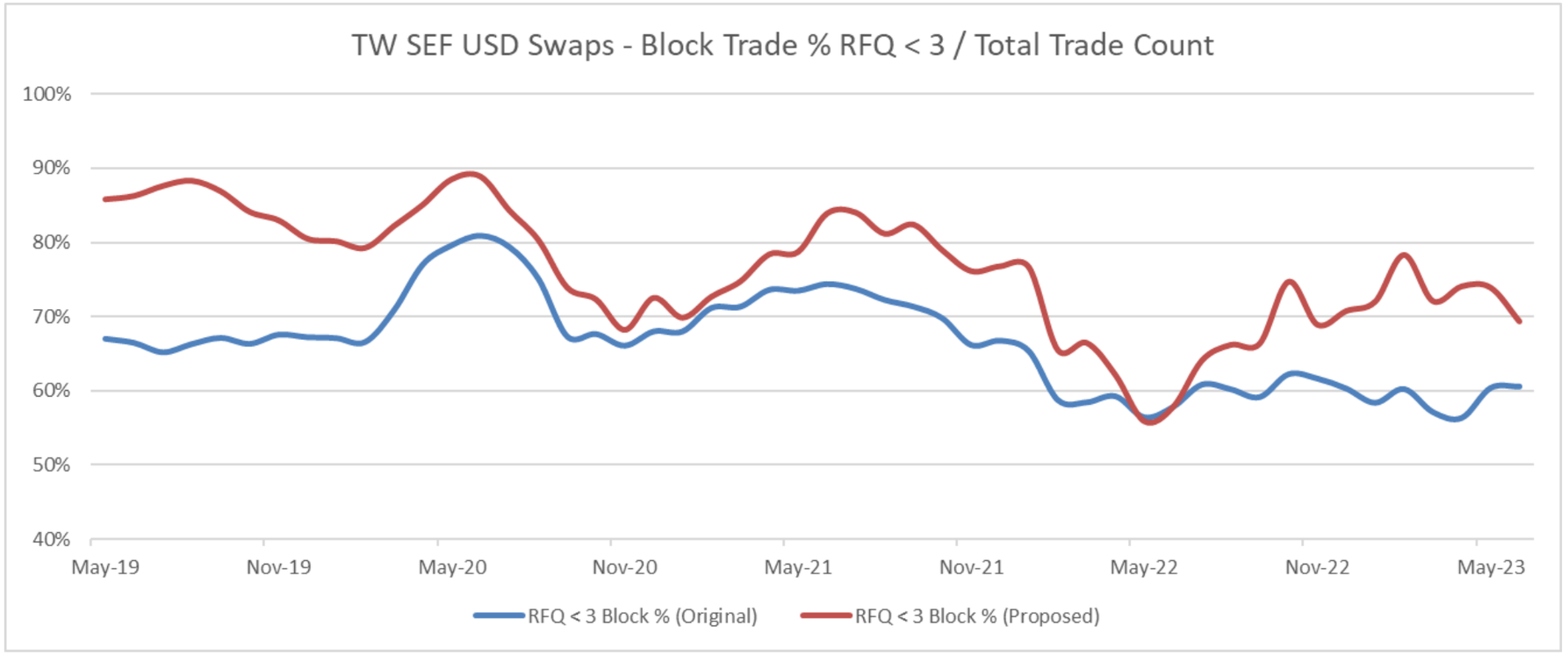
- Below chart shows the ICE BofA MOVE Index, a gauge of treasury volatility, versus the percentage of trades that were over block size on the TW SEF platform
    - Chart details both the original block thresholds that were implemented in 2012, as well as the proposed thresholds put forward
- In periods of sustained high volatility, the amount of block trades traded and processed on TW SEF is seen to decrease
    - From Jan 2019-Dec 2020, the average amount of block trades was 8% versus Jan 2022-Jun 2023 of 4%



% of tickets traded, spot effective, on-SEF, MAT designated tenors

RFQ Trading – Block USD IR Swaps TW SEF

- The percentage of trades that have been in-comp to one or two dealers has been marginally decreasing over the past four years, suggesting that market participants are more willing to put block trades in-comp with multiple dealers
    - Under the original block sizes, the proportion of block trades sent RFQ < 3 has dropped off slightly from 70% in 2019-2020 to 60% when looking at 2022-2023 YTD.
    - With the new proposed block sizes the proportion of trades sent RFQ < 3 for the same time periods would be 82% (2019-2020) and 69% (2022-2023)
- The chart below details the percentage of trades sent to one or two dealers, versus total block trades sent on platform. Thechart details both the original block sizes as well as the same analysis with the CFTC's proposed block sizes

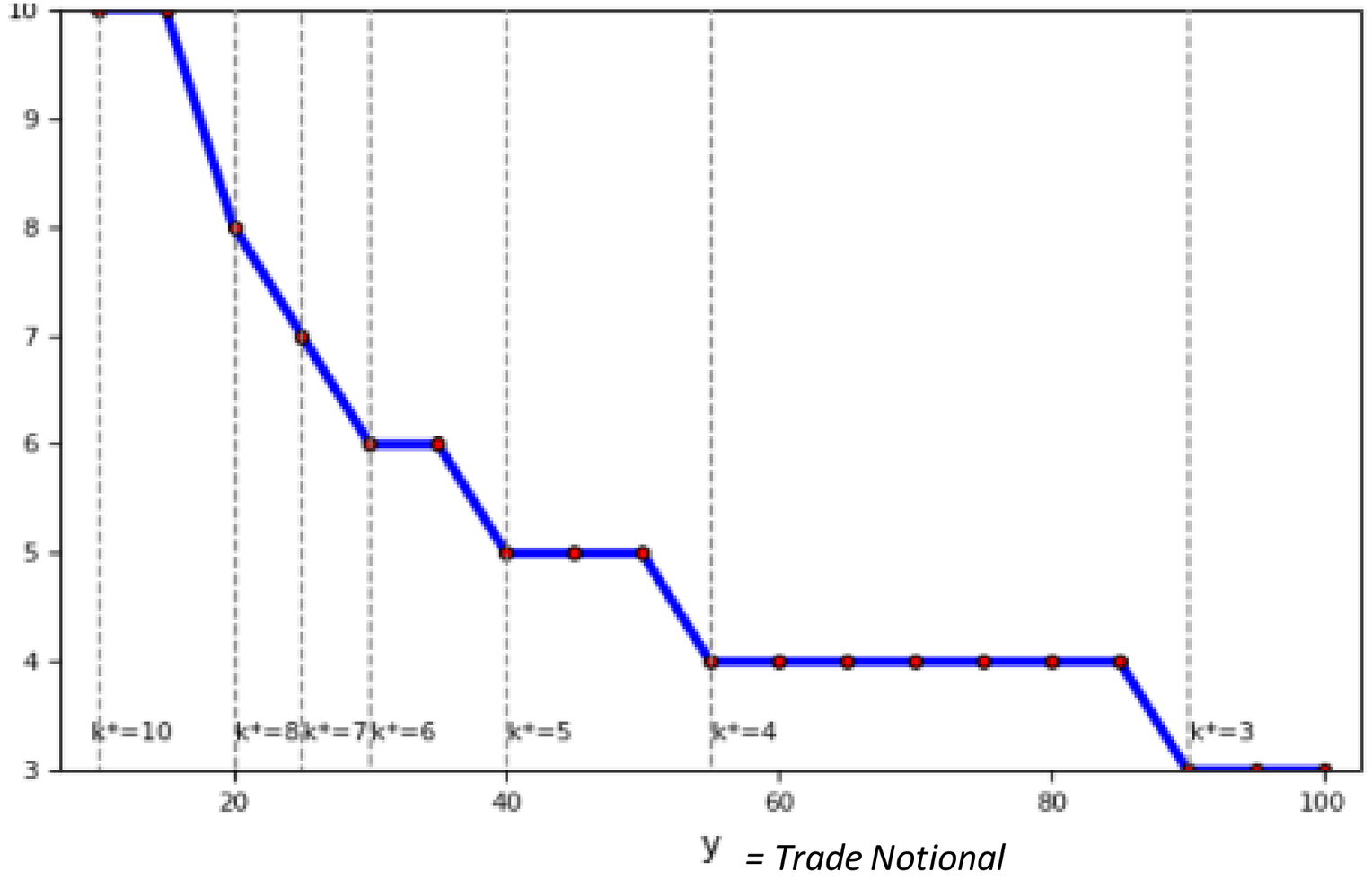


% of tickets traded, spot effective, on-SEF, MAT designated tenors, block trades, comparing ticket count of RFQ < 3 as a percentage of all block trades

Implications on Market Structure

Effect of Trade Notional Size (y) on Optimal # of Dealers (CDX)

Number of Dealers



Source: E. Onur, D. Reiffen and H. Zhu (2017). Mechanism Selection and Trade Formation on Swap Execution Facilities: Evidence from Index CDS Trades

https://www.cftc.gov/sites/default/files/idc/groups/public/@economicanalysis/documents/file/oce_mechanism_selection.pdf

Effect of Trade Notional Size (y) on Optimal # of Dealers (CDX)

Our theoretical model of SEF trading emphasizes a fundamental trade-off when the customer exposes his order to more dealers: *competition versus the winner's curse. In our model of the RFQ mechanism,* ***contacting more dealers increases both competition and the winner's curse****.*

. . .

