BlackRock

Policy Spotlight

A holistic approach to bond market resilience

Introduction

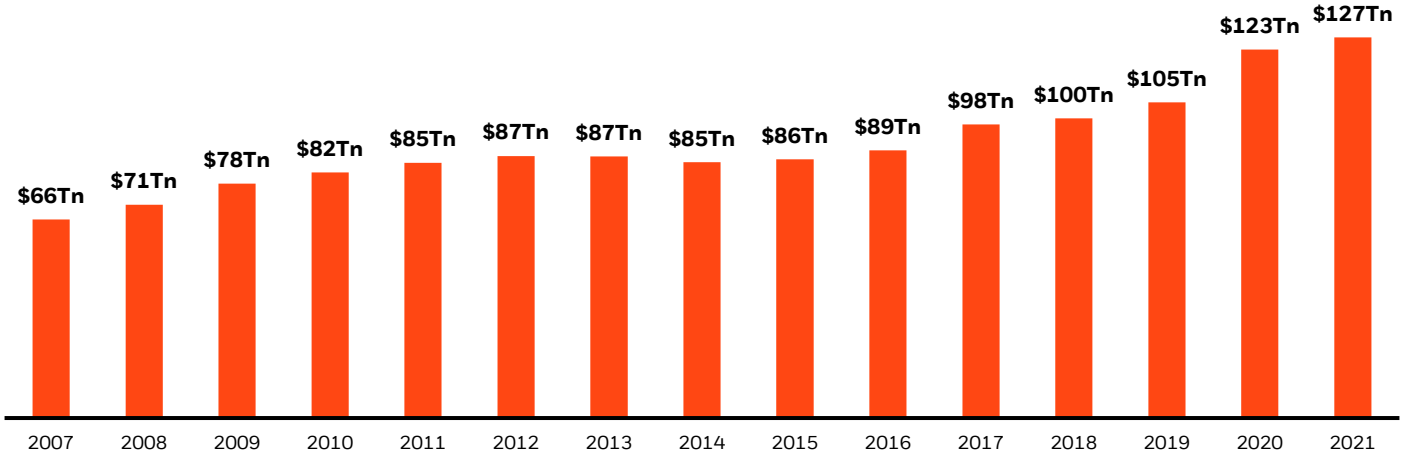
The outstanding value of global fixed income markets has increased by 50% over the past decade, reaching approximately $127tn at year-end 2021 (see Exhibit A).[1] This reflects growing use of capital markets and valuation effects driven by post-Global Financial Crisis (GFC) monetary policies. Non-bank finance's share of total financial intermediation has risen more modestly, from 45% in 2010 to 48% in 2020. Externally managed assets grew from 23% to 27% of global financial assets over the same period.[2]

Episodes of bond market turbulence, such as that induced by the COVID-19 pandemic, have prompted policymakers to consider options for enhancing resilience, focusing on the role of market-based finance as a driver of market dynamics. Particular attention is being paid to the liquidity risk management of open-ended bond funds. A separate initiative is examining developments in bond market structure, intermediation, and transparency.

To enhance bond market resilience, we believe a holistic perspective spanning both open-ended bond funds and bond markets is necessary. Market-wide outcomes cannot be delivered by focusing on individual entities or product types, such as open-ended funds, in isolation. Prevailing bond market dynamics are, by definition, a product of the interaction between all market participants – encompassing the full range of end-investors, intermediaries, product types and market infrastructures. The ability of bond markets to weather future crises depends on broad-based action that builds market resilience, and will be diminished if policy focuses solely on functioning of open-ended funds.

In this *Policy Spotlight*, we place open-ended bond funds into the wider context of the market ecosystem, providing recommendations to enhance not only fund liquidity management, but market structure and transparency. We focus on open-ended bond funds, rather than money market funds or exchange traded bond funds and products.

Exhibit A: Global Fixed Income Markets Outstanding Value, 2007-2021 (USD)



Source: SIFMA *2022 Capital Markets Factbook*.

All source information can be found in the Endnotes section. The opinions expressed are as of August 2022 and may change as subsequent conditions vary.

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Executive summary

Observations

- **Data on how all types of market participant, intermediaries, and product types behave through time is needed** for a **holistic assessment of supply and demand for bond market liquidity** during stress events.
- **Externally managed assets** (separate accounts, exchange traded products and funds, closed-ended funds, and open-ended funds) **accounted for 27% of global financial assets as of year-end 2020**.
- **Open-ended funds account for a smaller part of global financial assets**. Available data consistently shows that **bond open-ended funds similarly account for a small part of fixed income markets.**
- **Detailed data on the portfolio composition of open-ended funds is available, but is often missing for other investor types,** which account for the majority of fixed income holdings.
- **During March 2020, primary bond issuance froze in several markets. Companies instead relied on secondary markets** to raise cash.
- **Trading volumes in other secondary fixed income markets were sustained**, but **limited trading information drove price uncertainty and elevated transaction costs**.
- Within this market context, **many end-investors took action to build cash balances or rebalance their portfolios** in response to the dislocations:
  - **Many institutional asset owners were required to rebalance their portfolios in line with their investment policies**, selling fixed income securities and purchasing equities.
  - Corporate bond prices declined sharply, but anecdotal evidence suggests that **natural buyers of fixed income delayed decisions to step in, due to uncertainty and a lack of transparency.**
  - **Net outflows from open-ended bond fund increased, reaching a weekly average peak of -3.8% for high yield bond funds, but funds were overwhelmingly able to meet redemptions** and continue dealing.
  - **Regression analysis of bond open-ended fund and exchange-traded fund flows** against monthly S&P 500 returns **shows that even very large risk-off shocks do not appear to result in extreme outflows**.
- While **global fixed income markets are 50% larger** than a decade ago, **market structure and intermediation have not evolved to keep pace.** Banks were overall resilient during March 2020, but **a lack of intermediation capacity contributed to strains**.
- Although minority investors in fixed income markets, **some commentators have raised concerns that open-ended bond funds' structural features may amplify market movements**. This does not take into consideration that:
  - **First mover advantage *in markets*** – i.e. the advantage for market participants able to utilise available market liquidity ahead of others – **should exist irrespective of investment vehicle**.
  - **Open-ended funds face redemption risk rather than bank-like run risk**.
  - **Liquidity mismatch only arises if a fund is invested in inherently illiquid assets while offering daily redemptions** (concerning private assets such as real estate or infrastructure) and does not integrate notice periods or appropriate redemption windows.
  - **No liquidity mismatch exists for funds invested in public securities trading on an intraday basis such as corporate bonds**, as end-investors have an equity stake and the value of their mutual fund shares, unlike bank deposits, fluctuates. **Daily dealing is appropriate for these funds, and fund managers must mitigate first mover advantage *within the fund* through anti-dilution tools**.
- While there is scope for improving the liquidity management of bond funds, **regulatory or macroprudential interventions targeted solely at funds will only impact a subset of investors, rendering them either counter-productive, ineffective, or discriminatory.**

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Executive summary *(cont'd)*

