

Macroprudential Policies and Asset Management



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Macroprudential policies – prudential tools designed to anticipate and mitigate systemic risks before they materialize – have received attention as policy makers seek to avoid future financial crises. Macroprudential policies have traditionally focused on the banking system, given the systemic importance of banks. As banking reforms come to completion, however, policy makers are considering extending the perimeter of macroprudential regulation beyond banking.¹ This is based on the view that banking reforms have encouraged the migration of risks to non-banks, as demonstrated by greater holdings of bonds by investment funds. Despite recently revised data showing that the growth in bond ownership by mutual funds is more muted than previously believed, policy makers continue to consider whether macroprudential regulation should be applied to asset management. This has sparked a debate about system-wide stress testing, including stress tests across mutual funds and stress tests of asset managers. As the Financial Stability Board (FSB) recently acknowledged, system-wide stress testing is currently at an “exploratory stage”; however, some policy makers believe such efforts could eventually contribute to more effective regulation and liquidity risk management. In this *ViewPoint*, we outline challenges to implementing system-wide stress testing, followed by a survey of macroprudential tools that have been contemplated.

We continue to believe that the most effective way to reduce risks in asset management is to regulate at the product- and activity-level across the market ecosystem. Such efforts are already underway in multiple jurisdictions around the world,² and in many cases, existing regulation mitigates systemic risk concerns.

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Key Observations

- The role of *asset owners* must be incorporated into the dialogue.
- Regulators should focus on products- and activities-based regulation across the financial market ecosystem to reduce risks in asset management.
- System-wide stress testing cannot be used for macroprudential purposes unless it can (i) distinguish market and liquidity risk from systemic risk *and* (ii) obtain sufficient data on at least the majority of asset owners.
- We strongly discourage the use of system-wide stress tests to justify policies that hinder natural price adjustment processes.
- Stress testing across mutual funds is not a starting point for system-wide stress testing. Mutual funds do not operate in markets in isolation nor do they represent a homogeneous sector.
- Stress tests of asset managers will not inform systemic risk efforts. Assets managed by asset managers are not on the manager’s balance sheet. Asset managers are not the counterparty to client trades or derivatives transactions.
- Applying macroprudential policies to asset management will *increase* systemic risk by encouraging the procyclical behavior such policies aim to counteract.

Executive Summary

System-wide stress testing cannot be used for macroprudential purposes unless it can: (i) distinguish market and liquidity risk from systemic risk; and (ii) obtain sufficient data on the system to draw conclusions.

- Market risk and liquidity risk are not the same as systemic risk.
- System-wide stress tests must distinguish market and liquidity risk from systemic risk if policy makers intend to use the results for macroprudential purposes.
- Data needs to be collected on at least the majority of market participants (including pensions, sovereign wealth funds, family offices, and other asset owners) to draw meaningful conclusions about market dynamics.
- Focusing only where complete data is available (e.g., funds and asset managers) will result in skewed and misleading conclusions.

We discourage the use of system-wide stress testing to justify policies that hinder natural price adjustment processes (e.g., capital flow management measures).

- A well-functioning market anticipates that asset prices fluctuate, sometimes significantly.
- Prices set by the market convey information about potential risks and rewards that allow for better risk management and investment decisions by investors.
- Macroprudential policy should not be used to artificially restrict price discovery processes.
- Market risk is expected and desired by investors in asset management products. Asset managers are hired to take market risk in line with asset owner mandates and investment guidelines.
- Macroprudential policies that prevent prices from accurately reflecting risks will likely create asset price bubbles and market distortions.

Macroprudential stress testing is more appropriate for banks where market and liquidity risks can create solvency issues, thereby generating systemic risk.

- There are many examples where bank failures have caused or transmitted systemic risk.
- Regulation of banks directly addresses the fact that government-insured deposits can backstop risky lending and create misaligned incentives, which may lead to excessive risk-taking and excessive leverage.
- Macroprudential regulation of banks reflects the critical role of banks in intermediating liquidity throughout the financial system.

Stress testing across mutual funds requires assumptions that run counter to observed behavior during market stress events and ignores the diversity of mutual funds.

- Mutual funds are diverse on multiple dimensions – investment strategies, benchmarks, shareholders – making it virtually impossible to generalize about flows.
- Mutual funds are not an asset class of their own; they represent a wide range of strategies using equities, bonds, and cash.
- Mutual funds are only one component of the financial system and do not operate in markets in isolation.
- Mutual funds represent less than 20% of investable assets.

Stress tests of asset managers will not inform systemic risk efforts. Assets managed by asset managers are not on the manager's balance sheet. Asset managers are not the counterparty to client trades or derivatives transactions.

- Asset managers do not own the assets they manage; losses emanating from the portfolios they manage do not impact the balance sheet of the asset manager.
- Each of the portfolios under management, including funds and separate accounts, is a separate legal entity. The assets of one portfolio cannot be used to support the assets of another.
- Client assets are held by a custodian. Manager transitions do not require asset sales or the movement of assets.

Executive Summary (cont'd)

Macroprudential policies that violate risk management protocols (e.g., macroprudential use of margin/hairstcuts) or run counter to investors' best interests (e.g., mandatory liquidity buffers) will lead to procyclical not countercyclical outcomes.

- The application of macroprudential policies to funds or asset managers in stressed markets is likely to cause investors to retreat when their participation might otherwise be stabilizing, encouraging more homogeneous investment behavior.
- Policies that cause investors to retreat will reduce a source of funding to the real economy and negatively impact businesses and households.

We recommend policy makers instead focus on product- and activity-based regulations including:

- (i) Collect and monitor data on liquidity profiles of funds to permit earlier regulatory intervention if a fund experiences liquidity challenges.

- (ii) Review existing regulations to establish high standards for liquidity risk management and the broadest possible toolkit to help fund managers navigate a variety of redemption scenarios.
- (iii) Develop a suite of leverage and potential loss measures that can be collected consistently across portfolios to help regulators understand the leverage profiles of investment funds.
- (iv) Require fund redemption terms be aligned with the amount and type of leverage used by individual funds.
- (v) Review existing regulations to establish high standards for business continuity and disaster recovery planning.
- (vi) If policy makers decide to pursue system-wide stress testing, these efforts need to begin by filling data gaps related to asset owner holdings and investment behavior.

Macroprudential Stress Testing

System-Wide Stress Testing

The FSB recently recommended that authorities consider “system-wide stress testing that could potentially capture effects of collective selling by funds and other investors on the resilience of financial markets and the financial system more generally.” As acknowledged by the FSB, system-wide stress testing is currently at an “exploratory stage.”³ The objective is to identify potential systemic risks where the application of macroprudential policies may be warranted. In the banking context, this has translated to stress tests that look beyond individual banks (microprudential) to the impact of economic shocks on multiple banks (macroprudential). According to the Bank of England (BoE): “by assessing the impact across banks at the same time, concurrent exercises allow policymakers to identify whether a particular shock is likely to affect many banks or just a few. This is helpful in determining the likely system-wide impact of the shock, and hence risks to the provision of financial services to households and businesses.”⁴ That said, not all policy makers agree as to the practicality of macroprudential stress tests. As noted by Federal Reserve Board Governor Daniel Tarullo, “even the most conceptually promising of ideas are a good ways from being realized in specific and well-supported elements of our economic models.”⁵ While we understand the objectives, we also recognize that system-wide stress testing will need to overcome critical challenges

before such tests could be used to inform policy decisions. These challenges include:

- (i) Distinguishing market and liquidity risk from systemic risk; and
- (ii) Obtaining sufficient data to draw conclusions and avoid data availability bias.

Challenge 1: Distinguishing Market and Liquidity Risk from Systemic Risk

One difference between macroprudential stress testing of the banking sector and system-wide stress testing is that the catalysts and transmission mechanisms for systemic risk are relatively unclear outside the banking sector. In other words, a stress test of the banking system can presume that the insolvency or sudden failure of one or more large banks will lead to systemic risk, consistent with numerous examples of banking crises. Performing similar analyses outside the banking sector is more challenging because the solvency of individual entities does not necessarily have implications for financial stability. To date, system-wide stress test efforts have focused on asset fire sales.⁶ While collective selling by investors (whether asset owners investing directly or outsourcing to asset managers) will lead to price declines, this does not necessarily translate to systemic risk. In fact, price fluctuations due to changes in market risk factors are a sign of healthy and well-functioning markets. This is where it becomes important for system-wide stress tests to different-

iate market risk from systemic risk, given that the goal of macroprudential policy is to address systemic risk. As shown in Exhibit 1, systemic risk relates to severe market disruptions that have serious negative consequences for the real economy. In contrast, market risk reflects price fluctuations that result from risk factors, such as interest rate, currency, liquidity, or inflation risk. Market risk is present in markets at all times and the allocation of capital by investors reflects their perception of market risk. Systemic risk occurs infrequently, under extraordinary circumstances, and has not historically been anticipated by investors or by regulators.