Moreover, ***consistent with the winner's curse, dealers' spreads and customer's transaction costs in RFQs are also higher if the customer selects more dealers than expected****, although the economic magnitude of the estimate is rather small.*

Source: E. Onur, D. Reiffen and H. Zhu (2017). Mechanism Selection and Trade Formation on Swap Execution Facilities: Evidence from Index CDS Trades, *(page 39-40)*

https://www.cftc.gov/sites/default/files/idc/groups/public/@economicanalysis/documents/file/oce_mechanism_selection.pdf

MEMBER DISCUSSION

GMAC Technical Issues Subcommittee update

Allison Lurton, General Counsel and Chief Legal Officer, FIA (Co-Chair)
Tara Kruse, Global Head of Infrastructure, Data, and Non-Cleared Margin, ISDA (Co-Chair)

July 17, 2023

Improve Trade Reporting for Market Oversight

Provide recommendations to improve international standardization and amalgamation of trade reporting for market oversight

- Global guidance and alignment on:
  - Product identification using UPI
  - UTI uniqueness checks
  - Role of the Trade Repository re: UPI - processing facilitator or active enrichment
- Provide validation standards for CDE beyond field/value guidance
- Addressing ISO implementation variances between reporting regimes
- Identify standards/technology solutions that would improve trade data consistency and quality
- Analyze the legal and/or regulatory hurdles that prevent policymakers from seeing market activity on a holistic basis, as well as potential solution to such hurdles.
- Assess whether jurisdictional rewrite implementation differences could undermine the ability to amalgamate data in the future and recommend harmonization methods

Improve Efficiencies in Post-Trade Processes

Provide recommendations to improve efficiencies in post-trade processes including

- Improving collateral management to reduce cost and risk and improve liquidity management through:
  - Data standards for collateral representation
  - Development and use of standard operating procedures
  - Elimination of manual processes – e.g., use of faxes for collateral release
- Increased automation
  - Electronic/digital transaction confirmations
- Support DMIST initiatives regarding allocations and give-ups to reduce trade processing times

Global Coordination of Market Events

Provide recommendations for global coordination of market events such as closures or drills

- Educate on benefits of coordinating scheduled market and bank/liquidity market closures
- Recommendations regarding unexpected market disruptions:
  - Expectations for regulator communication
  - Industry coordination to include information sharing across playbooks and points of connectivity
  - Consider technical aspects of counterparty default scenario planning
- Standardize communication around outages
- Monitor CCP-lead global fire drill for default simulation
  - Support CFTC role in encouraging drills by emerging markets regulators
- Raise preparedness on impact of a transition to T+1 settlement
- Consider development of a playbook for future potential U.S. debt ceiling disruptions

Cross-border Infrastructure Issues

Identify other infrastructure issues to address that impact cross-border activity and access to markets

- Cloud standardization regarding wide range of topics:
  - Security
  - Data exchange standards
- Industry Benefits
- Use of money transfer/ACH for payment to brokers
- Potential or existing access issues for clearing and trading
- Any infrastructure issues identified through VM margining practices efforts at CPMI-IOSCO

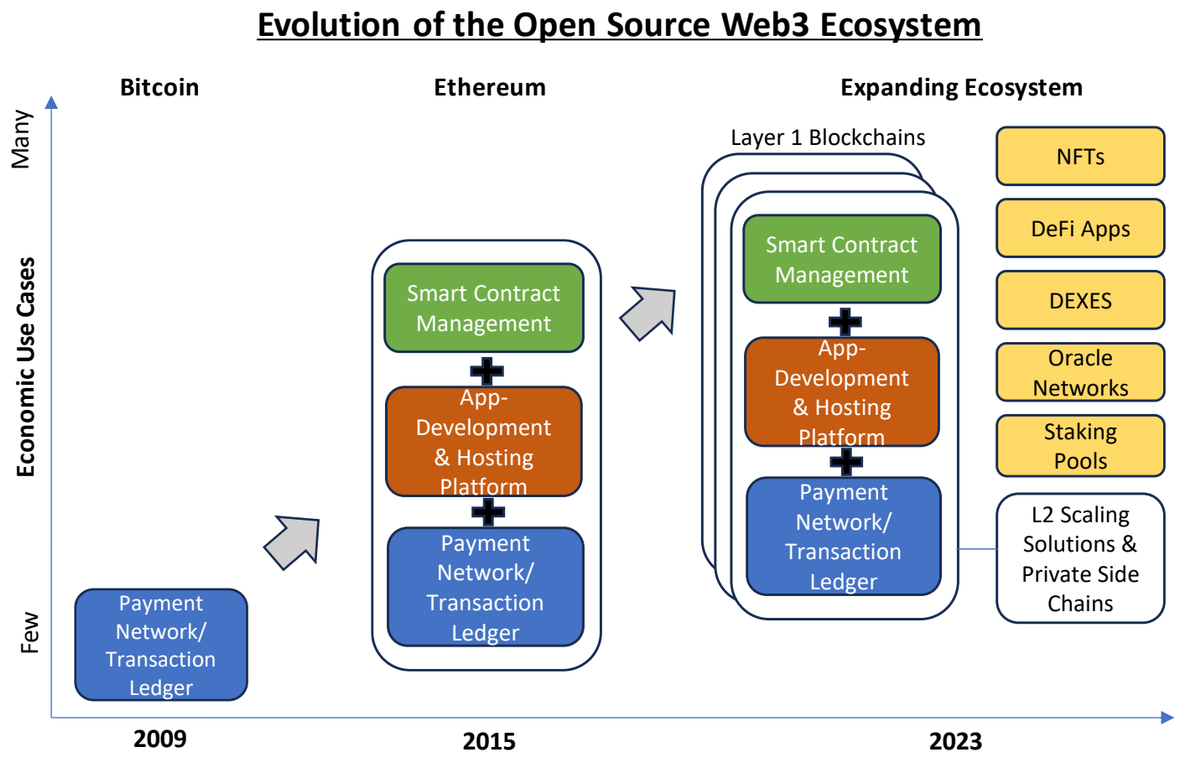
GMAC Presentation: Digital Asset Subcommittee

Overview & Objectives

Caroline Butler, Bank of New York Mellon
Sandy Kaul, Franklin Templeton

Why the Digital Asset Ecosystem Matters

Innovations in the enabling infrastructure of Web3 and digital assets continue to progress despite the onset of "crypto winter", but projects in the space often underweigh safety, soundness and controls



- Operates 24/7/365
- Globally accessible, public networks
- Permissionless access
- Near real-time payments/settlement
- Immutable, distributed record-keeping
- Services enabled by programmable currencies and tokens
- Actions enabled by self-executing smart contracts
- Assets held in pseudo-anonymous digital wallets protected by crypto keys
- New composable and interoperable approach to software & token development
- New financial participation and asset utilization models

As of June 2023, there were 21,300 active developers making code commitments monthly to open source Web3 ecosystem—a larger total than were active in the space in November 2021 when crypto prices hit an all-time high[1]

Chart Source: Franklin Templeton Industry Advisory Services; (1) Developer Report: Analysis of Open-Source Crypto Developers by Electric Capital

Cross-Over of Digital Asset/Market Innovations

Increasingly, innovations that originate in the crypto space are crossing over—recent reports suggest that the potential for tokenization of financial and real world assets may reach $4.6 trillion by 2030[1]

Tokenization of Physical & Digital Assets

- **Gold**: Tokenized gold assets surpassed $1.0 billion in combined market capitalization in April 2023[2]
- **Real Estate**: Tokenized real estate made up 40% of the digital securities market accounting for nearly $200 million as of September 2022[3]
- **Art**: Prints of 4 of Andy Warhol's most famous works are being tokenized and offered as security tokens that can be used in DeFi transactions[4]
- **Music Royalties**: The Chainsmokers[5] issued a limited number of NFTs with the release of their new album and Diplo[6] released NFTs for his new song with both offerings allowing to fans to share in the artists' future royalties; Rihanna's producer released a limited set of NFTs offering a portion of his royalties for one of her top songs[7]

Tokenization of Registered Investment Vehicles

- **40 Act Funds**: Franklin Templeton offers U.S. government money market fund (MMF) tokens[8]; Wisdom Tree has filed to offer 9 tokenized mutual funds via their Prime wallet[9]; Ondo is backing their stablecoin offering with shares in a U.S. government MMF[10]; Blackrock is tokenizing shares of their MMFs to use as collateral within JPM's Onyx platform[11]
- **Private Funds**: KKR, Apollo, Hamilton Lane, and Partners Group tokenized shares of their private funds offerings[12]
- **Securities**: Societe Generale, Deutsche Bank, and BNP Paribas each issued a tokenized bond using public blockchain[13]; the European Investment Bank (EIB) issued digital bonds using Goldman Sachs' Digital Tokenization Platform[14]
- **Structured Loans**: Santander issued a tokenized loan backed by agricultural commodities [15]

Exploration of Regulated, Digital Asset Use Cases

- **Collateral Management & Financing**: J.P. Morgan's private Onyx chain enables participants to transfer tokenized MMF shares as collateral & to perform on-chain repo[16]
- **Liquidity Pools, Trade Receivables & Structured Notes**: Monetary Authority of Singapore's Project Guardian has explored 1) trading in a permissioned liquidity pool; 2) tokenizing trade receivables; 3) issuing & servicing tokenized OTC structured notes [17]
- **Cash Payments**: The RLN network looks to facilitate the transfer of tokenized deposits between financial institutions [18]
- **Settlement**: Fnality, Canton Network, and DTCC's Project Ion are each building DLT solutions that link asset registries with digital currencies for settlement [19]

