

## FUND STRUCTURES AS SYSTEMIC RISK MITIGANTS

SEPTEMBER 2014

In our May 2014 *ViewPoint* entitled “Who Owns the Assets? Developing a Better Understanding of the Flow of Assets and the Implications for Financial Regulation”,<sup>1</sup> we discuss the drivers of asset flows and explain why additional regulation for asset managers will not materially address concerns related to asset flows – what some have termed “herding” and “run risk”. This is because asset managers are agents working on behalf of asset owners (such as institutional and retail investors) and do not ultimately control the decisions made by asset owners to allocate assets to or from a particular asset class or investment product. Directives from regulators that are contrary to the lawful legal rights of the asset owner cannot be executed because of the asset manager’s fiduciary obligation to its clients, the asset owners. The flow of assets into and out of individual asset classes and funds is driven by asset owners in a variety of ways, including subscription and redemption requests, investment guidelines in fund prospectuses, delegation of asset allocation decisions to financial advisors or institutional investment consultants, as well as regulatory constraints governing asset owners (e.g., state insurance regulation, ERISA, UK pension regulation, etc.). As such, efforts to address systemic risk by regulating a handful of large asset managers at the level of the firm are misplaced because they do not address the preponderance of control over asset flows – the ability of asset owners to govern and re-allocate their assets.

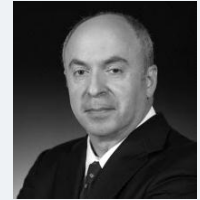
In order to address macro-prudential concerns related to systemic risk, we suggest that regulators must instead look to other avenues, including potentially rethinking the structure of existing fund vehicles and identifying best practices. In our *ViewPoints*, we argue that a fund structured to provide better investor protection will in most cases also mitigate the potential for that fund to create systemic risk. Put simply, if a fund is structured to ensure that the redemption behavior of one investor does not disadvantage the investors who remain in the fund, there will be, by definition, no “first mover advantage”. Ex-ante, this approach protects all investors equally while also mitigating the potential for systemic “run risk” by eliminating “accelerants” related to fund redemptions. *In fact, a number of existing fund regulations serve to mitigate “run risk” and protect investors to some extent based on fund mechanisms and prudent risk management guidelines. We believe regulators should consider design elements already in use in various types of funds. These design elements need to be considered together in the context of fund structure and in terms of their effectiveness to best address mitigating both “run risk” and investor protection concerns.* These areas were addressed in our May *ViewPoint* and include:

- i. Pricing methodologies for subscriptions and redemptions
- ii. Redemption provisions, including powers granted to the trustees or directors of a fund
- iii. Limitations, if any, on leverage and illiquid securities, including limits on the use of derivatives
- iv. Risk management procedures, specifically pertaining to measuring and managing liquidity risk in both normal and adverse conditions
- v. Disclosures in fund constituent documents as well as ongoing communication with investors on investment guidelines, risks and the provisions to protect the fund and investors (as applicable).<sup>2</sup>

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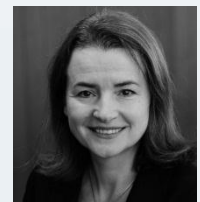
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These attributes should not be looked at in isolation. Any assessment of fund structures needs to look holistically at the provisions that are in place to manage client flows for each type of fund and how they collectively address investor behavior and investor protection. Ideally, regulators and fund sponsors can contribute collaboratively to a comprehensive fund structure review with the aim of improving the overall financial ecosystem for all market participants. To have any meaningful impact, any new regulations addressing these issues need to be applied consistently across all funds in the category; otherwise regulatory arbitrage may cause assets to flow between funds with different regulatory-imposed characteristics. One of the challenges of macro-prudential regulation is that through its efforts to make the entire system more robust, it may in some cases exacerbate the innate “commons” problem whereby while all market participants are better off in a more stable financial system, each individual investor or possibly even fund sponsors might be better off seeking the least restrictive vehicle for their own investments or products. Furthermore, reforms to fund structures need to balance systemic risk reduction with operational feasibility, investor receptivity and economic efficiency.

This *ViewPoint* provides a deeper analysis of the structural features of funds that already exist in various jurisdictions for various types of collective investment vehicles (CIVs or

funds). As a starting point, Exhibit 19 of our May *ViewPoint* summarized the current rules governing several different types of CIVs applicable in various regulatory regimes, included herein as Appendix A. In this paper, we reference Appendix A to compare and contrast CIV structures and their implications on systemic risk across alternative regulatory regimes. In addition, we note that the International Organization of Securities Commissions (IOSCO) and the Financial Stability Board (FSB) have done significant work in this area (see Appendices C, D, E, and F). This paper also highlights some of the positive features of existing fund structures with the goal of recommending balanced options to reduce systemic risk, enhance the liquidity of markets, and meet the reasonable demands of fund investors. We also predicate our recommendations based on the type of fund, recognizing that structural approaches will vary based on liquidity of a specific fund’s holdings, investor base (retail or institutional), and market conditions (i.e., certain structural features may be implemented only during adverse market environments). In a separate *ViewPoint* entitled “Who Owns the Assets: A Closer Look at Bank Loans, High Yield Bonds, and Emerging Markets Debt,” we investigate the structural features and liquidity risk management practices of funds that rely on these asset classes.<sup>3</sup>

## **BLACKROCK RECOMMENDS IDENTIFYING BEST PRACTICES IN EXISTING REGULATION AND INDUSTRY PRACTICES**

*Regulators should look at the range of features currently in place in various jurisdictions. While some funds already include certain features, this review should lead to an expanded toolkit that can be applied to existing and future investment vehicles to improve their systemic risk characteristics. Funds should be structured in a way that addresses investor protection and systemic risk concerns by looking at a combination of pricing methodology, underlying portfolio constraints, liquidity risk management, redemption features, and disclosure practices.*

1. Structuring funds in a way that more fully allocates contemporaneous transaction costs to transacting investors.
2. Establishing proportionate controls and transparency over the use of leverage for less liquid asset classes while permitting borrowing to meet shorter-term redemption needs.
3. Limiting levels of illiquid assets and establishing concentration limits.
4. Requiring managers to establish robust liquidity risk management practices.
5. Allowing managers discretion to use in-kind redemptions where operationally feasible and above specified redemption thresholds.
6. Providing fund boards greater discretion to manage redemptions.
7. Requiring disclosure in fund prospectus regarding liquidity risk management practices.

As noted in our May *ViewPoint*, many asset owners choose to manage all or a portion of their assets directly; in fact, more than three-quarters of financial assets are managed directly by asset owners.<sup>4</sup> Exhibit 1 differentiates between directly and externally managed assets and breaks out the latter into CIVs and separate accounts. To help frame this *ViewPoint*, CIVs are further delineated by funds that are widely available to the public, “registered” funds – such as UCITS and Investment Company Act of 1940, as amended (‘40 Act) funds; and funds that are available on a more targeted basis to institutional investors or a particular subset of investors, “unregistered” funds – such as hedge funds, private equity funds, and most alternative investment funds (AIFs).<sup>5</sup> It is important to note that this is not an exhaustive list of types of CIVs as there are registered fund structures in many countries around the world that have a variety of similar and different features to the ones that we describe below.

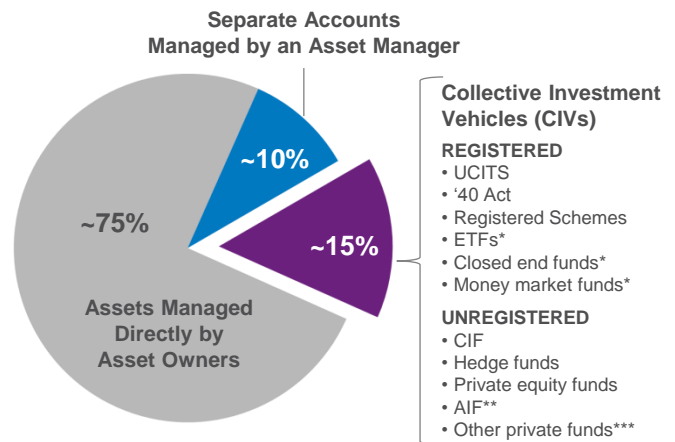
## Types of CIVs

Various types of CIVs have been developed to meet the needs of different client segments around the world. CIVs include funds that can be either registered or unregistered. Registered funds include:

- ▶ Mutual funds registered under the ‘40 Act (‘40 Act Funds) in the US that are regulated by the Securities and Exchange Commission (SEC);
- ▶ UCITS regulated funds offered in individual EU jurisdictions and subject to the common regulatory framework established by the body of EU law giving rise to the EU single market (including the UCITS Directive). (Individual EU member states also offer additional types of non-UCITS registered funds for their domestic market);
- ▶ Registered Management Investment Schemes (registered schemes) which are open-end funds regulated by the Australian Securities and Investment Commission (ASIC);
- ▶ Most forms of exchange-traded funds (ETFs); and
- ▶ Closed-end funds, which are registered under the ‘40 Act in the US, and can be offered in other jurisdictions under their respective regulatory regimes.

ETFs and closed-end funds are both variants of registered mutual funds subject to regulation in various jurisdictions, including regulation tailored to these products. ETFs are a type of open-end fund that can be traded throughout the day at the current market price, similar to a stock. Closed-end funds have a fixed number of shares that trade on the secondary market, and investors in closed end funds can buy and sell shares of the fund at the current market price.

**Exhibit 1: GLOBAL INVESTABLE ASSETS  
APPROX. \$225 TRILLION**



Source: BlackRock, McKinsey & Company, ICI.

\*Can be offered under several regulatory regimes (e.g., ‘40 Act, UCITS, etc.). Note that some closed end funds are not registered funds.

\*\*Some AIFs are registered funds.

