



association of the
luxembourg fund industry

| **guidelines**

SWING PRICING

Update 2022

Table of contents

Introduction, terms of reference and key principles	5
Scope and terms of reference	5
Key principles	5
Benefits of swing pricing	5
Definitions of key terms	6
The pros and cons of swing pricing	9
Advantages	9
Limitations	9
Primary considerations associated with applying swing pricing	10
Full versus partial swing pricing	10
Determination of the swing threshold and swing factor	12
Determination of the swing threshold	12
Determination of the appropriate swing factor	13
Governance	15
Swing pricing policy	15
Periodic verification of the swing factor and thresholds	15
Transparency and disclosure	16
Disclosure in fund documentation	16
PRIPs and MiFID II	17
Key investor information document (KIID)	17
Official NAV	17
Operational considerations	18
Operational considerations	18
Capital activity	18
Operational elements to consider	18
Recording the swing factor	19
Fund mergers	20
Other recommendations	21
Contributions and redemptions in kind	22
Launch of a new fund	22
Launch of a new share class	23
Liquidating funds	23
Swing errors	23
Investment fund structures	25
Basic principles	25
Funds with a single share class	26
Funds with multiple share classes	26
Master-feeder fund structures	26
Fund of funds structures	27
Pooling	27
Summary	28

Table of contents

Performance considerations	29
Pricing and the impact on performance	29
Risk assessment	29
Competitor and peer performance analysis	29
Fund performance reporting	29
Internal fund performance reporting	29
Performance fee calculations	29
Tax reporting	30
Financial reporting	31
Financial reporting	31

This is the third edition of the document that has been compiled by the ALFI Swing Pricing Brochure working group. The group collated the revisions from a series of meetings with practitioners operating swing pricing and through the comprehensive ALFI 2022 Swing Pricing survey of Luxembourg asset managers. This has resulted in a series of revisions and modifications to reaffirm key principles, including regulatory change, to reflect evolutions in working practice and to provide clarification on a number of areas such as governance, disclosures and error compensation.

Scope and terms of reference

The primary purpose of this paper is to provide insight and guidance concerning swing pricing, with consideration as to its advantages, operation and limitations relevant to both those considering adoption of a swing pricing programme and also to established practitioners. It is not, however, within the terms of reference of the group to consider the pros and cons of swing pricing relative to other methods of dealing with dilution. Moreover, the ALFI Swing Pricing and Anti-Dilution Committee has not been asked to recommend swing pricing, or any other method, as an industry standard. Equally there is no intention to mandate the use of swing pricing. Should an asset manager decide to implement swing pricing, the document intends to provide practical guidance relating to the key elements to be considered and to recommend standards of best practice as endorsed by ALFI.

Key principles

The purpose of swing pricing is to provide reasonable protection to existing shareholders in a fund against the negative dilution impact occurring when a fund invests/disinvests in securities as a result of shareholder activity. This is achieved by ensuring that the net asset value (NAV) that shareholders transact at

includes the estimated transaction costs. In a fund structure with multiple share classes, while capital activity is performed at the level of share classes, swing pricing is normally applied at the level of the fund for all share classes given that the portfolio of investments is managed at the level of the fund

Swing pricing is part of the NAV calculation process and, as such, it should be subject to an appropriate internal policy, governance and transparency as well as a strong control environment. There should be appropriate documentation, particularly of any exceptions to the swing pricing process.

For the purpose of this document a sub-fund is referred to as a fund.

Benefits of swing pricing

Swing pricing is applied for the ultimate benefit of fund investors by countering the dilution effect of investor activity. Studies have shown that swing pricing protects shareholders in the long term from suffering the costs of investment/disinvestment as a result of investor activity.¹ Swing pricing helps preserve investment returns enabling funds that apply swing pricing to show superior performance over time compared to funds (with identical investment strategies and trading patterns) that do not employ anti-dilution measures.

In addition, swing pricing could act as a deterrent to short-term speculative investors as their investment will potentially need to have increased by more than twice the value of the swing factor for any gain to be realised. Investors that trade at a swung price are effectively paying the portfolio dealing costs and related impacts associated with their transaction. The method of applying swing pricing to the traded NAV price of funds is not applied for the benefit of the fund's agents or service providers, but solely to protect existing investors' interests.

¹ BIS Working Papers No 664 - <https://www.bis.org/publ/work664.pdf>

Definitions of key terms

Capital activity	Net value of subscription, redemption and switch orders received by the transfer agent for a single fund on any one trading day
CSSF FAQ	The CSSF Swing Pricing Mechanism FAQ (the current version 4 is dated 17 August 2021; however, the latest version as available from the CSSF should always be consulted)
Dilution	The reduction in value of a fund, and hence NAV per share, that occurs as a result of capital activity dealt at a NAV that does not fully reflect the impact of investment/disinvestment associated with security trades undertaken by the investment manager
Dual-priced fund	A fund which calculates one price for subscribers, derived from underlying security offer prices, and another price for redeemers, derived from underlying security bid prices, and in each case potentially the related market costs
Full swing	In the case of full swing the NAV is adjusted each time there is capital activity, irrespective of its size or significance to the fund. The direction of the swing is determined by the net capital activity of the day.
Partial swing	In the case of partial swing the NAV is swung only when a predetermined net capital activity threshold (the swing threshold) is exceeded at each dealing day. As with full swing, the direction of the swing is determined by the net capital activity of the day. Partial swing can also be referred to as semi-swing pricing. For consistency, “partial swing” will be used throughout this document.
Single-priced fund	A fund which calculates one single NAV per share which is used for all capital activity regardless of whether inflow or outflow.
Swing factor	<p>The swing factor is the amount (normally expressed as a percentage) by which the NAV is adjusted in order to protect existing investors in a fund from dilution caused by securities trading following capital activity. The swing factor is applied as a result of capital activity exceeding a pre-defined threshold (for partial swing), or of any capital activity (for full swing).</p> <p>The swing factor can also be referred to as impact adjustment. For consistency, “swing factor” will be used throughout this document.</p>
Swing threshold	The level of net capital activity, expressed as a percentage of the NAV or an absolute monetary value, or both, required to trigger the swinging process where partial swing pricing is employed. Factors influencing the determination of the swing threshold are described in the section “Determination of the swing threshold”.
Unswung NAV	The unswung NAV is the NAV without application of a swing factor.

Dilution

When an investor subscribes into or redeems from a fund, that transaction is valued as at the fund's valuation point.

When the related cash proceeds are invested in/disinvested from underlying securities, the purchase or sales price of each underlying security may be at values different to those used in the valuation. This is dilution, and without an effective anti-dilution mechanism the financial impact is felt not by the subscriber/redeemer creating the dilution, but by all existing fund shareholders. There are two main causes of dilution: timing and value.

Timing

If portfolio management are able to invest/disinvest the relevant cash amount around the time of the fund valuation point, then an overall value similar to that in the NAV on which the investor deals may be achieved and any potential dilution due to timing may be mitigated. However, if i) portfolio management are unable to invest/disinvest at that time, perhaps because cash forecasts of net subscription/redemption activity are unavailable or not possible at that time or ii) the underlying securities markets are closed or illiquid at that time, then a dilution primarily due to timing can occur.

Value

Dilution in value can occur because the single NAV price at which investors buy and sell the fund shares reflects only the value of its net assets. It does not consider bid-offer spread to invest/disinvest the capital activity, or transaction charges, taxes, commissions or anything that would otherwise dilute the position of existing shareholders, e.g. the potential market impact caused by securities trading or any potential liquidity discounts incurred by the fund upon selling securities.

The greater the volume of investor activity in a fund, the more important the need for an effective anti-dilution mechanism. Swing pricing looks to achieve reasonable protection at fund level against dilution in value in a single-priced fund. It is not designed to address specific shareholder transactions nor to provide 100% protection.

Swing pricing provides a mechanism to attribute the estimated cost of underlying capital activity to those subscribing/redeeming and thereby protects existing shareholders from impacts caused by the capital activity of others.

