

Policy Spotlight

Swing pricing – Raising the bar

Introduction

Swing pricing has been used by asset managers in many major fund jurisdictions for over twenty years as an anti-dilution investor protection tool.¹ Its aim is to protect long term (especially buy and hold retail) investors from trading costs generated by more active investors transacting in or out of a fund. This is done by adjusting the price transacting investors pay or receive for fund shares by an appropriate ‘swing factor’, varying according to asset class, net capital flows and market conditions.² Swing pricing also forms an important part of the liquidity risk management (LRM) toolkit used to manage liquidity, subscription, and redemption risk in funds, complementing the range of other measures taken in the course of investment fund management.

Swing pricing can be used during both normal and stressed market conditions. Where an asset manager does not have the ability to use swing pricing, either because its use is not permitted or the ecosystem makes its use more difficult, funds with large capital flows are likely to experience higher levels of dilution, reducing their long term performance. In the extraordinary event that a fund has large capital flows, and is less able to fair value some or all of its assets, without swing pricing, the likelihood of fund gating or suspension is increased.³

Regulatory focus on LRM in funds increased dramatically following the Global Financial Crisis (GFC), resulting in new international standards on liquidity management, including a recommendation that swing pricing should feature prominently in the toolkit available to asset managers.⁴ Since then, the adoption of swing pricing has markedly increased, particularly in Europe, as more national regulators have included it in local rulebooks, and worked to ensure asset managers are able to operationalise the process.⁵

The effectiveness of swing pricing, where available and operationalised, was put to the test in March 2020: the impact of COVID-19 directly and quickly impacted financial markets, requiring asset managers to navigate stressed market conditions and an increase in fund outflows. The frequency of swing pricing and the magnitude of swing factors applied increased notably during the most turbulent weeks (see Annex).⁶ This helped to protect remaining investors from bearing the increased transaction costs of selling assets to meet outflows, and to a lesser extent the costs incurred by inflows as investors adjusted asset allocations or returned to ‘risk-on’ positioning. Some managers of funds operating in smaller, less liquid markets in Europe that did not have swing pricing decided to suspend when faced with significant redemption pressure, in order to protect investors.

As the initial impact of COVID-19 on financial markets abated, policymaker attention turned to assessing the areas where post-GFC reforms worked well, and those that needed improving. In the open-ended fund sector, significant focus is now being placed on possible reforms or intervention in swing pricing processes – as policymakers have noted differences in its application across jurisdictions and between asset managers.⁸

We strongly believe in the benefits of swing pricing, and recommend raising standards and best practises in its use, while, crucially, maintaining its primary use as an investor protection tool. In this *Policy Spotlight* we set out our perspective on the principles that underpin swing pricing, how and why it is used, share views on best practises that should guide the process, and offer recommendations on how to maximise its potential.

Observations

- Swing pricing is primarily an investor protection tool. It is effective in all market conditions in which securities can be fairly and appropriately valued and transacted.
- Swing pricing protects long term investors from transaction costs generated by the redemption and subscription requests of other investors.
- First-mover advantage risk in funds arises when one investor, or set of investors, are motivated to transact ahead of others to gain a better price, negatively impacting the positions of remaining investors.
- Swing pricing does remove the first mover advantage *in funds* by eliminating incentives created by the fund structure for some investors to transact in advance of others. Furthermore, swing pricing incentivises investors to spread large transactions over time to reduce transaction costs.
- However, swing pricing *is not* and *should not* be used to change strategic allocation decisions by investors responding to market conditions or individual investment requirements.
- Swing pricing therefore *does not* address opportunistic or pre-emptive positioning by investors to take advantage of changing market conditions – which we term ‘first-mover advantage in markets’: that is, the advantage for market participants able to utilise available market liquidity ahead of other market participants – this is a separate concept from first mover advantage in funds.
- Swing pricing therefore *removes any first mover advantage created by fund structures, and leaves the first mover advantage in markets*. This exists irrespective of investment vehicle; i.e. there is a comparatively level playing field across direct investments, investments via separate accounts, and investment funds.
- Swing pricing is suited to funds holding long-term investments that meet flows primarily by buying or selling underlying assets; it is *not* suitable for money market funds, for which alternative anti-dilution measures are better suited; or exchange traded funds, which have built-in adjustment mechanisms .
- Swing pricing frequently utilises of modelling and automated data feeds, but is *not* automated from start to finish: it requires human governance and oversight, including the combined judgement and expertise from a range of asset management functions when setting swing pricing thresholds and factors.

Recommendations

- We encourage continued efforts to permit swing pricing and encourage its take-up across all jurisdictions.
- Where local market characteristics represent barriers to implementing methods of swing pricing developed to date, alternative methods of swing pricing implementation measures should be considered.
- We strongly discourage any intervention that aims to prescribe particular swing pricing models or minimum swing factors: this process requires considered judgement drawing on the skill sets of different asset management functions and should not be prescriptive. ‘Over’ swing pricing risks a pricing error for which fund investors will require compensation; and disadvantages open-ended fund investors vis-à-vis those using other investment vehicles by creating an unlevel playing field in their respective abilities to access market liquidity.
- Setting standards and best practises are most appropriate to regulating swing pricing. They should cover the principles and operations that underpin the setting of swing factors and thresholds, model management, operations, governance, and escalation procedures:
 - Swing factors should reflect the full range of explicit and implicit transaction costs.
 - The choice of full or partial swing pricing, and choice of thresholds, should reflect funds’ portfolios and investor base.
 - Models used to calculate swing factors require strong governance, oversight, and ongoing review, which should be integrated into wider fund governance.
 - Processes and communication channels should be in place to facilitate the flow of information and communication needed to determine a swing pricing decision.
 - Fund investors should have appropriate disclosure concerning what swing pricing is, the fact the fund utilises it, and ex-post information on how it has been used.
 - Bodies responsible for managing swing pricing should have tested contingency procedures in place to respond to changing conditions, and be prepared to use them.
 - Managers should be prepared to explain the governance and oversight of their swing pricing process and to justify the effectiveness of any models used to their regulatory supervisors.
- We encourage regulators to facilitate improved access to information and resources that will ultimately improve swing pricing decisions, including:
 - The development of consolidated tapes for equities and fixed income across all markets.
 - Convening working groups of all participants in the fund distribution chain, with a view to improving the flow of critical information on underlying investor types in omnibus accounts, where not otherwise permitted by local securities law.

Swing pricing: what is it for, and what is it not for?

How swing pricing works

Swing pricing is first and foremost an anti-dilution tool: it is designed to protect remaining investors in a fund from dilution – the cost of buying or selling securities in the fund’s portfolio to match net capital flows in or out of the fund. The process helps to ensure that investors trading in or out of a fund pay their fair share of the cost of transacting in the fund’s securities, and to limit the possible dilution of remaining investors. By alerting investors to the costs of trading, swing pricing incentivises investors to spread large transactions over time to reduce transaction costs. Swing pricing is used on a day-to-day basis through all market conditions (see examples in Annex) – from calm through to stressed. Swing pricing can be deployed for as long as assets can be fairly and appropriately valued and transacted.

