



Banc Ceannais na hÉireann
Central Bank of Ireland

Eurosystem

CP130

**Treatment, Correction and
Redress of Errors in
Investment Funds**

Contents

Definitions	3
Introduction	4
Background	5
Error Types	6
Responsible Parties and their Obligations	6
Treatment of Errors - Materiality	7
Quantitative Materiality Thresholds	7
Qualitative Materiality Factors	8
Additional Considerations with Respect to Materiality	9
Proposed Approach – Materiality	9
Reporting / Notification	12
Regulatory Reporting	12
Notification to Investors	13
Redress	15
Additional Considerations with Respect to Redress	16
Proposed Approach – Redress	16
Next Steps	17

Definitions

Term	Meaning
Appropriately Rectified	Where an error occurs, the affected fund and / or investor must be Appropriately Rectified. In this context, Appropriately Rectified means taking any necessary action to restore the fund / investor to the position that it / they would have been in had the relevant issue not arisen. This includes meeting all reporting and notification obligations and the Payment of Redress as appropriate.
Control Breach Error	A Control Breach error is an error which is not a (i) NAV Error, (ii) Investment Breach Error or (iii) a Fee Error. Such an error may indicate a significant control failure despite not having a monetary impact on the fund / investor.
De Minimis Limits	De Minimis Limits refers to thresholds below which the Payment of Redress to an individual investor is not required to be paid. De Minimis Limits are not applicable to errors which result in redress being due to a fund.
Fee Error	A Fee Error is an error related to the overpayment of a fee
Fund Management Company	Fund Management Company means a UCITS management company, an authorised Alternative Investment Fund Manager (AIFM), a self-managed UCITS investment company and an internally managed Alternative Investment Fund which is an authorised AIFM.
Investment Breach Error	An Investment Breach Error refers to an error relating to the investments of a fund and non-compliance with the applicable investment restrictions.
NAV Error	A NAV Error occurs in the NAV calculation process and results in a difference between the NAV that has been calculated and the NAV that would have been calculated if such an error had not occurred. A NAV error could occur as a result of the mispricing of an asset, incorrect calculation of fees or inaccurate accounting entries;
Payment of Redress	Payment of Redress refers to a payment to return the affected fund / investor to the position that it / they would have been in had the relevant issue not arisen.
Qualitative Materiality Factors	Qualitative Materiality Factors refer to all non quantitative considerations to be taken into account in order to assess whether an error is material. Qualitative Materiality Factors take surrounding circumstances into consideration, which may result in an error being re-categorised as material notwithstanding that it did not reach the Quantitative Materiality Threshold.
Quantitative Materiality Thresholds	Quantitative Materiality Threshold refers to a threshold above which an error is deemed to be material.

Introduction

The Central Bank of Ireland (the Central Bank) is consulting on a regulatory framework that establishes rules and guidance in relation to the treatment, correction and redress of errors in investment funds. The Central Bank considers that the guiding principle for any such framework should be that where an error occurs, the fund and/or the investor must be Appropriately Rectified. The concept of 'Appropriately Rectified' will be applied broadly to include reporting of errors, notification to investors and Payment of Redress obligations. Where this has been done effectively, the fund / investor is restored to the position that it / they would have been in had the relevant issue not arisen

The Central Bank considers that a Fund Management Company is ultimately responsible for ensuring that the error is Appropriately Rectified and the depositary has a role in ensuring that this is the case.

The Central Bank is consulting on the basis of a regulatory framework which comprises of the following distinct components:

- **Treatment** – how errors should be treated when they arise, including when such errors should be considered as material;
- **Correction** – how errors should be corrected, including what reporting and notification obligations should apply; and
- **Redress** – how the fund and / or investors should be Appropriately Rectified following an error.

The proposed framework differentiates on how an error should be Appropriately Rectified depending on the type of error concerned. Four error types are defined under the framework as follows:

- an error in the calculation of the Net Asset Value (NAV) (a "**NAV Error**");
- an error relating to the investments of a fund and non-compliance with the applicable investment restrictions (an "**Investment Breach Error**");
- an error related to the overpayment of a fee (a "**Fee Error**") and
- errors which do not fall into the above three categories (a "**Control Breach Error**").