Further, the systemic risk implications of market and liquidity risk are substantially different for banks versus asset managers or mutual funds. As detailed in Exhibit 2, market and liquidity risk can result in solvency issues for banks. Given the systemic importance of banks, solvency issues or losses experienced by banks from market and/or liquidity risks can translate into systemic risk. The same is not the

case for asset managers or mutual funds.

Some commentators argue that price fluctuations can lead to systemic risk under certain circumstances.⁷ Indeed, large-scale mispricing of subprime mortgages was a leading cause of the 2008 Crisis. Based on this experience, policy makers surmise that other price changes could contribute to a future crisis – for example, if they stem from asset sales due to mutual fund redemptions. This logic fails to recognize that the mispricing of subprime mortgages and the follow on impacts to markets were due to a variety of factors, including poor underwriting standards, failures of credit rating agencies, opaque uses of derivatives, excessive leverage in the banking system, and significant risk-taking by banks. Mispricing of risk due to the aforementioned issues is materially different than the fluctuation of prices based on changes in market conditions. Further, as a result of financial regulatory reform efforts, there are many more protections in place today that address deficiencies exposed during the crisis. For example, the move to central clearing

Exhibit 1: Differentiating Systemic Risk from Market Risk

What is systemic risk?	What is market risk?
<p><i>“a risk of disruption in the financial system with the potential to have serious negative consequences for internal market and the real economy.”</i></p> <p style="text-align: right;">– European Systemic Risk Board (ESRB)^a</p> <p><i>“the risk of widespread disruption to the provision of financial services that is caused by an impairment of all or parts of the financial system, and which can cause serious negative consequences for the real economy.”</i></p> <p style="text-align: right;">– IMF-FSB-BIS^b</p>	<p><i>“the risk that an overall market will decline, bringing down the value of an individual investment in a company regardless of that company’s growth, revenues, earnings, management, and capital structure.”</i></p> <p style="text-align: right;">– FINRA^c</p> <p><i>“the risk of financial loss resulting from movements in market prices.”</i></p> <p style="text-align: right;">– Federal Reserve Board^d</p> <p><i>“the risk of losses in on and off-balance sheet positions arising from adverse movements in market prices.”</i></p> <p style="text-align: right;">– European Banking Authority (EBA)^e</p>

a ESRB Regulation (Nov. 24, 2010), <https://www.esrb.europa.eu/shared/pdf/ESRB-en.pdf>.
b IMF-FSB-BIS, Elements of Effective Macroprudential Policies, (Aug. 31, 2016), <https://www.imf.org/external/np/g20/pdf/2016/083116.pdf> (IMF-FSB-BIS).
c FINRA, Market Risk: What You Don’t Know Can Hurt You Jun. 24, 2016), <https://www.finra.org/investors/alerts/market-risk-what-you-dont-know-can-hurt-you>.
d Federal Reserve Board, Market Risk Management (May 17, 2016), https://www.federalreserve.gov/bankinforeg/topics/market_risk_mgmt.htm.
e EBA, Market Risk, <https://www.eba.europa.eu/regulation-and-policy/market-risk>.

Exhibit 2: Differentiating the Implications of Market and Liquidity Risk

	Banks	Mutual Funds	Asset Managers
Market Risk	<ul style="list-style-type: none"> • Can result in losses on balance sheet and create solvency issues that result in systemic risk. • Can result in interconnectedness risk due to leverage. 	<ul style="list-style-type: none"> • Can result in losses that are dispersed among shareholders. • Does not result in solvency issues for asset manager. 	<ul style="list-style-type: none"> • Market risk associated with mutual funds does not result in losses on balance sheet. • Losses on assets under management do not create solvency issues for asset manager.
Liquidity Risk	<ul style="list-style-type: none"> • Can result in asset-liability mismatch on balance sheet resulting in funding risk, which can create solvency issues that result in systemic risk. • Can have broader macroeconomic implications given banks’ critical role in intermediating liquidity through markets. 	<ul style="list-style-type: none"> • Can result in transaction costs that are dispersed among shareholders. • Where fund does not have the ability to externalize transaction costs, can result in theoretical first-mover advantage. • In an extreme scenario, fund may need to use extraordinary measures to address shareholder redemptions. 	<ul style="list-style-type: none"> • Liquidity risk associated with mutual funds does not result in losses on balance sheet. • Liquidity risk associated with AUM does not create solvency issues for asset manager.

for swaps has reduced bilateral counterparty risk, standardized collateral requirements, and increased transparency for regulators. System-wide stress testing would, therefore, need to factor in the current regulatory environment and not be based on the system as it was in 2008.

Similarly, short-term market volatility is not the same as systemic risk. Looking at recent history, we have seen a series of market events (see Exhibit 3) that resulted in significant and unanticipated periods of volatility. While each event resulted in “winners” and “losers,” these market events did not trigger systemic risk. This outcome reflects greater system-wide resiliency based primarily on the reduction in leverage across the system and the reduction in risk-taking by banks, as well as the diversity of market participants.

Another concern that has been raised surrounds situations where triggers may lead to forced selling. One example that has been cited is investment guidelines that do not allow for holding a bond that is downgraded below investment grade.⁸ These provisions are generally found in investment guidelines where the asset owner is subject to risk-weighted capital regulation or similar rules. This is an example where macroprudential policies cannot address the issue. Instead, regulators of insurers, banks, and other asset owners would need to promulgate rules that permit greater flexibility.

Exhibit 3: Examples of Significant Market Volatility 2014-2016

Major Market Events		
Date	Event	Market Impact
Oct. 2014	US Treasury “Flash Rally”	Intra-day volatility
Oct. 2014	Bank of Japan and Government Pension Investment Fund announcements about asset allocation shifts	7% increase in Nikkei Index ^a
Jan. 2015	Swiss National Bank lifted currency cap on Swiss franc	15% decline in Swiss Market Index ^b
Jan. 2015	European Central Bank announced expansion of QE	5% European equity market rally ^c
Aug. 2015	Equity market opening issues on August 24	Intra-day volatility
Jun. 2016	UK EU referendum result	7% drop in FTSE 250; 11% drop in FTSE 350 ^d
Oct. 2016	UK Pound Flash Crash	Intra-day volatility

a WSJ, using end of day data for Oct. 27-31, 2014. As of Nov. 2014.
 b Bloomberg, using end of day data for Jan. 12-16, 2015. As of Jan. 2015.
 c WSJ, using end of day data for Jan. 19-23, 2015. As of Jan. 2015.
 d The Guardian, Brexit fallout – the economic impact in six key charts (Jul. 8, 2016), available at <https://www.theguardian.com/business/2016/jul/08/brexit-fallout-the-economic-impact-in-six-key-charts>.

“We believe it would be misguided for policy makers to use system-wide stress tests to justify policies that artificially prop up prices by restricting the sale of downgraded assets. Such actions are more likely to create asset price bubbles and severe distortions than to mitigate systemic risk.”

As discussed in more detail in the next section, the critical missing piece of the dialogue on asset management is the asset owners. We believe it would be misguided for policy makers to use system-wide stress tests to justify policies that artificially prop up prices by restricting the sale of downgraded assets. Such actions are more likely to create asset price bubbles and severe distortions than to mitigate systemic risk.

A better approach would be to ensure that the banking system has sufficient capital and liquidity to withstand losses that may arise from severe but plausible declines in asset values. Such efforts are already being pursued by banking authorities worldwide.

Challenge 2: Obtaining Sufficient Data to Draw Conclusions and Avoid Data Availability Bias.