The application of a swing factor is separate to the process of fair valuing assets to set the fund NAV: it is therefore helpful to view the application of a swing factor as an adjustment to the fair value price which would otherwise apply to the fund’s assets.

The ability to set an appropriate swing factor relies on the ability of the manager to assess the expected costs of transacting and accessing liquidity. However this is not necessarily dependent on accurate on-screen prices: during March 2020, for example, on-screen prices and bid-ask spreads did not always represent actionable prices. In these circumstances, the transaction cost models used to determine swing factors are supplemented by input from trading, portfolio management and risk teams to determine an adjustment that appropriately reflects the cost of reaching a transactable price prices.

However, if underlying market conditions are so adverse that they do not support the use of fair value pricing mechanisms, swing pricing ceases to be an appropriate tool, and managers will instead use mechanisms such as gating or suspension until market conditions stabilise.

Swing factors are based on anticipated transaction costs for transacting in a portion of the fund’s assets, which we divide into explicit (e.g. taxes, levies, and broker fees) and implicit (e.g. bid-ask spreads and market impact) costs. Each of these will vary according to its asset class or sector, the net flows it must accommodate, and as market conditions change.

Explicit costs are typically easy to measure, but vary by instrument: for equities and futures, brokers collect a pre-determined execution commission; while fixed income commissions are incorporated into the final trade price – and can vary with market conditions. This is also true of implicit costs – transaction costs that arise indirectly – such as bid-ask spreads and market impact, which are also influenced by the size of the order being generated.

Understanding and anticipating these costs and how they arise requires informed judgement, because for some securities the line between explicit and implicit costs may be less clear. For example, an equity trading on a limit order book will have observable quotes on either side of a mid-point price, indicating the likely market impact and implicit cost of liquidity for a trade. By contrast, market depth for fixed income is often less transparent, and given the highly intermediated market structure, the cost of market liquidity will often be reflected through varying broker-dealer fees. As we discuss in section 3, this means inputs to a swing factor cannot be captured in a one-size-fits-all model and requires continual human oversight and input. Figure 1 sets out in more detail the components and considerations for each swing factor component.

It is noteworthy that the process of setting the adjustment occurs at a specific point within the fund’s dealing cycle, shown in Figure 2 below. The application of the relevant daily threshold and swing factors will take place after the cut-off point for requests to deal in shares in the fund and before the end-of-day fund price is released (after the assets of the fund have been valued and any adjustment for the swing factor made).

Figure 1: Components of a swing factor

Component	Description	Type: explicit / implicit	Inputs and considerations
1: Brokerage and market charges	Fees charged by intermediaries for executing a transaction.	Explicit	For some instruments (equities, derivatives) fees will be fixed and known in advance; for others (fixed income) they may vary depending on market conditions and trade size.
2: Taxes, levies, and duties	Government taxes on securities – not including capital gains or withholding tax	Explicit	Varies depending on security and by jurisdiction and whether securities are being bought or sold.
3: Bid-ask spread	The difference between the bid and ask price of a security.	Implicit	Fund NAV in single priced funds is typically based on the mid-point valuation of assets, meaning the cost of ‘crossing the spread’ is not captured, unless through a swing factor adjustment. ⁹ Observation of bid-ask spreads varies by asset class and market structure.
4: Market impact	Adjustment for market movement caused by trading activity.	Implicit	Varies with market conditions and trade size. Easier to observe for equities, less so for fixed income, where it may be captured in brokerage fees.

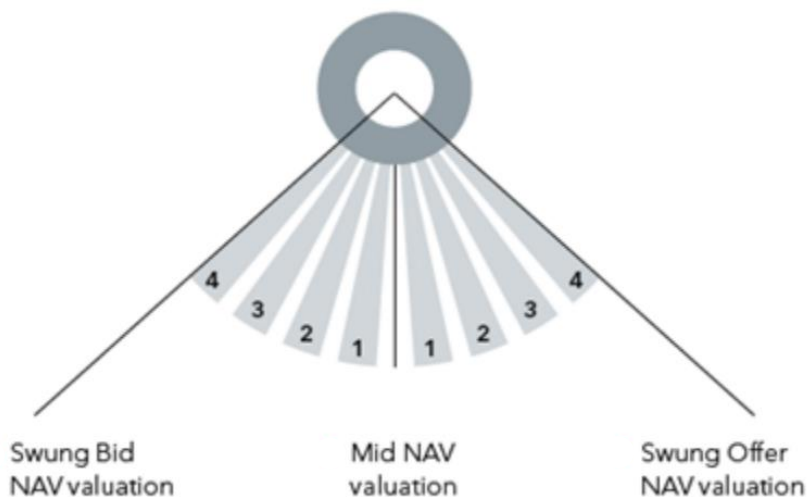
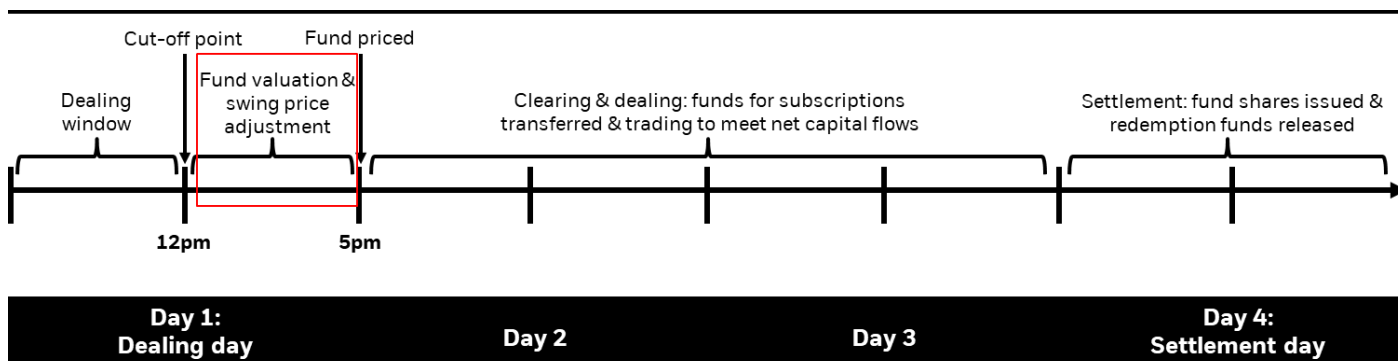


Figure 2: Illustrative fund dealing cycle*



*For illustrative purposes – timings are based on a typical European fund dealing cycle and may not be the same for all fund ranges

To be fully effective, swing factors applied should ideally reflect the full range of explicit and implicit costs associated with a transaction, set out in Figure 1 above. This should always include market impact (see Box A), which can be a significant component of the realised cost for certain larger trades – though we are aware of varying approaches to this across the market. A forthcoming survey conducted by the Association of the Luxembourg Fund Industry (ALFI) found that in 2021, at least 35% of managers surveyed considered market impact in their swing factor calculation in normal market conditions, up from 10% in 2015. In stressed market conditions, some managers reported moving to an ad-hoc swing pricing calculation that also included market impact.¹⁰

Box A: Understanding market impact

Bid-ask spreads are an implicit transaction cost that reflect the fact that, in most circumstances, the price for buying an instrument will be higher than for selling it to the same counterparty (i.e. a broker). However, the quantity of the security available at the best bid or ask price will not necessarily match the order size generated by a fund. Where the order is larger, it may sometime be completed at a less advantageous price for the fund. This difference is known as market impact, and is contingent on trade size, spreads, market depth, and market volatility. Ex-ante assessments of market depth can be model based, judgement based, or use a combination of both.¹¹

There are two main methods of swing pricing. ‘Full’ swing pricing occurs whenever there is a net flow in or out of the fund. ‘Partial’ swing pricing is triggered only when the net flow exceeds a pre-defined ‘swing threshold’.