It is proposed that the regulatory framework will apply to Fund Management Companies acting for Irish authorised Undertakings for Collective Investment in Transferable Securities ("UCITS") or Alternative Investment Funds ('AIFs') and (ii) Irish Fund Management Companies (which may be acting for non-Irish authorised funds). Where an Irish Fund Management Company manages non-Irish authorised funds, the regulatory framework will apply without prejudice to requirements and guidance in another relevant jurisdiction.

The proposed framework has been informed by supervisory experiences, the approaches of peer regulatory authorities, IOSCO principles¹ and engagements with external stakeholders with a view to ensuring the best interests of investors are safeguarded. The framework sets out the responsibilities and reporting obligations that should apply to Fund Management Companies and to depositaries with respect to errors.

The Central Bank is publishing this Consultation Paper to offer all interested parties an opportunity to consider the matters presented in the paper and to offer their views. Following the closing of the consultation period, the Central Bank will consider responses received in order to prepare related requirements and guidance. Such requirements and guidance will be subject to further consultation as appropriate.

Background

In 2015, as part of a program of themed reviews, the Central Bank carried out a thematic review of the fund industry's approach to the treatment of NAV pricing errors, in order to observe industry best practice. The representative body for the funds industry in Ireland (Irish Funds) has longstanding guidance on the treatment and compensation of errors and breaches. This guidance has neither been sanctioned nor approved by the Central Bank. The main finding from the thematic review was that while industry guidance is widely adopted and applied, there are a number of areas requiring attention, including in relation to reporting.

The thematic review was also carried out to inform the production of a regulatory framework, in order to meet an International Monetary Fund (IMF) recommendation that the Central Bank publish rules relating to fund errors. This recommendation arose as part of the IMF's assessment of Ireland's compliance with the IOSCO Objectives and Principles of Securities Regulation.²

A number of key questions are posed throughout this Consultation Paper. We ask anyone considering responding to do so by 9 December, 2019 by emailing a response in Word format to fundspolicy@centralbank.ie clearly labelled "Consultation Paper 130: Treatment, Correction and Redress of Investment Fund Errors." Our intention is to publish all written contributions submitted, with a feedback statement to follow in the normal course of events.

¹ IOSCOs Principles for the Valuation of Collective Investment Schemes - Principle 5: *A CIS should have policies and procedures in place that seek to detect and prevent pricing errors. Pricing errors that result in a material harm to CIS investors should be addressed promptly, and investors fully compensated.*

² IMF: [Detailed Assessment of Observance, IOSCO Objectives and Principles of Securities Regulation](#) – Ireland, April 2014. Principle 27 page 27 – “While there is industry guidance, the Central Bank has not issued rules prescribing how pricing errors are to be treated by CIS.”

Error Types

The proposed regulatory framework differentiates based on the type of error. The Central Bank considers that generally there are four types of errors which may arise for investment funds. These are a NAV Error, an Investment Breach Error, a Fee Error and a Control Breach Error.

In the case of a Control Breach, an example of such an error would be where a redemption payment is paid to the wrong investor account but this is subsequently returned in a short timeframe. While this may not have a monetary impact on the fund (or at least the impact may be capable of being reversed relatively quickly), such a control breach nevertheless highlights significant issues in the management of the fund. Depending on the type of error concerned, the steps taken to ensure the error is Appropriately Rectified will differ.

Responsible Parties and their Obligations

When considering how fund errors should be addressed, the Central Bank is of the view that the Fund Management Company is ultimately responsible for ensuring that the error is Appropriately Rectified. The depositary has a role in ensuring that this is the case.

As such, the Central Bank proposes to introduce a requirement for Fund Management Companies such that, in the event of an error, the Fund Management Company will be required to ensure that the error is Appropriately Rectified, taking into account related Central Bank guidance on the matter. In this context, Appropriately Rectified will entail (i) identification and classification of the error (including assessing materiality), (ii) correction of the error (including compliance with any reporting and notification obligations) and (iii) redress of the error (including the payment of redress to the fund and / or investors). This requirement will be explicitly set out by way of an obligation in future iterations of Central Bank UCITS Regulations and the Central Bank AIF Rulebook / AIF Regulations.

In the case of depositaries it is proposed to introduce a requirement that, in the event of an error, the depositary must ensure that the error has been Appropriately Rectified by the Fund Management Company.