As the ESRB notes, “system-wide [stress] tests should encompass all types of market participants and reflect the dynamics of the market.”⁹ Unfortunately, there is limited data available on a large swath of market participants, which creates a significant impediment to the implementation of a stress testing model that can produce reliable results. For example, within the Euro area, the ECB estimates that “detailed statistics are not available for more than 50% of the [shadow banking] sector.”¹⁰

While the focus is often on assets managed by asset managers, these firms manage only a portion of financial system assets. Sources estimate that between one-quarter and one-third of financial market assets are managed by asset managers.¹¹ The remaining assets are managed by asset owners directly. Exhibit 4 provides a breakdown of assets owned by different types of asset owners. The investment objectives and constraints, and the consequent investment behavior of these asset owners differ significantly. For example, insurance companies try to earn a spread while matching their liabilities and meeting regulatory and rating agency requirements. The asset allocation of a typical insurance company is heavily weighted towards high quality fixed income. Further, most insurance company assets are taxable, meaning that tax considerations must be taken into account when buying or selling securities. As a result, many insurers tend to pursue lower velocity investment strategies. Another

example is the greater use of target date funds (TDFs) by defined contribution plans. TDFs often exhibit countercyclical investment behavior because TDFs periodically rebalance asset class allocations back to their target allocations. A third example is the ability of less-constrained asset owners, as well as hedge funds, to invest opportunistically when they believe securities are mispriced. A system-wide stress test that relies solely on data about mutual funds or on assets managed by external asset managers is not a system-wide stress test and will likely produce misleading results.

The range of investment strategies and the availability of information on asset owners differs significantly, with limited data available on entire groups of asset owners. Many asset owners are not subject to regulatory constraints around the levels of leverage or risk they employ, nor are they subject to transparency requirements, making it difficult to ascertain the risks associated with their investment activities.

For example, according to the Committee on Capital Markets Regulation, it is difficult to evaluate the risks that SWFs, foreign exchange reserves, and pension funds may pose because disclosures about these asset owners are limited.¹² Similarly, the FSB has raised concerns regarding potential vulnerabilities of pension funds and SWFs due to their size and opacity.¹³ Further, the Peterson Institute for International Economics notes that SWF operations are substantially large and opaque in many cases, which can make it difficult to determine the motives behind their

Exhibit 4: Asset Owners

	Assets (US \$ trillion)
Pension funds ^a	\$33.8
Insurers ^b	\$24.0
Sovereign wealth funds ^c	\$7.4
Banks ^d	\$50.9
Foundations / Endowments ^e	\$1.6
Ultra-High Net Worth (UHNW) ^f	\$13.4
High Net Worth Individuals (HNWI) ^f	\$65.4
Mass Affluent ^f	\$88.9

Some assets may be double counted as part of the assets of Mass affluent, HNWI and UHNW will be invested with insurance companies and pension funds.

- OECD Global Pension Statistics. As of 2014. Includes private pensions in both OECD and non-OECD countries; does not include public pensions. Available at <http://www.oecd.org/finance/private-pensions/globalpensionstatistics.htm>.
- IMF Global Financial Stability Report as of April 2016: <https://www.imf.org/External/Pubs/FT/GFSR/2016/01/pdf/c3.pdf>.
- Sovereign Wealth Fund Institute. As of Jun. 2016.
- Represents largest 25 Banks. Source: <http://www.relbanks.com/worlds-top-banks/assets>. As of Jun. 2016.
- McKinsey & Company Performance Lens. As of 2015.
- BCG Global Wealth 2016: Navigating the New Client Landscape. Ultra-High Net Worth is defined as those having more than \$100 million in investible assets, High Net Worth is defined as those having between \$1 million and \$100 million, and Mass Affluent is defined as those having between \$250,000 - \$1 million.

investments and their potential to contribute to financial disruption.¹⁴ Likewise, many other asset owners, such as family offices, are not subject to transparency requirements, meaning that there is extremely limited data available on the risks associated with many asset owners' investment behavior. Recent press reports highlight that these types of investors can take sizeable market positions.¹⁵ Substantial additional information about asset owners would be necessary to design a meaningful system-wide stress test. Understanding a system-wide stress test would require broad-scale data collection exercises across a wide swath of market participants. In the absence of this additional information, a system-wide stress test will be critically flawed, as it will not reflect the dynamics of the market ecosystem.

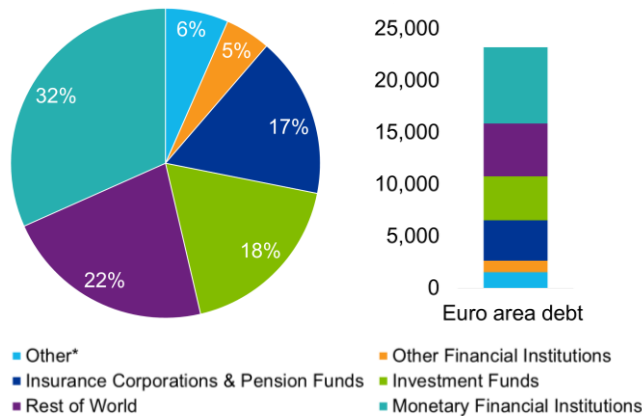
Stress Test Across Mutual Funds

As policy makers have grappled with the lack of data on the majority of market participants, some have suggested focusing stress testing efforts on mutual funds.¹⁶ They argue that a partial test is better than no test and since data is available on mutual funds, this would be a good starting point; we respectfully disagree. Looking past the obvious data availability bias, we note that mutual funds are a subset of assets managed by asset managers and mutual funds reflect less than 20% of investable assets. Even in corporate bond markets, where policy makers continuously highlight concerns related to mutual funds, mutual funds hold approximately 17% of US corporate and foreign bonds included in Federal Reserve Z.1 data. This data has been revised by the Federal Reserve and shows that growth in bond fund holdings of corporate and foreign bonds is more muted than previously believed. Investment funds own a similar portion of Euro area debt, as shown in Exhibit 5.

Importantly, mutual funds represent a wide range of investment strategies utilizing equities, fixed income, and cash – they are not a homogeneous financial market sector. Further, mutual funds are individual legal entities, where risk is managed at the fund level. Stress tests that aggregate multiple funds will lead to nonsensical results because each fund's risk is managed at the individual fund level, in line with the fund's redemption terms and investment strategy. Some commentators have expressed concerns that changes in bond market liquidity have made bond funds more vulnerable.¹⁷ While we agree that fixed income markets have changed, we caution that market liquidity is not the same as fund redemption risk, as outlined in our *ViewPoint, Addressing Market Liquidity*.

An analysis of the potential risks posed by mutual funds needs to consider the revised data, the evolution of trading and asset management over the past decade, fund managers' liquidity risk management procedures, and regulatory changes. In this section, we explore (i) the diversity of bond funds, (ii) the concept of runnable funding

Exhibit 5: Eurozone Debt Ownership by Type of Holder



Source: ECB. "Who-to-whom detail, Short term & Long-term debt securities by counterpart sector" reports. As of 3Q2016.

*Other includes general government, households, and non-financial corporations.

versus the concept of redeemable equity; (iii) the experience of mutual funds during recent market stress scenarios, (iv) revised Z.1 data on bond fund holdings, and (v) evolutionary aspects of bond markets and fund regulation. This analysis highlights that looking at mutual funds as a standalone asset class is likely to produce misinformation about system-wide risks.

Diversity of Funds

Mutual funds represent a wide range of funds pursuing hundreds of investment strategies across a variety of asset classes. Even within a single asset class, there is significant diversity in the types of securities in which each fund invests and in the investment strategies pursued. As a result, each mutual fund is subject to different risks based on its exposures to various underlying assets. In addition, risks to which funds are exposed are dispersed among thousands of shareholders, whether individuals or institutions.

In our *ViewPoint*, [Breaking Down the Data: A Closer Look at Bond Fund AUM](#), we examined US bond funds to better understand the composition of bond funds and investor flows. Morningstar defines 49 categories of US-domiciled dedicated bond mutual funds. This universe includes AUM of \$3.15 trillion across 2,200 funds, reflecting a broad range of investment strategies, benchmarks, and underlying investors. Some areas of differentiation include index versus active, sector-specific versus multi-sector, duration-based strategies, and market-specific versus global strategies. Adding to this diversity, end-investors vary from fund to fund, with some funds heavily retail-oriented, others sold primarily to institutional investors, and still others utilized mainly by retirement plans. Exhibit 6 shows the ten largest categories of US-domiciled bond funds. The largest category, Intermediate-Term Bond, represents 30.6% of the US open-end bond fund assets. Even within this category,

there is significant diversity on a number of fronts, including the benchmarks against which each fund's performance is measured. No other single category represents even 10% of the assets in US-domiciled bond funds, which of course, in aggregate, still only represent a small portion of the investable bond market. This data does not consider the diversity of funds domiciled outside the US.

Redeemable Equity Versus Runnable Funding

Some commentators argue that the presence of "redeemable equity" in mutual funds creates leverage-like features and makes fund shares akin to short-term debt. In other words, they argue that because fund shares can be redeemed for their net asset value (NAV), funds are subject to dynamics similar to funding risk faced by leveraged entities, such as banks. We strongly disagree. The analogy between redemption risk of mutual funds and funding risk of banks is fundamentally flawed and should not be used as a conceptual basis to justify the application of macroprudential policies to mutual funds.

