

**Anti-dilution Liquidity Management Tools –  
Guidance for Effective Implementation of the  
Recommendations for Liquidity Risk Management for  
Collective Investment Schemes**

**Consultation Report**



**IOSCO**

**The Board  
OF THE  
INTERNATIONAL ORGANIZATION OF SECURITIES COMMISSIONS**

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## Foreword

The Board of the International Organization of Securities Commissions (IOSCO) has published this Consultation Report with the aim of outlining guidance for the use of anti-dilution liquidity management tools. The guidance is addressed to responsible entities to support the greater use of anti-dilution liquidity management tools by open-ended funds to mitigate investor dilution and potential first-mover advantage arising from structural liquidity mismatch in OEFs.

## How to Submit Comments

Comments may be submitted by one of the three following methods **on or before 4 September 2023**. To help us process and review your comments more efficiently, please use only one method.

**Important:** All comments will be made available publicly, unless anonymity is specifically requested. Comments will be converted to PDF format and posted on the IOSCO website. Personal identifying information will not be edited from submissions.

### 1. Email

- Send comments to **LMTGuidanceConsultation@iosco.org**
- The subject line of your message must indicate '**LMT Guidance – Consultation Report.**'
- If you attach a document, indicate the software used (e.g., WordPerfect, Microsoft WORD, ASCII text, etc) to create the attachment.
- Do not submit attachments as HTML, PDF, GIFG, TIFF, PIF, ZIP or EXE files.

### 2. Facsimile Transmission

Send by facsimile transmission using the following fax number: + 34 (91) 555 93 68.

### 3. Paper

Send 3 copies of your paper comment letter to:

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International Organization of Securities Commissions (IOSCO)  
Calle Oquendo 12  
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Spain

Your comment letter should indicate prominently that it is a '*Public Comment on LMT Guidance – Consultation Report.*'

<b>QUESTIONS FOR CONSULTATION</b>	<b>1</b>
<b>EXECUTIVE SUMMARY</b>	<b>4</b>
<b>SECTION I – BACKGROUND</b>	<b>6</b>
OEF LIQUIDITY RISK MANAGEMENT	6
LIQUIDITY MANAGEMENT TOOLS	7
DRIVERS FOR THIS PROPOSED GUIDANCE	7
OBJECTIVES AND SCOPE	8
<b>SECTION II – DESIGN AND USE OF ANTI-DILUTION LIQUIDITY MANAGEMENT TOOLS</b>	<b>10</b>
OVERALL FRAMEWORK FOR THE DESIGN AND USE OF ANTI-DILUTION LMTs	10
ELEMENT (I) – TYPES OF ANTI-DILUTION LMTs	12
ELEMENT (II) – CALIBRATION OF LIQUIDITY COSTS	14
ELEMENT (III) – APPROPRIATE ACTIVATION THRESHOLD	20
<b>SECTION III – OVERSIGHT OF ANTI-DILUTION LMTs BY FUND/MANAGER BOARDS AND DEPOSITARIES</b>	<b>22</b>
ELEMENT (IV) - GOVERNANCE	22
<b>SECTION IV – DISCLOSURE TO INVESTORS ABOUT THE USE OF ANTI-DILUTION LMTs</b>	<b>26</b>
ELEMENT (V) – DISCLOSURE TO INVESTORS	26
<b>SECTION V – OVERCOMING BARRIERS AND DISINCENTIVES TO IMPLEMENTATION OF ANTI-DILUTION LIQUIDITY MANAGEMENT TOOLS</b>	<b>28</b>

## Questions for Consultation

A complete list of the questions for consultation is provided below. These same questions are also included in relevant sections of the main body of the report. IOSCO invites comments generally on the proposed guidance in this report, as well as views regarding the specific consultation questions listed below and set out in the report. The consultation questions are numerous and detailed, in order to solicit very targeted points of feedback that will be helpful to consideration of the final guidance. Please note that answers to the specific consultation questions are generally expected to be short and targeted, with supporting details where requested or relevant.

### *Proposed Guidance 1 – Overall Framework*

1. To what extent does the proposed guidance 1 help responsible entities to better integrate the use of anti-dilution LMTs within their existing liquidity risk management framework? Have all the critical elements been captured?
2. Do you agree with the proposed guidance 1 regarding the inclusion of anti-dilution LMTs within the daily liquidity risk management framework that OEF managers should have in place at all times?
3. Is this proposed guidance appropriate for all types of OEFs in its scope, and proportionate for all types of responsible entities to implement? If not, please explain.

### *Proposed Guidance 2 – Types of Anti-Dilution LMTs*

4. Has the proposed guidance identified all of the anti-dilution LMTs commonly used by responsible entities? Are there any other LMTs that share the same economic objective of passing on the liquidity cost to transacting investors, that could be included in this guidance? If so, please describe them.
5. Are the identified anti-dilution LMTs described correctly? Do the features or characteristics of the different tools vary or do they generally operate as described?
6. Do you support the proposed guidance 2? If not, in which cases do you think it could be justified not to adopt at least one anti-dilution LMT in OEFs (other than ETFs and MMFs)? What elements do you take into consideration to choose a specific anti-dilution LMT for your OEFs ?

### *Proposed Guidance 3 – Calibration of Liquidity Costs*

7. Have the components of the cost of liquidity, as described above, captured all the relevant costs that should be considered when calibrating anti-dilution LMTs?
8. How does the cost of liquidity vary across different funds ? To what extent could we achieve a more consistent approach to calibrating anti-dilution LMTs for similar funds, and what is the best way to do so?
9. How can significant market impact be incorporated in the calibration of all of the proposed anti-dilution tools? Please provide examples.
10. Can all of the components of the cost of liquidity (i.e., explicit and implicit transaction costs including any significant market impact) be incorporated in all five anti-dilution LMTs as set out in the discussion of Element (i) above? If not, what are the limitations to doing so and how would you suggest improving the effectiveness of these anti-dilution LMTs?

11. To what extent can a subscription / redemption fee achieve the objective of addressing the investor dilution issue and financial stability concern of OEFs by attributing the liquidity costs to transacting investors? How could it be appropriately calibrated to achieve this objective?
12. Do you see benefits in a tiered approach to attributing the cost of liquidity by using different adjustment factors according to net fund flow, market conditions and characteristics of the funds? Are there any operational difficulties? Any further comments thereto?
13. How could guidance on LMT calibration achieve a fair balance between (i) ensuring investors have a clear expectation of the cost of liquidity they could be charged and (ii) ensuring responsible entities have enough flexibility to attribute the overall cost of liquidity at all times, especially under stressed market conditions?
14. Is the proposed approach regarding ranges of liquidity cost adjustment appropriate? If not, how could it be improved?
15. Is the proposed expectation on the level of confidence and the sophistication of liquidity cost estimations appropriate? If not, how could it be improved?

*Proposed Guidance 4 – Appropriate Activation Threshold*

16. What are the appropriate factors to consider in setting the activation threshold so that anti-dilution LMTs will be activated for any subscription / redemption activities with material dilution effect? How would you define ‘material dilution effect’? Why and how could it vary across different funds?
17. Does the use of an activation threshold introduce the risk of trigger / cliff-edge effects? How could trigger / cliff-edge effects be avoided? Could the tiered swing pricing address the trigger / cliff-edge effect?

*Proposed Guidance 5 – Governance*

18. Do the proposed arrangements discussed above include all the essential elements regarding governance and oversight arrangements in relation to the use of anti-dilution LMTs? Are they proportionate to the differing size and complexity of responsible entities’ fund ranges?
19. Please describe any material factors of the governance and oversight arrangements which have not been included.

*Proposed Guidance 6 – Disclosure to Investors*

20. Is the ex-ante information described above likely to be appropriate and effective in explaining the use of anti-dilution LMTs to investors? What other information about dilution, if any, might be helpful to investors before they invest in a fund?
21. What information can (and should) be disclosed ex-post to investors or the public, and at what frequency, to enhance transparency without compromising the aims of the anti-dilution LMTs or creating unintended consequences? Further, how soon should this information be disclosed to investors?
22. Are there other risks than those described in this section attached to the disclosure of the parameters used for anti-dilution tools?

*Overcoming Barriers and Disincentives*

23. Do you agree with the list of barriers and disincentives identified? Do you consider there are others that are not covered?
24. In your view, what are the most significant barriers or disincentives to the implementation of anti-dilution LMTs? What are your suggestions for possible solutions to mitigate or overcome the barriers and disincentives to the implementation of anti-dilution LMTs?
25. For those OEFs facing significant barriers, what are the implications for their ability to implement this guidance? Are adjustments needed to the guidance to account for this, bearing in mind the objective to mitigate dilution for investor protection?

*Other questions*

26. Do you have any other comments on any guidance proposed in this document?

## Executive Summary

In 2021, IOSCO and the FSB jointly analysed liquidity risk and its management in open-ended funds (OEFs)<sup>1</sup> during the Covid-19 induced market turmoil. They found that while the ‘dash-for-cash’ was a main driver of OEF redemptions and manager decisions to sell assets in March 2020, determining the materiality and economic impact of the liquidity mismatch vulnerability contributing to the market stress is difficult. To the extent that proper asset valuation and use of liquidity management tools (LMTs) do not remove the liquidity mismatch vulnerability, redeeming investors may benefit at the expense of remaining investors. In parallel, IOSCO’s Assessment Committee conducted a thematic review<sup>2</sup> completed in 2022 of the extent to which participating IOSCO member jurisdictions implemented regulatory measures regarding the key IOSCO Liquidity Risk Management Recommendations. In 2022, the FSB undertook an assessment of the FSB Recommendations<sup>3</sup> regarding financial stability risks arising from liquidity mismatch in OEFs in light of recent experience. The FSB noted in its assessment report that there was material variation in how anti-dilution LMTs were used. Both the FSB and IOSCO observed in their respective assessments that there is scope for greater uptake of LMTs, in particular anti-dilution LMTs.