Recommendations

- **Address persistent challenges around data availability on portfolios and trading activity for investors in fixed income markets other than open-ended funds**. We support the Financial Stability Board's efforts to develop a systemic, ecosystem-wide understanding of the non-bank system.
- **Reflect the critical role of intermediaries, market structure, and transparency in reforms** aimed at delivering greater fixed income market resilience:
  - **Clarify regulatory guidance on when banks can use capital and liquidity buffers** during stress events.
  - We support efforts to **standardise bond issuance practises** and strongly support **improvements to post-trade fixed income data**, including developing consolidated tapes where they do not already exist. Both can play a critical role in both algorithm calibration and in giving market participants confidence in where the market is trading.
- **Mitigate first mover advantage *within funds* by specifically enhancing liquidity risk management. Avoid compromising fund investors' ability to be a first mover *in markets***:
  - We strongly support efforts **to increase the availability and uptake of Liquidity Management Tools**. Regulators can **improve effectiveness by monitoring asset managers' operational preparedness** to use these tools, and **promote standards and best practises** that engender high quality application.
  - Effectiveness of anti-dilution measures such as **swing pricing (which is appropriate and operationally feasible for open-ended funds) specifically could be improved by standards and best practises covering the principles and operations that underpin the setting of swing factors**, as well as thresholds, model management, operations, governance, and escalation procedures.
  - **Facilitate access to information and resources**, including **consolidated tapes** and **data on underlying fund investor transactions via omnibus accounts**, to allow better calibration of liquidity management tools including swing pricing.

Market composition

Investor composition

End-investors in financial markets are highly diverse, spanning retail investors, pension schemes, insurance companies, non-financial corporations, and official sector investors (see Exhibit B). They construct and manage their portfolios according to varying incentives, objectives, constraints, and convictions.

Investors can choose to manage their investments 'in house', or to outsource this activity to an external asset manager.

Asset managers' share of global financial assets under management has increased slightly over the past decade, from 23% in 2010 to 27% in 2020 (see Exhibit C). This figure encompasses separate accounts, exchange traded funds and products (ETFs & ETPs), closed-ended funds, and open-ended funds (OEFs).This growth has been driven primarily by retail and pension scheme end-investors, focused on saving for retirement or to enhance their individual financial resilience, who account for a majority(55%) of externally managed assets. Corporate treasuries of both financial and non-financial corporations are the largest class of investor in the internally managed segment.[3]

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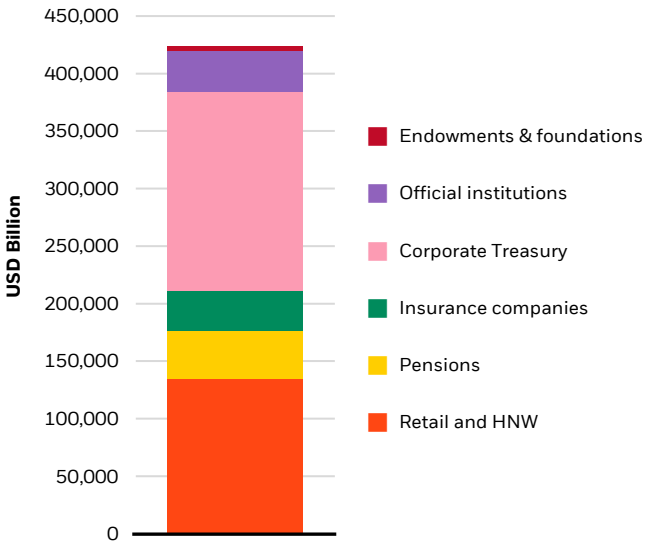
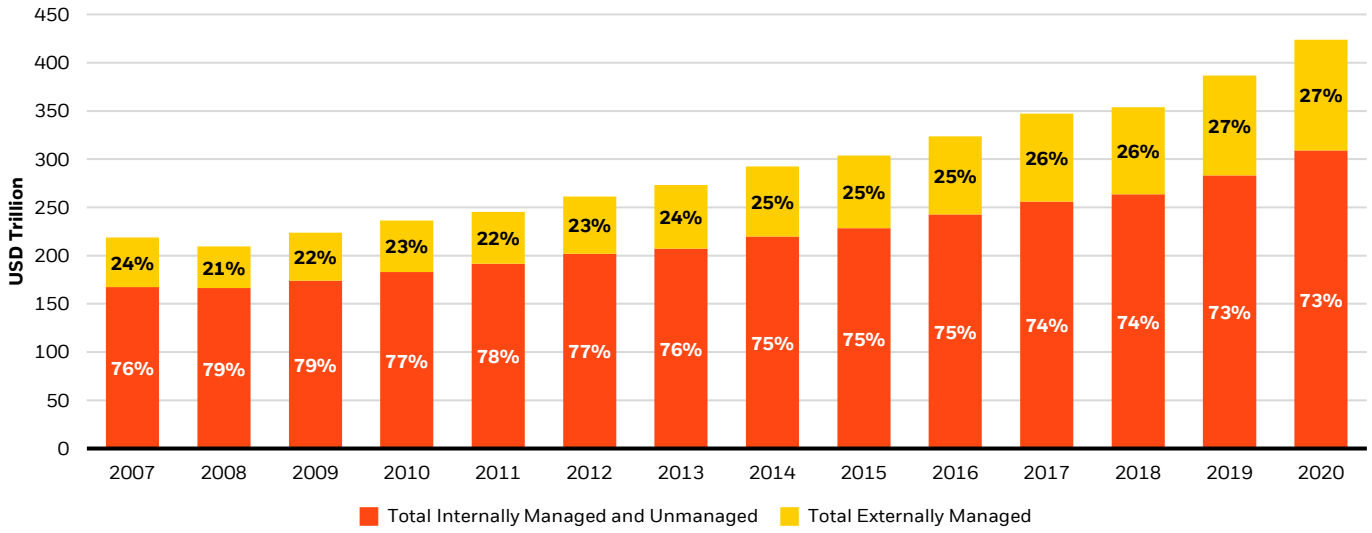
Exhibit B: Global Financial Assets by End-Investor, 2020

	Total Assets (USD Bn)	% Global Financial Assets
Retail & HNW	134,229	32%
Pensions	42,708	10%
o/w Defined Benefit	*25,576*	*6%*
o/w Defined Contribution	*17,132*	*4%*
Insurance companies	33,990	8%
Corporate Treasury	173,452	41%
o/w Financial Corporations	*115,458*	*27%*
o/w Non-Financial Corporations	*57,993*	*14%*
Official institutions	35,844	8%
o/w Sovereign Wealth Funds	*6,860*	*2%*
o/w State Entities & Other	*28,984*	*7%*
Endowments & foundations	3,762	1%
All Client Segments (Total)	**423,985**	-