Comparisons between banks and mutual funds conflate different issues. Banks are leveraged entities using short term funding, including insured deposits, to fund their operations. Depositors' principal is guaranteed, and thus, they expect to receive a fixed value that reflects the face amount of their deposits. In the event of a bank's insolvency, creditors will be treated differently depending on the terms of their agreements. Given the government insurance for deposits, banks are subject to "resolution" by authorities specially set up for this task.

Exhibit 6: 10 Largest US Open-End Bond Mutual Fund Categories

Morningstar Category	AUM (\$ millions)	% of total open-end bond fund AUM ¹
Intermediate-Term Bond	963,713	30.6%
Short-Term Bond	276,721	8.8%
High Yield Bond	232,229	7.4%
World Bond	197,838	6.3%
Multisector Bond	158,893	5.1%
Muni National Interm	158,040	5.0%
Nontraditional Bond	132,134	4.2%
Muni National Short	114,925	3.7%
Intermediate Government	93,357	3.0%
Bank Loan	92,933	3.0%

Source: Simfund. As of Dec. 31, 2015. Accessed May 2016. Includes active and index open-end bond mutual funds. Excludes ETFs and fund of funds. Categories defined by Morningstar. Includes bond funds within each category. 1) Total open-end bond fund AUM is the total AUM held in dedicated US open-end bond funds as defined by Morningstar. Total AUM is \$3.15 trillion as of Dec. 31, 2015.

In contrast, mutual fund shares fluctuate in value and the shareholders have equal claims to the assets in the fund. If the underlying assets in a mutual fund decline in value, the shares of the fund will decline in line with the underlying assets. In the highly unlikely event where a fund cannot meet redemptions and must impose a temporary gate or the fund needed to be wound down, investors would still be entitled to pro rata shares of the underlying securities or cash generated by the liquidation of the underlying securities. We are not aware of any instance in which a mutual fund has become insolvent or has needed to enter bankruptcy. Further, given the lack of government guarantees, there has never been a reason for prudential regulators or resolution authorities to intervene in (non-money market) mutual funds with resolution-like measures.

Experience of Mutual Funds During Recent Market Stress Scenarios

In the summer of 2015, the BoE's Financial Policy Committee (FPC) conducted a survey of 17 asset management firms and 143 of their bond funds. Based on this survey, the FPC concluded in its December 2015 Financial Stability Report: "in aggregate, surveyed funds expect to be able to liquidate over one day roughly three times estimated dollar corporate bond market turnover."¹⁸ This observation on market depth reflects a *static* view of the markets, without taking into account the way market conditions may change over time or how different market participants may react to market events. In our [ViewPoint, Addressing Market Liquidity: A Broader Perspective on Today's Bond Markets](#), we discussed a number of reasons why turnover ratios might be suppressed, including buy-and-hold strategies pursued by insurers and central banks and strong fund inflows, each of which reduce the need to sell bonds.

As market conditions change, other factors come into play, reflecting the dynamic nature of markets. For example, insurers and certain pension plans have unmet demand for bonds with higher yields to meet their liabilities, and an increasing amount of defined contribution plan assets are being allocated to TDFs, which often pursue countercyclical strategies that increase their appetite for bonds when bonds underperform equities. And, of course, a wide range of investors, including family offices, hedge funds, and other institutions, may buy bonds opportunistically. As such, it is extremely unrealistic to assume that all market participants or all funds would be selling all of their bond holdings at the same time, even during highly stressed market events.

Given the diversity of bond funds, it is not surprising to find different inflow and outflow behavior across funds. In our [ViewPoint, Breaking Down the Data: A Closer Look at Bond Fund AUM](#), we explored investor flows during four historical stress events: (i) 1994 Federal Reserve rate hikes, (ii) 2008 Crisis, (iii) 2013 "Taper Tantrum," and (iv) December 2015

“In sum, diverse participants in the market ecosystem contribute to financial stability.”

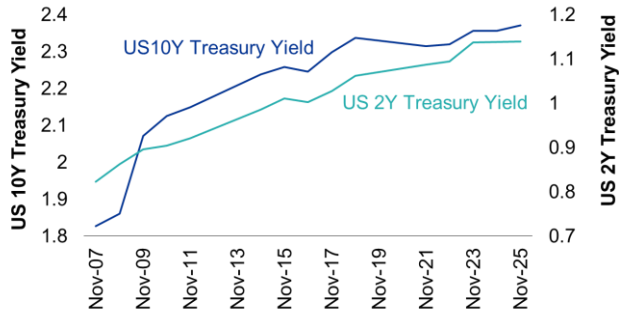
high yield selloff. Our analysis showed that actual fund flows during market stress scenarios do not demonstrate runs, fire sales, or mass redemptions from mutual funds. This is because actual experiences of bond markets reflect the interactions between a wide range of market participants.

Mutual funds do not participate in the capital markets in isolation. For example, in December 2015, high yield markets experienced volatility, in part related to a rapid decline in the price of oil. In addition, the Third Avenue Focused Credit Fund, a daily open-end fund investing in distressed credit suddenly announced it would cease meeting customer redemptions.¹⁹ While mutual fund investors redeemed \$9.6 billion from high yield bond funds that month,²⁰ we observed that several institutional clients added to their high yield allocations, viewing the sell-off as an attractive buying opportunity.

Market events following the US presidential election further underscore the importance of looking at the broader asset management ecosystem. For several years, policy makers have been hypothesizing that an increase in interest rates could result in destabilizing outflows from bond funds. They argue that given the decline in bond market liquidity, this could cause or transmit systemic risk. In the wake of the US presidential election, we observed precisely the set of circumstances that regulators are concerned about with no evidence of runs on funds, mass redemptions, or fire sales.

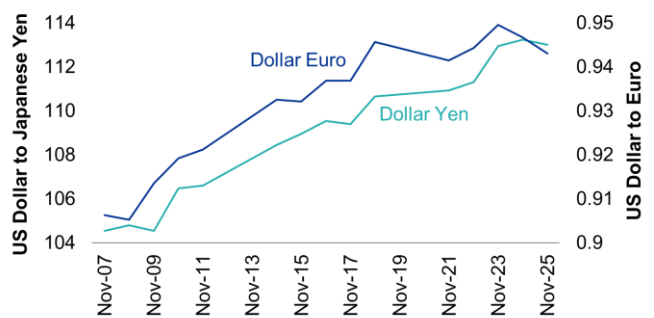
As shown in Exhibits 7 and 8, there was a significant spike in bond yields and the value of the US dollar in the wake of the Presidential election, followed by a US Federal Reserve rate hike announcement on December 14, 2016. This was only the second US Federal Reserve rate hike since 2008, and it signaled the Fed's bias towards further tightening. As shown in Exhibit 9, the largest outflows in the month of November were experienced by high yield bond funds (-\$6.3 billion), followed by a reversal of net flows in December, with inflows totaling \$4.2 billion. Weekly fund flows are shown in Exhibit 10, where we saw municipal bond funds experience consistent outflows of between \$2 and \$5 billion each week for the weeks ended November 16, 2016 through January 4, 2017. These flows likely reflected concerns about election-related changes to the US tax code. At the same time, certain categories of bond funds experienced net inflows during the month of November – namely bank loan funds, inflation-protected bond funds, and ultrashort bond funds. These same categories continued to see inflows in December.