As set out later in this paper, in the event that an error is deemed to be material, redress should be paid in all circumstances so that the fund and / or investor is returned to the position that it / they would have been in had the error not occurred. However, there is one exception to this. In the case of Fee Errors, a sum at least equal to the sum of the overpayment should be repaid to the fund and, where applicable, to investors.

Finally, it is also proposed to adjust existing reporting requirements imposed on Fund Management Companies and depositaries to take into account the development of this framework.

Treatment of Errors - Materiality

Once an error has been identified, it must be corrected without delay. The Fund Management Company and depositary will also have to assess the materiality of the error as this will affect the treatment of that error in terms of reporting, notification and redress. When considering materiality, the Central Bank is of the view that there may be Quantitative Materiality Thresholds and Qualitative Materiality Factors to consider. While applying a purely quantitative approach in determining the materiality of an error has merits, particularly because of the clarity this provides, assessing materiality solely on the basis of a quantitative approach does not take into account accompanying circumstances. As a result, it is preferable to take account of relevant surrounding circumstances in order to determine if an error is material. Such an approach could result in an error being re-categorised as material, notwithstanding that it did not reach a pre-determined quantitative threshold.

The Central Bank proposes to establish a framework outlining both Quantitative Materiality Thresholds and Qualitative Materiality Factors by reference to which the materiality of an error will have to be assessed. This will involve setting quantitative materiality thresholds and overlaying these with a qualitative assessment. The Fund Management Company will be required to consider both Quantitative Materiality Thresholds and Qualitative Materiality Factors when assessing whether an error is material. In the event that the error is deemed not to meet the quantitative threshold, the error will need to be assessed in the context of qualitative factors.

Questions to stakeholders

1. What are your views on the proposed approach to determining materiality? Please give examples and reasons for your answer.
2. What additional costs and benefits would be associated with compliance with the proposed framework? Please provide figures, where available.

Quantitative Materiality Thresholds

Where an error occurs, which meets or exceeds a pre-determined threshold, such an error should be considered material (subject to some exceptions as detailed later in this paper). Similar to the approach adopted in other jurisdictions, the Central Bank is proposing to differentiate the quantitative thresholds for determining materiality depending on the type of investment fund.

The proposed quantitative thresholds are as follows:

Money Market Funds (MMFs)	0.10% of NAV
Other investment funds	0.50% of NAV

A lower threshold is proposed for MMFs as these funds hold highly liquid instruments such as cash, cash equivalent securities and high credit rating debt-based securities with a short-term, maturity of less than 13 months. As a result, these funds should generally be straight forward to value and subject to very low levels of market volatility.

The rationale for proposing a threshold of 0.10% is linked to Article 29 of the Money Market Fund Regulation (MMFR). Article 29 of the MMFR (valuation of MMFs) sets out that when using the amortised cost method of valuation, any instrument whose price deviates from the mark to market price by more than 10 basis points should be valued as per the mark to market methodology.

It is not proposed to differentiate between other investment fund types given the challenges with setting clearly defined categories for different investment objectives / strategies.

Questions to Stakeholders

3. What are your views on introducing the proposed quantitative thresholds when determining materiality? Should lower thresholds be considered?
4. Are there any other fund types that warrant a separate threshold? Please give examples and reasons for your answer.

Qualitative Materiality Factors

Where an error is deemed not to meet or exceed the materiality threshold, the error may nevertheless be deemed to be material taking into account any relevant surrounding circumstances. Such qualitative factors are likely to include (i) the circumstances which resulted in the error (for example, inadequate controls) or (ii) the duration of the error.

The Central Bank proposes to set out by way of (non-exhaustive) guidance the types of considerations which would be taken into account when assessing if an error, below the quantitative thresholds, should be deemed to be material or not.

Questions to Stakeholders

5. What are your views on the appropriateness of the qualitative factors described above for determining materiality? Please give examples and reasons for your answer.
6. In your view, what other factors are relevant in a qualitative assessment? Are there any concerns about the concept being formalised? Please give examples and reasons for your answer.

Additional Considerations with Respect to Materiality

Regulation 77 of S.I. No. 352/2011 European Communities (Undertakings for Collective Investment in Transferable Securities) Regulations 2011, refers to inadvertent breaches of investment restrictions and provides that:

“Where the limits in this Part are exceeded for reasons beyond the control of a UCITS or as a result of the exercise of subscription rights, the UCITS shall adopt as a priority objective for its sales transactions the remedying of that situation, taking due account of the interests of its unit-holders.”

