

# THE ASSET MANAGEMENT INDUSTRY AND SYSTEMIC RISK: Is There a Connection?

Claude Lopez, Donald Markwardt, and Keith Savard



MILKEN INSTITUTE

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## **About the Milken Institute**

The Milken Institute is a nonprofit, nonpartisan think tank determined to increase global prosperity by advancing collaborative solutions that widen access to capital, create jobs, and improve health. We do this through independent, data-driven research, action-oriented meetings, and meaningful policy initiatives.

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# EXECUTIVE SUMMARY

In the aftermath of the 2007-2008 financial crisis, new legislation and regulations have pressured banks and insurance companies to reduce their size, leverage, and riskier lines of business in order to avoid another too-big-to-fail debacle. Nonbank financial intermediaries have naturally taken up some of that slack, and, not surprisingly, regulatory scrutiny has turned toward these intermediaries to evaluate whether they could pose similar risks to financial stability that banks did pre-crisis.

Owing to nonbank intermediaries' stunning growth in the past decade, the focus on them centers on asset managers, which include firms offering mutual funds, exchange-traded funds (ETFs), hedge funds, and private equity funds. This report explores whether there is a demonstrable link between the asset management industry and systemic risk.

## Key points:

- » Systemic risk is distinct from run-of-the-mill financial or operational risk, an important difference to keep in mind when determining whether the sector poses a risk to the broader financial system with the potential for negative spillovers into the real economy.
- » Because asset managers do not take on nearly the same level of leverage as banks and do not guarantee balances on customer accounts, as banks do with deposits, it is unlikely that the industry is the epicenter of—or *creates*—systemic risk. Theoretically, however, asset managers have the potential to transmit or *amplify* systemic risk based on unique factors such as herding and liquidity mismatches.
- » One major regulatory concern is the mismatch between asset management firms offering investors highly liquid investment terms for funds investing in highly illiquid assets, which could create fire-sale scenarios that negatively impact financial markets. A close look at the role of high-yield debt markets suggests that major disruptions to the sector's funding environment could have a significant impact on the real economy. However, even during periods of acute investor outflows, high-yield mutual funds have effectively managed liquidity risk, and high-yield ETFs have actually been a supplemental liquidity source for institutional investors.
- » In a post-crisis world, regulators have as much—if not more—power as financial firms' shareholders. Using this power wisely to simplify rules and minimize complex regulatory changes to the financial system may be the best way to achieve long-term financial stability.

## EXECUTIVE SUMMARY

Considerations should include:

- i. The dynamic relationship between financial regulation and financial activity. Rules must be targeted sufficiently to strengthen resilience of the desirable economic functions (such as lending to firms) but simplified enough to limit regulatory avoidance.
- ii. The necessity of proper fiscal and monetary policies to complement prudential oversight. No amount of asset management oversight can prevent investors from reaching for yield in response to extraordinarily low interest rates to meet their investment goals.
- iii. The reality that financial markets are connected globally. Domestic oversight without internationally coordinated policies leaves marked gaps susceptible to opportunism and regulatory arbitrage.

# I. INTRODUCTION

Despite the fact that the better part of a decade has passed since the global financial crisis upended what was described as the Great Moderation and the Goldilocks economy, participants and regulators of the financial system are still grappling with how best to prepare for and guard against another episode of systemic risk. While it generally is acknowledged that regulators and governments effectively prevented a massive disorderly deleveraging of the financial system, their subsequent efforts to strengthen the system against further shocks have been the target of frequent criticism. Countries throughout the world have implemented new laws and regulations and set up institutions to address perceived weaknesses in their financial systems. International institutions such as the International Monetary Fund (IMF), the Financial Stability Board (FSB), and the Bank for International Settlements (BIS) have provided their services to collect and analyze data, as well as to coordinate action to put policies in place that cut across national boundaries.

In the United States, the most visible response to the global financial crisis has been the enactment of the Dodd-Frank Wall Street Reform and Consumer Protection Act, which represents the most comprehensive financial regulatory reforms put in place since the Great Depression. Dodd-Frank implements changes that, among other things, affect the oversight and supervision of financial institutions, provide for a new resolution procedure for large financial companies, introduce more stringent regulatory capital requirements, and effect significant changes in the regulation of over-the-counter derivatives and the securitization market. Lopez et al. (2016) provide an overview of Dodd-Frank, contrasting its principal goals with its achievements.

Under the law, several new institutions have been created with varying responsibilities. An independent Bureau of Consumer Financial Protection has been set up to implement and enforce compliance with consumer financial laws. A Financial Stability Oversight Council (FSOC) is now in place to oversee financial institutions. The council is charged with identifying risks to U.S. financial stability that could arise from ongoing activities of large, interconnected financial companies, as well as from outside the financial services marketplace. The FSOC is also responsible for promoting market discipline by eliminating the expectation of government bailouts. Among its long list of duties, the council is tasked with recommending heightened prudential standards for nonbank financial companies and large, interconnected bank holding companies supervised by the Federal Reserve.

In addition to the enactment of new laws and the establishment of new institutions, officials have begun to employ a variety of policy tools to tackle systemic risk. Macroprudential policies have gained the most attention. Extensive research by the Milken Institute details the evolution



## I. INTRODUCTION

of macroprudential policies across emerging Asia and Europe and highlights the difficulties of these policies gaining traction in the U.S.<sup>1</sup>

Although macroprudential policy is seen in many quarters as an essential tool in the effort to mitigate and reduce the susceptibility of the financial system to systemic risk, its application has been almost exclusively focused on the banking sector. In the estimation of policymakers and regulators, this has left much of the remainder of the financial system exposed to possible systemic risk. A number of measures have been put forth to deal with the perceived vulnerabilities, including the identification of certain nonbank financial firms as systemically important financial institutions (SIFIs), which subjects them to additional regulatory scrutiny and rules. In addition, specific rules and regulations are being considered for asset managers, insurance companies, and other nonbank entities.

As might be expected, many senior executives in nonbank financial firms have expressed doubt about the need for many of the proposed rules and regulations as well as those already put in place by Congress or the U.S. regulatory community. Indeed, insurance company MetLife Inc. took legal action to thwart regulators' attempt to impose the SIFI designation on the company. A court overturned regulators' determination that distress at MetLife could put the U.S. economy at risk. The judge also took regulators to task, saying their "unreasonable" classification of MetLife didn't consider potential costs and relied on a process that was "fatally flawed." With the government's appeal pending, the debate will continue about the need for measures to inoculate the nonbank financial sector against potential situations that could result in systemic risk.

The purpose of this report is to analyze and assess the ways in which the asset management industry might act as a catalyst or contributor to systemic risk. It looks at the structure of the industry and its role as fiduciary agents for clients. Factors commonly associated with systemic risk, such as illiquidity and herding, are examined; stress tests and other measures are discussed as representing best practices for reducing risks.

Section 2 reviews the definitions of financial stability and systemic risk before looking at those risks specific to the asset management sector that are of concern from a macroprudential perspective. Section 3 discusses the pertinence of the current framework in regulating asset managers from a financial stability perspective. Section 4 explores the necessity of such a role, highlighting the differentiating factors between traditional targets of macroprudentialism (banks) and asset managers. The conclusion follows in Section 5.

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1. Lopez et al. (2015a) and (2015b) point to the need for precise timing of action and for appropriate monetary policy to be in place in order for macroprudential policy to be effective.

## II. SYSTEMIC RISK AND THE ASSET MANAGEMENT INDUSTRY

The bulk of literature and regulatory focus on systemic risk in the financial system is centered on the banking system. There are parallels between banks and asset managers, especially when referring to the broad notion of what systemic risk and financial stability means to the industry, as we will discuss. Fundamentally, however, the asset management industry and its subsectors are entirely different from the banking system and perform vastly different roles. As a result, they do not present the same risks as banks. Yet, as discussed in FSOC (2016) and FSB (2016), they might possess other dynamics that could contribute to the transmission of—or even amplification of—systemic risk. Next, we explore these dynamics and take a close look at high-yield debt funds to investigate whether concern about destabilizing spillovers from asset managers to the real economy is justified.

### A. Systemic Risk and Financial Stability

Reforms since the financial crisis have focused on financial stability and systemic-risk mitigation. While these two notions play a key role in the current regulatory environment, defining them in a tractable, time-sensitive, and relevant manner remains a challenge.

Financial stability often is defined in terms of “its ability to facilitate and enhance economic processes, manage risks, and absorb shocks.”<sup>2</sup> It is worth emphasizing that such a definition does not imply protecting badly run firms or creating a risk-free environment. Ensuring such stability is a complex, difficult task that requires identifying commonly agreed-upon objectives as well as their unintended consequences among regulators, firms, and clients/investors.