Footnotes in appendix

Challenges & Opportunities with Digital Assets/Markets

Digital assets and markets and their enabling infrastructure offer both challenges and opportunities

Challenges	Opportunities
Current rules regulate an asset, not the potential use of the asset	Tokens can be both an asset and a store of value that can be bartered for other assets or services; moreover, tokens can be programmed to confer different rights to the holder; this offers the potential for a dynamic, use-based approach to oversight
Digital wallets secured by crypto keys co-mingle tokens representing different types of underlying assets	Given the potential complexity of wallet holdings (that may be overseen by varying regulators), an opportunity may exist to solve for KYC/AML, digital identity and risk oversight at the wallet level rather than the individual or entity level
Distributed blockchains exchange tokens and payments in near-real time, 24/7/365	By running a node, regulators can monitor transactions and wallets in real-time rather than identifying issues forensically; global, round-the-clock access to digital markets may allow for dynamic application of regulatory regimes
Decentralized marketplaces and financial services offer permissionless access to participants	Access to certain investment products and services is today based on an accreditation system that links consumer sophistication to wealth levels—new digital asset models offer an opportunity to rethink and democratize this approach

Rallying together as a global industry can help harness the potential of new technology and define guidelines for a 21st century financial ecosystem; Failure to address challenges and seize opportunities may result in loss of talent, regulatory arbitrage, and fragmented or siloed solutions

High Level Principles & Plan

Guiding Principles:

- Stay true to the potential of the technology infrastructure and its ability to support new approaches to financial markets
- Base considerations on the optimal use of the new infrastructure, not on whether delivery will occur on private or public blockchains
- Think broadly about the optimal outcomes for the industry and do not limit recommendations to matters that currently sit within the CFTC mandate
- Envision opportunities independent of a participant's existing role and entity and think about how roles and entities may evolve
- Allow workstream leads the freedom to shape and define the scope of their mandates and output

Sub-Committee Workstreams:

- **Tokenization Infrastructure**: Set forth principles that might guide the use of blockchains, tokens, smart contracts, digital wallets, oracle networks and other innovations in a regulated investment ecosystem
- **Tokenized Asset Markets: Nomenclature**: Define a common taxonomy and set of definitions that can be agreed upon to help level-set discussions about elements of the new ecosystem, differentiate the various token types, and provide a common language for developing standards
- **Tokenized Asset Markets: Pre-Trade, Execution & Post-Trade Requirements**: Assess what changes might be required to existing practices and/or suggest new processes that might be enabled across the digital market lifecycle and assess how this alters, expands or redefines the roles of existing providers
- **Tokenized Asset Markets: Governance, Risk & Control Frameworks**: Develop a framework on how financial system participants might harmonize their activities, obligations, input, and suggestions across both centralized and decentralized participants, existing and emerging utilities, and potential new entrants to maintain coordinated and effective communication and guide the industry to positive outcomes
- **NFTs/Utility Tokens**: Explore how utility tokens and NFTs that can blend financial, commercial, and social terms might impact investment portfolios, particularly the ease with which new types of assets might be issued and made both investible and tradable, putting forward suggestions on how to adapt regulations to this new type of offering

Appendix

Footnotes for Page 3:

(1) Citigroup Predicts 80X Explosion in Tokenization, Forecasts Timeline for Mass Adoption of Digital Assets - The Daily Hodl
(2) Tokenized Gold Surpasses $1B in Market Cap as Physical Asset Nears All-Time Price High (coindesk.com)
(3) Dentons - The tokenization of real estate: An introduction to fractional real estate investment
(4) Andy Warhol Artworks to Be Offered as Tokenized Investments on Ethereum (coindesk.com)
(5) https://www.bloomberg.com/news/articles/2022-05-12/chainsmokers-to-release-nfts-that-offer-a-cut-of-music-royalties#:~:text=Pop%20music%20duo%20the%20Chainsmokers,other%20superfans%20getting%20early%20access
(6) Diplo Joins Nas With NFT Drop on Tokenized Royalties Platform Royal (coindesk.com)
(7) Biggest Music NFTs in February: Rihanna, Snoop Dogg, Tycho, KINGSHIP – Billboard
(8) . Franklin OnChain U.S. Government Money Fund - FOBXX (franklintempleton.com)
(9) WisdomTree Announces Nine New Blockchain-Enabled Funds are Effective with the SEC :: WisdomTree, Inc. (WT)
(10) Ondo Finance Announces New Token, OMMF, Providing Tokenized Exposure to US Money Market Funds, Targeting $100 Billion Stablecoin Market (prnewswire.com)
(11) JPMorgan Wants to Bring Trillions of Dollars of Tokenized Assets to DeFi (coindesk.com)
(12) Private-Equity Firms Push Blockchain-Based Funds Despite Crypto Collapse – WSJ
(13) State of Security Tokens 2023 - Real World Usage: Public Bonds & Institutional Adoption - Securities.io
(14) Goldman Sachs unveils digital asset platform with EIB €100m blockchain bond - Ledger Insights - blockchain for enterprise
(15) State of Security Tokens 2023 - Real World Usage: Public Bonds & Institutional Adoption - Securities.io
(16) JPMorgan Wants to Bring Trillions of Dollars of Tokenized Assets to DeFi (coindesk.com)
(17) MAS partners the industry to pilot use cases in digital assets — Marketnode — Digital Markets Infrastructure
(18) Facilitating Wholesale Digital Asset Settlement - FEDERAL RESERVE BANK of NEW YORK (newyorkfed.org)
(19) Incumbents embrace tokenization and alliances take shape | by Jonny Fry | Coinmonks | May, 2023 | Medium

PANEL III: Tokenization of Real Assets and Institutional Adoption

McKinsey & Company

Tokenization in financial services

July 2023

CFTC Global Markets Advisory Committee meeting

Key messages for today

1. Digital assets have demonstrated resilience through a period of extreme volatility, with emergence of non-crypto applications
2. Blockchain-based representation of real-world assets (i.e., tokenization) is growing as a key application of blockchain technology across traditional and new asset classes
3. Tokenization demonstrates qualities across value chain participants inherited from three tenants of the underlying technology: 24/7 operations, atomic settlement and programmability
4. A combination of challenges across technology, market readiness, economics and regulation have impacted the ability of the industry to scale
5. Accelerated adoption across certain asset classes point to a potential inflection point where these challenges could change or disappear
6. Whether or not tokenization is at an inflection point, there are a few steps companies could consider, ranging from simple preparedness to shaping the path for tokenization

Digital assets have demonstrated resilience through a period of extreme volatility

As of June 2023

880+

Digital Asset Funds globally

~$3 Bn ⬇(20%)

Daily volume processed by decentralized exchanges in 2022

64%

of F500 execs indicate investing in blockchain is important to stay ahead of competition[2]

30%+

% of FMIs with active pilots / investments in Digital Assets

~95 ⬆(20%)

Governments around the world who are actively engaging with digital assets

$25+ Bn

PE / VC investments in crypto and blockchain-related deals in 2022

1. Includes centralized and decentralized trading volume
2. Based on F500 execs familiar with cryptocurrency or blockchain – from Coinbase survey of June 2023

Source: Crypto Fund Research, DeFi Llama, The Block, Pitchbook, Coinbase

Web3 Applications and use cases are built on top of 3 technology primitives: Blockchain, Smart Contracts & Digital Assets

Illustrative **Simplified**

Web3 Applications & Use Cases

Applications & use cases built on top of the Web3 primitives. The connection of these virtual experiences is sometimes referred to as **metaverse**

Web3 Primitives

3 Digital Assets & Tokens

Assets that represent verifiable and ownable intangible digital items, incl. cryptocurrencies, NFTs, stablecoins, real world assets, etc.

