

THE
INVESTMENT
ASSOCIATION

ENHANCING FUND PRICING

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CONTENTS

Executive Summary	4
Part One: Fund pricing and the current UK debate on financial stability	6
Dilution and the design of pricing strategies	6
Dual pricing	8
Box management	8
Single pricing	8
Dilution levy	8
Swing pricing	9
Part Two: Findings from international analysis and implications for fund pricing	10
Liquidity mismatch and run incentives	10
Swing pricing as a run risk mitigant	11
The Covid-19 episode	11
Implications for the financial stability debate	12
Part Three: The way forward	13
Governance	13
Protecting investors from dilution	13
Setting dual pricing spreads	15
Operating a dilution levy	15
Operation of swing pricing	15
Conclusions	17
References	18

EXECUTIVE SUMMARY

AS POLICYMAKERS AND REGULATORS CONSIDER THE FUTURE SHAPE OF THE LIQUIDITY MANAGEMENT TOOLKIT, THE PURPOSE OF THIS PAPER IS REFLECTED IN ITS THREE-PART STRUCTURE: TO EXPLAIN THE PURPOSE OF DIFFERENT FUND PRICING MECHANISMS; TO EXPLORE THE EXTENT TO WHICH AVAILABLE LITERATURE SUPPORTS A CHANGE IN APPROACH ACROSS THE INDUSTRY; AND TO PROVIDE A HIGH-LEVEL SET OF RECOMMENDATIONS WHICH CAN BE SUPPLEMENTED IN DUE COURSE BY MORE DETAILED GUIDANCE.

Part One sets out how different pricing mechanisms operate and the rationale for the use of anti-dilution approaches historically. Drawing particularly on the UK experience, our view is that swing pricing is a well-established and effective method for achieving the fair treatment of fund investors across a range of asset classes. In particular, swing pricing can ensure that ongoing investors are protected from the dilution caused by transaction costs arising from the activity of incoming or outgoing investors. This point is also true of dual pricing mechanisms.

The concept of fairness is predicated on protecting ongoing investors by ensuring the economic experience of exiting or entering a fund is similar in principle to that of trading a basket of the underlying assets - investors will be subject to transaction costs in line with their decision to hold or divest.

At the same time, what may be a highly effective tool for some funds may be wholly inappropriate for others. In this respect, swing pricing would not routinely be appropriate for money market funds.

Part Two explores the key findings of academic and other analysis of the connection between pricing practice and observable behaviour across the fund market. While we recognise the findings of some parts of the literature showing a connection between pricing mechanisms and investor behaviour, that connection differs by asset class, holding size and investor type. Furthermore, evidence from the Covid-19 episode in March 2020 shows that it is wider investment considerations and not pricing policy that are a key driver of behaviour.

The fairness inherent in swing pricing and other anti-dilution mechanisms helps to ensure that decisions to re-allocate from funds are made on their own merits (ie. the strategic or tactical advantage to move to a different fund and/or asset class). The incentive to redeem on the basis that the fund price does not factor in the true cost of redemption is substantially reduced or removed altogether. This final point is critical in that it recognises that in times of crisis, there may be significant redemption pressure that is not driven by pricing distortions, or the fear thereof, and is not disincentivised by the pricing mechanism.

Part Three sets out a series of practical recommendations on the application of swing pricing as regulators consider the potential for change in this area. We aim for effective investor protection provided within a framework of strong operational discipline and robust governance. We also make some broader observations about the need to ensure that managers have the flexibility to determine the pricing mechanisms that are most appropriate for their asset class, investment strategy and investor profile as part of their wider liquidity toolkit. This is particularly important for the money market fund sector, which has an operational model that is generally not conducive to the use of swing pricing.

Our analysis reinforces the need to be clear about the purpose of anti-dilution mechanisms and what they can and cannot achieve, especially in the debate about financial stability. We must differentiate between potential first-mover advantage arising from asymmetry between the cost of redeeming from a fund and the true cost of selling the underlying assets, and the first-mover advantage arising from well-timed investment decisions about the future direction of financial markets. Swing pricing and other anti-dilution mechanisms can be effective in addressing the former but must not be used to inhibit the latter.