\*\*\*Examples of other private funds include private real estate and private infrastructure funds

There are also numerous types of CIVs that are not registered funds. For example, US banks may offer collective investment funds (CIFs), which are regulated by the US Office of the Comptroller of the Currency (OCC) for nationally chartered banks and by state banking regulators for state chartered banks. Unlike ‘40 Act Funds, CIFs are not offered publicly but are, instead, offered to a limited subset of institutional investors that have a *bona fide* trust relationship with the bank.<sup>6</sup> Other CIVs include private funds or AIFs. In the US, the term “private fund” encompasses hedge funds, private equity and certain real estate funds that are offered to institutional investors and accredited retail investors. In Europe, AIFs are a very broad category that encompass all non-UCITS funds (as mentioned above) and cover institutional pooled funds, non-UCITS retail funds and charity funds in addition to hedge funds, private equity and real estate funds. CIVs also include real estate investment trusts (REITs), which may be publicly offered registered funds, privately placed (unregistered funds), or traded as REIT equities. Different variants of CIVs are offered in several different geographic locations under the supervision of a variety of securities regulators.

Exhibit 2 delineates global assets under management (AUM) by type of CIV as of December 2013. At \$33.4 trillion, the total global AUM of CIVs represented approximately 15% of global financial assets of approximately \$225 trillion.<sup>7</sup> Open-end mutual funds were by far the largest fund class with AUM of \$25.3 trillion.

## Pricing Methodologies for Subscriptions and Redemptions

As we observed in our May *ViewPoint*, each type of CIV is subject to its own specific rules or practices. One important area of differences between CIVs is reflected in their rules around the handling of subscriptions and redemptions. At defined intervals, typically daily for '40 Act Funds, CIFs and UCITS,<sup>8</sup> CIV investors generally have the ability to subscribe to or redeem from a CIV. Except for the unusual case when aggregate subscription and redemption requests for a fund happen to be exactly equal, the netting of such requests will require the CIV either to engage with the primary asset market by buying or selling assets, or to borrow funds. As a result, subscriptions and redemptions from a CIV will force the CIV to generate transactions costs either through direct commissions to brokers or through incurring bid-ask spreads in an over-the-counter market, as is the case with most fixed income securities.<sup>9</sup>

**Exhibit 2: GLOBAL AUM FOR FUNDS (CIVS)**

Type of Fund		AUM (\$T)	% of Total
REGISTERED	Open-End Mutual Fund	<b>25.3</b>	<b>76%</b>
	United States	12.3	37%
	Europe	8.1	24%
	Africa and Asia-Pacific	2.9	9%
	Other Americas	2.0	6%
	ETFs	<b>1.7</b>	<b>5%</b>
	Passive	1.6	5%
	Active Non-1940 Act ETFs (primarily Commodity Funds)	0.01 0.06	0% 0%
Closed End Funds	<b>0.28</b>	<b>1%</b>	
UN-REGISTERED	Private Equity	<b>3.5</b>	<b>10%</b>
	Hedge Funds	<b>2.6</b>	<b>8%</b>
	<b>TOTAL</b>	<b>33.4</b>	<b>100%</b>

As of December 2013. Excludes US and non-US money market funds, Unit Investment Trusts and CIFs. Source: ICI, available at <http://www.icifactbook.org>; Preqin, available at <https://www.preqin.com>; HFR, Inc., available at [www.hedgefundresearch.com](http://www.hedgefundresearch.com)

## Exhibit 3: SUMMARY OF EXISTING MECHANISMS FOR SUBSCRIPTIONS AND REDEMPTIONS IN FUNDS

### '40 Act Funds (open-end)

In the US, Rule 22c-2 under the '40 Act, as amended, provides that the board of directors or trustees of an open-end '40 Act Fund must consider whether to impose a redemption fee (up to 2%) which flows back into the fund's NAV.<sup>10</sup> In general, redemption fees are used as a means to combat "market timing" as part of "frequent trading policies" and are charged by the fund and paid to the fund for the benefit of the shareholders remaining in the fund. Such fees must be disclosed in the fund prospectus. Currently, redemption fees are less widely applied given the effectiveness of fair valuation standards in preventing opportunistic short-term trading in open-end '40 Act Funds.

### UCITS (open-end)

UCITS provides a framework that allows each EU member state some flexibility to determine the pricing mechanisms that can be used by locally domiciled UCITS. The most common pricing mechanisms used by UCITS-funds are called "swing pricing", which attempts to allocate transaction costs (at least in part) to transacting investors, not the fund. Since countries have discretion on how to implement the UCITS rules into their national regulation, having anti-dilution mechanisms in place is not a requirement under UCITS,

however, it is commonly adopted by national regulators. For instance, BlackRock, in its Luxembourg UCITS-funds, uses swing pricing in its retail offerings

### Registered Schemes

In Australia, the ASIC requires disclosure of formulas for calculating withdrawals which can include transaction cost allocation. Specifically, each asset manager publishes a policy which details how unit pricing is calculated as well as treatment of transaction costs. The right to withdraw from a fund and the way in which withdrawals are effected must be fair to all members.

### CIFs

For these bank funds, transaction costs can sometimes be allocated to the subscribing or redeeming participant. For instance, BlackRock does this through a purchase redemption value ("PRV") mechanism, which nets subscription and redemption activity (where allowable under applicable regulation) and externalizes transaction costs that cannot be netted from the CIF.

### AIF

Transaction costs can be allocated at the discretion of the manager with disclosure requirements. AIFs that are marketed to retail investors usually follow UCITS-style rules.

Note that there are many different types of fund structures around the world. The above table captures only a representative group of such structures.



Which parties bear the costs of transactions associated with subscriptions and redemptions is an important question in a discussion of investor protection and systemic risk. From an economic and equitability perspective, ideally, the asset owner initiating the transaction should bear these costs in order to protect remaining investors in a CIV from the activities of other parties, as well as providing a price signal to the subscribing or redeeming investors thereby reducing the financial incentive to “run” in a time of market stress. While different types of CIVs have different approaches, CIV regulations generally allow for (but do not require) transaction costs of subscriptions and redemptions to be allocated to transacting participants rather than across the NAV of the fund, which would otherwise impact remaining shareholders. This is sometimes referred to as anti-dilution mechanisms.

Standards have been established across the industry around pricing methodologies for CIVs. Each approach has been developed over time by different regulators. While some regulatory regimes offer only one pricing methodology, others use a toolkit of measures to protect remaining investors in a fund against the dilutive effects of individual investor flows.

#### **'40 Act Funds (open-end)**

Open-end '40 Act funds publish a daily net asset value (NAV) at the end of each business day. That NAV is calculated without regard to the specific net flow with which the fund will be confronted. It generally uses the last close for exchange-traded securities like equities, and bid-side indications for over-the-counter assets like bonds, assuming an institutional-sized block.<sup>11</sup> Subscriptions and redemptions for open-end '40 Act funds are executed at the price per share at the next calculation of NAV after the order is placed. In the case of equities, if the issue is relatively thinly traded, a large sell order might have market impact which would make the actual price achieved by the fund less than what the NAV calculation implied. Similarly, given the limited transparency and trading in specific bonds in the bond market, the price provided to a fund by a pricing vendor might adjust relatively slowly, particularly when markets become increasingly illiquid. Similar to equities, there may also be market impact on the price. The net effect will be that the proceeds from the sale of securities due to a redemption may be less than what the NAV-based calculation would determine. The opposite might occur in a net subscription. When markets are functioning well and subscriptions/redemptions are relatively small, the impact is quite muted. However, since there is typically no mechanism to reflect the actual contemporaneous transaction costs realized by the fund, the impact may be magnified when markets are turbulent or illiquid, potentially creating burden for the remaining investors and increasing the incentive to “run” at a time of market stress.

*Which parties bear the costs of transactions associated with subscriptions and redemptions is an important question in a discussion of investor protection and systemic risk.*

#### **CIFs**

Bank CIFs in the United States also calculate a NAV on a periodic basis (typically on each business day). Similarly, orders for subscriptions and redemptions in CIFs received before the time as of which a CIF's NAV is determined on a given business day are processed at that business day's NAV. US CIFs are permitted to allocate transaction costs to transacting investors, subject to certain eligibility requirements. For instance, for eligible US CIFs, BlackRock uses purchase redemption values (PRVs) to isolate transaction costs for CIFs in the institutional defined benefit space.

Trades that are eligible to use a PRV are flagged by the portfolio managers as part of the order management process. Trades are flagged on trade date (T) and subscriptions and redemptions are then netted within the fund, subject to applicable regulatory requirements, in what is called a “unit exchange.” Therefore, when a unit exchange occurs, no additional market trades are necessary and no additional transaction costs are incurred by the CIF. To the extent that a subscription or redemption cannot be accommodated through a unit exchange and the CIF is eligible to use PRV, the subscription or redemption is valued at a “purchase net asset value” or a “redemption net asset value,” each calculated to reflect the transaction costs associated with buying or selling assets. These costs can include brokerage commissions, third-party fees, bid-offer spreads, differences between closing prices and actual execution prices, accrued interest for fixed income CIFs, and other transactional costs of acquiring or selling portfolio assets. For residual redemption or subscription amounts, securities are purchased or sold on the next trading day (T+1) and transaction costs are calculated and allocated to transacting investors. In this manner, portfolio transaction costs caused by subscriptions or redemptions are allocated to subscribing or redeeming CIF participants. As such, this mechanism appropriately addresses the risk of creating a “first mover” advantage by externalizing transaction costs by the fund to transacting investors. BlackRock has a PRV Governance Committee that reviews PRV eligibility guidelines for funds and monitors the PRV process.

## UCITS (open-end)

UCITS provides a framework that allows each EU member state<sup>12</sup> some flexibility to determine the pricing mechanisms that can be used by locally domiciled UCITS. Thus, allowable pricing mechanisms can vary somewhat from country to country. Since countries have discretion on how to implement the UCITS rules into their national regulation, having anti-dilution mechanisms in place is not a requirement under UCITS but it is commonly adopted by national regulators. By far, the most common pricing mechanism currently used by UCITS is called “swing pricing”.