Conceptually, once agreed upon, these financial-stability objectives should be used to define, measure, and monitor the aspects of systemic risk deemed pertinent and “anticipatable.”<sup>3</sup> Ultimately, the relevant mix of macroprudential and microprudential tools should be used to mitigate it. Unfortunately, there are no hard boundaries between systemic and nonsystemic risk, and the ever-evolving financial landscape requires the regular assessment of both objectives and how to achieve them. In other words, monitoring systemic risk and operationalizing a

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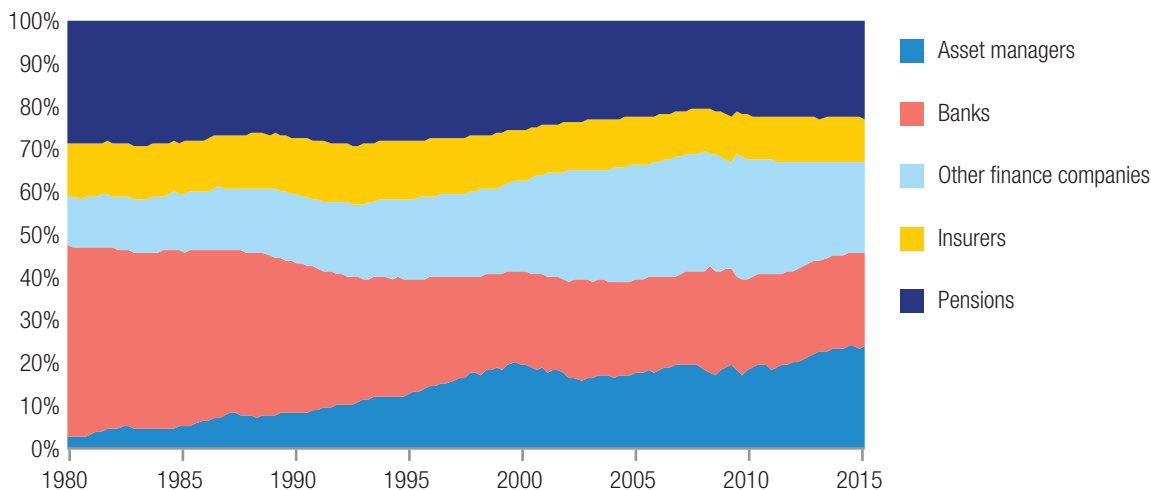
2. Shinasi (2014)

3. Systemic risk is usually defined as a “risk of disruption to financial services that is caused by an impairment of all or parts of the financial system and has the potential to have serious negative consequences for the real economy” (IMF, FSB, BIS). Yet Reinhart and Rogoff (2009) suggest that more than 50 percent of the financial crises come from the real side of the economy.

## II. SYSTEMIC RISK AND THE ASSET MANAGEMENT INDUSTRY

policy response to it remain a challenge because only the outcome of the risk, not the risk itself, can be directly observed.

**Figure 1. U.S. financial assets by industry**



Sources: Federal Reserve, authors' calculations.

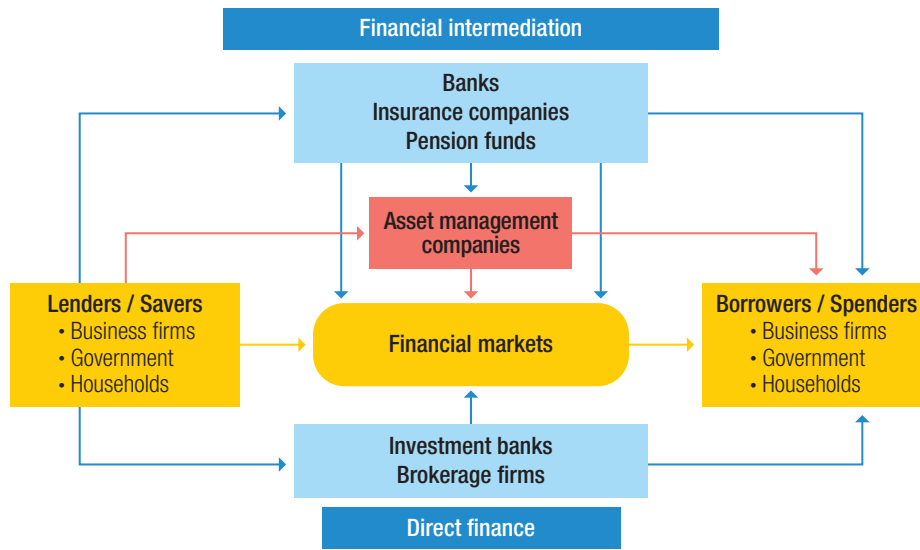
Aside from the importance of banks and insurance companies, the 2007-2008 crisis highlighted the increasing reliance of large firms and institutions on nonbanks to cover their short-term funding needs.

Figure 1 shows the growing importance of nonbank institutions (asset managers and other finance companies) in the functioning of U.S. markets: Asset managers oversee nearly a quarter of domestic financial assets, up from less than 3 percent in 1980.

## B. Asset Management: A Segmented Industry

Broadly defined, asset managers provide investment services as fiduciary agents for their clients, using a wide variety of specific asset management models. A summary of the major fund families' characteristics and risk profiles can be found in Appendix. They complement existing financial players in their function. Figure 2 illustrates how these fund families service not only households, businesses, and governments, but also other categories of financial intermediaries, including banks, pension funds, and insurance companies.

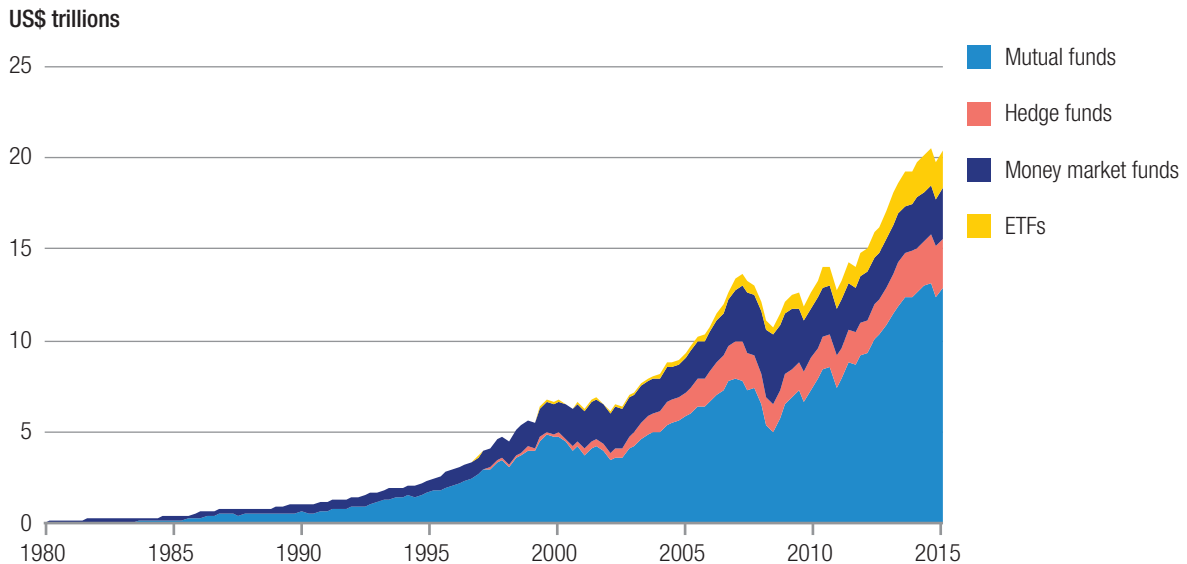
**Figure 2. Flow of funds in the financial system**



Source: Delbecque (2012).

The landscape of U.S. financial markets has changed significantly over the past 35 years. Figure 3 reflects the rapid growth of mutual funds, hedge funds, money market funds, and ETFs. More specifically, domestic mutual fund assets exceeded \$13 trillion in 2015, while ETFs have emerged as a multitrillion-dollar industry with assets growing by roughly 20 percent per year in the last decade.

**Figure 3. Total U.S. financial assets of asset managers**



Sources: BarclayHedge, Federal Reserve and authors' calculations.

## II. SYSTEMIC RISK AND THE ASSET MANAGEMENT INDUSTRY

Overall, asset managers are engaged in activities occurring either at the management-company level or at the fund level. Management-company activities include administration, centralized execution of trades, risk management, and market research, while fund-level activities include overall asset allocation, selection of specific securities, and liquidity management. Fund shareholders receive any profits or losses while the asset managers' primary source of revenue is from fees for services.<sup>4</sup> Furthermore, the separation between the custody and the management of assets protect investors from the risk of default of the asset manager.

### C. From Financial to Systemic Risk

The Basel III framework of financial reforms identifies two dimensions across which financial agents create or amplify systemic risk: either through exacerbating the extremes of the financial cycle (procyclical risk) or increasing fragility across financial sectors or institutions (contagion risk). Activities and incentives built into the asset management industry could transmit or potentially amplify risk across both these dimensions.