Source: McKinsey Performance Lens Global Growth Cube

Exhibit C: Total Finance Assets by Internal / External Management, 2007 - 2020



Source: McKinsey Performance Lens Global Growth Cube

OEFs assets are a subset of the 27% managed by asset managers, and are therefore a minority investor in global financial assets. In the US, OEFs account for no more than 22% of outstanding bond issuance in any given segment, with a substantially smaller share in several others (see Exhibit D). Comparable data for other regions is less readily available, but available evidence suggests proportions are similar: at end-2020 West European end-investors held approximately $11Tn in externally managed fixed income investment vehicles, including open-ended funds, closed-ended funds, separate accounts and fixed income exchange-traded funds and products (ETFs & ETPs).[4] This represents a fraction of the outstanding $32.5Tn at fixed income issuance in the European Union and the United Kingdom at year-end 2020.[3] The European Central Bank has also suggested that euro area investment funds hold around 30% of Euro Area corporate debt securities.[6] The Bank for International Settlements, by contrast, estimates that open-ended funds account for 17% of euro area corporate bonds.[7]

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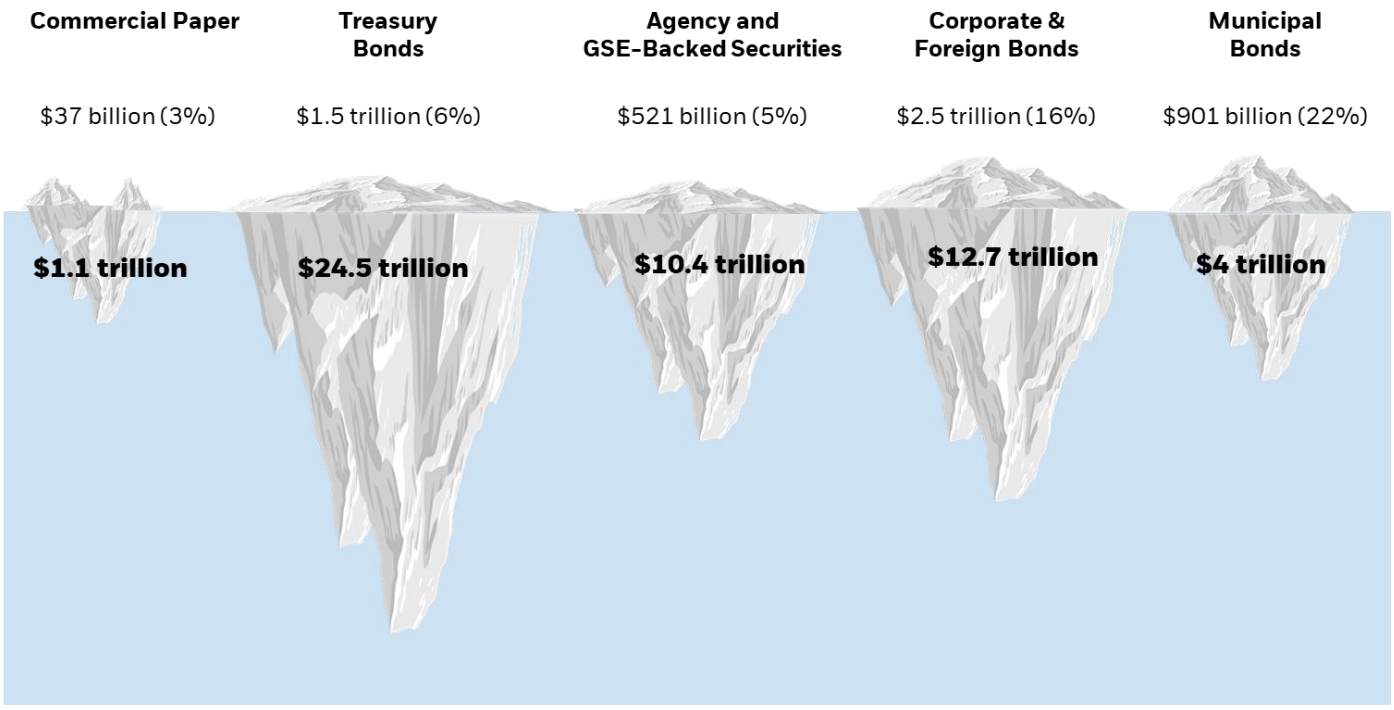
Exhibit D: Mutual funds in US fixed income markets



Source Federal Reserve Z.1 Financial Accounts of the United States, as of 8 June 2022. Mutual fund data excludes ETFs.

Portfolio composition

While OEFs are a minority investor in fixed income markets, data on their portfolio composition and interactions with markets are widely available. OEFs are highly regulated with multiple disclosure requirements, with detailed data on in- and out-flows giving a clear picture of their activity. This is not the case for other investor types. For example, in the wake of the March 2020 turmoil, the ECB's Financial Stability Review noted that "insurers and investment funds jointly held 55% and 34% of the outstanding amounts of euro area NFC [Non-Financial Corporate] and sovereign debt securities". But while able to demonstrate that euro-area high yield corporate bond funds saw "cumulative outflows of more than 10% of assets under management" between February and March2020, the ECB noted that "liquidity risks for insurers are hard to quantify given the current lack of comprehensive monitoring".[8] The result, as IOSCO has noted, is that *"[l]imitations in available data on long-term investor [defined here as insurance companies and pension funds] activity in corporate bonds means it is difficult to determine … [their] relative influence".*[9]

Bond markets during March 2020

Bond market stress during March 2020 has been well documented. As countries around the world took measures to contain the pandemic, locking down significant portions of their economies. The economic and financial implications of lockdown measures drove broad risk-off sentiment and a flight to cash.

Primary and secondary fixed income issuance

Primary issuance froze across several markets. US Investment Grade markets saw no issuance in the final week of February, with almost no High Yield issuance between the end of February and end of March. A similar picture emerged in European markets.[10] Inability to access liquidity through primary market issuance forced many companies to build up cash via secondary markets.[11]

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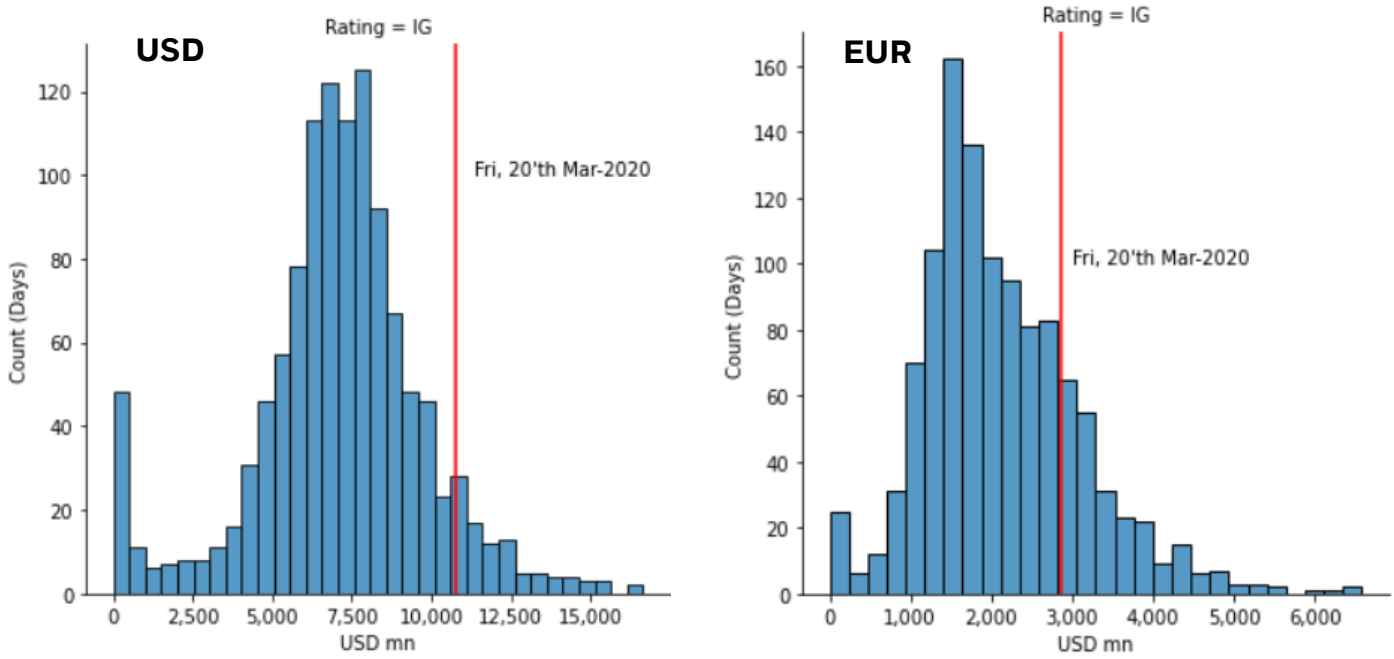
Trading volumes in several fixed income markets were sustained through March and April 2020. Exhibit E shows that volumes on the last day prior to the Federal Reserve's intervention, trading volumes for US Dollar and Euro Investment Grade bonds were above the median average between March 2016 and March 2021.