2 Smart Contracts

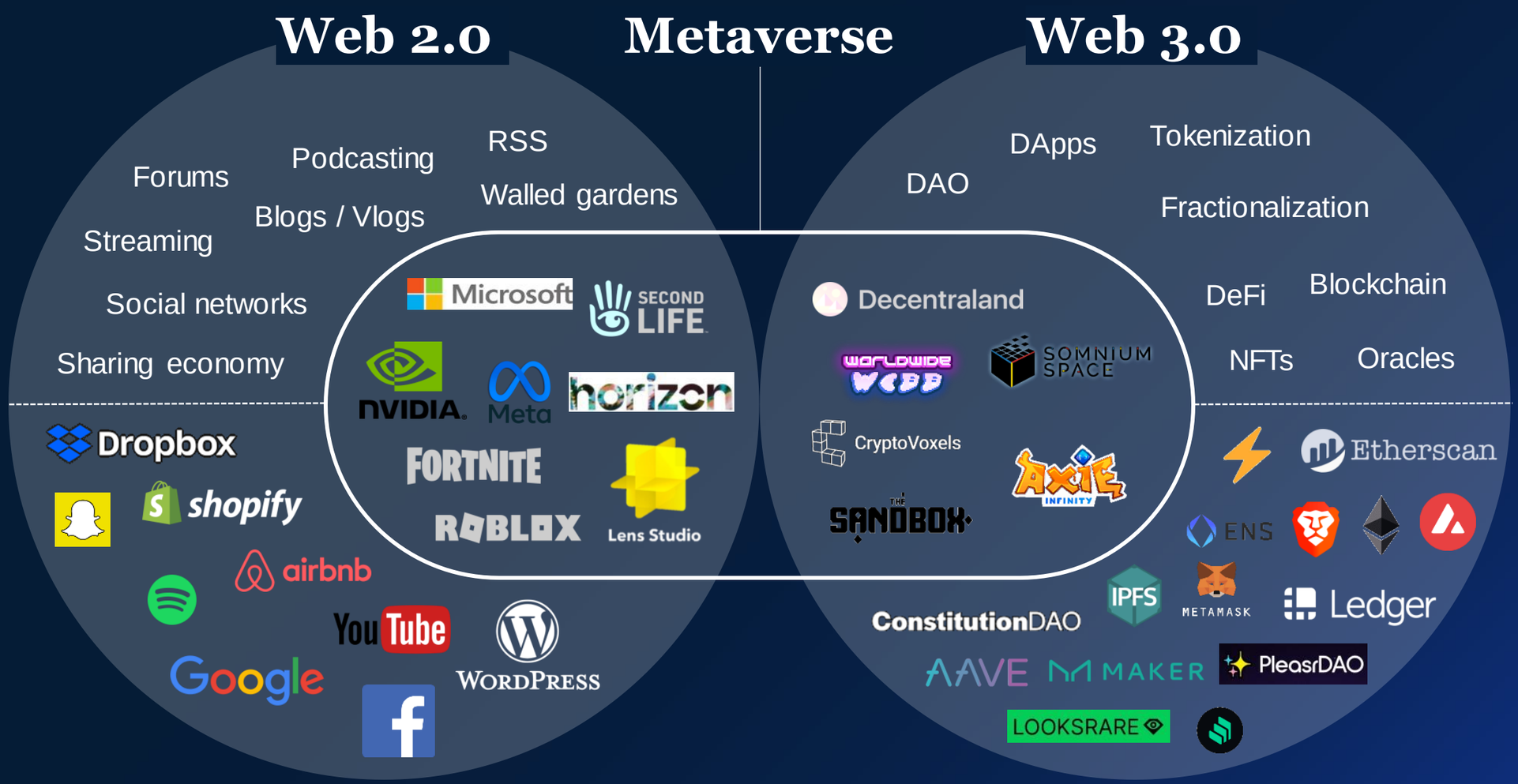
Code or programs stored on a blockchain that execute when conditions are met (e.g., terms between a buyer and a seller), governed by DAO

1 Blockchain

Digitally distributed, decentralized, public ledger that exists across a network and facilitates the recording of transactions

Source: Web3 beyond the hype, McKinsey & Company

Web 3.0 and Metaverse business models have some overlap but equally distinct archetypes



The metaverse encompasses the **transition of human experience from physical to virtual**, culminating in a **network of virtual experiences** that are real-time, persistent, interoperable, and multi-use case

- Web 2.0 models not linked to the metaverse
- Web 2.0 models aiming for metaverse-like models
- Web 3.0 models in metaverse with "immersive experiences"
- Web 3.0 models, NOT directly linked to metaverse

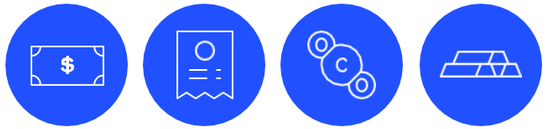
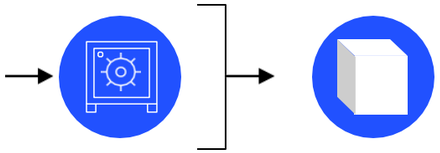
Source: Value creation in the metaverse, McKinsey & Company

Tokenization is the process of issuing a digital representation of a traditional asset on the blockchain

Illustrative

Overview of the tokenization process

x Number of parties potentially involved

1 Asset sourcing	2 Token issuance and custody	3 Token distribution and trading	4 Asset servicing & data reconciliation
	# DJYM 6744 BYXZ 		
The asset owner or issuer identifies the asset that would benefit from tokenization If the asset exists in the real world then the entity also custodies the asset in the real-world	**The assets are immobilized and represented on the blockchain as "tokens" with functionality embedded in them** (i.e., code) executing pre-determined rules **Tokens are stored by a digital assets custodian**	**Tokens are distributed to end investors** through traditional or novel channels (e.g., digital asset exchanges). **Some tokens can be traded on secondary marketplaces** for additional liquidity and price discovery	**Digital assets are serviced** (e.g., regulatory reporting on asset, NAV calculation, tax treatments), the nature of may depend by asset type (e.g., carbon credit token servicing will require different auditing than fund tokens)
Across assets (e.g., Bonds, MMFs, Equities, Carbon credits)			
Across investor types (e.g., retail, institutional, corporate)			
1+	4+	3+	1+

Note: Parties involve can include asset owner, issuer, traditional custody, tokenization provider, transfer agent, digital custody, broker-dealer, ATS, distributor, data provider, end investor

Source: McKinsey research

Tokenization could create unique outcomes for participants across the financial services value chain

Potential near term outcomes

Potential longer term outcomes

Revenue creation

Cost efficiencies

Not exhaustive

Asset owners

Service providers

Investors

Improved capital efficiency

Lower cost of capital and free up capital in transit

Operational cost savings

Manual and error-prone tasks in product structuring and asset servicing that can be embedded into token smart contract (and over time across a portfolio)

Enhanced compliance, auditability and transparency

Rules and credentials embedded into token and smart contract (e.g., investor qualification, carbon credit verification)

Expanding access

Access to new pools of capital with lower minimum investment required

Expanding access

Access to new secondary markets & greater liquidity

Cheaper and more nimble infrastructure

Open-source technology driven by the thousands of web3 developers and billions of investment dollars

Source: McKinsey research

Challenges related to technology, economics, and regulation have limited tokenization's potential to scale

Nascent infrastructure

Lack of institutional-grade web3 services (e.g., custody, wallets)

Low blockchain throughput to support institutional volumes

Market immaturity

No licensed tokenization provider with integrated and institutional-grade services

Absence of at scale token distribution

Limited short term business case

Significant upfront investment required to scale

Parallel processes (i.e., digital twin) needed in near-term

Lack of regulatory clarity

Regulatory framework for tokenization has differed substantially by region

Industry alignment

Incumbents have yet to signal the concerted will to build out tokenization capabilities or move markets on-chain

Source: McKinsey research

Growing institutional interest, spurred on by a few trends, could indicate a possible acceleration of adoption

- **Significant advances in cash tokenization,** particularly in private, deposit-based bank payment networks (e.g., >$120B in tokenized cash in circulation)
- **Better short-term business case fundamentals**, particularly for capital efficiency (i.e., faster settlement and shorter liquidity windows), due to a higher interest rate environment (e.g., for real-time repo settlement, fluid collateral management)
- **Emerging regulatory framework outside the US**, particularly in the EU, Singapore and UK (e.g., MiCA, MAS stablecoin guidelines)
- **Increasing market readiness and infrastructure maturity,** particularly in digital asset capabilities of financial services incumbents (e.g., large banks, asset managers, and digital asset natives)

Source: McKinsey research

Whether or not tokenization is at an inflection point, there are a few steps companies could consider

Re-examine underlying business case

Re-assess costs and benefits across relevant use cases or asset classes:

- **Macro environment:** How higher interest rates impact the tokenization value prop for your business
- **Customer demand:** Which clients benefit from tokenization for specific use cases
- **Investment and talent**: What investment and talent is required to build the tokenization solution in the short and long-term

Build out tech and risk capabilities

Learn about the technology and associated risks, such as:

- **Token design:** What restrictions to place on the token, how to enforce them
- **Wallet management:** How to manage permissions across users
- **Risk Management**: How to manage the risk of web3 related assets and technologies

Form ecosystem relationships

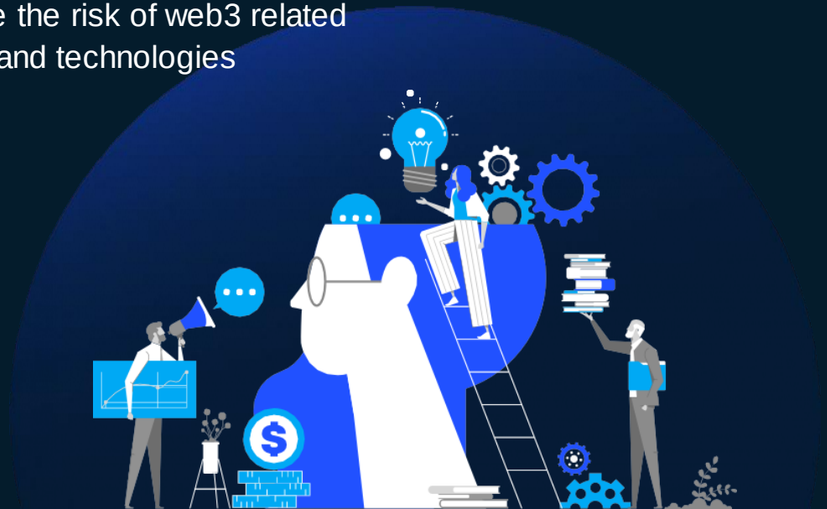
Understand the digital asset ecosystem and the required parties