Investor protection and financial stability concerns could arise when transacting investors in OEFs do not bear the costs of liquidity associated with fund subscriptions/redemptions, which disadvantages existing / remaining investors. Anti-dilution LMTs can address these concerns by passing on the costs of liquidity to transacting investors by adjusting the price at which they transact. These tools form an important part of an overall liquidity risk management framework for OEFs.

In particular, the greater inclusion of anti-dilution LMTs in OEF constitutional documents,<sup>4</sup> and their greater and more consistent use in both normal and stressed market conditions were specifically highlighted in the FSB assessment as having relevance and benefits to ongoing efforts to support global financial stability.

To support the greater use of anti-dilution LMTs by OEFs to mitigate investor dilution and potential first-mover advantage arising from structural liquidity mismatch in OEFs, IOSCO is proposing in this Consultation Report the following guidance to responsible entities:

1. Responsible entities should have appropriate internal systems, procedures and controls in place at all times in compliance with applicable regulatory requirements for the design and use of anti-dilution LMTs as part of the everyday liquidity risk management of their OEFs to mitigate investor dilution and potential first-mover advantage arising from structural liquidity mismatch in OEFs.

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<sup>1</sup> An OEF is a registered / authorized / public collective investment scheme (CIS) which provides redemption rights to its investors from its assets, based on the net asset value of the CIS, on a regular periodic basis during its lifetime - in many cases on a daily basis, although this can be less frequently. Please note that money market funds and exchange-traded funds have been excluded from the scope of open-ended funds covered by this proposed guidance due to their unique characteristics.

<sup>2</sup> <https://www.iosco.org/news/pdf/IOSCONEWS671.pdf>

<sup>3</sup> <https://www.fsb.org/2022/12/assessment-of-the-effectiveness-of-the-fsbs-2017-recommendations-on-liquidity-mismatch-in-open-ended-funds/>

<sup>4</sup> These include fund prospectuses, other offering documents and other documents accessible to investors on an ex-ante basis before they make their investment decisions.



2. As part of their liquidity risk management framework, responsible entities should consider and use at least one appropriate anti-dilution LMT for each OEF under management to mitigate investor dilution and potential first-mover advantage arising from structural liquidity mismatch in OEFs.
3. Anti-dilution LMTs used by responsible entities should impose on subscribing and redeeming investors the estimated cost of liquidity, i.e., explicit and implicit transaction costs of subscriptions or redemptions, including any significant market impact of asset purchases or sales to meet those subscriptions or redemptions. Independently of the anti-dilution LMT used, responsible entities should be able to demonstrate to authorities (in line with the authorities' supervisory approaches) that the calibration of the tool is appropriate and prudent for both normal and stressed market conditions.
4. If responsible entities set thresholds for the activation of anti-dilution LMTs, those thresholds should be appropriate and sufficiently prudent so as not to result in any material dilution impact in the fund.
5. Responsible entities should have adequate and appropriate governance arrangements in place for their liquidity risk management processes, including clear decision-making processes for the use of anti-dilution LMTs.
6. Responsible entities should publish clear disclosures of the objectives and operation (including design and use) of anti-dilution LMTs to improve awareness among investors and enable them to better incorporate the cost of liquidity into their investment decisions and mitigate potential adverse trigger effects.

IOSCO invites comments generally on this proposed guidance, as well as views in response to the consultation questions set out in the report (*see also the preceding section for full list of consultation questions*). Following the public consultation period, IOSCO will develop a final report for publication late in 2023.

## Section I – Background

### *OEF Liquidity Risk Management*

Liquidity risk management is critical to the orderly functioning of OEFs and to safeguarding the interests of and protecting investors. Effective liquidity risk management also plays an important role in reducing systemic risk by, inter alia, dampening the financial market effects possibly resulting from OEF liquidity demand during normal as well as stressed market conditions.

OEFs generally offer short-term (often daily) liquidity to their investors, notwithstanding that the liquidity of fund investments varies across different OEFs and over time for any particular fund. Some fund investors may overestimate the liquidity of the assets held by the funds in which they invest, and may not expect the additional cost or difficulty associated with funds exiting their positions or rebalancing their portfolios, particularly in stressed market conditions.

Generally, investors in an OEF will subscribe to (enter) or redeem from (exit) the fund at the net asset value (NAV) per share or unit.<sup>5</sup> However, the NAV may not always reflect the explicit and implicit costs of transactions<sup>6</sup> associated with adjusting the portfolio of the fund in response to the subscription or redemption. As such, the costs of providing liquidity to transacting investors may be borne by those remaining in the fund, as the value of their holdings can be diluted by the transaction costs. Investor protection concerns could arise when exiting investors do not bear the true costs of asset liquidation, and remaining investors are disadvantaged.

From a financial stability perspective, concerns arise when investors in OEFs could be incentivised by ‘first mover advantage’ dynamics stemming from the open-ended structure.<sup>7</sup> OEFs that invest in less liquid assets and have short redemption periods may be subject to larger liquidity mismatches, particularly during periods of market stress. Investors in these OEFs may be incentivised to redeem shares / units ahead of others if they anticipate that other fund investors will redeem shares and that remaining investors will bear the associated transaction costs. Although it is difficult to quantify and determine the materiality, a first-mover advantage may give rise to excess redemptions, and OEFs’ sales of portfolio assets to

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<sup>5</sup> The subscription or redemption request will typically be made prior to a defined dealing deadline or dealing cut off, after which there will be a valuation point when the assets in the fund will be valued and the NAV per share determined. The valuation might not yet represent transactions in the underlying investments of the OEF necessary to fulfil the subscription or redemption request.

<sup>6</sup> These costs are further explained in Section II (ii) of the document.

<sup>7</sup> This proposed guidance is intended to address the investor dilution issue and financial stability concerns originating from the potential first mover advantage dynamics stemming from the OEF structure. There is some evidence that a first mover advantage may also exist at market-wide level stemming from wider market dynamics and may not be unique to OEFs. These findings indicate that first mover advantage may be driven by competition for finite asset market liquidity among different types of investors that hold overlapping portfolios that may lead to investor dynamics on fund redemptions that are similar to those potentially motivated by first mover advantage stemming from the OEF structure. This proposed guidance does not intend to address these issues. See, Stahel (2022), [Strategic Complementarity among Investors with Overlapping Portfolios](#).

meet excess redemptions may contribute to greater market volatility and additional pressure on asset prices.

To address these investor protection issues and financial stability concerns<sup>8</sup> it is important that responsible entities<sup>9</sup> have a detailed framework with systems and controls in place to operationalise effective liquidity risk management at all times. In this respect, existing liquidity management tools used for investor protection can also mitigate financial stability risks.

### ***Liquidity Management Tools***

LMTs are various techniques and tools available to responsible entities to aid in the management of OEF liquidity needs and risks. This proposed guidance focuses on a subset of LMTs, referred to hereafter as anti-dilution LMTs,<sup>10</sup> that aim to pass on the estimated costs of liquidity associated with fund subscriptions / redemptions to the subscribing / redeeming investors by adjusting the price at which they transact. These tools form an important part of an overall liquidity risk management framework for OEFs.

There are specific features of anti-dilution LMTs that address the investor dilution issue and may also make them a useful tool for addressing the potential first mover advantage dynamic. First, properly calibrated anti-dilution LMTs can impose on redeeming investors the explicit and implicit costs of portfolio transactions, including any significant market impact caused by asset sales to meet redemptions. This action protects remaining investors from dilution impact and also mitigates potential first-mover advantage at its source. Second, anti-dilution LMTs may be suitable for use in both normal and stressed market conditions. Incorporating anti-dilution LMTs in the daily operation of a fund and ‘normalizing’ their use, as opposed to using them only in times of stress, helps avoid a ‘cliff-edge effect’. Appropriate disclosure to investors of anti-dilution LMTs’ objectives and operation may also enhance their effectiveness by guarding against potential ‘stigma’ or reputational concerns.

### ***Drivers for this Proposed Guidance***

The FSB *Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities* (FSB Recommendations), published in 2017, include several policy recommendations to address the risks to global financial stability arising from structural liquidity mismatch in OEFs. In 2018, IOSCO published a final report on *Recommendations for Liquidity Risk Management for Collective Investment Schemes* (IOSCO LRM Recommendations), supplemented with a set of related good practices published as *Open-ended Fund Liquidity and Risk Management – Good Practices and Issues for Consideration* (IOSCO Good Practices).

In March 2020, many OEFs experienced liquidity pressure and valuation challenges, facing large redemption requests and deteriorating market liquidity triggered by the flight to safety and ‘dash for cash’. In 2021 and 2022, IOSCO’s Assessment Committee conducted a thematic

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<sup>8</sup> These dynamics have been a focus of regulatory attention for some time. See, for example, the Bank of England (BoE) Financial Stability Report, dated December 2019. Available at: <https://www.bankofengland.co.uk/-/media/boe/files/financial-stability-report/2019/december-2019.pdf>

<sup>9</sup> Responsible entities in this guidance generally refer to the entity / entities responsible for the overall operation of the OEF and in particular its compliance with the legal / regulatory framework in the respective jurisdiction (e.g., the fund manager or the fund board).