### *Swing Pricing*

Managers may adopt a swing pricing mechanism in a single-priced UCITS to reflect the overall effect on the fund of transaction costs associated with expected subscriptions and redemptions. The idea behind swing pricing is to “swing” the NAV calculation to either the bid or offered side of the market depending on the net inflows or outflows from the fund. If the fund faces net redemptions, the fund’s NAV would swing to the full contemporaneous bid side of the market.<sup>13</sup> Conversely, if the fund faces net subscriptions, the NAV would swing to the full contemporaneous offer side of the market. There are at least two types of swing pricing, “full” and “partial” swinging. Swing pricing is commonly used for UCITS regulated funds in individual EU jurisdictions such as Ireland and Luxembourg.

Under full swing pricing, the NAV is adjusted any time there are net inflows or outflows in the UCITS. Under partial swinging, the process is triggered, and the NAV “swung”, only when net inflows and outflows exceed a predefined “swing threshold”. The swing threshold is the level of net flow, as a percentage of NAV, required for the fund to use swing pricing and prescribed based on liquidity of the fund. At BlackRock, the firm’s EMEA Swinging Committee governs the swing threshold as well as the actual level that the price of the fund should swing. Thresholds and levels are reviewed quarterly by the committee and on an as needed basis as market conditions change. Market impact caps are applied as a fixed percentage of NAV (e.g. 2%) and disclosed in the prospectus.

Swing pricing is, therefore, a mechanism by which investors buying or selling a UCITS at a volume that could materially impact ongoing investors bear the trading costs incurred (at least in part), rather than forcing other shareholders to bear those costs on their behalf. Swing pricing has been increasingly adopted as an anti-dilution method for UCITS, predominantly for funds marketed to retail investors.<sup>14</sup> In a December 2011 report entitled

“Swing Pricing: The Dilution Effects of Trading Activity,” BlackRock conducted a study of several of our retail UCITS funds that use partial swing pricing. The results demonstrated that the use of swing pricing enhances alpha generated for investors as transaction costs are allocated to transacting investors and not to the fund.<sup>15</sup> Additional detail on swing pricing and the results of that study are shown in Appendix B.

### *Bid/Ask Dual Pricing*

This mechanism is mainly used for UCITS and AIF funds sold to institutional investors in EMEA. Under this approach, funds are “dual-priced”; that is, funds publish and investors deal at, separate redemption and subscription prices (bid/ask). Assets held by the fund are priced on a mid-market basis which is used to obtain a mid NAV per unit/share. There is a “crossing” mechanism that matches subscriptions and redemptions as portfolio managers trade so that overall trading and related costs are reduced for subscribers and redeemers. BlackRock calculates transaction costs and these costs are added to the NAV to obtain the subscription price and deducted from the NAV to get the redemption price as applicable. The mechanism is designed to pass actual transaction costs as closely as possible to transacting investors. This protects existing investors from dilution caused by trades triggered by dealing/trading. At BlackRock, Bid/Ask Dual Pricing is also governed by the firm’s EMEA Swinging Committee.

These mechanisms appropriately attempt to externalize transaction costs realized by the UCITS-fund to the transacting investors, removing the burden from the remaining investors and reducing the incentive to “run” at a time of market stress. There are other pricing mechanisms used in the UCITS space, including dilution levies (analogous to exit fees) and related forms of dual pricing that are much less commonly used and/or are not suitable for cross-border distribution platforms.

## **Comparison of Subscription and Redemption Mechanisms**

In order to understand the differences between the different pricing mechanisms, we created a hypothetical example of a \$100 million investment-grade credit fund facing \$20 million in gross redemptions and \$5 million in gross subscriptions on a given day to demonstrate the impact on the fund. In this example (shown in Exhibit 4), we assume that the total cost of selling assets to meet the redemptions is ten basis points. And, we show numerically, the impact on NAV, flows and transaction costs when different redemption mechanisms are used. Please note that this example is for illustrative purposes only; and, for simplicity, certain complicating factors such as tax implications of selling securities are not captured.

#### Exhibit 4: COMPARISON OF FUND PRICING MECHANISMS

\$ millions	UCITS Full Swing Pricing*	UCITS-AIF Bid/Ask Dual Pricing	CIF PRV	'40 Act Open-End Funds (non-ETF)
<b>Beginning NAV of Fund</b>	<b>\$100</b>	<b>\$100</b>	<b>\$100</b>	<b>\$100</b>
<b>Net Flows</b>	<b>-\$15</b>	<b>-\$15</b>	<b>-\$15</b>	<b>-\$15</b>
Subscriptions	+\$5	+\$5	+\$5	+\$5
Redemptions	-\$20	-\$20	-\$20	-\$20
<b>Total Costs of Selling Assets (0.1%)</b>	\$0.015	\$0.015	\$0.015	\$0.015
Transaction Costs Incurred by SUBSCRIBING Investors	**-\$0.005	\$0	***\$0	\$0
Transaction Costs Incurred by REDEEMING Investors	\$0.020	\$0.015	\$0.015	\$0
Transaction Costs Incurred by FUND	\$0	\$0	\$0	****\$0.015
<b>Ending NAV of Fund</b>	<b>\$85.000</b>	<b>\$85.000</b>	<b>\$85.000</b>	<b>\$84.985</b>
<b>Commentary</b>	<i>Estimated transaction costs borne by transacting investors (transacting at a single NAV) after netting of subscriptions and redemptions.</i>	<i>Estimated transaction costs borne by transacting investors (transacting at 2 different NAVs) after netting of subscriptions and redemptions.</i>	<i>Actual transaction costs borne by transacting investors after netting of subscriptions and redemptions.</i>	<i>Actual transaction costs borne by fund.</i>

\*This example is specific to full swing pricing. For partial swing pricing, swing pricing would only occur if the net outflow as a percentage of NAV was greater than the established swinging threshold. Please see Appendix B for a more in depth discussion of swing pricing and an example of partial swing pricing.

\*\*As fund NAV has swung to the bid price due to net redemptions, subscribing investors benefit to the extent that they purchase units cheaper than pre-swung NAV. This is offset by the costs paid by redeeming clients.

\*\*\*Assumes all subscriptions and redemptions are eligible to do a "unit exchange".

\*\*\*\*In certain circumstances, portfolio managers may choose to use cash buffers and/or borrow funds to meet redemptions without incurring transaction costs as described in "ViewPoint – Who Owns the Assets: A Closer Look at Bank Loans, High Yield Bonds, and Emerging Markets Debt."

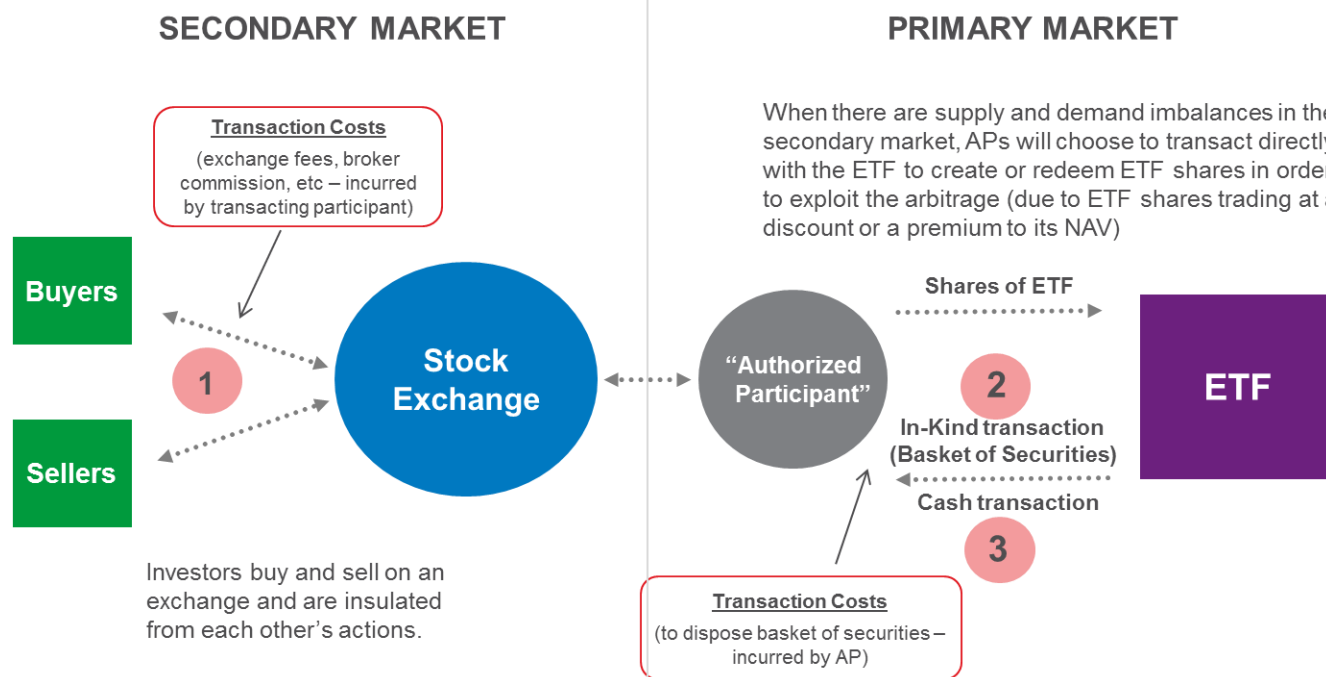
#### ETFs

ETFs<sup>16</sup> offer another way to meet redemptions which differs from traditional open-end funds. Like open-end mutual funds, ETF shares can be created or redeemed at the end of the trading day for the current NAV. ETFs stand ready to issue and redeem shares daily at NAV in large aggregations, sometimes referred to as Creation Units, but only do so with large institutional trading firms known as Authorized Participants (APs), Participating Dealers and similar entities depending on the jurisdiction in which the funds are registered. However, unlike mutual funds, investors can also trade existing shares of the ETF on an exchange or over-the-counter at market price, similarly to how any publicly-traded stock can be traded. A large percentage of ETF transactions occur in the secondary market (via the exchange or over-the-counter), with investors engaging with their brokers to purchase or sell shares of the ETF. With secondary market trading of ETF shares, the market for the underlying portfolio securities of the ETF is not directly impacted because none of these portfolio securities need to be bought or sold by the ETF, although to the extent that selling pressure on the ETF may cause the ETF to trade at a discount to its NAV, this may

open up the possibility that an AP will step in and buy the fund and then redeem it for its underlying securities which it would then sell to complete the arbitrage. Also, secondary market transactions do not directly impact the ETF's NAV or performance because the secondary market investor pays all transaction fees, including exchange fees, commissions, etc., to trade the ETF.