- **Partnerships**: what existing solutions & partners could help accelerate your build and go to market
- **Innovators:** What are digital asset natives doing that may be relevant to your business

Inform standard setting

Provide input to regulators defining emerging standards, including:

- **Governance, Risk and Control Frameworks:** Controls environment and expectations to embedding into existing frameworks
- **Digital asset standards:** When to use digital native records, best practices for token design
- **Data standards:** What data is kept on-chain vs. off-chain



Source: McKinsey research

BCG BOSTON CONSULTING GROUP

CLIFFORD CHANCE

CRAVATH

GFMA

Impact of DLT in Global Capital Markets

CFTC Global Markets Advisory Committee Meeting 17 July 2023

gfma GLOBAL FINANCIAL MARKETS ASSOCIATION

afme/ asifma sifma

Opportunity: Tokenized securities in capital markets could deliver game changing efficiency and innovation

'Tokenization of securities' means…

…the digital representation of **traditional financial instruments on a distributed ledger,** reflecting an ownership right of the underlying asset

Tokenized securities

'Digital 'twin'

Existing *security*

'Tokenized' *onto DLT*

Security tokens

'Native' issue

No existing *security*

'Natively issued' *onto DLT*

Transformative efficiency & innovation

~$2B[1]

Est. Global back-office Opex saves

'Golden-source' data **reduces post-trade reconciliations**

~$20B[2]

Global clearing & settlement Opex saves

Smart contracts **automate clearing & settlement**

~$19T[3]

Addressable global collateral in 2022

Faster settlement frees **trapped collateral for redeployment**

>$16T[4]

Value of global tokenized illiquid assets by 2031

Tokenization forms **new liquidity pools for illiquid asset classes**

Note: Benefits shown are hypothetical, assuming DLT is adopted at scale in capital markets; 1. Goldman Sachs, extrapolated to global benefit case; 2. Santander InnoVentures; 3. BCG analysis (original); 4. BCG x ADDX paper; commodities and FX are out of scope for this paper.

End game: DLT-based capital markets is emerging, but **critical barriers must be overcome**

DLT-based markets is emerging in phases[1]

Phase	Characterized by…
1 | Experimentation	• *Limited demand for DLT securities* • *Focus on primary market issuance* • *Legal & regulatory ambiguity*
2 | Commercialization	• *Growing demand for DLT securities* • *Growing liquidity in secondary markets* • *Market-level legal & regulatory clarity*
3 | Scaling	• *DLT-securities demand overtakes non-DLT* • *Globally harmonized legal & regulation* • *Interoperability across DLT-platforms*

Critical barriers to be overcome

- *Harmonized **global legal and regulatory frameworks***
- ***Interoperability** across DLT and non-DLT systems*
- ***Deeper liquidity** across primary and secondary markets*
- ***Resolved technical constraints** around scale and cybersecurity*
- *Launched **DLT-based payment instruments** (CBDC, deposits)*

1. Phases will not always occur in a linear order and often occur in parallel; asset classes and transaction types (e.g., intra-day repos) are already reaching institutional scale

Deaveraging adoption: Varying incremental opportunity and market readiness will drive adoption

Interplay of opportunity size and market readiness…

Incremental opportunity

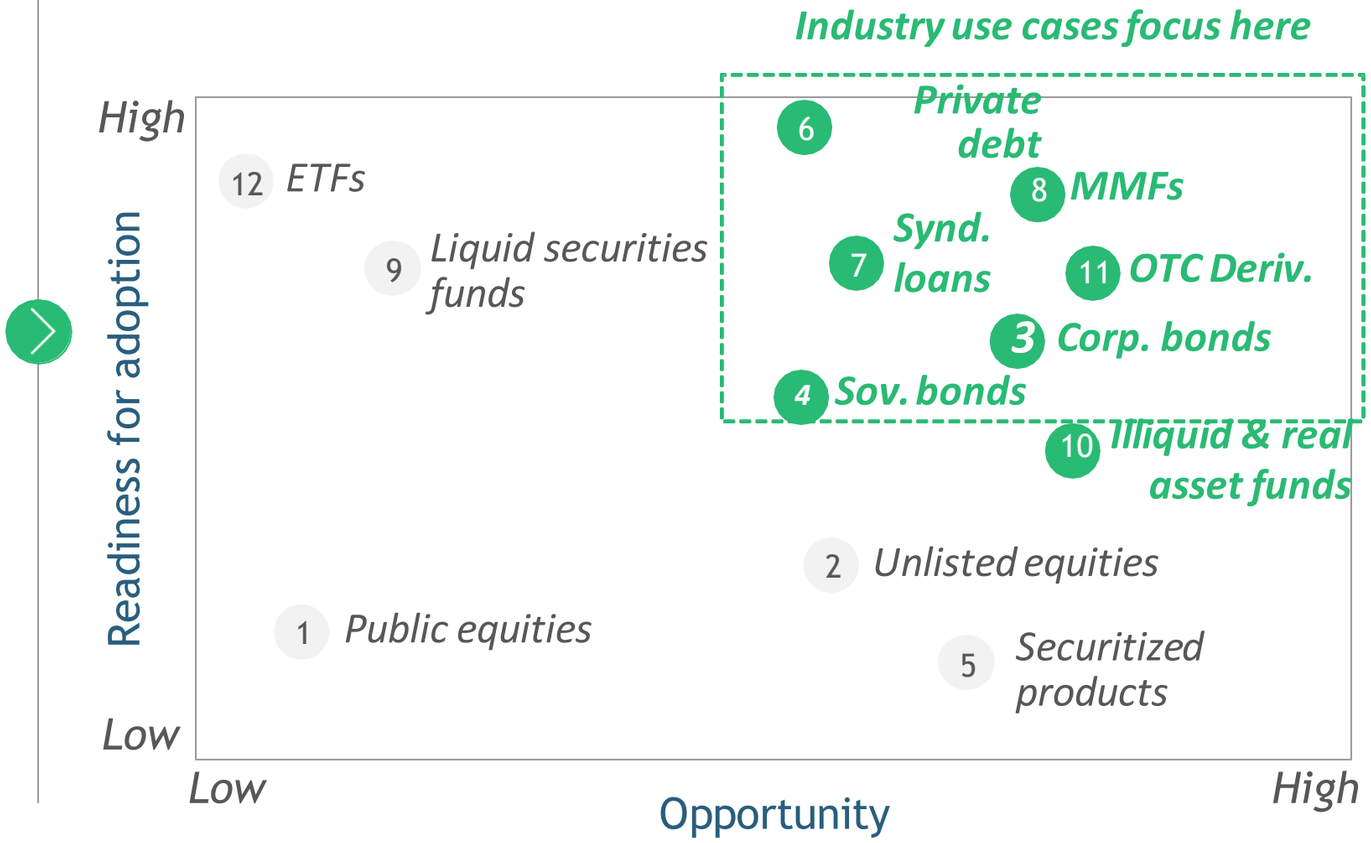
Efficiencies | *Innovation* | *Benefit*

Equity | *Bond* | *Derivatives*

Market Structure | *Maturity of digital* | *Ability to Pilot* | *Regulat. Support*

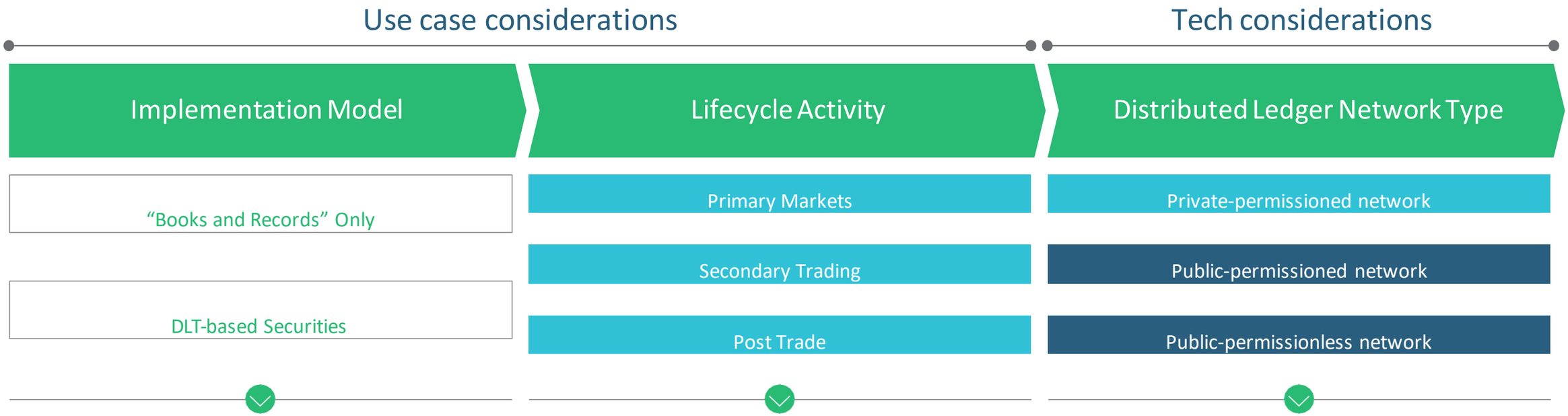
Market Readiness for adoption

…suggests illiquid assets, bonds and debt well-placed for early adoption



Source: Adapted from JP Morgan and BCG, "The Future of Distributed Ledger Technology in Capital Markets"; GFMA member inputs; BCG analysis

