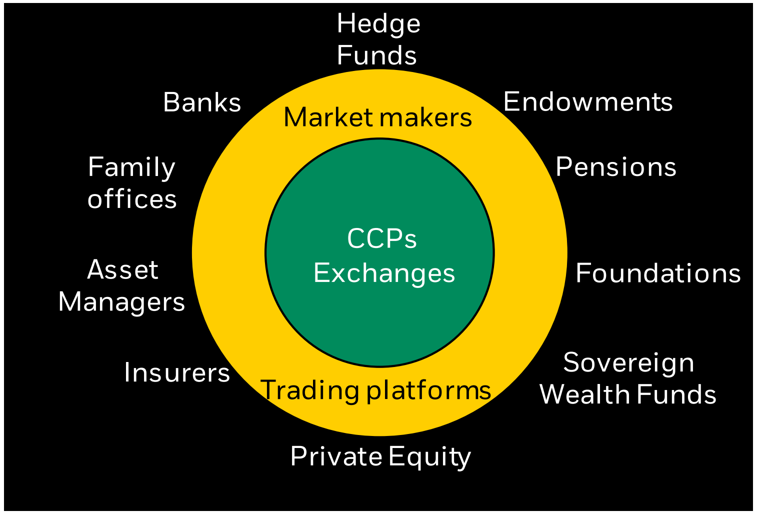
September 2020

BlackRock

Financial Stability and Non-Bank Financial Institutions

Background for NBFI discussions

NBFI is a broad and complex ecosystem in which financial market utilities play an important role…



NBFI underwent extensive reform after the Global Financial Crisis…

- New Money Market Fund structures & investment rules
- Mandated central clearing for OTC derivatives
- Equity market structure enhancements
- Enhanced mutual fund liquidity risk management and stress testing
- Revisions on use of leverage and derivatives for funds
- Increased data reporting across ecosystem

Including adoption of a 'products and activities' approach

2015: FSB and FSOC pivoted to 'products and activities' approach, recognizing:

- Market-wide approach to regulation is needed to *reduce* risk
- Designations of specific entities or funds will simply *shift* risk
- Problems in asset management are *not correlated* to 'large firms' or 'large funds' – as actual events demonstrate, larger firms have employed robust risk management
- Market risk is not the same as systemic risk

MARKET RISK: price fluctuations resulting from interest rate, currency, liquidity, credit, inflation risks. Expected by and disclosed to investors.

≠

SYSTEMIC RISK: severe market disruptions that have serious negative consequences for the real economy.

COVID-10 Market Experience and Official Sector Response

Financial Markets

March 2020

US Treasury market freezes up: bid-ask spreads for off-the-run 20y+ US Treasuries peak at 188bp during March

US Prime MMF outflows; institutional outflows of $91 billion or approximately 30% of AUM

Bond volatility at highest level in 15 years

Spreads on corporate and municipal bonds widened and new issuance declined

Bond ETF trading volumes surged to 3x average 2019 volumes and some traded at discounts to NAV

High yield municipal bond outflows of $11.6 billion or approximately 9% of AUM

CSSF and AMF allowed use of swing pricing factors in excess of 3%

CCPs sharply increased initial and variation margin; 49% increase in collateral for US futures alone

By April, markets mostly returned to normal functioning with spreads tightening, significant new issuance, and fund outflows reversing to inflows

Official Sector Programs

03/12
- **ECB Asset Purchase Programme** expanded by €120 over 2020
- **ECB** increases lending volumes and cuts rates for **TLTRO III**
- **ECB** allows banks to operate below regulatory **capital and liquidity buffers**

03/17
- **Fed** implements **Primary Dealer Credit Facility**
- **Fed** implements **Commercial Paper Funding Facility**

03/18
- **Fed** implements **Money Market Mutual Fund Liquidity Facility**
- **ECB Pandemic Emergency Purchase Programme** adds €750bn to Asset Purchase Programme purchases
- **ECB** expands **Corporate Sector Purchase Programme** eligible assets, including non-financial commercial paper
- **Bank of England COVID Corporate Financing Facility** purchases non-financial commercial paper

03/23
- **Fed** implements **Primary Market Corporate Credit Facility** and **Secondary Market Corporate Credit Facility**
- **Fed** implements **Term Asset-Backed Securities Loan Facility**

03/25
- **Bank of England** announces an extra 200bn in **QE purchases**, split between Gilts and corporate bonds

04/02
- **Bank of England** confirms 10bn of 03/25 **QE purchases** will be corporate bonds