However, price uncertainty and transaction costs increased significantly.[12] The US Treasury market froze, as bid-ask spreads for off-the-run bonds peaked at 188 basis points.[13] The number of US Investment Grade and High Yield dealers who were willing to quote halved. Limited trading information in turn hampered the normal price discovery process (see Exhibit F). Spreads increased sharply, but remained notably lower than during the Global Financial Crisis. European fixed income markets experienced similar issues, with trading volumes sustained throughout March and April: liquidity was accessible, but at a higher cost.[14] Central banks ultimately undertook a wide range of interventions to support market functioning, successfully restoring confidence, facilitating the re-start of primary issuance, and calming fixed income markets.[15]

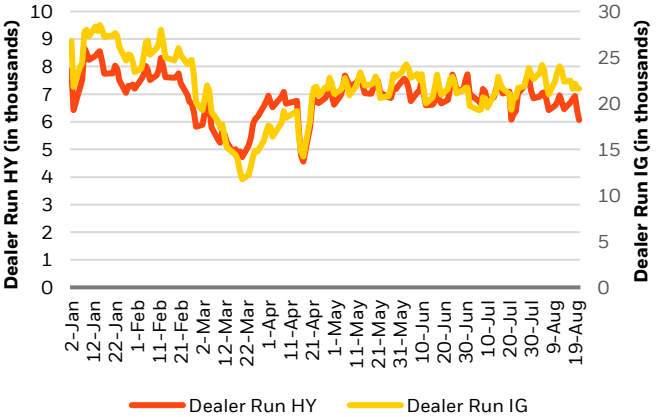
Exhibit E: Trading volumes for USD and EUR Investment Grade Bonds, March 2016 – March 2021



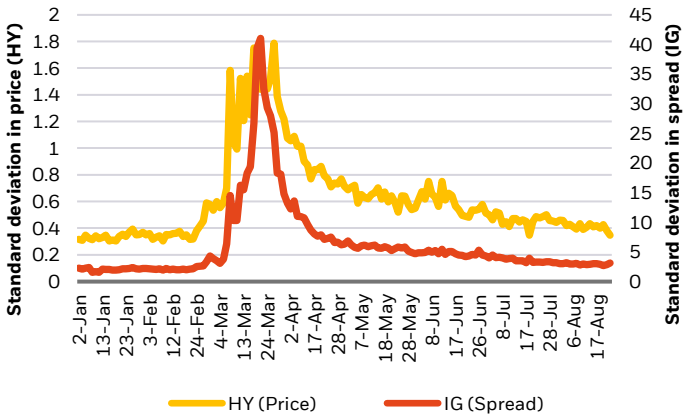
Source: TRACE, TRAX, Bloomberg. Red line shows the last trading day before the Federal Reserve's first interventions.

Exhibit F: Dealer run count and price uncertainty for US IG and HY

Dealer run count for IG and HY



Price Uncertainty (as measured by standard deviation of the quotes and trades)



Source: BlackRock market data. Note: we saw the drop in dealer runs after the expansion of the PMCCF and SMCCF because the market was down this week due to weak bank earnings results for Q1 2020 announced on April 15.

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Difficulties in fixed income markets contrasted with equity markets which, while volatile, were mostly orderly. This was partly due to a high degree of electronification, standardisation, less reliance on dealer balance sheets for intermediation, and better-quality market data. Fixed income markets, by contrast, remain less standardized, more fragmented, and operate with a regular cadence of issuance which requires continual financing.

Response of end-investors

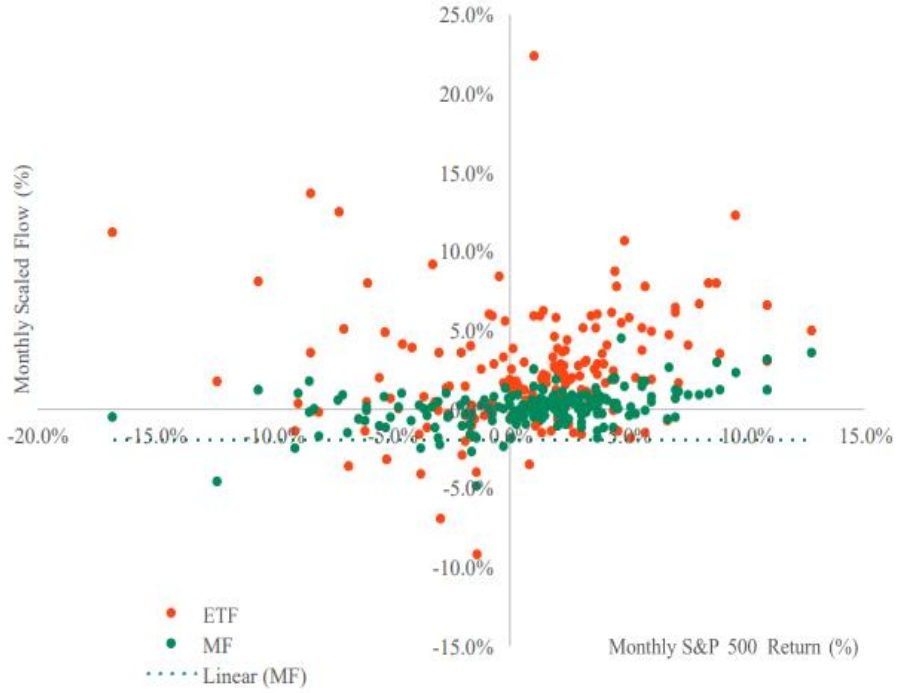
Within this market context, **end-investors of all types took action to build cash or re-adjust their portfolios in response to the dislocations.** As equity markets dropped, many institutional asset owners – such as pension plans – were required to rebalance their portfolios in line with their investment policies, selling bonds and buying equities. Corporate bond prices also declined sharply during this episode, theoretically presenting an attractive buying opportunity. And while data on institutional investor trading behaviour is limited, there is anecdotal evidence to suggest uncertainty – compounded by a lack of price discovery and deficiencies in trading data – may have prevented natural buyers of fixed income from stepping in: IOSCO has noted stakeholder feedback that even before central bank interventions *"it would have been a good strategy to buy during the March market stress, but…in practice, it was a hard period to trade, with the prevailing uncertainty … preferring a strategy of 'wait and see'"*.[16]

