






EUROCLEAR HOLDING SA/NV
ANNUAL REPORT

2023



Euroclear, your global partner



-  Offices
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Content

A message from our group Chairman	2
An update from our group CEO	4
Euroclear group management team	7
The Euroclear group at a glance	8
Business and strategy update	12
Business operating metrics	20
Economic & geopolitical context	22
Financial review	24
Risk management	30
Compliance	32
Acting responsibly	34
Corporate governance	40
Other disclosures	52
Financial statements	53
Consolidated income statement	54
Consolidated statement of comprehensive income	55
Consolidated statement of changes in equity	56
Consolidated statement of financial position	57
Consolidated statement of cash flows	58
Notes to the consolidated financial statements	60
Statutory auditors' report	122

A message from our group Chairman

Solid results in uncertain times

I'm very pleased to write that Euroclear achieved a record underlying business income of €1.7 billion and a net profit of nearly €1 billion in 2023. These strong results were driven by a robust business performance and higher interest rates. Underlying earnings per share increased by 63% to €312 and the expected 2024 interim dividend of €210 represents an increase of 82% compared to the previous year. This will be the highest dividend ever.

Throughout the year, Euroclear successfully delivered its business objectives and made solid progress on the execution of its strategic plans. We enhanced our ESG, data and digital offering as well as extended our investment funds and collateral management services.

The global environment

These strong results were achieved despite geopolitical tensions impacting the global economy and the capital markets. In this difficult environment, Euroclear continued to manage carefully the vast complexities arising from the international sanctions on Russia and Russian countermeasures. We remain prudent as to the sanctioned Russian assets that we hold in custody and the related cash positions.

Looking forward, we could face an ever more complex environment. In 2024, countries making up over 50% of global GDP will undergo elections and these results will both reflect and impact the increasingly precarious geopolitical and economic environment. A potential radicalisation of the political discourse could well be the source of more instability. We already have two wars at our European borders, and the weaponisation of the financial industry is another worrying trend. Security and strategic autonomy are becoming the number one preoccupation of the policymakers and voters.

These geopolitical events also impact supply chains realigning from "Just in Time" to "Just in Case," and we see trends like "de-risking" and "friend-shoring" continuing. Combined with the stress we have seen in the financial industry, rapid inflation and interest rate moves, fiscal constraints and the speed at which liquidity moves, the financial markets are increasingly vulnerable to future shocks.



Francesco Vanni d'Archirafi
Chairman, Euroclear group

Solid results in a challenging environment.



Client centricity between now and the future

With our environment becoming increasingly complex and uncertain, our clients value more than ever the resilience and safety that Euroclear represents in a world where appetite for risk is decreasing. Trusted institutions that can help manage risks, have an ecosystem of strong and long-lasting relationships and are nimble in taking advantage of this uncertain environment, are best placed to create substantial value. Our client focus and our AA rating are strong foundations to fulfil the role of a leading Financial Market Infrastructure in this complex and ever-changing landscape.

Through our ambition to co-create with our ecosystem and by putting clients at the centre of our model, we should strive to further build our position as a vital pillar of the global capital markets. With the stability and resilience we offer, we must remain the infrastructure that brings the certainty our clients need in this uncertain world. This will not only be beneficial for the financial ecosystem, but it will also create value for our shareholders.

The digital and green agendas

The digital revolution is a massive game-changer. Examples include the acceleration of Distributed Ledger Technology (DLT) moving from experimentation to reality (see World Bank DNN - p. 14), Gen-AI enabling transformational business models, and the acceleration that Quantum computing will eventually bring. Consequently, the management of cyber risks has never been more relevant. Industrial strength recovery capability is now a must. We therefore continue to invest in technology, resilience and recovery.

ESG, climate change and the green transition are also fundamental initiatives for us. With public, private and philanthropic collaboration dramatically intensifying, "action" has never been more critical. Euroclear has a central role to play, not only as an infrastructure facilitating the transition to net-zero, but also with more engagement in the communities where we operate, so that they are better off when we are present. Supporting the green transition and achieving our own ESG objectives is of critical importance. I look forward to Euroclear supporting EU initiatives such as the Corporate Sustainability Reporting Directive (CSRD) and also supporting the new EU Commission on the urgent need to build a strong Capital Market Union.

Strong shareholder foundations

Euroclear's shareholder structure continues to evolve. Over the last year, new high-quality, long-term investors decided to join us as shareholders. Their commitment is a confirmation of the long-term potential and stability of our company, reflecting positively on our prospects and strategic direction.

On behalf of the Board, I am delighted to welcome New Zealand Super Fund and Novo Holdings as new shareholders, each acquiring 4.99% and 3.22% respectively, in 2023. Their long-term investment vision and commitment strengthen Euroclear's position as a neutral, open financial market infrastructure. Such stable, long-term capital is ideally suited to support Euroclear's growth strategy. Additionally, I would like to thank all our shareholders for their continued confidence and support.

Transitioning to the future

With strong foundations in place, the Board's priority is to support the growth of the company in a sustainable way to ensure long-term value creation. With that in mind, we are continuously looking at how our governance can be further enhanced to best achieve this objective.

I would like to take this opportunity to thank and extend a special recognition to Franco Passacantando who left our Board in 2023 after eight years of great service. We are fortunate that he will remain involved with our company as Chair of the Euroclear Advisory Council. During the year, we welcomed Mrs. Cécile Nagel from the Bank of New York Mellon and Mr. Tom Feys from FPIM-SFPI, who joined our Board.

A lot of gratitude goes to our clients, to the management team, the employees and my Board colleagues for their hard work and co-operation throughout 2023.

My final word must centre on Lieve. Her commitment and leadership over the recent years position our organisation well for future challenges. She will be replaced by Valérie Urbain as our next CEO, who will take the reins in May 2024. A warm welcome and my best wishes to Valérie for her new role.

Sincerely yours,

Francesco Vanni d'Archirafi
Chairman, Euroclear group

An update from our group CEO

Excluding exceptionals related to geopolitical turmoil, Euroclear produces record results

Based on our vision to build an open, digital and data-enabled Financial Market Infrastructure (FMI), and in line with our purpose to innovate to bring efficiencies, safety and connections to financial markets for sustainable growth, 2023 saw Euroclear transform market challenges and opportunities into better client solutions.

Markets trends were very different compared to 2022, with increasing interest rates, lower market volatility, a sustained fixed-income issuance and equity markets rebounding later in the year. In spite of market trends, our well diversified business model, ensuring subscription like revenues, continued to prove its resilience. We delivered a record net profit of close to €1 billion, up 63% vs last year. The huge gain in interest income, together with our business fee income, increased our operating income by 42% to approximately €2.8 billion, also a new record.

Operating expenses increased by 14% to a total of €1.3 billion, largely attributable to higher inflation and increased investments in line with our strategic ambition to develop digital capabilities and IT infrastructure.

Adjusting for the non-cash impairments, these results translate into a 2023 dividend that is larger than the ones of 2021 and 2022 combined.

Turning to business metrics, our customers entrusted us with a record €37.7 trillion worth of assets to safekeep at the end of 2023. The number of netted transactions processed remained stable at 300 million, with the overall amount of activity processed for clients increasing slightly to over a quadrillion, or €1,072 trillion.

Russian sanctions

Russia's invasion of Ukraine in February 2022 has had a material impact on our business, as we manage a range of international measures as a repercussion. The number of sanctions and countermeasures are unprecedented and have a significant impact on our daily operations. While new sanctions were issued at a declining pace in 2023, these still resulted in unrivalled levels of manual intervention.

Well-established processes enable the group to implement the sanctions, while maintaining the normal course of business. However, one consequence of the sanctions is that blocked coupon payments and redemptions owed to sanctioned entities results in the accumulation of cash on Euroclear Bank's balance sheet. At the end of 2023, Euroclear Bank's balance sheet had increased by €38 billion, year-on-year, to €162 billion.

As per Euroclear's standard procedures, Euroclear does not remunerate cash balances and such balances are re-invested to minimise credit risk. The revenues of those interest income amounted to about €4.4 billion in 2023.

Since considerable uncertainties persist, Euroclear continues to separate the sanctions-related earnings from the underlying financial results and retain these profits until further guidance is provided.

Euroclear always acted cautiously and transparently in this matter. I am immensely proud and grateful for the efforts of the numerous colleagues managing these complex market issues and minimising the potential legal and operational risks arising from this unprecedented situation.

Strengthening market connections

Euroclear fully supports the need for integrated, deep and liquid capital markets within the European Union. As a common settlement platform for Europe, the European Central Bank's TARGET2-Securities (T2S) system underpins this harmonised environment. Euroclear Bank and Euroclear Finland successfully completed the connection to the European Central Bank's T2S settlement system in late 2023. By joining this common infrastructure, the Finnish CSD can offer its users delivery-versus-payment, cross-border settlement of securities and cash. We were delighted to successfully migrate over 2.3 million Finnish securities accounts in the largest ever T2S migration.

Furthermore, Euroclear continues to grow its international ecosystem in Asia. Euroclear Bank and the Korea Securities Depository took further steps in making the Korean market 'Euroclearable' by signing an agreement last year to allow international investors efficient post-trade access to KTBs and use in their collateral operations.

It's our people – the hard work and commitment of our teams worldwide – that underpin the success of our business. ”

Sustainability and data-driven future

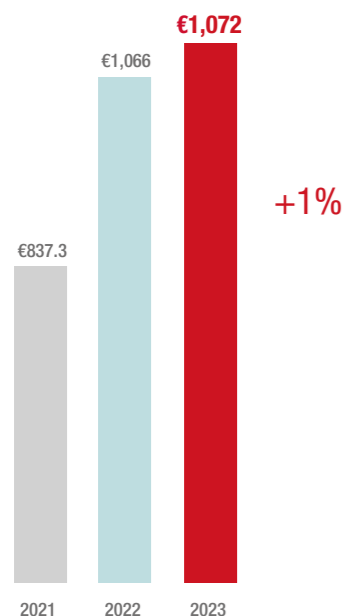
Euroclear, as a financial market infrastructure group, takes a long-term perspective. As we look to the future, our planet needs funding if our society is to meet the climate challenges ahead, and we are contributing to a sustainable transition by continuing to play our role as an important Financial Market Infrastructure (FMI).

In 2023, Euroclear continued to build on its strong ESG foundations established in previous years. It has started to implement the principles laid out in its ESG Board policy and begun to measure progress against the ESG KPIs which were approved in early 2023. Euroclear has made progress against its commitments in many areas, meeting supply-chain screening targets and receiving approval for its net-zero targets from the Science Based Targets initiative.

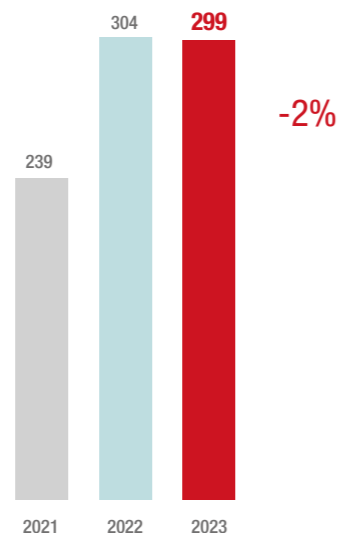
In line with our aspiration to become a digital and data-enabled Financial Market Infrastructure (FMI), we delivered a brand-new asset class - the Digitally Native Note (DNN). Issued using distributed ledger technology (DLT), the inaugural DNN was issued by the World Bank, raising €100 million to support its sustainable development activities. This DNN and future digital securities issuances can be bridged to Euroclear's traditional settlement platform for secondary market operations and collateral purposes.

Lieve Mostrey
CEO of Euroclear group

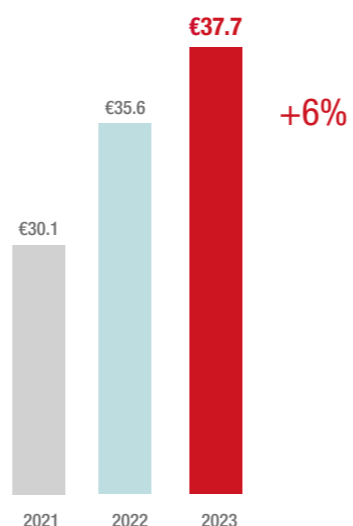
Turnover (in € trillion) ¹



Number of netted transactions (in million)



Values of securities held (in € trillion)



¹The data includes intra-group holdings/transactions, as relevant

Positioning the company for the future

While macro-economic turbulence and geopolitical tensions are likely to impact our global capital markets in years ahead, our business diversification coupled with our client-centric approach remain essential to our future success. I take pride in a consistent score of above 80% in client satisfaction levels across all entities in our group for the past five years. However, I am cognisant that we need to continue to focus on the ease of doing business with Euroclear.

Our diverse client base entrusts us with over €37 trillion worth of assets to safekeep – up 32% since 2017, when I became CEO. I am equally proud to have grown our operating income by some 35% during this timeframe. I would like to stress that it's our people – the hard work and commitment of our teams worldwide – that underpin the success of our business.

We recognise the value of our people and aim to foster an inclusive, performant and learning-orientated corporate culture. Last year alone, we onboarded 800 new employees and opened a new technology hub in Krakow which will see the company create 400 new jobs in the future.

As a company, we rely on our existing ecosystems and organic growth, but equally we are also aware of the opportunities that strategic acquisitions bring.

For example, through our acquisitions of MFEX and Goji, we continue to enhance our service offering in investment funds with the launch of a new service targeting private market funds, as demonstrated by some important new mandates we have been able to win over the course of 2023.

Passing on the baton

In concluding, I sincerely welcome Valérie Urbain as the next CEO of the Euroclear group. She brings with her a vast amount of experience and abilities based on her three decades of service in a variety of senior Euroclear positions, and with that, continuity is well assured.

I would like to take this opportunity to thank our colleagues across the entire group for their commitment and dedication in delivering another robust performance, servicing our clients, and contributing to preserve the certainty, fluidity, and safety of our markets.

Last but not least, I would like to thank my fellow Management Committee members, the past and present Board Chairmen and members and our entire shareholder base for their trust, their collaboration and their commitment for the company. After seven years at the helm of Euroclear, I am proud of our achievements in terms of growth and value creation for all stakeholders, and I trust that I leave Euroclear in safe and capable hands.

Thank you

Lieve Mostrey
CEO of Euroclear group

Euroclear group management team

We innovate to bring safety, efficiency and connections to financial markets for sustainable economic growth ”



From left to right:

Paul Hurd, Chief Risk Officer - **Bernard Frenay**, Chief Administration Officer - **Valérie Urbain**, Chief Business Officer - **Lieve Mostrey**, Chief Executive Officer - **Michał Paprocki**, Chief Information Officer

A trusted financial market infrastructure

AA rating Fitch/S&P

1 ICSD

Euroclear Bank, the International Central Securities Depository with a banking license, which also operates CSD services for Ireland

6 CSDs

Domestic Central Securities Depositories for Belgium, Finland, France, the Netherlands, Sweden and the UK

+2,400 clients

The world's largest financial institutions and Central Banks, connecting issuers and investors, and all intermediaries.

Financial Highlights

299 million netted transactions per year, worth **€1,072 trillion**

€37.7 trillion assets under custody

€1.7 trillion average daily collateral outstanding on the Collateral Highway

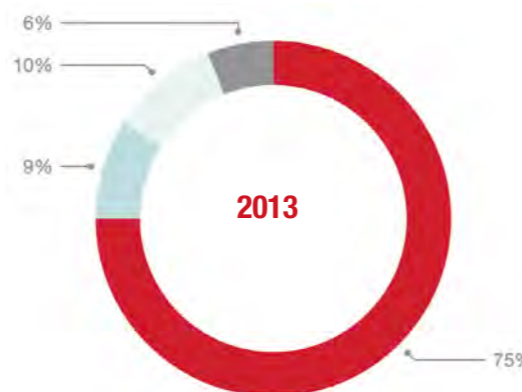
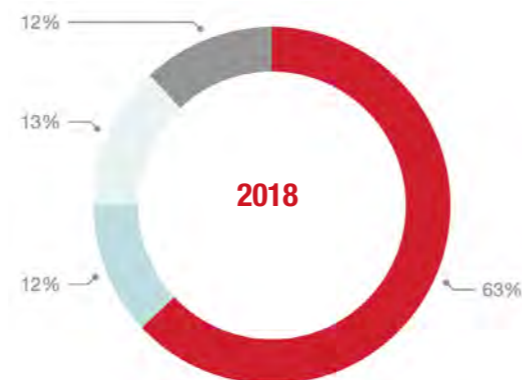
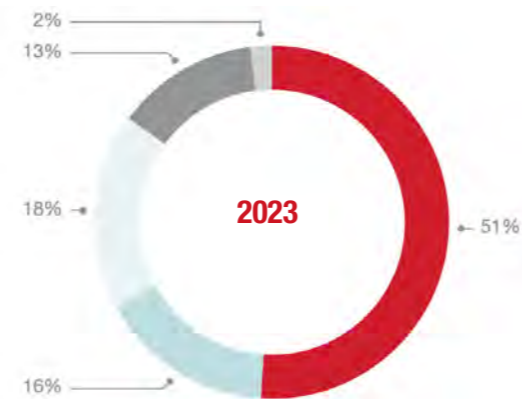
€3.1 trillion funds asset under administration

50 markets to access

45 currencies to settle in

Business income breakdown

● Eurobonds & European Assets ● Funds ● Collateral Highway
● Global Emerging markets ● Data



The Euroclear group at a glance

As a Financial Market Infrastructure (FMI) group, Euroclear plays a central role in helping global markets to process securities transactions efficiently, enhance liquidity and reduce risk. The group operates secure platforms where a wide network of the world's largest financial firms and central banks hold and transact securities issued by companies, governments, supnationals and fund managers.