Theoretically, asset managers do not face the same risks as banks and insurers (other than operational risks). Yet their fiduciary obligation exposes them to some financial risks. As a result, the question is whether the individual risks can become systemic and, if so, via which channels. This section provides a closer look at two types of risks—herding and liquidity risks—that stand out as specific to asset managers, particularly among the “plain vanilla” investment funds such as mutual funds and ETFs.

#### i. Herding and Procyclical Risk

The fund management industry has traditionally operated with managers actively selecting securities on behalf of their investors. Competing for clients based on relative performance, fund managers are measured against a comparable benchmark. For portfolio managers who are risk-averse or face career risk when falling in a lower percentile of performance, there are incentives to “herd” into positions similar to those of their peers and not stray too far from the benchmarks.<sup>5</sup> This can create strong disincentives for a manager to take countercyclical positions, resulting in “chasing yield” during upswings in the financial cycle and herding to sell positions during cycle downswings, thus exacerbating financial bubbles and the devastation of their fallout.<sup>6</sup> The IMF's recent Global Financial Stability Report notes that U.S. mutual funds now exhibit significantly more herding behavior than in 2009, just after the crisis.<sup>7</sup>

It is unclear to what extent these herding dynamics contribute to financial bubbles or if they are merely symptomatic. Equally unclear is what, if anything, can be done to mitigate these potentially

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4. Private funds, such as hedge funds, are a partial exception to this rule, as they are not subject to restrictions on receiving performance fees, which gives the management company a direct stake in the performance of the funds.

5. Naik and Maug (2011).

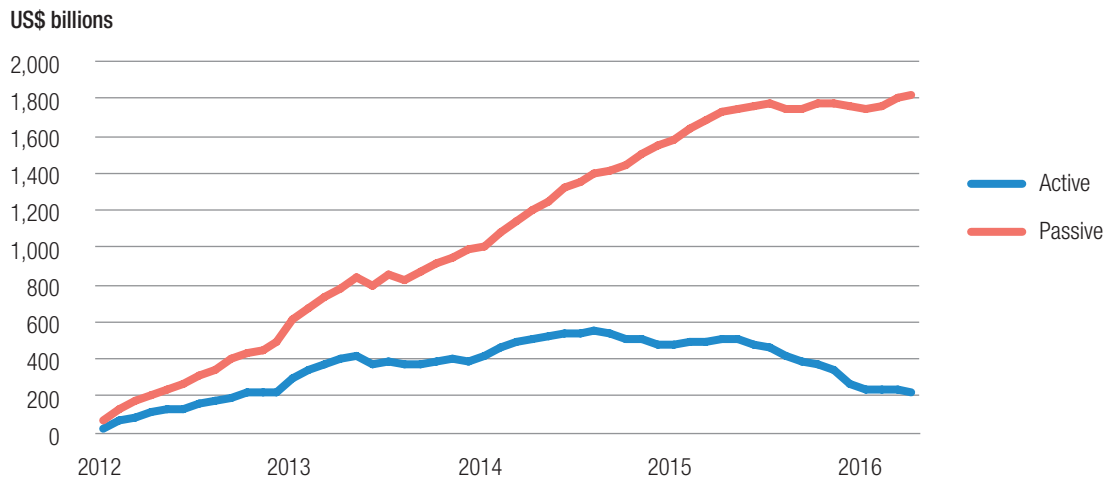
6. Feroli et al. (2014).

7. IMF (2015).



destabilizing incentives. Both retail and institutional end investors appear to be moving toward cutting active managers out of the investment process and self-directing investment decisions using passive indexes. (See Figure 4.)

**Figure 4. U.S. fund cumulative flows**



Note: Cumulative flows from January 2013 to April 2016 for U.S. open-end funds excluding money market and funds of funds.

Source: Morningstar.

The rise of passively managed funds—those that track indexes without fund managers actively selecting securities—introduces new potential consequences for the financial cycle and stability. The majority of passive funds buy or sell securities based on the market capitalization weights of their respective indexes. This can lead to a “momentum bias” where fund managers must buy (or sell) the fastest-appreciating (or depreciating) index constituents, again exacerbating the highs and lows of financial asset price cycles.<sup>8</sup>

While it generally is accepted that limits to arbitrage exist that could lead to unconstrained asset price bubbles, it is less obvious that anything could reasonably be done to mitigate these unmeasurable impacts. Potential reforms such as introducing alternative benchmarks or altering investor-manager contract designs with stronger emphasis on long-term performance appraisal are unlikely to be adopted by the industry en masse and would be difficult to enforce on a regulatory basis. Regulatory attention instead is turning primarily toward the other major perceived risk emerging from the asset management industry: liquidity mismatches in investment funds.

## ii. Liquidity and Contagion Risk

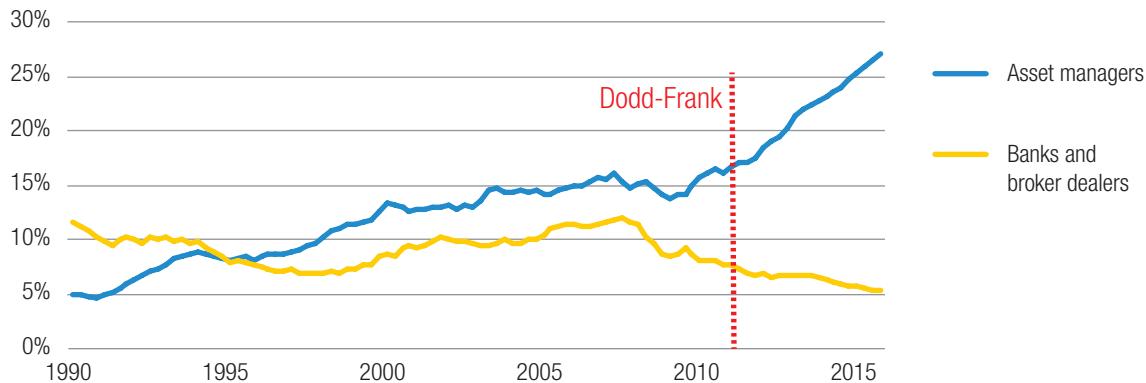
The implementation of the Dodd-Frank Act following the financial crisis placed greater constraints on the ability of banks and dealers to engage in various risky activities, including warehousing bond risk on their inventories. (See Figure 5.) The result has been a sharp decline in the ability of dealers to offer two-way quotes (an offer to buy or sell a given security). While bonds have always been

8. Jones (2015).

## II. SYSTEMIC RISK AND THE ASSET MANAGEMENT INDUSTRY

more difficult to trade compared with equities given their size and lack of standardized exchange, the diminishing role of dealers in the bond market has led many fund managers to complain that bonds—corporate bonds in particular—have become increasingly illiquid.

**Figure 5. Share of corporate and foreign bond ownership**



Note: Asset managers include closed-end funds, ETFs, mutual (including money market) funds, and REITs.

Source: Federal Reserve.

This refers to *market liquidity*, the ability to trade securities without creating adverse price movements. As bond market liquidity and broker-dealer bond inventories have declined, investment funds' ownership of corporate debt securities has risen substantially, in part displacing previous broker inventories but also in response to greater demand for corporate bond mutual funds and ETFs. Notably, as sluggish global growth and easy monetary policies have pushed interest rates to lows not witnessed in recent decades, there has been an increased appetite for higher-yielding instruments such as emerging-market bonds, leveraged loan funds, and domestic high-yield corporate bonds.

While many of these higher-yielding securities have grown increasingly illiquid (and owe part of their additional yield to the illiquidity factor), the proliferation of mutual funds and ETFs providing exposure to these securities continues to offer end investors very liquid redemption terms: Investors can easily buy and sell the funds on a daily basis without meaningful gates or fees. This contrast between highly liquid redemption terms and the illiquid underlying securities that the funds invest in creates a *liquidity mismatch*, a concern for regulators and many in the industry.

Liquidity mismatches on a large scale are of concern to financial-stability monitors because of their ability, in a worst-case scenario, to cause a “death spiral” of mass investor redemptions, causing fire-sale asset prices, which leads to further investor withdrawals. Studies find that funds investing in less-liquid corporate bonds experience disproportionately high outflows in response to bad performance<sup>9</sup> and that these outflows can create destabilizing financial shocks even in the absence of significant leverage or actions by leveraged intermediaries.<sup>10</sup> Manconi et al. (2012) found that funds holding illiquid bonds during the market turmoil of the global financial crisis were

9. Goldstein et al. (2016).

10. Feroli et al. (2014).

forced to sell higher-quality investment-grade bonds to raise cash, thus “propagating the crisis” across the entire corporate bond sector, suggesting the potential for cross-sector contagion.