The decision to use full or partial swing pricing for a fund, and (in the latter case) which thresholds to use, cannot follow a one-size-fits-all approach, and should instead reflect the characteristics of the funds’ portfolio (assets) and its investor base (liabilities). A ‘full swing’ approach in effect means there is no threshold level of net capital activity to trigger the process; while a ‘partial swing’ approach will activate it once a certain level of net capital flows has been reached – but will make a comprehensive adjustment via the swing factor. Swing pricing does increase NAV volatility and brings a level of added operational risk and cost, so the ability to set a threshold allows managers to ensure that swing pricing is used when needed, but not on every occasion.

Determining the appropriate threshold for a fund under a partial swing pricing model should reflect the desired level of shareholder activity to be subject to a swing factor. The appropriateness of the threshold will therefore depend on fund size; investor base and concentration; liquidity of its securities; and investment policy, among other factors. Some managers, including BlackRock, have adopted a multiple threshold model which may lead to more frequent but also more graduated application of swing factors. Where a partial model is used, the multiple thresholds should again be set according to the possible range of redemptions: for example, a fund with relatively small net flows could expect to experience only bid ask spreads upon investment/disinvestment (making a smaller swing factor)

appropriate), whereas as net flows increase, especially in respect of less liquid asset classes, market impact could also be anticipated (making a larger swing factor appropriate). A multiple threshold model therefore sets thresholds and swing factors to anticipate flows of different sizes from, for example, 0.5% to over 25%.

Addressing first-mover advantage in funds

Swing pricing mitigates first-mover advantage (FMA) risk in funds: that is, the risk that one investor or set of investors are motivated by the structure of the fund to transact ahead of others to gain a better price. If the fund is invested in asset classes where liquidity can be shallower or variable over time, where transaction costs can fluctuate, or where prices can be slower to adjust, fund investors – in the absence of anti-dilution measures – will have an incentive to redeem ahead of others, potentially reducing the value attributable to remaining investors.

The greater the relative volume of investor activity in a fund, the more important the need for an effective anti dilution process: swing pricing works by adjusting the price of a fund to reflect the estimated trading costs of investor transactions in the price (NAV) they will receive. When applied correctly, this swing factor results in a reasonable level of protection against dilution for remaining fund investors.

Therefore, where investors know the fund uses swing pricing, and it is properly applied, the incentive – specifically attributable to the nature of the fund structure – to trade out of a fund in advance of its other investors, is significantly reduced. Remaining investors will not bear the costs incurred by trading underlying assets in stressed markets to meet transaction requests by other investors. We increasingly see demand from end-investors to better understand the benefits of using swing pricing: as shown in Figure 3, the performance uplift attributable to the use of swing pricing over time can be significant.

Figure 3: Anti-dilution impact of swing pricing for representative BlackRock Global Funds (BGF) and BlackRock Strategic Funds (BSF)

Fund range	Fund	Asset class	Annual anti-dilution effect (bp)
BGF	Systematic China A-Share Opportunities Fund	Equity	24
	Future of Transport Fund	Equity	21
	Asia Pacific Equity Income Fund	Equity	15
	United Kingdom Fund	Equity	13
	India Fund	Equity	13
	ESG Emerging Markets Blended Bond Fund	Fixed income	11
	China Bond Fund	Fixed income	11
	Asian High Yield Bond Fund	Fixed income	10
	World Gold Fund	Equity	10
	Global Inflation Linked Bond Fund	Fixed income	10
BSF	European Diversified Equity Absolute Return Fund	Equity	66
	Global Real Asset Securities Fund	Equity	55
	Emerging Markets Equity Strategies Fund	Equity	38
	Multi-Manager Alternative Strategies Fund	Multi-asset	29
	UK Emerging Companies Absolute Return Fund	Equity	24
	European Unconstrained Equity Fund	Equity	24
	Global Long/Short Equity Fund	Equity	18
	Emerging Markets Absolute Return Fund	Equity	17
	UK Equity Absolute Return Fund	Equity	16
	Emerging Markets Flexi Dynamic Bond Fund	Fixed income	16

*Source: BlackRock *Swing pricing: The dilution effects of investor trading activity on mutual funds* (October 2020). Shows the most significant performance impact from BlackRock's Luxembourg-domiciled BGF and BSF fund ranges from January to December 2019.

The combination of funds' pricing process and the incentives to remain invested mean that swing pricing does not, as some have suggested, *incentivise* transacting ahead of other investors. Firstly, this is because swing pricing is a business-as-usual investor protection tool, used in all market conditions – not just stressed situations. End-investors should know and understand that swing pricing will be used when there are any moves in or out of a fund that require it, and therefore recognise the process cannot be timed. And secondly, because fund investors' risk of being subject to swing pricing is conceptually no different to the risk that transacting in or out of a fund will incur a cost. The crucial difference is that swing pricing externalises the impact onto transacting investors, thereby neutralising this specific incentive to redeem. Indeed, the operation of swing pricing provides a disincentive to transact in or out of a fund purely in order to try and avoid incurring the cost of market impact.

Box B: Stylised swing pricing example

As a highly stylised example, assume a €100mn fund comprised of 1,000 shares that does not use swing pricing receives five net-redemptions followed by five net-subscriptions. Each time the fund sells or buys assets to meet these requests, there is a transaction cost borne by all non-transacting investors in the fund, reflected in the fund NAV and share price. (A notional 50bp transaction cost is chosen here to simplify the calculation, but in practise will vary significantly by fund. BlackRock's Luxembourg fund range typically permits swing pricing up to 1.5% for equity and multi-asset funds, and 3% for fixed income and multi asset funds).

Meanwhile, a fund that has swing pricing will externalise the transaction cost through a corresponding adjustment to the share price (swung share price) received by the transacting investor. Overall transaction costs are identical in either scenario: the only difference is which set of investors incurs them.

In practise, these figures will be very different and vary over time. But the principle is the same: without swing pricing, the impact of investment or disinvestment detracts from fund performance over time, whereas using swing pricing can, over time, preserve fund performance for remaining investors.