Euroclear is a privately held company. In recent years, Euroclear's shareholder base has been transitioning from its traditional "user-owned" model to include a greater proportion of long-term institutional investors. Such stable, long-term capital strengthens Euroclear's position as a neutral, open financial market infrastructure and supports the group's growth strategy, focused on delivering value to its stakeholders, including clients, employees, shareholders and society.

The group's principal operating entities are central securities depositories (CSDs) being Euroclear Bank (the leading international CSD and the domestic CSD for Ireland) and six other domestic European CSDs (Belgium, Finland, France, the Netherlands, Sweden and the United Kingdom).

Through its acquisition of MFEX and Goji, the group has enriched its capabilities in global funds and the growing private equity sector, alongside other investments in strategic fintech providers.

Together, Euroclear's group companies provide solutions for domestic and global financial market participants to invest in securities issued by governments, corporations and fund managers. In addition, the group facilitates financing in capital markets by reducing risk, increasing post-trade process efficiency, and optimising collateral mobility and access to liquidity. The Euroclear network comprises around 2,400 financial institutions which use its platform to access 50 different markets and settle transactions in 45 currencies. On their behalf, the group holds approximately €37 trillion of assets under custody and enables 299 million netted transactions per year, worth an equivalent of €1,072 trillion.

The Euroclear group's business model provides a hedge against market volatility. When markets are lower, the impact is mitigated by the group's diversified and subscription-like business model, as approximately three quarters of the group's business income is decoupled from financial market valuations.

At the heart of the financial ecosystem

Euroclear connects issuers with investors: providing a platform for capital to flow where required throughout the global economy. Between those two parties are intermediaries; issuer agents, which perform multiple tasks on behalf of issuers including primary issuance and corporate actions; broker-dealers, that buy and sell securities on behalf of their investor community clients and actively support the origination of issuance and by bringing investors to the right products; and custodians, which safeguard the assets on behalf of underlying investors.

990,000 new issues by Euroclear Bank in 2023, representing **€4.15 trillion** year-end depot

Euroclear focuses relentlessly on meeting the evolving needs of its clients, always seeking to reinforce and extend its offer for:

Issuers, their agents and fund management companies

For issuers and their agents, Euroclear's core offering is to provide a secure place of issuance for their securities to access funding from the capital markets. All six domestic CSDs and Euroclear Bank, the international CSD, play the role of issuer CSD, which is to be the digital notary for the issued securities. A broad range of financial instruments are issued through the (I)CSDs, including equities, fixed income and exchange traded funds (ETFs).

Issuers require a place of issuance to allow for multiple asset classes and currencies, to have the right legal frameworks and to be attractive to investors. Moreover, issuers, their agents and fund management companies want to maintain a loyal investor base while meeting their regulatory responsibilities and ESG ambitions.

The investor community and their custodians

Investors and their custodians expect to transact and hold their securities with a full safety and transparency. Their investment goals hinge on access to a variety of financial markets which are efficient and provide asset protection through legal certainty.

Minimising risks often equates to a diversification of portfolios by accessing new geographical markets, multiple asset classes, while also developing marketplaces for sustainable finance.

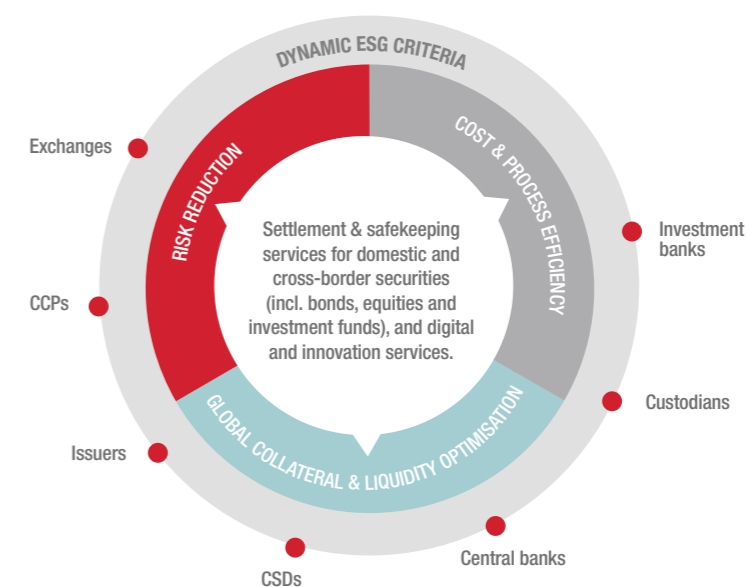
Custodians seek to benefit from the automation and standardisation of processes across the entire life cycle of the securities they hold for their underlying investors. This includes seamless asset servicing and related tax processes where modernisation and standardisation are hallmarks of Euroclear's custody services.

The broker-dealer community

As broker-dealers act as a conduit for the trading process for the investment community, they require efficient and reliable financial market infrastructure, with optimal access to liquidity. This enables them to focus on optimising funding opportunities whilst also managing costs, operational and credit risks, in line with their regulatory responsibilities.

By taking a stronger client lens in our strategy, we further strengthen the virtuous circle of bringing all clients into one self-reinforcing ecosystem, focusing on launching and scaling initiatives respectively, meeting the needs of investors, issuers and dealers.

Core activities to serve global client network



Business and strategy update

One year into our journey to become a D²-FMI

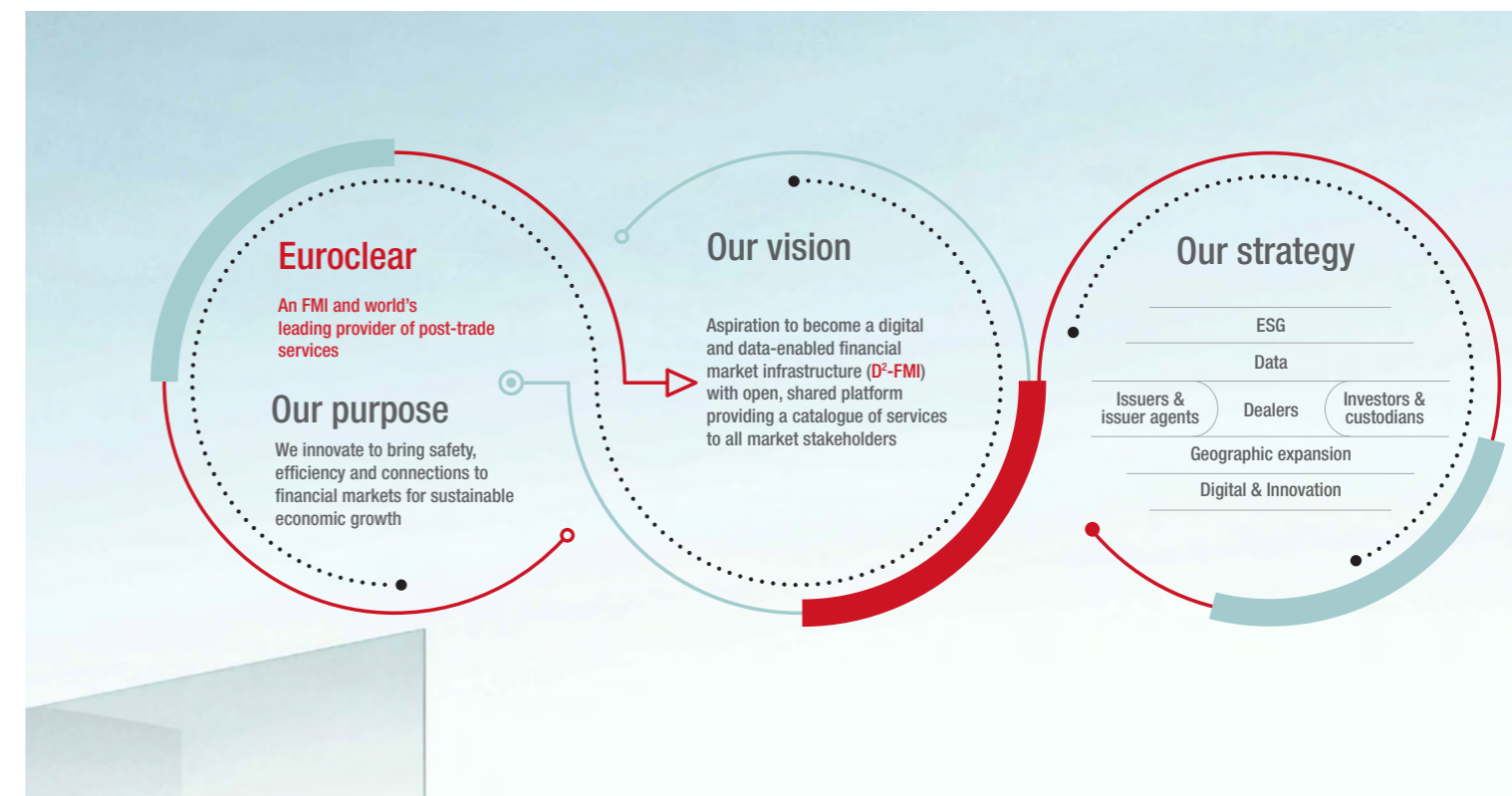
In 2023, Euroclear made solid progress in delivering on the business objectives of its renewed corporate strategy. Key achievements include the expansion of its digital capabilities with the launch of the Digital Securities Issuance (D-SI) service, the successful connection of Euroclear Finland to the European Central Bank’s T2S settlement system and the selection by several clients from Europe and Asia of Euroclear’s fund platform for the onboarding of all of their investment funds. Euroclear also expanded its footprint in Asia by taking further steps in making the South Korean market “Euroclearable”.

In 2022, Euroclear adopted a new strategic direction, laying the foundations for the next phase of Euroclear’s diversification and growth.

This strategy is anchored by a renewed purpose:

“We innovate to bring safety, efficiency and connections to financial markets for sustainable economic growth”.

Euroclear’s purpose underpins its long-term aspiration to become a digital and data-enabled financial market infrastructure, a D²-FMI. By building an open platform providing a variety of services to all market stakeholders, Euroclear continues to evolve its core settlement, custody, collateral and funds service, as well as developing new services – particularly in the data, sustainability and innovation space.



Harnessing technology and realising data & innovation ambitions

Advancing Euroclear's data and innovation ambitions to provide a catalogue of data-enabled services is core to the group's D²-FMI strategy. In support of this, Euroclear continues to broaden the scope of talent and grow and invest in critical capabilities such as data, digitalisation, operational resilience and cyber, while also reinforcing the client-facing, support and control functions.

Embracing digital securities

Euroclear's position as a systemic FMI and its track-record of innovation enable the group to play a significant role in expanding digital capabilities in the post-trade space whilst minimising potential risks.

Euroclear recently announced the launch of its Digital Securities Issuance (D-SI) service, the landmark first milestone in this journey. The service enables the issuance, distribution and settlement of fully digital international securities - Digitally Native Notes (DNN) - on Distributed Ledger Technology (DLT). This operates as part of Euroclear's platform, which in turn is connected to the traditional settlement platform of Euroclear for secondary market operations with DNN. For example, a DNN could also be used as part of a triparty collateral management deal.

The inaugural DNN was issued by the World Bank, raising €100 million to support its sustainable development activities. Euroclear has a pipeline of future issuers in this new security format.

Cooperating around digital assets

The benefits of DLT innovation are highlighted in a recent paper on the financial industry's digital asset evolution published by Euroclear, The Depository Trust & Clearing Corporation (DTCC) and Clearstream. The paper calls for increased collaboration to progress an ecosystem that currently includes fragmented standards, varying regulatory treatment, limited integrations with institutional-grade payment rails and siloed liquidity - all limiting factors to the further digitalisation of global financial markets.

Through collaboration with the industry, the research identified digitalisation opportunities for global financial markets, which included reducing the costs of connectivity and enabling consistent operating standards across processes, platforms, and digital assets.

Data-as-a-Service

Fixed income markets have grown significantly in recent years, as a result of volatile markets and rising interest rates around the globe. This new environment is driving demand for greater access to key fixed income data sets that help investors monitor market performance, liquidity conditions and key trends.

Last year, Euroclear teamed up with BondCliQ Inc, a credit market focused Data-as-a-Service (DaaS) company, to launch a new, European settlement data solution for debt instruments. This partnership has enabled Euroclear to significantly enhance the transparency and accessibility of its fixed income settlement data. Market participants are now able to obtain unparalleled levels of access to refined fixed income data through customised dashboards. This will make it easier for investors to take more informed decisions and manage their portfolios with greater precision and confidence.

Euroclear continues to invest in an optimal client digital experience. Through Taskize - our secure, web-based solution - clients can efficiently raise, route, track and resolve operational issues in real-time, avoiding the need to expend time on emails and phone calls. In 2023, new clients were welcomed to the Taskize network as well as existing clients increasing their adoption and experiencing higher satisfaction levels.

Technology ensures safety

Euroclear's foundations as a financial market infrastructure are its technology platforms and the operational resilience provided by its people and systems. Thanks to significant, consistent investment in technology capabilities and infrastructure platforms, Euroclear remains highly relevant, reliable, and scalable to meet growing market demand. Last year, the group again met its systems uptime targets while supporting record volumes, with 299 million netted transactions processed. Each of the group's settlement systems has proven to be robust when faced with these record volume levels, with an overall systems uptime of 99.9%.

Euroclear's technology investments remain focused on heightening resilience and cyber security capabilities. Furthermore, they also focus on modernising existing platforms and building out new ones as part of our D²-FMI aspirations to improve market efficiencies and connections through innovation.