The Central Bank has not previously defined what constitutes the type of error alluded to in Regulation 77 (an inadvertent breach). Instead, the Central Bank has placed emphasis on determining whether such a breach is material or non-material. The Central Bank considers that there is merit in maintaining this approach. As a result, irrespective of whether an error is deemed to be inadvertent or not, the Fund Management Company will have to ensure the error is Appropriately Rectified. As set out earlier, this will entail (i) identification and classification of the error (including assessing materiality), (ii) correction of the error (including compliance with any reporting and notification obligations) and (iii) redress of the error (including the payment of redress to the fund and / or investors).

Questions to Stakeholders

7. Is what constitutes an advertent and inadvertent breach well understood?

Proposed Approach – Materiality

It is proposed, in addition to the introduction of requirements on Fund Management Companies and depositaries with regard to treatment of errors, to introduce Central Bank guidance with respect to assessing the materiality of errors.

The Central Bank considers that the following elements should be provided for in such a regulatory framework:

- Where an error occurs, in all circumstances, it should be rectified without delay. The Fund Management Company and depositary should also assess the materiality of the error as this will affect the treatment of that error in terms of reporting, notification and redress.

- When assessing materiality, a Fund Management Company / depositary should consider both quantitative thresholds and qualitative factors when assessing whether an error is material or non-material. The Central Bank of Ireland (the Central Bank) considers that any error resulting in an impact the same or greater than the following thresholds should be considered to be material.

- The quantitative thresholds are as follows:

Money Market Funds (MMFs)	0.10% of NAV
Other investment funds	0.50% of NAV

- In the event that the error is deemed not to meet the quantitative threshold, the error must nevertheless be assessed in the context of qualitative factors as the materiality of a particular error may vary depending on the specific circumstances involved. Therefore, this guidance is intended to provide assistance when assessing whether an error is material or non-material. However, the factors listed are not intended to be exhaustive. Materiality will depend on the circumstances and nature of the error and should be assessed on a case-by-case basis.

Factors to be taken into account include:

- a) Errors may occur that are below the materiality threshold at an individual valuation point, however on an aggregate basis such errors may reach or exceed the threshold materially. However, the cumulative impact rather than the impact at a particular valuation point should be taken into account when determining if an error is material. For example, if an error has occurred over a number of valuation points, notwithstanding that such an error may be below the materiality threshold it may be deemed material taking into account the best interests of the investor;

- b) The specific circumstances in which an error took place may have significant bearing as to whether the error merits re-classification as material (notwithstanding that the impact has not reached the pre-determined materiality threshold). Examples of such errors could include;

- i. a subscription or redemption is not processed appropriately and this results in the transaction being allocated to the incorrect investor or a transaction being processed for an incorrect time period;
- ii. Any error or series of errors which results in a concern about the overall control environment in which the investment fund is managed;
- iii. An error or a type of error which has recurred on a number of occasions; and
- iv. An error which, all things being equal, was likely to occur given the particular actions of the Fund Management Company.

Questions to Stakeholders

8. Do you think further guidance is required? Please give examples and reasons for your answer.

Reporting / Notification

Regulatory Reporting

At present, the Central Bank imposes reporting obligations on both Fund Management Companies and depositaries.

The current approach includes a broad reporting obligation on Fund Management Company³ relating to a number of possible occurrences, including:

- any breach of the Irish UCITS Regulations, Irish AIFM Regulations or the Central Bank's requirements that are applicable to the Fund Management Company or the fund under management;
- any breach of other Irish legislation which may be of prudential concern to the Central Bank or which may be likely to impact on the reputation or good standing of the relevant Fund Management Company or fund ; and
- any situation or event that impacts, or potentially impacts, to a significant extent, the Fund Management Company or the Fund .