DLT Networks: Use case considerations drive decisions around network type



"Books and Records" use case typically internal and permissioned

“Books and records" use case represents dematerialized securities on centrally-administered electronic databases, does not issue securities with use of DLT

Relevant frameworks remain applicable to lifecycle specific risks

Example: Use Of Basel MAR50 framework to perform CVA RWA adjustments for Group 1A assets (as for or non-tokenized assets)

Private permissioned networks are already compliant with regulations

Public network risk considerations can be managed: cyberattacks, KYC/AML compliance, Group 2 asset exposure, market conduct, and settlement finality

Existing risk frameworks largely applicable

Existing risk frameworks need DLT-specific supplementation

Impact assessment: Three dimensions assessed cross the securities lifecycle

Dimensions assessed	Primary Markets	Secondary Trading	Clearing & Settlement	Custody	Asset Servicing
Overall DLT Impact	Medium	Medium	High	High	High
Workflow Efficiency	Medium	Low	High	High	High
Financial Opportunity & Value Creation	High	High	High	High	High
Incremental Risk Mitigation	Low	Low	High	Medium	Medium

Source: BCG analysis

Five critical takeaways

Harmonization of global regulatory and legal frameworks

- Adaptations to existing legal and regulatory structures is fundamental in promoting transparent, disciplined, risk-focused, and effective market infrastructure.
- Different jurisdictions are facing individual and global challenges and as such, legislation is at different levels of maturity
- Demonstrates need for harmonized and risk-consistent policy positions across different jurisdictions to benefit both the market and governments & regulators

Enablement of interoperability with existing market infrastructure

- Interoperability is an important enabler to network effects, providing the basis for real-world, diverse use cases
- Build on existing initiatives and broaden alignment on a framework of standards to guide market-level compatibility. This entails initiatives that cover public networks with appropriate risk mitigation, as well as private-permissioned networks.
- Key areas include technology architecture design, smart contract standards and governance, linkages with traditional infrastructure – alongside risk identification, mitigation, and management – and specific roles and responsibilities.

Development of viable Primary & Secondary Markets

- Cross-industry initiatives to focus the pooling of liquidity in a few, high potential asset classes (e.g., fixed income, OTC derivatives) across the security lifecycle could help increase the formation of viable markets for DLT-based securities.
- Market participants could focus on assets where the inefficiencies are well-documented and the cost of conversion is less onerous

Five critical takeaways

Advancement of open technical challenges posed by DLT

- DLT is not yet a fully formed infrastructure solution, with demanding requirements around scalability, cybersecurity, and regulatory compliance.
- Industry practitioners and developer communities collaborating on research and development of DLT-specific solutions that address these issues.
- Cross-industry participation can maximize the strength of participating talent pools, distributes costs and accelerates the timeline to key outcomes

DLT-based Payment Instruments to achieve true DvP settlement

- DLT-based payments are a critical enabler for the settlement of DLT-based Securities; integration with legacy payment tools significantly reduces the scope of benefits, such as programmability.
- DLT-based commercial bank deposits represent deposit account balances on a distributed ledger to support settlement, which can support more efficient and effective payment tools.

Thank You

Reference Papers:

GFMA with BCG, Clifford Chance, and Cravath, Swaine & Moore LLP report on the impact of distributed ledger technology (DLT) in global capital markets.

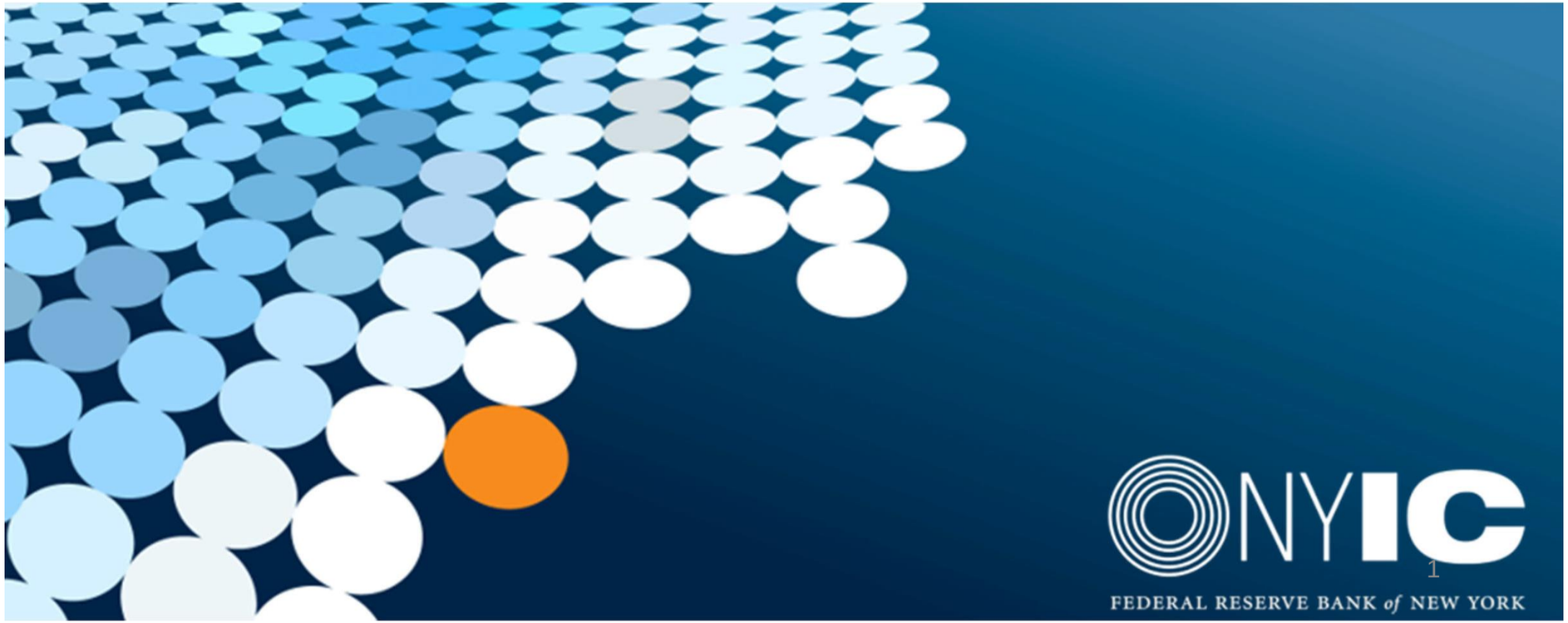
Full report, "The Impact of Distributed Ledger Technology in Global Capital Markets"

Executive Summary

Annex I: GFMA Proposed Approach for the Classification and Understanding of Digital Assets

Regulated Liability Network (RLN) overview - GMAC

July 2023



Disclaimer

The role of the New York Innovation Center (NYIC) in the RLN proof-of-concept (PoC) was limited to experimentation with simulated tokenized central bank deposits (referred to as a wCBDC) as a settlement asset as described in the reports produced by the RLN Working Group.

The NYIC's participation in the PoC is not intended to advance any specific policy outcome, nor to signal that the Federal Reserve will make any imminent decisions about the appropriateness or design of tokenized central bank deposits or wCBDC.

The NYIC does not take a view on anything in those reports that is beyond the scope of its limited role, including regarding any potential regulatory or supervisory frameworks for the RLN FMI. The NYIC's participation in the proof-of-concept is not intended to advance any specific policy outcome, nor to signal that the Federal Reserve will make any imminent decisions about the appropriateness or design of tokenized central bank deposits or wCBDC.

https://www.newyorkfed.org/aboutthefed/nyic

Executive Summary

- On July 6, 2023, a working group of participants in the wholesale payments market published three reports conveying the findings of an experiment to develop a proof- of-concept for a regulated liability network.
- The regulated liability network, or RLN, concept envisions a theoretical market infrastructure to exchange and settle tokenized forms of money, such as central bank and commercial bank money.
- Such infrastructure could potentially join the benefits of emerging technologies, such as tokenization, with the safety and stability of existing systems.
- The experiment explored two wholesale payment use cases, domestic payments and cross-border USD payments, across three parallel workstreams:
  - Business Applicability
  - Technical Feasibility
  - Applicability of Legal Frameworks
- Ultimately, the experiment demonstrated potential benefits across 6 key value propositions: 1) 24/7 Availability, 2) Atomic Settlement, 3) Operational Efficiency, 4) Interoperability, 5) Resilience, and 6) Programmability of Assets

Proof-of-Concept Overview

The RLN concept envisions a theoretical market infrastructure to efficiently and safely exchange and settle tokenized liabilities.