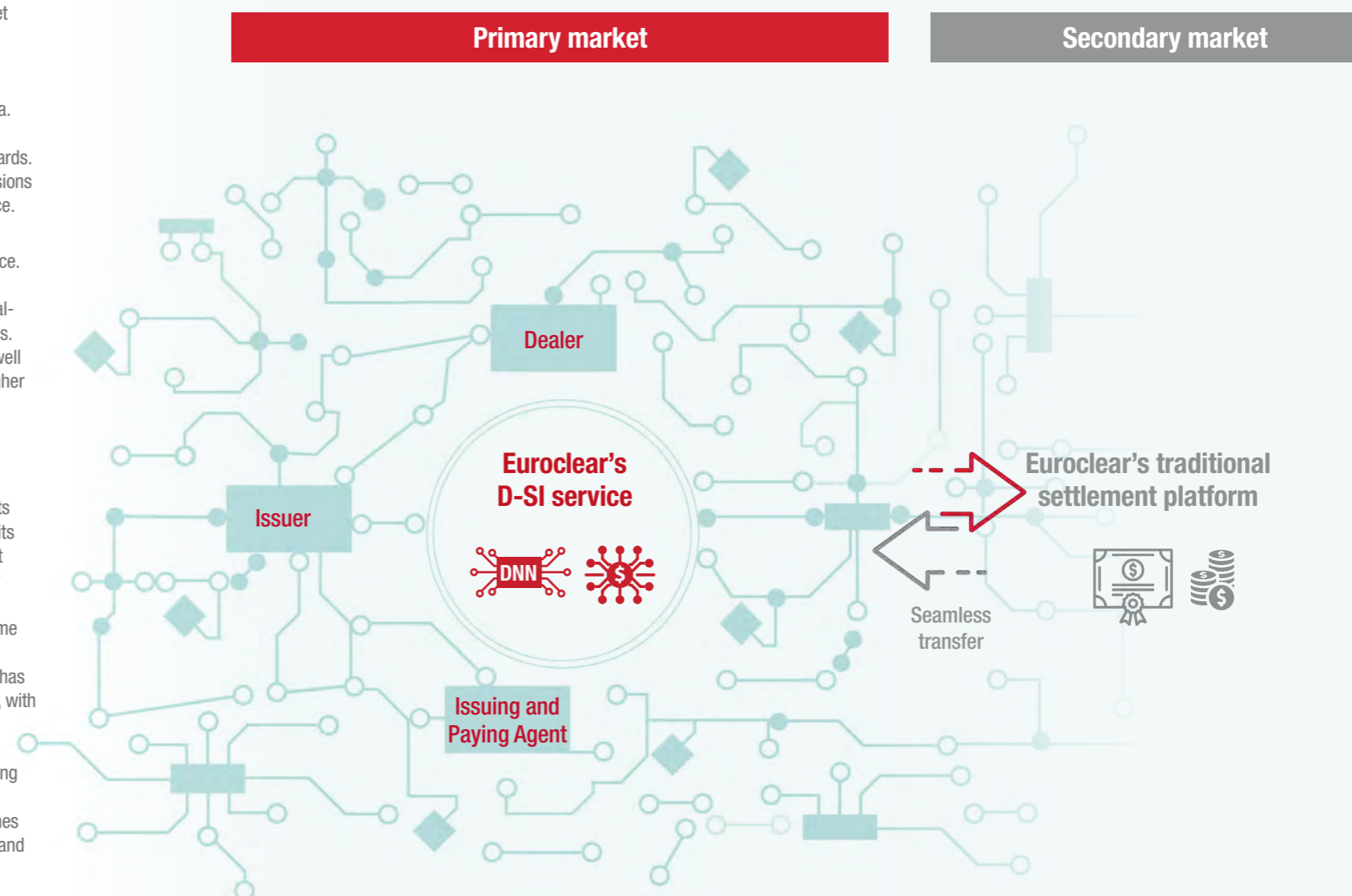
Euroclear's Digital Securities Issuance (D-SI) service

Euroclear's D-SI service enables the issuance, distribution and settlement of fully digital securities on Distributed Ledger Technology (DLT).

Connected with Euroclear's traditional platform

Secondary market operations with DNN

Fully CSDR compliant



Deepening market liquidity for clients

Euroclear supports the need for liquidity by providing settlement services and a neutral, interoperable collateral management utility to source, mobilise and segregate collateral, known as the Collateral Highway.

The Collateral Highway offers clients a complete view of exposures across the full spectrum of their asset classes and enables them to optimise collateral, including a growing trend in green collateral. At year-end 2023, the average daily collateral outstanding on the Collateral Highway was €1.7 trillion, with the business line contributing to 18% of group business income.

In 2023, changing macroeconomic parameters impacted our business composition. Collateral scarcity impacted lending demand for high-quality, liquid fixed income securities. This was compensated by rebounding repo activity and the return of certain cash lenders to the secured financing markets. In addition, the Collateral Highway continued to benefit from our global role in providing triparty solutions to clients implementing recent Uncleared Margin Rules (UMR) for derivatives under the Basel frameworks.

During the year, other collateral initiatives focused on the delivery of a new collateral data hub, including new criteria related amongst others to ESG stipulations. This to allow clients to implement their ESG strategies across their collateral portfolios or to simulate to which extent these portfolios are already ESG-compliant.

In November 2024, the new Eurosystem Collateral Management System (ECMS) will change the way clients interact with central banks to post collateral and receive credit. Euroclear is well prepared for this transition. Clients will be able to continue using Euroclear to post collateral to their central bank and will also have the possibility to outsource this collateral management to Euroclear entirely, with Euroclear delivering collateral to the national central banks in T2S (TARGET2-Securities) on their behalf.

Growing investment fund services

2023 saw the investment fund industry sector rebound after markets had driven down equity and investment fund valuations in 2022, and despite ongoing geopolitical uncertainties, financial instability and recession risks.

Euroclear offers a comprehensive range of services to distributors, custodians, and asset managers. The group administers €3.1 trillion of fund assets, servicing approximately 3,000 fund distributors and 2,500 fund management companies spanning across 85 countries.

In 2023, funds contribution to group business income was 16%. The core of Euroclear's investment funds proposition is the automated order routing, settlement, and asset servicing through both Euroclear Bank and the domestic CSDs. In addition, Euroclear has acted as a growing place of issuance for both domestic and international exchange traded funds.

Euroclear is committed to building a digital marketplace that caters to the entire funds' ecosystem. Building on the acquisitions of MFEX and Goji, Euroclear has continued to enhance its service offering in funds with the launch of a new service for private market funds. Leveraging Goji's capabilities with the FundSettle platform, the new service complements Euroclear's existing money market, mutual and alternative fund offerings.

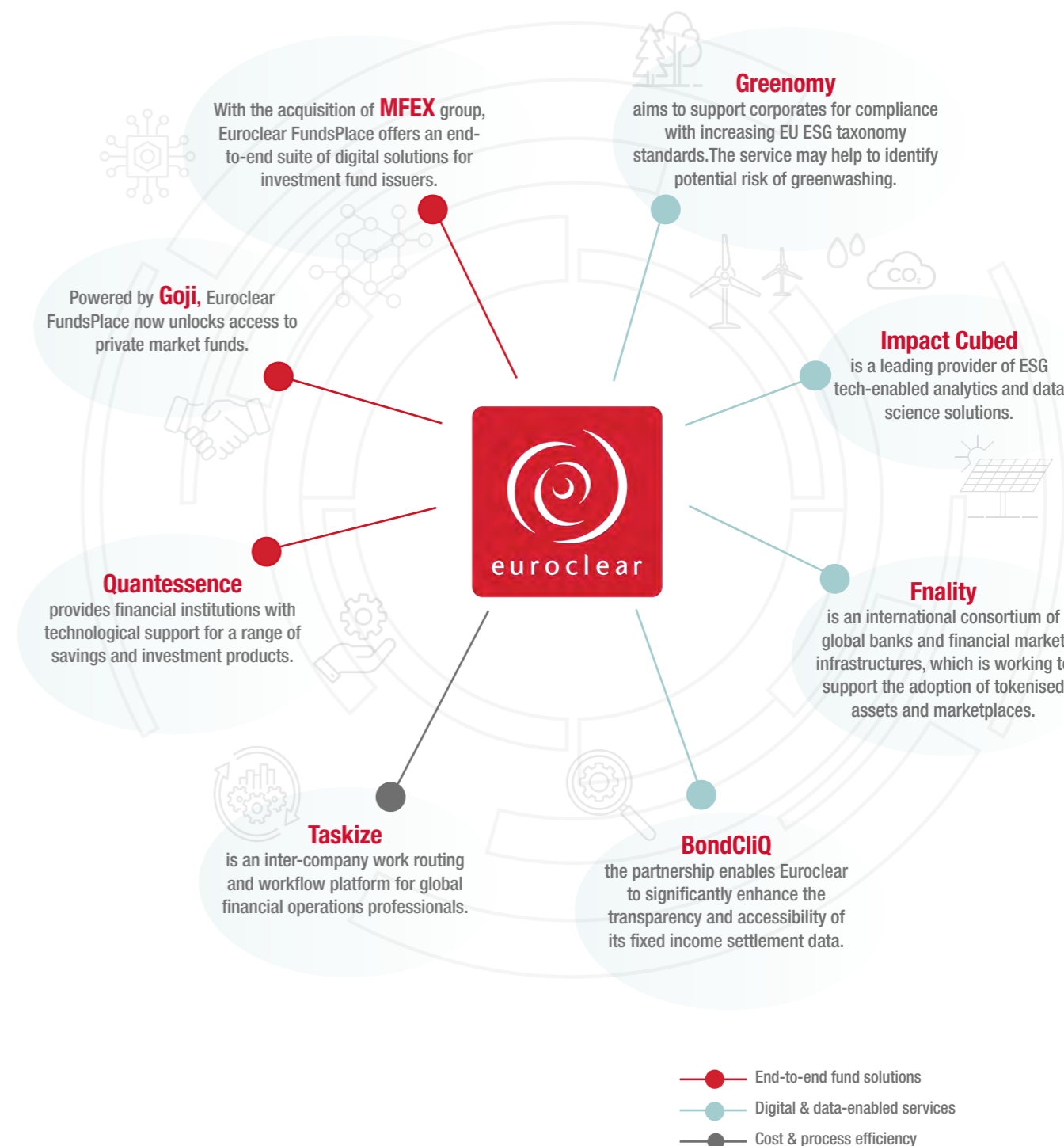
Moreover, Euroclear's partnership with Quantessence provides financial institutions around the world with technological support for a range of savings and investment products. In particular, the platform is used by some of the world's largest insurers and banks in support of individualised, customisable solutions for asset allocation. Quantessence takes care of calculation, asset rebalancing and order management for a growing number of clients.

Euroclear also continued to develop innovative services for fund distributors globally. In 2023, several clients from Europe and Asia chose Euroclear's fund platform for the onboarding of their investment funds. Euroclear provides a one-stop-shop solution for fund distribution and execution services via its extensive network, allowing these clients to have access to more than 250,000 funds.

To further streamline Euroclear's funds offering and reflect its ambition to create a true one-stop-shop offering to clients across the full spectrum of funds products, Euroclear's funds offering transitioned to a new brand name, Euroclear FundsPlace.

Euroclear's growing ecosystem

With a goal to add capabilities and scale to the client offering while being accretive to shareholder value. Euroclear is also taking actions to support the development of the sustainable finance marketplace.



Euroclear FundsPlace®

€3.1 trillion of fund assets under administration

+3,000 fund distributors

+250,000 funds

2,500 fund management companies

Forging stronger connections

Given Euroclear's central role in global capital markets with an emphasis on our European base, we fully support the need for integrated, deep and liquid capital markets within the EU. As a common settlement platform for Europe, the European Central Bank's (ECB) TARGET2-Securities (T2S) system underpins this harmonised environment.

T2S reduces European fragmentation and makes central bank money securities settlement more efficient by reducing risk and increasing liquidity, and by fostering a more attractive European capital marketplace. Since 2016, Euroclear's ESES CSDs (Euroclear Belgium, Euroclear France and Euroclear Nederland) have been connected to the T2S system. Euroclear Bank joined T2S in late 2021.

Euroclear Finland successfully completed the technical connection to the European Central Bank's T2S settlement system in late 2023.

This major milestone represents the largest migration of accounts, with 2.3 million securities accounts successfully migrated. By joining this common infrastructure, the Finnish CSD can offer its users delivery-versus-payment settlement of securities and cash in multiple currencies.

Further afield in Asia, Euroclear continues to grow its international ecosystem. Euroclear Bank and the Korea Securities Depository signed an agreement to open an omnibus account structure allowing to make the South Korean market "Euroclearable" in a next phase. Building on key advancements in making Korean Treasury Bonds (KTBs) accessible through Euroclear Bank, the link will allow international investors efficient post-trade access to KTBs.

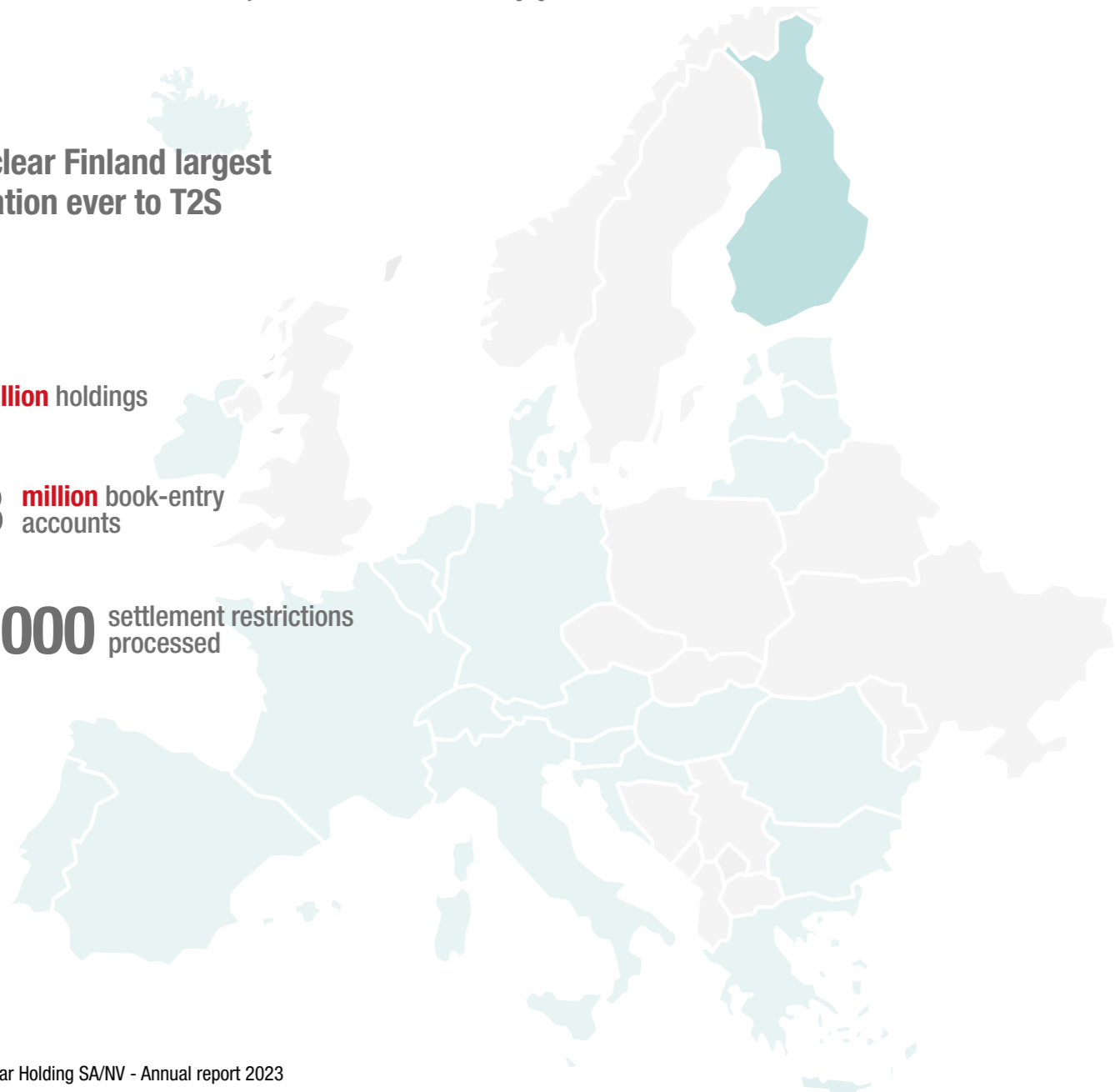
Overall, 13% of Euroclear's revenue streams stem from global and emerging markets.

Euroclear Finland largest migration ever to T2S

5 million holdings

2.3 million book-entry accounts

+20,000 settlement restrictions processed



Developing a sustainable financial market place

As a global FMI, Euroclear has a role to play in facilitating and accelerating the development of a sustainable financial market by:

Reducing infrastructure, regulatory and informational barriers to issuance

Euroclear is looking for ways to make the transition to green finance easier for issuers. An illustration of that is the work performed by Euroclear's partnerships, helping issuers on their reporting requirement journey as well as framing of sustainable credentials of portfolio holdings across many ESG dimensions in a user-friendly manner.

Providing transparency solutions so that issuers can access ESG information about their beneficial owners, and investors can access ESG market intelligence related to their investments

InvestorInsight and Vantage by Euroclear address the need for issuers and investors (InvestorInsight) to access ESG information. These information and analysis services are provided by Euroclear ESES and Euroclear Sweden, respectively. Both solutions enable issuers to boost their corporate governance by giving them easy and secure access to accurate, reliable and actionable information on the location and composition of their shareholders' base.

The Market Intelligence Tool (MINT) is a Euroclear Bank service which provides visibility on fund trends, enabling fund issuers to easily benchmark their portfolio at the time of issuance, and distributors to benchmark their target investments and make well-informed decisions.

The objective is to enhance the existing MINT platform with a layer of ESG information enabling asset management companies to assess the penetration of sustainable finance in their respective asset classes and areas of expertise.

Processing ESG information flows from different sources, including metrics and disclosures, to enable the enhancement and development of our services

Euroclear is enhancing its collateral offering to support clients' efforts to build ESG into their collateral management by allowing them to customise their collateral baskets using:

- ESG indices composition;
- Bloomberg Green Bond data and MSCI ratings;
- Assessment of the Collateral basket impact, based on the SDG framework via Impact Cubed data by providing specific data on sovereign bonds and ;
- ESG Select.

