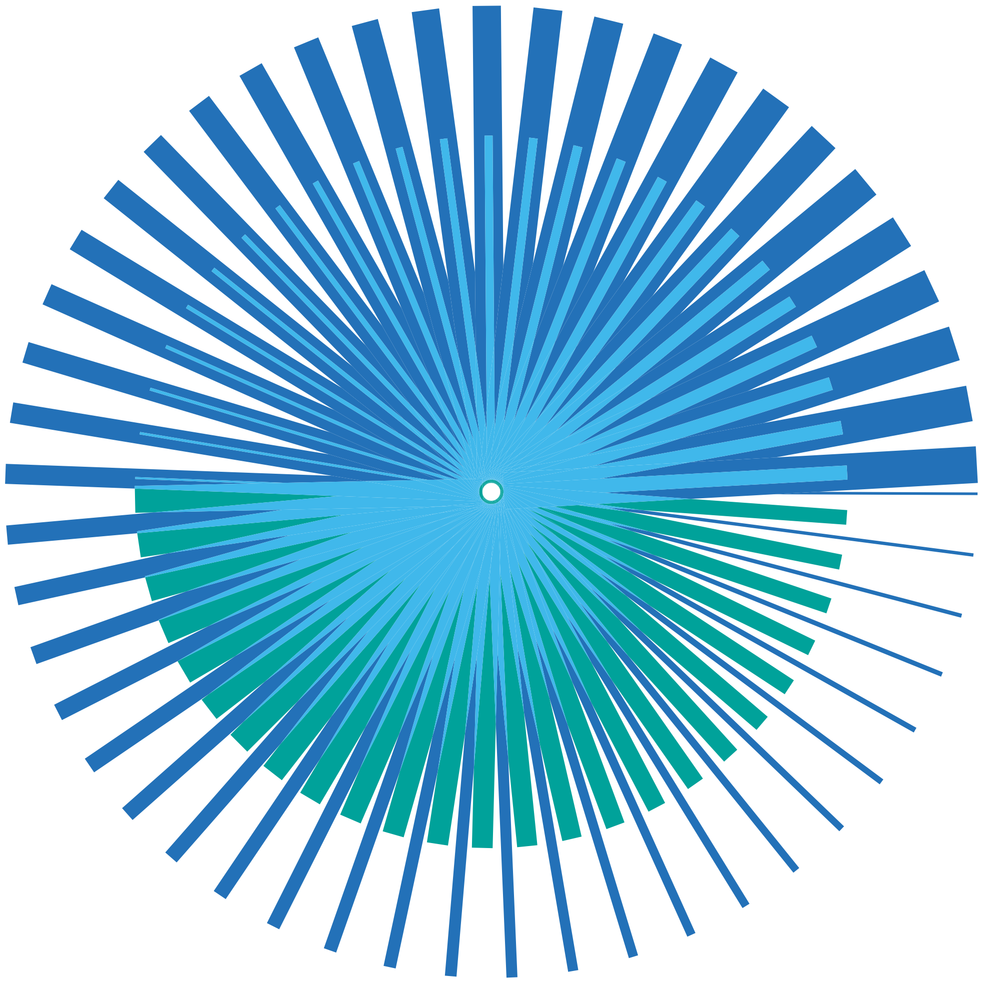


PENSION FUND

Annual Report and Financial Statements for the year ended 31 December 2022

CERN

The Financial Statements included in this Report are published in accordance with International Public Sector Accounting Standards (IPSAS) and the Rules and Regulations of the Pension Fund.

CONTENTS

MESSAGE FROM THE CHAIR

As Chair of the Pension Fund Governing Board (PFGB), it is my pleasure to present to you the Fund's Annual Report and Financial Statements for the financial year ending 31 December 2022. I trust that this report will give you a useful update on the financial status of the Fund, as well as a summary of the activities in relation to members and beneficiaries and the investment performance over the last year.

Whilst the difficult financial market conditions and high inflationary environment were at the forefront of all our minds last year, the Fund remained focussed on its key purpose which is to insure its members and beneficiaries, as well as the members of their families, against the economic consequences of disability, old age and death. We continue to service beneficiaries around the globe, making payments of 324 MCHF to 3 668 beneficiaries residing in 47 different countries.

We were pleased to be able to offer in-person annual information meetings again, at both CERN and ESO, following the easing of measures since the COVID-19 pandemic. It was a pleasure to see so many of you in person and also such a high attendance via the webcast.

The Periodic Actuarial Review is an important exercise that is completed at least every three years by the Fund's Actuary and the results of this review as at 1 January 2022 were presented to the CERN Council during its June session. The Fund's Actuary noted that the funding level according to the updated best-estimate assumptions had increased from 67.8% at 1 January 2019 to 77.1% at 1 January 2022, while the projected funding level at 1 January 2041 had decreased from 103.4% to 97.1% during the same period, mainly owing to the adoption of a lower future investment return rate, and was projected to be 114.4% at 1 January 2052. Further information on the actuarial status of the Fund is included in this Annual Report.

The economic environment remained challenging over the year, with the events in Ukraine and the flow-through of COVID stimulus actions causing inflation to rise sharply and prompting a significant level of volatility in the financial markets. During the year net investment losses were 323 MCHF. After total benefits and payments of 324 MCHF and receipt of member and employer contributions, net assets decreased by 403 MCHF to 4 578 MCHF.

The Fund continued to demonstrate its strong commitment to managing climate-related risks and opportunities, as well as adopting a responsible investment approach, with the implementation of its new Environmental, Social and Governance (ESG) Policy. More details of the ESG initiatives, the performance of the different asset classes and other investment activities are included in the Investment and ESG Report in this document.

As a result of the introduction of a new category of employed members of personnel at CERN, "graduates", the CERN Council approved amendments to two articles of the Fund's Rules: Articles I 1.05 (Members of the Fund) and II 1.03 (Reference Salary), for entry into force on 1 January 2023.

Following the completion of the permitted maximum of two three-year terms, there was some turnover in the PFGB. Peter Hristov retired from the PFGB as a member and Vice-Chair and Marcus Klug and Andreas Glindemann as members. Isabelle Mardirossian was appointed Vice-Chair and Thomas Groffmann, Ofelia Capatina and Alain Delome joined the PFGB, appointed by the ESO Council, CERN Staff Association and ESO Staff Association respectively.

The Actuarial and Technical Committee (ATC) saw Joanne Segars appointed as Chair and Philippe Charpentier join as a member. I would like to thank Peter Hristov for his significant contribution during his six years on the PFGB, including four years as Vice-Chair, and a year on the ATC. I also extend my gratitude to Marcus Klug and Andreas Glindemann for their service to the PFGB.

Whilst the opinions and feedback from our members, beneficiaries and other stakeholders provide the most important recognition, I am delighted that the Fund's achievements were recognised within the community that we share with other Pension Funds, by receiving an award for the Best Pension Fund (Switzerland) at the European Pension Fund Awards 2022.

In closing, I would like to thank all the members of the PFGB and its subcommittees for their continued commitment and dedication over the last year. On behalf of the PFGB members, I would also like to warmly thank our colleagues in the Pension Fund Management Unit for their excellent service to the members and beneficiaries of the Fund.

Ossi Malmberg
Chair, Pension Fund Governing Board

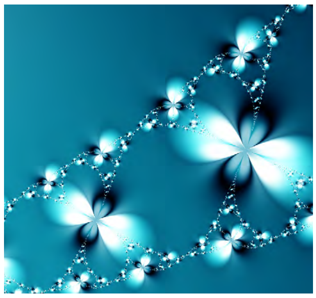
ANNUAL REPORT

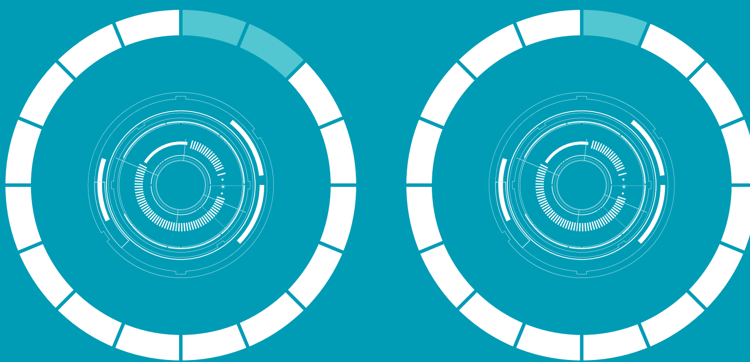
CERN PENSION FUND IN NUMBERS 2022

"The purpose of the Fund is to insure its members and beneficiaries, as well as members of their families, against the economic consequences of disability, old age and death. (Article I 1.02)."

Formed in **1955**

2 Sponsor Organisations



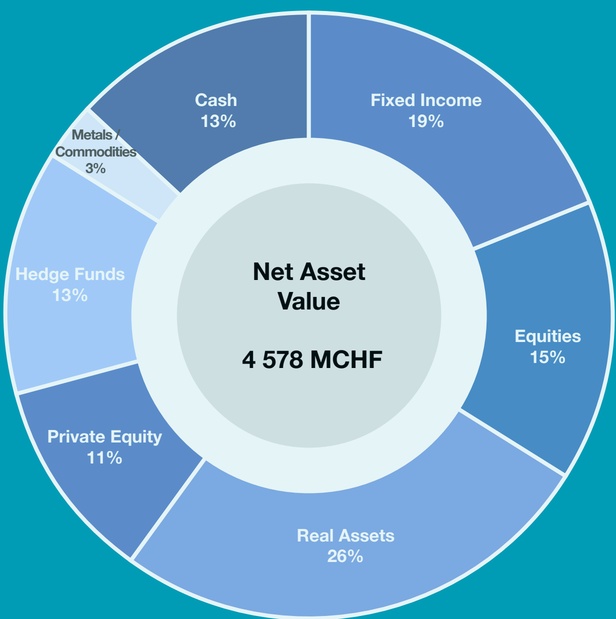


4085 members

3668 beneficiaries

Welcomed **550** new members

Supported families of **137** beneficiaries who sadly passed away



"The Pension Fund takes a holistic approach to the management of risk and operates an assurance framework that provides the PFGB and other stakeholders with an assessment of the strength of controls for risk management."

4 Beneficiaries aged over 100

—

16 Beneficiaries aged under 21

—

47 Countries with beneficiaries

—

25 Million CHF paid each month

—

10 Current beneficiaries with benefits for more than 50 years

PENSION FUND GOVERNING BOARD REPORT

The PFGB is pleased to present its Annual Report and Financial Statements for the year ended 31 December 2022.

Composition of the bodies of the Fund and Advisers (2022)

Governing Board

Investment Committee

Members

Raphaël Bello, Chair
Jacob Bjorheim
Georges Hübner
Marcus Klug
Isabelle Mardirossian

Actuarial and Technical Committee

Members

Marcus Klug, Chair (until 30.04.2022)
Joanne Segars (Chair as of 01.05.2022)
Philippe Charpentier (as of 01.06.2022)
Peter Hristov (until 31.05.2022)
Jan Robinson

Chief Executive Officer

Douglas Heron

Chief Investment Officer

Elena Manola-Bonthond

Chief Operating Officer

Kandy Mitchell

Auditors

	Appointed by:
CERN External Auditors	
National Audit Office of Finland (NAOF), *Helsinki, Finland*	CERN Council
Internal Audit	
CERN Internal Audit Service	CERN Council

Advisers

Fund Actuary

Buck Consultants Limited, *London, UK*

Custodian

Northern Trust Global Services SE., *Luxembourg*

Main Banker

UBS SA, *Nyon, Switzerland*

Risk Consultant

ORTEC Finance AG, *Pfäffikon, Switzerland*

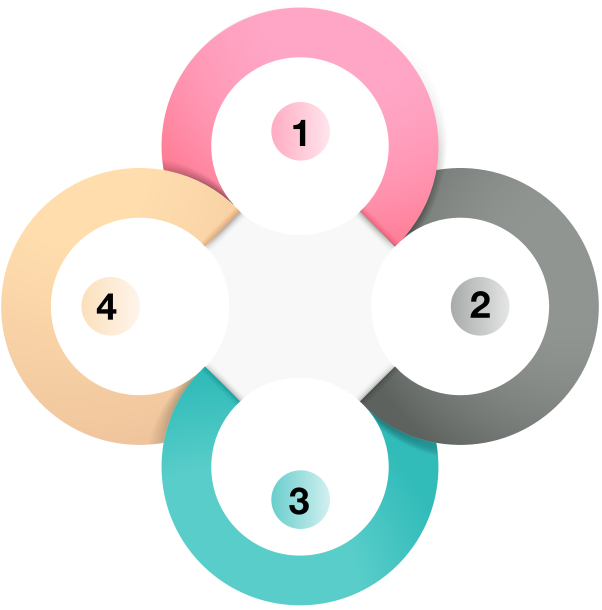
CERN Consulting Medical Practitioner

MEDABE SA, *Monthey, Switzerland*

Members	Appointed by:
Ossi Malmberg, Chair Dirk Ryckbosch	CERN Council
Marcus Klug (until 30.4.2022) Thomas Groffmann (as of 01.05.2022)	ESO Council
Raphaël Bello	Ex-officio (in capacity as member of CERN Management responsible for Administration)
Peter Hristov, Vice-Chair (until 31.05.2022) Isabelle Mardirossian (Vice-Chair as of 01.06.2022) Ofelia Capatina (as of 01.06.2022)	CERN Staff Association
Andreas Glindemann (until 31.10.2022) Alain Delorme (as of 01.11.2022)	ESO Staff Association
Philippe Charpentier	CERN and ESO Pensioners Association
Andreas Hilka Joanne Segars	Professional members appointed by CERN Council

GOVERNANCE

GOVERNANCE STRUCTURE FOR CERN PENSION FUND



1 The Fund is an integral part of CERN, has no separate legal personality and is under the supreme authority of the Council. The activities of the Fund are part of the official activities of CERN and benefit from privileges and immunities.

2 The Fund has operational autonomy within CERN and shall be managed in accordance with its Rules and Regulations. The Director-General shall have no responsibilities with respect to the management of the Fund.

3 The assets of the Fund shall be held separately from those of CERN and shall be used solely for the purpose of the Fund. Neither CERN nor ESO shall reclaim, borrow or impose a lien upon the assets of the Fund.

4 The oversight of the Fund shall be entrusted to the Governing Board, assisted and advised by the Investment Committee and Actuarial and Technical Committee. The management of the Fund shall be entrusted to the Chief Executive Officer.

In the event of ambiguity or any inconsistency or conflict between the information provided in this report and the Fund's Rules and Regulations, the latter will prevail.

CERN COUNCIL AND ITS FUNCTIONS

- Established the Pension Fund and acts as its supreme authority
- Decides on proposals from the Director-General concerning contributions paid to the Fund and the benefits provided by it
- Decides on proposals from the PFGB concerning changes to Pension Fund Rules and Regulations not relating to contributions and benefits
- Informed of the Fund's investment and operational performance and adopts measures to ensure the actuarial balance of the Fund

PENSION FUND GOVERNING BOARD (PFGB) AND ITS FUNCTIONS (ART. 1 2.05)

- Informs Council of financial balance of Fund and proposes any measures needed to ensure the actuarial balance of the Fund
- Approves actuarial parameters for periodic actuarial reviews
- Approves Statement of Funding Principles, Risk Limit, Strategic Asset Allocation, Investment Guidelines and Statement of Investment Principles
- Selects the Chief Executive Officer, proposes their appointment by Council and supervises their work
- Decides on proposals from Investment Committee and Actuarial and Technical Committee
- Approves the internal control system of the Fund and the internal audit programme
- Approves the Operational Plan and Budget of the Fund
- Approves the appointment of the Actuary and the custodian of the Fund's assets
- Decides on appeals lodged against individual decisions taken by the Chief Executive Officer
- Takes any other measures related to its oversight function

Pension Fund Governing Board composition (Art 1 2.06)

Two appointed by the Council (at least one Council delegate); one appointed by ESO Council; one ex-officio from CERN Management; two appointed by CERN Staff Association; one appointed by ESO Staff Association; one appointed by ESO and CERN Pensioners Associations; two professional members.

INVESTMENT COMMITTEE AND ITS FUNCTIONS (ART 1.2.10)

- Recommends to the PFGB the Statement of Investment Principles, Investment Guidelines, Risk Limit and Strategic Asset Allocation
- Monitors the implementation of the above
- Monitors the investment performance
- Approves or recommends to the PFGB, proposals from the CEO relating to the appointment of external service providers involved in the asset management process
- Reports to, and acts on requests from, the Governing Board on investment activities

Investment Committee composition (Art 1 2.11)

Two members of the PFGB; two external professional experts; any additional members with relevant experience (of PFGB or external expert) as the PFGB may decide to appoint.

ACTUARIAL AND TECHNICAL COMMITTEE AND ITS FUNCTIONS (ART. 1 2.13)

- Selects and proposes the Actuary for appointment by the Governing Board
- Defines and monitors the execution of the Actuary's mandate for the preparation of the Periodic Actuarial Review (PAR)
- Recommends, in agreement with the Actuary, to the Governing Board the actuarial parameters for the PAR
- Verifies the draft PAR and recommends to the Governing Board its submission to the Council
- Monitors the Fund's funding status and advises the Governing Board on any measures aimed at achieving full funding
- Examines proposed changes to the CERN/ESO Staff Rules and Regulations and to the Fund's Rules and Regulations, to determine any impact to the Fund and reports the results to the Governing Board
- Prepares and maintains a Statement of Funding Principles
- Reports to, and acts on requests from, the Governing Board on its activities

Actuarial and Technical Committee composition (Art 1 2.14)

Two members of the Governing Board; one or more additional members with relevant experience (who may be PFGB or an external expert) as the PFGB may decide to appoint.

THE FUNCTIONS OF THE CHIEF EXECUTIVE OFFICER (ART. 1 2.08)

- Acts as the legal representative of CERN for all matters relating to the Fund
- Under oversight of the PFGB, is responsible for the management of the Fund (head of the PFMU)
- Applies and interprets the Rules and Regulations of the Fund
- Implements the decisions of the Governing Board
- Acts as Secretary to the Governing Board, Investment Committee and Actuarial and Technical Committee
- Prepares and submits to the Governing Board the Annual Report and Financial Statements of the Fund
- Appoints external service providers, defines their mandates and monitors their execution

OVERVIEW OF THE YEAR 2022

PENSION FUND GOVERNING BOARD

The PFGB met five times during the year (2021: six times). The PFGB and its committees conducted some meetings in person, on site at CERN or ESO, and others via videoconference.

The PFGB's agendas included recurrent items such as the approval of the submission of the Fund's Annual Report and Financial Statements to the CERN Council and the approval of the Fund's risk limit and strategic asset allocation. In addition, the Fund's Actuary presented the Fund's actuarial "dashboard" to the PFGB, and the Pension Fund Management Unit (PFMU) presented the Fund's annual budget for administrative expenses and its medium-term plan for approval, as well as an update on the Fund's Internal Control System and key business risks. The PFGB also reviewed the 2023-2025 programme of work for the internal audit of the Fund, as well as receiving three internal audit reports on the Equities portfolio management, the risk management and control system and the Fixed Income portfolio management. As part of the follow-up on these and previous audits, the Internal Audit Service presented updates on the implementation of the outstanding audit recommendations.

2022 Periodic Actuarial Review

The completion of the periodic actuarial review was a key area of focus for the PFGB during the year. The actuarial assumptions to be adopted had been proposed by the Actuary and approved by the PFGB at the end of 2021. These were based on actuarial studies, as well as input from the Fund's Risk Consultant, following the Long-term Asset Study, and from CERN and ESO with respect to the expected future personnel policies and practices that could impact the evolution of member turnover and salary increases. Prior to the presentation of the results to CERN Council in June, the PFGB received regular updates from the Actuary on the progress and results of the review. The PFGB, at the request of the CERN Audit Committee, mandated an independent assessment of the periodic actuarial review to provide supplementary assurance around the approach to setting the assumptions, the valuation method and the accuracy of the data inputs.

Environmental, Social and Governance

There continued to be good progress on environmental considerations and responsible investing. The new ESG policy was integrated into the Fund's Statement of Investment Principles. The policy sets out the Fund's approach to managing climate-related risks and opportunities and adopting responsible ownership practices, as well as promoting good social governance and climate aware risk management with the Fund's asset managers, and keeping abreast of best practices and global trends in this area. During the year the PFGB received updates from the PFMU on ESG implementation, including the first carbon footprint analysis of the portfolio.

Custodian

Following a comprehensive benchmarking review by the PFMU, with the support of an external consultant, the PFGB approved the extension of the contract with the Fund's custodian for a further five years, providing important continuity with respect to this key service provider.

Indexation and purchasing power loss

Given the high inflationary environment, the PFGB received updates on the impact of the higher inflation rates across many Member States, as well as an update from the PFMU on the implementation arrangements for the annual indexation of pension benefits, including the communication of the purchasing power loss mechanism included in the Fund's Rules.

Updates to Council and Finance Committee

Over the year, the PFGB Chair and CEO provided regular updates to the Finance Committee and Council on the PFGB activities, in particular the progress of the periodic actuarial review, the service activities in relation to members and beneficiaries and the investment performance.

INVESTMENT COMMITTEE

The Investment Committee (IC) held four meetings during the year (2021: four meetings). The IC received regular reports from the PFMU on the performance of individual asset classes, examining and reviewing the actions by the PFMU aimed at optimising the Fund's performance in line with the risk limit and strategic allocation set by the PFGB.