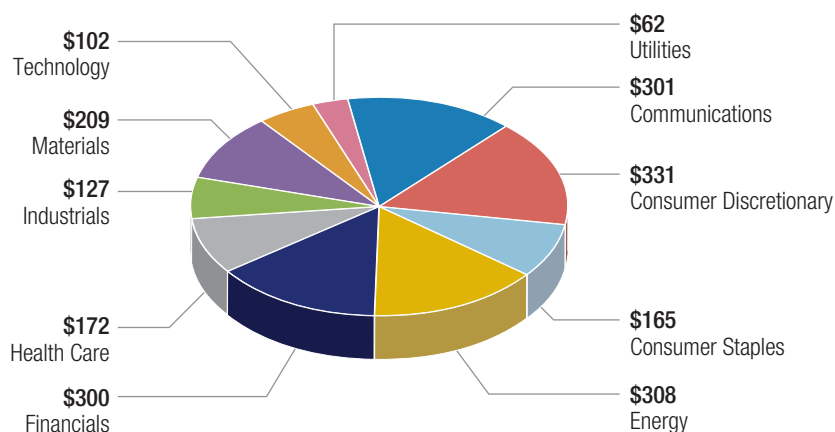
To some extent, this fire-sale scenario is analogous to countless historical examples of bank runs in which depositors rushed to withdraw their funds before the bank ran out of money, or, more recently, the “breaking of the buck” in money market mutual funds that sparked extreme fears in the aftermath of Lehman Brothers’ collapse. Unlike banks or money market funds, investment funds do not guarantee investor balances; rather, they float with the net asset value (NAV) that provides an up-to-date cash value of the fund’s underlying investments. Nonetheless, they can still be vulnerable to redemption runs when investors have a “first-mover advantage,” as is the case with mutual funds. In mutual funds, redemptions cause expenses to the funds that are not experienced by redeeming investors but are instead passed on to future NAVs that negatively impact continuing fund holders.

The high-yield debt sector, especially mutual funds and ETFs, can provide useful insights on how major disruptions to the sector’s funding environment could have a significant impact on the real economy. This sector finances a number of midsized companies and benefited greatly from investment fund flows in the years following the financial crisis.

### iii. High-Yield Focus

As the largest investable class of illiquid securities, high-yield corporate bond funds take center stage when it comes to concerns of liquidity mismatches causing destabilizing spillovers into the real economy. Since 2010, high-yield bonds have provided debt financing of over \$2 trillion to a wide array of companies from virtually all major industries, from energy to health care to technology. (See Figure 6.) Significant disruptions to these companies’ ability to raise new capital or roll over existing debt would undoubtedly create serious knock-on effects for the U.S. economy.

**Figure 6. High-yield debt issuance by industry (US\$ billions), 2010–2015**

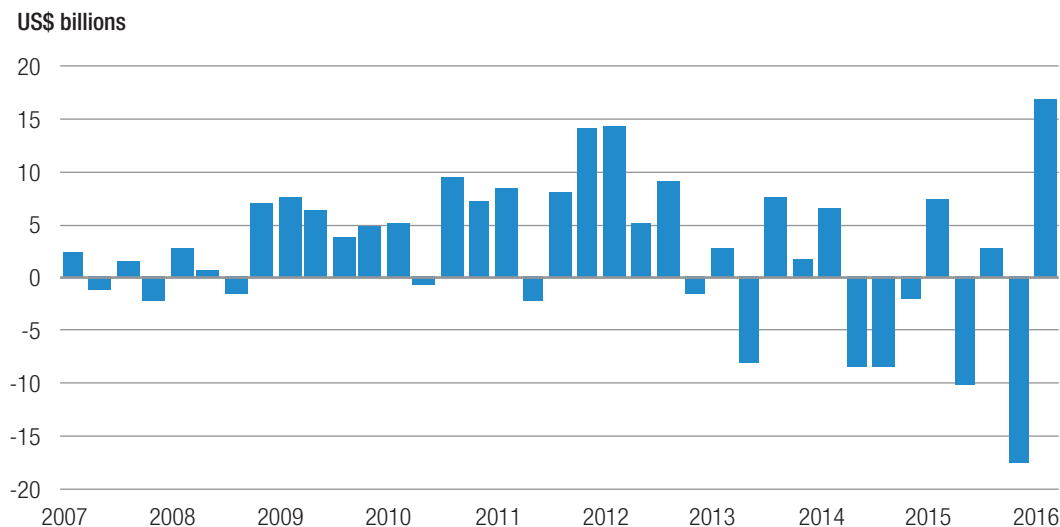


Source: Bloomberg.

## II. SYSTEMIC RISK AND THE ASSET MANAGEMENT INDUSTRY

Dedicated high-yield mutual funds and ETFs have grown substantially since the financial crisis. (See Figure 7.) U.S. fund assets increased from less than \$100 billion at the beginning of 2009 to nearly \$300 billion by 2014. At the same time, global net assets of dedicated high-yield funds exceeded \$700 billion, more than double the amount just three years earlier. However, investor flows into these funds have become more volatile in recent years as the performance of the asset class has dwindled and major events such as the “Taper Tantrum” of 2013 and oil crash in 2015 incited fear in debt markets.<sup>11</sup>

**Figure 7. U.S. High-yield fund flows by quarter**

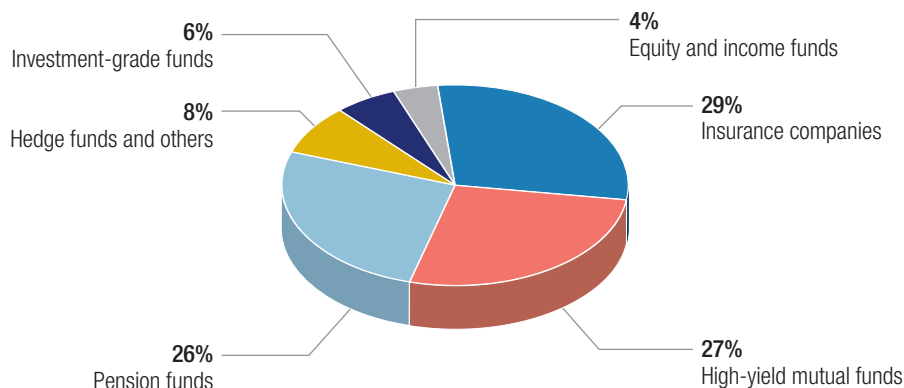


Note: Net flow estimates for open-end mutual funds and ETFs.

Source: Morningstar.

These periods of increased investment flow volatility (especially disproportionately large negative flows) raise concerns that prolonged outflows from high-yield funds could adversely impact the high-yield sector and create ripple effects that disrupt funding for mid-sized businesses. Market observers—from regulators to concerned participants—fear a distressed fire-sale scenario in which investor withdrawal requests exceed cash in the portfolio, thus causing portfolio managers to sell off existing fund investments to raise the necessary cash. If other buyers (hedge funds, insurance, or pension funds) fail to step in to support the market, a destabilizing feedback loop of fund redemptions and funds liquidating debt investments could occur. The current breakdown of high-yield ownership (see Figure 8) suggests that more than a third of demand for high-yield assets has come directly from investment funds, and more than a quarter from dedicated high-yield mutual funds. Insurance companies and pension funds, meanwhile, make up more than half of ownership.

11. In the summer of 2013, the Federal Reserve signaled it could raise interest rates at a faster pace than market participants had anticipated, causing heightened price volatility in financial markets.

**Figure 8. Owners of high-yield assets, 2015**

Source: JPMorgan.

It is difficult to determine whether fears of high-yield fire sales and death spirals are justified or merely fear mongering, a reflection of the difficulty in precisely measuring the likelihood of systemic events. The global financial crisis was precipitated in part by the extrapolation of historical housing returns and underestimating or ignoring the catastrophic “fat tail” of the risk distribution. Nonetheless, the best guess at what would happen in the event of a major episode of high-yield outflows may be seen by observing recent history to determine how funds have managed periods of distress and acute outflows.