It is worth noting that ESG Select was the winning solution from Euroclear's 2022 Hackathon, a fully hybrid companywide competition where Euroclear employees tackled various concrete business challenges, from sustainability to resilience. ESG Select offers collateral clients (givers and takers) a new service enabling them to simulate their collateral baskets from an ESG perspective. It leverages the existing data relating to ESG Indices and subsequently Bloomberg Sustainable Debt Data and MSCI ESG ratings will be added.

People as a key enabler of our strategy

Business success depends on our people. Euroclear offers a platform for our colleagues to learn, grow, and connect while operating in an environment of driven experts committed to continuous improvement.

One example of this is the creation of a new tech hub in Poland which will see Euroclear create 400 new jobs to further leverage technology opportunities. During Euroclear's 10 years in Krakow, it has seen its office grow to approximately 800 staff who primarily work in operations, support and control functions.

We continue to mobilise all layers of the organisation around its inclusive corporate culture. With strong leaders and an empowered workforce, the company is able to reinforce its client-centricity.

In order for Euroclear to engage, stimulate and develop its diverse workforce, it conducts a yearly Engagement Survey which helps set future business direction. In 2023, 87% of all staff across all Euroclear locations completed the survey, with almost 17,000 comments and good overall satisfaction score – in line with previous surveys.

Business operating metrics

We continue to offer value, safety, and reliability to clients – as evidenced by increases in our business metrics. Furthermore, I am delighted to have launched the premier digital note at Euroclear Bank – highlighting our ability to innovate in tandem with our core businesses.



Euroclear Bank
Peter Sneyers, Chief Executive Officer

	2023	Change from 2022
Turnover (in trillion)	€727.7	▲ 5%
Value of securities held ¹ (in trillion)	€18.3	▲ 4%
Number of netted transactions	171 million	▲ 5%

With an historical high in terms of assets under custody, 2023 confirmed the relevance of ESES' integrated model delivering value to clients and the wider market.



Euroclear ESES CSDs
Guillaume Eliet, Chief Executive Officer

	Euroclear Belgium		Euroclear France ²		Euroclear Nederland	
	2023	Change from 2022	2023	Change from 2022	2023	Change from 2022
Turnover (in trillion)	€0.7	0%	€157.5	▲ 12%	€7.9	▲ 4%
Value of securities held ¹ (in trillion)	€0.2	▲ 8%	€9.4	▲ 11%	€1.4	▲ 6%
Number of netted transactions	2.4 million	▲ 7%	34 million	▼ 3%	7.1 million	▼ 5%

¹ Yearly average
² The data for Euroclear France excludes 'pensions livrées' with Banque de France

I am proud that we improved settlement efficiency rates from 85% to an amazing 96%. In addition, our shareholder-analysis service - Vantage by Euroclear - positions us as a vital player in the overall value chain for issuers in the Swedish financial markets and beyond.



Euroclear Sweden
Roger Storm, Chief Executive Officer

	2023	Change from 2022
Turnover (in trillion)	€11.2	▼ 11%
Value of securities held ¹ (in trillion)	€2.1	▲ 8%
Number of netted transactions	14 million	▼ 16%

I'm delighted that we joined the T2S system in 2023 – migrating a record 2.3 million securities accounts. This was the largest migration in the history of T2S and a joint effort with our clients.



Euroclear Finland
Hanna Vainio, Chief Executive Officer

	2023	Change from 2022
Turnover (in trillion)	€1.6	0%
Value of securities held ¹ (in trillion)	€0.5	0%
Number of netted transactions	10 million	▼ 11%

I am pleased that our investment in resilience continued to deliver value during 2023. A key milestone was reached in our strategic roadmap to further modernise the CREST system. In so doing, we will be able to deliver further risk reduction and introduce even more value to the UK capital markets.



Euroclear UK & International
Chris Elms, Chief Executive Officer

	2023	Change from 2022
Turnover (in trillion)	€165.7	▼ 21%
Value of securities held ¹ (in trillion)	€5.8	▲ 5%
Number of netted transactions	59 million	▼ 10%

Economic & geopolitical context

The macroeconomic and geopolitical environment in 2023 remained unpredictable and challenging to navigate. In particular, with geopolitical events driving macroeconomic events and in turn having financial market consequences. The application of sanctions on Russian immobilised assets continued to have a material impact on Euroclear in 2023. The company responded well to the challenge by implementing the sanctions, managing the consequences of the countermeasures, while maintaining normal business operations. This diligence has helped to protect Euroclear's reputation as a trusted Financial Market Infrastructure.

Global trends

Through 2023, the global economy proved resilient in the face of conflict, geopolitical tensions, high inflation and tightening monetary policy. The ongoing war in Ukraine led G7 governments, the EU and their partners gradually tighten their regime of trade and financial sanctions towards Russia. However, the impact of the war on energy and grain prices declined over the course of the year. The outbreak of the Israel-Hamas war in October has had less impact on the world economy, but nevertheless it threatens to escalate into a wider, regional conflict with potential implications for energy supply and global trade.

Tensions between the West and China continued periodically throughout the year. Both sides made efforts to redirect investment and reconfigure supply chains to "de-risk" their economic ties. Other countries looked to seize opportunities and avoid the dangers of this geo-economic fragmentation. Nevertheless, the BRICS' admission of several new countries to the grouping in 2023 was, in part, a reflection of wider wariness among emerging economies about their dependencies on Western financial systems.

Inflation remained well above target rates in most economies throughout 2023, but interest rate rises in advanced economies brought inflation down during the year. However, the end of ultra-loose monetary policy weighed on economic growth, especially in Europe. Higher interest rates also exposed vulnerabilities in the liquidity and capital positions of some financial institutions.

2024 outlook

2024 is likely to be marked by uncertainty around interest rate reductions, and by market concerns about the sustainability of high levels of public debt. European and US governments face ever-growing spending demands for defence, industrial policy, the energy transition, health and social care, as well as more expensive debt service. With central banks engaged in quantitative tightening, investors' appetite for more government bonds may be limited. As a result, governments may need to implement policies that channel more funds to themselves and keep interest rates low (financial repression).

Conflict and geopolitical tensions will be ongoing headwinds for the world economy through 2024, and tensions could rise between China and Taiwan following the latter's general election in January 2024. China's economic slowdown is also likely to affect global economic growth. Significant uncertainty surrounds the US presidential election in November; the outcome of which could impact geopolitics and trade. Outside politics, a key theme in the year ahead will be the adoption of AI in the financial sector, with its related opportunities and risks. Several working groups have been set up to explore the business and strategic implications of the macro developments outlined above.

Managing Russian sanctions and countermeasures

Russia's invasion of Ukraine resulted in market-wide application of international sanctions. Euroclear considers the application of international sanctions as a key priority and takes its responsibility very seriously. Therefore, well established processes are in place which have allowed the group to implement the sanctions while maintaining our normal course of business.

One consequence of the sanctions is that blocked coupon payments and redemptions owed to sanctioned entities result in an accumulation of cash on Euroclear Bank's balance sheet. As per Euroclear's standard process, cash balances are unremunerated and cash balances are invested to minimise credit risk. Managing such credit risk is a requirement under the Capital Requirements Regulation. Like for any other reinvestment of cash balances, the interest earned is net interest income belonging to Euroclear.

Euroclear is faced with a high level of complexity in managing both the wide-ranging package of sanctions and the countermeasures implemented by Russia, since Russia does not recognise the international sanctions and considers them against public order. Euroclear allocates considerable time, resources, and capital to manage the market issues, potential risks, and implications of these countermeasures while maintaining regular dialogue with clients and other stakeholders.

Various parties in Russia contest the consequences of the application of international sanctions, with a significant number of legal proceedings ongoing, almost exclusively in Russian courts. The impact of the lawsuits on Euroclear is uncertain. Euroclear Bank is defending against all relevant legal claims and intends to continue to do so.

In parallel, the Board notes that the European Commission is contemplating various options to use the profits generated by the reinvestment of the sanctioned amounts held by financial institutions, including Euroclear Bank, for the financing of Ukraine.

Euroclear is focused on minimising potential legal and operational risks that may arise for itself and its clients from the implementation of any proposals from the European Commission. The company continues to act in a transparent manner with all authorities involved and to retain profits related to the international sanctions applicable on Russian immobilised assets until the situation becomes clearer – with no dividend distribution to its shareholders.

Financial review

Euroclear delivered a robust financial performance in 2023 driven by high business income and interest earnings, despite subdued market conditions. Euroclear continues to separate Russian sanctions-related earnings from the underlying financial results and retain these profits until further guidance is provided on the distribution or management of such profits.

Group's overall consolidated financial performance

Operating income €7,154 million +158% vs. 2022	Business income margin 17.3% -38% vs. 2022	EBITDA margin 82.7% +33% vs. 2022	Net profit €4,224 million +252% vs. 2022
Total assets €166 billion +30% vs. 2022	EPS (normalized) €1,380 +262% vs. 2022	ROE (normalized) 58.4% +148% vs. 2022	CET1 ratio 72.6% +93% vs. 2022

Selected financial information is derived from the audited Consolidated Financial Statements and is defined in the section 'Management accounts definitions'.

The selected consolidated financial information and metrics set out below are derived from the audited Consolidated Financial Statements for the financial years ended 31 December 2023 and 2022.

- In 2023, the Euroclear group recorded substantial growth in overall **operating income** to reach €7,154 million (compared to €2,769 million in 2022), driven by continued business income increase and higher interest earnings. The high interest rates environment combined with increase in cash balances led to a sharp increase of net interest earnings, reaching over €5,521 million for 2023, of which €4,408 million relate to interests linked to Russian sanctions and countermeasures.
- **Business income** amounted to €1,634 million in 2023, an increase of 2% compared to 2022, confirming the resilience of the group's business model.
- **EBITDA margin** reached 82.7% compared to 62.3% in 2022. This significant increase is explained by interest rates hikes across currencies in response to inflationary pressures throughout the period, as well as by the reinvestment of frozen sanctioned-party-owned assets.
- **Net profit** reached €4,224 million compared to €1,200 million in 2022; mainly on net interest income.

- **Total assets** amounted to €166 billion as of 31 December 2023, up €38 billion compared to 2022, corresponding to a year-on-year increase of 30% as Euroclear balance sheet has experienced a material increase in cash as blocked coupon payments and redemptions linked to sanctioned assets continue to accumulate.
- **Earnings per share (EPS)** amounted to €1,342 on 31 December 2023, compared to €381 on 31 December 2022. Adjusting for impairments¹, the group's normalised EPS landed at €1,380 at year-end 2023, corresponding to a year-on-year increase of 262%. Shareholders' equity totalled €9,473 million at year-end 2023, up €4,075 million compared to year-end 2022. In line with the prudent management of the sanctions and their application, Russian sanctions-related cumulated earnings (€3,839 million), net of taxes, are not distributed.
- **Return on Equity (RoE)** amounted to 56.8% for the year 2023, up from 23.6% in 2022. Adjusting for impairments (€120 million), the group's normalised RoE reached 58.4% in 2023, corresponding to a year-on-year increase of 148%.

The group continues to maintain a strong capital position with a **CET1 ratio** at 72.6% (core equity including current year's retained earnings minus ordinary dividends to be paid, compared against current year's total risk exposures) as of 31 December 2023 and a low-risk profile, which are critical as a financial market infrastructure, and this despite the sizable increase of its balance sheet due to the Russian sanctions. Both Fitch & S&P Ratings reconfirmed the AA rating of Euroclear Bank and the AA- rating of Euroclear Investments SA/NV in June and October 2023, respectively.

¹ Adjustments for impairments amounting to €120 million, mainly related to goodwill impairments of the Euroclear Sweden CSD. The harsher economic conditions and reduced volumes growth combined with an increase in costs are expected to persist, leading to reduced long-term projections. This has resulted in an impairment of €100 million of the goodwill of the group's Swedish CSD.

Main impacts of Russian sanctions on performance and reconciliation of group figures to underlying figures

The market-wide application of international sanctions has had a material impact on Euroclear. As such, Euroclear considers it necessary to separate the estimated sanctions-related earnings from the underlying financial results when assessing the company's performance and resources.

Euroclear has defined procedures and management reporting rules to segregate the sanctions-related earnings from the underlying performance, as to isolate the impact from the proceeds and the costs linked to the management of sanctioned assets from the regular conduct of business. This impact is on a quarterly basis since 30 June 2023 subject to a limited assurance engagement by our statutory auditor to confirm that nothing has come to their attention that causes them to believe that this impact has not been assessed, in all material respects, in accordance with the internally defined reporting rules.

The main impacts of the sanctions are the following:

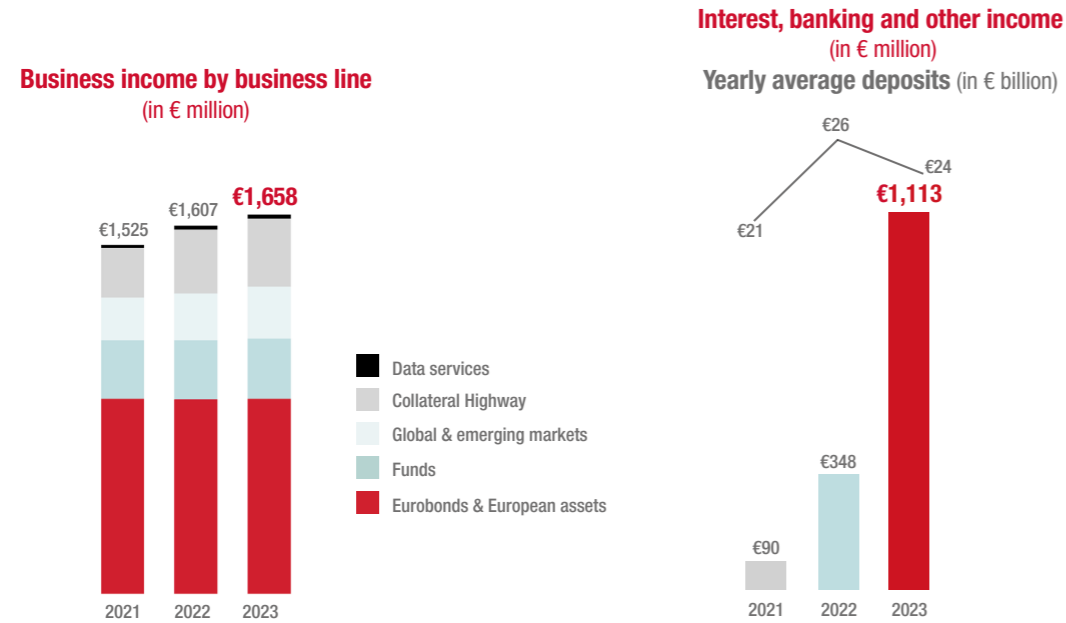
- Blocked coupon payments and redemptions owed to sanctioned entities results in an accumulation of cash on Euroclear Bank's balance sheet. These cash balances are invested to minimise credit risk. As a result, at 31 December 2023, Euroclear's balance sheet had increased by €38 billion year-on-year to a total of €166 billion.
- Cash balances from Russian sanctions-related assets are reinvested, generating interest earnings. Over 2023, revenues on cash balances arising from sanctions on Russia amounted to €4.4 billion. Such interest earnings are driven by two factors:
 - the prevailing interest rates; and
 - the amount of cash balances that Euroclear Bank is required to invest. As such, future earnings will be influenced by the evolving interest rate environment and the size of cash balances as the sanctions evolve.
- Overall, Euroclear incurred additional direct costs from the management of Russian sanctions of €62 million for the year 2023, with considerable senior management and Board focus on the topic. Additionally, the international sanctions and Russian countermeasures have resulted in a loss of activities from sanctioned clients and Russian securities, which negatively impacted business income by €24 million.
- Russian sanctions-related net profit (€3,242 million) is not distributed while uncertainties persist and are retained in shareholders' equity with no dividend distribution.