04/09
- **Fed** implements **Municipal Liquidity Facility**

April 2020

Core principles for policymaking

POLICYMAKING SHOULD BE DATA DRIVEN

- Speculative statements and untested hypotheses should not drive new regulation or policy measures
- Multiple market events as well as new reporting requirements has created a wealth of new data
- The resilience of ETFs and the activity of APs during the COVID-19 Crisis provide an example of how data can disprove previously untested hypotheses

HOLISTIC VIEW OF ECOSYSTEM AND CONNECTIVITY IS CRITICAL

- Actions of banks, non-banks, infrastructure and intermediaries, policymakers, all shape market outcomes and influenced the COVID-19 financial experience
- Ecosystem-wide data is necessary, with information on non-banks going beyond just asset management and investment funds

DRAW LESSONS ON 'WHAT NEEDS TO BE ADDRESSED' AND 'WHAT WORKED'

- Both are valuable and should be factored into future reforms
- Lessons drawn should carefully differentiate between market risk and systemic risk
- Mitigation of systemic risk requires a close review of the entire ecosystem

See next slide for key lessons…

Top Ten Lessons from COVID-19

1. **BANKS** entered the crisis with strong liquidity and capital positions. HOWEVER post-GFC capital regulation constrained balance sheets even after some regulators allowed use of prudential buffers. The 'no bid' environment exacerbated problems in short-term markets.

2. **OTC DERIVATIVES** move to central clearing improved transparency and risk management. HOWEVER margin calls were pro-cyclical and somewhat opaque. Collateral for US futures rose \$104 billion (49%) over the month of March, adding to the pressure in short term markets – *see slide 11.*

3. **ETFs** demonstrated their ability to deliver incremental liquidity and price discovery when underlying markets seized up. Nevertheless, we have recommendations for further improvements – *see slide 10.*

4. **EQUITY MARKET STRUCTURE** reforms improved resiliency of critical utilities: Market-Wide Circuit Breakers (implemented four times in two weeks) and Limit-Up-Limit-Down halts (triggered several times) worked. Markets were volatile but orderly.

5. **US TREASURY MARKET** had unprecedented liquidity issues reflecting shifts from broker-dealers to principal trading firms and hedge funds as liquidity providers. One remedy being explored is central clearing for USTs, which could reduce reliance on other intermediaries.

6. **MMF REFORM** proved beneficial in some areas – including higher quality, shorter maturity, more liquid portfolios; and increased reporting. HOWEVER, 30% weekly liquidity buffers' linkage with redemption gates and fees became the new 'breaking the buck' and should be addressed – *see slide 8*.

7. **MUTUAL FUND REFORMS** brought broader liquidity risk management toolkit, helping nearly all funds to meet redemptions in full. HOWEVER some funds experienced stress. Main difference for US and Europe was swing pricing being widespread in the latter. Anti-dilution measures should be available in every jurisdiction – *see slide 9.*

8. **INDEX PROVIDERS** voluntarily delayed all or part of their March fixed income rebalance. Even with elevated 'fallen angels' and robust new issuance, the rebalance at April month-end went smoothly, justifying the decisions made in March.

9. **CREDIT DOWNGRADES** remain high on the viewfinder. HOWEVER concerns about mutual funds' 'forced selling upon downgrade' are overblown - many can hold 'fallen angels' beyond the downgrade and beyond their removal from the index, and are often incentivised to from an investment perspective. Likewise, asset owners are often opportunistic buyers during periods of dislocation – *see slide 12.*

10. **OPERATIONAL RESILIENCE** reflected extensive BCP. WFH pivot was quick for global ecosystem (broker-dealers, custodians, asset managers and 3rd party vendors), HOWEVER it likely contributed to early market issues with chains of command and decision-making impeded. Outsourcing concentrations have been noted, and specific functionalities should be assessed for improvements.