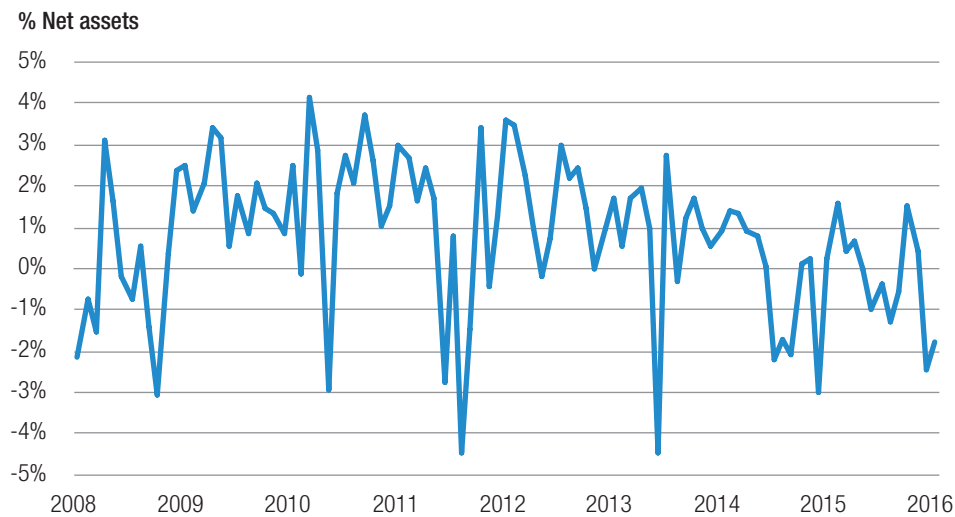
Mutual funds are the primary focus of fund liquidity concerns in the high-yield space for two key reasons:

- 1. Mutual funds are the largest holders of high-yield bonds** among asset management funds, with U.S. high-yield dedicated mutual funds holding \$247 billion in net assets as of April 2016, compared with \$41 billion in net assets for high-yield ETFs.
- 2. Most mutual funds offer daily liquidity** in the sense that investors can redeem shares and receive the NAV of the fund at the end of the day. This ignores potential administrative costs of the fund, including executing the sale of fund assets, which creates the potential for a “first-mover advantage” that benefits early redeemers and penalizes those redeeming later. This dynamic is not dissimilar to the incentives facing depositors in a bank run, thus heightening fears of distress in the sector.

One reason net fund flows appear more volatile in recent years is that the sheer size of high-yield funds has increased. When normalized by net assets, monthly U.S. high-yield fund flows were quite stable in the nearly 10-year period beginning in 2007, characterized by frequent net inflows and punctuated by brief net outflows during periods of financial stress. (See Figure 9.) The euro zone crisis in 2011 and the Taper Tantrum two years later marked the only months when outflows exceeded 3 percent of overall net assets for the sector.



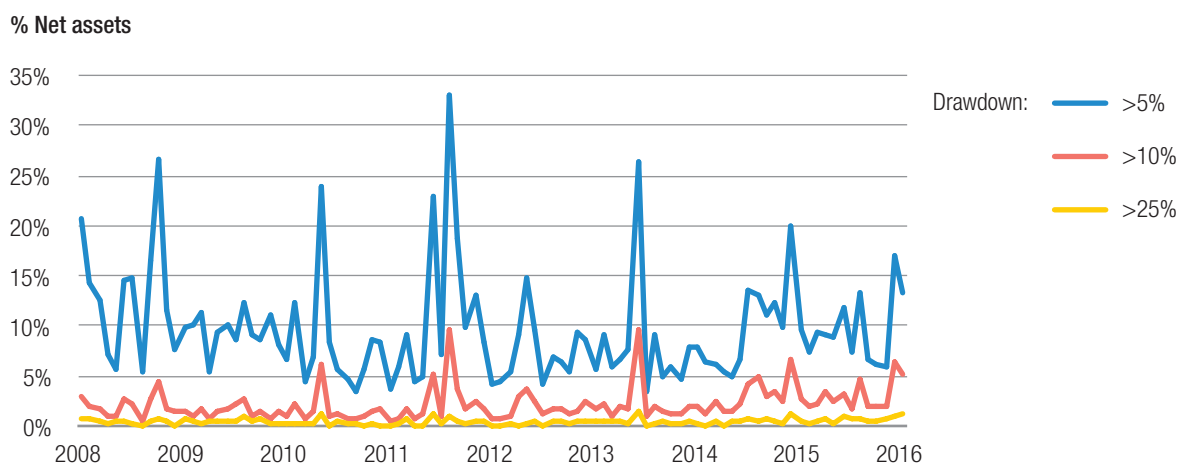
**Figure 9. Monthly high-yield flows as a percentage of net assets**



Sources: Morningstar, authors' calculations.

Zooming in on a fund level, we observe the number of funds experiencing large investor withdrawals relative to the size of the fund. Figure 10 shows the proportion of funds experiencing outflows in excess of 5, 10, and 25 percent of the starting month's net assets. Even in the most stressful periods, less than 2 percent of funds experienced monthly outflows in excess of 25 percent of starting fund assets.

**Figure 10. High-yield mutual fund net flows as a percentage of net assets**

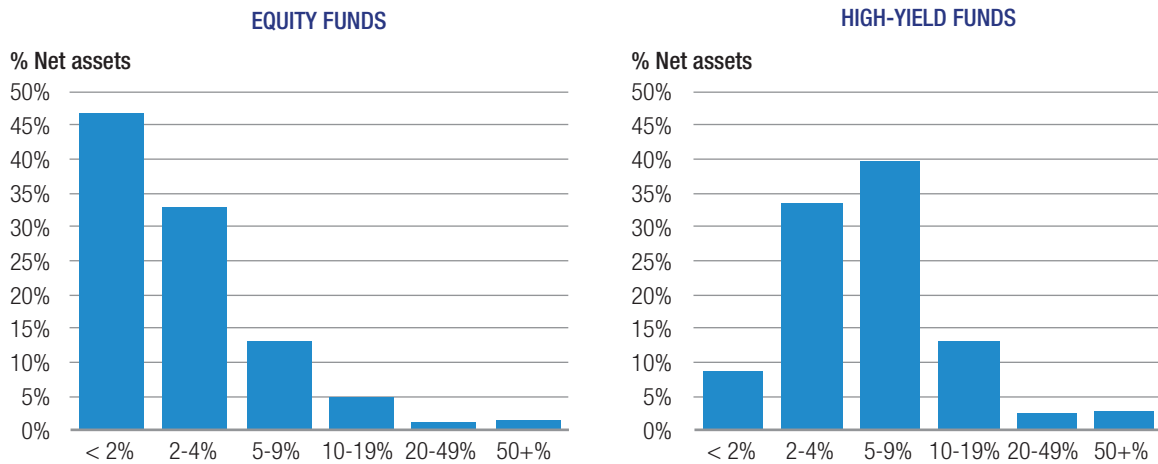


Note: Calculated using net outflows divided by previous month's ending net assets.

Sources: Morningstar, authors' calculations.

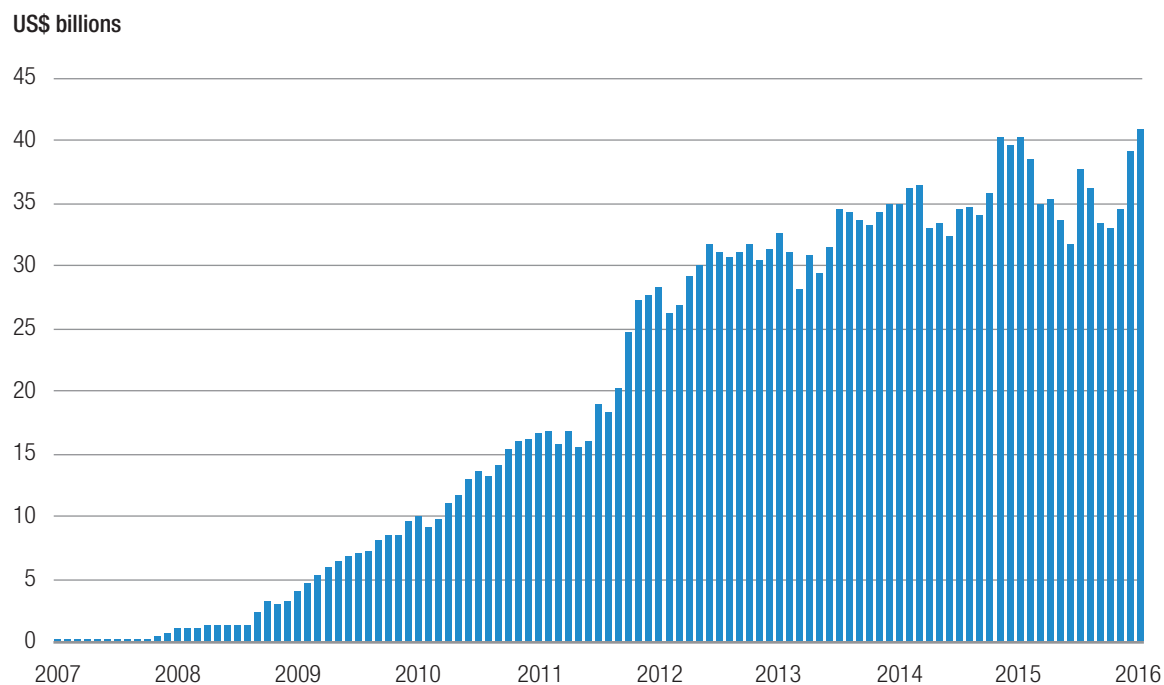
On a handful of occasions, more than 20 percent of high-yield funds experienced outflows in excess of 5 percent of starting assets. Outflows at these levels are less concerning, as portfolio managers are experienced in liquidity risk management and can draw on cash reserves or lines of credit to manage investor redemptions without disruptions to investments they want to retain. Figure 11 shows mutual fund portfolio allocations to cash by fund type, illustrating the cash cushion that high-yield fund managers keep on hand, reflecting the more volatile liquidity environment compared with equity funds. More than half of high-yield funds report keeping more than 5 percent of fund assets in cash.