Euroclear Holding SA/NV - Consolidated P&L (IFRS) (in € million)	FY 2022 Total	Russian sanctions impacts	FY 2022 Underlying	FY 2023 Total	Russian sanctions Impacts	FY 2023 Underlying
Operating income	2,769	815	1,955	7,154	4,384	2,771
Net business income	1,600	(7)	1,607	1,634	(24)	1,658
Net interest, banking & other income	1,170	821	348	5,521	4,408	1,113
Operating expenses	(1,152)	(20)	(1,133)	(1,351)	(62)	(1,290)
Operating profit before impairment	1,617	795	822	5,803	4,322	1,481
Impairment	(12)	(1)	(12)	(125)	0	(125)
Pre-tax profit	1,605	794	811	5,678	4,322	1,356
Tax	(405)	(197)	(208)	(1,454)	(1,081)	(374)
Profit for the period	1,200	597	603	4,224	3,242	982

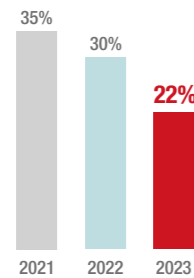
Euroclear Holding SA/NV - Consolidated B/S (IFRS) (End-of-period - in € million)	FY 2022 Total	FY 2022 Russia	FY 2022 Underlying	FY 2023 Total	FY 2023 Russia	FY 2023 Underlying
Loans and advances to banks and customers	107,378	85,785	21,593	148,063	126,769	21,294
Financial assets	17,105	7,630	9,475	14,822	7,466	7,356
Goodwill and intangible assets	1,501	0	1,501	1,482	0	1,482
Other assets & accruals	1,655	0	1,655	1,448	19	1,429
Total assets	127,639	93,415	34,224	165,816	134,254	31,562
Deposits from banks and customers	114,473	92,782	21,690	149,478	130,415	19,064
Debt instruments issued	6,243	0	6,243	5,368	0	5,368
Other liabilities & provisions	1,526	35	1,491	1,498	0	1,498
Subordinated liabilities	0	0	0	0	0	0
Shareholders' equity	5,397	597	4,800	9,472	3,839	5,633
Total liabilities and shareholders' equity	127,639	93,415	34,224	165,816	134,254	31,562

Note: The line Net Interest, banking & other income includes the cost related to liquidity lines. This cost is classified as fee expense (part of Net business income) in the financial statements.

Euroclear's robust financial progress on an underlying basis



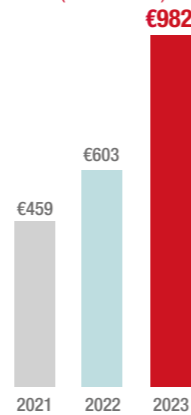
Business income margin



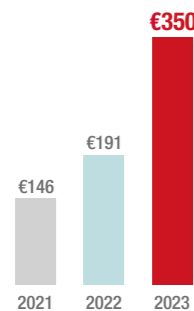
EBITDA margin



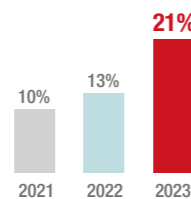
Net profit

(in € million)


EPS



Return on equity



CET1 ratio



Selected financial information is derived from the audited Consolidated Financial Statements and is defined in the section 'Management accounts definitions'.

Focus on underlying financial performance

In this sub-section, Euroclear refers to its underlying results, after segregation of its Russia related sanctioned earnings.

- Underlying **business income** improved year-on-year to reach a record €1,658 million, an increase of 3% year-on-year, reflecting a robust growth despite subdued market conditions. After volatile markets in 2022 following the invasion of Ukraine, market activity slightly reduced in 2023 and equities valuations showed a limited recovery. On the other hand, fixed income issuance performed well. The diversification of Euroclear group business demonstrates its resilience with a good balance between revenues linked to market activity, revenues linked to equities valuation and revenues linked to fixed income (subscription-like business model).
 - Eurobonds & European assets performance resulted from solid issuance and partial recovery of equities valuation, in spite of lower levels of trading compared to last year in most markets.
 - Funds business also suffered from lower activity mainly impacting mutual funds. Investments in ETFs remained strong.
 - Collateral Highway revenue increased, despite reduced volumes for lending and borrowing thanks to revised pricing.
 - Global & Emerging Markets performance remained solid amid interest in new, emerging markets.
- Underlying **operating expenses** increased to €1,290 million, up 14% compared to 2022. Approximately 10% of the group's increase in underlying operating expenses is due to inflation on costs, with the remainder reflecting continued investments in its technology and service offering, as well as one-off projects. The investments in Euroclear's technology aim at enhancing Euroclear's client proposition, business resilience, and to increase efficiency through standardisation and modernisation.
- EBITDA margin** on an underlying basis reached 57.4% compared to 47.7% in 2022, a level which is amongst the top of industry leaders in the financial market infrastructure sector. This significant increase is explained by interest rates hikes across currencies in response to inflationary pressures throughout the period.
- Underlying **net profit** reached €982 million compared to €603 million in 2022, reflecting a strong business performance and continued growth of Euroclear's core business.
- On an underlying basis, **EPS** is at €312 in 2023, a year-on-year 63% increase reflecting continued increase in the group's underlying net profit. Adjusting for impairments (€120 million), the group's normalised underlying EPS amounted to €350 at year-end 2023, corresponding to a year-on-year increase of 83%.
- Underlying **RoE** amounted to 18.8% for the year 2023, up from 12.6% in 2022. Adjusting for impairments (€120 million), the group's normalised underlying RoE reached 21.1% in 2023, an increase of 68% from 2022.
- The Board envisages approving an interim dividend on the group's underlying net profit in 2024, representing a **dividend per share** of €210.00 compared to €115.50 per share in 2023.

Management accounts definitions

In presenting and discussing the group's financial position, management uses certain performance measures that have not been audited although derived from the audited Consolidated Financial Statements, following the definitions below.

Measures	Definition
Business income	Business income, also presented as 'Net fee and commission income' in the financial statements adjusted to include fees from the group's liquidity line. Business income stems mainly from the provision of settlement, asset servicing and other services.
Business income margin	Business income minus administrative expenses divided by business income.
EBITDA margin	Earnings Before Interest (paid on financial debts), Taxes, Depreciation and Amortisation (EBITDA) divided by operating income.
Earnings per share (EPS)	Net profit divided by the number of shares as of 31 December.
Return on Equity (RoE)	Net profit divided by average shareholders' equity of current year and prior year.
Underlying	Excluding the impact of the Russian sanctions-related earnings.

Risk management

Despite the unpredictable and challenging macroeconomic and geopolitical environment, the group's risk profile remained strong, supported by a robust control environment and the dedication and expertise of its staff. However, sanctions against Russia and the Russian countermeasures remained one of the largest risk drivers in terms of legal, operational, and financial risks for Euroclear in 2023.

Euroclear has in place an overall effective Enterprise Risk Management framework and risk appetite that have been designed to meet Board, market and regulatory expectations and govern the way in which risks are managed in the company. Euroclear's comprehensive Risk Library includes all sources of risk to which it is exposed. Detailed information on the risks faced by Euroclear, as well as its risk management strategies, policies and processes can be found in Euroclear's yearly Pillar 3 report on www.euroclear.com as well as in Note IV to the consolidated financial statements.

External context

As described on p. 22-23, the macroeconomic and geopolitical environment in 2023 remained unpredictable and challenging to navigate. Whilst these drivers have had significant impacts on the environment in which Euroclear operates, the group's risk profile remained strong, supported by a robust control environment and the dedication and expertise of its staff. This conclusion is also supported by the external rating agencies (Fitch Ratings and Standard & Poor's) who have reconfirmed Euroclear's credit rating.

Evolution of Euroclear's Risk Profile

Principal risks

Operational risk (people, process, systems)

Approach

Operational risks are at the core of Euroclear's business. The group is committed to effectively managing these risks, ensuring its position as a resilient and strong financial market infrastructure through integrating continuous technological modernisation and innovation with the strategic development of its human resources. Euroclear has a comprehensive operational risk management framework, underpinned by its dedication to investing in human capital development and fostering a culture of risk awareness.

In 2023, the group's processes continue to be tested by the sanctions against Russia and the Russian countermeasures. While new sanctions were issued, these resulted in more breakage of straight-through-processes and increased manual interventions. The Russian countermeasures equally posed operational challenges to ensure reconciliation of securities balances held within Euroclear Bank. 2023 also saw underlying clients of sanctioned Russian participants bring cases before the Russian courts against Euroclear Bank concerning immobilised assets due to international sanctions on those participants. The effects of such cases are still feeding through the group's processes and being reflected in its capital assessments for operational risk.

Throughout 2023, Euroclear has effectively strengthened its operational risk management, resulting in a decrease in system incidents and the continuous endorsement of its Central Securities Depository Regulation (CSDR) license.

Looking at the operational achievements, Euroclear has enhanced its staff's risk management expertise through specialised development programs, resulting in heightened vigilance and capability. Euroclear reinforced its cybersecurity capabilities through substantial investments in its infrastructure and its Cyber Defense Centre. Business continuity plans have been refined. These are instrumental in the resilient response to potential disruptions, complement the very high system stability and demonstrate the robustness of the control environment in place.

Outlining the future outlook for 2024 and beyond, Euroclear is committed to maintaining momentum in risk management. The group believes its people are its greatest asset to effectively respond to the ever changing and challenging external environment and will continue to attract and develop talented individuals. The enhancement of Euroclear's training programmes is also a priority to embed a culture of risk awareness throughout the organisation.

Financial risks

Euroclear Bank is the only Euroclear CSD that has a banking license and thus bears the large majority of financial risks in the group. Other CSDs in the group offer only securities settlement services in central bank money and do not provide credit to clients. They also do not engage in operations with counterparties, except for the investment of their own funds.

Euroclear's exposure to various financial risks kept growing throughout 2023 driven by the continuous increase in the balance sheet, though to a lesser extent than in 2022. Following the international sanctions against Russia, Euroclear Bank has been blocking incoming cash proceeds linked to sanctioned assets as per sanctions legislations and reinvesting this cash safely, in line with Banking and CSD Regulations. This led to a substantial increase in financial exposures, in particular, credit risk (the risk of loss resulting from the inability of the borrower to repay the loan).

The credit risk linked to Russian exposures arises primarily when reinvesting the frozen or immobilised cash balances. To mitigate this risk, Euroclear Bank uses the investment policy designed to maintain a low risk profile - where possible, sanctioned cash is deposited with the central bank of the relevant currency. Where central bank access is not available, the reinvestments are made short-term and in a secure way (reverse repo) or reinvested via FX swaps with highly-rated counterparties. This prudent credit risk management strategy ensures that, while exposures are substantial, the resulting risk and capital requirements remain relatively contained.

As of end 2023, there is no market risk linked to the reinvestment of frozen or immobilised balances as they are either reinvested in the same currencies as the underlying balance or are hedged through the FX markets where the reinvestment is in a different currency than the underlying balance. Additionally, market exposure to the Russian rouble disappeared in 2023 from Euroclear Bank's balance sheet due to its decision to withdraw the Russian rouble from its list of accepted settlement currency earlier in the year.

Throughout 2023, the group has mitigated its financial risks and contained the capital impacts. Euroclear's financial soundness remains strong. Euroclear Bank continues to operate a strong credit, liquidity and market risk framework which continuously seeks to reduce the intra-day uncommitted credit provided to its participants and to ensure smooth day-to-day operations and maintain a high level of preparedness to cope with unexpected and significant liquidity shocks.

Legal, compliance, conduct and culture risks

The group faces legal, compliance, conduct and culture risks given its position as a leading financial market infrastructure operating in a highly regulated environment. Legal and compliance challenges continue to increase from the scale and complexity of new sanctions as well as the related Russian countermeasures and the high volume and variety of new regulations. These risks continue to be monitored and managed through the robust application of Euroclear's legal and compliance risk management frameworks and ongoing adherence to the Code of Ethics and Business Conduct.

Euroclear has implemented all relevant international sanctions and ensures its continued compliance with relevant legislations. Some uncertainties remain with regards to the Russian countermeasures and increasing number of the court cases brought in Russia against Euroclear Bank. Euroclear considers the potential impacts of these uncertainties on its financial position when assessing the appropriate capital levels to maintain and continue to provide a safe and resilient services to its clients and the markets.

Change and project risks, business and strategic risks

The ability to anticipate and integrate change in an evolving market is essential for the longer-term strategy of the group. Early in 2022, Euroclear defined a new strategy and long-term vision to ensure that its service offering remains relevant longer term. Since then, Euroclear progressed on the execution of its strategy. Euroclear operates a Portfolio governance framework to translate the strategy into programme and projects and monitor their execution. Managing effectively change and project risks by reliance on project and programme management capabilities at corporate level is crucial for the successful execution of the strategy in the coming years.

During 2023, the group continued to invest in its operational resilience, while responding to the challenges posed by the Russian sanctions and countermeasures and executing on its new strategy and building the foundations for its longer-term vision. These will remain the challenges for the next few years.

Compliance

The mission of the Compliance & Ethics function is to promote a culture of integrity and support Euroclear in navigating through regulatory complexity via expertise, constructive challenge, education and oversight.

Compliance & Ethics is responsible for assisting the Boards and Senior Management of the Euroclear group companies in managing compliance, fraud and conduct and culture risks (hereinafter “the Compliance risks”) effectively by monitoring compliance with applicable laws, regulations and regulatory standards, that fall within the scope of Euroclear companies’ competent authorities, national data protection authorities, and other foreign authorities, including providing assurance on the first line’s identification, assessment and management of Compliance risks.

Euroclear has adopted a Compliance Charter, a Compliance Risk Group Policy and a Code of Ethics and Business Conduct which provide the basis for the implementation of a consistent Compliance Risk Management framework across the Euroclear companies aligned with the Enterprise Risk Management framework.

Compliance & Ethics is part of a coherent whole of transversal control functions and services requiring mutual coordination. In performing its activities, Compliance & Ethics cooperates with other transversal control functions and services within the organisation, in particular:

- Legal Experts who monitor, identify, interpret, assess and communicate applicable legal developments to impacted internal stakeholders (“Legal / Regulatory Watch”);
- Risk Management, which provides robust independent oversight of management’s risk-taking activities, including for Compliance risks;

- Internal Audit, which provides independent reasonable assurance and insights to the Boards on the activities carried out by the first and second lines to effectively manage Compliance risks;
- Compliance Champions who are Compliance Risk experts in their business area, and who partners with the Compliance & Ethics to ensure that the Compliance Risk Management Framework is effectively embedded and applied on an ongoing basis in the culture and processes of their business area.

Additionally, for certain categories of compliance risks, Compliance & Ethics relies on the expertise of other departments or divisions within the group - ‘Regulatory Framework Owners (RFOs)’, or similar functions at local level - to carry out appropriate oversight of some specific Compliance risks.

In view of respecting regulatory requirements and of having a robust management of Compliance risks across the group, the organisation of Compliance & Ethics encompasses a local and a group dimension.

The group Chief Compliance Officer (‘CCO’) ensures that the regulatory obligation to have a central management of Compliance risks covering all entities of Euroclear is met. The group CCO defines the Group Compliance Risk Management framework, ensures it is implemented consistently across Euroclear and provides the Management Committee, the Audit & Compliance Committee (‘ACC’) and Board with a consolidated view of Compliance risks of the group and of the adequacy of the group Compliance function.

Acting responsibly

Euroclear is committed to conducting responsible and sustainable business which is aligned with its purpose and the expectations of its stakeholders. Believing that acting responsibly will be in the best long-term interests of the company and its stakeholders, it has embedded ESG into its corporate purpose and strategy. The Board is also committed to transparent, robust reporting and to overseeing how Euroclear assesses its effects on the environment and on society.

In 2023, Euroclear continued to build on the solid foundations established in previous years. It has started work on implementing the principles laid out in its ESG Board policy and begun to measure progress against the ESG KPIs which were approved by senior management early 2023. Euroclear has made progress against its commitments in many areas, meeting its supply chain screening targets, receiving approval for its targets from the Science Based Targets initiative (SBTi) and broadening its training offer, among others. Actions are ongoing to integrate ESG into its current service offering, together with its business partners Impact Cubed and Greenomy.

Euroclear's ESG Board policy was published in 2023 to drive and govern its ESG activity. This policy enables all employees and stakeholders to understand Euroclear's ESG priorities and the behaviours and culture it wishes to adopt across the group. The policy sets out the Board's minimum requirements for each Euroclear company in line with its ambitions and the group's risk appetite. These minimum requirements capture common principles on ESG issues across the Environment, Workplace, Community, and Governance pillars of the group's ESG strategy. Euroclear's ambitions related to those pillars are to manage climate risk in order to build climate resilience, to be an employer of choice, to demonstrate its positive impact in local and global communities and to ensure and encourage good governance across its organisation and in its value chain. This policy is currently being translated into policies/guidelines for the local entities.