<sup>10</sup> As the anti-dilution tools adjust the final price received or paid by investors, the tools are also known as price-based tools.

review of the extent to which participating IOSCO member jurisdictions had implemented regulatory measures regarding the key IOSCO LRM Recommendations. The results were published in a final *Thematic Review on Liquidity Risk Management Recommendations* on 16 November 2022 (IOSCO LRM Review). In 2022, the FSB undertook an assessment of the FSB Recommendations regarding financial stability risks arising from liquidity mismatch in OEFs in light of recent experience. The results were published in a final *Assessment of the Effectiveness of the FSB's 2017 Recommendations on Liquidity Mismatch in Open-ended Funds* in December 2022 (FSB OEF Assessment).

The FSB OEF Assessment noted that there was material variation in how anti-dilution LMTs were used. The FSB and IOSCO observed in their respective FSB OEF Assessment and IOSCO LRM Review that there is scope for greater uptake of LMTs. The greater inclusion of anti-dilution LMTs in OEF constitutional documents, and their greater and more consistent use in both normal and stressed market conditions to pass on the explicit and implicit costs of redemptions (including any significant market impact of asset sales) to redeeming investors, were specifically highlighted in the FSB OEF Assessment as having relevance and benefits to ongoing efforts to support global financial stability.<sup>11</sup> In particular, the FSB OEF Assessment suggested that the proper use of anti-dilution LMTs is critical for OEFs investing in less liquid assets to continue to offer daily dealing.<sup>12</sup>

Taking into consideration the outcomes of the reviews, IOSCO and the FSB committed to carry out follow-up policy work to enhance the effectiveness of the IOSCO LRM Recommendations, IOSCO Good Practices and FSB Recommendations, each in close consultation with the other. Specifically, the FSB is in parallel undertaking targeted revisions to the 2017 FSB Recommendations in 2023 and IOSCO committed alongside this to the development of this detailed guidance on anti-dilution LMTs in 2023. Following finalization of the revisions to the FSB Recommendations, IOSCO will revisit the IOSCO LRM Recommendations, IOSCO Good Practices and this proposed guidance as needed in 2024.

### ***Objectives and Scope***

This proposed guidance aims to support effective implementation of the IOSCO LRM Recommendations related to the use of anti-dilution LMTs (i.e., *Recommendations 1, 4, 7, 11, 12, 14, 16 & 17*). It covers the design and use of anti-dilution LMTs by OEFs; the oversight by fund boards, managers' boards or depositories; disclosure to investors; and overcoming barriers to effective implementation. It draws on (i) existing relevant policy recommendations, including the IOSCO LRM Recommendations, the FSB Recommendations and the IOSCO Good Practices; (ii) a review of recent academic literature; (iii) the observed good practices of jurisdictions where funds currently use anti-dilution LMTs; and (iv) engagement with industry stakeholders and academics through roundtables and other outreach.

Responsible entities have the primary responsibility and are best placed to manage the liquidity of their OEFs. As such, the proposed guidance neither prescribes a specific calibration for each anti-dilution LMT nor specifies which tool should be used or when. Instead, it sets out key operational, design, oversight, disclosure and other factors and parameters that responsible

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<sup>11</sup> In this regard, the FSB OEF Assessment noted that, based on available data, there was a wide variation in how some anti-dilution LMTs (e.g., swing pricing) were applied during the COVID-19 shock in 2020.

<sup>12</sup> See related proposed revisions to FSB Recommendations. [Addressing Structural Vulnerabilities from Liquidity Mismatch in Open-Ended Funds – Revisions to the FSB's 2017 Policy Recommendations](#).

entities should consider when LMTs are used, with a view to promoting their greater, more effective and more consistent use. As the OEF sector is very diverse, there is no ‘one size fits-all’ solution regarding liquidity risk management, including the use of anti-dilution LMTs. Responsible entities are expected to exercise their sound professional judgement in the best interests of investors.

Reference to and discussion of relevant IOSCO LRM Recommendations will be included throughout this proposed guidance to help illustrate how the proposed guidance can support effective implementation of the IOSCO LRM Recommendations.

While quantity-based LMTs<sup>13</sup> and other liquidity management measures, such as suspensions, redemption gates, in-kind redemptions, side pockets and borrowing are not the focus of this proposed guidance,<sup>14</sup> responsible entities should always consider a broad set of LMTs, including anti-dilution LMTs, quantity-based LMTs and other liquidity management measures. Responsible entities should determine the most effective and suitable tools for the OEFs they manage, considering the characteristics of each OEF, prevailing market conditions and other relevant circumstances.

Lastly, as the structural features and liquidity management practices of exchange-traded funds (ETFs) and money market funds (MMFs) distinguish them from other OEFs,<sup>15</sup> the following guidance is not applicable to ETFs and MMFs.

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<sup>13</sup> Quantity-based LMTs operate by reducing the liquidity obligations of OEFs through delaying / deferring payments to investors. They are in practice a more exceptional form of intervention.

<sup>14</sup> As discussed above, following finalization of revisions to the 2017 FSB Recommendations, IOSCO will revisit the IOSCO LRM Recommendations, IOSCO Good Practices and this proposed guidance on anti-dilution LMTs as needed in 2024. This work may include consideration of revised recommendations or further guidance regarding quantity-based and other LMTs not covered by this proposed guidance.

<sup>15</sup> For example, see IOSCO (2021), *Exchange Traded Funds Thematic Note - Findings and Observations during COVID-19 induced market stresses* at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD682.pdf>. See, also, IOSCO (2023), *Good Practices Relating to the Implementation of the IOSCO Principles for Exchange Traded Funds, Final Report* at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD733.pdf>.

## Section II – Design and Use of Anti-Dilution Liquidity Management Tools

### *Overall Framework for the Design and Use of Anti-Dilution LMTs*

**Proposed Guidance 1:** Responsible entities should have appropriate internal systems, procedures and controls in place at all times in compliance with applicable regulatory requirements for the design and use of anti-dilution LMTs as part of the everyday liquidity risk management of their OEFs to mitigate investor dilution and potential first-mover advantage arising from structural liquidity mismatch in OEFs.

#### **Relevant LRM Recommendation(s)**

Recommendation 1: The responsible entity should draw up an effective liquidity risk management process, compliant with local jurisdictional liquidity requirements.

Recommendation 16: The responsible entity should put in place and periodically test contingency plans with an aim to ensure that any applicable liquidity management tools can be used where necessary, and if being activated, can be exercised in a prompt and orderly manner.

Recommendation 17: The responsible entity should consider the implementation of additional liquidity management tools to the extent allowed by local law and regulation, in order to protect investors from unfair treatment, amongst other things, or prevent the CIS from diverging significantly from its investment strategy.

As discussed above, when investors enter or exit an OEF, fund managers have to invest the capital received (in the case of net subscriptions) or access liquidity by selling assets to meet redemptions (in the case of net redemptions). Unless fund managers attribute the associated explicit and implicit transaction costs to subscribing or redeeming investors, remaining fund investors may suffer dilution, as the NAV per share or unit may be reduced by the amount of the transaction costs incurred.

To mitigate material dilution and to protect remaining investors, responsible entities should attribute the explicit and implicit transaction costs to entering or exiting investors with the use of anti-dilution LMTs to adjust the fund NAV or the final price to be paid / received by transacting investors. Anti-dilution LMTs also mitigate the potential risk, in particular under stressed market conditions, that investors may exit funds preemptively in order to receive a higher NAV that does not take into account the higher cost of liquidating the most illiquid assets within the OEF. This is particularly critical for daily dealing OEFs investing in less liquid assets, which could experience reduced liquidity under stressed market conditions.

To achieve the above, responsible entities should establish a detailed framework, as part of an OEF's overall liquidity risk management process and compliant with applicable regulatory requirements, to support the design and effective use of anti-dilution LMTs in both normal and stressed market conditions. The critical elements of such a framework include:

- (i) the types of anti-dilution LMTs to be used;
- (ii) appropriate calibration of liquidity costs (including a pre-set mechanism to exceed any disclosed ranges of price adjustment factors if necessary);
- (iii) appropriate activation thresholds;
- (iv) governance; and

(v) disclosure to investors.

Responsible entities should fully consider these elements and put in place corresponding internal systems, procedures and controls. By doing so, the framework should enable fund managers to methodically design their anti-dilution LMTs, estimate the liquidity costs, and evaluate circumstances for activating such tools in both normal and stressed conditions, as part of the day-to-day liquidity management of the OEFs they manage. The governance and ongoing review process would help ensure the selected anti-dilution LMTs are used as intended and provide information for future enhancements to their use. Appropriate disclosure to investors on the objectives, design and use of anti-dilution LMTs would enhance their awareness of these aspects and enable them to better incorporate the costs of liquidity into their investment decisions.

In addition, responsible entities should be able to demonstrate to authorities (in line with the authorities' supervisory approaches) how the above-mentioned framework is implemented, including how anti-dilution LMTs are and will be used.

Valuation is extremely important because an OEF must redeem and sell its units or shares at its NAV. Stale valuations may contribute to first mover advantage. For example, in a scenario of declining values of a fund's assets, if the fund's NAV does not adjust to fully reflect those declines in value, investors may seek to redeem before that adjustment is made.<sup>16</sup>

Independently of whether and how an anti-dilution LMT is to be applied, to ensure that the price quoted to an investor for redeeming / buying a unit or share is fair, responsible entities should calculate a NAV that represents the fair value of the assets the fund holds and in accordance with local regulations.