Exhibit 7: US Treasury Yields (%) Following US Elections, Nov. 2016



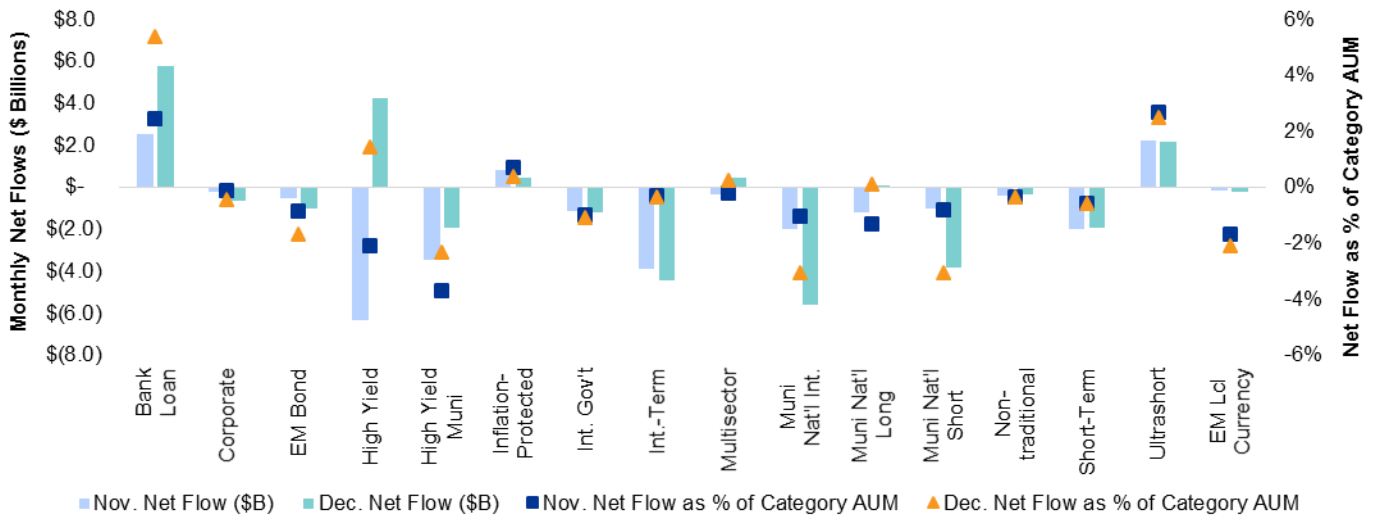
Source: Bloomberg, BlackRock Investment Institute. All data as of November 25, 2016. Accessed December 19, 2016.

Exhibit 8: US Dollar Value



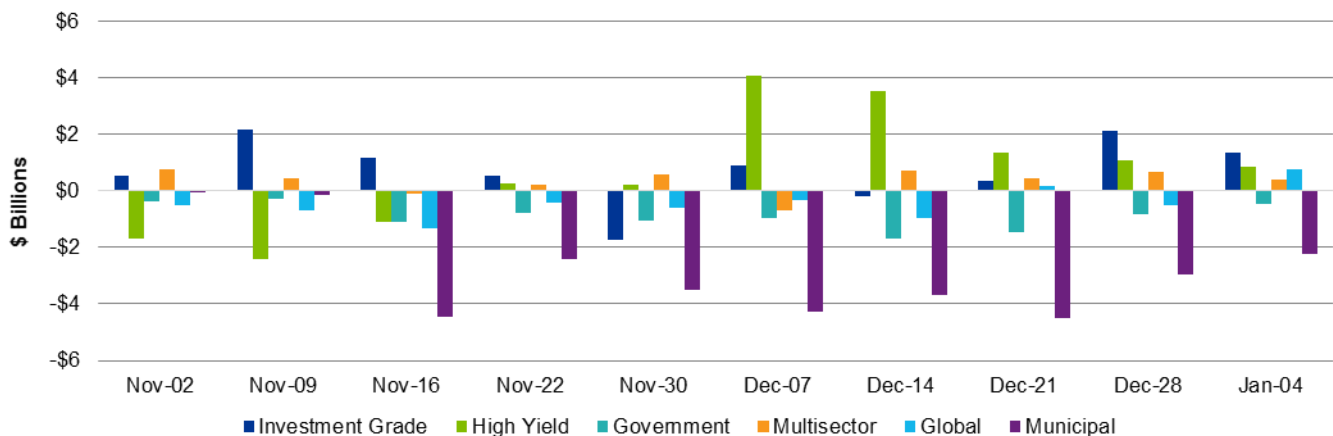
Source: Bloomberg, BlackRock Investment Institute. All data as of November 25, 2016. Accessed December 19, 2016.

Exhibit 9: Monthly Bond Fund Flows, Nov.-Dec. 2016



Source: Simfund. As of Dec. 31, 2016. Excludes fund of funds and money market funds.

Exhibit 10: Weekly Bond Fund Flows, Nov.-Dec. 2016



Source: ICI. Data accessed Feb. 1, 2017. Excludes ETFs. Weekly cash flows are estimates based on reporting covering 98 percent of industry assets.

As demonstrated by historical experience, stress tests that assume massive aggregate outflows from funds are reliant upon assumptions that contradict what has been observed through multiple market stress scenarios – including very recent stress events. Importantly, even during periods of significantly elevated redemption levels, bond funds facing redemptions have met redemptions without causing market disruptions. In sum, diverse participants in the market ecosystem contribute to financial stability. Focusing solely on the growth of open-end mutual funds provides an incomplete picture of market behavior in response to changes to market conditions, particularly since the holdings of assets by other market participants have also grown significantly in the post-crisis period.

Revised Z.1 Data on Mutual Fund Holdings

Some policy makers have expressed an interest in stress testing across bond funds. With this in mind, it is important to look at bond funds as they exist today. This includes developing an understanding of how bond markets have evolved over the past several years. It also requires a deeper understanding of how fund managers incorporate liquidity risk management into the management of mutual funds. Such analyses must consider regulations that set standards for fund liquidity risk management programs and introduce enhanced reporting on the liquidity profile of funds.

Many of the concerns expressed about bond funds originated from a belief that the share of corporate bonds owned by mutual funds is growing rapidly. However, in June 2016, the Federal Reserve released revised Z.1 data, which shows that the growth in mutual fund ownership of corporate and foreign bonds has been more muted than previously believed. As shown in Exhibit 11, the portion of corporate and foreign bonds owned by mutual funds is now estimated at 17%, whereas the previous estimate was 24%. While this represents an increase from 2006 to 2015, the revised data shows a leveling off of this growth.

Evolutionary Aspects of Bond Markets & Fund Regulation

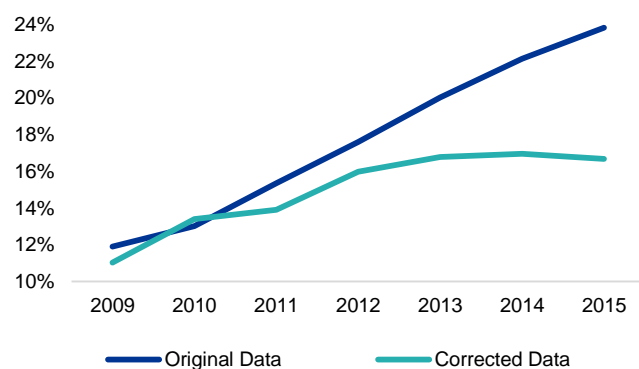
Another area of concern is related to perceived changes in bond market liquidity. While the bond markets have changed, many practices have evolved to adapt to these changes. We have highlighted the changes that have taken place in the US, European, and Asian bond markets in our Addressing Market Liquidity *ViewPoint* series. As we described in the first *ViewPoint* in this series, BlackRock and other asset managers have been adapting to a new normal for several years. For example, we have made substantial investments to enhance our trading capabilities through building new technologies and tools and changing our behavior to help effectively obtain liquidity on behalf of our clients. Likewise, many of our portfolio managers have adapted their portfolio construction processes to account for

“Some of the concerns expressed around market liquidity may have reflected a market in transition, rather than a market in distress.”

changes to market liquidity, and our risk management team has built new tools and enhanced its monitoring of liquidity risk in BlackRock-managed portfolios. While not all market participants have necessarily made changes in recent years, there is an increasing recognition that adapting is necessary as structural changes are here to stay.

Some of the concerns expressed around market liquidity may have reflected a market in transition, rather than a market in distress. One noticeable change is the growing role of bond exchange-traded funds (ETFs) as the bond market shifts from a principal market to a hybrid principal-agency market. More and more institutional investors have embraced bond ETFs as a way to express their views on fixed income.²¹ Interestingly, recent earnings reports from Goldman Sachs and Morgan Stanley highlight increased revenues from bond trading. In the fourth quarter of 2016, Goldman Sachs saw a 78% increase in Fixed Income, Currency and Commodities Client Execution (FICC) revenues versus the prior year period. Similarly, Morgan Stanley saw net revenues in fixed income sales and trading increase to \$1.5 billion from \$550 million a year ago. Several other firms also announced significant increases in fixed income trading revenue.²² As noted earlier, this reflects the dynamic nature of the markets. The bottom line is bond markets have changed, trading practices have adapted, and bond trading volumes remain significant.

Exhibit 11: Share of Corporate and Foreign Bonds Held by Open-End Mutual Funds



Source: Federal Reserve's Z.1 "Financial Accounts of the United States" Statistical Release. Original data from Dec. 2015 release. Corrected data from Sep. 2016 release. Chart includes quarterly data from fourth quarter 2009 through third quarter 2015 to illustrate corporate and foreign bond ownership by mutual funds following the 2008 Crisis.