One focus in 2023 was building a pathway towards meeting CSRD obligations by 2025. Euroclear sees CSRD as an opportunity to take a step back, assess what sustainability topics are material to it, both from the perspective of its impact on society and the environment, as well as how external events create risks and opportunities for the company. Euroclear has partnered with an external advisor to conduct its double materiality assessment and internal and external stakeholder engagement, ensuring that all types of stakeholders are well represented. Together with Greenomy, Euroclear is strengthening its internal data capabilities to be in a good position to report transparently on CSRD requirements in 2025.

In addition, Euroclear has also put greater focus on employee awareness, training and engagement in relation to ESG, including three new ESG-related questions in its Employee Engagement survey.

As well as reporting according to the Global Reporting Initiative (GRI) standards in its Sustainability Report, Euroclear also reports according to the UN Global Compact framework and the Task Force on Climate-related Financial Disclosures (TCFD).

Facilitating and accelerating a sustainable financial system

Euroclear has integrated ESG into its corporate strategy. Please refer to Business and strategy section for details of progress in this area.

Our ESG mission is to support and enable a sustainable marketplace, while limiting the impact on the environment, providing an equitable and inclusive workplace, and conducting business in an ethical and responsible way. ”



Environment

Euroclear's ambition for Environment is to be a climate resilient business and support climate resilient financial markets through the management of climate risk.

To reach this ambition, Euroclear has established principles to manage its environmental impact across four key areas: energy use and emissions, company-related travel, waste and resource use, and climate risk.

Euroclear continuously strives to reduce its impact on the planet, aiming for the lowest possible carbon level. In 2022, Euroclear reset its baseline emissions to base-year 2019 and to include all relevant value chain emissions (Scope 1, 2 and 3 including Purchased Goods and Services and Capital Goods spends). This had substantially increased our calculated Scope 3 emissions. In 2023, Scope 1 and 2 carbon emissions have substantially decreased while our Scope 3 emissions have increased.

Euroclear recently announced that its science-based targets, which support the pathway to reaching net zero by 2050 at the latest, were approved by the Science Based Targets initiative (SBTi) in November

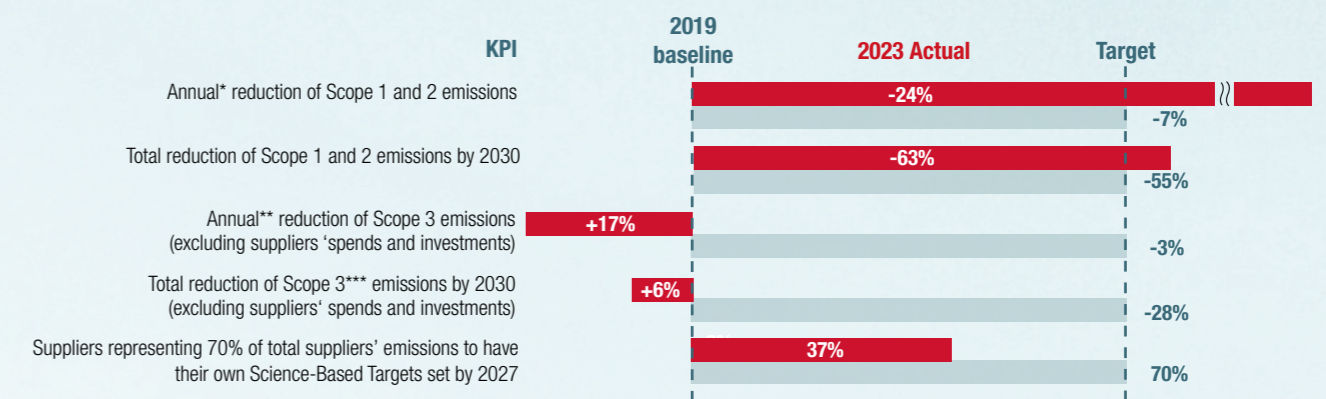
2023. As part of its journey to net zero, Euroclear is focusing on:

- implementing green energy across its offices and data centres, with currently over 90% of all the energy used classified as non-fossil fuel;
- taking measures to reduce emissions linked to resource usage and office management in the longer term;
- investigating transition to a more sustainable IT environment;
- reducing business travel emissions, which have increased since the end of the pandemic.

In Belgium, Euroclear continues its actions to reduce the carbon emissions of its car fleet and offers a comprehensive mobility programme encouraging employees to use public transport and greener transport options.

Euroclear continues to work with social enterprise Close the Gap to reduce its e-waste, ensuring that old IT equipment is repurposed and re-used where it is most needed. In 2023, 6,447 items of equipment were donated to Close the Gap, equivalent to an estimated amount of 619.13 tons of carbon emissions avoided.

Euroclear received a score of C from CDP (previously known as the Carbon Disclosure Project).



* Annual reduction targets are calculated from the total reduction required by 2030. E.g. 7% reduction per year is required to reach 55% reduction by 2030.

** Euroclear reports Scope 3 emissions on all 15 categories as outlined in the GHG Protocol Standard, where relevant. (Purchased Goods and Services, Capital Goods, Fuel and Energy-related activities, Upstream Transportation and Distribution, Waste, Business Travel, Employee Commuting and Working From Home and Investments).

*** Reduction target set on Scope 3 emissions coming from Fuel and Energy-related activities, Upstream Transportation and Distribution, Waste, Business Travel, Employee Commuting (see SBTi approved targets).



Workplace

Euroclear's ambition for Workplace is to be an employer of choice by fostering a healthy, inclusive environment and attracting, developing and upskilling staff for the future needs of financial markets.

To reach this ambition, Euroclear has established principles to manage its Workplace impact across four key areas: Diversity & Inclusion, wellbeing, training and development and talent for the future.

Euroclear recognises that its people are key to achieving its strategic objectives and that having a motivated and skilled workforce with a common corporate culture will help face future challenges and take advantage of opportunities. In 2023, Euroclear started to work with the World Economic Forum as one of its partners for 'The Good Work Alliance' to ensure that good work practices are embedded into its business.

Euroclear operates a strict policy of non-discrimination and is committed to creating an environment where all employees feel supported and valued. We have internal and third-party hotlines available for staff to report any grievances or instances of discrimination. In 2023, two cases were reported. In 2023 Euroclear implemented the revised governance for its five Diversity & Inclusion (D&I) Communities: gender diversity and inclusion; ethnic and cultural diversity and inclusion; inclusion of people with different abilities, LGBTQ+ and age inclusion, with senior sponsors for each of them. It continues to collaborate with partners such as Diversicom to hire diverse talents.

2023 continued to be a turbulent year, with the ongoing war in Ukraine and the conflict in the Middle East. With a focus on the well-being of its staff, Euroclear offers many resources to employees who may need support, such as its Employee Assistance Programme; the

Employee solidarity fund; company nurses and doctor; coaches and persons of confidence, as well as training and webinars. Euroclear is proud that its 'Career Continuity' programme, aimed at those who need support during their careers due to disability, chronic illness or accident, has been nominated for an award by the Belgian magazine 'Trends'.

During 2023, Euroclear continued to recruit to ensure that it has the right skills to realise its new strategy. Having onboarded 1,020 new recruits in 2023, and more than 2,000 over the last three years, Euroclear is taking a sustainable approach to recruitment, strengthening its workforce planning, ensuring an open pipeline for internal mobility and making sure that newcomers are provided with the time and resources to settle in.

Euroclear strives to create an environment where its people can develop and thrive. With new developments in technology, Euroclear's digital transformation and a fast-changing work environment, it is more important than ever to have the right skills in place and to nurture and retain talent. Therefore, Euroclear has launched an upskilling programme to foster the talents of its employees. This aims at creating more internal mobility opportunities, more employee engagement, reducing its dependency on a scarce talent market and helping it to achieve its strategic objectives.

In 2023, Euroclear enhanced its learning platform to enable integrated and aligned learning paths - combining soft and technical skills to support employees in their career development.

It also offers 10,000 new learning modules through LinkedIn Learning. In 2023, staff took part in over 122,000 hours of training. In 2023 we doubled the hours of training and we delivered more than 5,000 hours of peer-to-peer coaching and mentoring. In 2023, Euroclear also held a dedicated Learning week with more than 140 different topics, panels and events across the group.



Community

Euroclear's ambition with respect to Community is to demonstrate impact, tied to corporate purpose and defined Community pillars, in local and global communities.

The Community stream focuses on four main pillars: alleviation of poverty; coaching and education, social and financial inclusion, and the environment. We ensure that all our Community support is subjected to strict due diligence and impact is measured. All employees can volunteer and contribute to corporate projects during working hours for a minimum of eight hours a year.

As Euroclear decided to raise its Community support budget in 2023, it is currently adapting its governance to evolving needs.

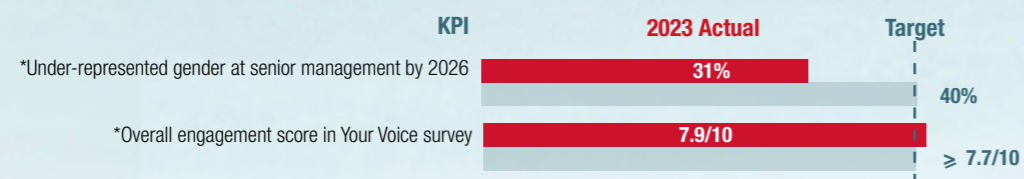
2023 saw some devastating natural disasters and Euroclear supported those who were impacted in Morocco, Syria and Turkey through donations. In 2023, our charitable donations were more than twice as compared to the previous year.

This year, as part of its support for those impacted by the war in Ukraine, Euroclear provided financial support to a charity working with refugees and hosted extra schooling activities for Ukrainian students in its premises in Krakow.

Euroclear continues to work with long-term charity partners such as Junior Achievement, Plan International, the Pan-Asian Women's Association (PAWA) and Street Child, as well as other local associations across all its locations.

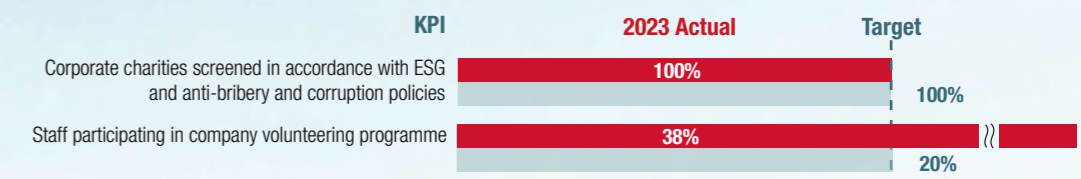
In 2023, Euroclear sponsored a Financial Award at Junior Achievement's final European competition in Turkey, with the participation onsite of a delegation of Euroclear volunteers. It also took out a team of colleagues to work with the local communities it supports through the NGO, Street Child, in Uganda, focusing on education and financial inclusion.

This year 2,082 colleagues have volunteered as part of the corporate volunteering programme, representing 38% of the workforce.



As of December 2023

*Excluding MFEX data



As of December 2023



ESG Governance

Euroclear's ambition with respect to governance is to ensure robust and transparent governance across the organisation and encourage good governance in its value chain.

To reach this ambition, Euroclear has established principles to manage governance impact across four key areas: corporate governance, market resilience, supply chain and human rights.

More broadly, Euroclear SA/NV and its major subsidiaries are all subject to a variety of financial services regulations, most notably the CSDR Regulation and Banking Regulations which detail specific governance requirements. The group publishes governance charters which outline the main aspects of the Corporate Governance framework of the major entities in the group. The group is also subject to climate and ESG regulations and standards from the ECB, European Commission (CRR-3/CRD-6) and related EBA Guidelines. Please refer to Corporate Governance section for details of progress in this area.

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ESG in compliance & ethics

Euroclear has strict policies in place around compliance & ethics. In addition to its Code of Ethics and Business Conduct and related policies, it publishes an annual statement on its website outlining its commitment to preventing acts of modern slavery and human trafficking from occurring within the business and supply chain.

In 2023, Euroclear continued with campaigns to maintain awareness around whistleblowing, focusing on psychological safety. 27 Speak Up cases were raised in 2023 at Euroclear SA/NV level. With regard to its anti-retaliation framework, Euroclear performs regular follow-ups with people who speak up to ensure they are not retaliated against.

Euroclear also ran a Conduct and Culture risk survey with a participation rate of 73% and 8.1/10 as score average, demonstrating that Euroclear has a strong ethical core. Some areas of improvement have also been identified for which an action plan has been set up and communicated to senior management.

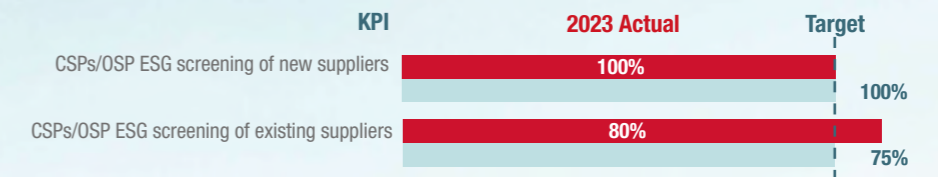
ESG in Euroclear supply chain

Euroclear manages the supply chain risks of its suppliers to contribute to financial market stability. It assesses all critical suppliers annually, with respect to ESG (anti-money laundering, sanctions, conflicts of interest, bribery and corruption, human rights including modern slavery and personal data). Protocols are established and followed when issues are identified.

In addition, as of 2023, 100% of all new Critical Service Providers (CSP), Outsourcing Service Providers (OSP) and suppliers with which Euroclear orders material amounts (High Spend suppliers) were screened by its third-party assessor Ecovadis, while 80% of existing CSP/OPS/HS suppliers have also been assessed. Euroclear will publish its revised Supplier Code of Conduct in early 2024.



As of December 2023



As of December 2023

Corporate governance

Euroclear believes in, and implements, strong, effective, and transparent corporate governance across the Euroclear group. All companies within the group are subject to detailed and specific corporate governance requirements.

Euroclear believes that sound corporate governance is key for a trusted FMI to protect the interest of its stakeholders. Euroclear has governance procedures and practices throughout the group which promote accountability and transparency of decision-making, and which seek to ensure that all stakeholder interests are duly considered and safeguarded. These procedures are underpinned by a strong focus on ethical behaviour and a positive working culture that help it to make better business decisions ensuring continued success.

Robust and transparent governance across the organisation and its value chain. Euroclear and its major subsidiaries are all subject to a variety of financial services regulations, most notable the CSDR Regulation and Banking Regulations which detail very specific governance requirements. Euroclear publishes detailed governance charters which outline the main aspects of the Corporate Governance framework of the major entities in the group. The group is also subject to new climate and ESG regulations and standards coming from the ECB and European Commission and related EBA Guidelines. Euroclear actively monitors regulatory developments to determine their impact, including allocating resources to address and close gaps in existing regulations.

Our strong governance upholds our reputation as a trusted FMI and is the foundation of our ability to support the expansion of a sustainable finance market. ”

Euroclear corporate structure

Euroclear Holding SA/NV is an unlisted public limited liability company incorporated under the laws of Belgium and financial holding company¹ and subject to a number of prudential and governance-type obligations under the Banking Law. Euroclear Holding SA/NV is the ultimate holding company of the Euroclear group which owns, directly or indirectly, the entire issued ordinary share capital of the group companies. Euroclear Holding SA/NV qualifies as an exempt financial holding company under the Banking law and is subject to a light regulatory regime under the Banking Law.

Euroclear SA/NV is a limited liability company (société anonyme/ naamloze vennootschap) established under Belgian law that is regulated as a support institution within the meaning of article 36/26/1 of the Organic Law and as a Financial Holding Company, in the meaning of Capital Requirements Directive (CRD) IV and the Belgian Banking Law.

As the result of the exemption granted by the National Bank of Belgium (NBB) to Euroclear Holding SA/NV, Euroclear SA/NV, as the approved and designated Financial Holding Company of the group, shall:

- act as the top Financial Holding Company of the Regulated group (consisting of Euroclear Bank and the financial institutions controlled by the former) and therefore be responsible for the consolidated oversight over the regulated entities of the Regulated group and be accountable to the NBB to ensure compliance with prudential requirements on a consolidated basis;
- be responsible for all management, operational or financial matters relating to the Regulated group (whether or not they qualify as strategic decisions within the meaning of Article 3, 63° of the Banking Law (a “Strategic Decision”) which affect the Regulated group (“Relevant Matters”) and;
- be given all the necessary means and legal authority to discharge the above obligations in an effective manner.

Furthermore, it is authorised by the NBB as a support institution within the meaning of respectively Articles 36/26 and 36/26/1, § 4 of the Belgian Law of 22 February 1998 on the organic status of the NBB.