Environmental, Social and Governance

ESG remained a key priority for the IC, with regular updates received from the PFMU on the progress of the implementation of the new ESG policy. The Fund's Risk Consultant completed an analysis of the climate risk exposure of the Fund's investment portfolio, under different scenarios, assessing the expected impact on future investment returns and the Fund's Strategic Asset Allocation. In addition, the PFMU presented an initial carbon footprint analysis of the portfolio.

Risk limit and Strategic Asset Allocation

In November, the IC approved the Fund's Strategic Asset Allocation (SAA) for 2023 and endorsed the proposal, subsequently approved by the PFGB, to retain the Fund's risk measure of 1 Year 5% CVaR at -8% for the coming year.

Investment Guidelines

The Fund's general and asset-specific investment guidelines are reviewed on a regular basis. During 2022 the Fund's General Investment Guidelines were updated by the PFMU and reviewed by the Investment Committee for subsequent approval by the PFGB. Updates included the clarification of the different roles within the PFMU, the formalisation of the benchmark selection and approval process, and the integration of the new ESG policy. The Equity portfolio investment guidelines were also updated to document the enhancements to portfolio construction and risk management.

ACTUARIAL AND TECHNICAL COMMITTEE

The Actuarial and Technical Committee (ATC) met four times during the year (2021: four times).

During the year, the ATC agenda included regular items such as the review of the Actuary's year-end report and semi-annual dashboard that monitors the funding situation.

2022 Periodic Actuarial Review

The ATC provided important oversight in relation to the completion of the 2022 periodic actuarial review, receiving regular updates from the Actuary on the progress and results. With support from the Fund's Risk Consultant, the final report from the Actuary included complementary information on the variance of the discount rate outcome distributions i.e. illustrating a "funnel of doubt" showing the variance of potential outcomes of the funding ratio. The ATC also provided input to the Actuary's draft presentation to Council, ensuring the results of the review were accessible and well understood. During the completion of the review, the PFMU provided the ATC with a summary of the oversight, data checks and quality assurance processes conducted by the PFMU and the Actuary in relation to the periodic actuarial review.

Statement of Funding Principles

A review and update of the Statement of Funding Principles was conducted by the ATC, and approved by the PFGB, to enhance the documentation of the Fund's funding objectives and some of the related risks.

New graduate programme

During the year, the ATC received an analysis from the Actuary regarding the expected impact of CERN's new graduate programme, noting that, provided the programme was implemented in accordance with the assumptions provided by the CERN HR department, the projected funding ratio of the Fund was not expected to be adversely affected.

Purchasing power loss

The high inflationary environment was expected to bring the indexation of benefits and the PPL mechanism under scrutiny for the first time. As a result, the PFMU provided the ATC with updates on the provisions in the Rules, the expected impact on beneficiaries and the planned communication engagement with key stakeholders, including the Fund's beneficiaries. The ATC reviewed and endorsed the approach and communication.

Benefits Service

Regular updates were provided by the PFMU on the activities of the Benefits Service, in particular a quarterly Dashboard showing the key activities in relation to members and beneficiaries and the strategic roadmap to enhance the infrastructure within the service and the tools available for communicating with members and beneficiaries. The key performance indicators presented to the ATC provided evidence of an excellent quality of service to members and beneficiaries, with most showing a 98% or above success rate against target service levels, throughout the year. The annual report from the Fund's Medical Practitioner and a report from the PFMU on the annual life certificate exercise were also presented to the committee.

MANAGEMENT COMMENTARY

REPORT BY THE CEO

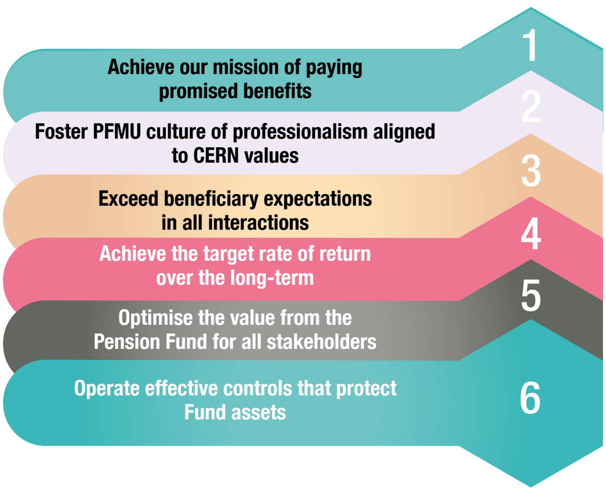
A new format to our Annual Report with key information about the Fund made more accessible

Following consultation with our stakeholders during the year we have introduced a number of changes to the Annual Report and Financial Statements you find here. The objective of making the changes is to provide you with the key information in an accessible format. Additional disclosures are made on the Fund's governance arrangements, our performance in key beneficiary services and in the progress we have made with the implementation of our first Environmental, Social and Governance policy. This is also a year when we report the outcomes of a Periodic Actuarial Review and so there are additional disclosures made about the funding level and how we value the financial obligations to pay benefits in the future. I hope that you find the additional information, and the new format, beneficial.

Listening to beneficiaries to inform our plans and priorities

During the year I was pleased to have the opportunity to meet with a number of our beneficiaries and beneficiary associations both at CERN and at ESO. These meetings, whether in groups arranged formally, such as our Annual Information Meetings, or the individual opportunistic conversations, provided me with valuable insight into how members and beneficiaries feel about their pension benefits and how the Fund provides its services. This insight forms the basis of our Operating Plan and the work we plan for the year ahead. I hope to continue these discussions in the coming year and encourage beneficiaries and members to share their views.

Overarching strategic objectives in the 2023 Operating Plan

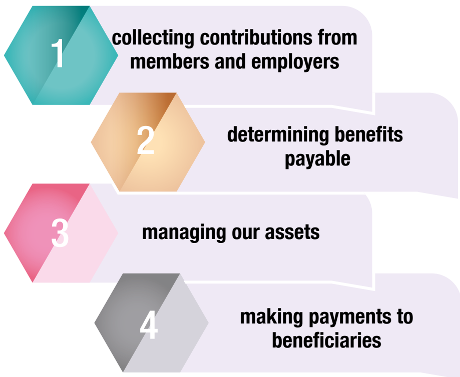


The reducing economic impact of COVID-19 did not provide the increased stability we anticipated

The events of February 2022 and the onset of military conflict in Ukraine brought a new set of challenges to fragile financial markets, following two years of COVID-19, and the flow-through effects of the stimulus packages released by central banks around the world. The direct impact on the Fund of the extensive sanctions, asset trading restrictions and payment blocks was small, with decisive and consistent action taken to ensure all benefit payments were able to be made. The Fund takes investment decisions through the lens of a long-term time horizon and we were not required to implement significant swings in our asset allocation or risk management arrangements, both of which provided some protection against falls in valuations. You can read more about this in the investment report.

Our purpose is clear and the work of each colleague in the PFMU is dedicated to it

Our purpose is to insure our members and beneficiaries against the financial consequences of disability, old age and death. Delivering this involves four key activities:



Each colleague in the PFMU supports one or more of these activities and during a challenging year has made a valuable contribution. I wish to thank them for their work and their commitment to the planned projects this year.

Douglas Heron

Douglas Heron
CEO, CERN Pension Fund

MEMBERS AND BENEFICIARIES

Over **25** million chf benefits paid each month

Welcomed **550** new members

Supported **137** families of beneficiaries who sadly passed away

Converted **19** members to deferred status

47 countries with beneficiaries

Processed **64** members to retiree status

BENEFITS SERVICE OVERVIEW OF THE YEAR 2022

"The purpose of the Fund is to insure its members and beneficiaries as well as the members of their families against the economic consequences of disability, old age and death. (Article I 1.01)."

Although last year allowed many of us to start to put the COVID-19 pandemic behind us, we are aware that there were still restrictions in some countries, as well as longer-term effects on some of our members, beneficiaries and their families. We were pleased to be able to welcome our beneficiaries back on site again, allowing them to visit the Benefits Service in person. We also visited our members at ESO, providing direct in-person access to the Benefits Service.

Engaging with our members and beneficiaries

We were delighted to be able to deliver live sessions at both CERN and ESO during the year to update our members and beneficiaries on the Fund's investment performance, Benefits Service and governance matters. The sessions were attended by over 500 members and beneficiaries, either in person or via the webcast. We received positive feedback from many of you regarding these sessions and hope that they provided a useful update regarding the status and activities of the Fund, as well as responding to the general questions that we received. We continue to provide our new members with important information as part of the induction sessions for new arrivals and to support those that are approaching retirement as part of the retirement seminars held each year.

Anticipating indexation

The increase in the cost of living in many countries last year, compared to previous years, meant that communicating clearly with our beneficiaries regarding the mechanism for the indexation of benefits was a key priority for the Benefits Service. We wanted to ensure that information on the purchasing power loss (PPL) mechanism in the Fund's Rules was provided in an accessible way and also to address any questions or concerns that our beneficiaries might have had, given the high inflationary environment. We trust that the enhanced communication that you received at the end of the year regarding the annual adjustment of your benefits on 1 January 2023 was helpful.

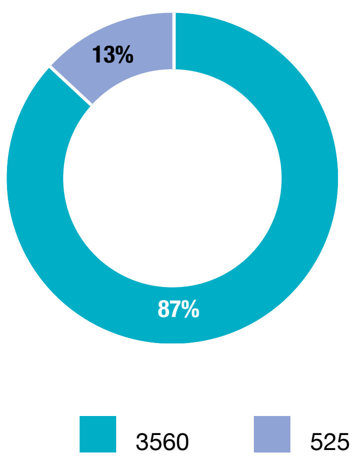
Performance indicators for key processes

The Fund's in-house Benefits Service provides a dedicated team for all our members and beneficiaries. Key processes include the monthly payment of benefits to beneficiaries living in 47 countries, as well as the payment of transfer values to members who decide to leave the Fund when their contract ends. Support for families of deceased beneficiaries is an important part of the Benefits Service activities and we aim to complete the administration processes in an efficient and compassionate way.

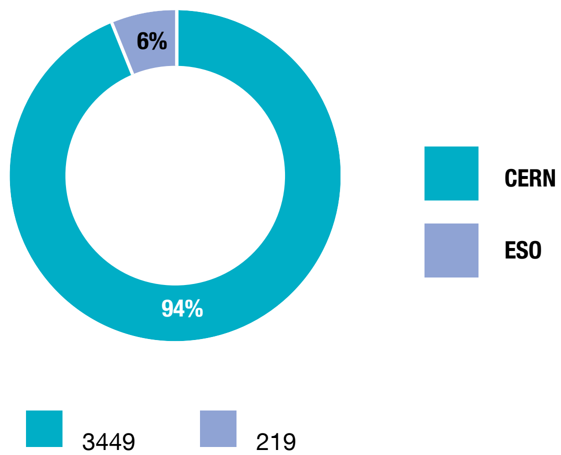
The Benefits Service monitors the service provided to members and beneficiaries against a set of key performance indicators (KPIs). Each KPI is measured against agreed targets regarding the timeliness of response and rated as green, amber or red. A summary of the key performance indicators by category is included below. The services rated below green during the year were caused by high demand, external delays or the requirement to investigate the query further.

		2022			
Service	**Average quarterly volume**	**Q1**	**Q2**	**Q3**	**Q4**
Payment of monthly benefits	9'990				
Processing of contributions	12'100				
Transfer values	90				
Purchases of additional periods	10				
Handling deaths	40				
Updates of personal/financial data	140				
Attestations	30				
Feedback/complaints	3				

Members by Organisation



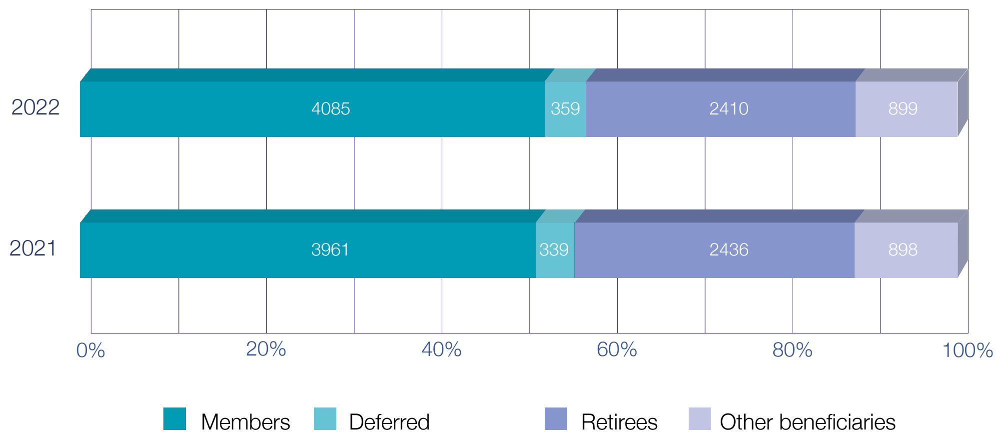
Beneficiaries by Organisation



The number of members and beneficiaries as at 31 December was as follows:

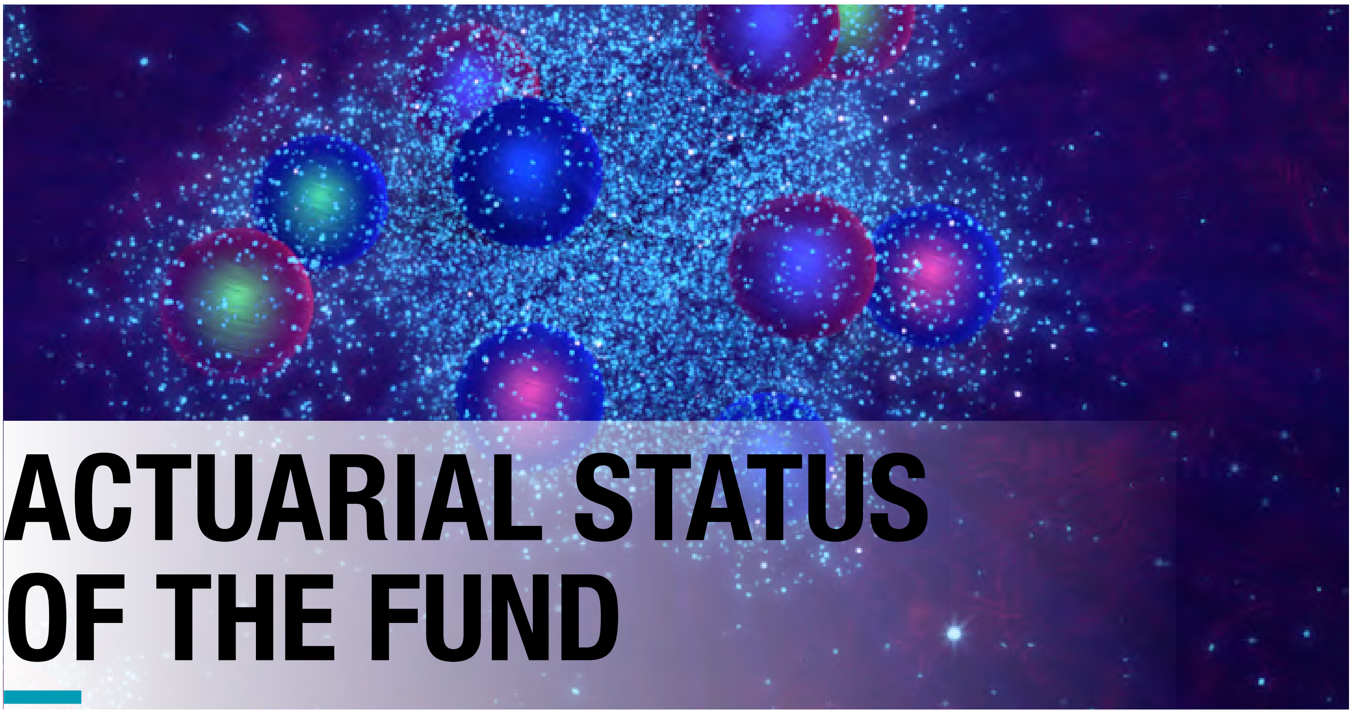
	2022			2021		
	CERN	**ESO**	**Total**	**CERN**	**ESO**	**Total**
Members (pre 01.01.2012)	1’541	280	1’821	1’569	286	1’855
Members (post 01.01.2012)	2’019	245	2’264	1’868	238	2’106
Total Members	**3’560**	**525**	**4’085**	**3’437**	**524**	**3’961**
Deferred retirement pensions	297	62	359	278	61	339
Retirement pensions	2’278	132	2’410	2’313	123	2’436
Surviving spouse pensions	818	17	835	816	17	833
Orphan pensions	37	1	38	36	1	37
Disability and ex-gratia	19	7	26	22	6	28
Total Beneficiaries	**3’449**	**219**	**3’668**	**3’465**	**208**	**3’673**

Members and Beneficiaries



There were 459 members who left the two Organisations (CERN and ESO) during the year 2022 (410 in 2021), 64 of which were retirements (59 in 2021):

	2022	2021
Retirement	64	59
Deferred Pension	19	23
Disability	2	4
Transfer Value	372	323
Deaths	2	1
Total Departures	**459**	**410**



ACTUARIAL STATUS OF THE FUND

A key measure when assessing the financial situation of a defined-benefit pension fund such as the CERN Pension Fund is the funding ratio. The funding ratio indicates the degree to which the Fund's assets cover the value of liabilities to be paid now and in the future and is calculated by dividing the net assets at the balance sheet date with the present value of the liabilities.

A funding ratio of 100% means that a pension fund is in a position to service all of its obligations whereas funding ratios in excess of 100% and below 100% indicate overfunding and underfunding scenarios respectively. Funding levels can fluctuate hence many pension funds target a funding ratio above 100%.

LIABILITY MEASUREMENT

It is important to note that a pension fund's liabilities can be defined and measured in a variety of ways and therefore different funding ratios may be calculated for the same fund.

The accumulated benefit obligation (ABO) measure takes into account those liabilities accumulated or accrued at a given valuation date. Only those benefit payments that are due to be made to members and existing beneficiaries at the valuation date are included in this measure and therefore no future accumulation of benefits is assumed.

Another approach to liability measurement which does take into account anticipated increases in benefits is the projected benefit obligation (PBO) method. This measure accounts for expected remuneration increase linked to career change and indexation, and also pension indexation. The funding ratio based on the PBO is generally considered the single most appropriate measure for assessing the financial position of the Fund at a given date.

When considering how a pension fund's liabilities will evolve over time the PBO liability is projected forward using a consistent set of actuarial assumptions. The PBO can be projected forward on either a 'closed fund' or 'open fund' basis. For a closed fund projection, no allowance is made for any new entrants to the Fund over time such that the analysis focuses only on the current membership. Conversely, an open fund projection will anticipate new entrants to the Fund, making allowance for the accrual of benefits for these members as time progresses.

Liability Measure	Accrued Service	Remuneration Indexation	Pension Indexation	New Entrants
ABO	X			
PBO (Closed Fund)	X	X	X	
PBO (Open Fund)	X	X	X	X

Table 1 summarises the elements of the different liability measures described above.

ACTUARIAL ASSUMPTIONS

In addition, these different methods of determining a funding ratio may use different actuarial assumptions including salary and pension indexation, longevity and the discount rate. These assumptions are typically derived from studies of previous experience of trends in these variables over different periods of time. The Fund's actual experience over the study period is compared to the current actuarial assumptions used in the Fund's actuarial models and where variations are detected adjustments may be made to better reflect, in the actuarial model, the recent and accumulated history of these assumptions.

Note that where an experience study is not feasible, actuarial assumptions may instead be set with reference to a fund's investment strategy, current market conditions, publicly available statistics, legislation, accounting standards, or a best estimate of future trends. The Fund's Actuary is appointed by the PFGB to carry out the actuarial studies on an independent basis.

In 2022 the CERN Pension Fund has disclosed information on the financial situation of the Fund based on the following different liability measures:

1. The Accounting Measure under International Accounting Standard 26 (IAS 26) – Accounting and Reporting by Retirement Benefit Plans (PBO – Closed Fund)
2. The Updated Funding Measure – Best Estimate assumptions (PBO – Closed Fund)
3. The Periodic Actuarial Review as at 1 January 2022 – Best Estimate assumptions (PBO – Open Fund)

The key actuarial assumptions applied in the different liability measures are indicated in Table 2 below. For further details regarding the actuarial assumptions applied under IAS 26 please refer to the "Extract of Actuary's Report on the Fund as at 31 December 2022". The actuarial assumptions used for the Updated Funding Measure as at 31 December 2022 were "Best Estimate" assumptions. The long-term inflation assumption has been updated for the year-end calculation, based on advice from the Fund's Risk Consultant. Whilst there is no change to the Best Estimate real discount rate which remains unchanged at 2.6%, the nominal discount rate increased to 3.85% due to the change in the long-term inflation assumption for the year-end calculation.

Actuarial Assumptions	Accounting Measure under IAS 26 PBO (Closed Fund) 31 December 2022	Updated Funding Measure Best Estimate PBO (Closed Fund) 31 December 2022	Periodic Actuarial Review Best Estimate PBO (Open Fund) 1 January 2022
Discount Rate	AON Swiss AA Corporate Bond Yield Curve (2.03% single equiv. rate)	3.85% p.a. (1.25% + 2.6%)	3.7% p.a. (1.1% + 2.6%)
Remuneration increase linked to inflation	1.25% p.a.	1.25% p.a.	1.1% p.a.
Indexation of pensions linked to inflation	1.25% p.a.	1.25% p.a.	1.1% p.a.
Remuneration increase linked to career change	1.55%*	1.55%*	1.55%*
Mortality and disability tables	94% ICLST2018**	94% ICLST2018**	94% ICLST2018**

Table 2

* Remuneration increase linked to career change is 1.55% p.a. when expressed as a liability-weighted average. The underlying assumption is 0.0% p.a. for CERN Fellows, 2% p.a. for ESO Fellows, and age dependent groupings (between 1.2% and 2.0% p.a.) specific to CERN and ESO for non-Fellows. i.e. the best estimate assumption that was used for the Periodic Actuarial Review as at 1 January 2022.