When discussions on bond funds and bond market liquidity began, there was relatively little understanding of fund liquidity risk management by policy makers who were not directly engaged in asset management oversight. Market liquidity is not the same as fund redemption risk and the critical missing component is liquidity risk management. Liquidity is not a new risk, and liquidity risk management is not a new practice. Fund managers take a variety of factors into consideration in managing funds. These factors include the asset class and the market conditions for that asset class, the tools available to a specific fund, and the underlying investors and their behavior.

BlackRock has consistently advocated for expanding the toolkit for managing liquidity in funds and for raising the bar on liquidity risk management industrywide. In September 2014, we published a [ViewPoint](#) highlighting the different tools available in various jurisdictions. We recommended that securities regulators provide the maximum flexibility to fund managers to address whatever events might occur in the future. We continue to believe this is key to successful risk management and the ability to navigate future crises. Likewise, we recommended ensuring that there are high standards for liquidity risk management by funds. Indeed, many regulators around the world have already taken steps to ensure these high standards are in place. We continue to recommend focusing on the risk characteristics and risk management of each fund rather than trying to lump disparate funds together.

Securities regulators have increased their focus on liquidity risk management. In December 2015, IOSCO issued a report that reiterated the importance of having liquidity management tools available to funds and performed a comparison of tools available to funds in 27 jurisdictions around the world. In this report, IOSCO outlined measures available in different jurisdictions to manage fund liquidity risk, including swing pricing, redemptions in-kind, and out-of-the-money gates. Each of these tools is available in some, but not all, jurisdictions where investment funds are offered. Where these tools are not already permitted, regulators should consider updating regulations to make the broadest set of tools available. IOSCO also concluded that “funds generally have shown to be responsible in their liquidity risk management across the countries surveyed.”²³ Several national authorities have conducted studies on mutual funds offered in their respective markets that similarly find that funds generally have robust liquidity risk management.²⁴

In January 2017, the FSB issued policy recommendations for activities in asset management, which included nine recommendations focused on liquidity risk management in open-end funds. The recommendations focus on enhancing information transparency and disclosure, expanding the liquidity toolkit for funds where necessary, and fund liquidity

stress testing. In October 2016, the SEC finalized three new rules that, when fully implemented, will require a more formal focus on liquidity risk management by US open-end mutual fund managers, modernize fund data collection including requiring 1940 Act funds to submit data to the SEC on the fund’s liquidity profile on a monthly basis, and permitting open-end mutual funds to adopt swing pricing after a two-year effective date.²⁵

Asset Manager Stress Tests

Although much has been written on this subject, some policy makers continue to believe that asset managers may present systemic risks and have considered including stress tests of asset managers as part of a macroprudential toolkit.²⁶ For example, a recent BIS report noted: “far from dampening the effect of client orders on market prices, asset managers amplify it: their discretionary trades tend to be in the same direction as client-induced trades.”²⁷ These concerns are also based on the mistaken view that the role of the asset manager can be or should be to dampen the impact of their clients’ asset allocation decisions.

In this context, we find it important to recap features of the asset management business model. First and foremost, asset managers act as fiduciaries on behalf of asset owners. The assets belong to the asset owners and the assets are held by a custodian. Client assets, including mutual fund assets, are not commingled with the asset management firm’s assets. And, clients control the strategic allocation of their assets, not the asset managers. Asset managers are obligated from a legal, regulatory, and ethical perspective to make investment decisions in line with client guidelines. Further, asset managers are not the counterparty to client trades or derivatives contracts, and in this regard the role of an asset manager is never to act as a buffer to the sale of assets or the unwinding of derivatives contracts by its clients.

In addition, the asset manager does not guarantee the returns of an investment portfolio it manages. Whether the assets appreciate or depreciate, the investment results are dispersed solely among the shareholders of the fund or to the individual investor in a separate account. Finally, the balance sheet of an asset manager is relatively simple. Asset managers generally do not use significant amounts of leverage or derivatives contracts and asset managers do not rely on short-term wholesale funding to fund their operations.²⁸

Further, the business models of asset managers can differ significantly from one manager to another. Some firms specialize in a particular asset class whereas others offer a more diversified set of products. Some firms have a domestic focus based on their national market, whereas others have a regional or global business. Some firms primarily manage traditional long-only strategies whereas

other firms focus on alternative investment strategies. Some firms focus on institutional separate accounts whereas others focus on mutual funds. Likewise, some firms have a decentralized investment decision-making process that permits individual portfolio managers or teams to make investment decisions based on their own views, whereas other firms have an investment committee that makes more centralized investment decisions. Even the legal entities and their capital structures differ, as firms may be organized as partnerships, public companies, or subsidiaries of banks or insurers. Exhibit 12 captures some of this diversity. The diversity of asset managers adds to financial stability and makes it difficult to imagine a one-size-fits-all stress test.

Exhibit 12: Asset Managers Come in Many Shapes and Sizes

Business Focus	
Retail	Global
Institutional	Americas
Passive	Asia-Pacific
Active	Europe
Alternatives	

Capital Structures Vary	
Public	
Privately held (including partnerships, LLP, LLC)	
Wholly-owned subsidiaries	
Mutualized shareholders	

Representative Asset Managers with Various Business Models	
Aberdeen	Franklin Templeton
Allianz Global Investors	Invesco
AQR	KKR
BlackRock	Man Investments
Blackstone	PIMCO
Capital Group	T. Rowe Price
Fidelity	UBS Global Asset Management
Fortress	Vanguard

The European Banking Authority (EBA) recently issued a discussion paper that proposed a capital framework for investment firms that are not systemic or “bank-like.” The purpose of such capital would be to “(i) avoid the failure of investment firms resulting in a material impact on the stability of the financial system, (ii) prevent harming investors’ rights and assets, (iii) deal with the impact of failure, and/or (iv) ensure there is enough time to wind down a firm in an orderly fashion.”²⁹ Capital requirements are based on the idea that a financial institution’s failure could lead to systemic risk. This approach is not appropriate for asset managers. The assets managed by asset managers are not owned by the asset manager, meaning that losses on client investment portfolios do not result in losses to the

asset manager’s balance sheet. The assets are held by a custodian and segregated from the asset manager, protecting the client assets should an asset manager go out of business. Further, asset managers are not highly leveraged or reliant upon short-term funding, meaning that they are not subject to the funding risk to which banks or other highly levered entities are subject.

There are numerous examples throughout history where bank failures have resulted in systemic risk. In contrast, there are no examples of the closure of an asset manager causing systemic risk. Looking back over the past 30 years, firms and/or funds that have stumbled requiring an asset manager transition to take place have been orderly.³⁰ Asset managers who stumble have not failed suddenly, but rather faded away over time. This is in contrast to banks that have experienced situations where their exit was unexpected, sudden, and disorderly.

Many commenters have focused on the transition of client assets. Given the segregation of client assets from the asset manager’s balance sheet assets, there is no scenario requiring client assets to be disentangled from the asset manager’s assets, as is the case in the event of a bank failure. The prime focus for regulatory capital requirements in an agency business such as asset management is to protect against ongoing operational risk and to ensure an orderly wind-down of the firm.

We recommend policy makers shift their focus from asset manager stress tests to ensuring appropriate business continuity and disaster recovery procedures are in place to address any potential disruptions to an asset manager’s business.

BlackRock’s Decentralized Investment Model

In the case of BlackRock, we follow a decentralized model with over 150 independent investment teams across over 6,500 portfolios.³² We offer both funds and separate accounts across all asset classes and across multiple geographic regions.

In addition to portfolio management, we have a team of dedicated risk management professionals in our Risk & Quantitative Analysis group (RQA) that are responsible for monitoring risk management within the portfolios we manage for clients. RQA investment risk managers are assigned to each portfolio to oversee the risk management process and ensure the portfolio’s adherence to client risk tolerances and guidelines. Members of RQA have independent reporting lines from portfolio management and are not compensated based on the performance of the portfolios for which they are responsible.

For example, the SEC recently proposed a set of rules that would require investment advisers to have business continuity plans. Indeed, many asset managers already have these plans in place.³¹

Macroprudential Policy Tools

Stress testing is just the first step. Assuming stress testing identifies systemic risks, the next step is to develop macroprudential policies that mitigate those risks. The ESRB has identified examples of policies that, when used at the discretion of prudential authorities, could mitigate systemic risk. These policies include: mandatory liquidity buffers, capital flow management measures (CFMs), leverage limits for Alternative Investment Funds (AIFs), fund redemption gates and suspensions, and margin and haircuts for securities financing transactions (SFTs).³³ In this section, we explore the implications of applying these tools to asset management for macroprudential purposes.