RECOMMENDATIONS

- 1 **It is recommended that the execution of the dilution policy should be free from operational constraints and that it should consistently protect investors from the effects of dilution throughout the lifecycle of the fund in both normal and extreme circumstances.**
- 2 **Managers should ensure that the pricing calculation for redemptions reflects the full impact of less liquid assets in the portfolio during periods of stress.**
- 3 **Managers of dual-priced funds should consider whether it is appropriate for the spread to include more than just the initial charge.**
- 4 **Managers should consider whether their dilution levy can be operated in a manner that is effective in consistently mitigating the drag on performance caused by dilution.**
- 5 **Managers should consider carefully whether their swinging pricing policy ensures effective and consistent mitigation of dilution and has an appropriate balance between discretion and automation.**
- 6 **Managers should consider whether the frequency of their dealing costs review process remains appropriate to the prevailing market conditions.**

PART ONE: FUND PRICING AND THE CURRENT UK DEBATE ON FINANCIAL STABILITY

Echoing issues being raised internationally as part of the financial stability agenda, the Bank of England (Bank) and the Financial Conduct Authority (FCA) concluded a joint review of vulnerabilities associated with the liquidity mismatch in open-ended funds in March 2021 with the publication of a report (Bank of England, 2021a) based on a survey of liquidity management practices in UK funds. The survey indicated widespread use of swing pricing that intensified during the Covid-19 stress period of March 2020. Based on the survey results, the Financial Policy Committee (FPC) judged that the liquidity classification of funds' assets and the calculation and application of swing pricing could both, in principle, be enhanced (Bank of England, 2021b).

The FPC's primary concern is that the mismatch between redemption terms and the liquidity of some funds' assets means there is an incentive for investors to redeem ahead of others, particularly in a period of market stress, and that this first-mover advantage has the potential to become a systemic risk by creating run dynamics. While this risk extends beyond any single asset class, the FPC considers it most pertinent to corporate bond funds where markets are less resilient, so are prone to amplify rather than absorb shocks, and fund redemptions are more sensitive to adverse price movements (Bank of England, 2019a).

In December 2019, the FPC established three principles for addressing the liquidity mismatch – these concern liquidity classification, pricing adjustments and notice periods (Bank of England, 2019b). This paper is concerned with the FPC's pricing adjustments principle – that redeeming investors should receive a price that reflects the discount needed to sell the required portion of a fund's assets in the specified redemption notice period.

In July 2021 the FPC endorsed a possible framework developed by the Bank and FCA for enhancing the liquidity classification of funds' assets and the calculation and use of swing pricing such that pricing adjustments more accurately represent the cost of exiting a fund over the specified redemption period (Bank of England, 2021c). Within the framework the Bank and FCA recognise swing pricing as an investor protection tool which seeks to protect ongoing investors from dilution by ensuring that transacting investors bear the transaction costs caused by their trading activity. Although the FCA's rules permit swing

pricing for the sole purpose of reducing dilution, the Bank and FCA note that swinging the redemption price could also help to reduce the potential financial stability risks stemming from first-mover advantage by removing the incentive to redeem ahead of other investors.

The Bank and FCA framework is intended to inform international policy development and should complement firms' existing liquidity management techniques. The FPC has underscored the importance of international work in this area and supports the ongoing work led by the Financial Stability Board (FSB) and the International Organization of Securities Commissions (IOSCO).

WHAT IS SWING PRICING?

Swing pricing is an investor protection tool that protects ongoing investors in a fund from the dilutive effect of trading costs caused by incoming or outgoing investors. It allows the price paid by incoming or outgoing investors to be adjusted to take account of the costs of buying or selling the fund's assets. The same is true of dual pricing.



DILUTION AND THE DESIGN OF PRICING STRATEGIES

While the policy debate has focused on the potential for pricing policy to influence investor behaviour at times of crisis, the starting point within the industry is the concept of protection against dilution. As we will explore particularly in Part Two, it is extremely important to be clear about what pricing mechanisms are intended to achieve, what they can achieve, and how investor behaviour will often ultimately be far more influenced by macro-economic or market conditions than by the way in which a fund's liquidity management toolkit operates.

Dilution is the drag on performance that occurs when the actual cost of purchasing or selling a fund's assets differs from the value of assets used to calculate the price at which units are issued or cancelled. For example, where units are cancelled at the mid-market price and fund assets are sold at the market bid price, less transaction costs, the impact of the dealing spread and explicit transaction costs is to dilute the value attributable to investors in the ongoing fund.

In the UK, a number of anti-dilution mechanisms are available to charge the dealing spread and explicit transaction costs to the redeeming investors, thereby protecting ongoing investors. As we illustrate below, the UK remains relatively unusual internationally in the scale of its use of swing pricing, and therefore provides a very useful test case for the current global policy and regulatory debate.

GLOBAL FUNDS MARKET AND THE USE OF SWING PRICING

The global funds market was worth £57 trillion at the end of 2021 with the US being the largest share, accounting for 49% of the total, Europe representing 31%, and most of the remaining 20% lying around the Pacific rim. Within Europe, Luxembourg is the largest fund domicile, playing host to 9% of the total, followed by Ireland with 6% and Germany with 4% (International Investment Funds Association, 2022). The UK is the world's second largest investment management centre, accounting for over 7% of global funds under management, primarily in funds domiciled in the UK (35%), Ireland (33%) and Luxembourg (15%) (The Investment Association, 2022).