**Figure 11. Cash allocations by fund type**



Sources: Morningstar, authors' calculations.

**High-yield bond ETFs** are not nearly as large as mutual funds, but they have experienced significant growth over the past decade. Starting from \$30 million in assets in 2007, they have grown to more than \$40 billion in assets as of April 2016. (See Figure 12.) Their popularity stems from the liquidity benefits they provide. Unlike mutual funds, ETFs are (as their name implies) trade on exchanges and can be bought or sold intraday.

**Figure 12. High-yield ETF assets**

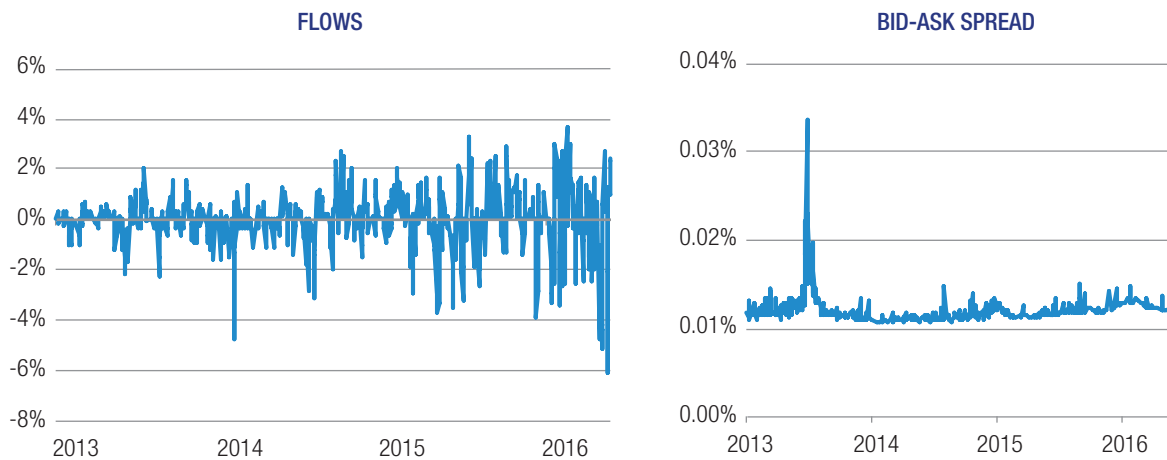
Source: Morningstar.

Despite providing even greater liquidity to investors, ETFs do not necessarily present the same “first-mover advantage” or run the risks of mutual funds because buying and selling ETF shares on an exchange (in the secondary market) does not necessitate cash inflows or outflows from the ETF.<sup>12</sup> Institutional investors have turned to ETFs to achieve high-yield debt exposure without the illiquidity typically associated with holding large bond positions or even bond mutual funds.<sup>13</sup> There is evidence that the largest high-yield bond ETFs have been more liquid than the underlying bonds in periods of market stress and have served as a price-discovery vehicle for market participants to express their views on the sector.

Indeed, Figure 13 shows that the average daily bid-ask spreads for the largest high-yield corporate bond ETF have remained remarkably stable in recent years despite increasingly volatile daily flows. Increasing daily outflows, which reached more than 6 percent of total assets in May 2016, do not appear strongly related to daily liquidity or volume measures. One explanation for greater flow volatility may be that bond dealers are buying ETFs instead of the underlying bonds themselves, and are redeeming ETF shares “in kind” to receive the underlying securities (resulting in an outflow) and selling them to clients. Far from creating distressed runs, ETFs appear to have promoted liquidity in the underlying high-yield bonds and accessibility for investors.

12. The ETF sponsor interacts only with select large institutional “authorized participants” to create or redeem ETF units, which can be exchanged “in kind” for the underlying basket of securities. See Ramaswamy (2011) for further ETF structure details.

13. McCollum (2016).

**Figure 13. Flows and spread for iShares iBoxx \$ high-yield corporate bond ETF**

Note: Flows as a percentage of ETF total assets.

Source: Bloomberg.

High-yield ETFs and, to a lesser extent, mutual funds have withstood short-term tumultuous financial periods, from the euro zone crisis to the Taper Tantrum to the recent decline in oil prices that impacted high-yield energy companies. Funds' performance to date does not guarantee they are safe from a more severe, prolonged downturn, but it does suggest a certain level of resilience.





# III. THE CURRENT U.S. MACROPRUDENTIAL POLICY FRAMEWORK

The initial targets of the Basel III and Dodd-Frank reforms were banks or institutions presenting similar transmission channels in terms of systemic risk, mostly based on leverage. As discussed previously, this framework identifies two risk dimensions that may threaten the stability of the entire financial system: across institutions (contagion risk, mostly using the SIFI denomination) or across the financial cycle (procyclical risk). Both dimensions are closely linked and their problems often accumulate at the same time.<sup>14</sup> This section compares the current framework with the risks it should be assessing.

## A. Systemically Important Financial Institutions

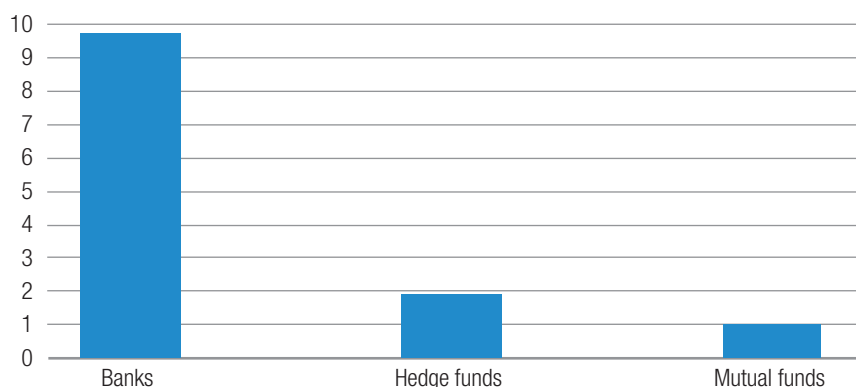
The SIFI denomination relies on the size of an institution. This proxy seems adequate when assessing the amplitude of risk that banks can generate to the system. By contrast, most fund managers tend to have simpler funding mechanisms: Figure 14 shows that they incorporate little or no leverage, while Table 1 compares the potential solvency risks banks and asset managers might experience during crisis periods when asset prices fluctuate.<sup>15</sup> It also shows that some asset managers are divisions of institutions already identified as SIFIs.

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14. While the size of the banks' balance sheet and degree of leverage have been identified as potential contagion risks, Shin and Shin (2011) and Lopez et al. (2015a) have shown that looking at funding sources provides information regarding procyclical risk, especially banks' excessive reliance on "noncore" liabilities—short-term funding in particular.

15. Hedge funds often make use of short-term funding arrangements and achieve leverage synthetically through the use of derivatives, but on average they are not leveraged to the same extent as banks.

**Figure 14. Median leverage ratio (2016)**



Note: Calculations for U.S. institutions; average liabilities to average assets for banks, gross assets to net assets for funds.

Sources: Bloomberg, Morningstar, Office of Financial Research, authors' calculations.

**Table 1. Largest U.S. banks vs. asset managers**

	Total assets (US\$ billions)	Financial leverage		Assets under management (US\$ billions)	Gross fund leverage
JPMorgan Chase	2,423	10.7	BlackRock	4,652	1.1
Bank of America	2,185	9.2	Vanguard	3,148	1.1
Wells Fargo	1,788	10.6	State Street Global Advisors*	2,448	1.0
Citigroup	1,731	8.5	Fidelity Investments	1,974	1.1
U.S. Bancorp	422	10.4	BNY Mellon Wealth Management*	1,710	n/a

Note: Bank data as of Q1 2016. Assets-under-management data estimated for end of 2015. Gross leverage calculated as gross long plus gross short exposures of open-end, closed-end, exchange-traded funds and separate accounts/CITs estimated based on latest reported portfolio data as of June 2016.

\* Asset managers that are divisions of SIFIs (insurers or banks).

Sources: Bloomberg, Morningstar, authors' calculations.

If the definition of systemic risk focuses on the possibility of disruption to the real economy and the dislocation of markets, then the main concern related to the size of asset managers is the potential for direct wealth loss. However, this issue fades in importance when considered in conjunction with the interconnectedness and substitutability of an institution. Interconnectedness

measures the potential of one firm to transmit financial distress to others.<sup>16</sup> The more a firm is able to transmit distress, the greater potential impact its own distress can have. Substitutability focuses on the critical functions performed by an asset manager and the extent to which other firms could provide similar services at a similar price in a timely manner in the case of its failure. The asset management industry is an intensely competitive business with relatively low barriers to entry, hence substitutability from the perspective of investors in the market for investment management services is of limited concern. However, it is important to consider the degree to which the manager or its funds are a hard-to-replace source of financing for certain businesses or sectors of the economy. Due to both interconnectedness and substitutability, the effects of asset managers on the economy depend on the asset classes, while the channels of risk transmission (and their complexity) depend on the instruments used and how they are combined. Box 1 illustrates the difficulty of linking size and systemic risk for asset managers.