The pros and cons of swing pricing

In deciding whether or not to introduce swing pricing to a fund or a fund range, there are various factors that should be taken into

consideration. The principal advantages and disadvantages of this anti-dilution mechanism are summarised below.

Advantages

- Is a straightforward, well-established and cost-effective anti-dilution technique to apply to single-priced funds;
 - Protects against dilution at the fund level;
 - Reduces the drag on performance from capital activity and therefore protects existing investors;
 - Can act as a deterrent against frequent trading activity;
 - Can act as a deterrent against market timing activity;
 - Can act as a deterrent to first-mover advantage
- In a liquidity-challenged environment, quoted bid-offer spreads would widen and may not be representative of executed prices achieved in the market. In such a circumstance swing pricing could be a useful process, in the context of a toolkit of measures, to help navigate the situation in the interests of shareholders. (This was particularly noticeable, as reflected in the ALFI Swing Pricing Survey 2022, during March 2020 when many practitioners using swing pricing in their funds were reviewing factors and thresholds on a daily basis due to the impacts on the market of the Covid pandemic.)

Limitations

- As swing pricing is applied on capital activity at the level of the fund it does not address the specific circumstances of each individual investor transaction;
 - Swing pricing may appear complex or non-transparent to those investors still unfamiliar with the process;
 - Swing pricing may increase performance volatility in the short term as expressed in the accounting NAV calculation;
 - Ordinarily swing factors are limited in amount by the fund prospectus although these prospectus caps may be exceeded in line with the CSSF FAQ. Swing pricing can
- be seen as part of an overall solution but would likely need to be supplemented with other prospectus powers.
- Despite certain limitations, swing pricing has become a highly successful and widely used anti-dilution practice. It can be adopted by single-priced funds in tight daily business cycles and also aligns to shareholder interests over the longer term.
- It is worth noting that while swing pricing is particularly relevant to single-priced funds, dilution can also occur in a dual-priced fund to the extent that the spread between the fund's bid and offer NAV does not reflect all the underlying costs of investment/disinvestment.
-

The pros and cons of swing pricing

Primary considerations associated with applying swing pricing

Consideration should be given as to whether swing pricing is the most appropriate anti-dilution method for the characteristics of the fund in question and the asset class(es) that it invests in. If it is decided that swing pricing is the appropriate mechanism for a given fund, the following should be considered:

- Can estimated net cash flows be robustly determined, in time and in a format that can be consumed by operational processes?
- Are appropriate and robust data sources, including trading data, available to incorporate into the calculation of the swing factor?
- Is full or partial swinging most appropriate for the fund in question?
- Once the decision is made to apply swing pricing, what is the appropriate swing factor for a particular fund?
- If partial swing is adopted, what is the appropriate swing threshold for a particular fund?
- Would multiple thresholds and multiple swing factors be appropriate? If yes, under which circumstances?
- What are the appropriate procedures, processes and controls governing swing pricing generally and in the case of special events, such as stressed markets or specific fund events?
- What level of disclosure and transparency is appropriate?

Full versus partial swing pricing

Although the use of full or partial swing pricing is often initially considered during the original swing pricing analysis, this however may also evolve throughout the lifetime of the fund. It is therefore listed as a separate step for the purpose of this section. The relative merits of full versus partial swing are considered below.

When considering which approach is the most appropriate, it is important to strike the right balance between investor protection (e.g. percentage flows captured and level of dilution protection), operational effectiveness, transparency, short-term NAV volatility and tracking error, board and investor expectations and portfolio management considerations.

In certain circumstances, and with consideration for shareholder composition, full swing pricing may be a more appropriate choice.

Generally, swing pricing operates such that once the net capital activity can be reasonably estimated, the NAV is swung using one of the following methods:

a) Full swing

The price is swung on every dealing date on a net deal basis regardless of the size of the net capital activity.

Principal advantages of full swing pricing

- Can be somewhat easier to explain to investors
- Means consistent treatment of shareholder transactions on all dealing dates
- Always benefits the fund
- Less risk of potential arbitrage

Principal disadvantages of full swing pricing

- Greater NAV volatility to benchmark as the price is swung on each day where net dealing occurs

(However, if a fund is constantly growing, the NAV will always trend to price on an offer basis (and vice versa for a shrinking fund). Consequently, if a fund is consistently experiencing net capital activity in one direction, full swing could

actually reduce NAV volatility while still appropriately protecting the fund.)

- Small net capital flows may not require the investment manager to trade in the short term, . The costs incurred in operating the process could, on some days, exceed the dilution saved
- Increased risk of swinging the NAV the wrong way due to the late capture of capital activity or an error in processing shareholder transactions

b) Partial swing

The NAV is swung only when the net capital activity exceeds a predefined threshold known as the swing threshold. This is the most commonly applied swing pricing method employed by Luxembourg market participants.

Principal advantages of partial swing pricing

- As the price is not swung on each valuation date there is normally a lower impact on NAV volatility to benchmark

- Is a well-established operational process in the Luxembourg market

- Aligns conceptually as it focusses on relatively large capital activity where material dilution is most likely to occur

- As the capital activity must exceed the swing threshold before the NAV price is swung, there is a lower exposure to NAV miscalculations as a result of operational errors compared to using full swing

Principal disadvantages of partial swing pricing

- Requires additional policy considerations and processes to determine and monitor appropriate thresholds

At a high level, the key questions to consider are equal treatment of investors, the relationship between capital activity and underlying investment activity, levels of dilution protection, operational complexity and the ease of understanding for investors.

Determination of the swing threshold and swing factor

Determination of the swing threshold

In determining an appropriate swing threshold it is often relevant to first consider the desired level of shareholder activity that should be subject to the swing process, and thus the target level of investor protection for the fund – given that the aim is to provide reasonable protection against dilution.

Set the threshold too low and characteristics of full swinging will become apparent, e.g. there may be operational risk considerations concerning the accuracy of flow estimates and the fund may swing every day, bringing an increase in accounting volatility.

Set the threshold too high and the fund may swing so infrequently that the mechanism may not achieve its aims in providing reasonable protection to the fund and its shareholders.

It is also relevant to consider the timing and levels of investor capital activity, both historic and prospective (if available). By way of example, funds with infrequent net capital activity and/or insubstantial net flows may require a different approach to those with daily net capital activity and/or substantial net flows.

There are different ways to consider the determination of the threshold levels, e.g.

- Consistent threshold levels across all funds in an umbrella or fund complex may be desirable;
- There may be a wish to consider the liquidity of the underlying securities (e.g. higher threshold for highly liquid securities, lower threshold for less liquid securities); which could result in different thresholds for each fund;
- will one single threshold per sub-fund or multiple/tiered thresholds be applied;
- if single thresholds are applied, is there an expectation that these will vary.

Multiple/tiered thresholds –that is a set of “tiered” swing thresholds each with its own corresponding swing factor. For example, a 2% net inflow may trigger a 10bps swing to offer, while a 10% net inflow may trigger a 50bps swing. The aim of multiple thresholds is to

have more representative swinging. Funds will swing more often, but on average by less. The swing factor for the highest threshold triggered that day is applied to the whole fund.

There are advantages of multiple thresholds: they are more reflective of the trading curve, with each threshold triggering a different swing factor in order to take account of differences between overall costs and dilution on small security deals (typically with low spreads) and very large deals (typically with much larger spreads and where **market impact** can occur). They can also reduce the opportunity for investors to attempt to arbitrage the swing pricing process.

Conversely, multiple thresholds add additional complexity for shareholders to understand, can be operationally complex to apply and consequently involve higher risk. Consideration should therefore be given to the level of automation and/or scalability available to support the higher complexity. Ongoing oversight and control will be important, and appropriate contingency and agility of application in stressed circumstances should be considered.

A threshold policy should be established which would state for example that a net capital activity greater than x% of the fund NAV would trigger swing pricing. Alternatively, monetary thresholds can be used, or a combination of both, although all three are possible the most common is the percentage threshold.