In this regard, IOSCO published the Principles for the Valuation of CIS in May 2013 with an objective to treat investors fairly.<sup>17</sup> If responsible entities cannot be confident that the assets are valued fairly or cannot reasonably estimate the cost of liquidity for these assets, especially in stressed market conditions, the use of quantity-based LMTs and other liquidity management measures (applied in accordance with local regulations), such as side pockets, suspensions, longer notice or settlement periods or reduced redemption frequencies, may be more suitable than the use of anti-dilution LMTs.<sup>18</sup>

The remainder of **Section II – Design and Use of Anti-Dilution LMTs** focuses on elements (i) to (iii) of the framework, while **Section III – Oversight of Anti-Dilution LMTs** and **Section IV – Disclosure to Investors About the Use of Anti-Dilution LMTs** discuss elements (iv) and (v) respectively. While the framework as described above is expected to be applicable to all responsible entities in principle, some of the critical elements may vary according to the nature of each OEF. Further details on such variations are provided below.

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<sup>16</sup> For further information see, for example, *IOSCO Best Practices Standards on Anti Market Timing and associated Issues for CIS*, available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD207.pdf>

<sup>17</sup> *IOSCO Principles for the Valuation of Collective Investment Schemes*, available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD413.pdf>

<sup>18</sup> See related proposed revisions to FSB Recommendations. [Addressing Structural Vulnerabilities from Liquidity Mismatch in Open-Ended Funds – Revisions to the FSB's 2017 Policy Recommendations](#).

## Questions for the Public Consultation

1. To what extent does the proposed guidance <sup>1</sup> help responsible entities to better integrate the use of anti-dilution LMTs within their existing liquidity risk management framework? Have all the critical elements been captured?
2. Do you agree with the proposed guidance <sup>1</sup> regarding the inclusion of anti-dilution LMTs within the daily liquidity risk management framework that OEF managers should have in place at all times?
3. Is this proposed guidance appropriate for all types of OEFs in its scope, and proportionate for all types of responsible entities to implement? If not, please explain.

### ***Element (i) – Types of Anti-Dilution LMTs***

**Proposed Guidance 2:** As part of their liquidity risk management framework, responsible entities should consider and use at least one appropriate anti-dilution LMT for each OEF under management to mitigate investor dilution and potential first-mover advantage arising from structural liquidity mismatch in the OEFs they manage.

#### **Relevant LRM Recommendation(s)**

Recommendation 1: The responsible entity should draw up an effective liquidity risk management process, compliant with local jurisdictional liquidity requirements.

Recommendation 17: The responsible entity should consider the implementation of additional liquidity management tools to the extent allowed by local law and regulation, in order to protect investors from unfair treatment, amongst other things, or prevent the CIS from diverging significantly from its investment strategy.

IOSCO has identified five anti-dilution LMTs adopted by OEFs in different jurisdictions globally. IOSCO's LRM Recommendations noted that anti-dilution levies and swing pricing, *“may be considered particularly appropriate where the fund invests in assets where investors may perceive an advantage in redeeming first. By ensuring that costs of transactions required to meet redemption requests are borne by the redeeming investors, these tools provide assurance to remaining investors and remove a potential incentive for investors to redeem.”* The IOSCO Good Practices also addresses anti-dilution LMTs, covering swing pricing, anti-dilution levies, and valuation according to bid or ask prices.<sup>19</sup> Further to these, IOSCO has also identified dual pricing and subscription / redemption fees as additional anti-dilution LMTs. Each of these anti-dilution LMTs provides for liquidity costs to be passed to transacting investors; the calculation of liquidity costs is further discussed in ***Element (ii)*** below.

- **Swing pricing:** refers to a process for adjusting a fund's NAV (typically calculated at mid-price) by applying a swing factor that reflects the liquidity cost stemming from net subscriptions or redemptions. All investors pay or receive the same swung price.
- **Valuation at bid or ask prices:** refers to an asset valuation procedure that switches from valuation at mid-price to valuation according to bid or ask-price, depending on the direction of net fund flows. Accordingly, the NAV is calculated based on bid-price when

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<sup>19</sup> *Open-ended Fund Liquidity and Risk Management – Good Practices and Issues for Consideration at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD591.pdf> p. 22-30.*



there are net outflows and based on ask-price when there are net inflows (a threshold may be set out). All investors pay or receive the same price.

- **Dual pricing:** refers to the calculation of two NAVs per valuation point. One way of implementing dual pricing is to calculate one NAV which incorporates assets' ask prices and the other NAV which incorporates assets' bid prices. Subscribing investors pay the NAV calculated using ask asset prices; redeeming investors receive the NAV calculated using bid asset prices. Another way of implementing dual pricing is to set an 'adjustable spread' around the fund's NAV under which assets are priced on a mid-market basis, with a bid price at which the fund redeems shares and an offer price at which the fund issues new shares. The difference between these two prices is known as the spread as estimated by the responsible entity, which could be dynamic to reflect the liquidity costs at prevailing market conditions.
- **Anti-dilution levy:** refers to a process whereby a variable levy / fee for the benefit of the fund is added to, or deducted from, the fund's NAV (typically calculated at mid-price), increasing the final price paid by subscribing investors or decreasing the price received by redeeming investors, to effectively pass on the liquidity cost. The levy can be based on the fund's net flows and the same levy may be applied to all subscribing / redeeming investors or, where possible, based on an individual investor's in / outflows and charged to each investor accordingly.
- **Subscription / redemption fees:** refers to a process whereby a fixed levy / fee is added to / deducted from the fund's NAV in case of subscriptions / redemptions.<sup>20</sup> The fee is charged to the transacting investors for the benefit of the fund<sup>21</sup> to cover the cost of liquidity. This tool may be particularly appropriate for funds that invest in assets that have fixed transaction fees, such as real estate agency fees or notary fees, and / or for funds that have low-variation transaction costs.

While anti-dilution LMTs generally attribute the estimated cost of liquidity to transacting investors by either adjusting the fund NAV or the final price to be paid / received by transacting investors, they vary in terms of calibration and responsiveness to the changes in market situations. As such, some anti-dilution LMTs may need to be adjusted or supported by other anti-dilution LMTs to account for larger liquidity costs, including any significant market impact expected to arise in changing market conditions, particularly in stressed market conditions.

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<sup>20</sup> The use of this type of fees for the benefit of the fund to cover the cost of liquidity is more common in the case of redemption. This may be because the fund has an obligation to honor redemption payments within a limited timeframe, whereas the time available for the fund manager to manage portfolio acquisitions to reduce potential dilution from subscriptions is more flexible. However, in the case of a large subscription, which may bring material dilution impact to the fund, anti-dilution LMTs such as a subscription / redemption fee should be used to attribute the cost of liquidity to the transacting investors to protect the interest of remaining investors.

<sup>21</sup> In some cases, subscription / redemption fees charged to investors may be retained by the fund managers or the intermediaries. Subscription / redemption fee structured in this manner is *not* regarded as an anti-dilution LMT as it does not mitigate the dilution impact on the existing / remaining investors in the fund resulting from the liquidity costs incurred by the subscribing / redeeming investors.

More specifically, subscription / redemption fees should be adjusted upward to account for larger liquidity costs or adjusted based on a tiered approach corresponding to the amount of net fund flows (akin to a tiered swing pricing approach as described on p.19 below). In addition, jurisdictional differences in OEF regulations, the operational environment and the distribution channel<sup>22</sup> may have a bearing on whether each of these tools is available or operationally feasible in a particular jurisdiction.

With respect to the above consideration, responsible entities should consider and use at least one anti-dilution LMT for each of the OEFs they manage, with a view to imposing on subscribing (in the case of net inflows) and redeeming investors (in the case of net outflows) the estimated cost of liquidity in both normal and stressed market conditions.<sup>23</sup> Subject to the guidance as set out in Element (ii), the selected anti-dilution tools may have to allow for adjustments or to be supported by other anti-dilution LMTs in stressed times to cater for different market conditions. Responsible entities are also expected to pass the benefit of the spreads, fees or levies arising from application of anti-dilution LMTs to the OEFs.<sup>24</sup>

### **Questions for the Public Consultation**

4. Has the proposed guidance identified all of the anti-dilution LMTs commonly used by responsible entities? Are there any other LMTs, that share the same economic objective of passing on the liquidity cost to transacting investors, that could be included in this guidance? If so, please describe them.
5. Are the identified anti-dilution LMTs described correctly? Do the features or characteristics of the different tools vary or do they generally operate as described?
6. Do you support the proposed guidance 2? If not, in which cases do you think it could be justified not to adopt at least one anti-dilution LMT in OEFs (other than ETFs and MMFs)? What elements do you take into consideration to choose a specific anti-dilution LMT for your OEFs ?

### **Element (ii) – Calibration of Liquidity Costs**

**Proposed Guidance 3: Anti-dilution LMTs used by responsible entities should impose on subscribing and redeeming investors the estimated cost of liquidity, i.e., explicit and implicit transaction costs of subscriptions or redemptions, including any significant market impact of asset purchases or sales to meet those subscriptions or redemptions.**

**Independently of the anti-dilution LMT used, responsible entities should be able to demonstrate to authorities (in line with the authorities’ supervisory approaches) that**

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<sup>22</sup> For example, some fund managers expressed that, when a fund is distributed by a third party (e.g., fund platform), applying anti-dilution levies may be more operationally burdensome, compared to swing pricing, because the third party would have to correct the price provided to fund investors by adding the anti-dilution levy to the fund NAV.

<sup>23</sup> The expectation is that responsible entities should have appropriate internal systems, procedures and controls in place that enable the use of at least one anti-dilution LMT as part of the day-to-day liquidity risk management of the OEFs they manage, even if such tool(s) would not always be in use.