In some cases (e.g., when there are supply and demand imbalances in the secondary market resulting in the ETF trading at a discount or a premium to its NAV), an AP will choose to transact directly with the ETF to create or redeem ETF shares in order to capture the arbitrage opportunity although there is no guarantee that they will do so. Transactions between an ETF and an AP are typically conducted 'in-kind', with the AP providing or receiving a basket of securities with very similar risk characteristics to the ETF's holdings.<sup>17</sup> Alternatively, some of these create or redeem transactions are made in part or whole for cash, with the ETF structure providing for a mechanism whereby transaction costs are absorbed by the AP in a manner that mimics the economics of an in-kind transaction.<sup>18</sup> This "externalization of costs" approach results in transaction costs

## Exhibit 5: COMPARISON OF ETF PRICING MECHANISMS



\*Redemption of ETF shares by AP shown in example

being allocated in a reasonable way outside of the ETF itself (i.e., the APs typically bear these costs and pass them along to their clients, often in the form of wider bid/ask spreads on the ETF shares).<sup>19</sup> In Exhibit 5, we illustrate the three methods of transactions involving ETFs, one between market participants in the secondary market through the stock exchange and two between the AP and the ETF, via in-kind or cash transactions. As the diagram illustrates, transaction costs are isolated to the transacting participants within the secondary market or to the AP in the primary market; there is no impact to the remaining investors of the ETF which significantly mitigates the chance of a “first mover” advantage and “run risk” in these funds.

### Redemption Fees

Some CIVs are allowed to employ redemption fees. For the most part, redemption fees are used as a means to combat “market timing” as part of “frequent trading policies” and rules that were implemented by different regulators in response to the market timing issues discovered in 2003. For example, UCITS have the ability to charge redemption fees if there is a reason to believe that a shareholder in the fund is conducting “excessive trading” or attempting a market timing abuse.<sup>20</sup> Where a redemption fee is charged by a fund and paid to the fund, it is for the benefit of the shareholders/unit holders remaining in the fund.

In the US, Rule 22c-2 under the '40 Act, provides that the board of directors or trustees of an open-end '40 Act Fund must consider whether to impose a redemption fee (up to 2%).<sup>21</sup> Specifically, the Board must either (i) approve a redemption fee on shares redeemed within a time period that in the Board's judgment is necessary or appropriate to recoup the costs the fund may incur as a result of those redemptions or to otherwise eliminate or reduce as far as practicable any dilution of the value of the fund's securities, with the proceeds retained by the fund, or (ii) determine that the imposition of a redemption fee is either not necessary or not appropriate. The Rule also requires funds to enter into agreements with certain financial intermediaries that provide fund management with access to certain information about fund shareholders who hold shares through those intermediaries.

Currently, redemption fees are less widely applied given the effectiveness of fair valuation standards (see next section) in preventing opportunistic short-term trading in mutual funds. However, redemption fees are sometimes used for international funds where time zone differences can create price arbitrage opportunities. In funds that incorporate redemption fees, these fees are required to be disclosed to investors in these funds.



## Fair Value Pricing

'40 Act Funds are required to determine the “fair valuation” of securities if market prices are not “readily available” or are not believed to reflect current market values. Such a situation could arise if, for example, securities held in a fund are traded on an exchange that closes before the fund is valued and/or a significant event occurs after trading in the securities ends but before the fund is valued. For '40 Act Funds, this situation could arise when the '40 Act Funds invest in non-US securities. Without fair value pricing, a fund could potentially be valued using “stale” prices, which could create an opportunity for market timing and could negatively impact existing fund investors.<sup>22</sup> As with '40 Act Funds, CIFs and the boards of European UCITS and AIFs can also utilize fair valuation policies. Note that many funds elect to delegate day-to-day implementation to specialist valuation committees that are responsible for overseeing the valuation process, including third party service providers such as fund administrators, as well as employees of the manager who are involved in the valuation process.<sup>23</sup>

## Disclosure of Pricing Methodologies for Subscriptions and Redemptions

Disclosure can be a key component of managing investor expectations about a fund’s pricing procedures. Most fund regimes require pricing policies to be disclosed in a fund’s constituent documents and many fund regimes provide a level of flexibility in pricing so long as there is proper disclosure. For example, in Australia, ASIC follows a disclosure-based regulatory framework that allows for discretion on the part of the trustee (the Responsible Entity), so long as such discretionary decisions are adequately documented in the registered scheme’s constituent documentation and disclosure documents and that they are consistent with the overriding obligation imposed upon the Responsible Entity to act within the best interests of investors at all times and to ensure that all investors are treated equally. The ASIC regulation requires the Responsible Entity of a registered scheme in Australia to put anti-dilution mechanisms in place and set those measures out in the registered scheme’s constituent documents but does not prescribe specific measures. Further, the documents must address the formula that is used for calculating withdrawals, which must be based on the value of the registered scheme’s assets less liabilities (or a class of assets, less liabilities), and can take into account the material costs involved in the disposal of the registered scheme’s assets. BlackRock has a governance process and policies and procedures for allocating transaction costs of redemptions and subscriptions to transacting investors.

## *IOSCO Principles for the Valuation of Collective Investment Schemes*

In May 2013, IOSCO published a report entitled “Principles for the Valuation of Collective Investment Schemes” in which they recommended eleven principles for the valuation of collective investment schemes (CIS) (Appendix C).<sup>24</sup> IOSCO’s principles are intended to be a basis against which both the industry and regulators can assess the quality of regulation and industry practices concerning fund valuation. They encourage the establishment of policies and procedures to document how assets in a fund should be valued to ensure consistency and prevent errors in the valuation process. In addition, the principles encourage putting in place measures to deal with any pricing errors as well as to mitigate conflicts of interest. Finally, the principles highlight the need for disclosure and transparency to investors regarding valuation and pricing. IOSCO acknowledges, however, that implementation of the principles may vary from jurisdiction to jurisdiction, depending on local conditions and circumstances. In our view, the IOSCO principles reflect an important step toward embedding best practice standards for valuation of CIVs.

## Redemption Provisions And Board Powers

Rules regarding redemptions vary widely across CIVs. For example, in some cases, Boards have the ability to require investors to accept redemptions in-kind rather than in cash in certain circumstances, or they may suspend dealing on a temporary basis, or elect to close and liquidate a fund. In many cases, the Board or its equivalent (i.e., trustees) have different powers to put certain redemption rules into effect across various funds. Depending on the fund, redemption provisions could include:

- i. the ability to redeem in-kind;
- ii. the ability to put down a “gate” to limit redemptions; or
- iii. the suspension of redemptions

In this section, we first discuss these redemption features as they may relate to various types of CIVs – '40 Act Funds, CIFs, UCITS and registered schemes. Later in this section, we describe the redemption features that are typically employed in hedge funds.

## Redeeming In-Kind

In theory, the use of in-kind redemptions could reduce a CIV's susceptibility to a "run" because the CIV would not need to sell securities in order to meet redemption requests. Indeed, regulation for many fund structures today allow for in-kind redemptions. However, this would simply move the selling pressure from the CIV to the investors who would find themselves holding an unwanted portfolio of securities instead of the cash they were originally seeking. As a matter of logistics, in-kind redemptions are more likely to be a practicable tool for institutional investors who have the ability to hold and trade a variety of securities that may be held in a particular fund. For example, a retail investor may not have a custodial account set up to hold a security that is traded in another country nor the market sophistication to be able to trade such a security. As such, although in-kind redemptions are permitted in '40 Act Funds,<sup>25</sup> they are rarely used as the presence of retail investors in these funds means that in-kind redemptions are not typically a viable option to meet redemptions. In practice, the standard convention in open-end '40 Act funds is to redeem in cash. In our May 2014 *ViewPoint*, we suggested that an area policy makers could consider is standardizing provisions for redemption-in-kind for large redemption requests while exempting smaller investors.

In contrast to open-end '40 Act Funds and other types of open-end funds, ETFs are specifically structured to allow for in-kind redemptions when transactions occur between an AP and an ETF. This is operationally efficient and feasible for ETFs due to their holdings transparency and the fact that the majority of ETFs are invested in passively managed index strategies. Further, institutional funds, such as bank CIFs also rely on in-kind redemptions around index rebalances or fund events. This is operationally feasible given that these funds are offered exclusively to large institutional investors.

### "Gates" / Ability to Suspend Redemptions

Some regulatory regimes permit CIVs to suspend redemptions (or use "gates") under certain circumstances. For example, a CIF trustee is typically empowered to suspend subscriptions and/or redemptions from a CIF under limited circumstances. In Europe, depending upon the relevant EU jurisdiction, the UCITS or its manager has the authority to suspend dealing in the fund, when redemption requests exceed a specific level, generally in excess of 10% of NAV on any business day. The UCITS or its manager can also close the fund to new subscriptions. In Australia, registered schemes must disclose any circumstances in which the Responsible Entity can suspend (and subsequently resume) withdrawals, the minimum and maximum limits on the number or value of interests that may be withdrawn, and the ability to satisfy requests on a partial or staggered basis.