** Following analysis of the Fund's mortality experience, an adjustment of 94% to the probabilities contained within the ICSLT2018 tables was proposed as the best estimate assumption.

DISCOUNT RATE

A key actuarial assumption is the discount rate which is used to calculate the present value of a pension fund's future liabilities and can be determined in different ways. Given the long term nature of pension fund liabilities, discount rates can be based on long term market interest rates or on actuarial assumptions that are more stable. Even small differences in the discount rate used can have a significant effect on the value of the liabilities and therefore the funding ratio. Different discount rates may be used under different approaches to liability measurement disclosed by the Fund.

EXPLANATION OF DIFFERENT LIABILITY MEASURES AND ACTUARIAL ASSUMPTIONS

The Accounting Measure under International Accounting Standard 26 (IAS 26) – Accounting and Reporting by Retirement Benefit Plans

The Fund prepares its financial statements in accordance with International Public Sector Accounting Standards (IPSAS) and International Accounting Standard 26 (IAS 26). As there is no IPSAS with respect to the reporting of the pension plan the Fund conforms to the provisions of IAS 26 in presenting the net assets available for benefits, the actuarial present value of promised retirement benefits and the resulting excess or deficit.

The Fund uses the PBO closed fund approach to value liabilities under IAS 26 and this permits an assessment of the financial position of the Fund by comparing the net assets of the Fund with its liabilities as at 31 December 2022. As the PBO method takes account of future salary and pension increases, it presents a higher value for liabilities than that which would be calculated under the ABO method.

Under IAS 26 the Fund uses a discount rate that refers to high-quality Swiss corporate bonds. This is a variable rate and as such is likely to produce volatile funding ratios from one year to the next. Using this variable discount rate to calculate the present value of promised retirement benefits illustrates the extent to which the Fund's net assets as at 31 December 2022, if invested with minimal investment risk would meet the liabilities at this date. It is important to note that this approach to determining the discount rate, although required by accounting standards, produces a very conservative funding ratio that is inappropriate for assessing the financial health of the Fund.

Updated Funding Measure

This measure of the Fund's liabilities also uses the PBO closed fund approach but with a different set of actuarial parameters that represent a best estimate of the long term funding view. Best Estimate actuarial assumptions are those which are most likely to be borne out in practice. For each assumption there is a 50% chance of actual experience being more favourable than assumed and a 50% chance of experience being less favourable than the best estimate assumption. The aggregate effect is that actuarial gains and losses should be equally likely in future years.

An important difference from the actuarial assumptions under the Accounting Measure is the discount rate which under this method represents the Fund's long term investment return target. The use of a consistent discount rate reduces the funding ratio volatility which is inherent in the Accounting Measure approach.

The Periodic Actuarial Review as at 1 January 2022

As provided for under Article I 4.04 of the Fund's Rules, a Periodic Actuarial Review is performed at least every three years. The purpose of this review is to inform CERN Council of the financial situation of the Fund. The last Periodic Actuarial Review was carried out as at 1 January 2022.

With respect to this liability measurement the actuary projects the assets and liabilities to determine the expected funding level in the future. The PBO method is again used but in addition future contributions, the expected return on assets and future accrual of service for current and new members of staff is included in the projection. Given this inclusion of expected future service for the current and future population and the use of a consistent discount rate, this measure of a future funding ratio is the most appropriate approach for funding purposes.

The Periodic Actuarial Review report provides an illustration of the variability in funding level i.e. a "funnel of doubt" using stochastic scenarios on the discount rate assumption.

As in the case of the previous Periodic Actuarial Review, a Best Estimate approach was used to set the actuarial assumptions for the Periodic Actuarial Review as at 1 January 2022.

Best Estimate actuarial assumptions are those which are most likely to be borne out in practice. For each assumption there is a 50% chance of actual experience being more favourable than assumed and a 50% chance of experience being less favourable than the Best Estimate assumption. The aggregate effect is that actuarial gains and losses should be equally likely in future years.

Funding Situation under different Liability Measures

Table 3 below shows the funding situation under each of the liability measurement approaches using the actuarial assumptions mentioned in Table 2 above. The prior year funding ratios under the first two measurements are presented in the "Extract of Actuary's Report on the Fund as at 31 December 2022". There is no funding ratio at 1 January 2041 nor 1 January 2052 as these two measures are projected on a closed fund basis.

Liability Measure	Funding Position Accounting Measure under IAS 26 As at 31 December 2022 kCHF	Funding Position Updated Funding Measure As at 31 December 2022 kCHF	Funding Position Periodic Actuarial Review As at 1 January 2022 kCHF
Net assets of the Fund	4'578'372	4'578'372	4'982'000
Actuarial Liabilities	8'966'633	6'620'177	6'464'000
Surplus/(Deficit) in the Fund	(4'388'261)	(2'041'805)	(1'482'000)
Funding Ratio at date of measure	51.1%	69.2%	77.1%
Funding Ratio at 1 January 2041	N/A	N/A	97.1%
Funding Ratio at 1 January 2052	N/A	N/A	114.4%

Table 3: Funding situation under each of the liability measurement approaches.

Summary

Different approaches to the measurement of liabilities may be applied to determine the financial situation of a pension fund under different scenarios and to meet the requirements of accounting standards.

The most appropriate method of liability measurement for assessing the funding situation is the PBO in an open fund scenario as determined in the Fund's three-yearly Periodic Actuarial Review.

INVESTMENT AND ESG REPORT

MACROECONOMIC HIGHLIGHTS

In 2022, global economic activity continued to expand but at a slower pace. According to the IMF, global GDP rose by 3.2%, which represented a significant slowdown from the robust growth of 6.2% observed in 2021.

The moderation of growth was caused by several factors, including the impact of a commodity supply shock, higher consumer price inflation, which negatively affected real incomes, and the tightening of global financial conditions.

The conflict in Ukraine led to an increase in energy prices, disrupting the supply of crucial commodity imports and impacting economic growth, particularly in the eurozone. Despite lower growth, labour market tightness persisted in numerous economies. On the other hand, the Chinese economy experienced slow growth due to COVID-related restrictions that were only lifted towards the end of the year.

The delayed impact of the very accommodative fiscal and monetary policies that were implemented in 2020 and 2021, coupled with higher commodity prices, led to a rise in inflation to the highest level in many decades. The IMF estimated that global CPI inflation rose to 8.8% in 2022, the highest since the 1980s.

In the US, inflation accelerated to multi-decade highs, while headline figures in Europe and the UK also rose at record paces. Notably, elevated prices for commodities such as gas and crude oil resulted in increased heating and electricity costs, particularly in Europe. Core inflation was also elevated as wage pressures picked up, and long-term inflation expectations were revised upwards.

As a result, central banks initiated quantitative tightening programmes and significantly tightened monetary policy. Policymakers in advanced and emerging economies raised interest rates aggressively, with the Federal Reserve in the US hiking policy rates at the fastest pace since the 1980s.

In summary, 2022 was a year of slower growth and very strong inflationary pressure, with central banks hiking interest rates and financial conditions becoming much more restrictive.

RISK MANAGEMENT AND ASSET ALLOCATION

The Fund's risk management and asset allocation policy is set out in the Statement of Investment Principles, which has been approved by the PFGB. It is based on an annual risk limit and an annual strategic asset allocation (SAA), and on managing the current asset allocation (CAA) in a manner compatible with both the risk limit and the investment return objective.

The Fund's return objective is to meet or exceed the actuarial best-estimate discount rate, adjusted for Geneva inflation, over the long term. Since 2022, the best-estimate real-rate assumption stands at 2.60% per annum. The PFGB set the same risk limit for 2022 as for 2021, namely a 5% Conditional Value-at-Risk (CVaR) limit of -8%.

The SAA for 2022, which was defined by the PFMU in collaboration with the Risk Consultant (Ortec Finance) and was subsequently endorsed by the Investment Committee and approved by the PFGB, is shown in Table 4 below.

The actual exposure by asset class (CAA – current asset allocation) as at 31 December is shown in the first column.

Asset class	CAA as at 30-12-2022	SAA 2022	SAA 2021
Fixed Income	19.22% (16.95%)	26.50%	29.00%
Equities	15.19% (13.14%)	17.00%	16.00%
Real Estate	20.83%	19.00%	19.00%
Infrastructure	2.95%	2.50%	2.50%
Timber/Farmland	1.84%	2.50%	2.50%
Private Equity	11.01% (7.49%)	6.00%	6.00%
Hedge Funds	12.61%	11.00%	9.50%
Precious metals/ Commodities	3.52%	5.50%	5.50%
Cash and Overlay	12.84%	10.00%	10.00%

Table 4: CAA as at 30-12-2022, SAA 2022 and SAA 2021.

The numbers in parentheses show the exposure net of equity hedges and cash held at asset class level.

In 2022, the level of uncertainty driven by inflation expectations and geopolitical risk led the Risk Consultant to recommend the continued use of a CVaR error margin, as implemented on 12 March 2020, in accordance with the risk framework approved by the PFGB in November 2017.

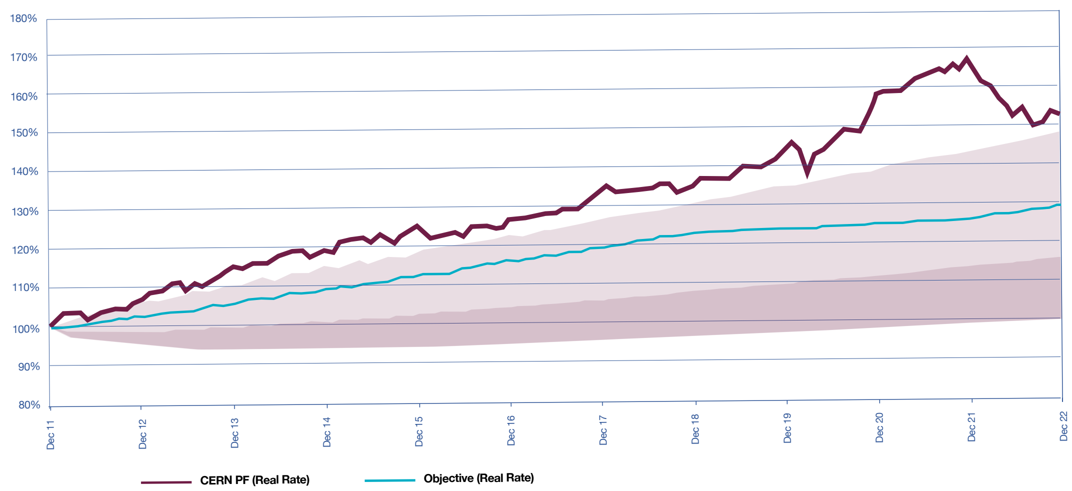
The risk level of the SAA increased throughout 2022. The Russia-Ukraine war triggered increased commodity prices and elevated uncertainty. This, combined with rising inflation and interest rates, a fear of recession and a tightening of the monetary policy stance by the central banks, led to a downturn in the business cycle. Sentiment remained negative throughout the year as there was little sign that inflation would decline to the level of central bank targets in the short term, given persistent labour market tightness and the prospect of an energy crisis. At the end of the year, the business cycle outlook for 2023 and 2024 had slightly improved as the cycle progressed, despite the remaining above-average market volatility and elevated geopolitical and inflation uncertainty.

Throughout the year, the Fund's risk, as estimated by the Risk Consultant using the disequilibrium scenarios, remained within the one-year 5% CVaR limit of -8% +/- the 2 percentage point error margin. It is recalled that the use of disequilibrium scenarios, which are short-term scenarios, is necessary because the Fund's risk limit is expressed in terms of a one-year time horizon. These scenarios take account of the current policies of central banks, which tend to keep the level of risk from rising to the level of the long-term expectation

PORTFOLIO PERFORMANCE IN 2022

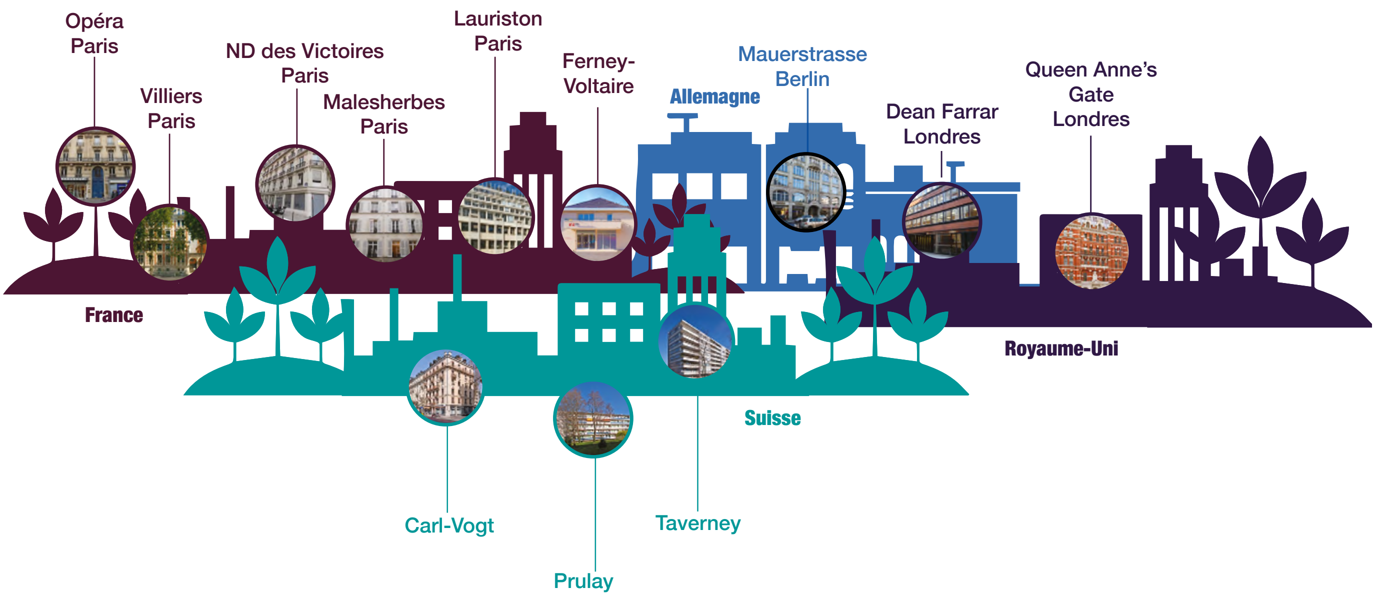
In 2022, the Fund returned a performance of -6.41%, net of external management and custody fees, as reported by the external performance-monitoring reporting service (APEX) as at 31 December 2022. This performance, which is calculated using a time-weighted rate of return to eliminate the impact of external cash flows and the associated timings, does not include the governance and internal management/ operations costs[1], which are evaluated at approximately 0.19 percentage points. Geneva inflation stood at 2.47%.

The graph below shows the Fund's cumulative returns compared to the return objective since December 2011, as reported by APEX. The return objective corresponds to the best-estimate real rate, which stands at 2.60% per annum since 2022. In 2022, the Fund's real return was 11.29 percentage points below the best-estimate real rate. As at 31 December 2022, the Fund's cumulated real returns exceeded the objective by 23.53 percentage points.



Cumulative Real Return vs. Objective (Real Rate)

1. Includes PFGB, ATC and IC expenses, Actuary, CERN services, Risk Consultant, PFMU staff, temporary labour and external service providers related to the investment process, such as due diligence providers, data providers, real-estate appraisal service and performance-reporting services.



Currency Hedging Policy

Throughout the year, the Fund maintained a prudent currency hedging policy, hedging close to 100% of its overall currency exposure on average.

Fixed Income

The fixed income portfolio returned –14.66% after currency hedging costs.

The year 2022 was the worst year for bond markets on record, with central banks across the world engaging in aggressive tightening of their monetary policies. The Federal Reserve and the European Central Bank hiked interest rates by 4.25% and 2.5% respectively, causing a sharp repricing of bond markets. The 10-year German government bond yields rose from -0.177% to 2.571%, while 10-year US government bond yields rose from 1.512% to 3.879% and interest rate curves flattened to unprecedented levels in anticipation of a subsequent slowdown of the economy. This led to a loss of 12.5% expressed in USD (approximately 15% in CHF) for the US Treasury Market and a loss of 18.5% in euros (approximately 19% in CHF) for eurozone government bonds. The credit market also experienced sell-offs, but only because of its duration exposure, and with little repricing of the credit risk.

The rate differential between Switzerland and the US or the eurozone led to more costly FX hedging (approximately 0.5% for EUR and 2.5% for USD), which further detracted from performance.

Given the risks in the market, the fixed income portfolio was managed with a significant underweight with respect to the benchmark allocation and contained a significant cash component.

Equities

The equities portfolio returned –20.38% after currency hedging costs.

2022 was a difficult year for the equity markets as the valuations, i.e. price-to-earnings multiples, dropped significantly due to the tightening of monetary policies by central banks, especially in the US. The US benchmark (S&P 500) returned –20.75% in CHF after currency hedging costs. In this type of environment it was difficult to add value through active long-only discretionary management. Seeking to obtain a broader market exposure, the PFMU moved a significant proportion of its US equity exposure to a passive management vehicle in the summer. A significant overweight in Europe was retained, which contributed positively to the Fund's performance.

Real Assets: Real Estate - Timber and Farmland - Infrastructure

The real-asset portfolio comprises the following three sub-portfolios: real estate (directly owned properties and real-estate funds), timber/farmland and infrastructure.

Real Estate

The real-estate portfolio returned +1.23% after currency hedging costs. 94% of the portfolio consists of directly owned properties scattered across four countries: Switzerland, France, the United Kingdom and Germany. The remaining 6% is invested in externally managed real-estate funds.

In terms of capital appreciation, the value of the Fund's French properties in core Paris locations increased, while the value of properties in other countries remained unchanged or slightly decreased. The rental income was to a large extent offset by budgeted capital expenses.

No investments or divestments were made during the year. The PFMU actively explored investment opportunities with an attractive risk/return profile in the main European markets

Timber and Farmland

The timber and farmland portfolio returned +3.65% after currency hedging costs. 50% of the portfolio is invested in directly owned forests in France, while the rest of the exposure is managed through investment funds.

The positive performance of the portfolio was largely driven by the increase in the capital value of the directly owned forests. These forests are managed according to the irregular forest management[2] technique, which is deemed to be best suited to maintaining ecological diversity.

During the year, seven new directly owned forests with a total surface area of 2,663 hectares were purchased.

Infrastructure

The infrastructure portfolio ended the year at -1.22% after currency hedging costs. The portfolio held significant exposure to listed companies, which negatively impacted the performance.

In 2022, the Fund's exposure to listed companies was reduced and one investment opportunity in the private space, focused on energy transition, was identified

Private Equity

In 2022, the private equity portfolio had a positive performance of +1.93% after currency hedging costs. This performance mostly came from buyout and growth funds. The portfolio generated a negative net cash flow of about 5.8 MCHF.

As of December 2022, the portfolio consisted of 83 active funds (involving 48 managers), invested across buyout, growth and venture capital funds. The portfolio is nonetheless quite concentrated, as approximately 11 funds make up half of the total exposure (NAV plus unfunded commitments). The geographic exposure of the total commitment is evenly shared between Europe and North America.

In 2022, the Fund committed a total of almost 52 MCHF to private equity across different strategies.

Hedge Funds

In 2022, the hedge fund portfolio returned +8.45% after currency hedging costs. At the end of 2022, the hedge fund allocation included 18 funds. During the year, the portfolio was extended to include 6 new funds with a total value of 105 MCHF, bringing the exposure slightly higher than the strategic asset allocation.

Commodities/Gold

In 2022, the commodities and precious metals portfolio delivered a negative performance, driven by the negative returns of gold and large volatility in commodity prices. The negative returns for gold were driven by market expectation of interest rate hikes. The portfolio fell by a total of 2.18% during the year.

2. Also called 'uneven-aged forest management'.

UPDATE ON THE OPERATIONAL INFRASTRUCTURE

The implementation of the Portfolio Management System (PMS) continued in 2022 and is due to be completed by the second quarter of 2023. The implementation of a PMS represents a major improvement in the infrastructure of the Fund, which will strengthen all trade flow processes and provide an overall more robust and reliable set-up in terms of operations and business continuity.

CONCLUSIONS – MACRO OUTLOOK

Looking ahead to 2023, the macroeconomic and financial outlook remains challenging. On the positive side, the global economy has shown continued resilience, despite tighter financial conditions and an energy supply shock. Additionally, the reopening of the Chinese economy, slowly abating inflationary pressures and lower market valuations are all positive developments.

However, the situation remains highly uncertain, with evidence suggesting that consumer demand in developed economies may weaken and investments and housing activity may remain subdued. This is expected to impact corporate earnings and increase the likelihood of an economic downturn in 2023. Moreover, high inflation remains a concern, and the potential for new geopolitical shocks with an impact on commodity prices could further constrain the ability of central banks to support economic growth.

UPDATE ON THE IMPLEMENTATION OF THE ESG POLICY

In November 2021, the PFGB adopted an ESG policy as an integral part of the Fund's Statement of Investment Principles. At the same time, the PFGB approved an ESG implementation work plan, with an explicit focus on addressing climate-related risks and opportunities, The progress achieved in 2022 is reported in the next section.