T=	Shares redeemed (-) or subscribed (+)	Shares outstanding (EoD)	No swing pricing			Swing pricing		
			NAV (EoD)	Share Price	t-cost (%)	NAV (EoD)	Share Price	
							Unswung	Swung
0	-	1,000	10,000	10.000	-	10,000	10	-
1	-10	990	9,900	10.000	-0.5	9,900	10	9.5
2	-10	980	9,799	9.999	-0.5	9,800	10	9.5
3	-10	970	9,699	9.999	-0.5	9,700	10	9.5
4	-10	960	9,598	9.998	-0.5	9,600	10	9.5
5	-10	950	9,498	9.997	-0.5	9,500	10	9.5
6	10	960	9,597	9.997	-0.5	9,600	10	10.5
7	10	970	9,696	9.996	-0.5	9,700	10	10.5
8	10	980	9,796	9.996	-0.5	9,800	10	10.5
9	10	990	9,895	9.995	-0.5	9,900	10	10.5
10	10	1,000	9,995	9.995	-0.5	10,000	10	10.5

Box C: Differentiating first-mover advantage in funds and in markets

As noted above, swing pricing is a tool for managing FMA in funds generated by the potential for dilution of remaining investors by transacting investors. An adjustment to the fund NAV reflecting transaction size and market conditions provides a disincentive to transact, but it cannot and should not be used to prevent investors from redeeming altogether. Even when swing pricing is applied, investors can still choose to redeem for other reasons – responding to broader market conditions, re-appraising an asset classes' prospects, a desire to re-balance or re-allocate their portfolio, or to raise or invest cash balances. Swing pricing imposes a potential cost on investors that wish to do this, but cannot and should not be used to discourage or prevent them from doing so altogether.

At this point it is helpful to draw a conceptual distinction between first-mover advantage in funds – which swing pricing addresses; and first mover advantage in markets – which it does not and cannot address. There are a number of ways to conceptualise FMA in relation to funds, and in relation to market activity more broadly. We start by looking at definitions of FMA and their relevance to the design of swing pricing processes.

The Financial Stability Board's (FSB) recent consultation on proposals to enhance money market fund (MMF) resilience provides a definition of FMA. We believe it is a useful starting point for considering FMA in funds as well as an assessment of FMA in markets. The FSB defines FMA as investors who redeem their shares first being able to *'do so on more favourable terms than investors in the same fund who redeem late...for example, [if] transaction costs for assets sold to meet redemptions are not properly allocated to redeeming investors'*. The FSB further refers to FMA occurring in *'a scenario of declining values in fund assets, [where] investors can redeem before the fund's NAV adjusts to fully reflect those declines in value'*; but notes that *'[a]n investor who redeems solely in anticipation of further market deterioration is not considered as benefitting from first-mover advantage'*.

This definition draws a helpful distinction between FMA in funds, and FMA in markets which reflects opportunistic or strategic behaviours such as portfolio reallocation and rebalancing. However, more nuance is necessary to i) further clarify the impact of FMA in open-ended funds more generally (i.e. for funds other than MMFs and ETFs); and ii) to differentiate effects attributable solely to fund structures from first mover advantages (such as pre-emptive or opportunistic selling) that apply across markets, and hold for all investor types, regardless of investment wrapper. Structures such as separate accounts or investment mandates, which are not restricted to specified dealing cut off times, can present opportunities for FMA in markets, allowing certain investors to take up market liquidity ahead of others.

FMA arises in open-ended funds where fluctuations in market liquidity or transaction costs for portfolio assets create the incentive for one set of investors to pre-emptively transact ahead of others and avoid paying their appropriate share of costs incurred, whether in ordinary or volatile market conditions. Thus the first-mover advantage *in funds* arises from incentives generated by the pooled investment structure which, if not corrected, can give rise to one group of investors avoiding their fair share of the cost of accessing market liquidity – to the detriment of other investors. The scenarios in which these incentives arise are (for funds other than MMFs and ETFs) best addressed by swing pricing, which takes into account both the transaction costs of providing liquidity to investors and any uncertainty around the 'on-screen' price of an asset.

Swing pricing can manage situations where there are adverse market conditions and / or sizeable transactions to manage, making higher transaction costs likely. In this situation the expected cost or market impact of the trade is assessed, and the NAV is discounted by an appropriate swing factor. The fact that the transacting investors – who are absorbing market liquidity and generating transaction costs – are bearing those costs themselves mitigates first-mover advantage *in the fund*. However, there remains a first-mover advantage *in markets*, irrespective of investment vehicle, for participants that are able to take up available market liquidity ahead of other market participants.

All investors, irrespective of vehicle, face incentives to transact opportunistically to take advantage perceived or actual changes in market fundamentals (such as reallocating from bonds to equity), or in market-wide conditions (such as liquidity). The fact that some investors will be able to pre-empt these changes and transact

Box C: Differentiating first-mover advantage in funds and in markets (cont'd)

ahead of others is an example of FMA in markets and is inherent in market functioning. This aligns with the FSB's observation that '*an investor who redeems solely in anticipation of further market deterioration is not considered as benefitting from first-mover advantage*'.

In summary, swing pricing was designed specifically with open-ended funds (other than MMFs and ETFs) in mind, is suited specifically for FMA *in funds*, and should not be altered in a way that aims to restrict fund investors' ability to capitalise on FMA *in markets*, thereby disadvantaging them relative to investors using alternative wrappers such as mandates or direct holdings.

Box D: Applying swing pricing to money market and exchange traded funds

Swing pricing is typically applied to open-ended investment funds which, while holding some cash balances (mainly to take advantage of investment opportunities), invest primarily in assets such as fixed income or equities. Swing pricing is appropriate for these funds because a sizeable inflow or outflow creates the need to transact in underlying assets, and in turn, can generate transaction costs.

By contrast, money market funds (MMFs) are designed specifically to meet redemptions through cash balances (and are required in most jurisdictions to hold a substantial portion of their portfolio in overnight liquidity – usually at least 10% – to ensure that cash balances are sufficient to meet redemptions). Only in circumstances where net redemptions exceed these cash balances would an MMF need to sell assets in secondary markets. In these instances, redemption fees are a more suitable anti-dilution measure for MMFs than swing pricing, as they can be applied in a way that allows MMFs to continue pricing and dealing on an intraday basis.

In an exchange-traded fund structure, investors hold shares whose value fluctuates as they are traded on secondary markets, which can generate premiums or discounts relative to the funds' NAV. Adjustments to the fund's price to reflect prevailing market conditions – including liquidity premia – are inherent in this process, as demonstrated by the performance of fixed income ETFs during the COVID-19 shock.

However, the discount of an ETF's share prices relative to its NAV cannot be used as the appropriate swing factors for traditional mutual funds with a similar strategy and portfolio holdings as the ETF. IOSCO's recent Thematic Note on the performance of ETFs during the COVID-19 shock is instructive here, noting that while '[i]n general, the secondary market price of an ETF's shares should be at or close to its NAV as a result of an effective arbitrage mechanism...[it] may also reflect other inputs, such as increased transaction costs (e.g., bid-ask spread, commissions, taxes, fees charged in the creation or redemption process), increased uncertainty related to valuation of underlying assets ... and higher hedging costs [for authorised participants] due to heightened uncertainty during periods of market stress'.¹⁵

How swing pricing is done: inputs, process, governance, contingency planning

The efficacy of swing pricing depends on a range of factors, including effective investor disclosure; ongoing liquidity risk management; access to appropriate expertise and data; appropriate modelling capability; robust processes to decide on and apply swing factors; and appropriate governance arrangements. In the following section we consider best practises around the inputs, process, and governance arrangements for swing pricing.