Mutual Funds: Just the Tip of the Iceberg[i]

- **Mutual funds are an important component of the capital markets ecosystem**
- **US mutual fund data is readily available; asset owner data is required to create a full picture**

Commercial Paper

MMF: $225.4 billion (20.7%)
Other MF: $103 billion (9.5%)

Treasury Bonds

$1.2 trillion (6.0%)

Agency and GSE-Backed Securities

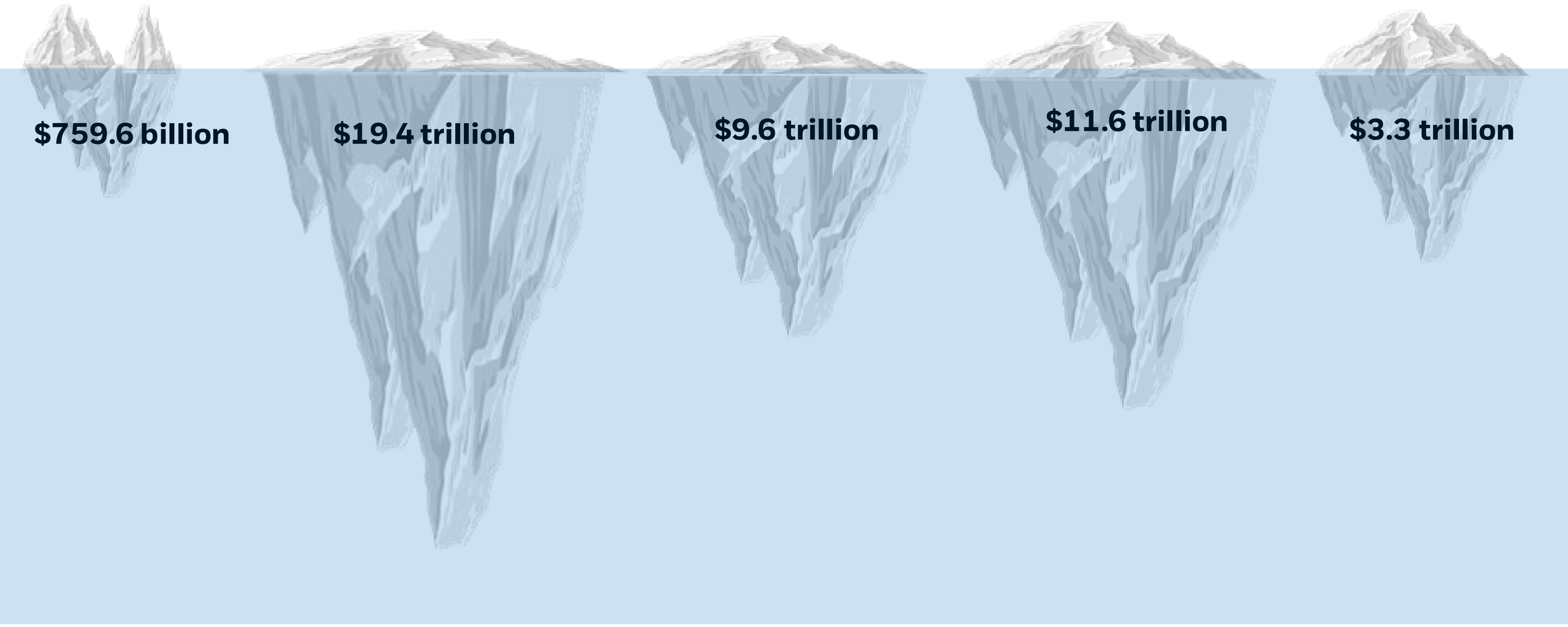
$584.7 billion (5.7%)

Corporate & Foreign Bonds

$2.2 trillion (16.1%)

Municipal Bonds

$802.1 billion (19.6%)



Approach to Regulatory Reform

BANKS CAN PLAY AN IMPORTANT ROLE

- Crisis response from central banks was swift and effective
- Regulatory relief helped increase balance sheet capacity in some areas, but regulatory ‘buffers’ became a ‘floor’, constraining intermediation
- Policy should strike a balance between safety and smoother market operations

MARKET STRUCTURE NEEDS MODERNIZATION

- Market structure should evolve to reflect balance sheet constraints on banks
- Both Treasuries and Commercial Paper could especially benefit from central clearing, which requires a regulatory mandate to succeed
- High quality data and electronic trading in equity markets helped maintain liquidity
- Electronic trading in fixed income is in early stages: more reliable market data is needed to allow calibration of models for all types of market conditions

REFORMS ARE WARRANTED FOR SPECIFIC PRODUCTS AND ACTIVITIES

- A products-and-activities approach to mitigating risks in asset management has been recognised by the FSB as the most effective type of regulation
- Designating a small number of funds or managers as ‘systemically risky’ would shift rather than mitigate risks
- Applying industry-wide requirements for specific products and activities is the correct way to address systemic risk in asset management

See next slides for detailed recommendations…

Key Recommendations for Reforms

BANKS

Capital and liquidity buffers

- Incorporate into the regulatory framework guidance on when banks can use capital and liquidity.