In the US, for registered investment companies that are not money market funds (MMFs) under Rule 2a-7, the suspension of redemptions is only possible if trading is halted or restricted on the New York Stock Exchange or under other emergency conditions described in the '40 Act. Open-end '40 Act Funds are permitted to wire proceeds within seven days after receiving a redemption order; however, funds typically meet redemption requests within a shorter time frame and would not avail themselves to the seven day redemption period other than in extraordinary circumstances. With respect to MMFs registered under the '40 Act, as described below, the SEC finalized reforms for MMFs in July 2014 which include provisions to temporarily restrict redemptions in MMFs under certain circumstances.

### Money Market Fund Reform

In July 2014, the SEC voted to approve its money market fund reform package which requires institutional funds to float their NAV (FNAV). The reform package exempts government MMFs and retail MMFs from the FNAV requirement. Additionally, MMFs, other than government MMFs, are subject to new redemption gate and liquidity fee rules.<sup>26</sup> Boards must determine whether it is in a MMF's best interest to impose redemption fees of up to 2% or gate (up to 10 business days<sup>27</sup>) when weekly liquid assets in the MMF fall below 30% of the MMF's total assets. Money market funds will be required to impose a 1% redemption fee when weekly liquid assets in the MMF fall below 10% of the MMF's total assets unless the MMF's board determines such a fee is not in the interest of the MMFs' investors.<sup>28</sup>

### Redemption Practices of Hedge Funds and Changes Post-Financial Crisis

Hedge funds employ a variety of tools to manage redemptions and asset-level liquidity. These are typically tailored to the liquidity profile of the fund's investments and differ by investment strategy. Redemption provisions, including notice periods, gates and, suspension provisions are disclosed in detail in each fund's offering documents. For funds that invest in illiquid securities or liquid securities that may become illiquid, there are a number of mechanics that can be employed to protect remaining fund investors in the event the fund experiences significant withdrawal requests from other investors in the fund. One such mechanic is a "side pocket" where illiquid assets are placed into and held away from the main fund. When a "side pocket" is employed, redeeming investors can only receive cash from their pro-rata stake in the non-side-pocketed assets. Another mechanism is a distribution-in-kind where assets are distributed to redeeming shareholders on a pro-rata basis through a variety of mechanics. These mechanics are disclosed in fund offering documents.

The experience of hedge funds during the 2008 financial crisis was instructive and prompted many hedge funds to change certain policies. Ironically, due to the relative liquidity of hedge funds as compared to private equity and real estate funds, many hedge funds experienced significant redemption requests during the financial crisis, which caused many to subsequently implement fund-level gates or suspend redemptions. Since then, many hedge funds have updated their constituent documents to improve the alignment of interests amongst the investors in the hedge fund and to respond to new regulatory disclosure standards (e.g., AIFMD in the EU).

Today, a typical hedge fund will offer monthly or quarterly redemptions combined with an extended prior notice period that generally ranges between ten and ninety days. In addition, many hedge funds now apply “investor-level gates,” which means each investor is allowed to redeem only a certain percentage of their investment on each redemption date versus fund-level gates that apply when aggregate withdrawal requests are received for more than a certain percentage of the fund’s total assets. Investor-level gates are often used in lieu of fund-level gates because fund-level gates can provide greater incentives for investors to redeem if they believe a lot of other investors in the fund will redeem. Typically, investor-level gates are set to allow an investor to redeem no more than 10% to 50% of the investor’s investment in a single redemption period. Finally, some hedge funds place limits on the allocation to illiquid securities to avoid a portfolio level mismatch with the redemption features of the fund.

#### *IOSCO Principles on Suspensions of Redemptions in Collective Investment Schemes*

In January 2012, IOSCO published a report entitled “Principles on Suspensions of Redemptions in Collective Investment Schemes” in which they recommended nine principles (Appendix D).<sup>29</sup> In this document, IOSCO recommends that the liquidity of the assets in open-ended funds should be in line with the redemption obligations and other liabilities of the fund and that liquidity should be monitored and managed accordingly, i.e., there should be a robust asset liability management process. Further, IOSCO recommends that a fund clearly disclose its ability to suspend redemptions and, in the event redemptions must be suspended, that communication is made to relevant authorities and to investors in the fund. Additionally, suspension of redemptions should only be implemented under exceptional circumstances and should be done in an orderly and efficient manner. When redemptions have been suspended, no new subscriptions should be accepted and all necessary steps should be taken to resume normal operation of the fund. BlackRock agrees with the IOSCO principles pertaining to suspensions of redemptions in funds.

## Liquidity, Leverage and Risk Management

Liquidity risk management processes are another key element in evaluating funds as they help to ensure that risks in a portfolio are properly monitored, managed, and mitigated. While some regulatory regimes place explicit limits on investment in illiquid assets, use of leverage, or require specific risk management processes, others take a more flexible approach. In this section, we examine each of these components as they may apply to various types of CIVs.

### Limits on Illiquid Securities

There are a number of examples where regulatory regimes limit investment in illiquid assets. For ‘40 Act Funds, the SEC considers a security to be “illiquid” if it cannot be disposed of within seven days at approximately its carrying value. The ‘40 Act requires that no more than 15% of a fund’s NAV can be invested in “illiquid” securities.<sup>30</sup> UCITS rules take a different approach which focuses on the fund manager’s liquidity control process by requiring the fund to hold an asset mix of transferable securities which allows the fund to meet ongoing liquidity calls by investors but does not specify a limit on illiquid asset classes. In Australia, the regulations differentiate between non-liquid and liquid registered schemes with specific limitations placed on illiquid registered schemes.

### Limits on Leverage

Many regulatory regimes limit the use of leverage and derivatives. For example, ‘40 Act Funds have a 33.3% of total assets debt leverage limit and funds that use derivatives are subject to disclosure and other requirements, including asset segregation. UCITS limits borrowing to 10% for short-term purposes. UCITS permits derivative usage both for hedging as well as investment purposes but subjects the use of derivatives to extensive rules including defining eligible derivatives, appropriate counterparties, collateral requirements, disclosure requirements, and maximum risk exposure. Consistent with Australia’s disclosure-based approach, a registered scheme’s ability to borrow or raise money must be specified in the registered scheme’s constitution and disclosure documents and must also be consistent with the overriding obligation imposed upon the Responsible Entity to act within the best interests of investors at all times. CIFs in the US are additionally subject to ERISA regulations if the investors in the CIF are subject to ERISA. Where leverage is permitted, this may also provide another source of liquidity.

### Liquidity Risk Management

Liquidity risk management is necessarily a critical process yet one where “financial science” gives fund managers and regulators the least amount of precise guidance. Nevertheless, certain regulators have provided some guidance or rules on liquidity risk management. UCITS are required to offer redemptions at least twice a month but the vast majority offer daily liquidity in order to be eligible to be

sold on third-party distribution channels or platforms. To this end, a UCITS is required to adopt a liquidity risk management process consistent with its general risk management process. This requires the UCITS to be able to regularly measure and manage its liquidity risk, in particular, risks arising from potential changes in market conditions that might adversely impact the UCITS.

In Europe, AIFs are not subject to specific eligible asset rules, but as with UCITS, must adopt a general risk management process and a specific liquidity management process. Managers of AIFs must, in particular, conduct stress tests of liquidity coverage (ability to meet redemptions with liquid assets) under normal and exceptional liquidity scenarios and provide regulators with detailed reporting on the liquidity profile of the fund, exposure to counterparties and the nature of leveraged positions whether arising from borrowing cash and securities or from leverage embedded in derivative instruments.<sup>31</sup> CIFs in the US are subject to bank liquidity risk management requirements.

Liquidity risk measurement and management guidelines are evolving from a regulatory perspective with each prudential regulator specifying their own requirements although without a lot of consistency. We believe that prudent liquidity risk management requires:

1. Measuring or estimating the levels of liquid assets as well as liquidation time frames for fund holdings under normal and stressed market conditions;
2. Estimating fund redemptions based on historical behavior under normal as well as under adverse market conditions (which may not be revealed in a fund's redemption history);
3. Requiring that individual funds have sufficient sources of liquidity to meet liabilities under a range of scenarios;
4. Setting guidelines for maintaining sufficient levels of liquid assets, including cash and liquid bonds as well as dedicated and shared loan facilities (where applicable) appropriate for the asset structure and the fund's redemption terms.
5. Setting reasonable controls and monitoring on the use of illiquid asset classes to ensure they do not compromise the liquidity offered to investors within the fund;
6. Prudent use of leverage with ongoing monitoring and management, including appropriate funding and margining policies;
7. Analyzing transaction costs in varying market environments and understanding the impact of stressed markets on cost and "capacity" to liquidate assets;
8. Managing the liquidation of assets in response to redemptions in a manner that prevents the fund from becoming increasingly illiquid by disproportionately selling liquid positions to meet cash requirements; and
9. Monitoring investor profiles and related redemption behaviors to help identify potential liquidity needs, recognizing the differences between institutional and retail investors as well as large and small investors.

Given the differences in underlying assets and investment strategies, these measures need to be tailored for specific funds.<sup>32</sup>

#### *IOSCO Principles of Liquidity Risk Management for Investment Schemes*

In March, 2013, IOSCO published a report entitled "Principles of Liquidity Risk Management for Collective Investment Schemes" in which they recommended fifteen principles (Appendix D).<sup>33</sup> This report reiterated a number of principles from the January 2012 "Principles on Suspensions of Redemptions in Collective Investment Schemes" regarding managing liquidity in a manner that coincides with redemption terms and fund liabilities. IOSCO also reiterated the importance of disclosure associated with redemption suspensions. In addition, the March 2013 principles recommend that funds have a liquidity risk management program in place to actively monitor and manage liquidity risk. Finally, IOSCO states that stress tests on different liquidity scenarios should be undertaken and that the liquidity risk management process should be used to help managers identify an emerging liquidity issue. BlackRock concurs with the existing and evolving regulations governing liquidity risk management, including the IOSCO principles, and we recommend more attention be spent understanding what factors drive market liquidity and how liquidity measures should be tailored for different funds.