In contrast, under the Central Bank UCITS Regulations⁴ and AIF Rulebook⁵ a depositary is generally required to report any material breach of investment fund legislation and regulatory requirements, including breaches of provisions of the prospectus. In the case of UCITS, a depositary is also required⁶ to report any non-material breach that is not resolved within four weeks of the depositary becoming aware of that breach. In the case of UCITS, the depositary is also required to maintain a written record of every breach.⁷

The Central Bank sees considerable merit in maintaining the dual reporting obligations on the Fund Management Company and the depositary. This is in light of the emphasis placed on both the role of the Fund Management Company and the oversight role of the depositaries. However, taking account of experience and feedback from the functioning of the current reporting regime, it is proposed to

³ Applied via Regulation 107(2) of the Central Bank UCITS Regulations and Chapter 1, Section 2, Paragraph 5 and Chapter 2, Section 2, paragraph 5 of the AIF Rulebook

⁴ Central Bank UCITS Regulations: Regulation 118(3)

⁵ AIF Rulebook: Chapter 5, Depositary Requirements, iii (Depositary tasks), paragraph 2.

⁶ Central Bank UCITS Regulations: Regulation 118(4)

⁷ Central Bank UCITS Regulations: Regulation 118(5)(a)

require reporting with respect to material errors only. This approach (to receive reporting related to material errors only) is supported by the proposal to adopt a framework which defines a material error.

It has been observed that many Fund Management Companies rely on the depositary to meet their reporting obligations to the Central Bank in respect of individual funds. The Central Bank sees merit in amending the obligations imposed on Fund Management Companies and depositaries to reflect this current practice. The Central Bank is therefore proposing to amend obligations imposed on the Fund Management Company to consist of one of the following:

- Imposing an obligation on a Fund Management Company to report errors to the depositary, which in turn would fulfil the regulatory reporting obligation as required; or
- Imposing an obligation on a Fund Management Company to report any material errors which have not been reported by the depositary to the Central Bank.

The Fund Management Company and depositary will however also be required to maintain a written record of all errors that occur.

Questions to Stakeholders

9. Do you consider that the dual reporting requirement on both Fund Management Companies and depositaries is appropriate? Should alternatives be considered? If so, what would be these alternatives?
10. What option is preferable in terms of the potential approaches set out with respect to Fund Management Companies? Please provide rationale for the preferred option.
11. Do you think that a time period for notification to the Central Bank should be specified?

Notification to Investors

The Central Bank has identified, from the thematic review carried out in 2015 and from supervisory engagements, that there are inconsistent approaches to the notification of errors (material and non-material) by Fund Management Companies to their investors. During the thematic review, the main finding was that industry has generally adopted policies whereby investors are notified when two conditions are met - (i) the error is above the materiality threshold and (ii) the investors are directly affected by the error and are due to be paid redress. However this approach is not uniformly applied.

The Central Bank considers that there is merit in introducing an obligation on Fund Management Companies to notify investors of any error found to be material irrespective of whether redress is required or not.

Questions to Stakeholders

12. Is the proposed approach appropriate?
13. Do you think there is merit in requiring that investors be notified at times when redress is required? Should notification be required in cases where redress is required but not paid as it falls below De Minimis Limits (See the 'Redress' section for further information)?

Redress

The Payment of Redress can be considered as a payment to return an affected fund / investor to the position that it / they would have been in had an error not arisen. Redress will either be payable to the fund as a whole and/or to specific investors, depending on the type of error involved. The Central Bank considers that redress is a critical component of an effective response to deal with an investment fund error. However, it should be noted that the payment of redress because of an error is without prejudice to the rights of the affected fund and / or investors.

Errors may arise from the actions of delegates. While a Fund Management Company may seek to arrange for the Payment of Redress from a particular delegate, it is nevertheless the responsibility of the Fund Management Company to ensure that errors are Appropriately Rectified and the responsibility of the depositary to ensure that this is the case. In addition, current industry practice, in relation to redress, provides for De Minimis Limits (i.e. thresholds below which redress is not provided). The industry standard De Minimis Limits currently applied are €50 for retail investors and €500 for institutional investors.

The Central Bank considers that De Minimis Limits may have some merit to avoid a situation where an investor would receive a redress payment but due to the costs involved would not accrue any net benefit. However, the current De Minimis Limits appear excessive, particularly for institutional investors. The Central Bank is therefore seeking feedback on (i) whether De Minimis Limits should be applied, (ii) the rationale for a differentiated approach for retail and institutional investors and (iii) what might be an appropriate threshold(s) if De Minimis Limits are to be applicable.

The Central Bank proposes to introduce guidance and rules in relation to how redress arrangements should operate where errors occur. The guidance will include principles prescribing how such redress arrangements should generally operate.