Considerations influencing the determination of the swing threshold may include

- The type of threshold (percentage, monetary or a combination);
- will single or multiple/tiered thresholds be applied;
- The fund size;
- The fund client base and its concentration;
- The type and liquidity of securities in which the fund invests;

Determination of the swing threshold and swing factor

- The costs, and hence the dilution impact, associated with the markets in which the fund invests (although this will principally impact the factor);
- The investment manager's investment policy and the extent to which a fund can retain cash (or near cash) as opposed to always being fully invested;
- Consistency considerations within a fund complex - whether consistency of thresholds could be achieved without affecting the effectiveness of the swing pricing mechanism;
- The accepted level of client net capital activity for which transaction costs can be absorbed by the fund;
- Soft closure measures on capacity-constrained funds, for example a fund closed to new subscriptions but which has contractually agreed to continue to accept small regular savings plan amounts;
- The frequency of the threshold review, and any specific triggers to review;
- Transparency considerations.

Determination of the appropriate swing factor

The swing factor is determined by assessing those transaction and market impacts expected to be incurred as a result of investing or disinvesting the net capital activity for that day.

The bid-offer spread is a key component to be included in the swing factor. If bid and offer prices of underlying securities are not available, then an estimate of the bid-offer spread applicable to the market in which the securities are traded may be reasonable.

Additionally, the following could be considered when deriving the swing factor:

- Broker commissions paid by the fund on an actual or historical basis;
- Custody transaction charges on an actual or historical basis;
- Fiscal charges (e.g. stamp duty, sales tax, transactions tax either on the security or on the currency required to purchase the security), any initial charges or exit fees applied to trades in underlying investment funds, where applicable;
- Market impact (see below);
- Share class specific items, e.g. if there is a notable cost specific to one particular class;
- Any swing factors, dilution amounts or spreads applied to underlying investment funds or derivative instruments.
- Passive vs active investment: there may be little or no price impact for security trading in respect of certain passive investing funds, particularly those using synthetic replication;
- Potential tiering of the swing factor to reflect the size of the net capital activity thus taking account of the sliding scale of broker costs associated with trade size: for example, larger trades might result in better broker arrangements. However, you should also consider that very large trades in an active fund will likely cost more overall because of i) market impact and ii) the risk to the broker of being unable to contract for the other side of the position and having to hold the position at least overnight;
- Taking account of the swing factor components outlined above, it is perfectly conceivable that the swing-to-offer factor and the swing-to-bid factor can be asymmetric: this is because the components identified may only be relevant depending on whether the portfolio manager is purchasing or selling portfolio assets. For example, UK stamp duty is only incurred if purchasing UK securities and as such should only be

considered as part of the swing-to-offer factor upon a net inflow into the fund.

- Scalability and agility of the review process, methodologies and communication flows: should be considered – in unusual situations (e.g. significantly stressed market conditions, can swing factors be appropriately reviewed and updated in a timely fashion?);
- Operational processes relating to application of swing factors as part of the NAV calculation process.

Some considerations where **market impact** is included in the swing factor:

Market liquidity is not a free good and it has a cost. Market impact is effectively a key element (and often the most significant element) of this cost. When an investor comes into or out of a pooled fund, they generate the requirement for the fund to undertake market transactions. Only on rare occasions (for small deals or in very liquid markets) will those transactions be completed at the market “touch spread” or “screen price” without that price moving to reflect the market activity. Market impact therefore measures the impact on the NAV calculation of a fund after allowing for the completion of all trading required to meet a flow, recognising the fact that the trading will not necessarily be transacted at the same prices as those used in the NAV calculation.

When considering how to estimate market impact, a close liaison with the traders executing portfolio management decisions will be required.

It could be that implementation shortfall (sometimes called slippage) is already

estimated. Implementation shortfall is the difference between the price at the time of a decision to buy or sell a security and the final price achieved after all execution costs. It therefore includes market movement between the time of the trading decision and order execution. Understanding and analysis of implementation shortfall at fund level, over a period of time, could yield an understanding of likely market impact.

Alternatively, it could be that the trading department of the investment manager has information of a level of sophistication that could estimate, based on previous activity, the probable price impact upon individual securities and thereby funds, dependent upon different flow levels, and this information could yield an understanding of likely market impact.

Use of Third-Party vendors may assist with certain data sources.

In estimating market impact, it is preferable to have processes that estimate the cost of buying or selling a complete slice of the portfolio rather than only focusing on the actual trading that may have taken place in a period.

In the event that trading is automated then consideration should be given to extraction of the necessary data for these purposes when the system is being designed.

In stressed market conditions, there may be a clear difference between screen price and actual trading price.

More than one data source may be required to arrive at a reliable estimate which should regularly be back-tested for accuracy.

As for any NAV calculation-related process, strong governance needs to be put in place around swing pricing. And as with all governance frameworks, clear documentation of roles and responsibilities is key.

A governing body needs to be established, under final responsibility of the fund board of directors. It could be the fund board, the management company as delegated by the fund board, a swing pricing committee, or any other grouping.

Approved terms of reference or equivalent documentation should define the extent of powers delegated, membership of the governing body, frequency of meetings and nature and frequency of reporting responsibilities. There should be a clearly documented swing pricing policy, which could, but does not have to, be incorporated into the terms of reference. Meetings and decisions should be appropriately documented, with a critical focus on any variations from application of the standard policy.

Swing pricing policy

It is recommended that the points made by the CSSF FAQ be taken into consideration when drafting the swing pricing policy and/or processes and/or procedures (hereinafter simply referred to as “policy”). In addition, the following should also be considered

- The policy should be consistently applied, and processes outlined therein should be embedded in the fund NAV calculation process;
- The key principles relating to the application of swing pricing : eligible funds, partial/full swing, single/multiple factors, single/multiple thresholds, elements to be included in the calculation of swing factors, practice concerning disclosures, basis for calculation of certain elements (e.g. swung NAV or unswung NAV).
- The policy should be broad enough to allow the co-existence of different criteria and arrangements;
- The circumstances should be set out under which the swing factor applied may exceed the maximum level laid down in the prospectus and related internal and regulatory communication and approval processes;
- The treatment of material swing errors, in line with CSSF Circular 02/77, and of immaterial swing errors, in line with the CSSF FAQ ;
- The contingency procedures , – that is, consideration should be given to what, if any, additional processes and procedures may be invoked during an emergency situation, such as a global pandemic (e.g. a more frequent review and/or review process for swing factor/threshold changes, “fire drills”, special sub-committees);
- Escalation procedures and processes should be set out.

Periodic verification of the swing factor and thresholds

It is recommended that the swing factor be regularly reviewed (e.g. on a monthly or quarterly basis) and back-tested (e.g. in light of actual transaction costs or spreads incurred by the funds) to ensure reasonability, and that it be revised as and when necessary. The objective is to ensure that the swing factor is consistent with the fund’s investment profile,

the markets in which it invests and the various cost components.

Similarly, swing thresholds should be reviewed in a periodic manner (at least on an annual basis), to ensure that they remain relevant and that the swing pricing process achieves its objectives.

Transparency and clarity of information is critical for investors. However, a key concern is not to provide too much information that might lead to behaviour intended to circumvent the purpose of swing pricing. For example, if partial swinging is used and information concerning the level of thresholds were to be freely available, a large

and frequent trader may be able to determine the probability that the price will swing and thereby attempt to avoid application of the swing factor by trading just below that level. Therefore, certain details, such as the level of thresholds may remain confidential to ensure that such information cannot be used to the detriment of the fund.

On that basis, and although the principles of swing pricing are disclosed to investors, certain details may remain confidential to ensure that this information cannot be used to the detriment of the fund, although, as swing pricing decisions are based on net capital activity, the risk of investors successfully arbitraging a threshold are limited.

Certain categories of investors, e.g. UK defined contribution schemes, may require disclosure of swing examples and factors associated after the transaction. Where such increased transparency is being provided, it is essential to consider fair and equal treatment of all shareholders.