As parent entity of a Belgian credit institution (Euroclear Bank), Euroclear SA/NV qualifies – and is regulated – as an approved Financial Holding Company as referred to in article 212/1 and following of the law of 25 April 2014 on the status and supervision of credit institutions.

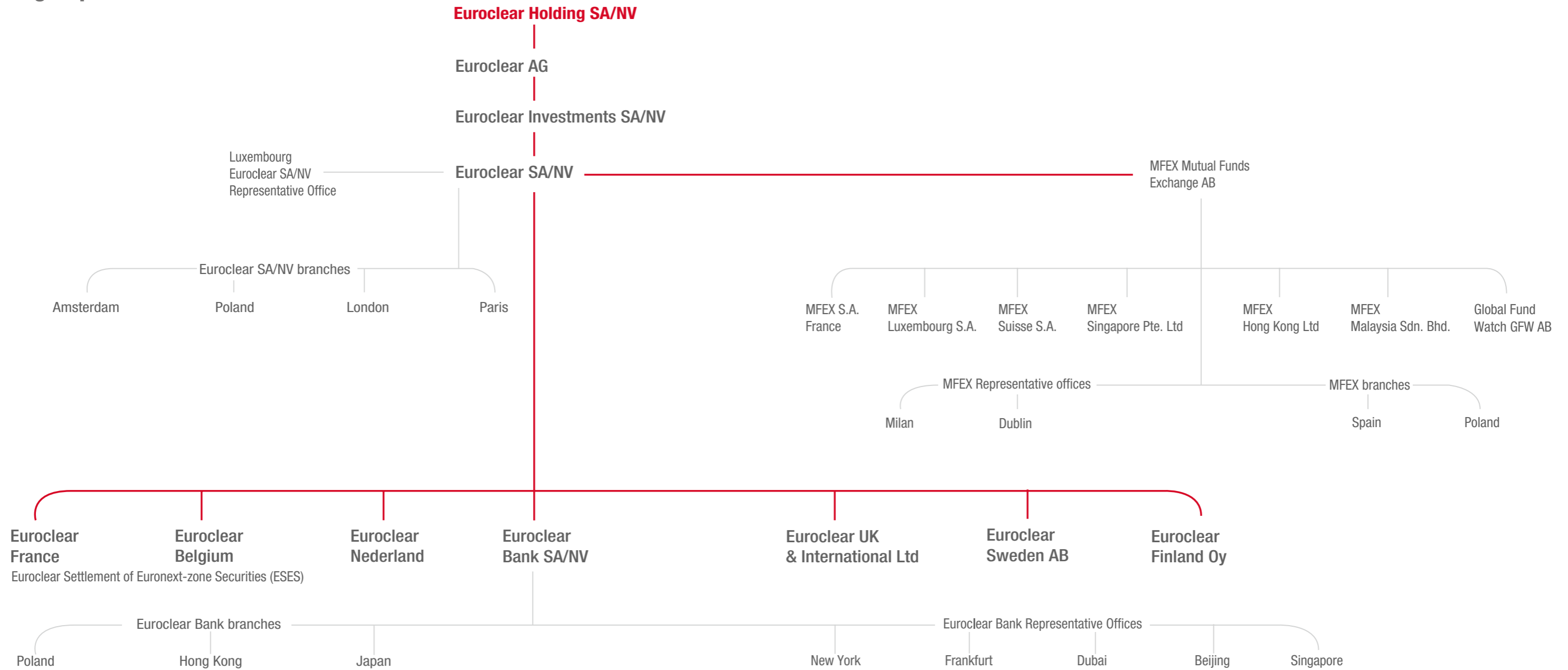
As a result of the systemic risk potential of the regulated entities of the Euroclear group (and in particular Euroclear SA/NV and Euroclear Bank in light of the financial market infrastructure services they provide), Euroclear SA/NV has also been designated by the NBB as a systemically important financial institution (“SIFI”) under the Organic Law. The NBB has designated Euroclear SA/NV as a domestic systemically important institution pursuant to Article 14 of the Belgian Banking Law of 25 April 2014 (referred to in the Capital Requirements Directive (CRD) as “Other Systemically Important Institution” or “O-SII”) under the Banking Law and, as such, Euroclear SA/NV is subject to a capital ratio surcharge.

Euroclear SA/NV is the Belgian parent company of the CSDs of the Euroclear group, and of the other operational subsidiaries of the group. Euroclear SA/NV operates branches in London, Amsterdam, Paris and Krakow as well as a representative office in Luxembourg. Euroclear SA/NV is also the parent of the non-CSDs regulated and non-regulated entities of the group.

Euroclear SA/NV owns the group’s shared securities processing platforms and delivers a range of services to the group’s regulated and non-regulated entities of the group (including Euroclear Holding SA/NV and Euroclear Investments SA/NV). Euroclear SA/NV has established support functions for the regulated and non-regulated entities of the group (except where legal or regulatory requirements require otherwise).

¹ Financial holding company (compagnie financière / financiële holding) in the meaning of Article 3, 38° of the Banking Law and is, in that capacity, required to seek approval from the NBB as required by Article 21a (1) of CRD IV, introduced by Article 1(9) of Directive 2019/878 of 20 May 2019 (as transposed into the Banking Law)

Our group structure



Euroclear Holding's shareholders

The shares of Euroclear Holding SA/NV may be transferred. However, as the group contains regulated entities, competent authorities must ensure the suitability of prospective shareholders.

Euroclear Holding SA/NV has 78 Shareholders. The Top 20 Shareholders represented a total of 83.49%. The information is available on our website.

In the year 2023, several shareholders have acquired shares in Euroclear Holding, the ultimate parent company, contributing to the overall growth and stability of our shareholder base.

The ownership of 14.20% of Euroclear Holding's capital changed in 2023:

- Société Fédérale de Participations et d'Investissement ("SFPI") continued to reinforce its holding by acquiring 1.79% from various sellers, totalling 12.92%.
- Caisse des Dépôts et Consignations ("CDC") continued to reinforce its holdings by acquiring 4.19% from various sellers, totalling 10.91%.
- NZSF Euro Limited ("NZ") became a new shareholder by acquiring a total of 4.99% from various sellers during 2023.
- Novo Holdings A/S ("Novo") became a new shareholder by acquiring 3.22% from various sellers during 2023.

Governance structure

As a financial holding company, the Company is subject to governance-type obligations referred to in Article 212 of the Banking Law of 25 April 2014 ("Banking Law"), it being understood that the National Bank of Belgium ("NBB") has granted an exemption from the obligation to set up a Management Committee.

Euroclear Holding is managed by a Board of Directors and Effective Managers. The Euroclear Holding Board has delegated to the Effective Managers the responsibility for the management of the Company within the strategic framework defined by the Board.

The Board of Directors determines the Company's general policy and strategy. Within the limits set out in the Protocol for Euroclear SA/NV - Euroclear Holding (the 'Protocol'), including its provisions on the role and responsibilities of Euroclear SA/NV to resolve on all specific matters and the information flows to be observed, the Board of Directors of Euroclear Holding is entitled to perform all powers reserved to it by law or the Articles of Association.

Since July 2021, to improve effective decision making and strategy implementation, the Boards of Euroclear Holding SA/NV and Euroclear SA/NV have been 'mirrored'.

In addition, the Board undertook to simplify the group's governance further by transferring the registered seat of Euroclear Investments SA/NV from Luxembourg to Belgium at the end of 2022 and appointing a newly composed Board, which since 1 January 2023 also mirrors the Board composition of Euroclear Holding SA/NV and Euroclear SA/NV.

This simplification of the corporate structure and board structures has strengthened the governance, risk management and oversight of Euroclear SA/NV, Euroclear Holding SA/NV and Euroclear Investments SA/NV, creating value for shareholders, stakeholders and society. All of these Boards are chaired by the same Independent Non-Executive Chair and contain an appropriate number of Independent Non-Executive Directors.

Sitting on different Boards, the members of the mirrored Boards have separate mandates and therefore manage such mandates in accordance with the Conflict of Interest Policy of these Boards.

The governance arrangements of the Board of Directors described in this section are based on, among other things, Belgian Banking Law, Euroclear Holding's Articles of Association, the Boards Terms of Reference, and the rules of procedures for the Board.

Euroclear Holding SA/NV Board composition in 2023

Euroclear Holding Articles of Association provide that the number of members of the Board consist of at least four directors appointed by the General Meeting of shareholders and who comply with legal and regulatory requirements. Directors, at all times, meet the fitness and propriety criteria required for their role as determined by law and applicable regulatory requirements. Only natural persons can be members of the Board. Euroclear Holding Board of Directors is composed of executive and non-executive directors, whereof a suitable number of independent directors.

At the end of 2023, the Euroclear Holding consisted of 18 directors; nine of whom were non-executive directors proposed by firms that are major shareholders, six independent non-executives and three executive directors. The composition of the Board changed in 2023 by the resignation of Mr. Passacantando (INED and one of the Deputy Chairs) and the appointment of Mr. Feys, proposed by SFPI-FPIM, and Mrs. Nagel, proposed by BNY Mellon Pershing EMEA, both appointed as non-executive directors of Euroclear SA/NV, Euroclear Holding SA/NV and Euroclear Investments SA/NV.

Mr. Vanni d'Archirafi is the Chairman of the Board, and Mr. Finders is the Deputy Chairman. Both Mr. Vanni d'Archirafi and Mr. Finders are independent directors, as defined by Article 3, 83°, of the Belgian Banking Law.

Remuneration

The remuneration of the members of the Board is decided by the shareholders' meeting. Directors are remunerated for their mandate as Board member and such remuneration is not linked to the business performance. The amount of remuneration takes account of the level of responsibility and time required to fulfil the Board role.

Euroclear Holding SA/NV Board responsibilities

The Board responsibilities and powers should be read in conjunction with, and interpreted in the light of, the Protocol, including with respect to its provisions on (i) the role and responsibilities of Euroclear SA/NV to resolve on all relevant matters, as described in the Protocol, and (ii) on the information flows to be observed.

Subject to the above and therefore excluding decisions on relevant matters or which may have an impact on the Regulated Group, the Board's general responsibilities and powers include, but are not limited to, the Shareholders' matters, holding participations and oversight of the Company and entities not part of the Regulated Group. The responsibilities of the Board are defined in detail in the Articles of Association.

Suitability

The composition of the Euroclear Board is considered in the context of the requirements of the business of the Company and the group at a given point in time, including prevailing legal and regulatory requirements.

To adequately fulfil its roles and responsibilities, the Board as a whole possesses the necessary balance of skills and experience to set the general policy and strategy of the company. This includes overseeing the effectiveness and independence of the control functions, establishing the culture, values, standards, ethics and conduct business rules of the group, and to properly supervising the implementation of such policy and strategy.

Diversity

All Board nominations are taken with consideration to gender, nationality, skills, knowledge, diversity and experience.

Euroclear group has a target to contain at least one third of the under-represented gender or 40% of non-executive director positions to be held by members of the under-represented gender, by 2026. By end 2023, the Euroclear Holding Board was composed of 61% men and 39% women.

To ensure adequate diversity, the Board has implemented an annual review process of compliance with agreed targets and objectives set for achieving and maintaining gender diversity on the Board.

The Board regularly reviews its composition and that of its committees, and agrees, as necessary, on the measurable objectives for achieving and maintaining diversity on the Board.

Corporate governance

Our strong governance upholds our reputation as a trusted FMI and is the foundation of our ability to support the expansion of a sustainable finance market.

Euroclear Holding SA/NV Board and Board committee composition

Name	Euroclear Holding SA/NV Board	Audit & Compliance Committee	Risk Committee	Remuneration Committee	Nominations & Governance Committee
Francesco Vanni d'Archirafi (Chairman) Independent	•		•		
Harold Finders (Deputy Chairman) Independent	•			•	•
Inge Boets – Independent	•	• (chair)	•		•
Andrew Butcher – Independent	•		• (chair)	•	
Ellis Ferran – Independent	•	•			• (chair)
Emeric Laforêt – Independent	•	•		• (chair)	
David Abitbol – Non-executive Director Société Générale	•		•		
Delphine de Sahuguet d'Amarzit – Non-executive Director Euronext	•			•	
Bart De Smet – Non-executive Director Consortium of Belgian shareholders	•				•
Yuxin Du – Non-executive Director Kuri Atyak Investment Ltd.	•			•	
Christophe Hémon – Non-executive Director London Stock Exchange (C) Ltd.	•	•			
Eric Lombard – Non-executive Director Caisse des Dépôts et Consignations	•				•
François Marion – Non-executive Director Sicovam Holding s.a.	•	•			
Tom Feys – Non-executive Director SFPI-FPIM – Société Fédérale de Participations et d'Investissement – De Federale Participatie- en Investeringsmaatschappij	•		•		
Cécile Nagel – Non-executive Director BNY Mellon Pershing EMEA	•				
Lieve Mostrey – Executive Director CEO Euroclear SA	•				
Bernard Frenay – Executive Director	•				
Valérie Urbain – Executive Director	•				

Board of Directors

18
Members

39%
Women

6
Nationalities

2023 core achievements of the Board



Risk

- Manage risk associated with the Russia-Ukraine war and continued macroeconomic uncertainty
- Support Management in managing the complexity of international sanctions on Russian assets.
- Oversee the monitoring of ESG KPIs
- Monitor risks in net-zero transition



Strategy

- Monitor the execution of the strategic plan
- Continued support of people strategy as key enabler of our business strategy
- Focus and investment on IT and cyber resilience



Corporate Governance

- Stabilise the shareholder base with transition from traditional “user-owned” model to longer-term institutional investors
- Evolve the overall Board composition
- Continued focus on identification, mitigation and management of conflicts of interests
- Continued training program for Non-Executive Directors



ESG

- Adopt and promote an integrated model of ESG governance throughout the group
- Embed ESG in existing governance structure

Top 10 Shareholders of Euroclear Holding SA/NV

You can find full list on [euroclear.com](https://www.euroclear.com)

1. Sicovam Holding S.A.
2. Société Fédérale de Participations et d'Investissement SA/NV
3. Caisse des Dépôts et Consignations
4. Kuri Atyak Investment Ltd
5. NZSF Euro Limited
6. London Stock Exchange (C) Limited
7. Société Générale
8. Euronext N.V.
9. Novo Holdings A/S
10. Skandinaviska Enskilda Banken AB (publ)

78
Shareholders

83.49%
represented by
top 20 shareholders

18.41%
of Euroclear holding's
capital changed

Board Advisory Committees

In order to perform its responsibilities, the Euroclear Holding Board has established several advisory committees. These committees meet quarterly with additional ad-hoc meetings as deemed appropriate by the Chairs of each Committee. The members of the committees are identical for Euroclear SA/NV, Euroclear Holding SA/NV since July 2021 and Euroclear Investments SA/NV, since January 2023.

Audit and Compliance Committee (ACC)

The ACC is an advisory committee of the Board established to assist the Board in fulfilling its financial reporting, internal and external audit, as well as compliance and ethics oversight.

The Committee has adequate interaction with the Risk Committee to ensure consistency and avoid any gaps in their respective roles and to make sure the ACC is informed of the major risk issues reported to the Risk Committee.

The Committee will be informed about the major risk issues reported to the Company's Risk Committee.

Committee members collectively have in-depth knowledge of financial markets and services, and they understand both the Company's and group's business as well as collective competence in the area of accounting, audit, and ESG. At least one member has specific expertise in accounting and/or auditing matters.

Risk Committee (RC)

The RC assists the Board in fulfilling its oversight responsibilities for Euroclear Holding in respect of (inter alia) the following: risk tolerance and profile, risk exposures, risk management framework and risk policies, risk management function, alignment of remuneration policy and procedures with sound risk management, and business continuity.

The Committee shall be informed about major risk or control issues raised by/to another Board committee to enable it to assess the acceptability within the company's risk profile. The Committee has adequate interaction with the ACC to ensure consistency and avoid gaps in their respective roles. The oversight of the adequacy and effectiveness of the company risk management systems is the responsibility of the ACC and shall be undertaken based on reporting from Internal Audit and reported to the RC and Board.

The Committee should have adequate interaction with the Remuneration Committee to ensure Compensation policies and practices are aligned with the risk culture, appetite and financial situation and long-term interests of the company.

Individual RC members have the skills and experience to be able to understand both the company's and group's business and to oversee the risk strategy, risk appetite (i.e. risk tolerance), risk capacity and risk profile of the company and the group.

Nominations and Governance Committee (NGC)

The NGC assists and advises the Board on all matters in relation to the nomination and composition of board and committee members, Effective Managers, succession planning as well as corporate governance matters.

The NGC members possess individual and collective appropriate knowledge, skills, expertise and professional experience regarding governance and selection process, suitability, control practices and ESG matters.