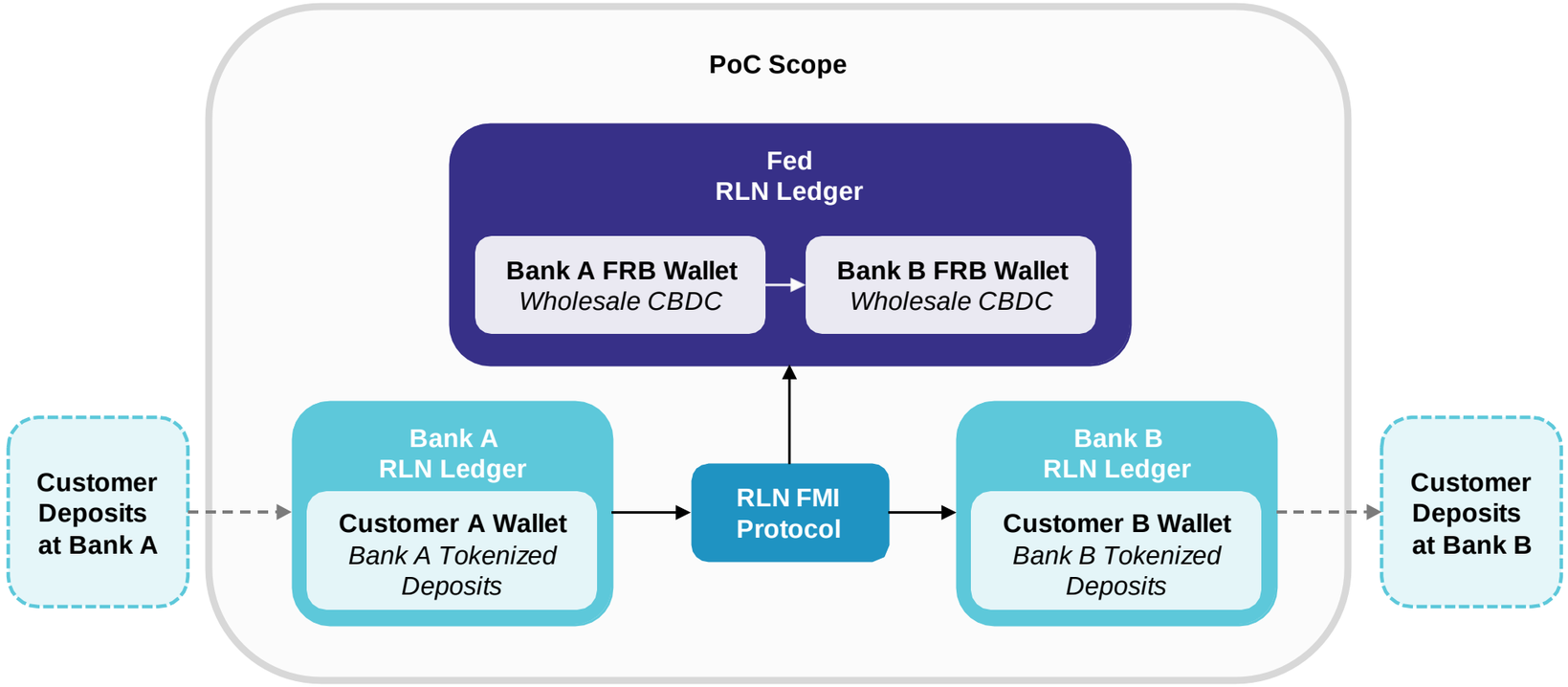
- **Working group** consisted of commercial banks, payment service providers, and the New York Innovation Center.

- **Simulated asset types** were limited to tokenized commercial bank and central bank money.
- **Two use cases** examined both a domestic and cross-border payment transactions.
- **Currency denomination** was limited to USD (e.g., no foreign exchange component)

ONYIC
FEDERAL RESERVE BANK of NEW YORK

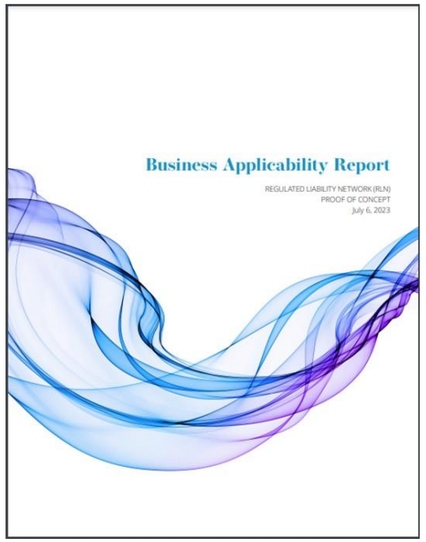
Solution Concept

The base use case was a domestic payment between two commercial banks, settled in central bank money.



Reports Published on 7/6/23

Business Applicability Report



- Includes Executive Summary covering all three reports
- Co-authored jointly by working group participants

Technical Report

- Co-authored by working group with support from technology vendors (SETL and Digital Asset)

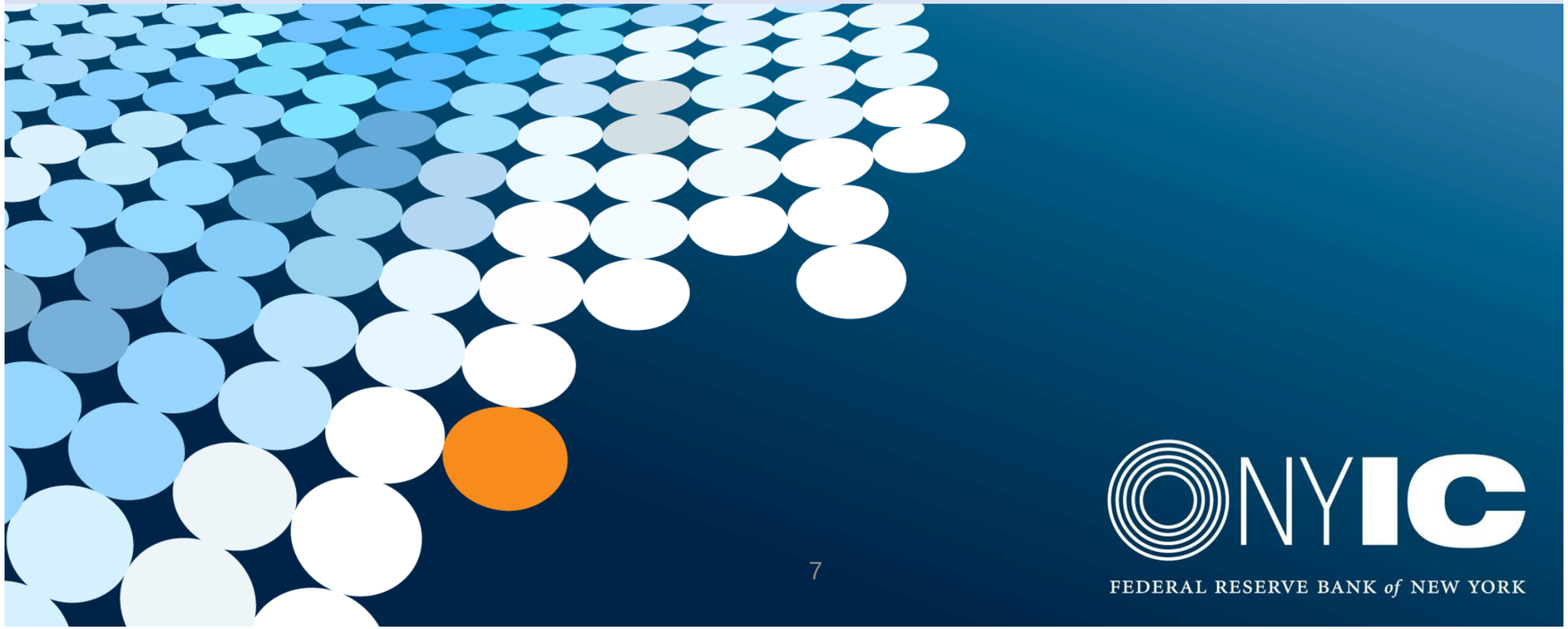
Legal Report

- Authored by legal firm (Sullivan & Cromwell) with support from working group participant legal delegates

https://www.newyorkfed.org/aboutthefed/nyic

ONYIC
FEDERAL RESERVE BANK of NEW YORK

Thank you



NYIC
FEDERAL RESERVE BANK of NEW YORK

HSBC Orion

HSBC

HSBC Orion – EIB 'Mars' Issuance

The EIB has issued the first ever GBP-denominated digital bond using blockchain on HSBC Orion

The European Investment Bank (EIB) appointed BNP Paribas, HSBC and RBC Capital Markets as joint lead managers for a short dated inaugural GBP digital bond issuance.

This is EIB's third digital bond issuance after its inaugural EUR 100 million 2-year zero coupon notes executed in 2021 and its EUR 100 million 2-year 2.507% notes executed in November 2022.

" We are excited to participate in this digital bond issuance, an important innovation for the development of digital asset solutions. This is another important step on our journey to understand the transformative potential of distributed ledger technology and how it may support the asset management industry to deliver better outcomes for our clients. **"**

EIB press release dated 31 January 2023

Size: GBP 50 million
Settlement: 02 February 2023 (T+2)
Maturity: 03 February 2025

- **Two blockchain technologies (public and private)**
- **Plain vanilla, short-dated tenor, GBP-denominated**
- **Floating rate coupons**
- **Joint Lead Managers: BNP Paribas, HSBC, RBC Capital Markets**
- **The digital bond is not held in a Central Securities Depository, and instead recorded on a blockchain operated via HSBC's Orion platform**
- **Secondary market supported, via OTC and agreed dealers**

HSBC Orion – Platform overview and getting involved with the EIB issuance

What is the platform?