The ESG plan itself is updated on an annual basis. In parallel, the Fund continued to take part in collective engagement activities. In 2022, it participated in 10 initiatives on various ESG topics led by Ethos Engagement Pool International (EEPI), a platform established by the Fund's provider of proxy voting services.

MANAGEMENT OF CLIMATE RELATED RISKS AND OPPORTUNITIES: PROGRESS REPORT

This section summarises the work carried out in 2022 to strengthen the Fund's management of climate-related risks and opportunities. It is organised according to the guidelines of the Task Force on Climate-Related Financial Disclosures (TCFD), as reproduced below, around the pillars of governance, strategy, risk management and metrics/targets

I. Governance

Describe the oversight of the climate-related risks and opportunities. Describe management's role in assessing and managing climate-related risks and opportunities.

The Fund acknowledges that climate risk can have a systemic impact on the value of its investments. Climate change is expected to be a source of increased physical risks (e.g. climate events) and transition risks (e.g. tighter regulatory requirements, legal risks, stranded assets, social unrest).

The Fund is on a path of progressively integrating the management of climate risks into its global investment risk management framework. While the responsibility for this integration lies within the remit of the CEO and the CIO, the progress is continuously monitored by the Investment Committee and the PFGB.

II. Strategy

Over the reporting period the Fund completed two exploratory studies, a climate impact analysis and a carbon footprint and transition pathway study, with the objective of providing an initial evaluation of the Fund's climate risk. In addition, the Fund is active in identifying opportunities to invest in climate transition themes. This combination of bottom-up and top-down approaches is deemed to be appropriate, given the complexity of the matter and the inherent uncertainties.

Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long term. Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.

Over the reporting period, the PFMU commissioned a climate impact analysis (Figure 1) to evaluate the Fund's strategic asset allocation over a long-term investment horizon, according to three stylised climate scenarios:

Orderly Transition – explores the transition and physical risks involved in an orderly and smooth transition towards a low-carbon, climate-resilient economy consistent with the goals of the Paris agreement.

Disorderly Transition – explores how a transition can have more severe financial impacts when the pricing-in of climate risks occurs abruptly and with financial sentiment shocks.

Failed Transition – explores the severe physical impacts of a scenario where current policies continue, the Paris Agreement is not met and global temperatures increase well beyond 2°C, triggering serious physical risks.

The three climate scenarios, which should be regarded as possible rather than probable outcomes, are viewed relative to the base case. The base case represents a scenario where all currently existing policies and past physical impacts are assumed to have been priced in by the markets, but no future transition policies or future physical risks are explicitly accounted for (in other words, a sort of "status quo")

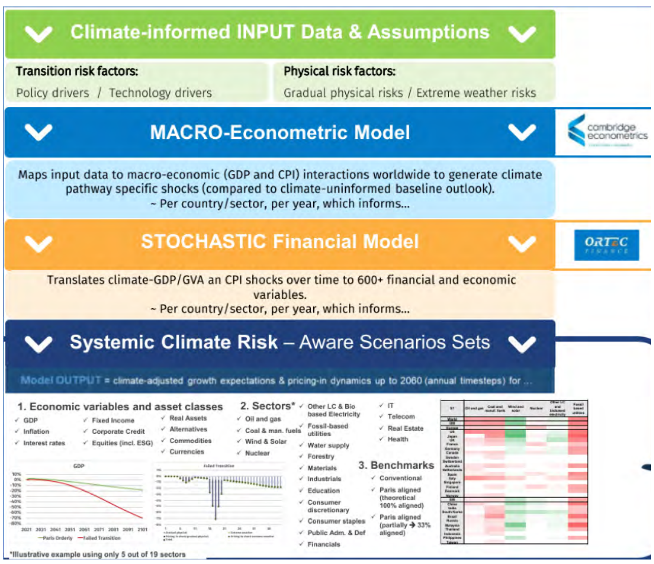


Figure 1: Climate MAPS methodology. Source: Ortec Finance

As shown in Figures 2 and 3 below, the investment return would be only modestly lower in an orderly transition. In a disorderly scenario, the effect is larger, with transition risks manifesting themselves early. In the failed transition scenario, the performance is expected to deteriorate quite significantly later on, as physical risks start to be realised.

- In the short term (next 5 years), a disorderly transition scenario would expose the portfolio to climate risks and result in approximately 3% lower cumulative returns than the baseline expectations.

- However, already by the end of this decade, the failed transition scenario will expose the portfolio to more severe impacts than an orderly transition to a low-carbon world. This leads to structural under-performance compared to the baseline expectations. By 2061, under the failed transition scenario, the portfolio value is expected to represent only 82.5% of what it would have been according to the baseline.

Impact on yearly return (annualized)	Year 1-5	Year 6-10	Year 11-20	Year 21-30	Year 31-40	Year 1-40
Paris Orderly	-0.10%	0.12%	-0.02%	0.01%	-0.10%	-0.02%
Paris Disorderly	-0.62%	0.21%	-0.03%	0.01%	-0.10%	-0.08%
Failed Transition	-0.11%	-0.26%	-1.05%	-0.29%	-0.51%	-0.50%

Figure 2: Impact on yearly returns over the next forty years according to each of the climate pathways.
Source: Ortec Finance for CERN Pension Fund

Impact on cumulative return	Year 5	Year 10	Year 20	Year 30	Year 40
Paris Orderly	-0.5%	0.1%	-0.1%	-0.1%	-1.0%
Paris Disorderly	-3.1%	-2.2%	-2.5%	-2.4%	-3.3%
Failed Transition	-0.5%	-1.8%	-11.3%	-13.4%	-17.5%

Figure 3. : Impact on cumulative investment results over the next forty years according to each of the climate pathways.
Source: Ortec Finance for CERN Pension Fund.

While the study delivered the numbers quoted above, it should be noted that the direction and the magnitude of these estimates are more informative than precise numbers. The above estimates are associated with significant uncertainty stemming from the multiple layers of model risk, in particular the specification of scenarios, the connections between the climate scenarios and the macroeconomic outcomes and, finally, the connections between the macroeconomic outcomes and the financial markets.

As mentioned in the preamble of this section, the Fund strives to identify opportunities to invest in climate-focused themes. During the reporting period, the Fund invested in two infrastructure funds with an energy transition focus, one of which is focused on offshore wind energy in Scandinavia and the another on energy transition solutions. The Fund is also invested in a credit fund that provides bridge financing for energy transition and in three private equity funds that invest exclusively in companies deemed to have sustainable and renewable infrastructure.

The Fund continues to invest in the timber asset class, both through direct ownership and through investment funds. The directly owned forests in the portfolio have been managed since inception according to the "irregular forest management" approach[3].

III. Risk Management

Describe the organisation's process for identifying, assessing and managing climate-related risks. Describe engagement activity with investee companies to encourage better disclosure and practices related to climate-related risks. Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organisation's overall risk management.

Given that the climate impact analysis provided useful insight into climate-related risk, the Fund plans to incorporate physical and transition risks in its next ALM study scheduled for 2024. In addition to this analysis, the Fund carried out its first carbon footprint and transition pathway analysis, the main results of which are detailed in the Metrics and Targets section below. A carbon footprint analysis will be carried out on a regular basis, with a frequency that will be decided by the PFGB in 2023.

In terms of engagement, the Fund actively participated in ten initiatives led by Ethos Engagement Pool International (EEPI) in 2022, four of which focused on environmental issues. EEPI is a platform established by the Fund's provider of proxy voting services, through which shareholder engagements take the form of participation in initiatives mainly centred on environmental, social and governance topics.

In conclusion, it can be said that the Fund made significant steps in integrating climate risk into its risk management process during the year

IV. Metrics and targets

Describe the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.

The Fund assesses the climate impact of the securities it holds by measuring their carbon footprint. For this purpose it used the methodology and data provided by S&P Trucost for the combined corporate bond and listed equity holdings as of September 2022, which accounted for 25% of the NAV excluding cash. Complementary figures were calculated by scaling absolute emissions, relative to the portfolio's value (C/I) or the revenues (C/R) of the underlying firm. The TCFD recommends using the weighted-average carbon intensity (WACI), which measures the average carbon-to-revenue ratio across individual portfolio holdings according to their individual weights.

The data used to evaluate emissions is backward-looking by design. For this reason, the Fund used a complementary metric for carbon footprinting, namely the Implied Temperature Rise (ITR)[4], which the TCFD defines as an attempt to estimate the global temperature rise associated with the greenhouse emissions of a single entity (company, fund, etc.). However, the ITR is more dependent on assumptions and models.

Using the same S&P Trucost service, the Fund separately measured the carbon intensity of its direct real-estate holdings, which account for 22% of NAV excluding cash. For this portfolio, the alignment with the decarbonisation pathway envisaged for the real-estate sector under the International Energy Agency 2°C scenario was evaluated using the Carbon

3 Also called 'uneven-aged forest management'. This approach can be defined as "managing and using forests and woodlands in a manner and with an intensity that allow them to maintain their ecological diversity, productivity, regeneration capacity and vitality and their ability to fulfil, now and in the future, relevant ecological, economic and social issues, locally and globally, and that they cause no impediment to other ecosystems" (Ministerial Conferences for the Protection of Forests in Europe – Strasbourg 1990, Helsinki 1993)
4 ITR incorporates current GHG emissions or other data and assumptions to estimate expected future emissions associated with the selected entities. Then, the estimate is translated into a projected increase in global average temperature (in °C) above preindustrial levels that would occur if all companies in corresponding sectors had the same carbon intensity as the selected assets (source: TCFD internal documentation).

Risk Real Estate Monitor (CRREM) global pathway.
The Fund's approach to climate-related opportunities is bottom-up, as discussed in the previous section. No specific metrics has been developed in this regard

Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risk. Disclose weighted average carbon intensity (WACI) for each product or investment strategy where data and methodology so allow.

In absolute terms, the footprint of the Fund's combined corporate and listed equity holdings is estimated at 57,654 tCO_2 e[5]. In accordance with the TCFD recommendation, this calculation includes Scope 1[6] and Scope 2 emissions. If Scope 3 "Non-electricity first tier of the supply chain" emissions are included (i.e. CO_2e emissions generated by companies providing goods and services in the first tier of the supply chain), the footprint rises to 80,376 tCO_2 e. The weighted-average carbon intensity (WACI) of the analysed portion of the portfolio – Scope 1 and 2 – is 212 tCO_2e/MCHF per year. The C/R, C/I and WACI of the aggregate portfolio – Scope 1, Scope 2 and Scope 3 – are 267, 91 and 258 tCO_2 e/MCHF, respectively. The Scope 1 and Scope 2 results are shown in Figure 4.

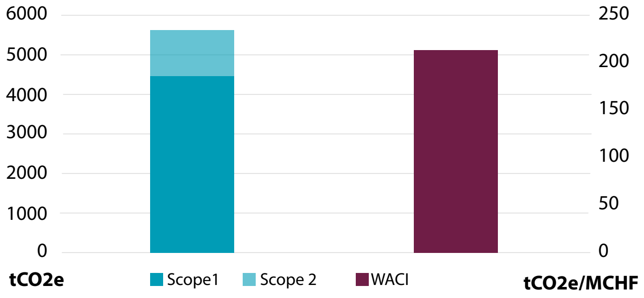


Figure 4: Carbon footprint and WACI, Scope 1 and Scope 2 emissions, CERN Pension Fund corporate and listed equity portfolio. Source: S&P Trucost for CERN Pension Fund

Asset owners should describe the extent to which their assets under management and products and investments strategies, where relevant, are aligned with a well below 2°C scenario, using whichever approach or metrics best suit their organisational context or capabilities

Figure 5 shows the path of the Fund's combined corporate bond and listed equity portfolio emissions, according to three different temperature paths, using firm-level estimates provided by S&P Trucost. The implied temperature path of the portfolio is measured to be in the 2-3°C range, which exceeds the goals of the Paris agreement.

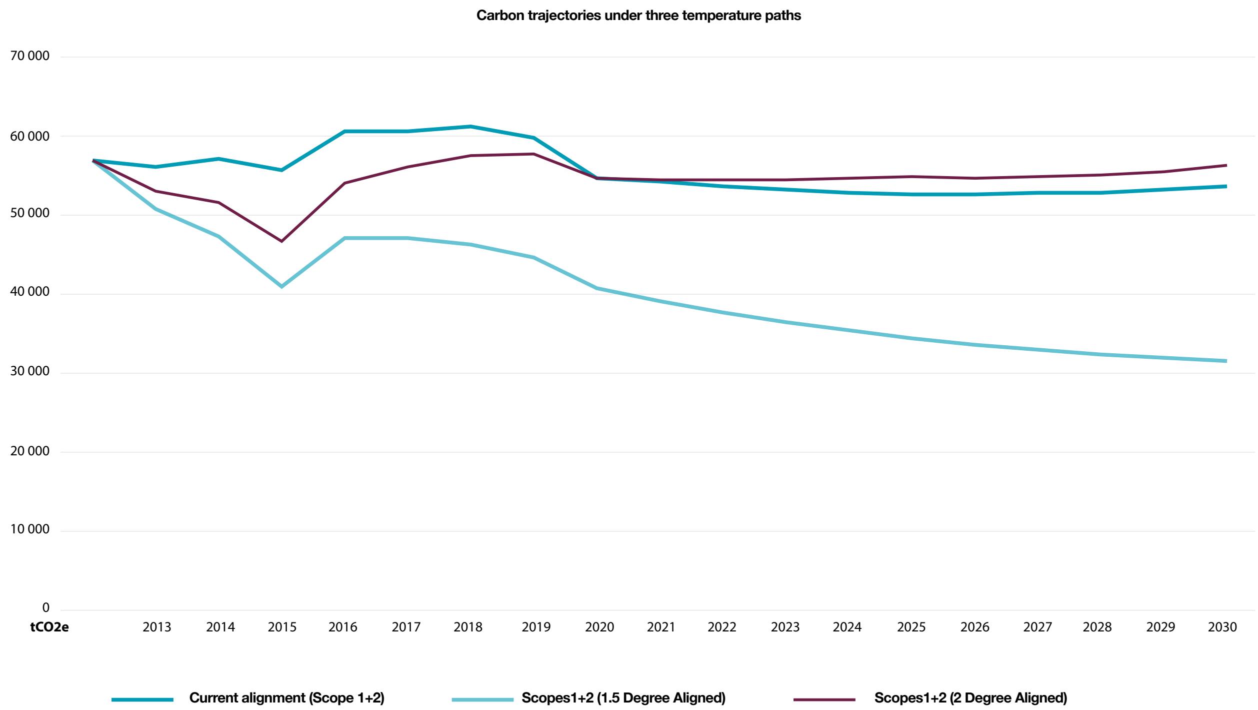


Figure 5. Carbon trajectories according to three temperature paths, Scope 1 and Scope 2 emissions, CERN Pension Fund corporate and listed equity portfolio. Source: S&P Trucost for CERN Pension Fund.

5 Calculations of GHG emissions are presented in metric tonnes of carbon equivalent, which weights each greenhouse gas by its Global Warming Potential.
6 Scope 1 emissions are greenhouse gases generated by direct company operations (i.e. emissions generated by electricity production, burning fuel in corporate fleet). Scope 2 emissions are those generated by purchased electricity, heat or steam. Scope 3 emissions ae those that are indirectly generated by a company's activities either "upstream" (i.e. by suppliers) or "downstream" (i.e. through the use of sold products). Scope 3 emissions are subject to far greater uncertainty compared to Scope 1 and 2 emissions.

The carbon intensity of the Fund's direct real-estate portfolio is 10 kg CO2e/m2, with a WACI value of 11 kg CO2e/m2. Figure 6 shows the portfolio's carbon intensity against the 2 °C Aligned Carbon Intensity Path. In its current state, the portfolio appears to well be positioned with respect to the CRREM milestones in 2030 and in 2040.

Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.

The Fund may consider setting targets for the management of the portfolio in the medium term, after having thoroughly assessed the drivers of its carbon footprint and temperature alignment performance.

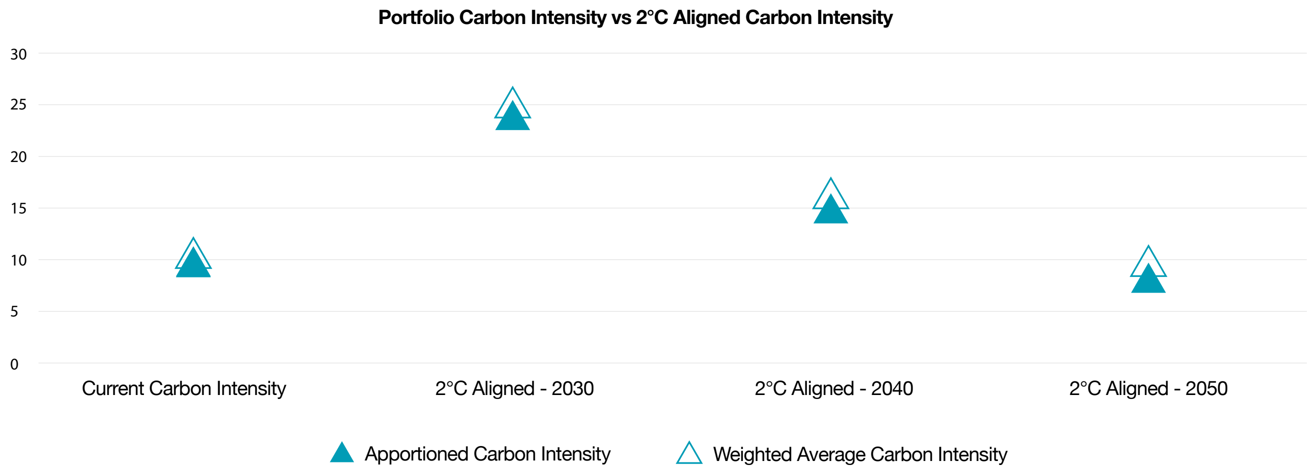
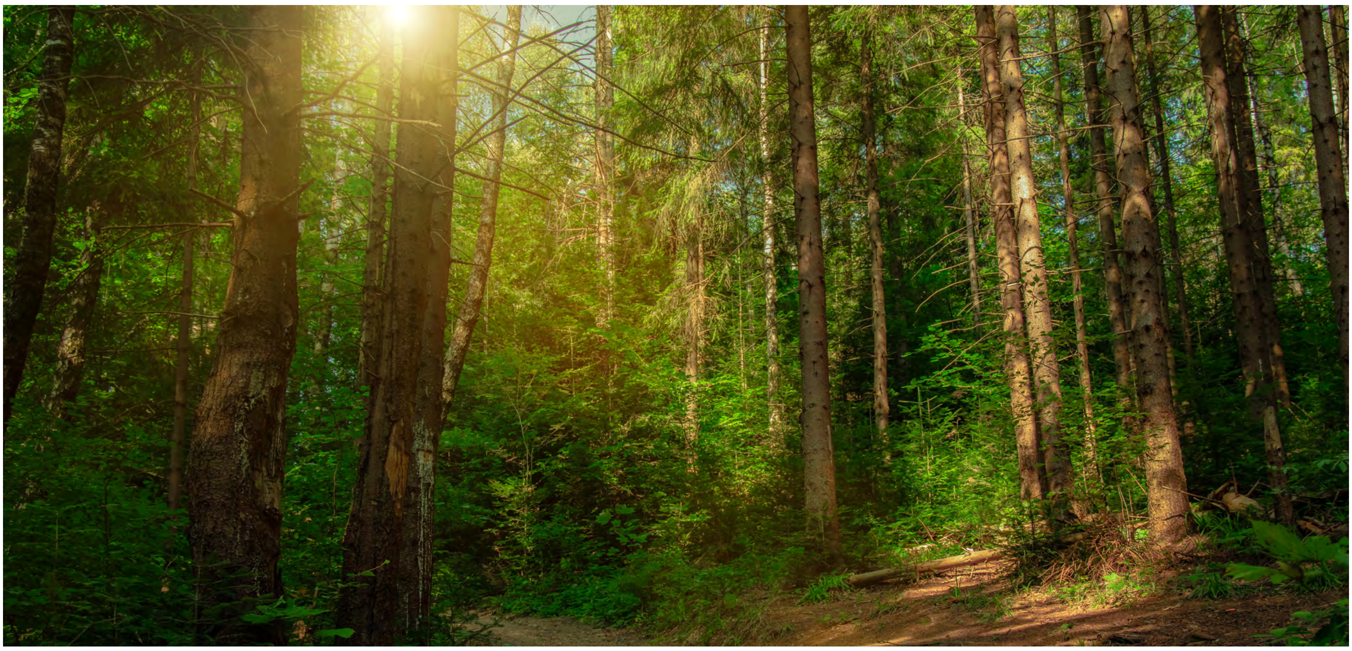


Figure 6. Direct Real Estate: Portfolio carbon intensity vs CRREM 2 C Aligned Carbon Intensity Milestones.
Source: S&P Trucost for CERN Pension Fund.