At a global level, an increasing number of jurisdictions now permit the use of swing pricing although its use in practice remains confined to a minority of locations:

- Swing pricing is the dominant approach in the UK with over 85% of funds under management being subject to either swing pricing or dual pricing.
- About two-thirds (65%) of the value in Luxembourg funds is subject to swing pricing with almost universal adoption by firms of UK, US, and Swiss origin and a bias towards practices in their home markets for other firms (Association of the Luxembourg Fund Industry, 2015, 2022).
- Swing pricing is uncommon in the major domestic European fund markets. It was not permitted in Germany until 2020 and its use in France since being introduced in 2014 remains low with just 6% of funds under management being subject to swing pricing at the end of 2019 (Autorité des Marchés Financiers, 2020).
- Swing pricing was not permitted in the US until 2018 and there remain significant operational barriers to its implementation in practice (Investment Company Institute, 2016, 2017).
- Regulatory regimes in most other jurisdictions around the world do not permit swing pricing. Outside UK, US and EU, only Hong Kong, Mexico, Singapore and Switzerland permit swing pricing (International Organization of Securities Commissions, 2018).

Dual pricing

Dual pricing is the traditional approach used in the UK and was the only permitted approach until single pricing was introduced in 1997 with the ability to swing the price being added in 2002. By its nature, dual pricing ensures ongoing investors in a fund are always fully protected from dilution and this protection can be regarded as equivalent to that provided by full swing pricing.

The starting point for dual pricing is to identify the actual cost of creating or liquidating a vertical slice of the portfolio ie. the cost of issuing or cancelling a fund unit. Issue and cancellation prices are calculated including the full cost of buying or selling each security, including both the dealing spread and explicit transaction costs. There is no discretion exercised in determining the issue and cancellation prices and, as a result, ongoing investors are always fully protected from dilution by the pricing method itself.

Flexibility exists to set sales (offer) and redemption (bid) prices anywhere between limits based on the issue and cancellation prices, and to price large deals differentially. Historically, some firms set the bid-offer spread to nil. In principle, in the absence of an initial charge, the outcome for incoming and outgoing investors is the same as full swing pricing. A variant of this approach is to impose a small bid-offer spread sufficient only to recover the cost of capital involved in running a manager's box (see below). Other firms set the bid-offer spread to include the full spread between the issue and cancellation prices. However, this causes incoming or outgoing investors to suffer a theoretical dilution payment for dilution that is not actually occurring, giving rise to box profits. The benefit of such profits must be paid to the fund where it provides a fillip to performance.

Box management

Historically, a particular benefit of dual pricing was the ability to recycle units without needing to trade fund assets or incur transaction costs in the fund. This provided a liquidity buffer because a firm could retain redeemed units in a manager's box rather than immediately cancelling fund units. Box units could then be sold to new investors or cancelled at a later date. A manager's box requires the firm to commit its own capital to holding fund units and therefore relies on the ability to recover the cost of capital by imposing a bid-offer spread. The introduction of rules (Financial Conduct Authority, 2018) requiring all proceeds derived from a bid-offer spread to be paid to the fund made it uneconomical to run a manager's box in this way and consequently firms have elected either to switch to swing pricing or to operate dual pricing on a full spread basis.

Single pricing

Single pricing without the ability to swing is the traditional approach used around the globe and remains dominant despite a number of jurisdictions moving to permit swing pricing in recent years. A single price is calculated using the mid-market values of the portfolio and takes no account of dealing costs or spreads. All unit deals take place at this single price. Protection from dilution may be provided by the use of a dilution levy or by swinging the price.

Dilution levy

A dilution levy is a separate charge levied on investor deals at the discretion of the firm to offset dilution. Fund units are issued or cancelled at mid-market prices and the proceeds of any dilution levy are paid to the fund to offset transaction costs. This approach is valued for reducing volatility in the unit price and the ability to target the levy on the specific investors whose actions would otherwise cause the most significant dilutive effects. In the UK, almost all single priced funds without the ability to swing retain the ability to apply a dilution levy.

Swing pricing

Swing pricing enables a firm to charge the relevant transaction costs to incoming or outgoing investors, by swinging the unit price. The single price will be swung lower (higher) to protect ongoing investors from the costs of selling (buying) underlying assets in response to the cancellation (issuance) of fund units. The swung price corresponds to the issue or cancellation price in a dual pricing mechanism. However, unlike dual pricing, a firm is able to exercise discretion in determining whether or not to swing the price so the protection provided depends on the specific operational policies put in place by the firm.