<sup>24</sup> See *UK FCA Asset Management Market Study* (April 2018) for discussion of box profits at <https://www.fca.org.uk/publication/policy/psi8-o8.pdf>

**the calibration of the tool is appropriate and prudent for both normal and stressed market conditions.**

#### **Relevant LRM Recommendation(s)**

Recommendation 16: The responsible entity should put in place and periodically test contingency plans with an aim to ensure that any applicable liquidity management tools can be used where necessary, and if being activated, can be exercised in a prompt and orderly manner.

Recommendation 17: The responsible entity should consider the implementation of additional liquidity management tools to the extent allowed by local law and regulation, in order to protect investors from unfair treatment, amongst other things, or prevent the CIS from diverging significantly from its investment strategy.

Anti-dilution LMTs should pass on the estimated cost of liquidity to transacting investors. Fund managers have to estimate those liquidity costs to be incorporated in anti-dilution LMTs because the adjustment of the portfolio as a result of the net fund flow on a particular day may not take place before the calculation of the fund's NAV for that day. This guidance seeks to provide a common framework to calculate such cost to promote a more consistent approach on the use of anti-dilution LMTs for funds with similar characteristics.

#### ***Liquidity Cost Components***

The estimated cost of liquidity is generally defined as the transaction costs expected to be incurred by the fund to buy / sell a pro-rata slice of all assets in the portfolio, including the less liquid assets.<sup>25</sup> This does not mean a fund manager will always need to buy / sell a pro-rata slice, as fund managers need to make appropriate judgements to determine what the actual trading strategy should be in the best interest of all investors as a whole. This calculation approach aims to treat investors fairly by promoting a consistent approach in estimating the cost of liquidity irrespective of the actual assets that would be transacted or used to meet subscriptions / redemptions. .

In this regard, the liquidity costs are comprised of two components, namely explicit transaction costs and implicit transaction costs. The latter includes potential market impact.

#### ***Explicit Transaction Costs***

These are transaction costs that are explicitly charged to a fund for its acquisition or disposal of assets. They include brokerage fees, trading levies, taxes and settlement fees. They are generally stable in amount and quantifiable in advance of the transactions.

Responsible entities should be able to identify the types of explicit transaction costs that are applicable and calculate their approximate amount with a high level of certainty for each asset by using, for example, previous transactions, contractual arrangements they have in place with brokers, and referring to third parties, where appropriate, for confirmation.

#### ***Implicit Transaction Costs***

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<sup>25</sup> There are however cases where using a pro-rata approach to estimate the transaction cost is not possible: for example, for OEFs that allocate a significant proportion of their AUM in inherently illiquid assets, such as real estate OEFs and private equity OEFs. In these cases, a long notice period with a pre-determined discount of the NAV unit price to be received by redeeming investors, could be envisaged to protect remaining investors and reduce the risk of fire sales and first mover advantage.

These are transaction costs incurred indirectly upon acquisition or disposal of assets by a fund, with the bid-ask spread and market impact (*to be discussed next*) being the key components. These costs may vary depending on, among others, the asset in question and underlying market conditions. For example, bid-ask spreads may range from less than 10 basis points for some developed market equities in normal times, to more than 5% for high-yield corporate bonds in stressed market conditions.

In addition, the transparency of bid-ask spreads may vary across assets and their trading venues. For example, the bid-ask spreads for assets that are traded in centralized exchanges (e.g., stocks and futures) tend to be more stable and transparent. The bid-ask spreads for assets that are traded OTC (e.g., corporate bonds) may fluctuate more and may be less transparent.

When the information sources that responsible entities use to determine bid-ask spreads become less reliable or unavailable, particularly in stressed market conditions, they should use their professional judgement, trading experience and best efforts to arrive at a reasonable estimate, which should be typically larger than the costs incurred during normal times, and aim at a fair treatment of all investors.

Overall, depending on the OEF's underlying assets and market conditions, responsible entities should source bid-ask spread information from the relevant commercial data bases, directly from broker dealers, and / or use estimations based on comparable assets and / or historical data, with a view to obtaining reasonable inputs to calibrate anti-dilution LMTs. Some responsible entities use pricing models when the market price is not available. However, those models should be used with caution and be adjusted as appropriate to reflect generally larger liquidity costs under stress.

### ***Significant Market Impact***

Market impact is another implicit transaction cost incurred, in addition to bid-ask spreads, when a fund takes / supplies liquidity from / in the market to complete the trading necessary to meet a net fund flow. For example, when the transaction by an OEF is large in size relative to the market liquidity, part of the transaction may be executed outside the market 'screen price' and 'move' the market price because it takes up a considerable depth of immediately available liquidity (i.e., 'on-screen' liquidity).<sup>26</sup>

A reasonable input for the estimation of market impact could be to analyse previous transactions under similar market conditions to compare the difference between the price of the transaction when the order was placed (i.e., the original market 'screen price') and the final executed price. The difference between screen price and final price after reflecting all execution costs is sometimes referred to as 'slippage'. For example, for certain fixed income securities that do not trade regularly, the screen price is rather an invitation to trade than an executable price. More generally, there could be a considerable difference between screen price and actual transacted price in stressed market conditions.

Responsible entities should include significant market impact in the calculation of the cost of liquidity when calibrating the anti-dilution LMTs. In order to do so, an assessment (e.g., slippage assessment) is needed before the sale / purchase is made, taking into account the size

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<sup>26</sup> See, for example, ALFI Swing Pricing document, update 2022, p.14 at: [https://www.alfi.lu/getattachment/3154f4f7-f150-4594-a9e3-fd7baaa31361/app\\_data-import-alfi-alfi-swing-pricing-brochure-2022.pdf](https://www.alfi.lu/getattachment/3154f4f7-f150-4594-a9e3-fd7baaa31361/app_data-import-alfi-alfi-swing-pricing-brochure-2022.pdf).

of the transaction, asset class, market structure and the prevailing market conditions. Responsible entities should use their best efforts to make estimates based on analysis of previous transactions (in consultation with subject matter experts such as their trading desks) or relevant market data / models.

Once the market impact is estimated, fund managers should assess the materiality of the impact and whether it is appropriate to incorporate it in the calibration of the anti-dilution LMT, according to their own pre-set framework. Overall, the calibration of market impact is an iterative process due to the complexities involved and the forward-looking nature. It is expected to be improved over time based on experience gained by the fund managers and regular reviews to refine the calibration.

### **Questions for the Public Consultation**

7. Have the components of the cost of liquidity, as described above, captured all the relevant costs that should be considered when calibrating anti-dilution LMTs?
8. How does the cost of liquidity vary across different funds? To what extent could we achieve a more consistent approach to calibrating anti-dilution LMTs for similar funds, and what is the best way to do so?
9. How can significant market impact be incorporated in the calibration of all the proposed anti-dilution tools? Please provide examples.

### ***How Different Anti-dilution LMTs Incorporate the Cost Components***

All anti-dilution LMTs adopted should aim to attribute the cost of liquidity to transacting investors by including the explicit and implicit costs (including any significant market impact) mentioned in the previous section. In principle, there should not be any caps or restrictions that prevent anti-dilution LMTs from achieving this objective. Therefore, the calibration of anti-dilution LMTs should be adjustable when needed, even if a normal range of adjustment factors / fees is disclosed or set.

By design, the swing factor of swing pricing and the anti-dilution levies are often adjustable on a regular basis. As such, they are able to incorporate both the more stable explicit transaction costs and any implicit transaction costs that are contingent on market conditions, including significant market impact. Therefore, they are useful anti-dilution LMTs for OEFs that invest mainly in assets with market-contingent liquidity costs. However, responsible entities may need the relevant expertise and operational set-up to enable their use.

Dual pricing (based on bid or ask prices) or valuation at bid / ask are more useful to OEFs that invest mainly in assets whose liquidity costs are mainly comprised of the bid-ask spread, as the fund's adjusted NAV would already reflect that spread in normal times. However, any significant market impact or explicit transaction costs, would need to be accounted for separately, either by additional adjustment to the NAV or via other (anti-dilution) LMTs.

Alternatively, if dual pricing is designed with the 'adjustable spread' approach as explained in Element (i), this would enable dual pricing to be more dynamic and reflect liquidity costs at prevailing market conditions, akin to swing pricing or anti-dilution levies. That said, this may require a similar level of expertise and operational set-up for implementation.

For subscription / redemption fees, the liquidity cost calibration tends to be more static than the other anti-dilution LMTs identified by IOSCO and they are hence more appropriate to capture explicit transaction costs that are known beforehand and any implicit costs that are

stable. Subscription / redemption fees may well be useful for OEFs that have constant or low-variation transaction costs in normal market conditions. In any case, subscription / redemption fees should be calibrated conservatively (i.e., set at higher levels) and should allow upward adjustments in response to changing market conditions, particularly during stressed times, to reflect the higher cost of liquidity.<sup>27</sup>

These attributes are crucial to achieving the objectives of anti-dilution LMTs (i.e., to mitigate dilution and potential first mover advantage), especially when used by daily-dealing OEFs that mainly invest in less liquid assets. Otherwise, managers should adopt another anti-dilution LMT in combination with subscription / redemption fees or adopt quantity-based LMTs or other liquidity management measures under stressed market conditions.

### **Questions for the Public Consultation**

10. Can all of the components of the cost of liquidity (i.e., explicit and implicit transaction costs including any significant market impact) be incorporated in all five anti-dilution LMTs as set out in the discussion of Element (i) above? If not, what are the limitations to doing so and how would you suggest improving the effectiveness of these anti-dilution LMTs?
11. To what extent can a subscription / redemption fee achieve the objective of addressing the investor dilution issue and financial stability concern of OEFs by attributing the liquidity costs to transacting investors? How could it be appropriately calibrated to achieve this objective?