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16. See Roncalli and Weisang (2015).

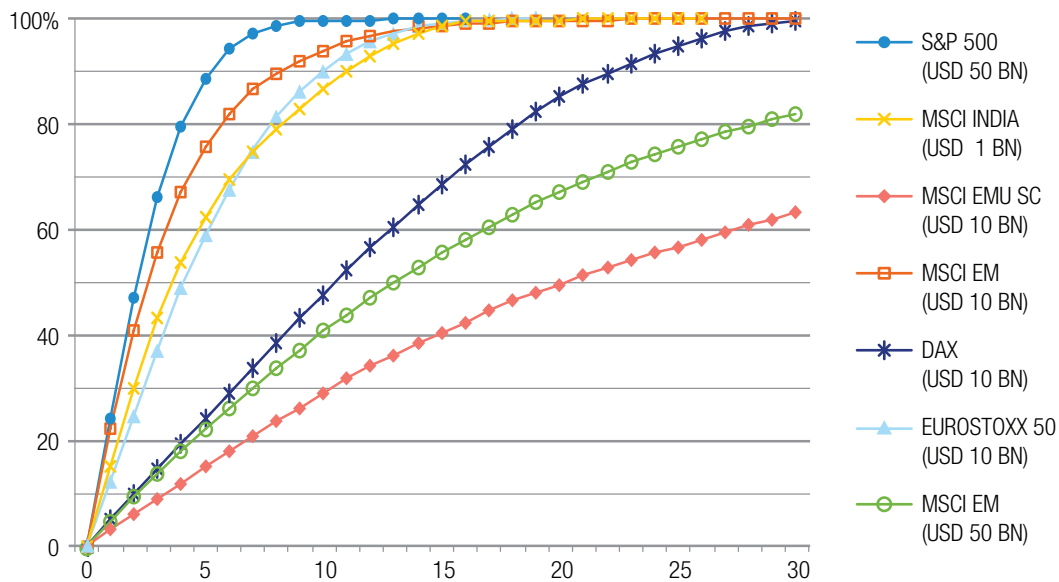
## BOX 1. FUND SIZE AND SYSTEMIC RISK

Roncalli and Weisang (2015) illustrate the difficulty of linking size and systemic risk for asset managers. To do so, they generate an indicator, the liquidation ratio, that measures the proportion of the fund that can be liquidated after  $t$  trading day. This statistic depends on the size of the liquidation, the fund's asset classes, its portfolio construction, and the liquidation policy.

**Figure B.1 summarizes a set of simulations based on the following assumptions:**<sup>17</sup>

- » Asset classes and portfolio compositions duplicating those of the S&P 500 index, EUROSTOXX 50 index, DAX index, Nasdaq 100 index, MSCI EM index, MSCI INDIA index and MSCI EMU Small Cap index on April 30, 2015
- » Fund sizes of \$1 billion for the MSCI India; \$10 billion for the MSCI EM, EUROSTOXX 50, DAX, and MSCI EMU Small Cap; and \$50 billion the S&P 500 and MSCI EM
- » 10 percent of the average daily volume can be sold every day

**Figure B.1. Size and liquidity**



Source: Roncalli and Weisang (2015).

17. We refer the reader to Roncalli and Weisang (2015) for more details and simulations. While the results reported here are based on a cap-weighted portfolio, the authors use other weighting schemes to illustrate the impact of portfolio construction on the liquidation ratio.

Table B.1 reports the free-float market capitalization (MC) of each index as well as the ownership ratio by size of assets under management (AUM).

**Table B.1: Statistics of ownership ratio**

Statistics	S&P 500	ES 50	DAX	NASDAQ	MSCI		
					Emerging Markets	India	EMU Small Cap
<b>MC (US\$ billions)</b>	18,109	2,512	1,052	4,887	4,564	381	448
<b>AUM (US\$ billions)</b>	<b>Ownership ratio (%)</b>						
10	0.06	0.40	0.95	0.20	0.22	2.62	2.23
50	0.28	1.99	4.75	1.02	1.10	13.12	11.16
100	0.55	3.98	9.51	2.05	2.19	26.25	22.32
200	1.10	7.96	19.01	4.09	4.38	52.49	44.64
<b>Ownership ratio (%)</b>	<b>Maximum fund size (US\$ billions)</b>						
0.1	18	3	1	5	5	0	0
0.5	91	13	5	24	23	2	2
1	181	25	11	49	46	4	4
2	362	50	21	98	91	8	9

Source: Roncalli and Weisang (2015).

**The results show that:**

- » The S&P 500-based fund, while being one of the largest (\$50 billion) in the simulations, presents a better liquidity profile than smaller funds such as the one based on MSCI EM (\$10 billion) or MSCI India (\$1 billion).
- » A closer look at the indexes' capitalization provides a potential explanation: S&P 500 capitalization is equal to \$18 trillion, while it is \$4 trillion for MSCI EM and \$381 billion for MSCI India.
- » Alternatively, the lower panel of the table shows that funds based on S&P 500, MSCI EM, and India all have an ownership ratio of 1 percent if their size is \$181 billion, \$46 billion, and \$4 billion, respectively.

Liquidity risks are often identified as one of the main components of systemic risk that could be linked to asset managers. These numerical results show that size is not an appropriate proxy of this risk.

## B. Liquidity Risks

The financial crisis has shown that a family of funds such as money market funds could lead to a systemic crisis via two channels: liquidity risk and connections between lightly regulated businesses and banks.

As a direct response to the first issue, the Securities and Exchange Commission in 2014 adopted a set of rules that “require a floating net asset value (NAV) for institutional prime money market funds that allows the daily share prices to fluctuate with changes in the market-based value of fund assets and provide nongovernment money market fund boards new tools—liquidity fees and redemption gates—to address runs.”<sup>18</sup> More recently, the SEC has proposed rules for mutual funds and ETFs to set up programs for managing liquidity risks and broaden disclosures about their liquidity and redemption practices. Furthermore, the Dodd-Frank Act requires the SEC to run stress tests on asset managers of more than \$10 billion in assets. Since, as previously discussed, banks’ and asset managers’ business models are significantly different, the methodology needs to be adjusted. So far there is no consensus on how to define and measure the concepts of liquidity and leverage that matter in the context of systemic-risk buildup within the asset management industry.

Dodd-Frank addresses the second issue by requiring central clearing of standardized derivatives transactions. The resulting strengthening of central clearing counterparties (CCP) or clearinghouses comes with a trade-off. It makes the credit chains more transparent, providing a foundation for centralized risk-management and data-processing operations. However, it also concentrates credit, liquidity, and operational risk within the CCPs. The Commodity Futures Trading Commission (CFTC) is also required to implement stress tests on CCPs in order to monitor potential systemic-risk buildup, but it runs into difficulties similar to those at the SEC.

The challenges faced by the SEC and the CFTC led to the creation of a working group within the FSOC to investigate these issues, including counterparty exposures, margin investing, trading strategies, and possible standards for measuring leverage.<sup>19</sup>

## C. Herding

Basel III is, by design, unable to discourage herding behavior because it relies on the Asymptotic Single Risk Factor Model to compute capital requirements for the monitored institutions. The model assumes that all financial institutions have a diversified portfolio and are all exposed to the same single risk factor. Wagner (2010) discusses the trade-off between ensuring that they all have the same prudent behavior and encouraging heterogeneity in risk-taking: Recent reforms could encourage more correlation across banks and financial institutions. Similar reasoning would hold for asset managers if stress tests were to assess their reaction to a common shock.

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18. SEC website.

19. UCITS and European alternative investment funds have been subject to such requirements and have had access to a range of liquidity management tools for some years.

# IV. MACROPRUDENTIAL POLICY FOR ASSET MANAGEMENT?

The asset management industry encompasses a wide variety of business activities ranging from traditional asset management to alternative investing and direct lending. In other words, it is a highly segmented industry with minimal information available to regulators attempting to monitor it. Little is known about the importance of portfolio size compared with the possibilities of nonlinear and threshold effects given the strategic situations of the institutions involved. Furthermore, given the absence of clear regulatory leadership, designing a coherent body of rules would require a significant amount of coordination among the different institutions, such as the SEC and CFTC.