A fund considering a partial swinging process, using multiple thresholds and swing

factors for each fund, may have different challenges concerning transparency. In a multiple threshold environment, the one-step threshold is replaced by a range of thresholds, which reduces the opportunity for arbitrage. Accordingly, in a multiple-threshold environment there may be less concern with transparency concerning the range of thresholds used. Conversely, with respect to swing factors in a multiple-threshold and swing factor environment, the range of swing factors could be commercially sensitive information, indicative of the investment manager's contracting capabilities. The release

of this information to trading counterparties may lead to deterioration in dealing terms as the counterparties seek to profit from this information at the cost of underlying investors. It is therefore likely that, in the best interests of investors, managers will wish to retain a level of confidentiality over this information.

With regards to the swing factor, a challenge may exist for those building an element of market impact into the swing factor as, depending on how it is achieved, this could be considered commercially sensitive information which, if made public, could be used to the detriment of the fund.

Nevertheless, concerning swing factors generally, in a world of increasing transparency, it is becoming more common to provide the swing factor applied to impacted or potential investors upon request.

Disclosure in fund documentation

A question therefore arises regarding the amount of information that should be provided in the fund constitutional documents, prospectus, financial statements and/or supplementary information.

Prospectus / Articles of Association, it is recommended that the points addressed in

the CSSF FAQ regarding disclosures² to be made in the Fund Articles of Association and Prospectus be taken into consideration. The annual and semi-annual report of a UCI should provide for a description of the swing pricing mechanism. Please refer to the section "Financial reporting" and the CSSF FAQ for full details.

² See point 1, 2 and 3 of the CSSF Swing Pricing Mechanism FAQ – https://www.cssf.lu/wp-content/uploads/FAQ_Swing_Pricing.pdf

PRIIPs and MiFID II

Regulation (EU) No 1286/2014 on packaged retail and insurance-based investment products (PRIIPs) and Directive 2014/65/EU on markets in financial instruments (MiFID II) introduced a requirement to report transaction costs from investment funds to retail and institutional investors. Such cost disclosure includes implicit, explicit and anti-dilution components as per the below formula:

Transaction costs = (implicit transaction costs + explicit transaction costs) – anti-dilution or anti-dilution applied or anti-dilution compensation

Swing pricing compensates the transaction costs from capital activities, so that long-term investors do not bear the transaction costs of other shareholders investing/disinvesting. Hence if a fund is applying swing pricing, it can deduct the amount of the swing applied from the transaction costs formula for PRIIPs and MiFID II reporting.

Asset managers should consider the level of connectivity necessary between their transaction cost calculation model under MiFID II/PRIIPs and their swing pricing model to seek to avoid inconsistencies in reporting.

Key investor information document (KIID)

As the European Directive 2009/65/EC, the Commission Regulation (EU) 583/2010 and the CESR (Committee of European Securities Regulators) papers in relation to the content of the key investor information documents (“KIIDs”) do not refer to swing pricing, it should not be disclosed in the KIID. In accordance with (article 3 of) the Commission Regulation (EU) 583/2010, no information or statements other than those specified in this Regulation may be included in the KIID.

The [ALFI UCITS KIID Q&A](#) address the question of whether swing pricing must be disclosed in the charges table, the answer to which is no. Swing pricing is not a charge but an adjustment in the NAV at which shares in the UCITS may be traded. Being a pricing model, it is not an essential feature of a fund in the sense required by the Commission Regulation (EU) 583/2010. However, as such it must be described in the fund prospectus.

Official NAV

While market practice is to report only one NAV – the swung NAV – for shareholder dealing, external performance and comparison purposes, the unswung NAV can have certain purposes:

- Performance fees should be exclusively based on the unswung NAV;
- Depending on the sequence of the NAV calculation process, AuM-based fees, where applicable, may also be calculated based on the unswung NAV

so that the swing factor is the very last adjustment recorded in the NAV before its publication;

- Certain investors or regulators may have an interest in the swung and unswung NAV;
- The unswung NAV may be considered as a more relevant basis for internal performance measurement as well as for risk management purposes (e.g. back-testing of Value at Risk).

Operational considerations

Operational considerations

Swing pricing is now a standard product offering from fund administrators in Luxembourg with, as per the ALFI Swing Pricing Survey 2022, continued increasing adoption. Nevertheless, when assessing the use of swing pricing, we recommend that the fund administrator be consulted to understand and contribute to the operating model design.

The application of swing pricing should be mechanistic, part of the fund's accounting policies and triggered on a consistent basis. However, under exceptional circumstances, such as described within the section "Fund mergers", the swing pricing governance body

may waive or alter the application of swing pricing on a given day or for a given period provided that such waiver is in the best interest of shareholders. Consideration should be given to the implications on the production and dissemination of NAV prices to ensure that there are no adverse consequences for recipients further down the process chain (e.g. late publication or incorrect content). NAV delivery will typically be dependent upon the times set for deal cut-off and the valuation point. A critical operational process required by swing pricing is the availability of estimates of the day's capital activity from the transfer agent at or soon after the valuation point.

Capital activity

A swing pricing model requires the estimated capital activity for a fund to be known before determining whether to swing the NAV price on any particular dealing day. Unit orders are more problematic to value than consideration-based orders and normally require that their value is estimated using the last available NAV price. The consolidation of capital activity on any given day may be time-consuming depending on the number of orders received by the transfer agent. As this information is required before it can be determined whether or not to swing the NAV of the fund, this may delay the completion of the pricing process.

Sufficient time should be allowed between the order cut-off time and the fund NAV release to calculate the day's capital activity and the swung NAV prices. These additional steps required for the operation of swing pricing may prolong the overall time required to complete the pricing and valuation process and could lead to delays in the release of investor order confirmations and the publication of NAV prices. However, in a well-established swing pricing process, this is simply a standard component part in the overall daily valuation cycle.

Operational elements to consider

- As both factors and thresholds are reviewed periodically, an effective communication channel should be put in place between the governing body approving the changes and the departments (or outsourced administrators) applying the changes in practice.

- Even if some of the markets in which the fund invests are closed, preventing the investment manager from trading on a given dealing day, swing pricing should be applied as it is investor activity that

triggers swing pricing and the amount will subsequently be invested/disinvested.

- In terms of fair-value pricing and interaction with swing pricing, it is recommended that the swing factor be applied to the fair valued NAV;
- In the case of funds of funds and funds investing in other single-priced securities, the NAV should have a swing factor equivalent to the entry and exit charges or costs of acquisition or disposal, where applicable.

Recording the swing factor

Generally, swing pricing operates such that once the net capital activity can be determined for a given dealing date and the swing pricing process is triggered, the NAV of all of the fund's share classes (in the case of a multi-share class fund) is swung on the following basis.

- Net inflows: the price used to process all shareholder transactions is adjusted upwards by the swing factor to a notional offer price;
- Net outflows: the price used to process all shareholder transactions is adjusted downwards by the swing factor to a notional bid price.

There are three main approaches to determine the amount by which the NAV is swung once the swing process is triggered as outlined below. In all cases, it is essential to engage with the fund administrator to understand its operating model.

In all approaches it is normal to first calculate an unswung NAV using the standard method as defined in the prospectus, and then, when flows exceed the threshold, apply the swing factor to arrive at the swung NAV. This often means that the underlying securities should be valued using mid-prices, although other methods may be used, such as valuing portfolios at bid or offer.

The detailed operational process adopted is often linked to fund administrator systems capability.

Other regular methods include:

- Value the underlying securities at mid-price and then accrue an absolute monetary amount in the fund NAV representing the percentage swing to bid or offer as a one-line adjustment in the valuation, to be reversed the next business day;
- Value the fund normally as per the fund prospectus, which may be at mid-price, then if the fund swings, revalue all of

the underlying securities to bid if the fund swings to bid, or revalue all of the underlying securities to offer if the fund swings to offer, and apply a swing factor which then only includes transaction costs. This in effect means fully recalculating the NAV based on the direction of the swing;

- Use the fund accounting engine to generate only unswung NAVs, and should the fund swing, then the swung NAVs are calculated by an accounting process additional to and apart from the normal valuation process which records only the unswung position.

In the first two methods above, accounting for the swing process is integrated into the funds daily NAV calculation engine.