Fixed income ETFs proved resilient and delivered an incremental layer of liquidity to bond markets by allowing investors to trade ETF shares on-exchange without trading underlying bonds. ETFs also provided a source of real-time transparency into cash bond markets where price uncertainty was prevalent.[17]

Open-ended bond funds saw net outflows increase as investors responded to the deteriorating economic outlook, sought to raise cash, and re-adjust portfolios. The extent of outflows varied by jurisdiction and by fixed income segment. **Regression analysis of bond OEF flows against S&P 500 returns between April 2007 and March 2022 shows almost no correlation, suggesting that even large risk-off shocks do not result in extreme outflows** – see Exhibit G.[18] Indeed, during March 2020, High Yield corporate bond funds saw the most pronounced – but still navigable – weekly outflows, ranging from weekly averages of -1.8% to -3.8% of AUM globally at their peak. Exhibit H shows that higher quality bond funds saw relatively small outflows. Some bond funds attracted inflows.[19]

OEFs were overwhelmingly able to meet redemptions and continue dealing. A small minority of European funds (accounting for 0.11% of global fund AUM) suspended redemptions during March 2020, driven mainly by local regulation requiring suspension in light of valuation uncertainty. More commonly, funds utilised other liquidity management tools, such as swing pricing, to allocate the costs of market liquidity to redeeming investors.[20]

Exhibit G: Mean Monthly Percentage Fund Flows and S&P500 Returns



Source: Laipply and Madhavan (2022), *Bond mutual fund and exchange-traded fund flows in stressed markets: Empirical evidence on the destabilization hypothesis*. Based on data as of 3/31/22 from Bloomberg and Morningstar

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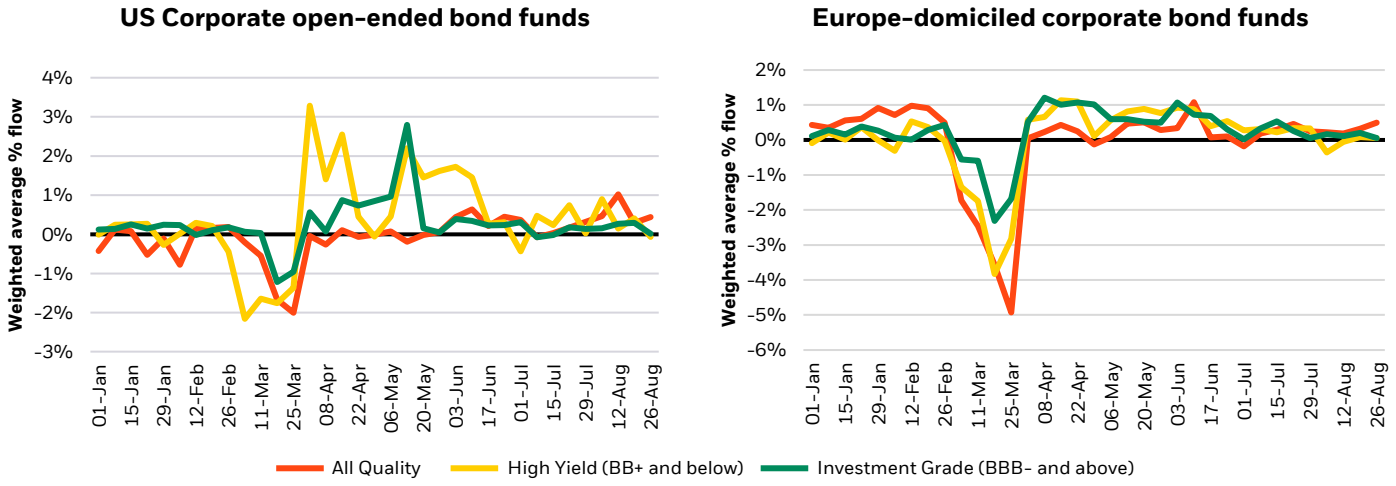
Exhibit H: US and European Open-Ended Bond Fund Flows (weighted average weekly percentage flows)



Source: EPFR. Data excludes ETFs. Flows are calculated relative to fund assets at the beginning of each period and weighted by AUM relative to the overall category.

US-domiciled bond fund AUM, February 2020

Investment Grade	**64%**
of which Corporate	5% (3% of total)
of which Sovereign	3% (2% of total)
of which Mixed	92% (59% of total)
All Quality	**25%**
of which Corporate	4% (1% of total)
of which Sovereign	2% (0.8% of total)
of which Mixed	94% (23% of total)
High Yield	**11%**
of which Corporate	93% (10% of total)
of which Sovereign	0%
of which Mixed	7% (1% of total)

Source: EPFR. AUM as of 26 February 2020, excluding ETFs. EPFR is not a comprehensive sample of all funds, therefore these figures should be taken as indicative

Europe-domiciled bond fund AUM, February 2020

Investment Grade (BBB- and above)	**54%**
of which Corporate	31% (17% of total)
of which Sovereign	21% (12% of total)
of which Mixed	47% (26% of total)
All Quality	**33%**
of which Corporate	13% (4% of total)
of which Sovereign	11% (4% of total)
of which Mixed	75% (25% of total)
High Yield (BB+ and below)	**12%**
of which Corporate	91% (11% of total)
of which Sovereign	1% (0.2% of total)
of which Mixed	8% (1% of total)
Other uncategorised	**0.03%**

Source: EPFR, as of 26 February 2020, excluding ETFs. EPFR is not a comprehensive sample of all funds, therefore these figures should be taken as indicative. "Europe-domiciled" is defined broadly as any fund domiciled in: Austria, Belgium, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Isle of Man, Italy, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom of Great Britain and Northern Ireland.

A holistic assessment of bond market resilience

The shock of COVID and resultant stress in bond markets prompted renewed focus from policymakers on bolstering the resilience of market-based finance. Analysis of March 2020 has sought to identify the contributions of different market participants and intermediaries to pressure on markets.[21]

Concern about open-ended bond funds' perceived structural vulnerabilities, liquidity, and redemption management during this episode warrants attention, and is discussed further below. But the fact that these funds are a minority investor in fixed income markets limits the scope for interventions targeted solely at them to have a market-wide impact. And, persistent challenges around data availability for other types of end-investor and trading activity in fixed income markets means that, as IOSCO have noted, *"it is difficult to assess whether corporate bond market liquidity declined primarily because of reduced liquidity supply by dealers, increased liquidity demand by investors, or a combination of both – and what the greater relative contributor to the stresses was"*.[22]

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A reform programme aiming to deliver greater market-wide resilience must take into account the activities of all end-investors; consider the critical role of intermediaries and market structure, and seek to improve transparency across the board – generating data that can be used to develop a comprehensive picture of market activity.