Swing pricing may be operated on a full or partial basis. Under full swing pricing, the fund price is swung every time there are net inflows or outflows and gives ongoing investors the same protection from dilution as dual pricing. Under partial swing pricing, the fund price is swung only when net inflows or outflows exceed a pre-defined threshold, usually expressed as a percentage of a fund's net asset value.

While swing pricing is highly effective for many types of strategy and asset class, care needs to be taken in some key areas, notably money market funds, not to mandate inappropriate liquid tools.

MONEY MARKET FUNDS

Money-market funds are intended to be able to meet redemptions using cash on hand rather than by selling assets and as such have regulatory thresholds, combined with “know your customer” requirements, designed to ensure sufficient cash is held to meet redemption requests and that portfolio assets are sufficiently short-term to replenish cash balances as they mature. As a consequence, portfolio holdings would not be expected to be sold to pay redemptions which means dilution due to transaction costs will not arise in normal market conditions. Combined with features such as the objective to preserve capital by avoiding market volatility and offer intraday and same day redemptions and settlement, this means traditional anti-dilution pricing mechanisms would not routinely be appropriate for money market funds.



PART TWO: FINDINGS FROM INTERNATIONAL ANALYSIS AND IMPLICATIONS FOR FUND PRICING

The available literature on swing pricing from both academics and regulatory sources is limited, although growing. In our analysis below, we note relevant research that is clearly influencing policymakers' focus on pricing mechanisms in funds investing in illiquid or less liquid assets. At the same time, we highlight findings that serve as a reminder of the intrinsic first-mover advantage from well-timed investment decisions in financial markets, particularly at times of crisis. In other words, some groups of investors will redeem because they have made an allocation decision to do so and will not be influenced by whether a swing pricing mechanism is being applied or not.

LIQUIDITY MISMATCH AND RUN INCENTIVES IN THE ABSENCE OF SWING PRICING

The FSB and FPC are concerned that the mismatch between redemption terms and the liquidity of some funds' assets means there is an advantage to investors to redeem ahead of others, particularly in a period of stress. This first-mover advantage can create a run-incentive (Bank of England, 2019a) whereby investors redeem when they suspect others may do so, resulting in selling pressure on the fund's assets and potentially contributing to the amplification of market shocks.

There is a body of evidence that fuels these concerns, culminating in the work of Goldstein et al (2017). They found that US corporate bond funds (1992 to 2014) tend to have greater sensitivity of outflows to bad performance when they have more illiquid assets and when overall market illiquidity is high. They also quantified the dilutive effect of outflows and showed the incentive to avoid being diluted is especially strong for funds with illiquid assets when the corporate bond market is less liquid. These stronger incentives to redeem are consistent with a risk of amplifying the effect of market shocks, although their contribution to systemic risk remains contested (Laipply & Madhavan, 2022).

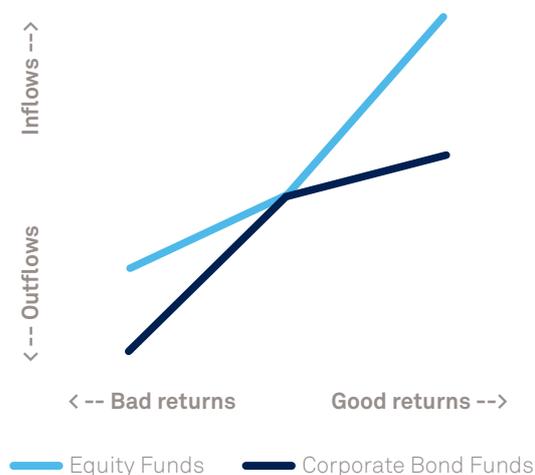
Goldstein et al (2017) also showed that the relationship between flows and performance for corporate bond funds is quite different to that for equity funds. It demonstrated that equity funds' inflows are 2.4 times more sensitive to good performance than their outflows

are to bad performance. In the case of corporate bond funds, outflows were found to be 3.6 times more sensitive to bad performance than inflows are to good performance. We illustrate these relationships in stylised form in Figure 1.

When the analysis was extended to the aggregate flows across each sector, it showed that the flow to performance relationship is maintained for corporate bond funds but disappears for equity funds. This suggests investors exit the corporate bond sector in response to declining performance, whereas equity investors move their money to other funds within the sector and highlights the particular significance of corporate bond funds for financial stability.

A final observation in this research is that investors in institutionally-oriented funds are less inclined to withdraw for fear of others withdrawing ahead of them in response to bad performance than investors (both retail and institutional) in retail-oriented funds. Therefore, it would appear that the first-mover advantage due to the mismatch between redemption terms and the liquidity of some funds' assets is a retail phenomenon.