REAL-ESTATE PORTFOLIO

	Property	Location	Size (m2)	Main usage
Switzerland	Carl-Vogt	Geneva	1'389	Residential
	Prulay	Geneva	3'062	Residential
	Taverney	Geneva	41'898	Residential
France	Ferney	Ferney-Voltaire	8'325	Hotel
	Lauriston	Paris	2'590	Commercial
	Malesherbes	Paris	2'769	Commercial
	Notre Dame des Victoires	Paris	4'749	Commercial
	Opéra	Paris	4'887	Commercial
	Villiers	Paris	2'380	Commercial
	Forêt Avril	Nièvre	342 ha	Timberland
	Forêt Baudières	Yonne	208 ha	Timberland
	Forêt Gergy	Côte-d'Or	728 ha	Timberland
	Forêt Mavelle	Saône-et-Loire	59 ha	Timberland
	Forêt Miaule	Ille-et-Vilaine	250 ha	Timberland
	Forêt Petit Serre	Ain	59 ha	Timberland
	Forêt Polly	Ardèche	52 ha	Timberland
	Forêt Roche	Creuse	71 ha	Timberland
	Forêt Seiglière	Ain	72 ha	Timberland
	Forêt Vauchassis	Aube	769 ha	Timberland
	Forêt Villemaine	Creuse	53 ha	Timberland
Germany	Mauerstrasse	Berlin	4'429	Commercial
UK	Dean Farrar	London	2'830	Commercial
	Queen Anne's Gate	London	2'399	Commercial

FINANCIAL STATEMENTS

AUDIT OPINION

Helsinki, 25 April 2023

External Auditors' Opinion

on the Financial Statements of the Pension Fund of the European Organization for Nuclear Research (CERN) for the year ended 31 December 2022

TO THE COUNCIL OF CERN

AUDIT OPINION ON THE FINANCIAL STATEMENTS OF THE CERN PENSION FUND

We have audited the financial statements of the Pension Fund of the European Organization for Nuclear Research (CERN) for the year ended 31 December 2022, issued under document reference CERN/FC/6683-CERN/3729 dated 31 March 2023. These financial statements comprise statement of financial position, statement of the financial performance, cash flow statement, statement of changes in net assets available for benefits as well as the notes to the financial statements.

In our opinion, the financial statements give a true and fair view of the financial position of the Pension Fund of the European Organization for Nuclear Research as at 31 December 2022, of its financial performance and of its cash flows for the year ended, in accordance with International Public Sector Accounting Standards (IPSAS) and International Accounting Standard 26.

BASIS FOR OPINION

We conducted our audit in accordance with the International Standards of Supreme Audit Institutions (ISSAIs). Our responsibilities under those standards are further described in the section of our report entitled 'Auditors' responsibilities in the audit of the financial statements'. We are independent of CERN Pension Fund in accordance with the ethical requirements relevant to our audit of the financial statements and we have fulfilled our other ethical responsibilities in accordance with those requirements. We believe that the audit evidence that we have obtained is sufficient and appropriate to provide a basis for our opinion.

EMPHASIS OF MATTER

The Pension Fund's net assets available for benefits reduced by 403 MCHF totalling 4 578 MCHF in 2022. The decrease is largely explained by the net investment loss of 323 MCHF in 2022 compared to net investment income of 320 MCHF in 2021. The net result of membership activities, which comprise the contributions to the Fund and benefits and payments of the Fund, was 72 MCHF negative thus reducing the Fund's net assets.

Despite the decrease of the Fund's assets, the liabilities, presented in the Statement of Financial Position under vested capital, reduced by 3 402 MCHF. The liabilities totalled 8 967 MCHF in 2022 compared to 12 368 MCHF in 2021. The decrease is explained by a change in the variable discount rate which moved to 2,03 % in 2022 from 0,15 % in 2021. Consequently, the Fund's funding ratio increased to 51,1 % in 2022 from 40,3 % in 2021.

Our opinion is not modified in respect of the matter emphasized.

KEY AUDIT MATTERS

Key audit matters are those that, in our professional judgement, were of most significance in our audit of the financial statements of the current period. The matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon.

Key audit matters in the audit of the CERN Pension Fund financial statements for 2022 were as follows:

1) Valuation of Pension Fund assets

The valuation of the Fund's total assets, amounting to 4 645 MCHF in 2022, was addressed by our audit work including analytical reviews and verification of the information provided in the Custodian's reports against relevant account balances. Transactions related to asset balances were tested on a sample basis. For investment property, the valuations of the assets were verified from reports received from independent evaluators.

2) Accuracy of reporting Pension Fund investments

The Fund's net investment result was 323 MCHF negative in 2022. The matter was addressed in the audit by verification of the information provided in the Custodian's reports against relevant account balances. Investment information reported in the Financial Statements was reconciled with the relevant accounting data and external confirmations.

3) Investment property income and expenditure

Investment income and expenses related to non-financial assets in 2022 included investment property income of 7 MCHF (95 MCHF in 2021) and expenditure of 14 MCHF (12 MCHF).

Our audit assessed the accuracy of financial information, the process and the functioning of controls related to investment property expenditure and income. The matter was addressed by analytical procedures, review of documents, interviews, assessment of the key system controls and by performing substantive testing.

REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

Based on the procedures we performed, nothing has come to our attention, as part of our audit of the financial statements that causes us to believe that the transactions of the CERN Pension Fund have not been made, in all significant respects, in accordance with the relevant Pension Fund regulations.

INFORMATION OTHER THAN THE FINANCIAL STATEMENTS AND AUDITORS' REPORT THEREON

The CERN Pension Fund Management is responsible for the other information, included in the Pension Fund Annual Report that comprises the Pension Fund Governing Board Report and an Extract of the Actuary's Report on the Fund as at 31 December 2022, as well as the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon. However, in connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If based on the work we have performed we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

RESPONSIBILITIES FOR THE FINANCIAL STATEMENTS

The CERN Pension Fund Management is responsible for the preparation and fair presentation of the financial statements in accordance with IPSAS and for such internal control as it determines to be necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Management is responsible for assessing the ability of CERN Pension Fund to continue as a going concern, disclosing, as applicable, matters related to the going concern and using the going-concern basis of accounting unless the Management intends either to liquidate CERN Pension Fund or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the financial reporting process of the Organization.

AUDITORS' RESPONSIBILITIES IN THE AUDIT OF THE FINANCIAL STATEMENTS

Our objectives are to obtain reasonable assurance as to whether the financial statements as a whole are free from material misstatements, whether due to fraud or error, and to issue an audit report that includes our opinion. Reasonable assurance means a high level of assurance but is not a guarantee that an audit conducted in accordance with the ISSAIs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or taken together, they could reasonably be expected to influence the economic decisions of users taken based on these financial statements.

As part of an audit in accordance with the International Standards on Auditing, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement in the financial statements, whether due to fraud or error, design and perform audit procedures that are responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than the risk of not detecting one resulting from error, as fraud may involve collusion, forgery, intentional omission, misrepresentation or the overriding of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for expressing an opinion on the effectiveness of the internal control of CERN Pension Fund.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Management.

- Draw conclusions as to the appropriateness of the Management's use of the going-concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists in relation to events or conditions that may cast significant doubt on the ability of CERN Pension Fund to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause CERN Pension Fund to cease as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves a fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Sami Yläoutinen
Auditor General

Christa Laurila
Audit Manager

Helsinki, 25 April 2023

FINANCIAL STATEMENTS

STATEMENT OF FINANCIAL POSITION

As at 31 December

(in kCHF)	Note	2022	2021
Assets			
Cash and Cash Equivalents	5	829’629	750’506
Short-Term Deposits	6	-	60’000
Settlements Receivable		1’058	12’538
Sundry Debtors	7	5’679	5’892
Other Receivables	8	9’862	7’005
Derivatives	9	134’207	93’287
Bonds	10	645’132	981’510
Equities	11	382’176	823’880
Investment Funds	12	1’771’467	1’408’799
Total Financial assets		**3’779’209**	**4’143’417**
Investment Property	13	865’351	871’003
Total Non-Financial assets		**865’351**	**871’003**
Total assets		**4’644’560**	**5’014’420**
Liabilities			
Settlements Payable		354	-
Sundry Creditors	14	14’562	10’741
Other Payables	15	2’924	3’916
Derivatives	9	48’347	18’102
Total liabilities		**66’187**	**32’759**
Net assets available for benefits		**4’578’372**	**4’981’661**

As at 31 December

(in kCHF)	Note	2022	2021
Vested pension capital **			
Transfer values of active members or current value of deferred pensions (without future adjustment)		4’336’954	6’744’359
Mathematical reserves of the beneficiaries		4’629’679	5’623’996
Vested pension capital		**8’966’633**	**12’368’355**
Technical deficit		**(4’388’261)**	**(7’386’694)**
Funding Ratio		**51.1%**	**40.3%**

**See Extract of Actuary’s Report

STATEMENT OF FINANCIAL PERFORMANCE

		Year ended 31 December	
(in kCHF)	**Note**	**2022**	**2021**
Investment Income			
Financial Assets			
- Dividend Income	16	45’111	83’643
- Interest Income	17	26’153	20’787
- Unrealised Gains/(Losses) on Financial Assets at Fair Value Through Profit & Loss	18	(135’891)	157’710
- Realised Gains/(Losses) on Financial Assets at Fair Value Through Profit & Loss	19	(182’957)	37’841
Non-Financial Assets			
- Investment Property Income and Gains/(Losses)	20	7’171	94’567
Foreign Exchange Gains/(Losses)	21	(3’842)	(11’445)
Total Investment Income/(Loss)		**(244’254)**	**383’103**
Investment Expenses			
Financial Assets			
- Investment Management Fees	22	59'871	45’296
- Custody Fees and Administration of Securities		517	511
- Transaction Costs		1’580	2’223
- Taxation		577	259
Non-Financial Assets			
- Investment Property Expenditure	23	13’562	12’128
Investment Related Expenditure		2’750	2’996
Total Investment Expenses		**78’858**	**63’413**
Net Investment Income/(Loss)		**(323’112)**	**319’690**
Other Expenses			
Bank Charges		24	17
Other Financial Expenses	24	2’532	4’151
Administration Costs	25,32	6’044	5’793
Total Other Expenses		**8’600**	**9’961**
Change in Net Assets before Membership Activities		**(331’712)**	**309’729**

(in kCHF)	Note	2022	2021
Membership Activities	**26**		
Contributions			
Member Contributions		67’399	65’775
Employer Contributions		119’643	117’630
Employer Special Contributions		61’400	61’400
Purchase of additional years of membership		2’695	2’890
Indemnities received from third parties		50	61
Compensations	27	778	652
Procurement of entitlement to pension for surviving spouse paid by members		257	183
Total Contributions		**252’222**	**248’591**
Benefits and Payments			
Retirement pensions		244’428	245’798
Disability pensions		1’838	1’610
Surviving spouse pensions		46’628	46’569
Orphans pensions		1’306	1’306
Family allowances		12’788	13’087
Ex gratia payments granted		66	66
Transfer values paid to members	28	13’067	10’738
Transfer values paid to other schemes	29	1’139	1’918
Amounts pending selection from members	30	2’437	(1’629)
Contributions paid to other schemes		102	124
Total Benefits and Payments		**323’800**	**319’587**
Net Membership Activities Cost		**(71’577)**	**(70’996)**
Net Increase/(Decrease) in Net Assets During Year		**(403’289)**	**238’733**
Net Assets Available for Benefits at Beginning of Year		4’981’661	4’742’928
Net Assets Available for Benefits at End of Year		**4’578’372**	**4’981’661**

CASH FLOW STATEMENT

(in kCHF)	2022	2021
	Year ended 31 December	
Cash flows from membership activities		
Contributions and other receipts	251’313	247’815
Benefits and other payments	(321’144)	(320’961)
Net cash flows from membership activities	**(69’830)**	**(73’146)**
Cash flows from investing activities		
Financial Assets		
Purchases of Bonds	(303’913)	(823’760)
Purchases of Equities	(431’112)	(712’882)
Purchases of Investment Funds	(581’644)	(253’118)
Proceeds from sale of short-term deposits	60’000	-
Proceeds from sale of Bonds	482’665	781’994
Proceeds from sale of Equities	687’948	1’049’233
Proceeds from sale of Investment Funds	214’468	368’210
Net payments from Derivatives	5’680	(94’801)
Dividends received	43’504	82’245
Net Interest received	11’577	12’439
Non-Financial Assets		
Investment Property payments	(18’865)	(18’862)
Purchases of Investment Property	(12’157)	(16)
Investment Property receipts	30’204	27’917
Net tax receipts	1’065	996
Management and Custody Fees paid	(2’987)	(3’397)
Administrative and other Operating expenses paid	(8’744)	(11’716)
Net cash flows from investing activities	**177’688**	**404’482**
Net (decrease) increase in cash and cash equivalents	**107’858**	**331’336**
Cash at beginning of the year	750’506	424’181
Unrealised Gains /(Losses) on Cash and Cash Equivalents	(28’734)	(5’011)
Cash at end of the year	**829’629**	**750’506**

STATEMENT OF CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS

(in kCHF)	2022	2021
Balance as at 1 January	**4’981’661**	**4’742’928**
Employer Contributions	119’643	117’630
Member Contributions	67’399	65’775
Employer Special Contributions	61’400	61’400
Purchase of additional years	2’695	2’890
Indemnities and Compensations	828	713
Procurement of Entitlement to pension for surviving spouse paid by members	257	183
Benefits paid	(307’055)	(308’436)
Transfer values and contributions paid	(16’745)	(11’151)
Investment Income/(Loss)	(244’254)	383’103
Investment Expenses	(78’858)	(63’413)
Other Expenses	(8’600)	(9’961)
Balance as at 31 December	**4’578’372**	**4’981’661**

NOTES TO THE FINANCIAL STATEMENTS

1. GENERAL INFORMATION

1.1. FUND DESCRIPTION

Under Chapter IV of the CERN Staff Rules and Regulations, the European Organization for Nuclear Research (CERN), which has its seat in Geneva, is responsible for the social insurance coverage of its staff. Thus it set up in 1955 a pension fund which constitutes the CERN personnel's social protection for disability, old age and death.

The governance structure of the Fund and its relations with the Council and the Director General of CERN are defined in the Rules of the Pension Fund ("the Rules," available at: https://pensionfund.cern.ch). The Rules and Regulations of the Fund are approved by CERN Council.

The Rules state that "The purpose of the Fund is to insure its members and beneficiaries as well as the members of their families against the economic consequences of the disability and old age of its members and of the death of its members and beneficiaries" (Art. I 1.01).

With respect to the status of the Fund within the Organisation, according to the Rules, "The Fund is an integral part of CERN, and, as such, has no separate legal personality and is under the supreme authority of Council" (Art. I 2.01). In addition, "The Fund shall enjoy operational autonomy within CERN and shall be managed in accordance with the framework set out in the Rules and Regulations". (Art. I 2.02).

Regarding the oversight and management of the Fund, Article I 2.04, states that

"1. The oversight of the Fund shall be entrusted to the Governing Board, assisted and advised by the Investment Committee and the Actuarial and Technical Committee.
2. The management of the Fund shall be entrusted to the Chief Executive Officer of the Fund, hereinafter referred to as "the Chief Executive Officer."

Article I 2.03 of the Rules further provides that the assets of the Fund shall be held separately from those of CERN and shall be used solely for the purpose of the Fund.

The Fund operates as a defined-benefit scheme. The members of the personnel of CERN and the members of the personnel of the European Southern Observatory (ESO), which has its seat in Munich, are members of the CERN Pension Fund. Conditions relating to the admission of ESO staff to the Fund are set out in the CERN/ESO Agreement.

Pensions are calculated in the following manner:

For members who joined the Fund on or before 31 December 2011, 2% of the Basis for the Calculation of Benefits, as set out in Article II 1.08 of the Rules, for each year of membership, up to a maximum of 35 years;

For members who joined the Fund on or after 1 January 2012, 1.85% of the Basis for the Calculation of Benefits, as set out in Article II 1.08, of the Rules, for each year of membership, up to a maximum of 37 years and 10 months.

The retirement age is as follows:

i. **For members who joined the Fund on or before 31 December 2011**: 65 years;
ii. **For members who joined the Fund on or after 1 January 2012:** 67 years.

The entitlement to a pension begins after a minimum of five years' contributions.

1.2. FUNDING ARRANGEMENTS

According to the Rules, the resources of the Fund derive from (a) contributions from CERN and ESO, (b) contributions from its members, (c) the income from the investment of its assets, and (d) gifts and legacies. The contributions are expressed as a percentage of each member's reference salary, which is equal to the basic remuneration for 40 hours' work per week multiplied by a coefficient set out in Annex A to the Rules.

Contributions are apportioned between the member and the participating Organizations as follows:

i. **For members who joined the Fund on or before 31 December 2011: member: 11.33%; Organization: 22.67%; total: 34%;**
ii. **For members who joined the Fund on or after 1 January 2012: member: 12.64%; Organization: 18.96%; total: 31.6%.**

1.3. TERMINATION TERMS

When membership of the Fund terminates before the applicable age of retirement for a reason other than death or total disability, a transfer value is calculated on the basis of the reference salary at the date of termination:

i. Less than five years of service: where the member has less than five years of service, the transfer value is paid into another pension scheme or to the member himself;
ii. Between five and ten years of service: the member has the choice between a deferred retirement pension, or payment into another pension scheme, or, if the latter option is not possible, to himself;
iii. Ten or more years of service: the member has the choice between a deferred retirement pension, and payment into another pension scheme, or, if the latter option is not possible, into a private insurance scheme offering comparable guarantees.

Payment of a transfer value extinguishes any right to a pension, except that for partial disability that is already being paid.

1.4. SIGNIFICANT ACTIVITIES FOR THE PERIOD

There were no significant activities during the year.

1.1.1. Beneficiaries

As at 31 December 2022 the number of beneficiaries was 3,668 (3,673 as at 31 December 2021).

1.1.2. Members

As at 31 December 2022 the number of members of the Fund was 4,085 (CERN: 3,560 and ESO: 525) compared to 3,961 (CERN: 3,437 and ESO: 524) as at 31 December 2022.

1.5. INVESTMENT POLICY

The Fund's principles governing the investment policy are set out in the Statement of Investment Principles CERN/PFGB/90.6c/A/Rev. which is approved by the PFGB.

The Fund strives to maximise returns while remaining below a maximum level of risk. The maximum level of allowable risk is referred to as the "risk limit".

The Fund's portfolio is constructed and managed with the objective of remaining at all times within the risk limits approved by the PFGB, while striving to attain the Fund's investment return objective.

When selecting and managing investments, the Fund considers adapting the time horizon to the market conditions or to the circumstances of the Fund. In addition, the requirement for active management and the sensitivity of the risk and return to market cycles are also considered.

The Fund may invest in a wide range of asset classes including listed equity, government and non-government debt, currencies, money market instruments, property, commodities, private equity/debt. The Fund may also invest in strategies with absolute return focus. Investments may be undertaken directly (internally), or indirectly (e.g. via funds or investment agreements), in physical assets or derivatives.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

2.1. BASIS OF PREPARATION

The CERN Pension Fund Financial Statements for the financial year ended 31 December 2022 have been prepared on a going-concern basis and pursuant to Article I 4.02 of the Rules of the Pension Fund, in accordance with International Public Sector Accounting Standards (IPSAS) and International Accounting Standard 26, Accounting and Reporting by Retirement Benefit Plans, as there is no such equivalent IPSAS. The preparation of financial statements in conformity with IPSAS requires the use of certain critical accounting estimates. It also requires the Fund to exercise its judgement in the process of applying the Pension Fund's accounting policies. The areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the financial statements are disclosed under note 3. If such estimates and assumptions deviate from the actual circumstances, the original estimates and assumptions will be modified as appropriate in the year in which the circumstances change.

Whilst the accounts of the Fund are maintained to the nearest Swiss franc, these financial statements are expressed in thousands or millions of Swiss francs. Some rounding differences may therefore occur.

At its meeting on 5 April 2023 the PFGB approved the submission of the CERN Pension Fund Annual Report and Financial Statements for 2022 to CERN Council, via the Finance Committee, for approval and discharge.

The accounting policies set out below have been applied consistently by the Fund and throughout all periods presented in these financial statements.

The following new standards, that are issued but not yet effective, up to the date of issuance of the Fund's financial statements, are disclosed below. The Fund intends to adopt these standards, if applicable, when they become effective:

i. IPSAS 41, Financial Instruments (will replace IPSAS 29) – effective January 1, 2023.
ii. IPSAS 42, Social Benefits – effective January 1, 2023.
iii. IPSAS 43, Leases - effective January 1, 2025
iv. IPSAS 44, Non-current Assets Held for Sale and Discontinued Operations - effective January 1, 2025

Once effective, the above standards are not expected to have any effect on the amounts in the Statement of Financial Position, Statement of Financial Performance, Cash Flow Statement nor the Statement of Changes in Net Assets Available for Benefits.

2.2. MEASUREMENT BASE

The measurement base adopted is that of historical cost as modified by the revaluation of financial assets and financial liabilities (including derivative financial instruments) and investment property at fair value through profit or loss.

2.3. FOREIGN CURRENCY TRANSLATION

2.3.1. Functional and presentation currency

Pursuant to Article I 4.02 of the Rules of the Pension Fund, the unit of account of the Pension Fund is the Swiss franc which is the functional and presentation currency.

2.3.2. Transaction and balances

At each balance sheet date monetary assets and liabilities that are denominated in foreign currencies are translated into Swiss francs at the exchange rates ruling on that date. Foreign currency transactions are accounted for at the exchange rates prevailing at the date of the transaction. Gains and losses arising on translation are shown separately in the Statement of Financial Performance for the period.

2.4. CLASSIFICATION OF ASSETS AND LIABILITIES

The CERN Pension Fund is an entity that, inter alia, manages assets used to pay pensions. As such, the assets and liabilities are disclosed in the Statement of Financial Position in an order that broadly reflects their relative liquidity.

2.5. CASH AND CASH EQUIVALENTS

Cash and cash equivalents include cash in hand, deposits held at call with banks and other short-term highly liquid investments with original maturities of three months or less, as well as margin accounts with brokers that cover margin calls on derivative positions.