While asset managers have not been the primary focus of recently introduced macroprudential policy, they continue to be affected by it. Basel III and, for the U.S., Dodd-Frank moved riskier activities (proprietary trading) off banks and onto nonbank intermediaries. New regulations are still being implemented, including the Department of Labor's fiduciary rule and the "living wills" of large banks.<sup>20</sup> Furthermore, the regulatory and political momentum that followed the financial crisis is fading, leading to some questioning of the current framework and its potential expansion to the asset management industry.<sup>21</sup> So far, regulators seem mostly focused on identifying the largest potential sources of systemic risk rather than the likelihood of a systemic shock originating from a specific institution.<sup>22</sup> This approach captures the functional risk of banks where size is an appropriate proxy of importance when it comes to systemic risk. "However, in the case of asset managers, it would confuse large institutions with systemically strategic institutions, giving wealth loss too much importance over the potential for broader economic disruptions and market dislocations."<sup>23</sup>

The noted segmentation of the asset management industry explains in large part the industry's resilience as a whole, as well as its usefulness to the real economy. It is, by business design (low cost of entry, fiduciary activity), a dynamic industry that evolves and adjusts to new conditions (direct or indirect regulations, technological progress, or very low interest rates) and passes all asset-value fluctuations to its clients. As a result, monitoring and regulating the asset management industry is quite challenging. One suggestion is for regulation to focus on the specific type of activity that provides an economic function and which, if failing, would trigger systemic crises. Then the appropriate resolution strategies should be designed to avoid such chaos. This approach implies

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20. The Department of Labor's fiduciary rule is not part of the Dodd-Frank Act but an initiative competing with the SEC fiduciary rule.

21. Lopez and Saeidinezhad (2016) provide an assessment of the implementation of Dodd-Frank.

22. The SIFI denomination ignores whether the scenarios suggested in the stress tests are likely or not.

23. Roncalli and Weisang (2015).



#### IV. MACROPRUDENTIAL POLICY FOR ASSET MANAGEMENT?

an iterative process or rounds of communication among all parties (regulators, firms, and their clients) to secure the buy-in of all sides. Cooperation among all parties is required to minimize unexpected consequences such as pushing risky activities in a more shadowy environment or generating unrealistic expectations among investors. It would also reduce the risk posed by layers of uncoordinated regulations due to the numerous institutions overseeing part of the same industry. The current setup of the FSOC could facilitate such a process as long as it remains politically independent and a lead institution is identified to oversee the asset management industry.

## V. CONCLUSION

Throughout this report, we have highlighted the challenges of a systemwide monitoring of asset management and have questioned such an approach. As an alternative, we advocate for regulation by function, imposing similar regulations for institutions performing similar tasks (for example, depository institutions and money market funds) and for having requirements set consistently across markets and institutions<sup>24</sup>

Yet it also seems necessary to take a step back and remind ourselves of the required, but not sufficient, elements for the successful use of prudential regulation in mitigating systemic risk. First and foremost, prudential policies are complements to—not substitutes for—proper macroeconomic policies (monetary, fiscal, structural). The current global monetary policy stance with pervasive low or negative interest rates and continued divergence among major central banks could generate financial instability that prudential policies would be unable to fix. Second, many financial markets and actors are international. As a result, successful toughening of prudential requirements necessitates international coordination. Yet Frankel (2016) provides several reasons why such coordination remains a challenge, as shown in recent G-20 and G-7 summits. Third, the financial world is highly complex, whether it is due to business models or extremely integrated activities across different industries. Therefore, it is rather unlikely that any data sets will provide a complete understanding or mapping of all the risk profiles. As a result, limitations should be clearly accounted for when designing regulations and their goals.

Looking ahead, it will be important for political decision-makers and regulators to realize that the nature of systemic risk will change with the evolution of the financial landscape. Already it is apparent that the business model of banks is in a state of flux, with banks' *raison d'être* questioned by many. The center of power in finance is shifting to the buy side. As assets under management rise toward \$100 trillion by 2020 (according to some projections), the buy side is poised to replace banks as the major source of funding for deals and underwriting. In the post-crisis world, regulators have as much, if not more, power as shareholders. Using this power wisely to simplify rules and minimize complex regulatory changes to the financial system while providing the right incentives for the private sector to adopt proper governance and monitoring seems the best way to achieve long-term financial stability and benefits to the real economy.

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24. See Richardson (2014): "If the risk of the underlying loans is the same, it should not matter how those loans are sliced and diced through securitization in terms of determining the required capital buffer of banking institutions."



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# APPENDIX

## Main Categories of Asset Managers

Vehicle	Features and Risk Profiles
Open-End Mutual Fund	<ul style="list-style-type: none"><li>• These funds issue “redeemable equity securities” and stand ready to buy back their shares at their current net asset value—the price per share of a fund.</li><li>• These funds invest in generally liquid publicly traded bonds and equities.</li><li>• Many of the funds offer daily liquidity to clients, making liquidity risk the key risk for the fund.</li><li>• In particular, some funds invest in relatively illiquid securities (for example, corporate bonds instead of equity). This is often referred to as “liquidity transformation” that could lead to “liquidity mismatch,” which makes the fund vulnerable to redemptions.</li><li>• These funds have little leverage through borrowing, though they could be taking portfolio leverage using derivatives. (The same applies for money market funds and exchange-traded funds, below.) Although regulations impose caps on the use of leverage, little quantitative information is available.</li></ul>
Money Market Fund (MMF)	<ul style="list-style-type: none"><li>• These funds invest in short-term cash-equivalent instruments such as commercial paper, Treasury bills, and certificates of deposit and play a major role in short-term-funding markets.</li><li>• MMFs experienced major runs and liquidity distress during the global financial crisis. All U.S. MMFs offered constant NAV (mutual fund price per share) at \$1 per share. This structure created a first-mover advantage because funds continued to honor the \$1-per-share repayment even though their actual NAV was worth less as the result of losses from asset-backed commercial paper, which was perceived to be liquid and safe before the crisis.</li><li>• Constant-NAV MMFs continue to exist in the U.S. and several other jurisdictions.</li></ul>

Exchange-Traded Fund (ETF)	<ul style="list-style-type: none"> <li>• ETF shares are traded in primary and secondary markets.</li> <li>• ETF shares can be created or redeemed in the primary market between the fund and “authorized participants” (APs) in large units. APs are typically large securities dealers. Only primary market transactions cause fund flows to ETFs. The settlement between ETFs and APs are usually in-kind, meaning that the exchange of ETF shares and the basket of securities is in line with the ETF’s investment objectives.</li> <li>• APs then trade the ETF shares in the secondary market with clients and counterparties on stock exchanges. This intraday trading in secondary markets provides intraday liquidity to end investors.</li> <li>• Most ETFs are index funds, tracking the performance of a specific index.</li> </ul>
Hedge Fund	<ul style="list-style-type: none"> <li>• These funds cover a large variety of investment strategies, ranging from publicly traded equity (highly liquid holdings) to distressed debt vehicles and structured credit products (highly illiquid holdings). Use of leverage and derivatives also varies considerably depending on the strategy. Unlike mutual funds, hedge funds have no cap on leverage.</li> <li>• Hedge funds tend to be more nimble than mutual funds regarding their investment strategies, leading to potentially rapid alterations in their risk characteristics. Depending on their funding and trading strategies, there can be significant interconnection with other financial institutions.</li> </ul>
Private Equity Fund	<ul style="list-style-type: none"> <li>• “Private equity” is a broad term that refers to any type of equity participation in which the equity is not freely tradable on a public stock market, such as equities of private companies and public companies that are delisted.</li> <li>• Private equity funds often monitor and participate in managing the companies whose equity they hold. They aim to maximize financial returns by a sale or an initial public offering of the companies.</li> <li>• There are four main subclasses among private equity funds: (1) venture capital that invests in early-stage, high-potential, growth startup companies; (2) buyout funds that acquire existing business units or business assets; (3) mezzanine funds that invest in both growth equity and the subordinate debt layer—namely, the “mezzanine” between senior debt and equity—of buyout transactions; and (4) distressed asset funds, which are a specialized segment of buyouts that target mature and distressed companies. In addition, there are real estate and infrastructure funds.</li> <li>• Some private equity funds may be leveraged, but they are smaller components of the private equity industry.</li> <li>• Moreover, these alternative investment vehicles offer limited liquidity to end investors, matching the funds’ long-term investment horizon.</li> <li>• Contagion risks are also limited because private equity funds invest in companies that are not traded in markets.</li> </ul>

Source: IMF (2015).



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**Dr. Claude Lopez** is director of research at the Milken Institute, leading projects and initiatives on international finance and macroeconomics. With her team, she investigates the linkages between the financial sector and the real economy, focusing on three core areas: systemic risk, capital flows, and investment. She brings expertise and experience on several topics, including exchange rate, capital flows, commodities, inflation, and time-series econometrics. Her research has been published in highly ranked academic journals and policy reports and presented at international conferences. Before joining the Institute, Lopez held management roles while being senior research economist at the Central Bank of France, Paris (Banque de France), and was professor of economics at the University of Cincinnati.

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