FIGURE 1: STYLIZED RELATIONSHIP OF FLOW TO PERFORMANCE



SWING PRICING AS A RUN RISK MITIGANT

Recent research supports the view that a well-structured swing pricing mechanism is an effective anti-dilution tool and the investor protection it provides can help to neutralise the incentive to redeem ahead of other investors, even if that is not the primary purpose for which it is designed.

Lewrick and Schanz (2017) provide the first empirical evidence of the effect of swing pricing by studying corporate bond funds with similar investment styles domiciled in the US and Luxembourg over the period January 2012 to May 2016. They rely on fund domicile to indicate the availability of swing pricing and conclude that swing pricing dampens outflows in reaction to weak fund performance but has a limited effect during stress episodes. They attribute this limited effect to the swing factors being too small to be effective, noting that Luxembourg funds tend to set a uniform swing factor, often with a cap on the maximum swing.

Capponi et al (2020) develop a theoretical model of the relationship between outflows and the illiquidity of funds' assets. It illustrates the sensitivity of outflows to market shocks and is consistent with empirical findings of Goldstein et al (2017). In line with Lewrick and Schanz (2017), the model shows that, to be effective during periods of market stress, the size of the swing factor needs to increase in line with the increasing illiquidity of the fund's assets.

Arguably, the results of Lewrick and Schanz (2017) say more about the application of swing pricing in Luxembourg than they do about the effectiveness of the application of swing pricing more generally. At the time, swing pricing was used by about half of Luxembourg funds (Association of the Luxembourg Fund Industry, 2015) and it is unclear to what extent the results would be different during episodes of stress had they been able to isolate the individual Luxembourg funds that operate swing pricing.

Jin et al (2022) solve this problem by studying data collected by the FCA that provide a richer source of information than is available publicly. In particular, the data allows funds to be categorised precisely according to their pricing approach. Their study of UK-managed funds domiciled in UK, Luxembourg, or Ireland over the period January 2006 to December 2016 shows that alternative pricing mechanisms (the collective term they use to describe both swing and dual pricing) eliminates first-mover advantage and significantly reduces outflows during market stress.

The FCA data also allows analysis of the extent to which firms adjust their swing factors in response to stress. Jin et al (2022) observe that swing factors increase in line with: increasing illiquidity of funds' assets; during periods of increased market stress; and for funds experiencing higher outflows

THE COVID-19 EPISODE

The onset of the Covid-19 pandemic in March 2020 triggered an extreme, if short-lived, period of market turmoil. Studies of the effects of swing pricing during this episode have taken place in both the UK (Bank of England, 2021a) and Luxembourg (Claessens & Lewrick, 2021). Both observed more intensive use of swing pricing with the magnitude of swing factors increasing and swing thresholds decreasing or being removed altogether. Neither found evidence of a dampening effect on net outflows for swing pricing funds during the Covid-19 episode. At the same time, Lewrick et al (2022) concluded that investor considerations other than first-mover advantage, such as liquidity needs or risk reduction, were in play.

During this period, the UK study revealed much larger outflows from funds held predominantly by professional (institutional and intermediated) investors and the Luxembourg study observed greater outflows from funds with a larger share of institutional investors. These findings accord with analysis of the UK property market (Forbes, 2017) that suggests the significant redemption pressure seen in the aftermath of the EU referendum in 2016 was driven by a small number of large intermediaries making large redemptions, rather than run-risk relating to multiple simultaneous individual retail investor decisions.

Taken together with the findings of Goldstein et al (2017) that outflows from institutionally-focused funds are less sensitive to first-mover advantage than retail-focused funds, this flow to investor-type relationship suggests redemption pressures motivated by factors other than first-mover advantage relating to pricing mismatches. In other words, these were strategic decisions insensitive to the pricing mechanism employed. This points to a much more complex pattern of behaviour where the institutionalisation of decision-making can have a significant impact on flow dynamics.

IMPLICATIONS FOR THE FINANCIAL STABILITY DEBATE

In light of the findings above, we think it is essential to highlight the distinctions between what might be regarded as tactical or opportunist redemption pressure (possibly also linked to strategic considerations) and redemption driven by a decision to sell a fund because of a judgement about prevailing or anticipated market conditions. The key consideration, as others have highlighted (BlackRock, 2021), must be to use pricing mechanisms as investor protection tools to create a level playing field between the experience of the investor in the fund, and the investor in a similar set of assets in a segregated account or investing autonomously in the wider market, and not as a tool with which to lock investors into a fund.