Mandatory Liquidity Buffers

Some policy makers have suggested that mandatory liquidity buffers be held by funds.³⁴ The thought is that liquidity buffers could be used to meet elevated redemption levels and dampen the effects of asset sales by funds experiencing the redemptions. While this concept may seem logical when applied to banks, the idea of relying on a liquidity buffer to meet fund redemptions (particularly for funds that invest in less liquid assets) would run counter to liquidity risk management best practices. If required, fund liquidity buffers would lead to procyclical outcomes. Further, the presence of liquidity buffers is likely to give false confidence to investors and regulators about the liquidity of a fund.

Rather than focus on mandatory liquidity buffers, we recommend regulators focus on developing liquidity risk management standards and expanding the toolkit of backup measures available to funds. We also encourage the collection of data on fund liquidity

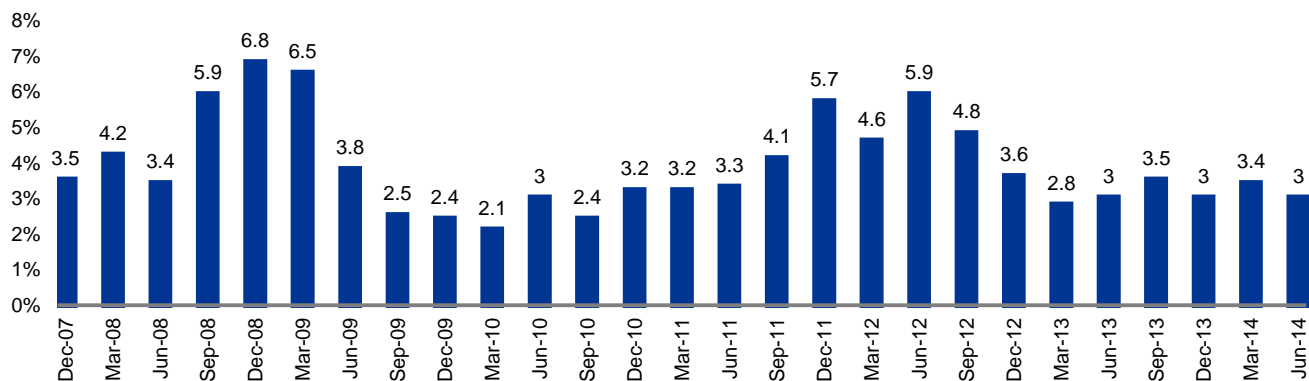
profiles so regulators have a better window into the liquidity of funds under their jurisdiction.

Sound liquidity risk management dictates that fund managers should be encouraged to meet redemptions through pro rata (or risk constant) selling of fund assets. If a fund manager, instead, relies primarily on liquidity buffers to meet redemptions, a liquidity buffer designed for normal market conditions is unlikely to be sufficient to cover heightened redemptions. This means that if redemptions exceed the size of the liquidity buffer, a fund manager may have difficulty meeting redemption requests, particularly if the remaining assets are less liquid. The ineffectiveness of relying on liquidity buffers was demonstrated by the Third Avenue Focused Credit Fund, which had over 20% of its assets invested in cash,³⁵ and still found itself in a situation where the manager believed it was in the best interest of fund shareholders to cease redemptions.³⁶

A mandatory liquidity buffer designed for stressed periods is likely to introduce a cash drag on fund performance, encouraging investors to utilize other types of investment products (e.g., separate accounts) or to invest their assets without the help of an asset manager. As a result, the introduction of mandatory liquidity buffers is likely to cause outflows from mutual funds and will disadvantage individual retail investors that do not have access to professional asset management services beyond mutual fund investments.

Fund managers consider a number of factors in managing the liquidity of open-end mutual funds including: redemption terms, liquidity of the underlying asset class, current market conditions, investor types and redemption patterns, and backup measures available to the fund. The decision to hold cash and the amount of cash held is dynamic. Liquid asset holdings are integrated into liquidity risk management considerations for each fund and the appropriate level of liquid assets for a given fund will likely differ at different points in time. Exhibit 13 demonstrates this phenomenon in

Exhibit 13: Cash Balances for High Yield Mutual Funds



Source: JP Morgan Securities. As of June 2014.

high yield bond funds where the percentage invested in cash has varied over time. Fund managers proactively manage cash levels to reflect the actual and anticipated liquidity needs of each fund. In a well-constructed fund portfolio, the combination of bonds held, along with cash and other liquid holdings, is sufficient to address redemption activity.

Another layer of this discussion was raised in a recent BIS Working Paper that criticized the concept of “cash hoarding” by mutual funds. Cash hoarding is defined as a positive association between cash levels and redemptions that may result in fund managers selling more assets than are strictly necessary to meet redemptions as they anticipate future redemptions from their fund.³⁷ Liquidity risk management requires a fund manager to consider actual redemptions and anticipated redemptions to ensure that a fund can meet redemption requests. The fund manager needs to consider the tools available to each fund and then decide how much cash and other liquid assets it is prudent to maintain. This decision will naturally vary through time, as shown in Exhibit 13. In addition, holding cash is an active decision weighing the benefits to fund liquidity versus the potential for increased tracking error or reduced return for the fund’s shareholders. Needless to say, we cannot simultaneously expect fund managers to: (i) manage a portfolio that can meet redemptions and (ii) not sell securities in anticipation of meeting redemptions. In reality, requiring funds to hold mandatory liquidity buffers will only contribute to greater levels of “cash hoarding,” as fund managers will seek to avoid regulatory scrutiny by selling liquid assets so that their liquidity buffer will not fall below the mandatory level.

As such, liquidity buffers are likely to produce procyclical outcomes, encouraging funds to sell less liquid assets in order to maintain their mandatory liquidity buffers. Procyclical outcomes would run counter to the objectives of macroprudential policies.

Capital Flow Management Measures (CFMs)

A recent IMF-FSB-BIS publication introduced the idea of CFMs as a potential tool for macroprudential regulators, if used to mitigate systemic risk. The publication states: “CFMs are designed to limit capital flows by influencing their size or composition. Macroprudential measures are designed to limit systemic risks... This can include, but is not limited to, vulnerabilities associated with capital inflows and exposure of the financial system to exchange rate shocks. Hence, if macroprudential policy measures are designed to limit systemic risks by limiting capital flows, they would be considered CFMs.”³⁸

Put simply, capital flow management measures are capital controls. We believe that market intervention via CFMs would negatively impact investor confidence. CFMs could introduce market distortions and impact investor assumptions about the functioning of markets. In the event that CFMs were applied selectively to certain types of capital

“Put simply, capital flow management measures are capital controls. We believe that market intervention via CFMs would negatively impact investor confidence.”

markets participants, this could lead to questions about fairness and potentially introduce regulatory arbitrage. Rather than acting as a stabilizing influence or limiting systemic risk, we believe this subjective use of capital controls would create systemic risk by destabilizing markets. In particular, CFMs inhibit price discovery and natural price adjustment processes by artificially inhibiting capital flows. Given that prices convey important information to investors that are used for risk management and investment decision-making purposes, CFMs that prevent prices from accurately reflecting risks are more likely to create asset price bubbles and market distortions than to mitigate systemic risk.

We recommend that policy makers decline to utilize CFMs as a macroprudential policy tool.

Mandatory Leverage Limits

Policy makers have suggested applying mandatory leverage limits to funds. For example, the ESRB has encouraged the development of limits on leverage for AIFs.³⁹ Given that there is no single measure that can accurately quantify leverage for all types of funds, regulators will need to develop a suite of leverage and potential loss measures that can be collected on a consistent basis. The FSB recently finalized its recommendation that IOSCO “identify and/or develop consistent measures of leverage in funds to facilitate more meaningful monitoring of leverage for financial stability purposes, and help enable direct comparisons across funds and at a global level.”⁴⁰ Until those measures are developed and data on funds collected and analyzed, it is premature to develop leverage limits.

The use of leverage in funds is complicated by the fact that there are multiple types of derivatives and many funds pursuing different investment strategies. Further, different measures of leverage measure different risks, and there is no single measure that can accurately capture all uses of leverage in all investment strategies. Importantly, asset managers are not the counterparty to client or fund derivative obligations, meaning that any losses from leverage in client portfolios do not result in losses to the asset manager’s balance sheet. Rather, gains or losses are dispersed among the investors in the levered fund or separate account.