Reforming bond market structure

Global fixed income markets are 50% larger today than in the immediate aftermath of the Global Financial Crisis. This growth should be viewed positively: while monetary policies and resultant valuation effects have been a significant driver, it also reflects growing use of capital market funding channelled from a growing pool of end-investor capital provided by – among others – DC pension schemes and retail investors. However, as IOSCO has noted, *"corporate bond markets maintain a large institutional and buy-and-hold component and remain mostly reliant on a limited number of dealers for intermediation",* while at the same time, post-Crisis regulation and evolution of market practices have forced traditional bond dealers to fundamentally rethink their business models, resulting in falling inventories and diminished risk appetites.[23]

Market structure continues to evolve with the emergence of new market participants and all-to-all trading technologies. But while these are important alternatives for trading bonds, they are not substitutes for the traditional dealer-based principal/agent model. **It is reasonable to suggest that bond market structure and intermediation capacity has not kept pace with bond issuance**, and that, as IOSCO has concluded, *"the structure of the corporate bond markets also contributed to the constraints in meeting demand for liquidity during the COVID-19 induced market stresses"*.[24]

Indeed, while post-GFC reforms meant banks were overall resilient, having entered the March 2020 crisis with strong liquidity and capital positions, their willingness to draw down on them was limited even after some prudential regulators gave guidance that allowed them to do so. The Bank of England's Prudential Regulation Authority has pointed to the need to revisit how these regulatory buffers are structured, noting that *"the way the prudential framework itself works may be inhibiting banks in appropriately using their liquidity when facing stress",* and that defensive actions taken *"could lessen market intermediation and credit provision",* meaning *"central banks have to intervene in greater size and more quickly than in the counterfactual"*.[25]

Fixed income market structure needs reform to increase intermediation capacity and reduce reliance on bank balance sheets. Post-GFC constraints on bank-based intermediation spurred the growth of algorithm-driven Principal Trading Firms (PTFs) and all-to-all trading platforms as increasingly important methods of trading bonds in recent years. But price uncertainty and unprecedented volatility during March 2020 saw many dealing algorithms switched off; while all-to-all trading platforms do not use their balance sheet to act as liquidity providers, and must be able to match willing buyers and sellers in real time, limiting their ability to ease market turbulence where there is an imbalance in liquidity demand and supply.[26] In equity markets, central limit order books – a type of all-to-all platform – were able to hold up through the turbulence due to more standardisation of equity issuance, concentrating liquidity, better data giving investors confidence in prices and in turn a willingness to take the other side of trades, and predominately electronic means of transmitting orders and processing executions.

Recommendations to enhance bond market resilience:

- Update **regulatory guidance on the usability of bank capital and liquidity buffers** during stress events.
- **Improve fixed income post-trade data**, including via development of consolidated tapes where they do not already exist, to enhance both algorithm calibration and market participants' confidence in where the market is trading. Prices in a real-time tape can also integrate markets and make liquidity more accessible via more stable prices.
- **Standardise bond issuance practises** to allow for more bonds to trade on all-to-all platforms, and larger, more liquid issuances; and creating conditions for better integrated bond markets.

Bond market transparency

A holistic assessment of supply and demand for bond market liquidity during stress events requires data on how all types of market participant behave through time. Open-ended bond funds – while a minority investor in fixed income markets – are subject to robust disclosure requirements, which allows analysis of flows both at fund level and aggregate level, such as that outlined earlier in this paper. Several commentators have noted this is not the case for other types of market participant, where information on transactions can be anecdotal at best.[27] **Better real-time market-level transaction data is also critical in enhancing market resilience and transparency.** Fixed income ETFs provided one source of real-time information during the market turbulence, benefitting from

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continuous electronic trading on several all-to-all platforms. However, as noted above, one manifestation of stress during March 2020 was significant price uncertainty in underlying fixed income markets. In part, this was due to broker-dealers' reluctance to make markets, but in many jurisdictions was exacerbated by a lack of comprehensive, reliable information on where markets were trading. Better access to real-time information led to more resilient and orderly equity markets, allowing exchanges to initiate trading halts to stabilize prices, and giving investors real-time transparency on executable prices. The EU and UK, for example, do not yet have consolidated tapes of post-trade data for bonds akin to TRACE in the US. Poor transparency and price uncertainty is likely to translate into a reluctance to participate in markets, even as price dislocations generate attractive investment opportunities.

Recommendations to enhance bond market transparency we recommend:

- **Accelerate the Financial Stability Board (FSB)'s efforts to develop a develop a systemic, ecosystem-wide understanding of the non-bank financial system;** including better use or sharing of information collected already, potentially with new metrics to allow better monitoring by authorities and distinguish between 'shadow banking' and market-based finance.[28]
- **Improve post-trade fixed income data**

Open-ended bond fund resilience

Some commentators have raised concerns that structural features may make open-ended bond funds a source of unique or disproportionate pressure on markets, unduly amplifying market movements. They point to a perceived liquidity mismatch between daily-dealing fund redemption terms and underlying assets; and have suggested a risk of first-mover advantage incentives arising from the collective investment structure. Before discussing each concern, it is worth recapping some fundamental features of OEFs.

OEFs do not face bank-like run risk. Bank depositors' principal must be returned at par, and bank runs can occur when depositors demand their money back in short order. By contrast, the value of mutual fund shares, unlike bank deposits, fluctuate. Fund investors have an equity stake valued according to their pro-rata share of underlying fund assets. If the assets decline in value, the share price of the fund declines accordingly. Redemptions are generally met by selling a representative sample of fund assets, rather than relying on cash or near-cash assets. OEFs therefore face redemption risk, i.e., the risk of difficulty meeting investor requests to redeem shares for cash within the timeframe required without unduly diluting the interests of remaining shareholders.

OEFs investing in inherently illiquid assets present a liquidity mismatch if daily dealing is offered – this covers assets that do not trade frequently and are not on public markets, such as real estate, infrastructure, or other private assets. In general, **they should not offer daily dealing and should integrate notice periods that are appropriate to the underlying market.**[29]

For **OEFs invested in public securities (such as corporate bonds) that trade on an intraday basis, there is no liquidity mismatch and daily dealing is suitable**, since it matches the underlying market.[30] In these funds, **managers must mitigate first-mover advantage risk *within* the fund**, which can arise when one investor, or set of investors, are motivated to transact ahead of others to gain a better price, negatively impacting or 'diluting' the positions of remaining investors. Robust ex-ante liquidity risk management and anti-dilution mechanisms such as swing pricing are necessary to mitigate these risks, particularly when funds areinvested in asset classes where liquidity can be shallower or variable over time, where transaction costs can fluctuate, or where prices can be slower to adjust.

The market turbulence of March 2020 prompted policymakers to look again at the effectiveness of fund liquidity risk management tools (LMTs). We have outlined policy options in recent Policy Spotlights on swing pricing specifically, and managing liquidity risk in investment funds generally (see recommendations below).