### ***Disclosed Ranges of Liquidity Cost Adjustment***

Some responsible entities may disclose a normal range of liquidity cost adjustment (e.g., a range of swing factors or anti-dilution levies) to be applied, which may help set the expectation on anti-dilution LMTs' effect and may satisfy a regulatory disclosure requirement in some jurisdictions. While such disclosure is beneficial to investor communication and may also help reduce the incentive to redeem due to first mover advantage, the range should not be regarded as a cap or restriction that would prevent anti-dilution LMTs from achieving their objectives to pass the relevant liquidity costs to transacting investors.

Therefore, where such parameters are disclosed, responsible entities should put in place mechanisms to allow a larger adjustment beyond the disclosed ranges if necessary to sufficiently cover the costs of liquidity (including any significant market impact), particularly in stressed market conditions. An example would be to include a clause in the fund documentation that explicitly states that the ranges of liquidity cost adjustment could be exceeded on an exceptional basis.

### ***Expectations on the Level of Confidence and Sophistication of Estimations***

As bid-ask spreads and market impact cannot be calculated definitively ex-ante, the overall cost of liquidity to be incorporated in anti-dilution LMTs is expected to be estimated on a best-effort basis. Under normal market conditions, the cost of liquidity could usually be estimated with a high level of confidence. Under stressed market conditions, transaction costs may

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<sup>27</sup> Conservatively calibrated subscription / redemption fees could be effective in mitigating potential dilution impact in OEFs. Such practice may also be useful in jurisdictions where there are operational hurdles to obtaining timely fund flow information for assessing dilution impact to be incorporated in anti-dilution LMTs.

become more unpredictable and econometric models may not be fit for purpose. In such cases, it would be appropriate for responsible entities to rely on expert judgement to account for uncertainty based on available information.

Independently of the type(s) of anti-dilution LMT(s) used, responsible entities should be able to demonstrate to authorities that their calibration is appropriate and prudent for both normal and stressed market conditions, taking into account the best interests of investors. This should be supported by a strong liquidity risk management framework, which should include periodic back-testing and strong governance.

The degree of sophistication of the estimation is expected to be commensurate with the fund's overall portfolio profile, such as fund size, complexity of strategies, types of asset classes and their market liquidity, investment sectors, redemption terms and conditions of the OEF, as well as the overall liquidity risk management framework.<sup>28</sup> Responsible entities should also document how judgement and discretion were applied and review their models regularly to continuously improve their estimations. The review should take into account experience of past stress events as well as the results of liquidity risk assessments and stress testings.

### **Examples of Good Practices**

#### **Calculation of Significant Market Impact**

Market impact could be calculated for each asset in the portfolio (i.e., bottom-up approach), using previous transaction data to model the calculation. Back-testing is used a posteriori to enhance the accuracy of that model over time.

Alternatively, in particular when under stress or when adequate data is not available, the discounts required by the market in asset sales may be estimated based on a representative sample of assets which, in the case of fixed income, could be done by type of asset (e.g., public or private debt, sector, rating, priority level, etc.) or, in the case of equities, could be based on information from transactions carried out or observed in the market for similar volumes (especially through block transactions).

In the early stages of adopting an anti-dilution tool, fund managers could start by relying on simple models to estimate the implicit costs, including the market impact, then gradually move to more advanced models using their historical transactional data.

When using dual pricing, estimated transaction costs for buying and selling can be applied to the respective bid and ask valuations, so it should be possible to adjust these to include the market impact estimates.

#### **Tiered Swing Pricing Approach**

Some managers use a tiered swing pricing approach by pre-setting and applying a progressively increasing swing factor based on the net fund flow amount and market conditions. For example, when the net fund flow is less than x% of the OEF's NAV, the swing factor to be

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<sup>28</sup> For clarity, it may be appropriate for a large OEF or an OEF with a complex investment strategy / portfolio to use a simple calibration model for their anti-dilution tools, if such a model is consistent with the OEF's overall portfolio profile, liquidity risk management framework and local regulatory guidance.

applied is set to be less than  $y\%$ . When the net fund flow exceeds  $x\%$ , the swing factor will be adjusted upward accordingly to an appropriate level (which is higher than  $y\%$ ). The same mechanism could apply based on market conditions (e.g., market volatility). This approach facilitates a clear and systematic implementation of anti-dilution mechanisms while taking proportionality into account.

### Questions for the Public Consultation

12. Do you see benefits in a tiered approach to attributing the cost of liquidity by using different adjustment factors according to net fund flow, market conditions and characteristics of the funds? Are there any operational difficulties? Any further comments thereto?
13. How could guidance on LMT calibration achieve a fair balance between (i) ensuring investors have a clear expectation of the cost of liquidity they could be charged and (ii) ensuring responsible entities have enough flexibility to attribute the overall cost of liquidity at all times, especially under stressed market conditions?
14. Is the proposed approach regarding ranges of liquidity cost adjustment appropriate? If not, how could it be improved?
15. Is the proposed expectation on the level of confidence and the sophistication of liquidity cost estimations appropriate? If not, how could it be improved?

### ***Element (iii) – Appropriate Activation Threshold***

**Proposed Guidance 4: If responsible entities set thresholds for the activation of anti-dilution LMTs, those thresholds should be appropriate and sufficiently prudent so as not to result in any material dilution impact in the fund.**

#### **Relevant LRM Recommendation(s)**

Recommendation 8: The responsible entity's liquidity risk management process must be supported by strong and effective governance.

Recommendation 16: The responsible entity should put in place and periodically test contingency plans with an aim to ensure that any applicable liquidity management tools can be used where necessary, and if being activated, can be exercised in a prompt and orderly manner.

Recognising that OEFs provide investors with the benefits of collective investing, investors in OEFs should also collectively bear the reasonable costs of investing via such vehicles. As such, they should expect to share transaction costs as well as other costs of the OEF as long as such costs are not disproportionate. In this regard, while proper procedures are expected to be put in place to enable the use of anti-dilution LMTs as part of the ongoing liquidity management, such LMTs are not necessarily expected to be activated at all times.

It is appropriate for responsible entities to set different levels for the activation of anti-dilution LMTs for each OEF they manage. The activation threshold should be set appropriately and prudently so as not to result in any material dilution impact in the fund if it is set too high, taking into account factors such as the OEF's AUM size and portfolio characteristics (including the investment strategy and asset liquidity), estimated cost of liquidity (as defined under Element (ii) above), investor profile and historical fund flows. If it is set too low, it can create unnecessary costs for both transacting and remaining investors and increase the volatility of the OEF's NAV.



For example, some OEFs may adopt a partial swing pricing mechanism, which is activated only when net subscriptions or net redemptions are greater than a pre-determined threshold. This threshold can also be based on the cumulative flows registered in a pre-determined period. In that case, the swing adjustment will be activated the day when the cumulative flows exceed that threshold. The activation thresholds in respect of net fund flows for OEFs investing in less liquid assets should be set more conservatively, compared to OEFs investing in more liquid assets, as less liquid assets usually involve relatively higher liquidity costs.

Another type of partial swing pricing is the tiered swing pricing model, where the OEF's NAV is adjusted based on multiple pre-determined thresholds and factors. Depending on the pre-defined inflow / outflow threshold breached, the OEF applies a different swing factor. OEFs may use different factors for subscriptions and redemptions or have several differently tiered factors, depending on the asset class, fund size and market conditions. The tiered approach potentially reflects the trading curve better by taking into account different potential dilution impacts when trade sizes vary. In addition, it may help to reduce the opportunity for some investors to try to 'game' the use of swing pricing, as smaller fund flows can also trigger its use. The tiered approach also facilitates the use of swing pricing during the whole life of the fund from its inception, and under both normal and stressed market conditions (also see the *Box* above for example).

Both approaches can be applied when using other anti-dilution LMTs such as anti-dilution levies.

Alternatively, an activation threshold can be set in terms of the estimated liquidity cost of the assets in which the OEF invests. For example, in times of market stress and when that estimated liquidity cost exceeds a pre-determined level, the anti-dilution LMT will be activated independently of the total amount of flows.

The appropriateness of the activation threshold for each OEF should be subject to ongoing review, taking into account changing market conditions. For example, some OEFs may adjust their activation threshold (even reducing it to zero) during market stress to account for the increase in estimated liquidity costs and apply the anti-dilution LMT independently of the amount of flows.

### **Questions for the Public Consultation**

16. What are the appropriate factors to consider in setting the activation threshold so that anti-dilution LMTs will be activated for any subscription / redemption activities with material dilution effect? How would you define 'material dilution effect'? Why and how could it vary across different funds?
17. Does the use of an activation threshold introduce the risk of trigger / cliff-edge effects? How could trigger / cliff-edge effects be avoided? Could the tiered swing pricing address the trigger / cliff-edge effect?

## Section III – Oversight of Anti-dilution LMTs by Fund / Manager Boards and Depositaries

### *Element (iv) - Governance*

**Proposed Guidance 5: Responsible entities should have adequate and appropriate governance arrangements in place for their liquidity risk management processes, including clear decision-making processes for the use of anti-dilution LMTs.**

#### **Relevant LRM Recommendation(s)**

Recommendation 8: The responsible entity's liquidity risk management process must be supported by strong and effective governance.

Recommendation 15: The responsible entity should ensure appropriate records are kept, and relevant disclosures made, relating to the performance of its liquidity risk management process.

Recommendation 16: The responsible entity should put in place and periodically test contingency plans with an aim to ensure that any applicable liquidity management tools can be used where necessary, and if being activated, can be exercised in a prompt and orderly manner.