Questions to Stakeholders

14. What factors should be considered when determining whether redress is required?
15. Are there circumstances where errors due to their inherent nature, should be reimbursed irrespective of materiality?
16. In your view, should De Minimis Limits be applied? If so, what are appropriate De Minimis Limits? Should these be differentiated for retail and professional investors? If so, why? Please provide sufficient rationale where relevant.

Additional Considerations with Respect to Redress

Where an error has been identified, the Fund Management Company should ensure the error is corrected without delay. For example, in the case of a NAV Error (whether deemed material or not), the error should be corrected in the next valuation following discovery of the error.

When examining the issue of redress, consideration must be given as to whether a materiality threshold should apply to the Payment of Redress. The Central Bank considers that, in the case of errors deemed to be material, the Payment of Redress should be made in all circumstances. However, applying a materiality threshold may not be appropriate in all circumstances. In the case of Investment Breach Errors, an inadvertent breach is generally outside of the control of a Fund Management Company. As a result, it would appear appropriate that the Payment of Redress would be required in all cases (regardless of materiality) where the error is an advertent investment breach. In the case of an inadvertent investment breach (either material and non-material), it would appear appropriate that redress should generally not be payable except where otherwise deemed appropriate by the depositary.

Question to Stakeholders

17. Do you consider the proposed approach appropriate?

Proposed Approach – Redress

As outlined, in the event of an error, the Fund Management Company will be required to ensure the Payment of Redress to the affected fund and / or investor, taking into account Central Bank guidance on how to determine whether the error is material or non-material. The Payment of Redress on foot of an error will be made without prejudice to the rights of affected fund and / or investors. The regulatory framework will set out how such redress should be operated.

The Central Bank considers that the following elements should be provided for in such a regulatory framework:

- When calculating the Payment of Redress, a Fund Management Company must act promptly in determining the financial impact of an error, in particular distinguishing between the different categories of investors who are affected. It is intended that Central Bank guidance will provide additional details with respect to the appropriate approaches to apply where redress is required. The Fund Management Company will need to take the specific circumstances into account, such as (i) whether there are investors which have joined the fund before the error occurred and which have redeemed their units/shares during the period in which the error took place and (ii) whether there are investors which have joined the fund prior to or during the period in which the error took place and which continued to hold their units/shares in the fund;

- The Fund Management Company must act as quickly as possible to correct an error and quantify the impact for the fund/investors;
- The Payment of Redress should be fair, clear, provided in a timely manner and easily accessible;
- It is the responsibility of a Fund Management Company to identify all potentially impacted investors and to communicate with them in a clear and timely manner;
- An investment fund should not be subjected to any administrative or other costs incurred from the investigation or from the Payment of Redress;
- The process leading to the Payment of Redress should not impose unreasonable demands or burdens on impacted investors.
- The Payment of Redress to a fund and / or investors should be made in a timely manner without prejudice to the rights of the affected funds and/or shareholders;
- In the case of NAV Errors or Control Breach Errors deemed to be material, the Payment of Redress should be made in all circumstances;
- In the case of Investment Breach Errors, the Payment of Redress should be made in all circumstances where the error is as a result of an advertent breach;
- In the case of an inadvertent Investment Breach Error, the Payment of Redress will generally not be payable unless otherwise determined by the depositary;
- In the case of Fee Errors, the Payment of Redress must be made in all circumstances;
- Errors may arise from the actions of delegates. While a Fund Management Company may seek to arrange for payments from a delegate, it is nevertheless the responsibility of the Fund Management Company to ensure that errors are Appropriately Rectified in a timely manner and the responsibility of the depositary to ensure that this is the case); and
- A Fund Management Company or a delegate/other third party should not gain as a result of an error. Any such gain should be attributed to the relevant fund.

Next Steps

This Consultation Paper is part one of a two part process in relation to a regulatory framework for the treatment, correction and redress of errors in investment funds. A number of key questions are posed throughout this Consultation Paper. Stakeholders are requested to provide responses to the questions contained throughout this Consultation Paper. They are also invited to provide any general observations

on the matters discussed or issues raised herein. Following the closing of the consultation period, the Central Bank will consider responses received in order to prepare related requirements and guidance. Such requirements guidance will be subject to further consultation as appropriate.



T: +353 (0)1 224 6000
E: fundspolicy@centralbank.ie
www.centralbank.ie



Banc Ceannais na hÉireann
Central Bank of Ireland

Eurosystem