Whichever accounting process is adopted it will need to be sufficiently robust to successfully navigate the typically short time frames available to complete accounting for the swing in the daily NAV calculation. From a practical perspective, the determination of a swing factor can evolve very quickly in line with market conditions, e.g. implementation or removal of non-market costs such as taxes or duties, or decreased market liquidity (i.e. increased spreads). In March 2020, linked to COVID 19 and increased market volatility, a greater frequency of review, including daily, was observed. It is recommended that the governing body in charge of swing pricing has structures in place to allow for early identification of such significant instances and be able to react quickly, as required, in the best interest of shareholders.

It is also recommended that the governing bodies in charge of swing pricing valuation and security pricing, if separate, maintain close links including exchange of information generally, but particularly in times of extreme market conditions and significant market events.

All methods of accounting for the swing factor are valid; there will be no material difference to the fund NAV.

The principal advantages and disadvantages are set out below:

	One-line adjustment in the fund accounting system	Revaluation of portfolio securities to bid or offer	Outside of fund
Advantages	<ul style="list-style-type: none"> ■ Fund accounting NAV is the same as dealing NAV ■ Integrated in the core accounting system ■ Quicker than the revaluation method 	<ul style="list-style-type: none"> ■ More precise bid/offer valuations by security used rather than overall estimates 	<ul style="list-style-type: none"> ■ No impact to variable expenses or performance fees ■ Parallel processing possible so less impact to NAV delivery ■ The net benefit for the fund can easily be tracked by reference to the fund-level swing adjustment
Disadvantages	<ul style="list-style-type: none"> ■ Potential impact to NAV delivery due to sequential processing requirements ■ Variable expenses (incl. performance fees) not based on the swung NAV would require separate calculation to base them on the unswung NAV ■ Might require financial statements adjustments ■ When the absolute monetary amount is deducted/added back to the NAV on the day after the swing adjustment, the performance is not constant due to market movements 	<ul style="list-style-type: none"> ■ More complex operational implementation than the one-line adjustment method ■ Impact to NAV production timeline ■ Variable expenses are based on hybrid swung NAV 	<ul style="list-style-type: none"> ■ Fund accounting NAV is not the same as dealing NAV ■ Requirement to make fund level adjustment when processing capital activity ■ Additional operational process

As noted above, the three methods are equally valid, and the method selected will largely be dependent on workflows, system limitations and, if applicable, any restrictions in the fund governing documents regarding the basis of charging NAV-based fees.

It is recommended that, in all cases, appropriate records be maintained regarding swing decisions made, flows supporting the swing decisions, swing factors used and unswung NAVs (where applicable).

Fund mergers

The precise circumstances of each merger should be considered on a case-by-case basis to assess the appropriateness of the following guidelines for the fair and equal treatment of shareholders. For an investor, a merger results in the receipt of shares of the absorbing fund in exchange for its shares in the merging fund, and the merger ratio for this will be based on the respective NAV of both funds. It is thus important that the NAVs are calculated, where possible, using the same valuation principles.

If the absorbing fund does not need to swing on the merger date, e.g. as there is no other shareholder capital activity, the value of the securities of the merging fund does not need

to swing, although the cash portion might be considered for the determination of the swing event. A hands-on approach is required with the fund administrator, as this is usually known late in the day.

Where the NAV of the absorbing fund is swung on the merger date, the NAV and value of the assets of the merging fund will be adjusted by a similar swing factor in the same direction to that applied by the absorbing fund. This has the effect of valuing the NAV and the assets of both funds in a consistent manner. In practice, this neutralises the impact of swing pricing on the shareholders of the merging fund by recognising that the investment manager of

the absorbing fund may not have to trade securities as a direct result of the merger.

Where the merging fund cannot be swung, it is recommended to consider other provisions in the fund prospectus to achieve the same result, such as the use of alternative valuation principles or the ability to calculate a second NAV for the purpose of the merger.

Points to consider that may modify the method employed.

- Where possible and appropriate, aligning the portfolio of the merging fund to that of the absorbing fund prior to the merger should be considered to reduce impacts in the merging fund (post-merger impacts, operational risk).
- If the portfolio of the merging fund has not been aligned to the portfolio of the absorbing fund on the merger date, there will be costs associated with the necessary portfolio transactions in the absorbing fund.
- If the fund manager does not intend to sell the securities contributed, the swing pricing governing body may decide to waive the application of swing pricing for this particular transaction.

If the investment manager is required to sell most or all securities, then it may be appropriate to include the value of the assets to be merged in the swing pricing decision process of the absorbing fund, taking into account what swing pricing model the absorbing fund is using (partial/full).

Where the merging fund's portfolio consists mainly of cash, depending on its significance to the absorbing fund, it may be more appropriate to deduct from the value of the assets to be merged a best estimation of actual trading costs that will be incurred in the absorbing fund as a result.

Provided that the articles and prospectus allow this, the absorbing fund may wish to be closed to shareholder dealing on the merger date to avoid swing considerations altogether. This may however be detrimental to existing shareholders and perceived negatively as shareholder liquidity is reduced.

To reduce operational risk, it may be an option to switch off the swing pricing process in the absorbing fund on the merger date. It should be noted that if there are any other large flows into/out of this fund, investors might not be protected from dilution. However, if a decision has been made to close the funds to shareholder dealing and if the portfolios are aligned, then there is no need for a swing process.

Other recommendations

It is important to understand the fund administrator's operational swing pricing mechanism to assess the operational risk and the best approach to consider.

In all cases, it is recommended that shareholders of both the absorbing and absorbed fund be informed of the principles

to be applied and any associated costs in the shareholder letter informing them of the merger.

It is recommended that the swing factor of the absorbing fund be reviewed for accuracy following a merger.

Contributions and redemptions in kind

The precise circumstances of each transaction in kind should be considered on a case-by-case basis to assess the appropriateness of the following guidelines for the fair and equal treatment of shareholders. For an investor, a transaction in kind results in the receipt or cancellation of fund shares for a value equal to the value of the assets contributed or redeemed. It is thus important that the NAV and the value of the assets contributed or redeemed are calculated, where possible, using the same valuation principles.

Contributions in kind

Substantially all principles laid out for mergers are applicable.

It may be appropriate to include the cash portion of the assets contributed in the swing pricing decision process of the fund unless it is confirmed that the cash portion will not be traded but will remain as a cash weighting in the absorbing fund.

It is important to understand whether the investment manager wishes to retain or sell securities once they have been contributed in kind as this should be factored into the swing pricing decision process of the fund.

As any additional cost (e.g. legally required audit in Luxembourg) is typically borne by the specific investor(s), there is no reason to apply swing pricing to in-specie transfers where there

is no other shareholder capital activity on the specific valuation date, and the value of the assets transferred that the fund manager may need to sell does not trigger a swing event.

The assets contributed should always be valued on a fair and consistent basis and without any prejudice to existing investors.

Redemptions in kind

Where an investor is exiting with securities and available cash, this does not necessarily cause the investment manager to trade. In such cases, and if there is no other capital activity on the specific valuation date, it may be decided to forgo the impact of swing pricing in calculating the value of assets transferred out in kind.

Specific consideration needs to be given to assets which are not transferable or which require minimum odd-lots to be traded that might have to be sold as a result of the in-kind redemption and transferred in cash to the exiting investor. It is more appropriate to allocate the direct costs of those adjustments to the exiting investor rather than consider swing pricing.

Where assets are not transferable, and based on approval from the management company and fund auditors, it may be possible to reallocate the value of those assets pro rata to increase the weighting of those assets that are transferable.

Launch of a new fund

The investors dealing at the initial issue price are the same investors that will incur the costs of the initial investments made by the investment manager, thus risk for dilution starts from the next dealing date.

It is common practice that the issue price of a new fund is not swung, and that swing pricing is applied to a fund from the second valuation date onwards.

It is however not unusual to swing the launch price in certain specific fund types, such as index funds, for example to neutralise the performance gap to the index.

Both approaches achieve the same result from a dilution perspective.

Operational considerations

Launch of a new share class

Where a new share class is launched in an existing fund, capital activity in any share class has an impact on the trading costs incurred by the whole fund, not just the new share class.