The LRM Recommendations 8, 15 and 16 highlight the importance of governance for an effective liquidity risk management process, for example by establishing independent oversight, appropriate escalation procedures, periodic review and proper recordkeeping. The same applies to the effective use of anti-dilution LMTs. In particular, responsible entities should regularly review and refine the factors applied in the calibration of anti-dilution LMTs against the characteristics of an OEF, expected redemption patterns and prevailing market conditions so that the use of anti-dilution LMTs is effective in achieving the intended objectives. Responsible entities should incorporate the following guidance into the governance arrangements of the OEFs they manage.

#### **Governance Committee**

The responsible entity should have adequate and appropriate arrangements for internal governance of the use of anti-dilution LMTs. The objective is to ensure that anti-dilution LMTs are applied in accordance with the internal procedure and that extraordinary decisions to reflect changing market situations can be made in a timely and efficient way, especially in a stressed situation, taking into consideration external stakeholders such as fund administrators and distributors.

To achieve that, the internal governance arrangements should include at least the following elements: (i) objective criteria (e.g., activation thresholds) for the application of anti-dilution LMTs; (ii) methodology, including calibration,<sup>29</sup> of anti-dilution LMTs; (iii) parties involved (e.g., senior management, risk management, administration, etc.), their respective functions and responsibilities as well as how these parties should be coordinated; (iv) sources of information and data used; (v) controls to be carried out (including reviews on the use of anti-dilution LMTs) and their frequency; (vi) documentation of recommendations and decisions

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<sup>29</sup> The calibration should set out how all relevant explicit and implicit costs of subscriptions / redemptions (including any significant market impact of asset purchases / sales) should be taken into account.

made about the use of anti-dilution LMTs and the basis of them; (vii) escalation processes and (viii) oversight by the governing body.

These arrangements should be commensurate with the portfolio profile (e.g., fund size, complexity of strategies, types of asset classes, investment sectors, etc.) of the funds under management and be properly documented. The governance framework should also foresee adequate approval levels for the internal procedure to ensure there are no unwanted or inappropriate modifications.

In this regard, an internal governance committee, bringing together the various parts of the business that have an interest in fund pricing, would be appropriate for most responsible entities. Such a committee might be dedicated to oversight of anti-dilution LMTs, or it might have broader responsibilities (e.g., for oversight of all aspects of liquidity risk management or have responsibility to seek fair outcomes for investors).

The exact composition of any internal governance committee should be appropriate to the size and organization of the responsible entity, bearing in mind any potential conflicts of interests, and the characteristics of the OEFs managed by it.<sup>30</sup> If the portfolio manager is not a member of the committee, the responsible entity should have a process in place to keep the portfolio manager informed of decisions about the use of anti-dilution LMTs and to require the manager to give proper weight to them when making investment decisions.

### ***Skills, Knowledge and Data***

The internal governance committee should ensure that persons of suitable seniority, who individually or collectively possess adequate skills and knowledge, are involved in decisions about the use of anti-dilution LMTs.

The internal governance committee should have an informed understanding of, or reliable data about, all relevant aspects of the OEFs under management by the responsible entity to support its recommendations / decisions, for example:

- The liquidity profile of the portfolio of each fund, in particular its exposure to less liquid or illiquid assets based on the analysis of relevant factors such as volumes traded, days to trade, valuation certainty and the number of intermediaries that quote bid / ask prices;
- The investor profile of the fund(s);
- Historical and predicted inflows / outflows of cash;
- The current state of the market(s) for the assets held, including current bid-ask spread information, executed prices and differences with quoted bid-ask prices;
- Assessments of the ability to execute transactions in underlying instruments, in terms of likely market impact of transacting in average / above-average lot sizes;
- Liquidity stress testing data; and
- Operational readiness to apply or adjust relevant anti-dilution LMTs, both for the responsible entity itself, its delegates / agents, and others in the distribution network.

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<sup>30</sup> The oversight arrangements are expected to be commensurate with the operations of the responsible entity including its size and nature of the OEFs (e.g., their size and complexity) it manages. In some cases, the oversight may be performed by an individual.

## ***Committee Recommendations and Decisions***

Recommendations and decisions of the internal governance committee should be appropriate for each OEF under management, having regard to its individual profile (e.g., investment strategy, investor profiles, nature, size and complexity) and circumstances. This may result in different factors / calibrations being applied to different OEFs in different situations.

All recommendations and decisions made by the internal governance committee on the use of anti-dilution LMTs should be properly documented. For example, the responsible entity should keep a record of the days on which the adjustment to the NAV was made or should have been made, the basis and the supporting documentation of the decisions adopted (whether or not the adjustment factor was finally applied).

## ***Review and Escalation Processes***

The internal governance committee should conduct both ex-ante and ex-post reviews on the use and calibration of anti-dilution LMTs on a sufficiently frequent basis and in a documented manner, having regard to the frequency of dealing in shares / units. For example, risk management procedures should set a minimum frequency at which arrangements will be reviewed. The responsible entity should consider whether to specify, in its procedures, thresholds for trigger events that would automatically trigger an escalation or cause a review to be carried out, e.g., a market movement above a certain percentage, or a dealing order above a certain percentage of fund assets.

Ex-ante reviews could enable LMTs to reflect frequent changes in market conditions, dealing trends and portfolio investment decisions. There should be an escalation process in circumstances when liquidity is becoming more stressed, to ensure that oversight arrangements are promptly stepped up. Contingency plans (e.g., specific operational arrangements for stressed market conditions) should also be in place and tested periodically to ensure LMTs can be used in a prompt and orderly manner.

Ex-post reviews of decisions / recommendations against data (i.e., back-testing) could enable senior management to assess how effective LMTs were in practice and to make informed future decisions on the use of anti-dilution LMTs (including the calibration of adjustment factors and whether actual dilution occurred). Such ex-post reviews could include, for example:

- An assessment of the execution quality of transactions in portfolio assets carried out following a particular dealing point,<sup>31</sup> comparing the adjustment factors (which reflect the cost of liquidity) with the actual dealing prices achieved with a view to improving estimates of market impact for future trading;
- An assessment of the implementation of anti-dilution LMTs during the fund valuation process, for example, by reviewing the causes for anti-dilution LMT related NAV errors: incorrect swing factors, prices swung in the wrong direction, failure to apply a swing where the criteria for doing so were met, etc. with a view to improving implementation effectiveness;

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<sup>31</sup> Thereby, risk management may be able to leverage from work done and data gathered from other departments, in particular, best execution checks on trades performed by compliance.

- Comparisons of portfolios, pre- and post-execution of significant investor redemptions, with particular focus on the portfolio's 'bucket' of least liquid assets and the pricing thereof, to treat redeeming and remaining investors fairly.

### ***Reporting to Senior Management or Board***

The oversight process should result in adequate and timely management information being produced and reported to the senior management / board of the responsible entity. The board should consider this information and appropriately address any weaknesses that have been identified.

The content and amount of management information to be produced and the arrangements for who considers it should be decided in a proportionate way, taking account of the size of the responsible entity, the characteristics of the OEFs it manages (e.g., their size and complexity) and the levels of management within its corporate structure. Such arrangements should however ensure that the most senior level of management explicitly considers liquidity risk management processes on a periodic basis, making use of relevant management information when doing so, in order to satisfy itself that the processes are adequate and are operating in the best interests of the funds and their investors. This might also be done with review reports from the internal audit function.

### ***Depositary and External Auditor Roles***

Where an external third party, such as a fund depositary or external auditor, has duties of oversight of the responsible entity's valuation, pricing and dealing processes, they should periodically review the effectiveness of the processes put in place for the use of anti-dilution LMTs.

A depositary or auditor may have a role in independently checking the calculation of unit prices and / or the relevant governance framework, for example to ensure that they are calculated within parameters set by national regulation. It is not expected that these third parties would need to carry out additional real-time checks at each dealing point in line with these recommendations, but rather on an ex-post basis. The review might be done through direct testing of samples or a review of the responsible entity's own back-testing controls.

The resulting report of findings should be considered by the responsible entity's board alongside internal management information. It may be useful for such reports to be shared with the responsible entity's regulator.

### **Questions for the Public Consultation**

18. Do the proposed arrangements discussed above include all the essential elements regarding governance and oversight arrangements in relation to the use of anti-dilution LMTs? Are they proportionate to the differing size and complexity of responsible entities' fund ranges?
19. Please describe any material factors of the governance and oversight arrangements which have not been included.

## Section IV – Disclosure to Investors about the Use of Anti-dilution LMTs

### *Element (v) – Disclosure to Investors*

**Proposed Guidance 6:** Responsible entities should publish clear disclosures of the objectives and operation (including design and use) of anti-dilution LMTs to improve awareness among investors and enable them to better incorporate the cost of liquidity into their investment decisions and mitigate potential adverse trigger effects.

#### **Relevant LRM Recommendation(s)**

Recommendation 7: The responsible entity should ensure that liquidity risk and its liquidity risk management process are effectively disclosed to investors and prospective investors.

LRM Recommendation 7 sets out guidance on disclosure related to the general LRM process as well as the design, use and implications of LMTs. Transparency of anti-dilution LMTs is important to investors and careful consideration is needed on the extent and timing of information to be provided to them, to strike an appropriate balance between transparency and the efficacy of the tool. It is important that the level of transparency is appropriate (i) to help investors better incorporate the liquidity cost into their investment decisions and (ii) to avoid any unintentional counter-productive effect (e.g., any trigger effects which may lead to pre-emptive redemptions by investors or any actions taken by investors to game the mechanism and thereby reduce the effectiveness of the anti-dilution LMTs). This is relevant both in terms of investor protection and financial stability.