However, **any further interventions must recognise that LMTs are ongoing portfolio management tools designed to both manage redemption risk and protect investors from dilution and other risks**. As such, while they are effective redemption management tools that remove any first mover advantage arising specifically from the OEF structure, **they should not be used beyond this to compromise fund investors' ability to be a first mover *in markets***: that is, the advantage for market participants able to utilise available market liquidity ahead of other market participants.

First mover advantage *in markets* will continue to exist irrespective of investment vehicle – whether direct investments, investments via separate accounts, or investment funds. Future **interventions must therefore avoid creating an uneven playing field between different types of investors by placing more onerous restrictions or controls on OEFs than on other investment vehicles** – whether through more prescriptive rules on asset allocation, use of LMTs, or regulatory intervention in their use.

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We believe this is a critical distinction: LMTs, and any policies aimed at improving them, should aim to further reduce incentives created by the fund structure for some fund investors to transact in advance of others. But **LMTs *cannot* and *should not* be used to change strategic allocation decisions by investors responding to market conditions or individual investment requirements**. Policies should target first mover advantage *in funds*, but not first-mover advantage *in markets*.

Direct regulatory or macroprudential interventions targeted at funds on financial stability grounds will, by definition, only impact a subset of investors in a given asset class. It is therefore more likely that **any such intervention will be ineffective or discriminatory** (by disadvantaging fund investors versus direct or separate account investors) **and could be harmful or counterproductive on financial stability grounds**, either by signaling to other investors holding related assets (through other vehicles or on their own balance sheet) that there is a problem in the market, prompting them to sell; or to shift assets into other, non-restricted vehicles.

Recommendations to enhance bond fund resilience:

- **Prioritise efforts to increase the availability and uptake of liquidity management tools.**
- **Improve the effectiveness of swing pricing and other anti-dilution mechanisms by increasing uptake (where appropriate and operationally feasible), developing standards and best practices, and facilitating access to data** that will allow better calibration, including consolidated tapes and information on underlying investors transacting via omnibus accounts.
- **Regulators can issue supervisory guidance on use of LMTs during market stress events**, informed by close engagement with industry.

Clarifying liquidity mismatch in open-ended funds

Banks engage in maturity transformation, funding long-dated assets (i.e. mortgages) with short-term liabilities (i.e. deposits). This mismatch between assets (e.g. a bank's loan book) and the nature of the liabilities goes to the heart of the debate on liquidity transformation and liquidity mismatch risk. The requirement to honour deposits immediately means a bank will need to generate cash from assets which may not be immediately realisable or of sufficient value to meet fixed-at-par liabilities.

Open-ended funds can face liquidity mismatch, depending on the asset classes they are invested in. However, a critical difference is that fund investors hold an equity stake in fund assets which can fluctuate in value depending on underlying markets, while depositors hold a fixed claim on their bank. This equity stake means that fund investors do not have a right to be paid out at the nominal value of underlying assets, such as bonds, held in the fund's portfolio but only on the market value of the fund's assets at the time of redemption.

For open-ended funds, inherently illiquid assets should therefore be differentiated from assets with variable liquidity. The former includes assets trading in private markets – such as direct lending, real estate, or infrastructure debt – where liquidations might take weeks, months, or years. The latter (securities trading continuously on public markets, such as corporate bonds) can be sold quickly, but variable liquidity – depending on economic circumstances, market sentiment, or trade size – can generate additional trading costs.

Open-ended funds risk liquidity mismatch if they invest in inherently illiquid assets – with no realistic prospect of an immediate liquidation – while offering daily dealing. This type of liquidity transformation would not be appropriate to the fund structure. They should therefore not offer daily dealing, and should integrate notice periods that are appropriate to the underlying market.

Open-ended funds investing in assets that can be sold on the day while offering daily dealing are not engaging in liquidity transformation. There may be a liquidity premium associated with a sale, but this is borne by end-investors via their equity stake in the fund in the form of fluctuating net asset values. Robust liquidity stress testing and liquidity management tools should be deployed to mitigate any excessive risks to investors. Anti-dilution mechanisms such as swing pricing or anti-dilution fees can pass on the costs of accessing liquidity to the transacting investor, minimising the risk of devaluing the stake of investors remaining in the fund.

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Macroprudential cash buffers

Some commentators have suggested that funds should increase 'cash buffers' as an ex-ante liquidity risk management measure. This is premised on the idea that higher cash buffers should allow funds to meet elevated redemption requests without selling portfolio securities.[31] We believe there are several serious flaws in these proposals.

The suggestion that funds are holding insufficient 'cash buffers' conflates the liquidity risks inherent in bank balance sheets with OEF redemption risk. Fund investors hold a redeemable equity stake in all of the funds' assets, both cash and securities. To ensure all investors are treated fairly, fund managers therefore aim to meet redemptions on a pro-rata or risk-constant basis by selling over time a representative 'slice' of portfolio assets. The suggestion that funds should hold larger cash buffers implicitly and inappropriately relies on a 'High Quality Liquid Asset' framework designed for banks.

Portfolios are structured using ongoing liquidity stress testing so that cash or near-cash assets are not relied on as a primary source of OEF liquidity. Regulations such as SEC Rule 22e-4 and ESMA's Liquidity Stress Testing Guidelines aim to ensure funds can meet redemptions without disadvantaging remaining investors, and that the fund portfolio is resilient to a range of redemption scenarios and market conditions, including diminished liquidity.[32] Business-as-usual LMTs such as robust swing pricing make sure liquidity costs are externalised onto transacting investors.

This notwithstanding, while cash buffers could be designed specifically with stressed scenarios in mind, they would need to be a significant portion of the portfolio to be sufficient for redemptions. For example, in 2015 the Third Avenue Focused Credit Fund had nearly 16% in liquidity assets, but chose to close the fund to protect investors from further redemptions.[33]

Moreover, the consequence of relying on cash buffers to meet redemptions would be funds' portfolios becoming progressively less liquid with each round of outflows. Instead of contributing to fund resilience, this would increase first-mover advantage within the fund and incentives to 'run': investors who 'moved first' would not bear any of the liquidity risks, and receive their stake in the fund in cash, leaving a less liquid portfolio for other investors.[34]

In sum, mandatory cash buffers would be:

- **Counterproductive**: as relying on cash buffers increases first mover advantage in funds and generates an incentive to 'run' that would not otherwise exist.
- **Ineffective**: as there is no guarantee that cash buffers would ultimately be sufficient to prevent funds having to sell securities onto the secondary market.
- **Discriminatory**: both between fund investors (by negating the principle of equal treatment of investors) and versus investors using other investment vehicles (who would not face the same restrictions and cash drag on their returns).