A new share class can be subject to swing pricing on the first day, if the fund swings on that day.

Consideration should be given to fixed price launches (e.g. EUR 100) that are announced in advance of the share class launch date, to ensure that the published NAV of the new class is the fixed price, irrespective of whether the fund is swung or unswung on that valuation date. In practice, this means that the unswung launch price is derived from the swung price, and equals the fixed launch price.

Liquidating funds

The precise circumstances of each liquidation should be considered on a case-by-case basis for the fair and equal treatment of shareholders.

It is good practice to continue to apply swing pricing in a fund due to liquidate until the fund is closed to dealing or fully converted into cash and/or cash equivalent, whichever comes first.

While swing pricing is maintained during this period, it is recommended that the factors be reviewed more frequently to take into account cash levels in the fund.

Where partial swing is used, consideration should be given to whether using full swing instead may be appropriate, or deciding to permanently swing the fund to bid.

Alternatively, swing pricing may be switched off and the portfolio valuation basis adjusted to bid. In that particular circumstance, consideration should be given to how transaction costs will be captured;

On the date of the liquidation, as all assets will have been liquidated resulting in the receipt of cash, prior to the payment of liquidation proceeds to the remaining investors, the NAV will not need to be swung.

This does not apply where individual share classes are fully redeemed as they will continue to follow the swing process triggered by the net shareholder capital activity happening at fund level.

Swing errors

In the context of CSSF Circular 2002/77, materiality thresholds have been established with regards to NAV errors. The CSSF FAQ provided further clarity in regard to the application of this circular. The operational elements and timing of the NAV calculation process when implementing swing pricing should be carefully considered.

As swing pricing is part of the fund's accounting policy with respect to NAV calculation, a swing error is deemed to be a NAV calculation error. An error may occur due to the inaccurate calculation of capital activity, which forms the basis from which to determine if a fund price is swung and additionally the

direction of the swing. Generally speaking, the causes of errors can be categorised as follows:

1. The incorrect processing of subscription and redemption orders

In this case the error is ordinarily only identified after the order has been incorporated in the capital activity of the dealing day which is used to determine whether to swing the fund NAV. The resulting swung or unswung NAV then becomes the price that is applied to the erroneous order. Therefore, one single incorrect order could give rise to the incorrect application of swing pricing to a fund NAV.

2. Operational errors by the fund administrator

Errors beyond the incorrect processing of an order include

- Application of swing when the threshold has not been breached;
- Failure to swing a fund when the threshold has been breached;
- Swinging the fund NAV in the wrong direction;
- Application of an incorrect swing factor to a fund NAV.

The procedures relating to the correction of calculation errors, as set forth in CSSF Circular 02/77 and updated by the CSSF FAQ, must be

followed, including the determination of the financial impact of the NAV calculation error and the appropriate compensation payable to the UCI and/or its investors.

In addition, and in line with the CSSF FAQ, any negative impact to a fund as a result of an error will need to be made good, regardless of materiality. However, the NAV will not need to be recalculated if the materiality threshold is not exceeded.

In conclusion, when implementing swing pricing the asset manager should review their error and omissions policy and update it as appropriate to provide clarity as to the principles of what constitutes an error in respect of swing pricing and any implications in respect of CSSF Circular 2002/77 as amended by the CSSF FAQ.

This section considers the application of swing pricing to investment funds with structures ranging from an individual share class to the more complex pooling arrangements and integrated master-feeder structures. It is worth noting that some structures are under the control of a single fund board while others are distinctly independent. Perhaps most common however in European distribution is the mixture of both, combined to form a complex

and sophisticated distribution network. Bearing this in mind, when applying swing pricing to the larger structures it is important to consider where and to what extent dilution may be incurred and the impact of different capital activity.

It is these components that will influence the most appropriate level at which to apply a swing pricing mechanism.

Basic principles

NAV prices could swing according to net capital activity within the fund. A net subscription will lead to the NAV price per share swinging upwards to an offer price, and a net redemption will lead to the NAV per share price swinging downwards to bid. This swing protects existing investors from the impact of any trades within the fund associated with the net capital activity.

One outcome of swing pricing is that the dealing of one active investor may have a potential financial impact on other active investors. For example, consider the impact of a large subscriber on the returns of a smaller redeemer on the same day. The net capital activity at fund level is a subscription, and so the NAV per share price is increased to compensate the fund for the future transaction and investment costs associated with investing the proceeds of this net capital activity. The subscriber pays a higher price for the shares he has purchased. The price he pays is not impacted by the activities of the redeeming shareholder, and therefore he receives no benefit or lower costs as a result of the redemption activity.

The redeeming shareholder, however, will benefit from the fact that the NAV has been increased, and will receive a higher-than-anticipated level of proceeds from his redemption. This additional benefit is received, indirectly, from the subscribing shareholder.

As the NAV is always swung according to the net capital activity, the overall objective of eliminating dilution of the fund is always achieved.

It should be noted that netting activity – the investor transacting in the opposite direction to the swing – fulfils an important role in providing liquidity on a net redemption day, limiting the amount that portfolio management have to sell. In the example of a redeemer on a net subscription day, it limits the securities that portfolio management have to buy and therefore limits market impact. Netting of capital activity across investors of the same class, various classes or different funds/ feeders is key to assess the aggregate level of transactions on the market generating transaction costs.

In summary, and in comparison to a fund without any provision to apply swing pricing, the fund and the long-term investors are protected from the transaction and investment costs incurred from investing or disinvesting subscription or redemption proceeds. Active shareholders transacting in the direction of the net capital activity of the day will incur dilution of their investment, though the level of dilution is not necessarily made better or worse by the impact of activity of other shareholders. Shareholders transacting in the opposite direction to the net capital activity at fund level will benefit from the swung price.

Funds with a single share class

These will follow the basic principles outlined above.

Funds with multiple share classes

These are funds having more than one share class, the NAV of the fund is the sum of the net assets of the different share classes. Each share class has its own NAV per share dependent on its weighting in the fund and the number of shares within each of the share classes. The individual share classes may differ in terms of expense rates, distribution policies, currencies or minimum holdings.

In the same way that active shareholders can impact each other in a fund with a single share class so can active shareholders in a fund with multiple share classes. Economic activity takes place at fund level, so the decision to swing prices should take place only after all capital activity at fund level has been taken into account.

The single-share-class-fund example can be extended. There are situations where one share class within a fund has net subscriptions, while another has net redemptions. Assuming the net activity of the two share classes combined triggers a swing price adjustment, the swing

price adjustment applied to the net capital activity at fund level will compensate the fund for any underlying impact. In this instance the capital activity in one share class is offset by the capital activity in any of the others with no overall impact on existing shareholders within the fund. In this case these other shareholders could be within the same share class or in any other share class within the fund. With the increasing development of new types of hedged share classes (e.g. currency-hedged), the transaction costs may increasingly be incurred at share class level. As share class-level costs become significant, it could become appropriate to consider an additional swing factor at share class level. It is conceivable in these cases that the fund will swing in one direction and the share class in the opposite direction, such that the share class swing factor may be added to or deducted from the fund level swing factor to arrive at a share class-specific factor. The technology changes required to achieve this are more complex than with fund-level-only swing factors, and this is currently not market practice.

Master-feeder fund structures

Master-feeder structures are normally one or a series of feeder funds set up to facilitate effective access for investors to one or more master funds. Although many may be under common management, this is not always the case. Although the structure shares similar features to an investment pooling structure, a master feeder structure nonetheless has its own points of consideration.

In order to apply the logic described above to master-feeder fund structures, it is important to identify which fund is actually trading in securities (i.e. in stock markets as a result of capital activity). This normally takes place at the level of the master fund, and so swing pricing, if used, should be applied at this level.

It may also be appropriate to consider applying swing pricing at the feeder fund level as well. This can be determined by reviewing the

investment objectives and holdings of the feeder fund. If, for example, the feeder fund invests solely in the master fund, then it is unlikely that there is a reason to apply swing pricing to the feeder fund.