Governance and transparency

The process and oversight of swing pricing should be integrated into wider fund governance. A governing body for swing pricing, with ultimate oversight by the fund's board or local equivalent should have appropriate terms of reference covering the extent of its responsibility, powers, membership, meeting frequency and nature, and reporting requirements.¹⁶

The appropriate governance structure will vary depending on fund type and jurisdiction, but should be supported by a clear and documented swing pricing policy, covering:¹⁷

- Key principles on its application (which funds, partial/full swing, single/multiple factors, single/multiple thresholds, elements to include in calculation, disclosure practises);
- Which entity is responsible for applying swing pricing (e.g. Management Company, or a dedicated specialist committee appointed by the governance body);
- The name of the entity in charge of overseeing the correct application of the policy;
- The frequency of review including frequency of update of swing factors and thresholds;
- Policies to be applied for fund corporate actions (mergers, liquidations, in-kind transactions);
- Escalation procedures, and policies for back testing the ongoing swing pricing process

To be fully effective, fund investors should have information on how swing pricing is used and know that the fund applies it. Fund prospectuses should notify investors that swing pricing is used, provide accessible information on how it works and what it is for, and ex-post information on whether and to what extent swing pricing has been used should be made available. Asset managers should try to increase ex-post transparency on swing pricing to investors to the greatest extent possible, consistent with the need to avoid adverse effects on the fund. Detailed information on thresholds or model specification should not be released, as this could risk some investors trying to arbitrage the swing pricing process.

Determining swing factors

A common approach to swing pricing is to use an asset-class-specific model to make a first estimate of swing factors, relying on a range of market and fund data feeds, with automatic triggers when fund flows exceed certain limits. Updates on swing factors and thresholds are fed into fund administrator pricing models.

However, the complex and variable nature of markets means that determining and applying swing factors cannot and should not be a fully automated process: it requires the judgement and expertise from a range of asset management functions including trading teams, risk managers, legal and compliance, and operations professionals to assess the information fed into a model against real-time observations; and to consider qualitative features of the fund in questions – such as investment guidelines, upcoming portfolio construction changes, and pre-notified investor flows.

For example, market impact can be one of the most significant elements of trading costs: the price of an asset will often move between the point at which the trade instruction is placed and trade execution, resulting in a 'slippage' cost. Depending on market conditions, the act of trading itself may generate slippage costs, and must be taken into account in transaction cost models used by trading teams. Ongoing transaction cost analysis (assessing whether the output of expected cost models is consistent with realised costs) informs oversight of and compliance with best execution rules (e.g. under MiFID II), and helps to improve investment performance. As such, trading professionals have experience in assessing whether the 'on-screen' information (including last price, quotes, spreads, etc) is likely to be reliable under current market conditions, or if a trade will likely incur higher costs than expected, and can provide valuable input to the swing pricing process. In addition, discussions with portfolio managers (regarding future allocation decisions) and sales teams (regarding potential future inflows) provide useful market insight to inform the swing pricing process.

As such, decision-making around swing pricing needs structure and governance in place to be effective – particularly if operating at scale – and contingency plans need to be developed for stressed market conditions. The remainder of this section discusses best practises and areas for improvement across swing pricing factors and thresholds, model management, operations, and contingency planning.

Model management

Quantitative models, such as expected cost models often used by asset managers when deploying swing pricing, pull in a range of data from markets and from distribution infrastructures surrounding the fund. Although the swing factor calculated by these models is not automatically applied to the fund, all models require strong oversight to ensure that they are functioning properly and that risks are mitigated. Robust oversight and governance of models should include standards and policies for their design and implementation, with continual monitoring of performance: models should be regularly reviewed to check their suitability to the funds' changing investment profile, and back-tested to ensure swing factors applied are suitably aligned with actual costs incurred.

Continually enhancing the quality and availability of data used for modelling as new sources become available will also improve outcomes.

Operations

Since the funds applying swing pricing are typically daily-dealing, the final amount (or a reliable estimate) of the day's flow activity should ideally be arrived at before the in time to be incorporated into the NAV calculation, and thereafter the adjusted fund NAV can be produced and disseminated.

The time taken to consolidate flow activity on a given day can vary according to the number of orders received by a fund's transfer agent, and if not managed properly can delay the pricing process. Sufficient time should be therefore allowed between a fund's dealing cut off point and the point at which the swung NAV is published (see Figure 2), to develop a sufficiently accurate picture of flow activity. However, characteristics of some markets may mean this is not possible. Where this is the case, an alternative method to applying swing pricing should be considered.

Since swing pricing – where available and operationalised – is deployed regularly and in all market conditions, effective communication channels must be in place between the governing body approving the swing factors, and the teams – both within and outside the asset management firm, such as fund administrators – involved in applying the swing factors .

Once the swing factor has been calculated, it must be disseminated to fund administrators through a sufficiently robust and timely process, so that it can be accounted for in daily NAV calculations. Specific operational processes should be agreed with fund administrators to accommodate any specifics of their systems. Finally, appropriate records should be maintained regarding swing pricing decisions made, the flows supporting the decision, swing factors applied, and (where applicable) the 'unswung' NAV.

In jurisdictions which apply swing pricing, fund administrators appointed by the fund's responsible entity to calculate the fund's NAV have developed the operational infrastructure to support swing pricing. This includes calculating the relevant adjustment needed for the administrator's pricing model by inputting relevant swing factors and thresholds. In normal market conditions, applicable thresholds and swing factors are regularly reviewed (e.g. on a monthly basis) but managers typically retain the ability to override previously notified levels to respond promptly to changing market conditions (e.g. by increasing swing factors or lowering thresholds).

Contingency planning

Market conditions pertinent to the calculation of swing factors can be complex and fast-changing: governing bodies responsible for managing swing pricing should therefore have structures in place to allow for the

identification of quick changes in market conditions, particularly where they are not captured by available data feeds, in order to make adjustments to swing factors.

Asset managers should be operationally prepared for these stress events, given that processes like swing pricing are likely to be used more intensively. Tested contingency plans and governance mechanisms should be in place in anticipation of such situations. In some jurisdictions, this preparedness is already a regulatory requirement: Luxembourg's CSSF, for example, requires that "contingency plans should be implemented and periodically tested to ensure that any applicable [liquidity management tool] can be used where necessary and if being activated, can be used in a prompt and orderly manner"; and IOSCO's 2018 Recommendations on liquidity risk management also noted the need for contingency plans around the use of liquidity risk management tools.¹⁸

Policy options

Recent market events and the increased use of swing pricing during March 2020 has heightened policymaker focus on swing pricing, and has brought about a desire for global availability of swing pricing.