Central bank support conditionality

- Make participation in central bank purchase programs balance sheet neutral for banks

Commercial Paper regulatory treatment

- Give Commercial Paper 'High Quality Liquid Asset' status for the purposes of the Liquidity Coverage Ratio

MARKET STRUCTURE

Treasuries

- Consider expanding scope of reporting and expanding clearing

Short-term markets

- Convene participants to advise on modernising market structure, and a longer-term 'contact group' of buy- and sell-side

Fixed income markets

- Encourage more electronic, equity-style trading; and improve calibration of broker algorithms to increase resiliency

Central Clearing Counterparties

- Encourage more conservative and less procyclical margin requirements, and include MMF units as eligible collateral

Equities

- Market wide circuit breaker rules should be harmonised and the resumption of trading after a halt should be facilitated

Indices

- Consider whether industry guidelines for index providers on addressing future rebalancing modifications are necessary

Data

- Continue refining TRACE reporting in the US, and establish a pan-European consolidated tape for equity, ETFs, and fixed income

PRODUCTS & ACTIVITIES

MMF buffers

- Decouple 30% liquid asset requirement for MMFs from redemption gate and fee triggers, and provide guidance for use of buffers during stressed periods

Fund liquidity risk management tools

- Make the broadest set of liquidity risk management tools for open-ended funds available to fund managers in all jurisdictions

Fund liquidity stress testing

- Ensure that fund managers have stress tested contingency plans and enhanced data to prepare for crisis situations

Enhancements to ETFs

- Develop a clearer Exchange-Traded Product (ETP) classification to help end-investors distinguish between products and how they behave during stressed periods

Non-bank ecosystem monitoring

- Accelerate efforts to collate better data across the non-bank financial ecosystem, including all market participants, and differentiating between shadow banking and market finance

Money Market Funds (MMFs)

Observations from the COVID-19 crisis

1. Post-GFC capital and liquidity requirements left banks unwilling to intermediate commercial paper during stress
2. This OTC model for secondary CP markets froze, whereas derivatives and equity markets continued to function
3. Relaxing bank prudential regulation plus central bank intervention, albeit not directly for financial CP in Europe, encourage d banks to intermediate and improved investor confidence
4. Post-GFC MMF liquid asset buffers acted as a ‘floor’; the link with redemption gates and fees increased uncertainty

A three-pillar approach to improve financial stability

I. Modernize CP market structure

- Reduce reliance on bank balance sheet capacity through market structure improvements
- Set up dialogue with policymakers and market participants to explore options
- Possible solutions include: standardising CP issuance, and development of all-to-all trading platforms

II. Bank capital and liquidity rules

- Improve bank capacity to intermediate CP through targeted regulatory change
- Give CP ‘High Quality Liquid Asset’ status for bank prudential ratios
- Develop guidance for easing of prudential buffers during stressed periods

III. MMF product regulation

- MMFs are not homogeneous and experiences differed significantly by type of fund
- Decouple 30% liquid asset requirements from redemption gate and fee triggers
- Develop guidance for use of buffers during stressed periods

For further details see *Lessons from COVID-19:* *U.S. Short-Term Money Markets* and *The Experience of European MMFs in Short-Term Markets*

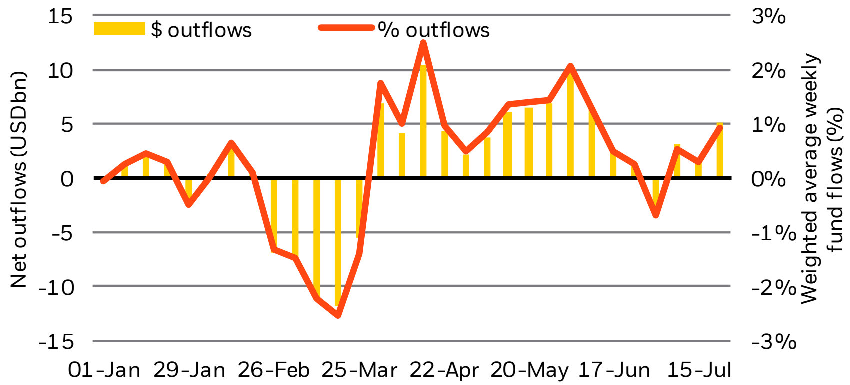
Open-end Funds (OEFs)