Whereas, for example, if the feeder were to invest 50% into the master fund and 50% into exchange-traded securities, then it might be appropriate to apply swing pricing to the feeder fund with a swing factor reflecting the transaction costs incurred in the purchase or sale of the exchange-traded securities.

In practice, it is common for master-feeder fund structures to have several feeders linked to a master, and this is often extended with a range of master funds linked to multiple feeder funds. The feeder funds may have varying investment objectives ranging from fully investing into one master fund versus a

percentage allocation in several master funds combined with investments in other securities. It is essential to understand the dynamics of flows into the master (e.g. one feeder only, multiple feeders, or one feeder and other

investors) to determine the appropriate manner to protect investors from dilution. Regardless of such specifics, the rules for applying swing pricing as described above work across all of these structures.

Fund of funds structures

There are many similarities between fund of funds (FoF) structures and master-feeder fund structures. Not surprisingly though the distinguishing features are that FoF structures are set up to accommodate the investment by one investment fund into another. They can either be internal arrangements whereby an investment manager is selecting from a range of funds offered by a single asset manager or alternatively a broader investment objective that includes investment funds of other asset managers.

The main consideration when applying swing pricing for such structures is the ability to look through to the underlying swing pricing and/or any other dilution mechanism. It is this level of detail plus any entrance or exit charges levied by the underlying funds in which the FoF invest that will allow an appropriate swing factor to be determined. On the premise that sufficient information is available to determine a swing factor that could be applied to the FoF, then the guidelines outlined above concerning the application of swing pricing can also be applied to FoF structures. It is worth noting particularly for a FoF with a broad investment remit enabling it to invest in other asset managers' funds that it is possible that the FoF may swing its price in one direction while the underlying fund into which it invests swings in the opposite direction. An example of this is where there are net capital inflows into the

FoF and net capital outflows at the level of the underlying investment fund due to redemptions from other investors exceeding the investment from the FoF.

This is quite common in practice and reflects the development of the investment industry, with investment managers investing in other investment managers' funds, or hybrid models where distributors establish investment funds for distribution purposes that in turn invest in underlying investment funds.

Finally, it should be noted that funds domiciled in certain jurisdictions may not be authorised to apply swing pricing. For example, in the case of a Luxembourg FoF investing in an underlying fund domiciled in another jurisdiction, while the FoF might swing its price based on the level of capital activity from investors, the underlying fund may not be able to swing its price when the Luxembourg FoF makes an investment into it.

This has the effect that prices can only be swung at the level of the Luxembourg fund. It may well be that the fund domiciled outside Luxembourg has an alternative method to protect its investors, such as a dilution charge. In this instance the anti-dilution mechanism of all funds in the structure should be considered together to understand the overall impact.

Pooling

In the same way that active investors dealing in one share class can impact shareholders in other share classes, so active shareholders in one fund of a pooling structure can impact shareholders in another fund.

The investment manager trades securities at the level of the pool, so the decision to swing prices should take place only after taking into account all capital activity at pool level.

Without swing pricing, the capital activity of one fund will impact the performance of any other fund sharing a common pool (transaction and investment costs are incurred at pool level, and so the impact of such costs is shared between all pool owners). Consistent with the principles outlined above, applying swing pricing at the level of the pool will transfer the pool's trading cost to those funds with capital activity.

The same principle applies whereby economic cost and benefit will be transferred between active shareholders within different funds sharing common pools, but that no shareholder is worse off than they would have been had they transacted in isolation, and that certain active shareholders and all passive shareholders are better off than they would have been without any protection against dilution.

Similar to master-feeder funds and FoFs, the specific set-up and relationship of the pooling complex should be considered on its own merits in order to optimise the use of swing pricing with pooling structures, considerations include

The number of funds participating in a pool and the level of each fund's activity may determine whether the mix of fund types in the pool merits the use of swing pricing.

Adjusting the NAV at pool level may result in a swing adjustment at fund level that is contrary to that fund's net dealing activity. Reporting such swing occurrences (either to clients or to regulators) can be complicated.

Performing a swing adjustment on a pool that is only marginally invested by a sub-fund may result in a swing occurrence where the fund NAV does not actually change.

Reporting the swing factor (that is, the pool factor) externally can be complicated by the fact that the fund-level adjustment will regularly not match this swing factor.

Providing a fund-level factor (based on aggregate weighted pool factors) may be complex as the pool allocation changes every day. It would be quite rare for the fund's adjustment to match this calculated factor, as most of the time not all pools would incur a swing.

Pooled structures, which are inherently built to benefit from economies of scale, should as a result see fewer price adjustments than regular fund structures.

As pooling structures typically have many entities and intricate relationships and dependencies, it is recommended that extensive systems testing be performed before using swing pricing on pooling structures.

Summary

The costs and benefits associated with the capital activity of an individual shareholder within a share class will impact other shareholders

- Within the same share class; or
- Within other share classes within the same fund (in the case of multiple share class funds); or
- Within a master fund with several feeders, or other funds sharing a common pool

(in the case of funds using a pooled investment structure).

Applying swing pricing on fund structures and pools will not eliminate this transfer of cost or benefit between shareholders.

However, it will spread costs and benefits more equitably between categories of investors, and will protect existing investors (and underlying fund performance) from a portfolio's trading costs associated with capital activity.

Pricing and the impact on performance

Swing pricing is primarily used to address dilution, protecting existing investors from experiencing lower fund performance in the long term as a result of dealing costs arising from the capital activities of other investors. However, there are certain points to consider. Swing pricing will ordinarily introduce an increase in NAV volatility and, in the short term, increase the tracking error (i.e. the difference in return based on the swung NAV compared to benchmark).

Risk assessment

The introduction of swing pricing is likely to increase, in the short term, the level of tracking error between a fund and the index against which it is benchmarked. It is therefore important to clearly disclose the use of swing pricing so that it is transparent to the users of performance data. It is important that investors consider longer-term data to properly estimate the inherent level of portfolio risk of a given fund.

Competitor and peer performance analysis

The swing effect may, to some extent, mask the investment manager's performance in the short term if performance is measured using the swung NAV. In the long run however, fund performance will be protected from dilution related to portfolio transaction costs. Periodic back-testing, as part of the investment manager's review of thresholds and factors, can be used to enhance the oversight and governance of the programme with a specific focus on performance impacts.

The use of the swung price is considered most appropriate for investment performance reporting because investors are impacted by the return of the fund as a whole and not just the performance of the manager. Since the purpose of swing pricing is ultimately to protect the existing investors, the impact of swing pricing on performance is seen as a valid component of long-term return to investors.

This is based on the common view that the users of NAV data are only interested in one NAV, the traded NAV, be it swung or unswung.

Fund performance reporting

The same logic applies to performance reporting in monthly fact sheets and marketing material. Based on the arguments above, the swung price should be used and disclosure of the unswung price is optional. It is however recommended that practices in this respect are validated against local rules where the fund is registered.

Internal fund performance reporting

Performance reporting for internal purposes could be based on either the unswung NAV or the swung NAV. However, it can be observed that investment managers are usually as concerned with the performance divergence between the NAV based upon valuation point prices and closing market prices as with the impact of swing pricing.

Performance fee calculations

Performance fees are specifically designed to remunerate the investment manager for outperformance against a benchmark. As performance fees are ordinarily crystallised on a specific date, the use of the swung price could significantly distort the performance fee calculation.

Therefore, when calculating performance fees, it is appropriate, as noted within the CSSF FAQ, to use the unswung NAV, and it is recommended that the basis of calculation be disclosed in the fund prospectus. Given the sensitivity of performance fees, care should be taken to ensure that the calculation methodology is clearly documented, transparent for investors and mechanically applied by the fund administrator.

The management company or directors of the fund are ultimately responsible for the ongoing monitoring and consistent application of the performance fee calculation process and policy. The verification of the accurate and consistent application of the calculation methodology should be checked as part of the work performed in the fund's annual audit.

Tax reporting

Since the concept of swing pricing is not one that is generally recognised in tax regulation, there is currently no formal position supported by any official guidance regarding its application to required reporting. As such, both exclusion or inclusion of any swing factor in this regard could be considered appropriate or, at least, could currently not be challenged from a technical perspective.