We agree that there is need for a set of international best practises on the principles and operation of swing pricing, to complement the focus post-2008 on making swing pricing available in national rulebooks and its operationalisation within industry. Indeed, **we encourage continued efforts to improve the availability and take-up of swing pricing globally.**

Permission to use swing pricing in rulebooks of major fund domiciles has increased notably over recent years. Swing pricing is in place in Hong Kong, Singapore, and China; while the Securities and Exchange Board of India issued a consultation on introducing swing pricing in July 2021.¹⁹ In Europe, a 2019 survey conducted by the European Systemic Risk Board found that funds operating in 14 EU member states, as well as the UK, are permitted to use swing pricing.²⁰ More recently, in 2020, Germany began to permit swing pricing, while as of 2021 Sweden is considering its introduction. In total, European jurisdictions accounting for 90% of AUM in UCITS and AIFs currently permit swing pricing to be used.²¹

In some jurisdictions, whilst swing pricing is permitted in local rulebooks, operational or institutional barriers in the local market need to be overcome before it can be implemented. In the United States, while the SEC has permitted swing pricing to be used by open-ended funds since 2018, eligible funds have yet to implement swing pricing, largely because implementation would require substantial reconfiguration of current distribution and order-processing practices. Notably, the structure of US market dealing processes mean that intermediaries, as agents for the funds, do not always submit requests to trade they have received until after fund NAVs are calculated. This means that fund managers cannot be certain of their full net flows for the day until the following morning, which in turn impacts their ability to apply an appropriate swing factor. **Where local market characteristics represent insurmountable barriers to implementing methods of swing pricing developed to date, alternative methods of swing pricing should be considered.**

Where swing pricing is available, policymakers have called for further guidance, or a framework, around how swing pricing should be deployed. A recent paper by the Bank of England, for example, recommended a framework to 'enhance the calculation and use of swing pricing', noting the importance that swing factors reflect the full cost of transacting in or out of a fund; reflecting the full cost of investor flows and market conditions; being subject to perioding review; and giving investors an adequate level of transparency.²²

We believe that developing best practises is the most appropriate approach to advancing the use of swing pricing, and strongly discourage any intervention that aims to prescribe particular swing pricing models or minimum swing factors. Swing pricing processes must be tailored to a funds' portfolio and investor base. Given the immense variety in the range of open-ended funds available, and variety in the size and organisation of asset managers, it is not practical or desirable to pursue a prescribed approach.

Local regulatory supervisors of the fund and its oversight entity are best placed to oversee that these best practises are in place, ensuring managers have appropriate oversight and governance in place.

We strongly discourage regulatory intervention in setting specific swing factors with a view to managing fund flows or market dynamics. As noted previously, determining and applying swing factors requires judgement and expertise from a range of asset management functions, and is dependent on market conditions and individual fund flows – it cannot, and should not, be a prescribed process. Swing pricing is an investor protection tool, and swing factors are set primarily to ensure remaining investors do not bear others' explicit and implicit transaction costs.

Any departure from this, for example by requiring the application of a punitive swing factor during stressed episodes, will be detrimental to investors using open-ended funds: any significant departure from a fair estimate of the transaction costs of meeting net capital flows runs the risk of constituting a pricing error for which securities regulation will typically require transacting investors to be compensated. Indeed, existing regulation of swing pricing stipulates that it is to be used solely to reduce dilution of fund investors, based on the cost incurred or expected to be incurred for a transaction, and cannot be used to create a 'profit' or a 'loss' for fund investors.²³ The corollary of this is that a fund should not deliberately inflate or reduce a swing factor to influence investor behaviour.

Moreover, over-swinging would create an unlevel playing field between open-ended fund investors and investors choosing to use other investment vehicles: any swing factor in excess of what is necessary to address first-mover advantage in funds would put one class of investors at a disadvantage to others by constraining their legitimate option to take advantage of market opportunities. In practice, this is likely to constrain retail investors' access to markets, disadvantaging them relative to institutional investors with a larger range of investment vehicles to choose from.

Instead, **we encourage regulators to facilitate improved access to information and resources that will ultimately improve swing pricing decisions;** and global best practises on swing pricing that local regulators can consider when introducing regulation in their own jurisdictions.

Data on trading activity is one of the most valuable inputs to setting swing factors appropriately. While transparency has significantly increased in recent years, there is still room for improvement in many jurisdictions. **We encourage the development of consolidated tapes for equities and fixed income across all markets:** this will provide a comprehensive and authoritative overview of market activity in real-time, in turn allowing improved assessments of market depth and transaction costs, especially during periods of market volatility .

Access to more granular data on end-investor types would also be beneficial: for funds intermediated by distribution networks, modelling investor behaviour can be limited by the aggregation of transaction requests via nominee or omnibus accounts. **Policymakers should convene working groups of all participants in the fund distribution chain, with a view to improving the flow of critical information on underlying investor types, where not otherwise permitted by local securities law.** Specifically, data on the types of investors transacting in omnibus accounts, the size and concentration of investor holdings, and industry-wide data on historical worst-case redemptions would all help inform better manager assessments of potential redemption patterns. Information on the types of underlying investor would allow managers to assess likely redemption scenarios according to their characteristics: differentiating, for example, between transactions arising from wealth management or asset allocator platforms on the one hand, from investors in tax-incentivised savings accounts on the other.

Finally, **we see a need for a set of global best practises for swing pricing, covering the principles and operations that underpin setting factors and thresholds, model management, operations, governance, and escalation procedures.** As outlined in section 3, the following points should be covered:

- **Swing factors should reflect the full range of explicit and implicit transaction costs:** this includes taxes and levies, broker fees, bid-ask spreads, and market impact. Market impact is a core component of swing factors and cannot be excluded.
- **The choice of full or partial swing pricing, and choice of thresholds, should reflect funds' portfolios and investor base:** full swing pricing may be more suited to institutional funds with a concentrated number of large investors and those who do not trade as frequently; a partial model is suited to funds with a broader investor base. Thresholds chosen should reflect possible flow scenarios for a funds' particular investor base.
- **Models used to calculate swing factors require strong governance, oversight, and continual review:** model oversight should include standards and policies for their design and implementation; and models should be regularly back-tested for performance and reviewed for suitability to the funds' characteristics.
- **Processes and communication channels should be in place to facilitate flow of information and communication needed to arrive at swing pricing decisions:** sufficient data on fund flows must be received in a timely manner before fund valuation points; communication channels should be in place between the body approving price changes and the teams involved in applying the changes; and 'swung NAVs' should be disseminated through robust and timely processes.
- **The process and oversight of swing pricing should be integrated into wider fund governance:** a governing body for swing pricing should be accountable to the fund board, operating within clear terms of reference and a documented swing pricing policy.
- **Fund investors should have appropriate information on what swing pricing is, that the fund utilises it, and ex-post disclosure of how it has been used:** fund prospectuses should notify investors of the swing pricing process; provide documentation explaining the process to investors; and ex-post transparency should be encouraged, consistent with the need to avoid adverse effects on the fund.
- **Bodies responsible for managing swing pricing should have tested contingency procedures in place to respond to changing conditions, and be prepared to use them:** contingency plans for adverse or idiosyncratic market scenarios should allow asset managers to make necessary adjustments to swing factors if necessary.