Observations from the COVID-19 crisis

1. During March, markets underwent a flight to cash and quality, with credit markets coming under particular pressure
2. Bond funds saw high absolute outflows which represented a reasonable % of fund AUM; even high yield fund flows were manageable
3. Where available, the post-GFC liquidity risk management toolkit proved indispensable for handling redemptions
4. 100% redemptions met in US bond funds; small number of non-US funds had issues
5. Use of the toolkit – especially anti-dilution mechanisms such as swing pricing – should be extended further post-COVID

High Yield Bond Fund Flows(ii)

Aggregate outflows and average percentage outflows



Idiosyncratic open-ended fund events:

- **Danish and Swedish bond funds** suspended redemptions due to valuation uncertainty in local fixed income markets
- **UK real estate funds** suspended citing 'material valuation uncertainty' – in line with FCA rules
- A group of **Indian bond funds** suspended and then wound up after facing continued redemptions and no buyers for their securities

Recommendations to improve financial stability

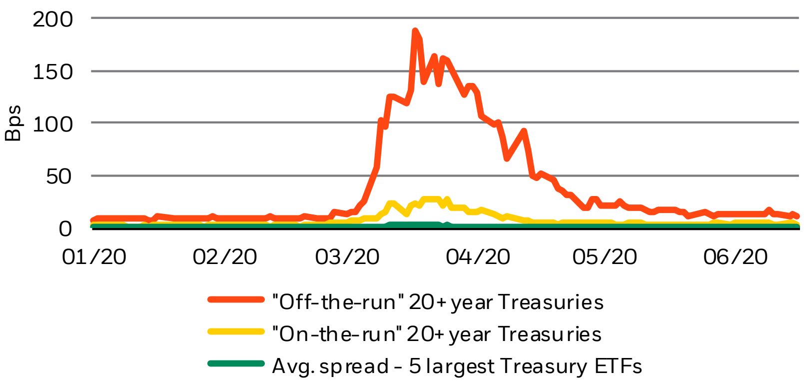
- Make the full set of liquidity risk management tools available to all jurisdictions
  - Where swing pricing is not practical, consider alternative anti-dilution tools
- Ensure asset managers develop contingency plans and prepare for use of tools in a crisis
- Enhance fund liquidity stress test models with better data on redemptions and market transactions
- Macroprudential measures such as mandatory liquidity buffers or regulatory redemption suspensions will encourage procyclical behaviour and should be avoided

For further details see *Lessons from COVID-19:* Liquidity Risk Management is Central to Open-Ended Funds

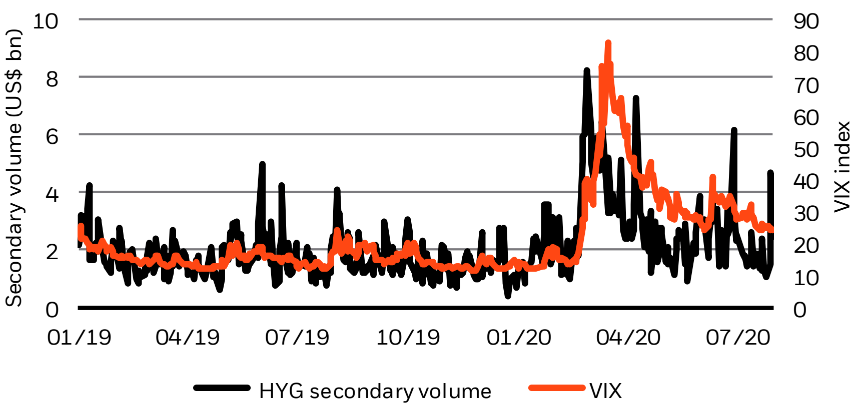
Exchange Traded Funds (ETFs)

March 2020 saw extreme market volatility and bond market conditions, but elevated ETF trading volumes allowed investors to allocate capital, adjust positions, and manage risk:

Bid-Ask spreads: Treasury ETFs vs Treasuries[iii]

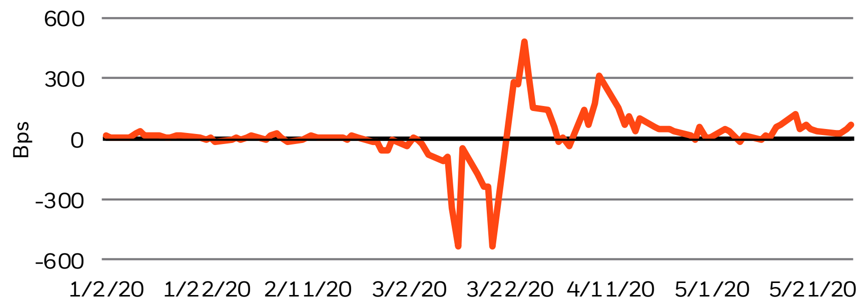


HYG secondary volume vs. CBOE Volatility Index[iv]