2.6. FINANCIAL ASSETS

Financial assets are recognised on the Fund's Statement of Financial Position when the Fund becomes a party to the contractual provisions of the instrument.

The Fund classifies its financial assets in the following categories: at fair value through profit or loss and loans and receivables. The classification depends on the purpose for which the financial assets were acquired. Management determines the classification of its financial assets at initial recognition.

2.6.1. Financial assets at fair value through profit or loss

The Fund's business is investing in assets with a view to profiting from their total return in the form of interest, dividends, distributions and increases in fair value.

A. Classification

The Fund classifies its investments in cash and cash equivalents, debt, equity securities, investment funds and derivatives as financial assets at fair value through profit or loss. Cash and cash equivalents, bonds, equities and investment funds are designated by the Fund at fair value through profit or loss. Derivatives are classified as assets held for trading.

The portfolio of investment funds is categorized as financial assets designated at fair value through profit or loss at inception and is shown under Investment Funds on the Statement of Financial Position.

B. Recognition and derecognition

Purchases and sales of unquoted and quoted investments are recognised and derecognised on trade date where a purchase or sale is made under a contract whose terms require delivery within the timeframe established by the market concerned.

Financial assets are derecognised when the rights to receive cash flows from the investments have expired or have been transferred and the Fund has transferred substantially all risks and rewards of ownership.

C. Measurement

Financial assets at fair value through profit or loss are initially recognised at acquisition cost. Transaction costs are expensed in the Statement of Financial Performance. Subsequent to initial recognition, all financial assets at fair value through profit or loss are measured at fair value which is based on the last reported bid price (sales price) at the balance sheet date. Unrealised gains and losses arising from changes in the fair value of the "financial assets at fair value through profit or loss" category are presented in the Statement of Financial Performance in the period in which they arise. Interest, dividends and investment management fees arising from financial assets are shown separately in the Statement of Financial Performance and are not included in Unrealised or Realised Gains/(Losses) on Financial Assets at Fair Value Through Profit and Loss.

2.6.2. Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. Sundry debtors include recoverable withholding tax levied at source on dividends and reimbursable value added tax paid on investment property transactions, investment property debtors and other due amounts.

Settlements receivable represent amounts due to the Fund for securities sold that have been contracted for but not yet settled or delivered at the balance sheet date.

Other receivables include accrued interest on cash and short-term deposits, dividends receivable and outstanding receipts.

These amounts which do not carry any interest are expected to be received within twelve months and are accordingly stated at their nominal value. Loans and receivables are subsequently carried at amortised cost using the effective interest method less any impairment losses.

2.7. IMPAIRMENT OF FINANCIAL ASSETS

Financial Assets carried at amortised costs are Loans and Receivables.

The Fund assesses at the end of each reporting period whether there is objective evidence that this group of financial assets is impaired. A financial asset or a group of financial assets is impaired and impairment losses are incurred only if there is objective evidence of impairment as a result of one or more events that occurred after the initial recognition of the asset (a "loss event") and that loss event (or events) has an impact on the estimated future cash flows of the financial asset or group of financial assets that can be reliably estimated.

Evidence of impairment may include indications that the debtors or a group of debtors is experiencing significant financial difficulty, default or delinquency in interest or principal payments, the probability that they will enter bankruptcy or other financial reorganisation, and where observable data indicates that there is a measureable decrease in the estimated future cash flows, such as changes in arrears or economic conditions that correlate with defaults.

For loans and receivables, the amount of loss is measured as the difference between the asset's carrying amount and the present value of the estimated future cash flows (excluding future credit losses that have been not been incurred) discounted at the financial asset's original effective interest rate. The carrying amount of the asset is reduced and the amount of the loss is recognised in the Statement of Financial Performance.

2.8. OFFSETTING FINANCIAL INSTRUMENTS

Financial assets and liabilities are offset and the net amount reported in the Statement of Financial Position when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis or realise the asset and settle the liability simultaneously.

2.9. NON-FINANCIAL ASSETS

Those assets where there is no contractual right to receive cash or another financial asset are listed under this heading.

2.9.1. Investment property

Investment property is defined as land, buildings and forests held to earn rental income and capital appreciation and is not occupied by the Fund.

Investment property is measured initially at its cost, including related transaction costs. After initial recognition investment property is carried at fair value, representing open market value determined annually by external valuators with professional qualifications and experience. Fair value is based on active market prices, adjusted, if necessary, for any difference in the nature, location or condition of the specific asset. If the information is not available, the Fund uses alternative valuation methods such as recent prices on less active markets or discounted cash flow projections. Changes in fair values are recorded in the Statement of Financial Performance, as part of Investment Property Income.

The costs of the day-to-day running of the properties, e.g. repairs and maintenance, are recognised in the Statement of Financial Performance as incurred. Expenditure incurred in the replacement or renovation of part of an existing investment property that is 5% or more of the value of that property is recognised in the carrying amount, only when it is probable that future economic benefits associated with the item will flow to the Fund and the cost of the item can be reliably measured.

2.10. OTHER FINANCIAL LIABILITIES

Other financial liabilities include Settlements Payable, Sundry Creditors and Other Payables.

Settlements payable represent amounts due by the Fund for securities purchased that have been contracted for but not yet settled or delivered at the balance sheet date.

These amounts are not interest-bearing and are due within twelve months. They are initially recognised at their fair value and subsequently measured at amortised cost using the effective interest method.

2.11. DERIVATIVE FINANCIAL INSTRUMENTS AND HEDGING ACTIVITIES

The Fund's activities expose it to the financial risks such as foreign currency risk, interest rate risk and credit risk. Therefore the Fund may use derivative instruments such as foreign exchange forward contracts, interest rate swap contracts and credit default swaps to hedge these exposures. The Fund may also use derivative instruments for investment purposes, principally to gain exposure to specific markets.

Derivatives are initially recognised at fair value on the date on which a derivative contract is entered into and are subsequently re-measured at fair value. Any gains and losses arising from changes in the fair value are recognised in the Statement of Financial Performance. The Fund does not apply hedge accounting.

Derivatives are carried as financial assets when the fair value is positive and as financial liabilities when the fair value is negative.
The Fund may, at a given time, hold the following derivative instruments:

A. Forward contracts
Forward contracts are contractual obligations to buy or sell financial instruments on a future date at a specified price. A forward contract is a non-standardised contract written by the Fund and the counterparty to the agreement. The contracts are collateralised by cash and changes in the forward contracts' value are settled on reset, rollover or closure of the contract. The forward contracts are settled on a gross basis.

B. Options
An option is a contractual arrangement under which the seller (writer) grants the purchaser (holder) the right, but not the obligation, either to buy (a call option) or sell (a put option) at or by a set date or during a set period, a specific amount of securities or a financial instrument at a predetermined price. The seller receives a premium from the purchaser in consideration for the assumption of the future securities price. Options are settled on a gross basis.

C. Swaps
Swaps are contracts to exchange cash (flows) on or before a specified future date based on the underlying value of currencies/exchange rates, bonds/interest rates, commodities, stocks or other assets.

D. Futures
Future contracts are contractual obligations to buy or sell financial instruments on a future date at a specified price established in an organised market. The futures contracts are collateralised by cash and changes in the futures contracts' value are settled daily with the exchange. Futures are settled on a net basis.

E. Credit default swaps
Credit default swaps are contractual obligations under which the seller receives a premium or interest-related payments in return for agreeing to compensate the buyer in the event of a credit event on an underlying reference obligation. Credit events usually include bankruptcy and payment default.

2.12. PROVISIONS

Provisions are recognised when the Fund has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits or service potential will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation.

2.13. ACTUARIAL LIABILITIES

The PFGB approves the significant actuarial assumptions for the calculation of the actuarial present value of promised retirement benefits at the end of the period, taking advice from an independent actuary concerning the appropriateness of the assumptions. The actuarial present value of promised retirement benefits at the end of the period is included in the Statement of Financial Position under the heading “Vested pension capital”.

The actuarial present value of the promised retirement benefits, based on projected remuneration and capitalised pension indexation, is disclosed to indicate the magnitude of the potential obligation on a going concern basis.

In accordance with IAS 26, the actuarial method used to calculate the actuarial commitments is the projected unit credit method (PUC method). The projected unit credit method considers that each service period allows for an additional unit of benefits rights and evaluates each of these units separately to obtain the final value of the liability.

2.14. REVENUE RECOGNITION

2.14.1. Revenue from exchange transactions

Interest income is recognised on time proportionate basis using the effective interest method. Rental income is recognised over the term of the lease on a straight line basis. Dividend income is recognised when the right to receive payment is established.

2.14.2. Revenue from non-exchange transactions

The Fund does not recognise revenue from non-exchange transactions. Non-exchange transactions include administrative support and office accommodation provided free of charge by CERN.

3. CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

The Fund makes estimates and assumptions that affect the reported amounts of assets and liabilities. Estimates and judgements are continually evaluated by the Fund, with input from independent experts, and are based on historical experience and other factors, including assumptions about future events that are believed to be reasonable under the circumstances. The resulting accounting estimates will, by definition, seldom equal the related actual results.

The most significant estimates made during the period are outlined below.

3.1. ACTUARIAL ASSUMPTIONS

The liabilities of the Fund, in respect of promised benefits to be paid, have been determined using methods relying on actuarial estimates and assumptions. These assumptions reflect the long-term nature of future benefits. Changes in these estimates and assumptions could materially affect liabilities in respect of benefits.

The basis for the Fund’s actuarial assumptions is set out under note 2. “Summary of Significant Accounting Policies”.

The table hereafter shows the significant actuarial assumptions proposed by the Fund’s Actuary and approved by the PFGB at its meeting of 16 February 2023 (CERN/PFGB/100.4a) and also those used in the corresponding period. The reference discount rate as at 31 December 2022 is the AON Swiss AA Corporate Bond Yield Curve. As a result, the discount rate applied for 2022 is 2.03% when expressed as a single equivalent rate. In 2021, the rate was 0.15%, when expressed as a single equivalent spot rate. The assumptions for the indexation of pensions and indexation of remuneration were updated to 1.25%, compared to 1.1% in 2021. In addition, the discount rate was adjusted for the change in the assumption for inflation. All other assumptions used as at 31 December 2022 are those assumptions that were approved for the 1 January 2022 Periodic Actuarial Review. Aside from the discount rate, the assumptions used for 31 December 2021 were those adopted for the 1 January 2022 Periodic Actuarial Review. The assumptions are presented as single equivalent spot rates or a liability-weighted average for simplicity.

Actuarial Assumptions	2022	2021
Discount Rate	2.03%*	0.15%*
Remuneration increase linked to inflation	1.25%	1.10%
Indexation of pensions linked to inflation	1.25%	1.10%
Remuneration increase linked to career change	1.55%**	1.55%**
Mortality and disability tables	94% ICSLT2018 GEN	94% ICSLT2018 GEN

*The underlying best estimate assumption is the AON Swiss AA Corporate Bond Yield Curve. The single equivalent spot rate approximates this underlying curve.
** Remuneration increase linked to career change is 1.55% p.a. when expressed as a liability-weighted average. The underlying assumption is 0.0% p.a. for CERN Fellows, 2% p.a. for ESO Fellows, and age dependent groupings (between 1.2% and 2.0% p.a.) specific to CERN and ESO for non-Fellows. i.e. the best estimate assumption that was used for the Periodic Actuarial Review as at 1 January 2022.

Buck Consultants Limited London is the Fund's Actuary. An extract of the Actuary's Report on the Fund as at 31 December 2022 is included at the end of this document for information purposes.

In 2022, the Fund's Actuary did not propose any change to the reference used for the discount rate assumption, however the yield curve data was different compared to 2021. Following advice from the Fund's Risk Consultant, the Actuary proposed an update to the long-term inflation assumption i.e. indexation of pensions and indexation of remuneration. The other actuarial assumptions were not updated compared to 2021 and reflect the Best Estimate assumptions used in the 1 January 2022 Periodic Actuarial Review. The updated assumptions were accepted by the PFGB. The sensitivity of results as at 31 December 2022 to changes in the discount rate, indexation of pensions and indexation of remuneration are set out in the extract of the Actuary's report.

In 2022 the discount rate used to determine the present value of future promised benefits was 2.03% when expressed as a single equivalent rate (0.15% in 2021). The effect of this change was a decrease in liabilities of 3,850,647 kCHF. In 2022 the indexation of pensions and remuneration increase linked to inflation was 1.25% (1.10% in 2021). The effect of these changes was an increase of 387,073 kCHF.

Total liabilities, as at 31 December 2022, were 8,967 MCHF (12,368 MCHF as at 31 December 2021).

3.2. FAIR VALUE OF INVESTMENT PROPERTY

The fair value of the Fund's investment property is considered to be its market value. As at 31 December 2022 the fair value of Investment Property was 865,351 kCHF (871,003 kCHF as at 31 December 2021).

The fair values of the Investment Property were determined based on valuations performed by independent valuers, as at 31 December 2022 and 2021. The fair values of the properties (excluding the forests) have been determined using a sales comparison approach, where possible, and supported by a discounted cash flow method, in order to arrive at the most reliable estimate of the fair value within a range of reasonable fair value estimates. The independent valuers use assumptions that are mainly based on market conditions existing at each balance sheet date. The fair values of the forests have been determined by an expert in the forest industry, using market practice for valuing forest land i.e. taking into account current market prices for forest land and inventory.

The principal considerations underlying the estimation of fair value are those related to:
- Current or recent prices of similar properties;
- Appropriate discount rates ranging from 3.00% to 5.50% (2.92% to 5.75% in 2021);
- The receipt of contractual rentals;
- Expected future market rentals;
- Void periods;
- Maintenance requirements;
- Current market prices for forest inventory.

These valuations are regularly compared to actual market yield data, and actual transactions and those reported by the market. The expected future market rentals are determined on the basis of current market rentals for similar properties in the same location and condition.

3.3. FAIR VALUE OF FINANCIAL ASSETS NOT QUOTED IN AN ACTIVE MARKET

In arriving at the fair value of financial assets not quoted in an active market, the Fund considers factors such as industry performance, company performance, quality of management, the price of the most recent financing round, exit opportunities which are available, liquidity preference, comparable market transactions, discounted cash-flows, earnings multiples and net present value analysis. The maximum use of market inputs is made with as little reliance as possible on entity-specific inputs.

3.3.1. Investment Funds

As at 31 December 2022 the Fund had holdings in investment funds totalling 1,285,443 kCHF (1,076,885 kCHF in 2021) that are not quoted in an active market. Many of these investment funds have the same reporting period as the Fund. Consequently, in some cases, audited financial statements attesting, inter alia, to the value of the Fund's investments in these funds were not available at the reporting date. Where audited statements were not in evidence, the Fund used unaudited statements as at 31 December 2022 provided by the independent administrators or fund. In other cases, unaudited statements as at 30 September 2022 were used, as adjusted for capital movements between the last received statements and 31 December 2022.

Valuations totalling 921,742 kCHF (815,615 kCHF in 2021) were based on unaudited statements. These holdings are included in note 12 "Investment Funds".

The Fund has the following outstanding commitments to Private Equity, Real Estate and Private Debt funds as at 31 December:

	2022		2021	
(in kCHF)	**Total Net Asset Value**	**Outstanding Commitment**	**Total Net Asset Value**	**Outstanding Commitment**
US Private Equity	189'171	137'904	177'800	117'428
European Private Equity	193'589	45'974	173'788	74'596
Real Estate funds	86'854	18'126	71'545	31'538
Private Debt	78'258	30'546	56'155	38'200
Total	**547'872**	**232'550**	**479'288**	**261'762**

3.3.2. Over- the-counter derivatives instruments

The fair value of over-the-counter derivatives instruments is determined using quoted prices at the balance sheet date. When an instrument or its equivalent does not have a market price, its valuation is determined using a valuation model that is based on observable market inputs.

4. FINANCIAL RISKS

4.1. FINANCIAL RISK FACTORS

The Pension Fund's activities expose it to a variety of financial risks: market risk (including price risk, foreign exchange risk, interest rate risk), credit risk and liquidity risk. The Fund's overall risk management programme seeks to maximise the returns derived for the level of risk to which the Fund is exposed and seeks to minimise potential adverse effects on the Fund's financial performance. The Fund uses derivative financial instruments to both hedge and to create certain risk exposures.

All securities investments present a risk of loss of capital. The maximum loss of capital on bonds, equities, investment funds and purchased options is limited to the fair value of those positions. The maximum loss of capital on written put options, long futures and forward currency contracts is limited to the notional contract values of those positions. On written call options and short future positions the maximum loss of capital can be unlimited.

The management of these risks is carried out by the Fund in line with investment guidelines approved by the PFGB. The Fund uses different methods to measure and manage the various types of risk to which it is exposed; these methods are explained below.

4.1.1. Market risk

The risk management policy of the Fund is defined in the Statement of Investment Principles. It is based on setting a risk measure, an annual risk limit and managing the asset allocation exposure compatible with the risk limit and with the return objective.

The Fund uses CVaR (Conditional Value at Risk) to measure and monitor its market risk. The CVaR of a certain confidence level measures the expected return of the corresponding tail of the return distribution. 1 Year 5% CVaR is defined as the annual expected return in the worst 5% of the return distribution of a portfolio. CVaR is also called expected shortfall.

The risk measure of 1 Year 5% CVaR is approved by the PFGB, based on the recommendation of the IC. The annual 1 Year 5% CVaR risk limit of -8% for 2022 was set by the PFGB taking into account the actuarial return considerations. The risk exposure of the Strategic Asset Allocation (SAA) and the Fund is estimated and reported to the IC by the independent risk consultant on a quarterly basis and compared to the risk limit set by the PFGB. In addition, the Fund's Risk Manager monitors the expected risk relative to the risk limit on a daily basis.

During 2022 all quarterly evaluations of the estimated 1 Year 5% CVaR showed that the Fund was within the risk limit of -8%, taking into account the 2 percentage point margin referred to in the Risk Framework of the Fund that was approved by the PFGB in November 2017. This margin was utilised throughout 2022 because of the market conditions observed. As at 31 December 2022, the estimated 1 Year 5% CVaR of the Fund was -9.5% (-9.5% as at 31 December 2021), according to data provided by the Fund's independent risk consultant (and not the data included in these Financial Statements).

A. Price Risk

The Fund is exposed to securities and derivative price risk. This arises from investments held by the Fund for which prices in the future are uncertain.

Where assets of the Fund are denominated in currencies other than the Swiss franc, the price initially expressed in foreign currency and then converted into Swiss franc will also fluctuate because of changes in foreign exchange rates. Paragraph B: "Foreign exchange risk" sets out how this component of price risk is managed and measured.

Some of the Funds' financial assets and liabilities are exposed to market price risk. The fair value of these assets as at 31 December is as follows:

(in kCHF)	2022	2021
Assets		
Bonds	645'132	981'510
Equities	382'176	823'880
Investment Funds	1'771'467	1'408'799
Derivatives	134'207	93'287
Total Financial assets	**2'932'982**	**3'307'476**
Liabilities		
Derivatives	48'347	18'102
Total Financial liabilities	**48'347**	**18'102**

B. Foreign exchange risk

The Fund is exposed to foreign exchange risks arising essentially upon investments in assets denominated in foreign currencies as outlined in the table below. As a general policy, the Fund hedges its exchange rate risk to the level of 100% of its exposure, but may alter the hedge ratios depending on tactical considerations. The Fund uses three month rolling forward foreign exchange contracts and currency options to cover the currency exposure of existing and anticipated investments in foreign currency. The value of currency forward contracts as at 31 December 2022 is disclosed in note 9. "Derivatives".

As at 31 December 2022, given a shift of 10% in foreign currency rates against the Swiss Franc with all other variables held constant, the Statement of Financial Performance would have shown a higher/lower result of 2,598 kCHF (3,548 kCHF as at 31 December 2021).

The table below summarises the Fund's net assets that are denominated in a currency other than the Swiss franc. The table excludes the forward foreign exchange contracts that are used to hedge foreign exchange rate exposure:

(in kCHF)	2022	2021
US dollar	1'871'937	2'005'527
Euro	1'481'620	1'813'267
Pound sterling	190'538	237'041
Japanese yen	105'029	88'026
New Zealand dollar	31'389	32'299
Swedish krona	12'522	17'213
Other currencies	39'861	56'259
Total	**3'732'896**	**4'249'632**

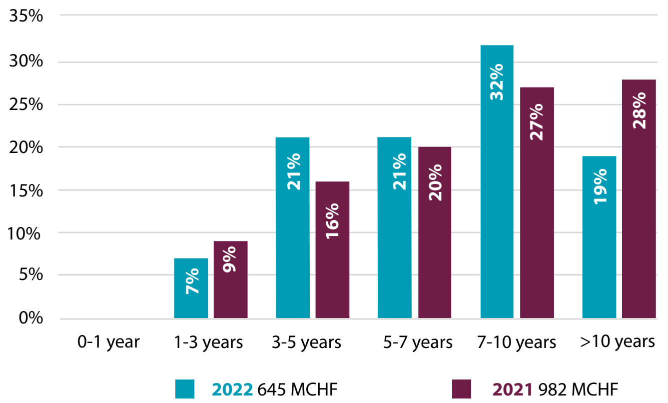
The Fund uses year-end exchange rates supplied by its custodian. The source of these rates is Reuters World Markets.