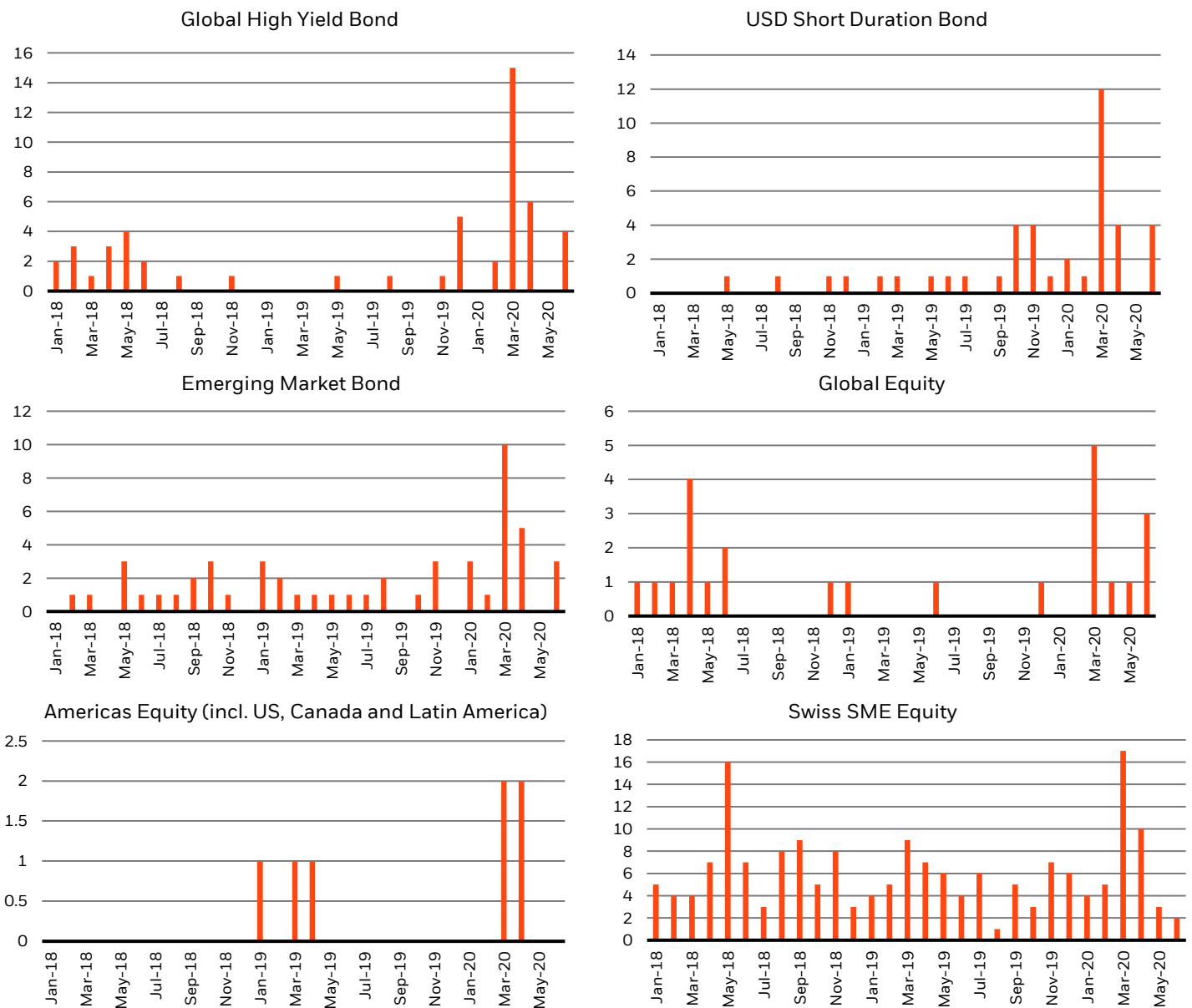
Annex: Use of swing pricing in European funds

Given the heterogeneity of funds, the use of swing pricing, in terms of both frequency and magnitude, will differ for various funds. In an average month, during normal market conditions, we see swing pricing triggered around 200 times in aggregate across all our European fund ranges. While the activation of swing pricing is a regular occurrence, especially for funds using partial swing pricing, it is not done for every redemption or subscription: only if net flows are higher than the relevant threshold will swing pricing be triggered.

The frequency of the use of swing pricing increased markedly during March 2020, as did the size of swing factors to allocate the full costs of market liquidity to redeeming investors.

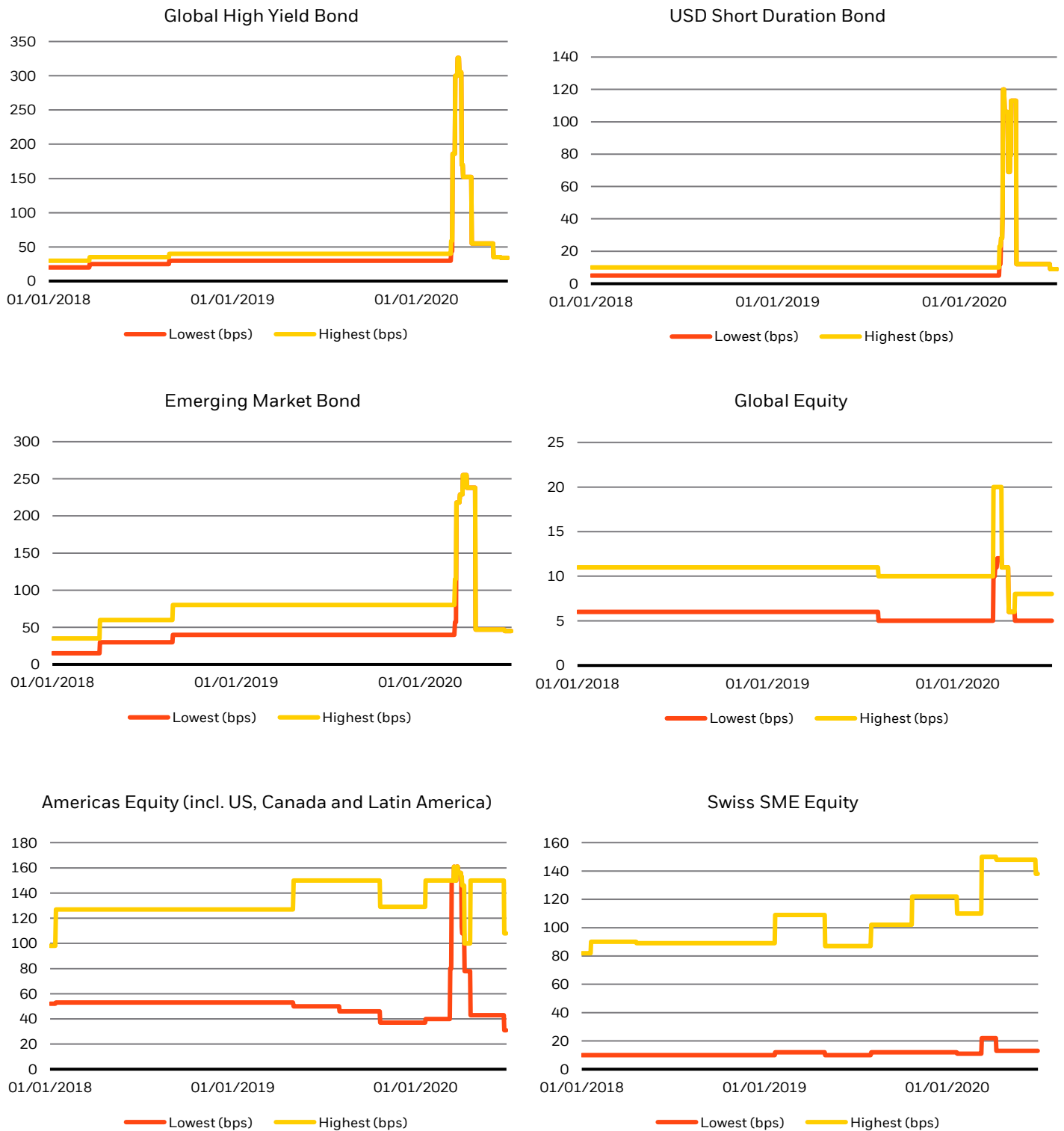
Figures 4 and 5 show the use of swing pricing for a selected range of BlackRock-managed strategies domiciled in Europe. Figure 4 shows a spike in March of the number of times swing pricing was used: around 1000 times in aggregate across our funds in March 2020, and 500 times in April 2020, before reverting to more typical volumes from May 2020 onwards. Figure 5 shows that the size of the swing factors also increased significantly in March. These trends were particularly pronounced in certain fixed income funds as the decrease in market depth translated into larger transaction costs, especially for larger trades.