PART THREE: THE WAY FORWARD

It is clear that the principle of protecting ongoing investors from dilution is deeply embedded in the history and culture of the UK industry, both in respect of domestic funds and overseas funds managed from the UK. Independent research has shown the operation of swing and dual pricing by UK firms to be an effective investor protection tool that can also help to mitigate potential run incentives due to pricing mismatches and so contribute to financial stability. Nevertheless, it is appropriate to continue to review and develop the application of pricing strategies to ensure the highest standards of investor protection are maintained, and good outcomes are delivered in line with the FCA's new Consumer Duty.

In response to the extreme market conditions experienced in 2008, we conducted a review of the operation of fund pricing and produced industry guidance on selecting and operating appropriate pricing mechanisms (Investment Management Association, 2010). We have reviewed the guidance in the light of the Bank and FCA framework and consider that the recommendations therein remain relevant. A working group of industry participants has reviewed market practices and identified areas of best practice in respect of the implementation of each of the 2010 recommendations, as set out in the remainder of this section.

GOVERNANCE

Managers are required to pay due regard to the interests of their customers and treat them fairly. In accordance with this principle the FCA sets out rules and guidance intended to ensure fund prices are calculated fairly and allowing the effects of dilution to be mitigated. The manager is responsible for selecting the pricing methodology and ensuring that an appropriate anti-dilution mechanism is in place for a fund's investment strategy, underlying asset exposure and the characteristics of the fund and its investors. The decision should also be made with reference to the wider liquidity management programme being deployed for that fund.

The manager should establish an appropriate supervisory structure that ensures effective policies and procedures are in place such that the pricing

methodology is operated on an ongoing basis in accordance with regulatory requirements and in the interests of investors. Managers may establish an appropriately resourced pricing or valuation committee to draw up and document, implement, maintain, back-test, review and, when appropriate, revise the manager's policies and procedures. Procedures should include triggers for the escalation of issues by the committee to the manager and by any third parties involved in operating the pricing mechanism to the committee. These procedures should ensure a sufficiently timely response to rapidly changing market conditions. We do not believe that it is appropriate for regulators to mandate the use of a given pricing mechanism or to intervene in the detailed design and operation of the chosen mechanism.

PROTECTING INVESTORS FROM DILUTION

1

It is recommended that the execution of the dilution policy should be free from operational constraints and that it should consistently protect investors from the effects of dilution throughout the lifecycle of the fund in both normal and extreme circumstances.

This recommendation provides an overarching principle for the selection and oversight of an appropriate pricing strategy. It is intended to ensure investors are protected at all stages of a fund's lifecycle and in all market conditions. It seeks to balance policies that are sufficiently detailed and responsive to changing circumstances with the need for pragmatic and reliable operational processes. Although our review of our guidance and recommendations focuses on swing pricing, given its prevalence over other methods, the substance of the recommendations will apply equally to all pricing approaches.

The key components of a swing pricing system are whether to swing and how much to swing by. The size of the swing is determined by the methodology for calculating the swing factor, which is the subject of this section, and is supplemented by the frequency of recalculation of the swing factor (see recommendation 6). The parameters for whether to swing are dealt with in recommendation 5.

The calculation of the swing factor takes account of the spread on the fund’s assets and explicit transaction costs (eg. broker commission and transaction taxes) where appropriate. Consideration of other factors, such as market impact, is rare (Bank of England, 2021a). Market impact occurs when selling a large quantity of an asset causes the price of that asset to move against the seller and the Bank and FCA report acknowledges it may be difficult to assess. Nevertheless, consideration of market impact has increased with 35% of firms (up from 10% in 2015) that use swing pricing in Luxembourg now taking it into account (Association of the Luxembourg Fund Industry, 2015, 2022).