The table below shows the rates used by the Fund at 31 December to covert the major currencies in the Fund's portfolio to the Swiss franc:

Currency	2022	2021
Euro	0.987	1.036
Pound sterling	1.113	1.234
US dollar	0.925	0.931

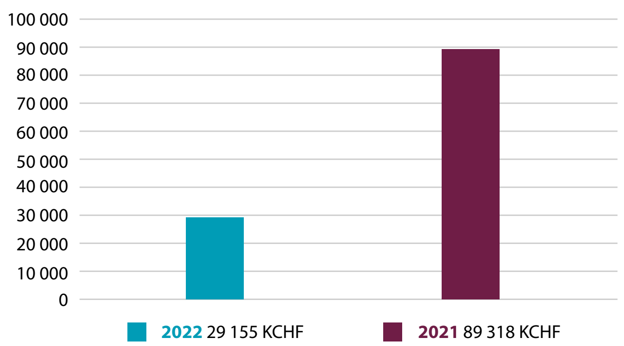
C. Cash flow and fair value interest rate risk
Fair value interest rate risk arises from the effects of fluctuations in the prevailing levels of market interest rates on the fair value of financial assets and future cash flows. The Fund holds some fixed income investments and cash on short-term deposits. The duration of the fixed income investments is regulated by investment guidelines. The Fund may use derivatives to hedge interest rate exposure.

The analysis below summarises the maturity range of the Fund's principal fixed income portfolio at 31 December and is a measure of the sensitivity of the fair value of the Fund's fixed interest securities to changes in market interest rates:



The duration of the above securities, which is the weighted-average term to maturity of the cash flows, was 7.01 years at 31 December 2022 (2021: 9.37 years).

The following table indicates the Fund's exposure to fair value interest rate risk in respect of cash and short-term deposits:



The Fund also holds cash, a limited number of floating rate debt and derivatives that expose the Fund to cash flow interest rate risk.

As at 31 December 2022, if interest rates on these investments had been 1% higher with all other variables held constant, the net assets available for benefits at the end of the year would have been higher by 7,739 kCHF (7,425 kCHF higher as at 31 December 2021).

4.1.2. Credit risk

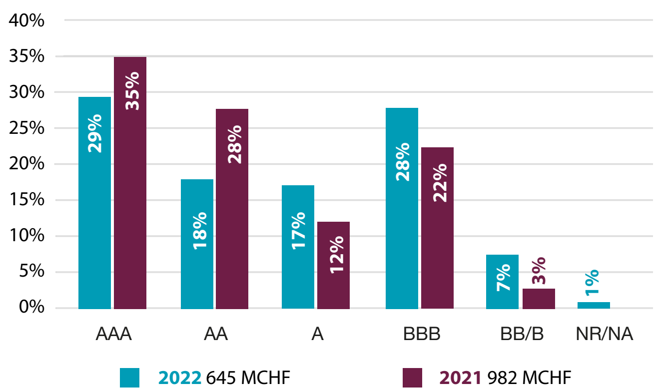
The Fund is exposed to credit risk, which is the risk that the counterparty will be unable to pay amounts in full when they fall due.

Credit risk arises from cash and cash equivalents short-term deposits, derivative financial instruments and bonds, as well as credit exposures including outstanding receivables and committed transactions.

All transactions in listed securities are contracted using approved brokers and settled/paid for upon delivery. The risk of default is considered minimal, as delivery of the securities sold is only made once the custodian has received payment. Payment is made on a purchase once the securities have been received by the custodian. The trade will fail if either party fails to meet its obligation.

The Fund invests in fixed income securities issued by various bodies such as governments, agencies or corporations. These holdings are managed in line with the investment guidelines to ensure issuer quality and diversification. In addition, the Fund limits the amount of credit exposure to any financial institution through diversification of its counterparties and strict monitoring of open receivables on derivatives instruments. If a derivative position is showing a profit, the Fund may ask for collateral or force the reset of the position.

The analysis below summarises the issuer quality of the Fund's principal fixed income portfolio at 31 December:



The maximum exposure to credit risk at 31 December is set out below:

(in kCHF)	2022	2021
Bonds	645'132	981'510
Cash and Cash Equivalents	829'629	750'506
Fixed Income funds	71'377	120'291
Private Debt	78'258	56'155
Short Term Deposits	-	60'000
Derivatives	134'207	93'287
Settlements Receivable	1'058	12'538
Other assets	15'541	12'897
Total	**1'775'201**	**2'087'184**

No material financial assets were past due as at 31 December 2022.

4.1.3. Liquidity risk

Liquidity risk is the risk that the Fund may not be able to generate sufficient cash resources to settle its obligations in full as they fall due, or can only do so on terms that are materially disadvantageous. In addition to its commitments to pay monthly benefits, the Fund is exposed to the periodic settlement of margin calls and gains and losses on derivative positions. The hedging of exchange rate risk can generate substantial cash flows that are difficult to predict. Therefore the Fund aims to maintain sufficient levels of cash and cash equivalents to meet its short-term liabilities. The Fund does not take leveraged positions on the market.

The table below analyses the Fund's financial liabilities (excluding the derivative financial instruments in a loss position) into relevant maturity groupings, based on the remaining period at the balance sheet date to the contractual maturity date:

(in kCHF)	< 7 days	1-3 months	3-12 months
As at 31 December 2022			
Settlements payable	354		
Members and Beneficiaries	7'398		
Investment property deposits			2'334
Taxes payable		209	
Investment property creditors		4'180	
Reimbursements of contributions	656		
Payments Outstanding		2'269	
Total	**8'408**	**6'657**	**2'334**
As at 31 December 2021			
Settlements payable	-		
Members and Beneficiaries	5'208		
Investment property deposits			1'849
Taxes payable		312	
Investment property creditors		2'852	
Reimbursements of contributions	1'312		
Payments Outstanding		2'604	
Total	**6'520**	**5'768**	**1'849**

The following table analyses the Fund's derivative financial instruments in a loss position that will be settled on a gross basis into relevant maturity groupings based on the remaining period at the balance sheet to the contractual maturity date:

(in kCHF)	< 1 month	1- 6 months	> 6 months
At 31 December 2022			
Forwards	-	16'292	-
Credit default swaps	-	-	632
Swaps	-	-	28'598
Futures	-	1'125	-
Options	-	-	1'700
Total	**-**	**17'417**	**30'930**
At 31 December 2021			
Forwards	-	2'816	-
Credit default swaps	-	-	6'664
Swaps	-	-	8'547
Futures	-	-	-
Options	75	-	-
Total	**75**	**2'816**	**15'211**

4.2 FAIR VALUE ESTIMATION

The fair value of financial assets traded in active markets (such as trading securities) is based on quoted market prices at the close of trading on the reporting date.

An active market is a market in which transactions for the asset take place with a sufficient frequency and volume to provide pricing information on an on-going basis.

The fair value of assets not traded in an active market is determined using valuation techniques. The Fund uses a variety of methods and makes assumptions that are based on market conditions existing at each year end date. Valuation techniques include the use of recent arm's length transactions, reference to other instruments that are substantially the same, discounted cash flow analysis, and option pricing models, making maximum use of market inputs and relying as little as possible on entity-specific inputs.

The carrying amounts of the financial assets and liabilities not measured at fair value in the Statement of Financial Position approximate their fair value.

Specific valuation techniques used to value financial instruments include:

i. Quoted market prices or dealer quotes for similar instruments;
ii. Prices sourced from broker quotes, inter-dealer prices or other reliable pricing services;
iii. The present value of the estimated future cash flows using observable yield curves, prices and other available market information;
iv. The latest available valuation received from fund administrators;
v. Other techniques, such as discounted cash flow analysis.

The fair value hierarchy has the following levels:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets that the Fund can access at the measurement date;
- Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly, or indirectly;
- Level 3 inputs are based on unobservable market inputs for the asset or liability.

The level in the fair value hierarchy within which the fair value measurement is categorised in its entirety is determined on the basis of the lowest level input that is significant to the fair value measurement in its entirety. For this purpose the significance of an input is assessed against the fair value measurement in its entirety. If a fair value measurement uses observable inputs that require significant adjustment based on unobservable inputs, that measurement is a Level 3 measurement. Assessing the significance of a particular input to the fair value measurement in its entirety requires judgement, considering factors specific to the asset.

The determination of what constitutes "observable" requires significant judgement by the Fund. The Fund considers observable data to be that market data that is readily available, regularly distributed or updated, reliable and verifiable, not proprietary, and provided by independent sources that are actively involved in the relevant market.

The following table analyses within the fair value hierarchy the Fund's assets measured at fair value at 31 December 2022:

(in kCHF)	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets				
Financial assets designated at fair value through profit or loss:				
Cash and Cash Equivalents	118'183	-	-	118'183
Equities	381'823	-	353	382'176
Bonds		644'358	774	645'132
Investment Funds	486'024		1'285'443	1'771'467
Sub total	**986'030**	**644'358**	**1'286'570**	**2'916'958**
Financial assets held for trading:				
Derivatives	16'857	117'350	-	134'207
Sub total	16'857	117'350	-	134'207
Total assets at fair value through profit or loss	**1'002'887**	**761'708**	**1'286'570**	**3'051'165**
Liabilities				
Financial liabilities held for trading:				
Derivatives	2'825	45'522	-	48'347
Total liablities at fair value through profit or loss	**2'825**	**45'522**	**-**	**48'347**

The following table analyses within the fair value hierarchy the Fund's assets measured at fair value at 31 December 2021:

(in kCHF)	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets				
Financial assets designated at fair value through profit or loss:				
Cash and Cash Equivalents	124'101	-	-	124'101
Equities	823'818	-	62	823'880
Bonds	-	981'510	-	981'510
Investment Funds	331'914	-	1'076'885	1'408'799
Sub total	**1'279'833**	**981'510**	**1'076'947**	**3'338'290**
Financial assets held for trading:				
Derivatives	28'441	63'329	1'517	93'287
Sub total	**28'441**	**63'329**	**1'517**	**93'287**
Total assets at fair value through profit or loss	**1'308'274**	**1'044'839**	**1'078'464**	**3'431'577**
Liabilities				
Financial liabilities held for trading:				
Derivatives	-	(18'102)	-	(18'102)
Total liablities at fair value through profit or loss	**-**	**(18'102)**	**-**	**(18'102)**

Investments whose values are based on quoted market prices in active markets, and are therefore classified within Level 1, include money market funds, listed equities, exchange-traded derivatives and exchange-traded funds.

Financial instruments that trade in markets that are not considered to be active but are valued based on quoted market prices, dealer quotations or alternative pricing sources supported by observable inputs are classified within Level 2. These include government bonds, corporate bonds, and over the counter derivatives. As Level 2 investments include positions that are not traded in active markets and/or subject to transfer restrictions, valuations may be adjusted to reflect illiquidity and/or non-transferability, which are generally based on available market information.

Investments classified within Level 3 have significant unobservable inputs, as they trade infrequently. Level 3 instruments include unlisted investment funds, over the counter derivatives and unlisted equities. As observable prices are not available for these securities, the Fund has used valuation techniques to derive the fair value.

There were two transfers, totalling 1,065 kCHF between levels during the year ended 31 December 2022. One bond position totalling 774 kCHF was transferred from Level 2 to Level 3 and one equity position totalling 291 kCHF was transferred from Level 1 to Level 3.

The following table presents the movement in level 3 instruments for the year ended 31 December 2022 by class of financial instrument:

(in kCHF)	Equities	Derivatives	Bonds	Investment Funds	Total
Opening balance	62	1'517	-	1'076'885	1'078'464
Purchases	-	-	-	275'903	275'903
Sales	-	(1'517)	-	(118'982)	(120'499)
Transfers into level 3	291	-	774	-	1'065
Unrealised Gains/(Losses) on Financial Assets at Fair Value Through Profit & Loss	-	-	-	63'611	63'611
Realised Gains/(Losses) on Financial Assets at Fair Value Through Profit & Loss	-	-	-	(11'974)	(11'974)
Closing balance	**353**	**-**	**774**	**1'285'443**	**1'286'570**

The following table presents the movement in level 3 instruments for the year ended 31 December 2021 by class of financial instrument:

(in kCHF)	Equities	Derivatives	Investment Funds	Total
Opening balance	62	(8'506)	938'016	929'572
Purchases	-	-	249'998	249'998
Sales	-	-	(227'727)	(227'727)
Transfers into level 3	-	-	-	-
Unrealised Gains/(Losses) on Financial Assets at Fair Value Through Profit & Loss	-	-	107'126	107'126
Realised Gains/(Losses) on Financial Assets at Fair Value Through Profit & Loss	-	6'989	9'472	16'461
Closing balance	**62**	**(1'517)**	**1'076'885**	**1'075'430**

4.3. INVESTMENTS EXCEEDING FIVE PERCENT OF NET ASSETS AVAILABLE FOR BENEFITS

The Fund was invested in one Investment Property representing five percent or more of net assets available for benefits as at 31 December 2022 and 31 December 2021.In addition, the Fund was invested in a total of 661,704 kCHF, including six properties, each representing five percent or more of Investment Property as at 31 December 2022. (As at 31 December 2021: 666,374 kCHF and six properties)

The Fund was invested in a total of 422,597 kCHF, including two exchange-traded funds and one unlisted fund, as at 31 December 2022, each investment representing five percent or more of Investment Funds. (As at 31 December 2021: 191,924 kCHF in one exchange-traded fund and one unlisted fund).

The Fund had no investment in Bonds representing five percent or more of Bonds as at 31 December 2022, (One investments of 89,848 kCHF in Bonds represented five percent or more as at 31 December 2021.)

The Fund had currency forward asset positions hedging US Dollar against Swiss francs and one interest rates swap totalling 73,621 kCHF as at 31 December 2022 each representing five percent or more of the Derivatives assets balance. (As at 31 December 2021: 30,771 kCHF representing currency forward asset positions hedging Euro against Swiss francs and two options).

As at 31 December 2022 the Fund had four swap liability positions totalling 28,119 kCHF, each representing five percent or more of the Derivatives liabilities balance. (As at 31 December 2021: 14,384 kCHF representing currency forward liability positions hedging Euro against Swiss francs, five swap liability positions and three credit default swap positions).

5. CASH AND CASH EQUIVALENTS

For the purposes of the cash flow statement, cash and cash equivalents comprise the following balances with original maturity of 90 days or less:

(in kCHF)	2022	2021
Current accounts	675'944	586'988
Money Market funds	118'183	124'101
Deposit accounts	29'155	29'318
Margin accounts with brokers	6'346	10'099
Total	**829'629**	**750'506**

The amounts under the heading "Margin accounts with brokers" concern cash collateral pledged with derivative counterparties of the Fund. The cash is held in segregated accounts with the brokers and is callable by the Fund to the extent that collateral balances are in excess of the net fair value liability amount of the open derivative positions held with each broker.

6. SHORT-TERM DEPOSITS

Short-term deposits are made for varying periods, depending on the immediate cash requirements of the Fund and earn interest at the respective short-term rate. The deposits are made for more than 3 months and hence are classified as short-term deposits. An amount of 60,000 kCHF matured during the year and is included in Cash and Cash Equivalents as at 31 December 2022.

7. SUNDRY DEBTORS

(in kCHF)	2022	2021
Recoverable taxes	3'171	3'725
Investment property debtors	2'390	2'074
Other due amounts	118	93
Total	**5'679**	**5'892**

8. OTHER RECEIVABLES

(in kCHF)	2022	2021
Accrued interest	1'018	53
Dividends receivable	1'265	868
Outstanding receipts	88	206
Payments in advance	7'492	5'878
Total	**9'862**	**7'005**

The increase in Accrued interest during the period includes 811 kCHF of Accrued positive interest on cash balances held at the Custodian.

9. DERIVATIVES

The following table shows the types of derivative contracts held by the Fund as at 31 December:

	2022		2021	
(in kCHF)	**Assets**	**Liabilities**	**Assets**	**Liabilities**
Forwards:				
Currency Overlay programme	96'912	(16'292)	58'160	(2'816)
Credit default swap			2'200	(6'664)
Swaps	20'065	(29'230)	3'483	(8'547)
Futures	1'680	(1'125)	415	-
Options	15'550	(1'700)	29'029	(75)
Total	**134'207**	**(48'347)**	**93'287**	**(18'102)**

10. BONDS

The fair value of investments in bonds, 645,132 kCHF as at 31 December 2022 (981,510 kCHF as at 31 December 2021) is as follows:

(in kCHF)	2022	2021
North America	277’163	422’603
Europe, Middle East and Africa	272’550	402’735
Asia	62’968	101’165
Emerging Markets	32’451	55’007
Total	**645’132**	**981’510**

Source of geographical data: country of risk data provided by Custodian

The exposure of bonds to market and credit risk is described under note 4.1. “Financial Risk Factors”.

11. EQUITIES

The fair value of investments in equities, 382,176 kCHF as at 31 December 2022 (823,880 kCHF as at 31 December 2021) is as follows:

(in kCHF)	2022	2021
Europe, Middle East and Africa	273’660	474’730
North America	100’917	336’262
Asia	6’087	10’709
Emerging Markets	1’512	2’179
Total	**382’176**	**823’880**

Source of geographical data: country of risk data provided by Custodian

The decrease in Equities during the year includes 183,236 kCHF in relation to a decrease in market valuations (107,995 kCHF increase in 2021) and a decrease of 258,469 kCHF in respect of reduced allocation to equities (338,189 kCHF decreased allocation in 2021).

The exposure of equities to market risk is described under note 4.1. “Financial Risk Factors”.

12. INVESTMENT FUNDS

The fair value of Investment Funds, 1,771,467 kCHF as at 31 December 2022 (1,408,799 kCHF as at 31 December 2021) is as follows:

(in kCHF)	2022	2021
Alternative funds	637’466	454’419
Equity funds	514’752	354’801
Private Equity	382’760	351’588
Fixed Income funds	71’377	120’291
Real Estate funds	86’854	71’545
Private Debt	78’258	56’155
Total	**1’771’467**	**1’408’799**

The increase in Equity funds was largely as a result of purchases of Exchange Traded Funds during the year.

13. INVESTMENT PROPERTY

The fair value of Investment Property, 865,351 kCHF as at 31 December 2022 (871,003 kCHF as at 31 December 2021) is as follows:

(in kCHF)	2022	2021
As at 1 January	**871'003**	**800'503**
Purchases	11'613	17
Net gain/(loss) for fair value adjustments (price)	10'841	87'654
Net gain/(loss) for fair value adjustments (foreign exchange)	(28'106)	(17'171)
As at 31 December	**865'351**	**871'003**

During the year, there were three purchases of Investment Property in France representing three parcels of forest land. (There was one purchase of three parcels of forest land in France in 2021).

14. SUNDRY CREDITORS

Sundry creditors include rent guarantee deposits, rents received in advance, amounts due to members leaving the Fund and value added tax payable.

(in kCHF)	2022	2021
Members and Beneficiaries	7'398	5'208
Investment property deposits	2'334	1'849
Taxes payable	209	312
Investment property creditors	4'180	2'852
Deferred Income	441	520
Total	**14'562**	**10'741**

15. OTHER PAYABLES

Other Payables include contributions to be reimbursed to members leaving the Fund and amounts due mainly in respect of management and custody fees.

(in kCHF)	2022	2021
Reimbursements of Contributions	656	1'312
Payments Outstanding	2'268	2'604
Total	**2'924**	**3'916**

16. DIVIDENDS

(in kCHF)	2022	2021
Investment Funds	33'899	70'451
Equities	11'212	13'192
Total	**45'111**	**83'643**

Included under the heading Investment Funds are dividends totalling 27,926 kCHF (65,114 kCHF as at 31 December 2021) received from Private Equity investments. The decrease during the year was a result of reduced performance compared to the prior period.

17. INTEREST INCOME

(in kCHF)	2022	2021
Cash and Cash Equivalents	3'265	136
Bonds	22'888	20'651
Total	**26'153**	**20'787**

Included in Interest Income under the heading "Bonds" is an amount of 9,671 kCHF (7,534 kCHF as at 31 December 2021) that relates to cost adjustments for inflation-linked bonds. The increase during the year was largely as a result of higher inflation in the United States, compared to the prior period.

The increase in Interest Income under the heading "Cash and Cash Equivalent" during the year was largely as a result of an increase in interest rates.

18. UNREALISED GAINS/(LOSSES) ON FINANCIAL ASSETS AT FAIR VALUE THROUGH PROFIT & LOSS

The following table shows the amount of unrealised gains/(losses) on financial assets at fair value through profit and loss and discloses the gains and losses arising as a result of changes in price and changes in foreign exchange currency movements for the money market funds included within Cash and Cash Equivalents, Bonds, Equities, Investment Funds and Derivatives. The Fund hedges the foreign exchange exposure it has to assets denominated in non-Swiss franc currencies.

The unrealised gains/(losses) arising as a result of changes in price and changes in foreign exchange currency movements on derivative products are on a best estimate basis.

	2022			2021		
(in kCHF)	**Price**	**Currency**	**Total**	**Price**	**Currency**	**Total**
Cash and Cash Equivalents	(80)	(5’838)	(5’917)	(238)	(6’009)	(6’247)
Bonds	(134’653)	(9’844)	(144’497)	(26’819)	(11’598)	(38’417)
Equities	(28’640)	(9’986)	(38’626)	55’722	(8’980)	46’742
Investment Funds	82’707	(25’023)	57’684	146’759	10’661	157’420
Derivatives	(4’436)	(99)	(4’535)	(1’819)	31	(1’788)
Total	**(85’101)**	**(50’790)**	**(135’891)**	**173’605**	**(15’895)**	**157’710**

19. REALISED GAINS/(LOSSES) ON FINANCIAL ASSETS AT FAIR VALUE THROUGH PROFIT & LOSS

The following table shows the amount of realised gains/(losses) on financial assets at fair value through profit and loss and discloses the gains and losses arising as a result of changes in price and changes in foreign exchange currency movements for Bonds, Equities, Investment Funds and Derivatives. The Fund hedges the foreign exchange exposure it has to assets denominated in non-Swiss franc currencies.