Investors should be given enough information prior to investing in the OEF to enable them to have a good understanding of the implications of anti-dilution LMTs, which facilitates investors' incorporation of liquidity costs into their investment decisions. Investors subscribing to or redeeming from the OEF should be aware in broad terms of the liquidity profile of the portfolio and be prepared to bear the liquidity cost associated with portfolio transactions and passed on to them through the use of anti-dilution LMTs.

The relevant OEF constitutional document (such as the prospectus) should disclose the anti-dilution LMTs that may be applied, the basis on which they may operate and the objective and implications of the mechanisms. The disclosure should indicate that the main purpose of anti-dilution LMTs is to facilitate fair treatment of investors by protecting the ones that remain invested from bearing the costs generated by the subscription and redemption activities of others. In particular, the fund documents should set out details of the constituents of the costs taken into account to calculate the adjustment factor, including the calculation or estimation basis. The disclosure may also differentiate between the contexts of normal and stressed market conditions.

Some OEFs disclose a range of adjustment factors, in particular those applicable under normal market conditions, to facilitate investors' understanding of the potential implications of anti-dilution LMTs or to satisfy disclosure requirements in some jurisdictions. This benefits investor communication and may discourage any potential first mover advantage. However, such a range should not limit the ability of anti-dilution LMTs in sufficiently passing on liquidity costs to transacting investors. In this regard, where a range of adjustment factors is disclosed, to the extent permitted in relevant jurisdictions and OEF constitutional documents, disclosures should also state that such a range may be exceeded to allow for changes, if necessary, to reflect

higher liquidity costs in changing market situations. The circumstances under which such a range may be exceeded should also be disclosed.

Periodic ex-post disclosures of an OEF's historical use of anti-dilution LMTs may (i) help investors understand the potential cost implications of redeeming from, and subscribing to, an investment fund at different points in time; and (ii) enhance the ability of oversight by authorities or other stakeholders. Such periodic disclosure could be included in the investment fund's annual or semi-annual financial statements or websites. Consideration is also required of what information should be disclosed to investors at the time they submit a subscription or redemption request and after such a request has been executed.

However, there may be concerns that the disclosure in public reports of the actual adjustment factors that have been used by OEFs could result in stigma effects or front-running which may jeopardize the effectiveness of anti-dilution LMTs. For example, a manager may anticipate that the adjustment factors applied historically will become a selection criterion for investors, which may incentivise applying an arbitrarily low factor that does not appropriately reflect the full cost of liquidity. Disclosing a range of thresholds and factors that have been used, rather than specific figures, or delayed disclosure after application, could help to mitigate this risk.

### **Examples of Good Practices**

Guides and / or FAQs could supplement legal disclosure to provide information in a language accessible to all investors.

The prospectus disclosures should provide for the possibility to go beyond the disclosed ranges of adjustment factors under certain, predefined conditions. In exceptionally stressed market conditions, fund managers may wish to set a temporary anti-dilution factor that goes beyond the ranges disclosed in the prospectus. In this case, communication should be made to investors through the usual communication channels, such as the ordinary notice to investors, through the fund's internet website, or another way as disclosed in the prospectus.<sup>32</sup>

A fund manager may also publish the average swing factors applied for all their funds in their website in the previous year.

### **Questions for the Public Consultation**

20. Is the ex-ante information described above likely to be appropriate and effective in explaining the use of anti-dilution LMTs to investors? What other information about dilution, if any, might be helpful to investors before they invest in a fund?
21. What information can (and should) be disclosed ex-post to investors or the public, and at what frequency, to enhance transparency without compromising the aims of the anti-dilution LMTs or creating unintended consequences? Further, how soon should this information be disclosed to investors?
22. Are there other risks than those described in this section attached to the disclosure of the parameters used for anti-dilution tools?

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<sup>32</sup> Based on the CSSF experience of the Covid-driven market turbulence in the year 2020. please refer to the CSSF's FAQ on swing pricing available at [https://www.cssf.lu/wp-content/uploads/FAQ\\_Swing\\_Pricing.pdf](https://www.cssf.lu/wp-content/uploads/FAQ_Swing_Pricing.pdf)

## **Section V – Overcoming Barriers and Disincentives to Implementation of Anti-dilution Liquidity Management Tools**

Responsible entities should put in place measures to enable LMTs that are permitted under applicable laws and regulations to be used promptly and in an orderly manner. However, there are some challenges and disincentives associated with the use of anti-dilution LMTs. These can be grouped into two types: negative perceptions regarding the use of anti-dilution LMTs and market-wide structural or operational barriers to their use.

### ***Negative Perceptions***

There may be ‘stigma’ / reputational / commercial concerns as the design and implementation of anti-dilution LMTs could impact negatively the relationship between managers and their investors.

Under normal market conditions, it has been raised that OEFs implementing such tools could face difficulties in attracting new investors for two main reasons:<sup>33</sup>

- First, some investors fear that they might be penalised more than warranted by the imposition of existing liquidation costs. To some extent, certain investors, particularly retail investors, may also perceive liquidation costs as extra costs and therefore prefer not to invest in funds implementing anti-dilution LMTs.
- Second, dilution adjustment in fund prices can increase an OEF’s tracking error (when compared to a benchmark / index) and make the fund prices more volatile.

Thus, such ‘stigma effect’ may discourage an OEF from implementing anti-dilution LMTs if its peers do not.

### ***Market-wide Structural and Operational Barriers***

The second type of barrier relates to costs and operational challenges in the employment of anti-dilution LMTs:

- Fund managers are likely to face costs to implement anti-dilution LMTs, especially during the initial design and preparation phase. Besides some ongoing fixed costs, for instance those charged by fund administrators, auditors or data providers, fund managers may face upfront costs related to the development of anti-dilution LMTs (model developments, IT costs to automate processes).
- The use of certain anti-dilution LMTs may require the cooperation of third parties, such as fund administrators or accountants. These parties may not have the expertise or the resources enabling a proper implementation of the anti-dilution LMTs. This may also result in an increase in operational risks, attached to the activation of anti-dilution LMTs: while these risks could be reduced by automation of managers’ processes, they may still occur from the activities performed by third-party entities they engage.
- In some jurisdictions, the inclusion and use of certain anti-dilution LMTs, despite their availability, may face market-wide operational barriers such as the need for substantial reconfiguration of current distribution and order-processing practices in order to have

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<sup>33</sup> See the Financial Conduct Authority Occasional Paper 48, May 2019. Available at: <https://www.fca.org.uk/publication/occasional-papers/occasional-paper-48.pdf>



reliable net fund flow data as an input to the calculation of liquidity cost. Intermediaries may not communicate fund flows to the fund managers until after the responsible entity has calculated the NAV of the OEF, meaning that the fund managers may have to determine the NAV (including whether to apply swing pricing) before knowing the inflows and outflows with reasonable certainty. The current processes of intermediaries therefore introduce delay or complexities in implementing anti-dilution LMTs in these jurisdictions.

- Apart from a lack or delay of fund flow data, there may also be a lack of relevant data (e.g., reliable bid-ask spread information). These barriers make the calculation of dilution adjustment factors particularly challenging.
- Operational issues are more likely to surface under stressed market conditions, as fund managers may face the need to recalibrate their anti-dilution LMTs at a more sustained pace (for instance, recalculating the dilution adjustment factors and sharing it with fund administrators).

### ***Potential Solutions***

If OEFs adopt at least one anti-dilution LMT and the investor disclosures are enhanced, the above-mentioned negative perceptions could be alleviated. Some managers are of the view that proper use of anti-dilution LMTs have potential benefits on the OEF's performance. It is expected that the use of these LMTs will become market practice which will result, with time, in standardisation and automatisisation of processes.<sup>34</sup> This could also reduce some of the operational barriers such as operational costs and operational risk associated with manual processes.

In addition, responsible entities could adopt other measures to facilitate the greater use of anti-dilution tools, for example:

- further investor education to raise awareness about the role of anti-dilution LMTs and the rationale in favour of their appropriate use;
- closer communication with intermediaries and service providers such as administrators in designing anti-dilution LMTs to enable effective implementation of such tools; and
- ongoing review of the use of anti-dilution LMTs to inform possible improvements to their effectiveness over time.

Close communication and engagement between responsible entities and authorities may also help to identify any potential issues (e.g., regulatory hurdles) that may prevent effective use of LMTs, and facilitate formulation of solutions to such issues.

Nevertheless, market-wide barriers such as certain market structures or lack of appropriate systems of fund service providers would be more difficult for individual fund managers to overcome. These would require complex solutions to be implemented by parties other than fund managers.

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<sup>34</sup> For example, over the years Luxembourg's industry body, ALFI, has attempted to standardize swing practices, enabling its consistent application and leading to a relatively high adoption rate. The 2022 survey is available at [https://www.alfi.lu/getattachment/8417bf51-4871-41da-a892-f4670ed63265/app\\_data-import-alfi-alfi-swing-pricing-survey-2022.pdf](https://www.alfi.lu/getattachment/8417bf51-4871-41da-a892-f4670ed63265/app_data-import-alfi-alfi-swing-pricing-survey-2022.pdf)

## **Questions for the Public Consultation**

23. Do you agree with the list of barriers and disincentives identified? Do you consider there are others that are not covered?
24. In your view, what are the most significant barriers or disincentives to the implementation of anti-dilution LMTs? What are your suggestions for possible solutions to mitigate or overcome the barriers and disincentives to the implementation of anti-dilution LMTs?
25. For those OEFs facing significant barriers, what are the implications for their ability to implement this guidance? Are adjustments needed to the guidance to account for this, bearing in mind the objective to mitigate dilution for investor protection?
26. Do you have any other comments on any guidance proposed in this document?