Exclusion or inclusion of the swing factor from/in tax reporting could also be driven by operational efficiency, as any impact to the tax calculation, whether included or excluded, is likely to be negligible, if not zero. Consulting with the fund's tax advisor for a final opinion is the advisable approach, also taking into account any further clarification on this point issued subsequent to this document.

Financial reporting

When a swing pricing mechanism is in place, be it a full or partial model, due consideration should be given to how to capture accurate data and make relevant disclosures in semi-annual and annual reports. Financial statements represent a description of underlying assets and liabilities and profit and loss accounts of a fund at a specific point in time. Assets and liabilities are usually valued in accordance with the relevant accounting principles together with the rules of the fund as defined in the prospectus.

The CSSF FAQ detail the minimum level of disclosure and description of the swing pricing mechanism that should be contained within the fund's annual and semi-annual reports.

Where a swing factor has been applied to the last published NAV of the financial period, the options to present and disclose it in the financial statements may depend on how it has been captured within the NAV calculation process (see page 17). There are three possible options:

Option 1

Where the factor has been booked as a **single-line** adjusting entry, the adjustment figure does not represent an actual asset or liability for the fund as of the reporting date.

As a result, in accordance with relevant accounting principles it would be necessary to remove this line item from the statement of net assets.

This is the case under Luxembourg GAAP and under IFRS (see page 25).

Option 2

Where the swing factor has been applied on a line-by-line basis to individual securities within the portfolio, the swung NAV could be used as the basis of financial statements prepared under Luxembourg GAAP. However, it may imply a change in the basis of valuation of specific assets (e.g. from mid to bid or ask). Thus, the valuation mechanism should ensure that it complies with the valuation policy contained in the prospectus and is incorporated into the pricing policy of the fund.

In terms of IFRS reporting, portfolio investments are generally recorded at fair value through profit and loss and shall be valued at a price within the bid-ask spread (where available) that is most representative of fair value. No adjustment for future transaction costs is permissible. Thus, the line-by-line swing adjustment described above should not be reflected via the line for fair value of investments in the statement of financial position. Rather a reconciliation between the published swung NAV and the IFRS NAV using bid prices may be required to assist the reader of the financial statements.

Option 3

Where the swing factor is accounted for outside the fund NAV accounting system, the factor adjustment does not represent an actual asset or liability of the fund as of the reporting date. As a result, in accordance with the relevant accounting principles and similarly to option 1, it is not appropriate to include the factor adjustment in the statement of net assets.

This is the case under both Luxembourg GAAP and IFRS.

The following table sets out guidance on how swing pricing could be captured in terms of financial reporting:

	Luxembourg GAAP	IFRS
Statement of net assets/ financial position	<ul style="list-style-type: none"> ■ Where a swing factor has been applied as a one-line adjusting entry or accounted for outside the fund NAV accounting system, the asset or liability created is not a genuine asset or liability and should be excluded from the statement of net assets³, or ■ Where a swing factor has been captured by each individual security, this may imply a change of valuation basis and is included in the valuation of those securities in the statement of net assets (refer to the notes to the accounts)⁴ 	<ul style="list-style-type: none"> ■ Where a swing factor has been applied as a one-line adjusting entry or accounted for outside the fund NAV accounting system, the asset or liability created is not a genuine asset or liability and should be excluded from the statement of financial position; or ■ IFRS requires valuation of investments at a price within the bid-ask spread (where available) that is most representative of fair value with no adjustment for future transaction costs (refer to the notes to the accounts)⁵
Statistical information (i.e. three-year summary of net asset values)	<ul style="list-style-type: none"> ■ The NAV per share disclosed for each share class should be consistent with the published NAV per share and applied to capital activity. This may differ from that presented in the statement of net assets (refer to the notes to accounts). 	<p>IFRS only requires 2-year comparatives.</p> <ul style="list-style-type: none"> ■ The NAV per share disclosed for each share class should be consistent with the published NAV per share and applied to capital activity.
Statement of operations and changes/ comprehensive income	<p>Depending on the accounting policies in place there are a number of acceptable practices for the recording of the swing factor adjustment actually paid or received during the year:</p> <ul style="list-style-type: none"> ■ The year-to-date swing amount posted may be treated as part of the realised result for the fund, as a separate line item.⁶ ■ The year-to-date swing amount posted may be included within the line item reported for capital activity.⁷ ■ If transaction costs are disclosed separately as expenses in the statement of operations (e.g. for UCITS) the year-to-date swing amount posted may be reported as a separate line item under income.⁸ 	<p>Depending on the fund's accounting policies and on how the relevant financial instruments are classified under IFRS there are a number of acceptable practices for the recording of the swing factor adjustment actually paid or received during the year:</p> <ul style="list-style-type: none"> ■ The year-to-date swing amount posted may be treated as a realised result for the fund, as a separate line item.⁹ ■ The year-to-date swing amount posted may be included within the line item reported for capital activity.¹⁰ ■ If transaction costs are disclosed separately the year-to-date swing amount posted may be reported as a separate line item under income.¹¹

³ See page in the appendix 34 (options A & B)

⁴ See page 34 in the appendix (option C)

⁵ See page 34 in the appendix (option C)

⁶ Corresponds to option D on page 35 in the appendix

⁷ Corresponds to option E on page 35 in the appendix

⁸ Corresponds to option F on page 35 in the appendix

⁹ Corresponds to option D on page 35 in the appendix

¹⁰ Corresponds to option E on page 35 in the appendix

¹¹ Corresponds to option F on page 35 in the appendix



The Association of the Luxembourg Fund Industry (ALFI) represents the face and voice of the Luxembourg asset management and investment fund community, championing sustainable investing, mainstream and private assets. ALFI's mission is to promote Luxembourg as the world's leading cross-border investment fund centre, facilitate the transition towards more sustainable economies globally and empower investors to meet their goals.

Created in 1988, the Association today represents over 1,500 Luxembourg-domiciled investment funds, asset management companies and a wide range of businesses that serve the sector. These include depositary banks, fund administrators, transfer agents, distributors, legal firms, consultants, tax advisory firms, auditors and accountants, specialist IT and communication companies. Luxembourg is the largest fund domicile in Europe and a worldwide leader in cross-border distribution of funds. Luxembourg-domiciled investment funds are distributed in more than 70 countries around the world.

ALFI defines its mission as to “lead industry efforts to provide solutions and make Luxembourg the most innovative international investment fund centre”.

Its main objectives are to:

Help members capitalise on industry trends

ALFI's many technical committees and working groups constantly review and analyse developments worldwide, as well as legal and regulatory changes in Luxembourg, the EU and beyond to identify threats and opportunities for the Luxembourg fund industry.

Shape regulation

An up-to-date, innovative legal and fiscal environment is critical to defend and improve Luxembourg's competitive position as a centre for the domiciliation, administration

and distribution of investment funds. Strong relationships with regulatory authorities, the government and the legislative body enable ALFI to make an effective contribution to decision-making through relevant input for changes to the regulatory framework, the implementation of European directives and the regulation of new products or services.

Foster dedication to professional standards, integrity and quality

Investor trust is essential for success in collective investment services and ALFI thus does all it can to promote high professional standards, quality products and services, and integrity. Action in this area includes organising training at all levels, defining codes of conduct, transparency and good corporate governance and supporting initiatives to combat money laundering.

Promote the Luxembourg investment fund industry

ALFI actively promotes the Luxembourg investment fund industry, its products and services. It represents the sector in financial and economic missions organised by the Luxembourg government around the world and takes an active part in meetings of the global fund industry.

ALFI is an active member of the European Fund and Asset Management Association, of the International Investment Funds Association, of Pensions Europe, of the International Association of Pension Funds Administrators and of the Global Impact Investing Network.

For further information, visit www.alfi.lu and follow ALFI on [LinkedIn](#), [Twitter](#) (@ALFI-funds), [Youtube](#) and [Flickr](#).



© July 2022 ALFI. All rights reserved.



| Swing Pricing