Related content

- BlackRock (2017), *Macroprudential Policies and Asset Management*.
- BlackRock (2018), *Taking market-based finance out of the shadows: Distinguishing Market-Based Finance from Shadow Banking*
- Barbara Novick, BlackRock (2019), *Remarks at the OeNB Macroprudential Policy Conference: "Agnostic on non-banks?"*
- BlackRock (2020), *Lessons from COVID-19: Overview of Financial Stability and Non-Bank Financial Institutions*.
- BlackRock (2020), *Lessons from COVID-19: Market Structure Underlies Interconnectedness of the Financial Market Ecosystem*
- BlackRock (2020) *Lessons from COVID-19: Liquidity Risk Management is Central to Open-Ended Funds*.
- BlackRock (2021), *Addendum to Lessons from COVID-19: Liquidity Risk Management is Central to Open-Ended Funds*.
- BlackRock (2021), *Policy Spotlight: Swing pricing – Raising the bar*.
- BlackRock (2022), *Policy Spotlight: A European Perspective on Managing Liquidity Risk in Investment Funds*.
- Laipply and Madhavan (2022), *Bond mutual fund and exchange-traded fund flows in stressed markets: Empirical evidence on the destabilization hypothesis*.

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Endnotes

1. SIFMA (2022) *2022 Capital Markets Factbook*.
2. Source: Financial Stability Board (December 2021) *Global Financial Monitoring Report on Non-Bank Financial Intermediation 2021*. Non-bank finance is a catch-all term encompassing a range of different activities, including activities referred to as 'shadow banking' entities which have a material asset-liability mismatch, leverage, and direct connections to traditional banks (with implicit access to official sector backstops). Market-based finance involves unlevered investments in financial instruments. There is a continuum between shadow-banking and market-based finance, within the non-bank ecosystem, with varying degrees of leverage, asset-liability mismatched, and access to official sector support. See BlackRock (2018), *Taking market-based finance out of the shadows: Distinguishing Market-Based Finance from Shadow Banking*. Measurement of the non-bank financial intermediation groups together by the FSB groups together both investment funds and reformed Money Market Funds (Economic Function 1) with risker forms of bank-like lending (Economic Functions 2 through 5). See Barbara Novick, BlackRock, (2019), *Remarks at the OeNB Macroprudential Policy Conference: "Agnostic on non-banks?"*.
3. Source: *McKinsey Performance Lens Global Growth Cube*. In 2010, assets managed externally for Retail & High Net Worth investors stood at just over US $21Tn, and $6Tn for Defined Contribution pension schemes, accounting for 40% and 11% of externally managed assets respectively. By 2020, the respective figures were $49Tn (42%) and $15Tn (13%) respectively. And in 2020, internally managed Corporate Treasury assets stood at $163Tn, or 38% of global financial assets (both internally and externally managed).
4. Source: *McKinsey Performance Lens Global Growth Cube*. 'Western Europe' covers Austria, France, Germany, Italy, the Netherlands, Spain, Switzerland, the UK, Sweden, Norway, Denmark, and Finland.
5. SIFMA (2022) *2022 Capital Markets Factbook*.
6. European Central Bank (2020), *Financial Stability Review May 2020*.
7. Bank for International Settlements (2021) *Quarterly Review December 2021 – Open-ended bond funds: systemic risks and policy implications*.
8. European Central Bank (2020), *Financial Stability Review May 2020*.
9. IOSCO (2022) *Discussion Paper: Corporate Bond Markets – Drivers of Liquidity During COVID-19 Induced Market Stresses*.
10. BlackRock (2020), *Lessons from COVID-19: Liquidity Risk Management is Central to Open-Ended Funds*.
11. See Financial Stability Board (2020), *Holistic Review of the March Market Turmoil*.
12. See also IOSCO (2022) *Discussion Paper: Corporate Bond Markets – Drivers of Liquidity During COVID-19 Induced Market Stresses*, page 36.
13. Source: BlackRock, Bloomberg, NYSE. As of March 31, 2020.
14. BlackRock (2020), *Lessons from COVID-19: Liquidity Risk Management is Central to Open-Ended Funds*.
15. Importantly, short term funding markets did not receive direct support in Europe and remained stressed for several weeks. For further discussion see BlackRock (2020), *Lessons from COVID-19: Overview of Financial Stability and Non-Bank Financial Institutions*.
16. IOSCO (2022) *Discussion Paper: Corporate Bond Markets – Drivers of Liquidity During COVID-19 Induced Market Stresses*.
17. BlackRock (2020), *Lessons from COVID-19: ETFs as a Source of Stability*.
18. Laipply and Madhavan (2022), *Bond mutual fund and exchange-traded fund flows in stressed markets: Empirical evidence on the destabilization hypothesis*.
19. BlackRock (2020), *Lessons from COVID-19: Liquidity Risk Management is Central to Open-Ended Funds*.
20. See BlackRock (2020), *Lessons from COVID-19: Liquidity Risk Management is Central to Open-Ended Funds* and BlackRock (2021), *Addendum to Lessons from COVID-19: Liquidity Risk Management is Central to Open-Ended Funds*.
21. IOSCO (2022) *Discussion Paper: Corporate Bond Markets – Drivers of Liquidity During COVID-19 Induced Market Stresses*.
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23. IOSCO (2022) *Discussion Paper: Corporate Bond Markets – Drivers of Liquidity During COVID-19 Induced Market Stresses*.
24. IOSCO (2022) *Discussion Paper: Corporate Bond Markets – Drivers of Liquidity During COVID-19 Induced Market Stresses*.
25. Victoria Saporta, Bank of England, (2022), *Capital and (for a change) Liquidity Buffers*.
26. See BlackRock (2020), *Lessons from COVID-19: Market Structure Underlies Interconnectedness of the Financial Market Ecosystem* and BlackRock (2022) *Feedback on IOSCO's Report on Corporate Bond Markets & ETF Consultation*.
27. IOSCO (2022) *Discussion Paper: Corporate Bond Markets – Drivers of Liquidity During COVID-19 Induced Market Stresses*.
28. Financial Stability Board (2020), *Holistic Review of the March Market Turmoil.*
29. In the US registered investment companies are subject to 15% cap on illiquid assets and ongoing liquidity testing requirements under Rule 22- 2(e)4. In the EU UCITS funds are subject to a 10% restriction (see the Eligible Asset Directive 2007/16/EC of 19 March 2007 regarding illiquid asset limits). UCITS and open-ended AIFs are required to have a detailed liquidity risk management program and liquidity stress testing program in place (see ESMA guidelines on liquidity stress testing in UCITS and AIFs). The UK has similar rules as to the EU UCITS and AIF requirements in the FCA Rulebook but the FCA requires funds investing in inherently illiquid assets to restrict liquidity windows to no less than every 90 days to minimize the risk of liquidity mismatch (see FCA PS19/24).
30. BlackRock (2022) *Policy Spotlight: A European Perspective on Managing Liquidity Risk in Investment Funds*.
31. As a recent example, see European Central Bank (2022) *Working Paper No. 2695: Macroprudential regulation of investment funds*.
32. BlackRock (2021), *Addendum to Lessons from COVID-19: Liquidity Risk Management is Central to Open-Ended Funds*.
33. See Securities and Exchange Commission (2015) *Third Avenue Trust and Third Avenue Management LLC; Notice of Application and Temporary Order*
34. For further discussion, see Barbara Novick, BlackRock, (2019), *Remarks at the OeNB Macroprudential Policy Conference: "Agnostic on non-banks?"*.

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