## Conclusion

Our review of the current rules in place for collective investment vehicles across a range of different jurisdictions reveal a broad variety of approaches to investor protection that have been implemented. Those approaches can have different systemic impacts. As noted earlier in this paper and in our May *ViewPoint*, funds need to be structured in a way that addresses investor protection by looking at a combination of pricing methodology, redemption features, underlying portfolio rules and disclosure. At the same time, their aggregate impact on the stability of the financial system should not be ignored.



Traditionally, securities regulators were broadly charged with protecting investors and making sure that appropriate disclosures were in place. Following the 2008 financial crisis, securities regulators took on additional responsibility to consider systemic risk. This creates an additional lens for looking at fund structures. Our view is that there are many opportunities to learn from the range of features already in place in different jurisdictions to create a toolkit that can be applied with greater global consistency to existing and future investment vehicles to improve their systemic risk characteristics. Importantly, these elements of structure should not be considered in isolation but rather need to be considered holistically to construct a complete package. Specifically, this means evaluating the tradeoffs between the objectives of greater investor protection and reducing systemic risk along with other vital factors, such as operational feasibility, economic alignment and commercial viability from a fund investor's perspective. We believe there is room to improve certain current fund structures in a balanced manner to continue to provide fund investors with investor-friendly yet more systemically safe vehicles. Maintaining this balance is critical because if a vehicle is designed to be so overly restrictive due to systemic concerns, investors will vote with their feet and simply redeploy their assets elsewhere.

In particular, we view several structural, risk management and disclosure standards of existing funds (under varying regulatory regimes) as having the potential to, on balance, both protect investors and reduce systemic risk. These include:

#### **Structural**

- ▶ Structures that better allocate transaction costs to transacting investors such as swing pricing, where investors get a contemporaneously relevant price signal associated with their transaction in contrast to, in some cases, being confronted with a “first mover” advantage to exit a fund.
- ▶ Granting additional discretion for fund boards or trustees to manage redemptions, including restrictions when necessary.
- ▶ Allowing in-kind redemptions where this is operationally feasible and above specified redemption thresholds.
- ▶ Allowing borrowing to meet redemptions.

#### **Risk Management**

- ▶ Limits on levels of illiquid assets (i.e. under the '40 Act, assets that cannot be sold within seven days at approximately the same price as valued in a fund).
- ▶ Reasonable limits on leverage, including economic leverage created by derivatives.

- ▶ Improving and evolving liquidity risk management practices, including measurement of liquidity risk under normal and stressed market conditions with liquidity thresholds to ensure sufficient levels of liquidity across the cycle.

#### **Disclosure**

- ▶ Requiring disclosure to investors regarding structural fund elements, including redemption and pricing policies.
- ▶ Requiring disclosure to regulators on levels of illiquid assets and liquidity risk management practices.

*It is important to note that the IOSCO guidelines look at each factor independently and we encourage regulators to develop guidelines across these factors.*

Notably, IOSCO began the process of establishing guidelines for several factors, including guidelines for valuation,<sup>34</sup> suspensions of redemptions,<sup>35</sup> and liquidity risk management.<sup>36</sup> The IOSCO guidelines look at each factor independently; we encourage regulators to develop guidelines across these factors. In addition, as a component of its work on “shadow banking”, the Financial Stability Board (FSB) has evaluated the effectiveness of a number of policy measures related to subscriptions and redemptions in CIVs as they relate to mitigating “shadow banking” risks as identified by the FSB.<sup>37</sup> We recommend that national and regional regulators build on the work done by IOSCO and the FSB to develop more granular guidelines for structuring both registered funds and private funds. Individual fund managers can, and should, take some steps unilaterally, such as developing increasingly robust liquidity risk management practices. Regulators also can, and should, take some steps to address product design as structural features of a given fund category need to be relatively uniform to avoid investors arbitraging similar funds with differing structural characteristics. Due to the “common” nature of improving systemic stability, there is room for additional regulatory guidance.

As discussed in this paper as well as in our May *ViewPoint* entitled “Who Owns the Assets: Developing a Better Understanding of the Flow of Assets and the Implications for Financial Regulation” and in our September *ViewPoint* entitled “Who Owns the Assets? A Closer Look at Bank Loans, High Yield Bonds, and Emerging Markets Debt,” there are a number of existing approaches to reduce systemic risk and, in many cases, also improve investor protection. There are good reasons to endorse a variety of approaches so long as the overall package of features protects investors from the investment decisions of other investors in a fund. By addressing investor protection, these guidelines will also help mitigate systemic risk.

## APPENDICES

### Appendix A: RULES GOVERNING COLLECTIVE INVESTMENT SCHEMES<sup>33</sup>

	Subscription / Redemption Pricing	Redemption Provisions	Liquidity, Leverage & Risk Management
<p><b>'40 Act Funds (open-end funds)</b> Offered in: US Primary regulator: SEC Publicly available: Yes</p>	<ul style="list-style-type: none"> <li>▶ NAV calculated at end of each business day.</li> <li>▶ Subscriptions / redemptions priced at next NAV calculation after order submitted.</li> <li>▶ Board can elect to use fair value pricing if market prices are not readily available or do not reflect current market values.</li> <li>▶ Redemption fees which go back into the NAV on some funds.</li> </ul>	<ul style="list-style-type: none"> <li>▶ <u>In-Kind Redemptions</u>: Permitted subject to certain requirements</li> <li>▶ <u>Suspension</u>: Prohibited unless a Stop Order from SEC is received.</li> <li>▶ Often have frequent trading policies in place. These policies can include explicit redemption fees which are disclosed in the fund prospectus.</li> </ul>	<ul style="list-style-type: none"> <li>▶ <u>Illiquid Assets</u>: Max. 15% of NAV.</li> <li>▶ <u>Leverage</u>: Max. 33.3%; revolver loans/lines of credit with 300% asset coverage of borrowings.</li> <li>▶ <u>Derivatives</u>: More rules if significant usage including additional disclosure, asset segregation.</li> <li>▶ <u>Risk Management</u>: No specific requirements.</li> </ul>
<p><b>UCITS</b> Offered in: Europe, Asia, Latin America, other countries Primary regulator: Domestic regulators and ESMA Publicly available: Yes</p>	<ul style="list-style-type: none"> <li>▶ Multiple methods including dual pricing, swing pricing, dilution levy.</li> </ul>	<ul style="list-style-type: none"> <li>▶ <u>In-Kind Redemptions</u>: Permitted subject to client consent.</li> <li>▶ <u>Suspension</u>: Allowed in exceptional circumstances with Board and/or regulatory approval.</li> <li>▶ May restrict redemptions to 10% of NAV on any dealing day.</li> </ul>	<ul style="list-style-type: none"> <li>▶ <u>Leverage</u>: Borrowing max. 10% and only for short-term purposes.</li> <li>▶ <u>Derivatives</u>: Must adhere to extensive rules.</li> <li>▶ <u>Risk Management</u>: Stress testing and scenario analysis.</li> </ul>
<p><b>Registered Management Investment Schemes (Registered Schemes)</b> Offered in: Australia Primary regulator: ASIC Publicly available: Yes</p>	<ul style="list-style-type: none"> <li>▶ The "Responsible Entity" may exercise discretion or make adjustments affecting the amount payable on withdrawal using a formula or method, based on the NAV.</li> <li>▶ Expected to have anti-dilution measures in place and to disclose them.</li> <li>▶ Must disclose formula used for calculating withdrawals, which must be based on the value of Registered Scheme assets less liabilities, and can take into account the material costs involved in the disposal of Registered Scheme assets.</li> </ul>	<ul style="list-style-type: none"> <li>▶ The relevant provisions governing redemptions must be set out in the Registered Scheme's constituent documents, including the constitution.</li> <li>▶ <u>In-Kind Redemptions</u>: Permitted if provided for in the constitution.</li> <li>▶ <u>Suspension</u>: Permitted in limited circumstances if provided for in the constitution.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Leaves discretion to "Responsible Entity", subject to appropriate disclosure and assuming this is not inconsistent with the Registered Scheme's constituent documents. However, the extent to which non-liquid assets are held will affect whether the Registered Scheme is considered to be liquid or "non-liquid" under the relevant provisions of the Corporations Act 2001.</li> </ul>
<p><b>Collective Investment Funds (CIF)</b> Offered in: US Primary regulator: OCC Publicly available: No</p>	<ul style="list-style-type: none"> <li>▶ NAV typically calculated at end of each business day.</li> <li>▶ Subscriptions / redemptions priced at next NAV calculation after order submitted.</li> <li>▶ For certain CIFs, portfolio transaction costs caused by redemptions can be allocated to a subscribing / redeeming participant.</li> </ul>	<ul style="list-style-type: none"> <li>▶ <u>Suspension</u>: Permitted under limited circumstances if in best interests of remaining investors subject to constituent documents.</li> <li>▶ <u>In-Kind Redemptions</u>: Permitted subject to certain requirements.</li> </ul>	<ul style="list-style-type: none"> <li>▶ <u>Leverage</u>: Permissible for certain investment strategies, subject to fund guidelines. CIFs typically do not incur indebtedness to finance investments.</li> <li>▶ <u>Risk Management</u>: Subject to bank risk management oversight and ERISA (if ERISA clients in CIF).</li> </ul>
<p><b>Alternative Investment Funds (AIFs)</b> Offered in: Europe Primary regulator: Domestic regulators and ESMA Publicly available: No*</p>	<ul style="list-style-type: none"> <li>▶ Leaves discretion to the Alternative Investment Fund Manager (AIFM), subject to appropriate disclosure. AIFs sold to retail investors may be subject to additional UCITS-style restrictions.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Leaves discretion to the AIFM, subject to appropriate disclosure.</li> <li>▶ <u>In-Kind Redemptions</u>: Leaves discretion to the AIFM, subject to appropriate disclosure.</li> <li>▶ <u>Suspension</u>: Leaves discretion to the AIFM, subject to appropriate disclosure.</li> </ul>	<ul style="list-style-type: none"> <li>▶ <u>Leverage</u>: Enhanced reporting when an AIF has commitments &gt;300% of NAV.</li> <li>▶ <u>Risk Management</u>: Requires liquidity risk management process to be in place including periodic stress testing and scenario analysis.</li> </ul>

\*AIFs are generally not publicly available but can be made publicly available when additional local requirements are met in certain jurisdictions. Note that the above table is for illustrative purposes and is not exhaustive. Does not reflect rules specific to money market funds or ETFs.