The context around the purpose of utilizing leverage in a portfolio is important as well. This decision stems from the asset owner’s investment objectives. For example, some investors may utilize asset management services to hedge

risks on their own balance sheets, which may not be readily apparent when looking at an asset management portfolio in isolation. For example, some defined-benefit pension plans use swaps to pursue liability-driven investment (LDI) strategies that seek to match pension liabilities to the pension's assets. Another example is when an investor invests in a foreign market and uses currency forwards to hedge the associated currency risk. While these strategies may appear levered under most measures of leverage, they must be considered in the context of the asset owner's overall investment portfolio.

The Global Association of Risk Professionals (GARP) explored the challenges associated with measuring leverage in funds in their September 2016 letter to the FSB.⁴¹ The paper highlighted several important themes when considering leverage in the asset management context, notably:

- (i) Individual measures of leverage, when used in isolation, do not provide information about the risks associated with the unlevered portfolio or baseline against which the risk amplification from leverage is measured;
- (ii) The investment strategies pursued by asset managers vary widely, meaning that the risks to which asset management portfolios are subject also vary widely;
- (iii) A single measure of leverage that can be applied consistently to all asset management portfolios does not exist; and
- (iv) Measures of leverage provide the greatest insight when they are informed by measures of potential loss, such as value-at-risk (VaR).

As mentioned previously, risks in funds are managed at the individual fund level, making it conceptually problematic to attempt to aggregate the risks across funds. Efforts to understand risks associated with leverage in funds should be directed to understanding the leverage profile of individual funds to ensure that the structure of the fund is properly aligned.

Given these issues, we recommend that policy makers define metrics and collect data on funds. This data can then be analyzed to determine if leverage limits are necessary for certain products. In the near-term, regulators should require fund terms be aligned with the amount and type of leverage utilized by the fund.

Redemption Gates and Suspensions

Another tool that has been contemplated is the use of redemption gates and suspensions for macroprudential purposes.⁴² The objective is to moderate the selling of assets by applying fund redemption gates. Macroprudential use of gates introduces a number of issues. First, if fund investors are prohibited from redeeming assets held in a fund, those investors will likely sell other assets that are not

subject to redemption gates, such as direct investments in bonds or stocks. Second, such policy actions are unlikely to mitigate systemic risk because mutual funds only represent a minority of financial assets. As such, other types of asset owners will continue to sell the assets that funds may be prohibited from selling. Third, the macroprudential use of redemption gates or suspensions creates fundamental fairness questions. Such actions would impede fund shareholders' abilities to liquidate investments that are no longer suitable for their needs. In contrast, investors who accessed the assets directly would still be able to sell their assets. This would result in the selective imposition of losses on certain market participants but not others. While this may be viewed as a means of avoiding taxpayer bailouts, in reality it is simply a taxpayer bailout by another name – forcing individuals saving for retirement or other purposes to bear the cost of a systemic risk event. Aside from the potential social consequences of such policy actions, this would be a highly unfair outcome that imposes costs on specific taxpayers.

Rather than applying blanket policies across all or a subset of funds, we recommend regulators focus on data collection, for example the new SEC reporting requirements on liquidity,⁴³ to permit monitoring of and earlier intervention into an individual fund, if needed.

Countercyclical Margin and Haircuts

In its strategy paper on Macroprudential Policy Beyond Banking, the ESRB noted that one of its short-term objectives is to develop macroprudential policies that address “the procyclicality of initial margins or haircuts, especially in securities financing transactions and derivatives.” In particular, the ESRB highlighted that “both EMIR and the SFTR do not at this stage provide for the macroprudential use of margins and haircuts by authorities, although these regulations could be adapted to allow such use (ESRB, 2015e; ECB, 2015b).”⁴⁴ In other words, regulators contemplate countercyclically reducing haircuts during periods of stress.

In this context, it is important to recall that margin and haircut-setting practices are risk management techniques designed to protect investors. Haircut-setting is an important way to protect against counterparty risk by incorporating volatility of collateral value. When these protocols are not in place, investors will likely choose not to participate in a given market or transaction. As such, while it may seem sensible to attempt to protect markets by reducing haircuts during times of stress, the macroprudential use of haircuts could reduce or eliminate the attractiveness of SFT or derivatives transactions for investors and their counterparties, impacting liquidity in the system and the overall efficiency of markets. For example, if investment managers are not able to protect their clients by increasing SFT haircuts when market conditions increase the risk associated with these transactions, investors may stop participating in these

transactions to avoid unwanted counterparty risk – thereby retreating from the market altogether during a period of stress. As such, this policy measure would have a more procyclical impact than permitting market participants to raise haircuts during periods of stress. In addition, the likely reduction in market liquidity during such a period of stress would outweigh potential benefits. The challenges presented by short selling bans during the 2008 Crisis demonstrates the danger associated with this approach.

Short-Sale Ban in 2008

During the 2008 Crisis, the US and several other countries banned short sales on financial stocks to combat the sharp price declines of such stocks. Analysis by the Federal Reserve Bank of New York finds that the bans had little impact on stock prices, as even with the bans, prices continued to fall. In the US, during the two weeks when the ban was effective, the prices of financial stocks fell over 12%. At the same time, “the bans lowered market liquidity and increased trading costs.” The inflated costs of liquidity attributable to the short-sale ban are estimated to be over \$1 billion, not including the lost gains from trades that might have been made if bid-ask spreads had been normal or the costs imposed on other markets (e.g., convertible bonds).⁴⁵ Some of the other unintended effects of the 2008 ban on short-selling include impeded price discovery, increased volatility of stock prices, price inflation, increased price of options, reduced levels of short covering, and more.⁴⁶ As demonstrated by the 2008 short-sale ban, macroprudential policies can create negative market impacts and unintended costs.

Further, there are several regulatory developments in this area that recognize the importance of haircut-setting including: the reporting of haircut levels through SFTR and subjecting haircuts to mandatory minimum levels.

We recommend policy makers permit these regimes to take effect before drawing conclusions on optimal minimum haircut setting levels.

Conclusion

While the goals of extending macroprudential policies beyond banking may be well-intentioned, they are likely to have the unintended consequence of increasing systemic risk, primarily by encouraging the procyclical behavior they aim to counteract. As policy makers acknowledge, the diversity of financing sources afforded by the capital markets, including mutual funds and other asset management products, facilitates risk transfer among diverse participants pursuing a range of investment strategies, thereby decreasing concentration risk. This

enhances financial stability and benefits the real economy. Efforts to mitigate systemic risk must explicitly seek to preserve this diversity. Likewise, care must be taken to avoid impeding the functioning of capital markets. Though it might seem logical to attempt to extend the use of macroprudential policies beyond the banking system, there are fundamental challenges that call into question the utility of such measures. Most notably, investors are not obligated to participate in markets nor to invest through mutual funds. Macroprudential policies that violate risk management protocols (e.g., macroprudential use of margin and/or haircuts) or run counter to investors’ best interests (e.g., macroprudential use of fund gates or mandatory liquidity buffers) will cause investors to retreat, leading to procyclical rather than countercyclical outcomes, and will likely lead to distortions that ultimately destabilize markets. Given the importance of capital markets financing to the real economy and economic growth, it is incumbent upon policy makers to have strong reasons to intervene in markets and to consider the potential negative externalities associated with their actions. Any tools used to identify systemic risk and support the case for policy actions must be based on complete and accurate data. At present, this data is not available for a broad swath of market participants, making a system-wide stress test impossible.

We recommend policy makers instead focus on developing product- and activity-based regulations. With respect to concerns regarding the liquidity of open-end funds, regulators should collect and monitor data on fund liquidity profiles to permit early regulatory intervention if an individual fund experiences redemption stress, rather than attempting to apply blanket policies such as mandatory liquidity buffers or gates across all or a subset of mutual funds. In addition, where they have not done so recently, policy makers should review existing regulations to ensure high standards for liquidity risk management and the availability of the broadest possible toolkit to help fund managers navigate extraordinary redemption scenarios. In many jurisdictions, these reforms are already in place or in the process of being implemented. With respect to concerns about leverage, policy makers should develop a suite of leverage and potential loss measures that can be collected consistently across portfolios to help regulators understand potential risks associated with the use of leverage by funds and they should ensure that fund terms are aligned to the amount and type of leverage used by the fund. Regulators should also review existing regulations to establish high standards for business continuity and disaster recovery planning. Finally, if regulators continue to believe that system-wide stress testing is a helpful tool, it is imperative that data gaps related to asset owner holdings and investment behavior are filled and that stress testing models are able to differentiate market risk from systemic risk before using these stress tests for macroprudential purposes.

Endnotes

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