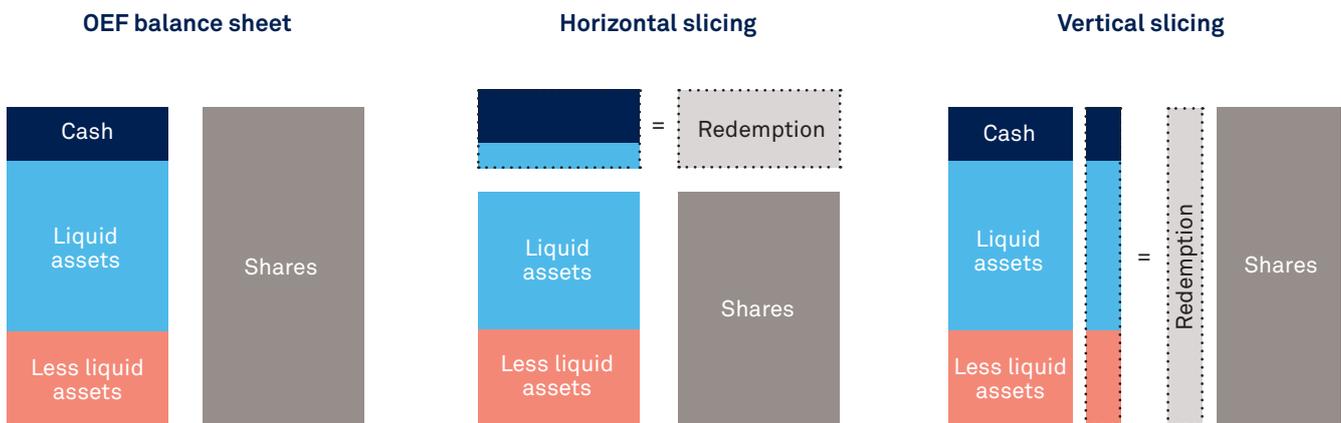
An effect of collective investment is to convert trading from a retail to an institutional scale. This has benefits in terms of economies of scale (eg. broker commissions are far lower for funds than for most individuals) but, at times, it may be necessary to accept a lower price to sell assets in large volumes quickly, due to market impact. Firms can usually manage this effect in normal conditions through their trading strategies but, if faced with heavy redemptions during periods of stress, it may become necessary to factor these price discounts

into the swing factor. Such price discounts should reflect the prices that could be achieved for a quick sale¹ of a representative sample (or vertical slice, see figure 2) of the fund’s assets in sufficient volume to meet the demand for redemptions. This leads us to a new recommendation to be considered in relation to extreme circumstances.

2
Managers should ensure that the pricing calculation for redemptions reflects the full impact of less liquid assets in the portfolio during periods of stress.

In order to ensure that trading a horizontal slice does not defer the costs of selling less liquid assets to the detriment of ongoing investors, the calculation of the fund price should, where appropriate, take account of the costs of liquidating a vertical slice of the portfolio.

FIGURE 2: HOW OPEN-ENDED FUNDS (OEFs) CAN MEET REDEMPTIONS



Source: Claessens & Lewrick, 2021

¹ This paper does not consider inherently illiquid assets for which no quick sale price exists.

Market impact is most relevant where the volume of a stock to be sold is significant in the context of the overall volume being traded in the market. This will require analysis of the market for each stock and the level of redemptions that would be required to cause the amount of each stock within a vertical slice to become significant relative to the market.

One way to achieve this may be by tiering the swing factor² across a number of swing thresholds such that a higher factor is used for higher levels of redemptions. Nevertheless, it might still be necessary to ensure that sufficient flexibility exists to deviate promptly from pre-determined factors in the light of changing market conditions.

Swing factor caps are used by less than 10% of the swing priced funds in the Bank and FCA survey of the UK market (Bank of England, 2021a), but are commonly used in Luxembourg (Association of the Luxembourg Fund Industry, 2015, 2022). In both jurisdictions, such caps were overwhelmingly overridden or removed during the Covid-19 stress period suggesting their use would not be consistent with the first two recommendations.

SETTING DUAL PRICING SPREADS

3

Managers of dual-priced funds should consider whether it is appropriate for the spread to include more than just the initial charge.

The bid-offer spread of a dual priced fund includes both the initial charge and the spread between the issue and cancellation prices. This recommendation addresses the spread aspect, in particular the concern that when operating a bid-offer spread that includes the full spread between the issue and cancellation prices, incoming or outgoing investors may suffer a theoretical dilution payment for dilution that is not actually occurring. In 2018 the FCA introduced rules requiring the benefit of any such dilution payment to be paid to the fund where it provides a fillip to performance. Nevertheless, it remains relevant to consider the appropriate balance between the interests of incoming, outgoing and ongoing investors when setting the spread.

OPERATING A DILUTION LEVY

4

Managers should consider whether their dilution levy can be operated in a manner that is effective in consistently mitigating the drag on performance caused by dilution.

This recommendation is designed to highlight that the administrative capabilities of some distributors may curtail the manager's ability to use a dilution levy effectively in practice.

OPERATION OF SWING PRICING

5

Managers should consider carefully whether their swinging pricing policy ensures effective and consistent mitigation of dilution and has an appropriate balance between discretion and automation.

This recommendation is designed to ensure the application of swing thresholds is sufficiently dynamic to respond to unexpected or unforeseen circumstances.