ETFs provided real-time price discovery – reflected at times in discounts to NAV – as bond market liquidity deteriorated:

Divergence between IG ETF price and NAV[v]



Recommendations to improve financial stability

- Enhancing classification system for Exchange Traded Products (ETPs)
- Improving transparency for European ETFs through a consolidated tape and 'Best Bid or Offer' metric
- Clarifying settlement rules for US ETFs when underlying markets are closed
- Flexibility for US ETF redemption fees during volatile periods

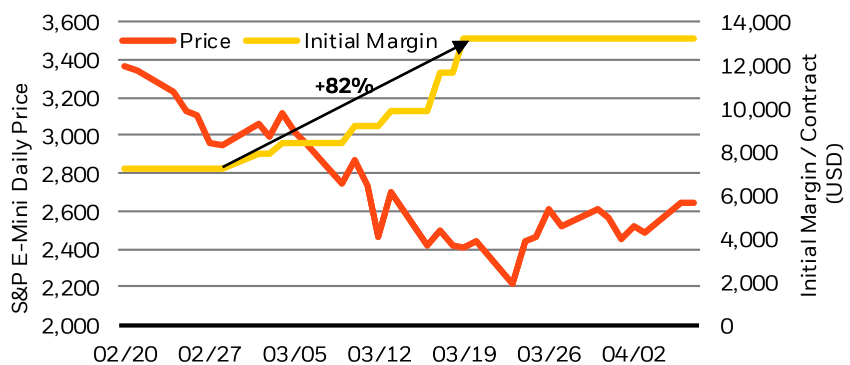
For further details see *Lessons from COVID-19:* *ETFs as a Source of Stability*

Central Clearing Platforms (CCPs)

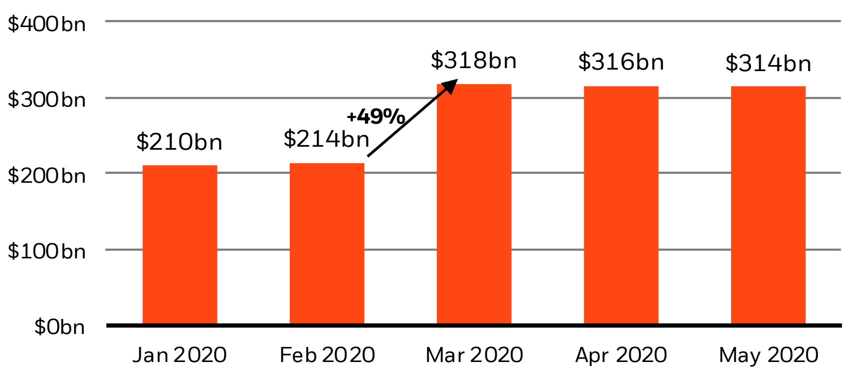
Observations from the COVID-19 crisis

1. Post-GFC reforms increased central clearing of derivatives, improving transparency and lowering counterparty risks
2. Reforms proved effective: centrally cleared US futures and options hit an all-time high of 1.43bn contracts in March[vi]
3. However, spiking margin calls were procyclical and unpredictable: US futures collateral rose 49% month-on-month into March
4. Heightened margin requirements added pressure to short-term markets in already challenging conditions

S&P E Mini Daily Price vs. Initial Margin[vii]



US FCM required customer funds[viii]



Recommendations to improve financial stability

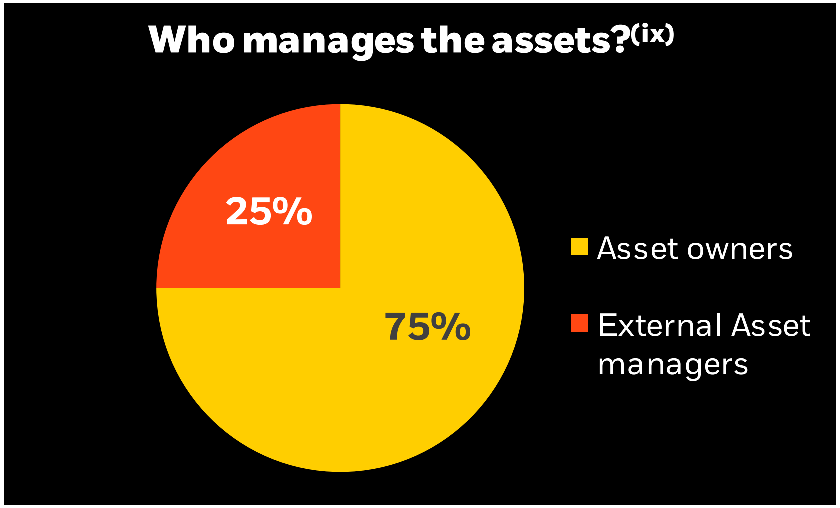
- Adjust initial margin calculations to a more conservative approach – making margin higher in 'peacetime' but more stable in 'wartime'
- Include Money Market Fund shares as eligible collateral for CCPs – easing pressure on short-end markets during stressed periods