	2022			2021		
(in kCHF)	**Price**	**Currency**	**Total**	**Price**	**Currency**	**Total**
Cash and Cash Equivalents	5	49	54	-	15	15
Bonds	(36’548)	12’743	(23’805)	2’176	(9’135)	(6’959)
Equities	(150’486)	5’876	(144’610)	49’322	11’931	61’253
Investment Funds	(22’484)	5’948	(16’536)	18’526	4’060	22’586
Derivatives	1’149	791	1’939	(38’876)	(178)	(39’054)
Total	**(208’364)**	**25’408**	**(182’957)**	**31’148**	**6’693**	**37’841**

The realised gains/(losses) arising as a result of changes in price and changes in foreign exchange currency movements on derivative products are on a best estimate basis.

20. INVESTMENT PROPERTY INCOME AND GAINS/(LOSSES)

The following table shows Investment Property Income arising from both rental income and non-rental income:

(in kCHF)	**2022**	**2021**
Rental Income:		
Residential Property	12’549	12’581
Commercial Property	11’429	10’686
Non-Rental Income:		
Forests	457	817
Changes in fair value	(17’265)	70’483
Total	**7’171**	**94’567**

Gains of 10,841 kCHF for fair value price adjustments and losses of 28,106 kCHF for fair value adjustments as a result of foreign exchange movements, are included in “Changes in fair value” above. The corresponding amounts in 2021 were gains of 87,654 kCHF and losses of 17,171 kCHF respectively.

With regard to its Investment Property the Fund is a lessor of operating leases and as such is required to make the following disclosures in respect of future minimum lease payments.

The Fund has leases that are contracted for remaining periods of between one and ten years. Some of the operating leases include break clauses.

(in kCHF)	2022	2021
Not later than 1 year	24'615	22'093
Between 1 and 5 years	79'761	68'022
Later than 5 years	15'624	13'993
Total	**120'000**	**104'108**

21. FOREIGN EXCHANGE GAINS/(LOSSES)

Foreign Exchange Gains/(Losses) includes gains of 19,450 kCHF (losses of 12,209 kCHF in 2021) relating to trades executed as part of the Currency Overlay programme that is used by the Fund to hedge its foreign exchange rate risk.

22. INVESTMENT MANAGEMENT FEES

(in kCHF)	2022	2021
Currency Overlay programme	19'450	(12'209)
Other exchange rate movements	(23'292)	764
Total	**(3'842)**	**(11'445)**

22.1. RECORDED INVESTMENT MANAGEMENT FEES

The following table shows Investment Management Fees recognised in the Statement of Financial Performance.

(in kCHF)	2022	2021
Reported Investment Management Fees	58'708	44'224
Calculated Investment Management Fees	1'163	1'072
Total	**59'871**	**45'296**

The above Recorded Investment Management fees also include performance fees. The increase in the amount of Reported Investment Management Fees of 58,708 kCHF in 2022 (44,224 kCHF in 2021) was largely due to an increase in the performance and allocation of Investment Funds during the year.

22.2. NON-RECORDED INVESTMENT MANAGEMENT FEES

For less than 6% of Total Financial assets (less than 4% in 2021) there was insufficient information available regarding Investment Management Fees. As a result no Investment Management Fees have been disclosed for these assets that are all Private Equity/Debt funds. The total carrying value of these assets as at 31 December 2022 was 211,695 kCHF (191,812 kCHF as at 31 December 2021).

Carried interest payable in the future to the general partners of Private Equity funds has not been disclosed as there was insufficient information available.

23. INVESTMENT PROPERTY EXPENDITURE

(in kCHF)	2022	2021
Residential Property	7'413	8'477
Commercial Property	5'982	3'444
Forests	167	207
Total	**13'562**	**12'128**

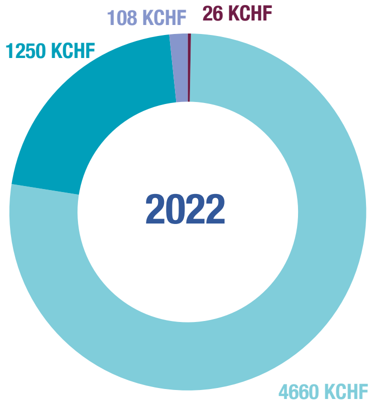
The above Investment Property Expenditure includes amounts totalling 8,314 kCHF due to renovation work on Residential and Commercial Property (4,660 kCHF as at 31 December 2021).

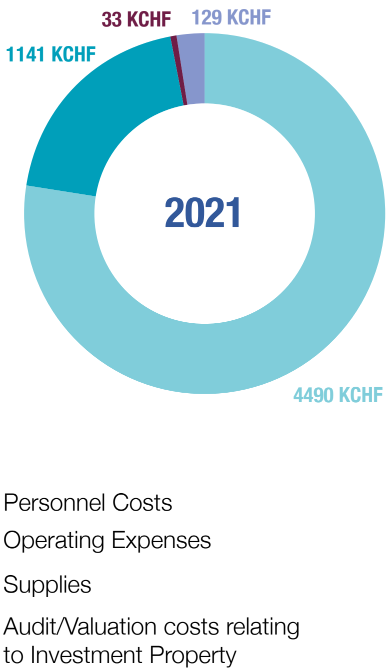
24. OTHER FINANCIAL EXPENSES

Other Financial Expenses were 2,532 kCHF for the period ending 31 December 2022 (4,151 kCHF in 2021) in relation to the Fund's exposure to negative interest rates in some currencies.. The decrease in Other Financial Expenses during the year was largely as a result of interest rates becoming positive in some jurisdictions.

25. ADMINISTRATION COSTS

Administration costs of 6,044 kCHF in the period ending 31 December 2022 (5,793 kCHF for the period ending 31 December 2021) were as follows:





26. MEMBERSHIP ACTIVITIES

This heading shows the contributions of the members of the Fund and the participating Organisations and other amounts received, as well as the various benefits and other amounts paid during the period.

27. COMPENSATIONS

The Fund is compensated by CERN for the additional cost associated with Administrative Circular No. 22 A (Rev.1) "Award of additional periods of membership in the Pension Fund for long-term shift work". Compensations received for the period ending 31 December 2022 were 552 kCHF and are included in the total amount of 778 kCHF. Compensations received for the period ending 31 December 2021 were 474 kCHF.

28. TRANSFER VALUES PAID TO MEMBERS

According to Article II 1.11 of the Fund's Rules, members with less than ten years of service may, under certain circumstances, receive a transfer value directly into their bank account. Alternatively, members can select to have the transfer value paid to another pension scheme.

29. TRANSFER VALUES PAID TO OTHER SCHEMES

Upon leaving the Fund, members can choose to have a transfer value paid into another pension scheme.

30. AMOUNTS PENDING SELECTION FROM MEMBERS

Members who are entitled to a transfer value have one year to inform the Fund of their selection (Article II 1.11). Depending on the number of years of service, a member may elect to be paid a transfer value to another scheme or to the member. A member with at least five years of service may also elect to become a deferred beneficiary.

31. LITIGATIONS AND CLAIMS

As at 31 December 2022, there were no pending claims or litigations against CERN in respect of the Fund. In 2022, the ILOAT (International Labour Organization Administrative Tribunal), issued a judgment in a case filed by a former member of the personnel against CERN relating to the procurement of an entitlement to a surviving spouse's pension, dismissing the complaint in its entirety.

32. RELATED-PARTY TRANSACTIONS

Parties are considered to be related if one party has the ability to control the other party or exercise significant influence over the other party in making financial or operational decisions.

Related parties of the Fund during the period were:

I. Professional members appointed by the CERN Council to act as experts in the PFGB and professional members appointed by the PFGB to the IC and ATC. These professional members provide advice on governance, investment and actuarial issues respectively. Fees in 2022 totalled 95 kCHF (74 kCHF in 2021);

II. Key personnel are the Chair of the PFGB, Chair of the IC, Chair of the ATC and the Chief Executive Officer of the Fund. The aggregate remuneration paid to the remaining key personnel includes salaries, allowances and other entitlements paid in accordance with the Staff Rules and Regulations;
III. CERN, the Organization, contributes a significant portion of the Fund's financing. While the Fund is an autonomous operating entity without separate legal identity, for the purposes of IPSAS 20 disclosure requirements, CERN is considered a related party. Although the Fund meets the cost of its operating expenses, CERN provides free of charge some central support services and office accommodation.

During the year the Fund paid the following amounts to CERN:
- Finance and Administrative Processes department: 213 kCHF for IT support and maintenance (357 kCHF in 2021).
- Industry, Procurement and Knowledge Transfer department: 81 kCHF for procurement services (43 kCHF in 2021).
- Internal Audit Service: 118 kCHF for internal audit services (117 kCHF in 2021).
- Legal Service: 90 kCHF (109 kCHF in 2021).

In 2022 the Fund did not grant any loan or pay any other remuneration (except for the above mentioned amounts) to the key management personnel or to their close family members.

33. EVENTS AFTER THE REPORTING DATE

There were no material events after the reporting date.

EXTRACT OF ACTUARY'S REPORT ON THE FUND AS AT 31 DECEMBER 2022

The Actuary to the Fund has provided technical assessments of the Fund in line with the requirements of IAS26 using two separate sets of assumptions as set out below.
The first set of assumptions are those used to measure the liabilities for inclusion in the Statement of Financial Position under International Accounting Standard 26 (IAS26). These assumptions are informed by the requirements of the accounting standards, with the aim of allowing users of the accounts to have a consistent basis on which to compare pension schemes at different institutions. The IAS26 discount rate is set with reference to observable market corporate bond yields, which are likely to fluctuate over time.

The second set reflects Best Estimate assumptions as set out in the report 'Actuary's Report on the Fund as at 31 December 2022' dated March 2023. These assumptions are long term and used to inform funding levels and contribution requirements. Given the long term nature of the assumptions, these are not expected to fluctuate significantly in the short-term, in the absence of any significant changes in investment strategy or long-term outlook.

Given the different nature and purpose of the two sets of assumptions described above, the positions can move differently over time.

The technical assessments were based on member and asset data provided by the Fund.

1. ACTUARIAL ASSUMPTIONS

Actuarial assumptions	IAS26	IAS26	Best Estimate	Best Estimate
	31 December 2022	31 December 2021	31 December 2021	31 December 2021
Financial assumptions	% p.a.	% p.a.	% p.a.	% p.a.
Discount rate	2.03	0.15	3.85	3.7
Indexation of pensions linked to inflation	1.25	1.1	1.25	1.1
Inflation and remuneration increases linked to inflation	1.25	1.1	1.25	1.1
Average remuneration increases linked to career change (age related scale used)	Overall: 1.55; CERN Fellow: nil; CERN Non-Fellow: 1.50; ESO Fellow: 2.00; ESO Non-Fellow: 2.00			

Demographic assumptions	IAS26	IAS26	Best Estimate	Best Estimate
	31 December 2022	31 December 2021	31 December 2021	31 December 2021
Mortality	94% ICSLT2018			
Spouses' age gap	Males are assumed to be 3 years older than their female spouses and vice versa			
Exit assumptions	CERN Fellow: nil CERN Under age 40: 2.6% p.a. CERN Ages 40 and over: 0.5% p.a. ESO Under age 40: 0.4% p.a. ESO Ages 40 and over: 0.6% p.a.			
Method of evaluating benefits on exit*	23% Transfer Value / 77% present value of accrued deferred pension (on average)			

* The proportion of members who fully extinguish their liability by payment of a transfer value compared to those who take a deferred pension when they depart the Fund with at least five years' service

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Some narrative has been provided below on the key actuarial assumptions to the IAS 26 assumptions.

DISCOUNT RATE

IAS26 measures pension fund liabilities by reference to a discount rate which reflects the time value of money. The currency and term of the financial instrument selected to reflect the time value of money shall be consistent with the currency and estimated term of the defined benefit cashflows.

An entity should make a judgment whether the discount rate that reflects the time value of money is best approximated by reference to market yields at the reporting date on government bonds, high quality corporate bonds, or by another financial instrument. In some jurisdictions, market yields at the reporting date on government bonds will provide the best approximation of the time value of money. However, there may be jurisdictions in which this is not the case, for example, jurisdictions where there is no deep market in government bonds, or in which market yields at the reporting date on government bonds do not reflect the time value of money.

For the 31 December 2022 disclosures, the discount rate is the Aon Swiss AA corporate bond yield curve as received by email from CERN on 5 January 2023. This results in a discount rate assumption of 2.03% p.a. when expressed as a single equivalent rate; the full discount rate curve has been used for the purposes of the calculation. This approach is consistent with that adopted for the 31 December 2021 disclosures.

There has been a significant increase in the discount rate assumption since last year, the impact of which is to significantly reduce the calculated IAS26 liabilities. This increase reflects the significant changes in high-quality corporate bond yields over the period and as such I consider the change in discount rate to be reasonable.

INFLATION-RELATED ASSUMPTIONS

IAS26 does not state any method for determining the rate of inflation or of pension indexation to be assumed. Consequently, the rate of inflation, on which indexation of benefits provided by the Fund and also remuneration increases are dependant, has been set by the principles of best estimate and also of mutual compatibility with other assumptions. The assumption adopted is a long-term assumption appropriate over the entire remaining lifetime of existing members and beneficiaries of the Fund in relation to their accrued benefits as at 31 December 2022.

For the 31 December 2022 disclosure CERN have set their assumption to be consistent with the best estimate of future inflation suggested by the Fund's risk consultant, Ortec Finance. This results in an inflation assumption of 1.25% p.a. at all terms at 31 December 2022. We note that this is higher than the long-term inflation assumption used for the IAS26 disclosures last year (and for the 1 January 2022 Periodic Actuarial Review) of 1.10% p.a., reflecting Ortec's updated view on long-term inflation over the next 40 years.

REMUNERATION INCREASES LINKED TO CAREER CHANGE

This assumption is in respect of increases to remuneration that are in excess of inflation and are due to career progression, promotional increase or some other mechanism, taking into account data provided from CERN and ESO HR.

The 31 December 2022 assumption is set out in the table below; it is consistent with the assumption used at 31 December 2021 and is in line with the best estimate assumption adopted for the 1 January 2022 Periodic Actuarial Review. The average assumptions (shown for disclosure purposes only) has been calculated as a liability-weighted average; the full age-dependent assumption is used for the purposes of the calculation.

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Fellows	CERN	ESO
Average increase	nil	2.0% p.a.
Non-Fellows		
Average increase over all ages	1.5% p.a.	2.0% p.a.
Under age 40	1.8% p.a.	2.1% p.a.
Ages 40-50	1.6% p.a.	2.1% p.a.
Ages 50 and over	1.2% p.a.	1.6% p.a.

MORTALITY

The 31 December 2022 assumption is the same as the assumption used at 31 December 2021 and is in line with the best estimate assumption adopted for the 1 January 2022 Periodic Actuarial Review. The ICSLT2018 table is based on mortality data from European-based International Civil Servants and allows for future improvements. An adjustment of 94% is applied to the probabilities contained within the ICSLT2018 tables (based on the Fund's past experience and using individual pension amount as a weighting factor to derive the best-fit scaling factor). The application of the adjustment means that all mortality rates (across all ages) in the standard base table are multiplied by 0.94. The resulting probabilities provide the best match to the Fund's observed mortality experience, as indicated by the mortality study done in 2021.

OTHER DEMOGRAPHIC ASSUMPTIONS

The method of evaluating benefits for active members who leave service has been kept the same as that used as at 31 December 2021 and in line with the best estimate assumptions adopted for the 1 January 2022 Periodic Actuarial Review. It reflects a best estimate analysis of the proportion of members who fully extinguish their liability by payment of a transfer value compared to those who take a deferred pension when they depart the Fund with at least five years' service. The assumption is an age-related scale, with an average assumption that allows for 23% of the corresponding transfer value and 77% of the present value of the accrued deferred pension.

In accordance with the Fund rules we have allowed for 100% of the transfer value for members who are assumed to leave the Fund with less than five years' service.

The assumptions for proportion married, spouses' age gap, withdrawal rates, ill health disability rates, retirement age and contract transitions are consistent with the corresponding assumptions at 31 December 2021 and in line with those adopted for the 1 January 2022 Periodic Actuarial Review.

2. TECHNICAL BALANCE SHEET USING IAS26 ASSUMPTIONS

Balance sheet	31 December 2022 IAS26 000's CHF	31 December 20221 IAS26 000's CHF
Total assets of the Fund	4,578,372	4,981,661
Liabilities in respect of members	(4,336,954)	(6,744,359)
Liabilities in respect of beneficiaries	(4,629,679)	(5,623,996)
Total Liabilities	(8,966,633)	(12,368,355)
Surplus/(Deficit) in the Fund	**(4,388,261)**	**(7,386,694)**
Funding Level under IAS26 (%)	**51.1**	**40.3**

The funding level has increased from 40.3% as at 31 December 2021 to 51.1% as at 31 December 2022.
The main factors contributing to an improvement in the position were as follows:

1. Special contributions of 61.4 million CHF were paid into the Fund over the year, which increased the assets of the Fund.
2. The assumptions used to measure the liabilities have changed, which has resulted in a 3,590.8 million CHF reduction in the liabilities. The main factors contributing to a deterioration in the position were as follows:
3. Normal contributions paid into the Fund were 236.6 million CHF lower than the value of benefits (assessed on the IAS26 assumptions) earned during the year.
4. The Fund's liabilities accrued interest of 18.3 million CHF.
5. The Fund assets experienced a loss of 331.1 million CHF.
6. There has been an experience loss of 67.8 million CHF arising on the Fund's liabilities.

Overall, these factors have combined to decrease the deficit by 2,998.4 million CHF over the year.

The table below summarises the impact on the accounting liability at 31 December 2022 of changing key assumptions from the assumptions used at 31 December 2021. Each change is considered in isolation.

Assumption	31 December 2022	31 December 2021	(Increase)/decrease to the liability at 31 December 2022 000's CHF
Discount rate	2.03% p.a.	0.15% p.a.	3,850,647
Indexation of pensions and remuneration increases linked to inflation	1.25% p.a.	1.10% p.a.	(387,073)

The table below shows the impact on the IAS26 liability results at 31 December 2022 (with a starting position of 8,966,633 k CHF) to changes in the discount rate, inflation and remuneration increase assumptions. Please note that for the purpose of these sensitivities, all assumptions are changed in isolation while keeping the other assumptions constant.

Assumption changed*	(Increase)/decrease to liabilities resulting from a 0.5% increase in the assumption 000's CHF	(Increase)/decrease to liabilities resulting from a 0.5% decrease in the assumption 000's CHF
Discount rate	773,174	(890,923)
Inflation (including impact on indexation of pensions and remuneration)	(799,001)	684,681
Remuneration increases linked to career change	(234,270)	220,993

*Please note that the changes in the liabilities resulting from the increase/decrease to the individual assumptions shown in the table above are slightly asymmetric around the base value of the liabilities of 8,966,633 k CHF. The asymmetry occurs as a result of compounding the inflation related assumptions and the discount rate assumption as part of the present value liability calculation.

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3. TECHNICAL BALANCE SHEET USING BEST ESTIMATE ASSUMPTIONS

Balance sheet	31 December 2022 000's CHF	31 December 2021 000's CHF
Total assets of the Fund	4,578,372	4,981,661
Liabilities in respect of members	(2,771,160)	(2,668,200)
Liabilities in respect of beneficiaries	(3,849,017)	(3,796,208)
Total Liabilities	(6,620,177)	(6,464,408)
Surplus/(Deficit) in the Fund	**(2,041,805)**	**(1,482,747)**
Funding Level using Best Estimate assumptions (%)	**69.2**	**77.1**

The funding level has decreased from 77.1% as at 31 December 2021 to 69.2% as at 31 December 2022.

This decrease was largely because of lower-than-projected returns on the assets of the Fund over the year. This was partly offset by the contributions paid in over the period.

The reason the Best Estimate funding level has decreased, whereas the IAS26 funding level has improved, is due to the different way the discount rates are determined. The IAS26 discount rate is set with reference to observable market corporate bond yields, which have increased significantly. However, the Best Estimate discount rate is a long-term assumption with a 2.6% p.a. margin over inflation which is not expected to update in the short-term, in the absence of any significant changes in investment strategy. As a result, the IAS26 assessment of the liabilities has decreased significantly with the increasing discount rate, whereas the Best Estimate value of liabilities has remained relatively stable.

The table below shows the impact on the Best Estimate liability results at 31 December 2022 (with a starting position of 6,620,177 k CHF) to changes in the discount rate, inflation and remuneration increase assumptions. Please note that for the purpose of these sensitivities, all assumptions are changed in isolation while keeping the other assumptions constant.

Assumption changed*	(Increase)/decrease to liabilities resulting from a 0.5% increase in the assumption 000's CHF	(Increase)/decrease to liabilities resulting from a 0.5% decrease in the assumption 000's CHF
Discount rate	469,919	(533,132)
Inflation (including impact on indexation of pensions and remuneration and the discount rate)	51,783	(59,134)
Remuneration increases linked to career change	(136,294)	127,220

The inflation sensitivity has a relatively small impact on the liabilities as the increases/decreases to liabilities linked to a rise/fall in indexation of pensions and remuneration are largely offset by increases/decreases in the discount rate assumption (set as inflation +2.6% p.a.).

*Please note that the changes in the liabilities resulting from the increase/decrease to the individual assumptions shown in the table above are slightly asymmetric around the base value of the liabilities of 6,620,177 k CHF. The asymmetry occurs as a result of compounding the inflation related assumptions and the discount rate assumption as part of the present value liability calculation.

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