## Appendix B: ADDITIONAL DETAIL ON SWING PRICING

Swing pricing is employed under national regulations for UCITS funds in the EU and protects investors by eliminating the dilution effect of investor activity in traditional open end mutual funds where transaction costs are captured in fund NAV and essentially allocated pro-rata to all investors. There are two types of swing pricing, “full” and “partial” swinging. Under full swinging which is applied for certain of BlackRock’s European institutional funds, a fund’s NAV is adjusted any time there are net inflows and outflows in a fund. Under partial swinging, the process is triggered, and the NAV swung, only when net inflows and outflows exceed a predefined “swing threshold”. The swing threshold is the level of net flow, as a percentage of NAV, required for the fund to swing.

Partial swing pricing is used for certain of BlackRock’s retail UCITS funds. At BlackRock, the EMEA Swinging Committee governs swing pricing that meets monthly to review fund flows, transaction costs and swing thresholds. On a quarterly basis, the committee meets to review average transaction costs over the prior quarter and determine transaction costs

### Exhibit B.1: EXAMPLE OF PARTIAL SWING PRICING

\$ millions	UCITS <i>Partial Swing Pricing*</i>
<b>Beginning NAV of Fund</b>	<b>\$100</b>
<b>Net Flows</b>	<b>-\$15</b>
<i>Subscriptions</i>	+\$5
<i>Redemptions</i>	-\$20
<b>Net Flows as % of NAV</b>	-15%
<b>Swing Threshold (of NAV)</b>	+/- 1%
Is Net Flows % of NAV > Swing Threshold?	Yes, Partial Swing pricing is effected
<b>Transaction Costs of Selling Assets (0.1%)</b>	-\$0.015
<b>Market Impact Fee (0.1%)</b>	-\$0.015
<i>Transaction Costs Incurred by SUBSCRIBING Investors</i>	-\$0.005*
<i>Transaction Costs Incurred by REDEEMING Investors</i>	\$0.020
<i>Transaction Costs Incurred by FUND</i>	<b>\$0</b>
<b>Ending NAV of Fund</b>	\$85.000
<b>Commentary</b>	<i>Estimated transaction costs borne by transacting investors after netting of subscriptions and redemptions.</i>

\*As fund NAV has swung to the bid price due to net redemptions, subscribing investors benefit to the extent that they purchase units cheaper than pre-sung NAV. This is offset by the costs paid by redeeming clients.

to be applied for redemptions for the next quarter. Average transaction costs are used to establish “impact” fees (i.e., the amount by which a fund price is swung). The committee also sets swing thresholds based on the liquidity of fund holdings. Thresholds are set for 5 tiers of funds (1 reflecting the most liquid and 5 the least liquid funds) and generally range between 1% and 5% of NAV. Thresholds are set at a level to ensure no daily loss to the fund exceeds a certain level. Therefore, high impact fee funds tend to have low thresholds and vice versa. Once a threshold has been met during a trading day, swing pricing is effected for fund transactions. In the case of net redemptions, the NAV is swung to reflect offer prices and transaction costs are allocated to redeeming investors based on a secondary NAV for the fund. Exhibit B.1 illustrates the impact on fund NAV and the allocation of transaction costs that would apply in the same example in Exhibit 3 in the text for a number of representative fund strategies.

BlackRock’s December 2011 study entitled “Swing Pricing: The Dilution Effects of Trading Activity”, we show that swing pricing enhances alpha actually earned as transaction costs are allocated entirely to transacting investors and do not affect overall fund alpha. The article also provides additional details on the specifics of how the swing pricing mechanism functions for UCITS funds. Following are the results of that study.

### BlackRock’s December 2011 Study “Swing Pricing: The Dilution Effects of Trading Activity”

BlackRock carried out a study across several of its UCITS funds during the period from July 2010 to June 2011, which revealed that performance for each of the funds would have been impaired, in some cases quite considerably, had we not operated the policy.

The funds’ performance would have been diluted (reduced) by the amounts shown in the final column had we not protected it by using price swinging.

Investors that trade at a swung price are effectively paying the dealing costs associated with their activity. Applying swing pricing to a fund’s traded NAV is not done for the benefit of fund promoters or service providers but solely to protect existing investors’ interests.

**Exhibit B.2: RESULTS OF 2011 STUDY ON SWING PRICING FOR REPRESENTATIVE FUND STRATEGIES**

Fund Name	# of Swings During Period	Beginning Price in Base Currency	Price on 6/30/11 in Base Currency	Class Base Performance	Performance Without Swinging	Performance Benefit
Asian Bond	72	27.25	29.19	7.11%	4.59%	2.52%
Global High Yield	60	14.59	16.79	14.24%	12.11%	2.13%
USD High Yield	42	19.69	22.64	14.94%	14.25%	0.69%
Specialists Global Equity	12	10.39	13.33	28.34%	27.89%	0.45%
Emerging Markets Bond	32	11.67	12.88	10.38%	9.97%	0.41%
Country Specific Asian Equity	42	11.19	12.69	13.35%	12.95%	0.40%
Emerging Markets Small Cap Equity	20	112.95	149.9	32.71%	30.48%	2.24%
Unconstrained Fixed Income	14	100.78	103.35	2.55%	2.06%	0.49%
European Equity Absolute Return	28	101.82	112.4	10.39%	9.95%	0.44%
European Equity 130/30	6	88.11	104.88	19.03%	18.62%	0.41%
European Credit	7	118.81	113.64	-4.35%	-4.73%	0.38%

Source: BlackRock, August and November 2011.



## **Appendix C: IOSCO PRINCIPLES FOR THE VALUATION OF COLLECTIVE INVESTMENT SCHEMES**

May 2013

1. The responsible entity should establish comprehensive, documented policies and procedures to govern the valuation of assets held or employed by a CIS.
2. The policies and procedures should identify the methodologies that will be used for valuing each type of asset held or employed by the CIS.
3. The valuation policies and procedures should seek to address conflicts of interest.
4. The assets held or employed by CIS should be consistently valued according to the policies and procedures.
5. A responsible entity should have policies and procedures in place that seek to detect, prevent, and correct pricing errors. Pricing errors that result in a material harm to CIS investors should be addressed promptly, and investors fully compensated.
6. The responsible entity should provide for the periodic review of the valuation policies and procedures to seek to ensure their continued appropriateness and effective implementation. A third party should review the CIS valuation process at least annually.
7. The responsible entity should conduct initial and periodic due diligence on third parties that are appointed to perform valuation services.
8. The responsible entity should seek to ensure that arrangements in place for the valuation of the assets in the CIS's portfolio are disclosed appropriately to investors in the CIS offering documents or otherwise made transparent to investors.
9. The purchase and redemption of CIS interests generally should not be effected at historic NAV.
10. A CIS's portfolio should be valued on any day that CIS units are purchased or redeemed.
11. A CIS's NAV should be available to investors at no fee.

## **Appendix D: IOSCO PRINCIPLES ON SUSPENSIONS OF REDEMPTIONS IN COLLECTIVE INVESTMENT SCHEMES**

January 2012

1. The responsible entity should ensure that the degree of liquidity of the open-ended CIS it manages allows it in general to meet redemption obligations and other liabilities.
2. Before and during any investment, the responsible entity should consider the liquidity of the types of instruments and assets and its consistency with the overall liquidity profile of the open-ended CIS. For this purpose, the responsible entity should establish, implement and maintain an appropriate liquidity management policy and process.
3. The responsible entity should clearly disclose the ability to suspend redemptions in exceptional circumstances to investors prior to their investment into the CIS.
4. Suspension of redemptions by the responsible entity may be justified only a) if permitted by law and in exceptional circumstances provided such suspension is exclusively in the best interest of unit-holders within the CIS, or b) if the suspension is required by law, regulation or regulators.
5. The responsible entity should have the operational capability to suspend redemptions in an orderly and efficient manner.
6. The decision by the responsible entity to suspend redemptions, in particular the reasons for the suspension and the planned actions should be appropriately: a) documented; b) communicated to competent authorities and other relevant parties; and c) communicated to unit-holders.
7. During the suspension of the redemptions, the responsible entity should not accept new subscriptions.
8. The suspension should be regularly reviewed by the responsible entity. The responsible entity should take all necessary steps in order to resume normal operations as soon as possible having regard to the best interest of unit-holders.
9. The responsible entity should keep the competent authority and unit-holders informed throughout the period of suspension. The decision to resume normal operations should also be communicated as soon as practical.