1. HSBC's strategic platform for asset tokenisation.
2. A secure, private, permissioned blockchain acting as the legal registry, and a public blockchain acting as a memorandum of holdings.
3. Platform located in Luxembourg.
4. The European Investment Bank (EIB) issued its first ever GBP 50 million digital bond on HSBC Orion.

   https://grp.hsbc/6045MQ1fV

   https://www.eib.org/en/press/all/2023-030-eib-issues-its-first-ever-digital-bond-in-british-pounds

How can investors get involved?

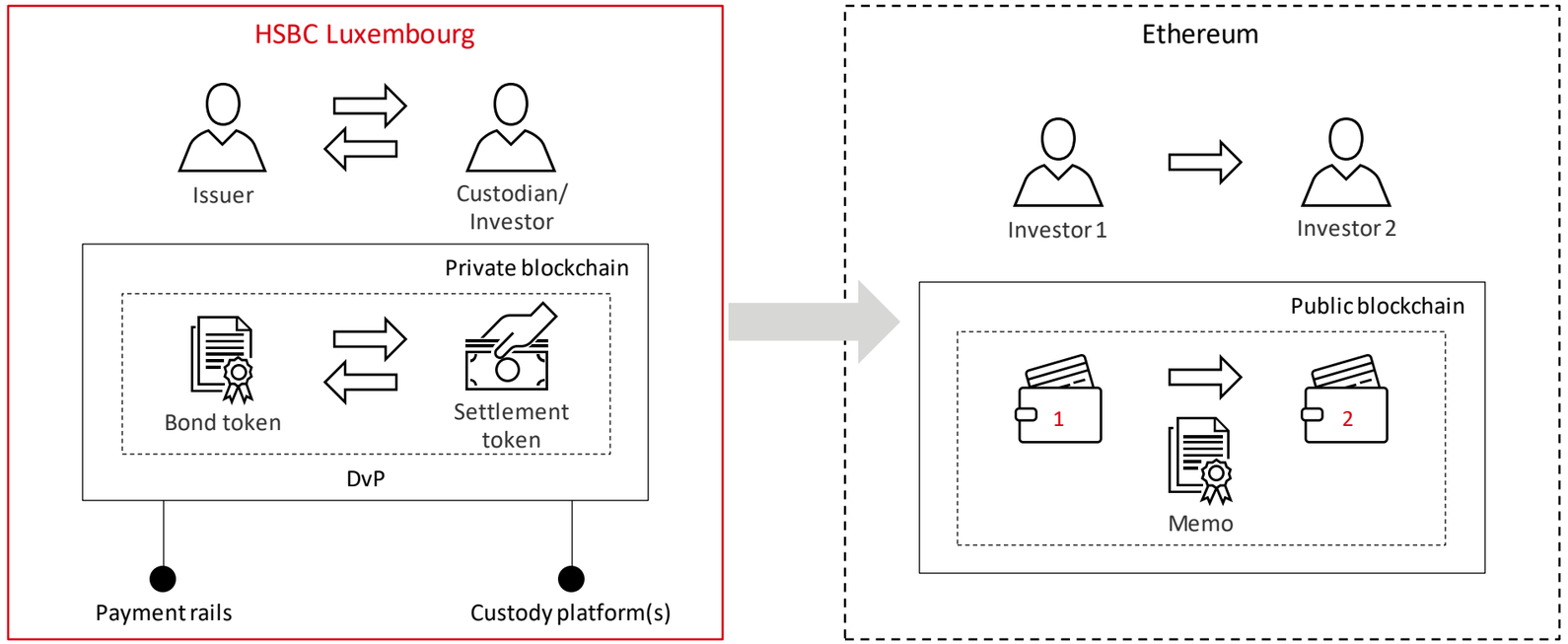
1. Transact the bond post-issuance via existing OTC approaches;
2. Work with platform custodian for the bond. Current platform custodians are HSBC, RBC and BNPP (more to be added soon).
3. No need to create any digital wallets, or use stablecoins or cryptocurrencies.
   - Money movements for the bond and coupon will be in fiat sterling, and use a 'settlement token' approach.

Why should investors get involved?

1. Prepare your firm for the growing number of digital bond issuances.
   - Get involved in holding and selling a digital bond.
2. Review and understand the legal structure and term sheet supporting a digital bond.
3. Minimal technology and operational change is required to access the bond.
   - A tokenised bond is similar to an analogue bond, but not held in a traditional CSD.
   - The bond has an ISIN - LU2557886475

HSBC Orion – Platform Architecture

A secure HSBC environment . . . . . Connected to a public blockchain



- Fiat cash is transferred using a settlement token connected to payment rails
- Manages issuance, coupon payment, trading and redemption
- The private blockchain is the legal register
- Access to the environment is controlled by HSBC

- Memorandum of holdings
- Not the legal register of holdings
- Anonymous

Key features

- Primary Issuance
- HSBC's on-chain payments solution
- Asset Servicing
- Payment infrastructure connectivity
- Secondary Market (via OTC/agreed dealers)
- External distribution platforms connectivity
- Public blockchain connectivity

HSBC Orion – Account and Token Approach

Account Structure

- The Orion Platform is designed and built to reflect the two-tier account structure under the Luxembourg DLT regime.
- One **central account keeper** (the "**CAK**") for the initial issue of the digital bonds (the "Securities Issuance Account"), this is HSBC
- Securities accounts kept by **secondary account keepers** ("**SAK**") for distribution of the digital bonds, these are HSBC, BNP Paribas and RBC for the EIB issuance.

Tokens

Four token types are used to create and record the digital bonds on the Securities Issuance Account and the Securities Accounts.

On the Private Blockchain

1. **Issuance Token:** indicates the primary issue details recorded on the securities issuance account. Created and held by the CAK (HSBC) only.
2. **Digital Bond Tokens:** the bond tokens that are issued, registered, held, transferred and cancelled in segregated securities accounts on the DLT platform. Each securities account on Orion are mirrored in the SAKs' existing custody systems.
3. **Settlement Tokens:** used solely to settle cash transactions relating to the digital bonds on-chain. These Settlement Tokens are records of deposits held by HSBC and will be ephemeral whilst on-chain, existing intra-day only.

On the Public Blockchain

4. **Digital Bond Information Tokens:** mirrors the 'Digital Bonds' information on the private chain onto a public chain. An optional information source for investors to see transactions in the Digital Bonds that has no legal status – the legal entitlement to bonds is evidenced on the private blockchain only.

   https://etherscan.io/token/0x46a0d81204149327ae56bcb5887f007a41d46f2c

HSBC Orion – More Features to Come

New Participants

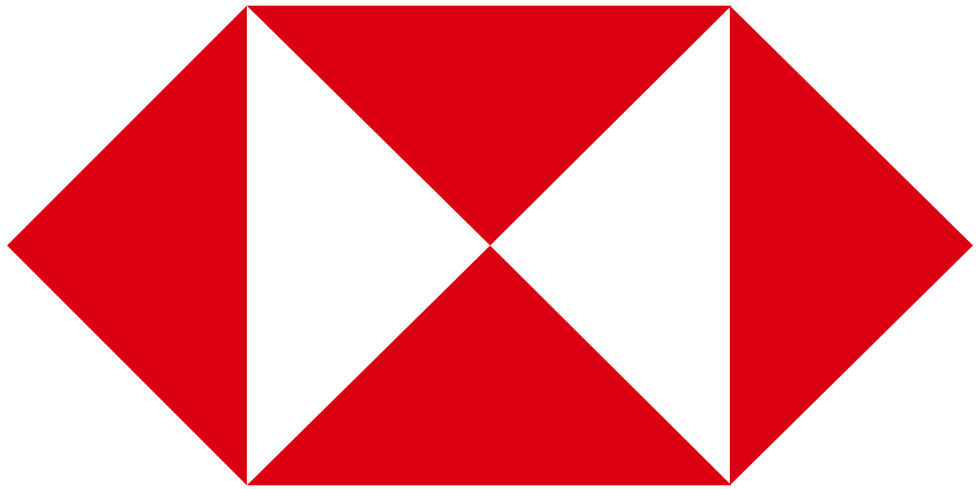
- **New custodians:** bringing more Security Account Keepers (SAKs) onto the platform. SAKs can be existing Global Custodians or ICSDs.
- **New markets and currencies:** further expansion across new currencies, geographies and other products

New Features

- **Collateral & Repo:** collateralisation of bonds will be possible pending the passing of Luxembourg law (Q3-4 2023); also working to introduce repo facilities
- **Trading venue connectivity**: trading of Digital Bonds on electronic platforms is being explored (subject to law / regulation)
- **Token interoperability:** exploring arrangements where a token on one network can have meaning on another

Infrastructure development

- **Connectivity:** currently fund managers and custodians need to instruct one of the Direct Participants via SWIFT with a place of settlement of BBDALULX (HSBC CE's BIC Code) for Direct Participants to enter trades onto the Platform; end-to-end SWIFT connectivity will be added in 2023
- **More distributed architecture:** increased component dispersion and node hosting from more SAKs



CFTC

COMMODITY FUTURES TRADING COMMISSION

MEMBER AND SUBCOMMITTEE PRESENTATIONS AND DISCUSSION

CLOSING REMARKS