For further details see *Lessons from COVID-19:* Market Structure Underlies Interconnectedness of the Financial Market Ecosystem

Areas requiring further discussion (1/2)

NBFI ecosystem

Discussion of non-bank finance often focuses on asset management, where data availability is stronger

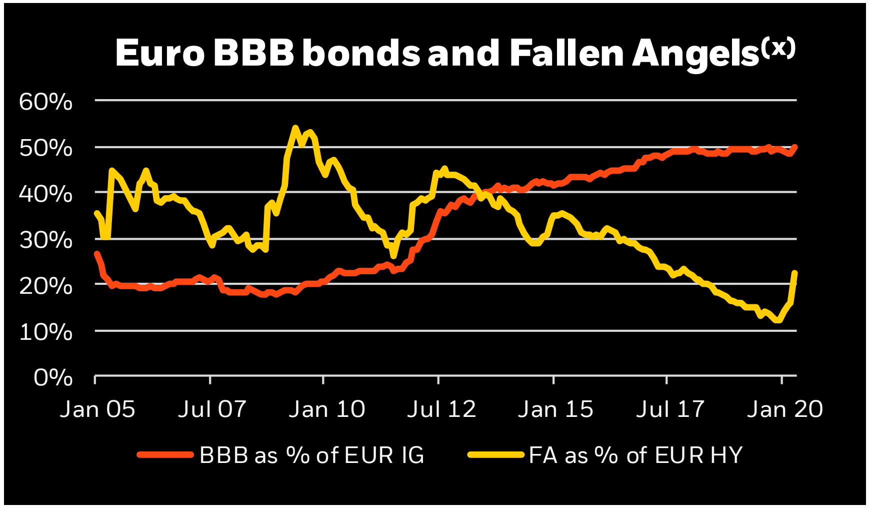


HOWEVER:

- Significant transparency around asset management and investment funds provides only a partial view of the NBFI ecosystem
- Better data is needed to capture sellers and buyers across all asset classes
- Analysis of NBFI should recognise the diversity of the ecosystem – including insurers, pension funds, sovereign wealth funds, etc – and their individual constraints and objectives

BBB bonds and fallen angels

An increasing proportion of BBB bonds in the Investment Grade universe and downgrades increasing 'fallen angels' post-COVID raised concerns about forced selling from funds:



HOWEVER:

- Different investors have varying flexibility to hold downgraded bonds
- Investment grade mutual funds can often hold 20-30% of AUM in non-IG bonds
- Index funds can hold non-index bonds until the manager deems it advantageous to sell
- Downgrades of higher-quality names into HY presents an opportunity for HY and IG investors

Areas requiring further discussion (2/2)

Liquidity risk management

Many commentators suggest there is a 'mismatch' between open-ended fund assets and liabilities

Banks: Funding liquidity risk	**Mutual funds: Redemption risk**
• Assets purchased by issuing short-term liabilities • Funding provided by run-prone investors	• Assets purchased with fluctuating redeemable equity • Shareholders are long-term investors

Some inherently illiquid asset classes (e.g., real estate) should not sit in daily-dealing OEFs, as the UK FCA has recognized through a 'funds investing in inherently illiquid assets' (FIIA) category

For other asset classes (e.g., corporate bonds) portfolio & risk management build layers of liquidity into funds (cash, IG bonds, ETFs) and stress test funds for redemptions. Market liquidity is not the same as fund liquidity.