## **Appendix E: IOSCO PRINCIPLES OF LIQUIDITY RISK MANAGEMENT FOR COLLECTIVE INVESTMENT SCHEMES**

March 2013

1. The responsible entity should draw up an effective liquidity risk management process, compliant with local jurisdictional liquidity requirements.
2. The responsible entity should set appropriate liquidity thresholds which are proportionate to the redemption obligations and liabilities of the CIS.
3. The responsible entity should carefully determine a suitable dealing frequency for units in the CIS.
4. Where permissible and appropriate for a particular CIS, and in the interests of investors, the responsible entity should include in the CIS's constitutional documents the ability to use specific tools or exceptional measures which could affect redemption rights.
5. The responsible entity should consider liquidity aspects related to its proposed distribution channels.
6. The responsible entity should ensure that it will have access to, or can effectively estimate, relevant information for liquidity management.
7. The responsible entity should ensure that liquidity risk and its liquidity risk management process are effectively disclosed to prospective investors.
8. The responsible entity's liquidity risk management process must be supported by strong and effective governance.
9. The responsible entity should effectively perform and maintain its liquidity risk management process.
10. The responsible entity should regularly assess the liquidity of the assets held in the portfolio.
11. The responsible entity should integrate liquidity management in investment decisions.
12. The liquidity risk management process should facilitate the ability of the responsible entity to identify an emerging liquidity shortage before it occurs.
13. The responsible entity should be able to incorporate relevant data and factors into its liquidity risk management process in order to create a robust and holistic view of the possible risks.
14. The responsible entity should conduct assessments of liquidity in different scenarios, including stressed situations.
15. The responsible entity should ensure appropriate records are kept, and relevant disclosures made, relating to the performance of its liquidity risk management process.

## **Appendix F: SELECTED TOOLS FOR THE MANAGEMENT OF COLLECTIVE INVESTMENT VEHICLES FROM FSB REPORT ENTITLED, "STRENGTHENING OVERSIGHT AND REGULATION OF SHADOW BANKING"**

August 2013

1. Tools for Managing Redemption Pressures in Stressed Market Conditions:
  - 1a. Redemption gates
  - 1b. Suspension of redemptions
  - 1c. Imposition of redemption fees or other redemption restrictions
  - 1d. Side pockets
2. Tools to Manage Liquidity Risk:
  - 2a. Limits on investments in illiquid assets
  - 2b. Liquidity buffers
  - 2c. Limits on asset concentration
  - 2d. Limits on leverage

## Notes

1. Available at <http://www.blackrock.com/corporate/en-us/literature/whitepaper/viewpoint-who-owns-the-assets-may-2014.pdf>.
2. Note that because disclosure to investors is an embedded component within each of the four other areas mentioned, we will address disclosure to investors within each of the other sections of this paper, where relevant. In addition, the International Organization of Securities Commissions (IOSCO) has published reports that relate to each of the three areas. In this paper, we briefly describe IOSCO's work in each area and include the related IOSCO principles in appendices.
3. "ViewPoint – Who Owns the Assets: A Closer Look at Bank Loans, High Yield Bonds, and Emerging Markets Debt." [Available at <http://www.blackrock.com/corporate/en-us/literature/whitepaper/viewpoint-closer-look-selected-asset-classes-sept2014.pdf>].
4. Source: McKinsey & Company, "Strong Performance but Health Still Fragile: Global Asset Management in 2013. Will the Goose Keep Laying Golden Eggs?." Also see "ViewPoint - Who Owns the Assets?: Developing a Better Understanding of the Flow of Assets and the Implications for Financial Regulation," (May 2014). Available at <http://www.blackrock.com/corporate/en-us/literature/whitepaper/viewpoint-who-owns-the-assets-may-2014.pdf>
5. AIFs can also be registered funds. Closed-end funds can also be unregistered funds.
6. A bona fide trust relationship is required for CIFs relying on the 3(c)(3) exemption, not group trusts.
7. Source: McKinsey & Company, "Financial Globalization: Retreat or Reset?: Global Capital Markets 2013." March 2013.
8. UCITS rules require redemptions to be offered at least twice monthly but at present, the majority of UCITS offer daily dealing.
9. Notably, the fund can choose not to respond immediately to flows in or out. However, this will result in either a build-up in cash drag, running down cash balances or leverage, neither of which are normally desirable
10. MMFs and certain funds that affirmatively permit short-term trading of their securities are exempt from this requirement. However, under the new SEC rules for MMFs that were finalized in July 2014, Boards of '40 Act MMFs will need to consider whether or not to impose a liquidity fee in a fund if the fund's weekly liquid assets fall below 30% of its total assets. See Money Market Fund Reform; Amendments to Form PF, at 39-40 (Available at <http://www.sec.gov/rules/final/2014/33-9616.pdf>).
11. Certain money market assets are valued using amortized cost rather than market value.
12. The largest UCITS funds domiciled in EU countries are France, Germany, Ireland, Luxembourg and the UK. (As of December 2013. Source: PWC, Available at <http://www.irishfunds.ie/fs/doc/publications/distributingourknowledgemay2014.pdf>)
13. The degree to which a fund swings its NAV may be constrained in the fund's prospectus
14. "Swing Pricing - Survey" (August 2011). Available at <http://www.alfi.lu/publications-statements/publications/new-brochure-swing-pricing>
15. "Swing Pricing: The dilution effects of trading activity" (December 2011).
16. ETFs are not to be confused with the term Exchange Traded Products (ETPs), which is used to describe a number of different investment vehicles. The single characteristic shared by all products referred to as ETPs is that they are traded on an exchange. Most but not all ETPs provide exposure to a market index. This includes certain exchange traded debt instruments that are not funds at all, such as exchange traded notes (ETNs). An ETN is a senior, unsecured and uncollateralized debt that trades on an exchange and has features that resemble those of certain ETFs but may pay returns based on an investment formula that cannot be replicated physically. Other ETPs have embedded leverage or other structural characteristics that are starkly different from conventional ETFs. For greater detail on ETPs and ETNs, see *ViewPoint - Exchange Traded Products: Overview, Benefits and Myths*. June 2013. Available at <http://www.blackrock.com/corporate/en-us/literature/whitepaper/viewpoint-etps-overview-benefits-myths-062013.pdf>
17. For most equity and Treasury ETFs, creations and redemptions involve a pro rata basket of securities included in the underlying portfolio or benchmark index. However, for some broad equity and most fixed income ETFs, it may not be possible to include all underlying portfolio or benchmark securities in a creation or redemption basket. Instead, the ETF will publish "optimized" creation and redemption baskets wherein the ETF's advisor attempts to match the risk and return characteristics of the baskets to those of the underlying portfolio or to the applicable benchmark index.
18. The use of cash is sometimes required because certain investments held in ETFs, such as emerging market stocks, may be subject to legal restrictions that prevent in-kind transfers.
19. For greater detail on ETFs, see *ViewPoint - Exchange Traded Products: Overview, Benefits and Myths*. June 2013. Available at <http://www.blackrock.com/corporate/en-us/literature/whitepaper/viewpoint-etps-overview-benefits-myths-062013.pdf>
20. For example BlackRock has a range of retail UCITS funds that permit a redemption charge of up to a maximum of 2% of the redemption proceeds to be charged to a shareholder at the discretion of the Directors where the Directors, in their reasonable opinion, suspect that shareholder of excessive trading. In accordance with the Prospectus "this charge will be made for the benefit of the Funds and shareholders will be notified in their contract notes if such a fee has been charged. This charge will be in addition to any applicable conversion charge or deferred sales charge." See <http://www.blackrock.co.uk/literature/prospectus/bgf-prospectus-prospectus.pdf> - page 48.
21. See *supra* note 10.
22. See Madhavan, Ananth. "Implementing Fair Value Pricing." *Journal of Investing*, 13(1): 14-22, 2004.
23. "Asset Management Valuation Survey" (December 2010). Available at <http://www.pwc.com/gx/en/asset-management/assets/asset-management-valuation-survey.pdf>
24. "Principles for the Valuation of Collective Investment Schemes". IOSCO. May 2013. Available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD413.pdf>
25. Boards of '40 Act Funds can elect to be governed by rule 18f-1, which obligates the fund to redeem shares solely in cash up to the lesser of \$250,000 or 1% of its NAV during any 90-day period for any shareholder of the fund. The fund can then elect to redeem in-kind amounts above this threshold.
26. "Under the amendments we are adopting today, government funds are permitted, but not required, to impose fees and gates, as discussed below." See Money Market Fund Reform; Amendments to Form PF, footnote 101 at 39 (Available at <http://www.sec.gov/rules/final/2014/33-9616.pdf>).
27. MMF may only be gated for a period of up to 10 business days in any 90 day period. Money Market Fund Reform; Amendments to Form PF, at 39-40 (Available at <http://www.sec.gov/rules/final/2014/33-9616.pdf>).
28. See Money Market Fund Reform; Amendments to Form PF, at 40 (Available at <http://www.sec.gov/rules/final/2014/33-9616.pdf>).
29. "Principles on Suspensions of Redemptions in Collective Investment Schemes". IOSCO. January 2012. Available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD367.pdf>
30. For MMFs, in the US, SEC Rule 2a-7 requires that no more than 5% of a MMF's total assets can be invested in "illiquid" securities.
31. Source: Alternative Investment Fund Managers Directive ("AIFM Directive"). Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:174:0001:0073:EN:PDF>
32. "ViewPoint – Who Owns the Assets: A Closer Look at Bank Loans, High Yield Bonds, and Emerging Markets Debt." [Available at <http://www.blackrock.com/corporate/en-us/literature/whitepaper/viewpoint-closer-look-selected-asset-classes-sept2014.pdf>].
33. "Principles of Liquidity Risk Management for Collective Investment Schemes". IOSCO. March 2013. Available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD405.pdf>

34. "Principles for the Valuation of Collective Investment Schemes," IOSCO. May 2013. Available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD413.pdf>
35. "Principles on Suspensions of Redemptions in Collective Investment Schemes," IOSCO. January 2012. Available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD367.pdf>
36. "Principles of Liquidity Risk Management for Collective Investment Schemes". IOSCO. March 2013. Available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD405.pdf>
37. "Strengthening Oversight and Regulation of Shadow Banking," Financial Stability Board, August 29, 2013. Available at [http://www.financialstabilityboard.org/publications/r\\_130829c.pdf](http://www.financialstabilityboard.org/publications/r_130829c.pdf)

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