Although full swing pricing provides the same protection of the ongoing fund from dilution as would be guaranteed in a dual pricing system, partial swing pricing is the most common approach being used by 80% of the swing priced funds in the Bank and FCA survey of the UK market (Bank of England, 2021a), and the overwhelming majority (97%) of firms applying swing pricing in Luxembourg (Association of the Luxembourg Fund Industry, 2015). The latter reports that the main reasons for using partial swing pricing are to reduce volatility in the unit price, and to target only material dilution when cash is used to manage lower levels of redemptions. This can work well in normal conditions with both inflows and outflows as cash received from inflows replenishes cash balances depleted by paying redemptions.

² These considerations are also relevant to dual priced funds and to the calculation of dilution levies.

Managers should consider whether the frequency of their dealing costs review process remains appropriate to the prevailing market conditions.

However, partial swinging carries the risk of being unresponsive to a shift to persistent outflows when it will become necessary to liquidate fund assets in order to maintain an appropriate cash balance. In these conditions the cash balance serves only to defer the dilutive effect (see recommendation 2) and if the swing threshold is set too high, the dilution caused by these liquidations can accumulate and become material.

One approach to address this risk is to operate a semi-permanent swing that matches the trend of inflows and outflows over time, rather than responding to daily inflows and outflows on a mechanistic basis. This approach helps to reduce price volatility while minimising any dilution.

A further risk of the partial swing approach is that it may be unresponsive to changing market conditions such as a widening of market spreads. If the swing threshold is calibrated to a particular level of market spread in normal market conditions, it may fail to mitigate dilution in stressed conditions.

This risk can be addressed by ensuring processes are in place to reduce or remove the swing threshold in stressed conditions, and it is notable that over a quarter (28%) of partially swinging funds reduced their thresholds or removed them completely during the onset of the pandemic. However, there is a suggestion in the Bank and FCA report that in most cases this only happened after the immediate stress peak had passed.

Another approach is to set the threshold by reference to a maximum level of dilution tolerance. The swing factor is calculated to reflect the trading costs that cause dilution and can therefore be considered as a measure of the dilutive effect of each unit of outflow. Assuming the swing factor calculation is quick to respond to changing conditions (see recommendation 6), this gives rise to a more dynamic threshold that is responsive to the onset of periods of stress.

Dealing costs are used to calculate standard swing factors and this recommendation was designed to address the concern that single pricing systems may be slow to respond to rapidly widening spreads due to the onset of periods of market stress.

A standard swing factor subject to a periodic review is the most commonly used approach being applied by 70% of the swing priced funds in the Bank and FCA survey (Bank of England, 2021a) and 80% of firms applying swing pricing in Luxembourg (Association of the Luxembourg Fund Industry, 2015). The frequency of the reviews varies with a fairly even spread of quarterly (38%), monthly (34%) or weekly (26%) in UK funds and quarterly (59%) being the most common amongst firms in Luxembourg (Association of the Luxembourg Fund Industry, 2022) followed by monthly (24%). Firms using standard swing factors in both jurisdictions are able to respond to changing market conditions or specific events outside the regular review cycle with over two thirds of firms in Luxembourg, and over half of funds in the Bank and FCA survey, having done so during the Covid-19 stress period.

The approach works well in normal conditions when spreads and transaction costs are stable, but risks being unresponsive to changing market conditions such as a widening of market spreads. Evidence from ETF price factors indicates that open-ended funds were slower than ETFs to react to the widening of spreads at the onset of the Covid-19 pandemic (Bank of England, 2021c). This lag corresponds with a period when many firms reported a dislocation between quoted corporate bond bid-ask spreads and actionable trades in the underlying market.

This risk can be mitigated by ensuring processes are in place to review and adjust the swing factor in response to changing market conditions in addition to regular periodic reviews. This relies on being able to identify the onset of stress episodes quickly and could entail monitoring indicators such as changes in observable spreads for similar assets or ETFs, volatility indicators such as the VIX index, and feedback from the firm's trading desks.

CONCLUSIONS

Swing pricing is an effective investor protection tool that works well in normal conditions and may have the added benefit of mitigating certain run risks. Its use is widespread in funds managed by UK firms but its uptake in other jurisdictions is limited.

We have reviewed our 2010 guidance and recommendations and determined it remains relevant. However, one important addition in our current guidance relates to considerations relevant to ensuring the operation of swing pricing is sufficiently responsive to changing conditions. In this regard, while our conclusions from the stress episode caused by

Covid-19 in March 2020 suggest that outflows were primarily driven by investment decisions and not by pricing mechanisms, we accept the FCA and Bank observations that the operation of swing pricing can be enhanced.

We will continue to monitor market developments and changing regulatory expectations, including in relation to the FCA's new Consumer Duty, to ensure this guidance remains both relevant and operationally practical and update it as appropriate.

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The Investment Association

Camomile Court, 23 Camomile Street, London, EC3A 7LL

www.theia.org

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