Post-GFC, fund liquidity risk management standards have been raised. Best-practise toolkits include:

✓ Swing pricing
✓ Redemption fees
✓ Anti-dilution levies
✓ Redemption gates
✓ Redemptions in kind
✓ Side pockets
✓ Suspending redemptions

Many major fund domiciles allow the full range of liquidity risk management tools – more work is needed to make tools universally available

Macroprudential controls

- Some suggest macroprudential tools should be implemented for asset management and funds
- The case for macroprudential policies conflates bank funding risk with mutual fund redemption risk; and market liquidity with fund liquidity
- If applied to funds, macroprudential policies would be at best ineffective, and at worst pro-cyclical

Measures suggested include:

Mandatory liquidity buffers	• Buffers designed for normal times will be insufficient for crises • Relying on buffers becomes procyclical if liquid assets are exhausted
Mandatory leverage limits	• Leverage is hard to measure: derivatives can amplify or reduce risk • Leverage isn't additive across funds. Each is responsible for own obligations
Regulator-imposed suspensions	• Funds are only a portion of investable assets – other investors can still sell • Announcing a suspension will shock markets triggering pro-cyclical selling

Enhancing fund liquidity risk management tools would better address concerns about open-end funds

See *ViewPoint: Macroprudential Policies and Asset Management*

Relevant publications

BlackRock

Public Policy ViewPoint papers

- Lessons from COVID-19:
  - Overview of Financial Stability and Non-Bank Financial Institutions
  - U.S. Short-Term Money Markets
  - The Experience of European MMFs in Short-Term Markets
  - U.S. Municipal Bond Market
  - ETFs as a Source of Stability
  - European BBB bonds and Fallen Angels
  - U.S. BBB Bonds and Fallen Angels
  - Fixed Income Index Rebalancing
  - Liquidity Risk Management is Central to Open-Ended Funds
  - Market Structure Underlies Interconnectedness of the Financial Market Ecosystem
  - Operational Risk and Resilience
- *ViewPoint:* Macroprudential Policies and Asset Management
- *ViewPoint*: Breaking Down the Data: A Closer Look at Bond Fund AUM
- *ViewPoint:* Taking Market-Based Finance Out of the Shadows: Distinguishing Market-Based Finance from Shadow Banking
- *ViewPoint:* The Decade of Financial Regulatory Reform: 2009 to 2019

iShares papers

- Sending a Clear Signal: Bond ETFs Show Where Markets Are Trading in Real Time
- ETFs and the Ongoing Coronavirus Market Shock: An Analysis of Trading Volumes, Real-Time Pricing and Bid/Ask Spreads
- ETFs are Made for These Times

External

- Antonio Weiss : Treasury Markets: Data, Oversight, and Transparency
- Darrell Duffie : Still the world's safe haven? Redesigning the U.S. Treasury market after the COVID-19 crisis
- A path forward for CCP Resilience, Recovery, and Resolution
- Multi-firm response to 2020 FSB consultation on CCP resolution
- FSB Chair's letter to G20 Finance Ministers and Central Bank Governors: July 2020
- Luis de Guindos: Building the Financial System of the 21st Century
- Bank of England Financial Stability Report: August 2020
- European Central Bank Financial Stability Review: May 2020
- International Monetary Fund Global Financial Stability Report: Markets in the Time of COVID-19
- EFAMA: Net outflows from UCITS in March 020 – Industry remains resilient in face of Covid-19 crisis
- ESMA: Steven Maijoor letter to Valdis Dombrovskis re: Review of the Alternative Investment Fund Managers Directive
- BIS: US dollar funding markets during the Covid-19 crisis – the money market fund turmoil
- BIS: The recent distress in corporate bond markets: cues from ETFs

Endnotes

(i) Federal Reserve Z.1 data as of June 2020. Available at: https://www.federalreserve.gov/releases/z1/20200611/z1.pdf . Graphic not to scale.
(ii) EPFR fund flow data. Covers high yield bond funds domiciled in all jurisdictions globally
(iii) Bloomberg, NYSE, BLK. As of June 17, 2020
(iv) BlackRock, Bloomberg (data as of March 24, 2020)
(v) Bloomberg, as of June 1, 2020. Data for the largest by assets under management of a US investment grade corporate bond ETF.
(vi) FIA presentation to the CFTC Market Risk Advisory Committee, "Impact of COVID-19 Pandemic on Derivatives Clearing," July 21, 2020
(vii) Bloomberg, CME. Initial margin shown looks at the active change in IM which represents the CCP's decision to increase/decreas e the outright rate.
(viii) CFTC. Available at: https://cftc.gov/MarketReports/financialfcmdata/index.htm
(ix) McKinsey Performance Lens Global Growth Cube. As of year-end 2017.
(x) Bloomberg, BlackRock calculations

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