Figure 4: Frequency of swing pricing use for a selected range of BlackRock strategies domiciled in Europe (Number of times swing pricing each month)



Source: BlackRock. These charts represent fund strategies from “umbrellas funds” containing a number of sub-funds with varying investor bases.

Figure 5: Swing factors applied for select range of investment strategies



Source: BlackRock. These charts represent fund strategies from “umbrella funds” containing a number of sub-funds with varying investor bases. Different sub-funds may therefore have applied different swing factors within the range shown at any one time, hence “lowest” and “highest” swing factors for the fund range are shown in the charts. This also means that where swing factors look stable – such as the Americas Equity strategy – individual sub-fund swing factors may have been raised during market turbulence, despite the highest and lowest not changing materially.

Endnotes

1. Swing pricing was introduced in many regulatory jurisdictions following the 'market timing' or 'late trading' crisis of 2003, where certain mutual fund companies were found to have allowed certain traders to transact in and out of funds after dealing in the fund had closed, but based on before-closing prices.
2. For further detail on the frequency and depth of swing pricing deployed over time, see BlackRock, *Lessons from COVID-19: Liquidity Risk Management is Central to Open-Ended Funds*, November 2020, pg. 19-21.
3. Fund suspensions are used rarely, and during the COVID-19 crisis, the number of fund suspensions were modest: Fitch estimate only 0.11% of total global mutual fund assets were suspended; while ESMA estimate that between the second half of March and May 2020 around 200 EU and UK funds (out of a universe of 60,000 European funds) had suspended dealings temporarily. See BlackRock, *Lessons from COVID-19: Liquidity Risk Management is Central to Open-Ended Funds*, November 2020, pg. 22.
4. IOSCO, *Recommendations for Liquidity Risk Management for Collective Investment Schemes – Final Report*, February 2018
5. See BlackRock, *Lessons from COVID-19: Liquidity Risk Management is Central to Open-Ended Funds*, November 2020; and AMIC/EFAMA, *Response to IOSCO consultation on open-ended funds: LRM recommendations and Market Stress of 2020*, April 2021, pg. 3-4.
6. See BlackRock, *Lessons from COVID-19: Liquidity Risk Management is Central to Open-Ended Funds*, November 2020
7. Most notably, a range of Danish and Swedish funds (as well as Luxembourg-domiciled funds run by Nordic promoters investing in local Danish and Swedish markets) suspended dealing; while suspension of Danish funds was attributable to idiosyncratic fund structuring (where fund administrators' insufficient confidence in valuations for fund assets required suspension), Swedish funds suffered from an inability to access accurate pricing for their domestic securities. In addition, a number of UK real estate funds could not access independent valuation for fund assets. See BlackRock, *Lessons from COVID-19: Liquidity Risk Management is Central to Open-Ended Funds*, November 2020, pg. 22.
8. For example, see Bank of England and Financial Conduct Authority, *Liquidity management in UK open-ended funds*, March 2021
9. 'Crossing the spread' refers to where an investor buying (or selling) an asset meets the ask (or bid) price offered by a market-maker.
10. See ALFI, *2015 Swing Pricing Survey*, 2021 data sourced from forthcoming ALFI survey updating the 2015 data.
11. There are different approaches to estimating transaction costs, which vary in suitability according to context. For further discussion, see BlackRock, *Disclosing Transaction Costs – The need for a common framework*, August 2018.
12. See Financial Stability Board, *Policy Proposals to Enhance Money Market Fund Resilience: Consultation report*, June 2021.
13. As the FSB notes, a similar incentive can arise if fund investors believe they can receive a price for fund shares that is advantageous relative to the 'true' market price of an asset.
14. For further discussion, see Bank of England, *Financial Stability Report*, August 2020 (pg. 76); IOSCO, *Exchange Traded Funds Thematic Note - Findings and Observations during COVID-19 induced market stresses*, August 2021 and BlackRock, *Lessons from COVID-19 ETFs as a Source of Stability*, July 2020
15. See IOSCO, *Exchange Traded Funds Thematic Note – Findings and Observations during COVID-19 induced market stresses*, August 2021.
16. In a US context, this could appropriately sit with the entity responsible for liquidity risk management.
17. In the EU, pricing policies are not set by regulation; they are the part of the general oversight and control responsibilities of management companies and are typically also reviewed by the fund's independent depository.
18. See CSSF "Circular 19/733 on contingency planning in the use of liquidity management tools", December 2019; and IOSCO, *Recommendations for Liquidity Risk Management for Collective Investment Schemes – Final Report*, February 2018
19. SEBI, *Consultation Paper for introduction of Swing Pricing*, July 2021.
20. See BlackRock, *Lessons from COVID-19: Liquidity Risk Management is Central to Open-Ended Funds*, November 2020; and BlackRock, *Swing pricing: The dilution effects of investor trading activity on mutual funds*, October 2020
21. See AMIC/EFAMA, *Response to IOSCO consultation on open-ended funds: LRM recommendations and Market Stress of 2020*, April 2021, pg. 3-4.
22. Bank of England, *Assessing the resilience of market-based finance*, July 2021
23. See FCA, COLL 6.3 Valuation and pricing, section 6.3.8, 'Dilution', which notes that "[a]n authorised fund manager operating either a dilution levy or a dilution adjustment, must operate that measure in a fair manner to reduce dilution and solely for that purpose"; that "[a] dilution adjustment may be made as part of the calculation of the unit price for the purpose of reducing dilution in the scheme or to recover any amount which it had already paid or reasonably expects to pay in the future in relation to the issue or cancellation of units; and that "[w]here the authorised fund manager decides to make or not to make a dilution adjustment, it must not do so for the purpose of creating a profit or avoiding a loss for the account of an affected person."

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