Remuneration Committee (RemCo)

The RemCo assists and advises the Board in defining the remuneration policy of the Company and laying down the compensation philosophy in alignment with the group. Furthermore, it ensures the non-executive Board and Board Committee members, Effective Managers as well as Identified Staff of the Company are compensated as per the principles described in the Euroclear group remuneration policy overseeing management's implementation of the compensation policy.

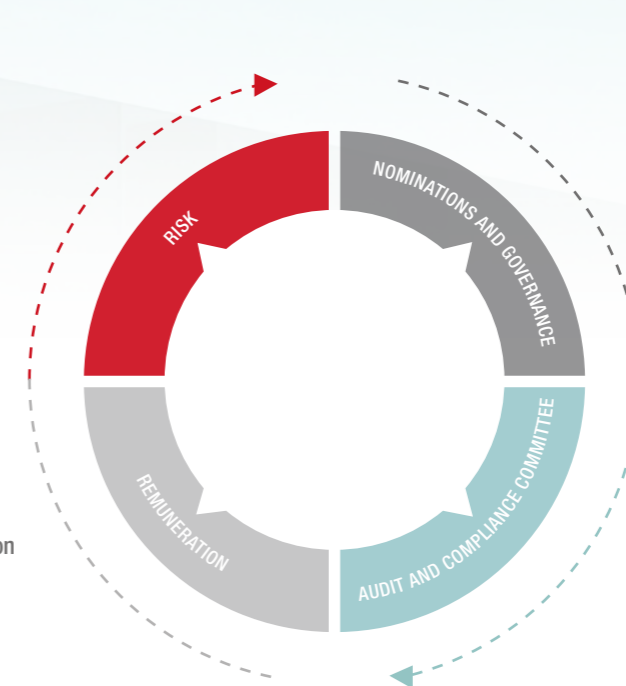
The Committee works closely with the Risk Committee in evaluating the incentives created by the compensation policy.

The RemCo members possess collective knowledge, expertise and experience concerning remuneration policies and practices, risk management and control activities, namely with regard to the mechanism for aligning the remuneration structure to the Company's risk and capital profiles. Furthermore, RemCo members have an understanding of the Company's and group's business and shall have competence relevant to the sectors in which the Group operates.

Board advisory committees

- Risk tolerance and profile, risk exposures
- Risk management framework and policies
- Alignment of remuneration policy and procedures with sound risk management
- Business continuity

- Defines remuneration policy
- Oversees management's implementation of the remuneration policy



- Nomination of Board, Committee members, and effective Managers
- Succession planning
- Corporate governance matters
- ESG matters

- Financial reporting
- Internal and external audit
- Compliance and ethics

Core Achievements in 2023

In light of ongoing geopolitical turbulence, the Board monitored the risks associated with the Russia-Ukraine war and supported Management in managing the complexity of international sanctions on Russian immobilised assets. The group's focus has been on supporting clients through these uncertain times by providing robust infrastructure and fulfilling our duties as a trusted FMI.

Throughout 2023, the Board monitored the execution of the strategic plan (unveiled in 2022), considering the growing challenges related to new risks that emerged due to the ongoing war in Ukraine, continued macroeconomic uncertain and the net-zero transition, to name a few.

As in previous years, there was substantial focus and investment on IT and cyber resilience, particularly pertinent given geo-political developments.

In addition, Euroclear has decided to adopt and promote an integrated model of ESG governance throughout the group and to embed ESG in its existing governance structure. The Euroclear SA/NV Board approved the new ESG Policy and details about the policy are available in the Acting responsible section. The Euroclear SA/NV Board oversees the monitoring of ESG KPIs.

Insofar as corporate governance is concerned, substantial work has been achieved to ensure the stabilisation of the shareholder base and to evolve the overall Board structure.

- In recent years, Euroclear's shareholder base has transitioned from its traditional "user-owned" model to include a greater proportion of longer-term institutional investors. After welcoming in 2022 CDC and SFPI-FPIM as major shareholders, in the third quarter, the group welcomed New Zealand Super Fund and Novo Holdings as new shareholders, acquiring 4.99% and 3.22% respectively. The long-term investment vision and commitment of both New Zealand Super Fund and Novo Holdings strengthen Euroclear's position as a neutral, open financial market infrastructure.

- Discussions at the Board took place with regard to the Board composition renewal that will take place in 2024. The Board composition has been defined on the basis of a number of criteria, which should support the efficient functioning of the Board, of size, diversity, skills, knowledge, and expertise.

- An important focus remained on the proper identification, mitigation and management of conflicts of interests (including a formalised process for pre-vetting conflicts of interests). Work has also been done on ensuring having a clear view on the actual time commitment of Non-Executive Directors.

- The regular training program for Non-Executive Directors continued. Additionally, the Board undertook several sessions to deepen its knowledge in the tech domain, cyber and AI, and ESG domains.

The Board continued to monitor the subsidiaries' contribution to the group's success by inviting CEOs and Non-Executive Chairs to each of the subsidiaries to the Board meetings. The Board has also continuously supported the people strategy which is a key enabler of our business strategy.

Management

The Board appointed three Effective Managers who shall satisfy any conditions set out by the National Bank of Belgium and any other relevant regulatory authority.

The Euroclear Holding Board has delegated to the Effective Managers the responsibility for the management of the Company within the framework defined by the Board. Most support services have been outsourced to Euroclear SA/NV.

The Heads of Control functions (Internal Audit, Compliance, Risk Management) are, in line with regulatory requirements, senior managers with similar functions in Euroclear SA/NV and report on a regular basis to the AC.

Other disclosures

Research and development

Euroclear continues to invest in research and development. These investments are linked to the performance and resilience of its systems as well as business developments, which are described in more detail in the Business and strategy update section of this report. Euroclear also continued investing in market research in line with its mission to provide increasingly commoditised market infrastructure services.

Recovery plan and resolution

In line with regulatory rules and guidance, a Recovery, Restructuring and Wind-down (RRW) plan is in place for Euroclear Bank as part of its overall approach to a recovery, restructuring or orderly wind-down situation. This plan is reviewed and approved by the Board of Directors, upon recommendation of the Risk Committee, on an annual basis. The aim of the RRW plan is to demonstrate Euroclear Bank's ability to recover from a series of extreme but plausible stresses that could threaten its financial viability, such that Euroclear Bank can, to the extent possible, ensure the continuous provision of critical (economic) functions. To this end, the RRW plan identifies and analyses a number of recovery and restructuring options that could be used in order to restore Euroclear Bank's capital base, liquidity position or profitability, over a short-to-medium timeframe. Finally, should these recovery and restructuring options prove insufficient to negate the stress, and thus could not recover Euroclear Bank, then the RRW plan also contains a series of wind-down actions that could be taken to ensure, to the extent possible, the orderly wind-down of the Euroclear Bank's critical (economic) functions such that it does not exacerbate or create undue stress on the market.

Euroclear SA/NV and Euroclear Bank are also subject to resolution requirements. To this end, Euroclear is implementing a multi-year resolution programme to ensure it can be deemed resolvable as it delivers the various resolution requirements. This will allow the resolution authority to resolve Euroclear in an effective way, should a very unlikely extreme event occur, where Euroclear is unable to recover.

Dividends

A dividend amounting to €363,532,000 (€115.50 per share) was paid under the form of an interim dividend in 2023. The Board envisages approving the payment of a dividend in the second half of 2024 under the form of an interim distribution, in accordance with the Belgian Companies Code and Euroclear Holding SA/NV's Articles of Association.

Post-balance sheet events

Euroclear continues to closely monitor the invasion of Ukraine by Russia, and to implement the various sanctions. In line with its role of financial market infrastructure, Euroclear is carefully managing the various aspects resulting from this situation in cooperation with the competent authorities. Future earnings linked to the sanctions will continue to depend on the prevailing interest rate environment and the evolution of the sanctions.

Various parties in Russia contest the consequences of the application of sanctions, with a significant number of legal proceedings ongoing, almost exclusively in Russian courts. The impact of the lawsuits on Euroclear is uncertain. Euroclear is defending against all relevant legal claims and intends to continue to do so against any further claims.

Effective 15 February 2024, the EU Council adopted a Regulation (Council Regulation (EU) 2024/576 of 12 February 2024 amending Regulation (EU) No 833/2014) providing for an obligation for Central Securities Depositories holding reserves and assets of the Central Bank of Russia - or of any legal person, entity or body acting on behalf of, or at the direction of, the Central Bank of Russia to apply specific rules in relation to the cash balances accumulating exclusively due to restrictive measures. In parallel the Board notes that various options to use profits generated by sanctioned amounts held by financial institutions, including Euroclear, for the financing of Ukraine are being considered at EU and international level. Euroclear is focused on minimising potential legal, financial and operational risks that may arise for itself and its clients from the implementation of any proposals made or measures taken, while complying with its obligations.

Information on circumstances that might materially influence the development of the company or its subsidiaries

Other than set out in the section above, no circumstances occurred that might materially influence the development of the company or its subsidiaries.

On behalf of the Board

Francesco Vanni d'Archirafi
Chairman of the Board
28 March 2024

Financial statements

Consolidated income statement	54
Consolidated statement of comprehensive income	55
Consolidated statement of changes in equity	56
Consolidated statement of financial position	57
Consolidated statement of cash flows	58
Notes to the consolidated financial statements	
I. Interests in other entities	60
II. Accounting policies	62
III. Critical accounting estimates and judgements	69
IV. Risk management and the financial risk management environment	72
V. Segment analysis	94
VI. Net interest income	96
VII. Net fee and commission income	97
VIII. Net gains/(losses) on financial assets and liabilities held for trading	97
IX. Administrative expenses	98
X. Impairment	99
XI. Taxation	100
XII. Deferred taxation	101
XIII. Financial assets at FVOCI	103
XIV. Financial instruments held for trading	104
XV. Derivatives used for hedging	104
XVI. Other assets	106
XVII. Property, plant and equipment	107
XVIII. Goodwill and intangible assets	108
XIX. Other liabilities	110
XX. Debt securities issued and funds borrowed	111
XXI. Provisions for liabilities and charges	112
XXII. Defined benefit plans	112
XXIII. Shared-based payments	115
XXIV. Share capital and share premium	117
XXV. Treasury shares	117
XXVI. Other reserves	118
XXVII. Dividends paid	118
XXVIII. Contingent liabilities and commitments	119
XXIX. Lease commitments	119
XXX. Related party disclosures	120
XXXI. Events after the balance sheet date	121
Statutory auditors' report	122

Consolidated income statement

For the year ended 31 December 2023

(€'000)	Notes	2023	2022
Interest income	VI	5,755,635	1,126,171
Interest expense	VI	(394,852)	(217,546)
Net interest income		5,360,783	908,625
Fee and commission income	VII	2,138,673	2,165,397
Fee and commission expense	VII	(527,646)	(591,361)
Net fee and commission income		1,611,027	1,574,036
Net interest and fee income		6,971,810	2,482,661
Dividend income		9,068	7,948
Net gains/(losses) on financial assets measured at amortised cost		-	(58)
Net gains/(losses) on non-trading financial assets mandatorily at FVPL		4,635	(918)
Net gains/(losses) on financial assets and liabilities held for trading	VIII	153,235	275,228
Net gains/(losses) on foreign exchange		5,803	(2,915)
Other operating income		9,660	7,491
Operating income		7,154,211	2,769,437
Administrative expenses	IX	(1,348,818)	(1,150,187)
Share of the profit/(loss) of investments accounted for using equity method	I	(2,602)	(1,905)
Operating profit/(loss) before impairment and taxation		5,802,791	1,617,345
Impairment	X	(124,575)	(12,173)
Operating profit/(loss) before taxation		5,678,216	1,605,172
Taxation	XI, XII	(1,454,358)	(405,171)
Profit/(loss) for the year		4,223,858	1,200,001

For the list of companies in the group, see Note I.

The accompanying Notes form an integral part of these financial statements.

Consolidated statement of comprehensive income

For the year ended 31 December 2023

(€'000)	Notes	2023			2022		
		Gross	Tax	Net	Gross	Tax	Net
Changes in other comprehensive income							
Debt instruments measured at FVOCI	XIII, XXVI	110,517	(27,043)	83,474	(240,904)	59,731	(181,173)
Cash flow hedges	XV, XXVI	63,927	(15,982)	47,945	(64,851)	16,213	(48,638)
Foreign currency translation reserve	XXVI	16,790	-	16,790	(29,858)	-	(29,858)
Recyclable subsequently to profit/(loss)		191,234	(43,025)	148,209	(335,613)	75,944	(259,669)
Equity instruments designated at FVOCI	XIII, XXVI	32,204	(4,079)	28,125	(94,680)	3,774	(90,906)
Defined benefit plans	XXII	(3,338)	763	(2,575)	78,518	(19,322)	59,196
Not recyclable subsequently to profit/(loss)		28,866	(3,316)	25,550	(16,162)	(15,548)	(31,710)
Derecognised equity instruments designated at FVOCI		39,428	-	39,428	(2,979)	-	(2,979)
Other comprehensive income for the year		259,528	(46,341)	213,187	(354,754)	60,396	(294,358)
Profit/(loss) for the year		5,678,216	(1,454,358)	4,223,858	1,605,172	(405,171)	1,200,001
Total comprehensive income for the year		5,937,744	(1,500,699)	4,437,045	1,250,418	(344,775)	905,643

The accompanying Notes form an integral part of these financial statements.

Consolidated statement of changes in equity

For the year ended 31 December 2023

(€'000)	Notes	Called up share capital	Share premium account	Treasury shares	Other reserves	Retained earnings	Total equity
At 1 January 2023		3,147	943,441	(12,267)	16,327	4,446,844	5,397,492
Profit for the year		-	-	-	-	4,223,858	4,223,858
Other comprehensive income							
- Debt instruments measured at FVOCI	XXVI	-	-	-	83,474	-	83,474
- Equity instruments designated at FVOCI	XXVI	-	-	-	28,125	39,428	67,553
- Cash flow hedges	XV, XXVI	-	-	-	47,945	-	47,945
- Foreign currency translation reserve	XXVI	-	-	-	16,790	-	16,790
- Defined benefit plans	XXII	-	-	-	-	(2,575)	(2,575)
Total Other Comprehensive Income		-	-	-	176,334	36,853	213,187
Total Comprehensive Income		-	-	-	176,334	4,260,711	4,437,045
Movements in treasury shares	XXV	-	-	523	-	-	523
Dividends paid	XXVII	-	-	-	-	(363,070)	(363,070)
At 31 December 2023		3,147	943,441	(11,744)	192,661	8,344,485	9,471,990

(€'000)	Notes	Called up share capital	Share premium account	Treasury shares	Other reserves	Retained earnings	Total equity
At 1 January 2022		3,147	943,441	-	359,233	3,476,478	4,782,299
Profit for the year		-	-	-	-	1,200,001	1,200,001
Other comprehensive income							
- Debt instruments measured at FVOCI	XXVI	-	-	-	(181,173)	-	(181,173)
- Equity instruments designated at FVOCI	XXVI	-	-	-	(90,906)	(2,979)	(93,885)
- Cash flow hedges	XV, XXVI	-	-	-	(48,638)	-	(48,638)
- Foreign currency translation reserve	XXVI	-	-	-	(29,858)	-	(29,858)
- Defined benefit plans	XXII	-	-	-	-	59,196	59,196
Total Other Comprehensive Income		-	-	-	(350,575)	56,217	(294,358)
Total Comprehensive Income		-	-	-	(350,575)	1,256,218	905,643
Treasury shares		-	-	(12,267)	-	-	(12,267)
Transfer to legal reserve	XXVI	-	-	-	7,669	(7,669)	-
Dividends paid	XXVII	-	-	-	-	(278,183)	(278,183)
At 31 December 2022		3,147	943,441	(12,267)	16,327	4,446,844	5,397,492

The accompanying Notes form an integral part of these financial statements.

Consolidated statement of financial position

As at 31 December 2023

(€'000)	Notes	2023	2022
Assets			
Cash and balances with central banks	IV	108,683,767	83,543,419
Loans and advances at amortised cost	IV	39,379,452	23,834,459
Financial assets at FVOCI	XIII	14,822,118	17,104,911
Non-trading financial assets mandatorily at FVPL		33,329	33,301
Financial assets held for trading	XIV	85,161	61,088
Derivatives used for hedging	XV	93,648	46,243
Current income tax assets	XI	26,074	27,123
Deferred income tax assets	XII	157,161	178,372
Other assets	XVI	394,635	873,828
Pre-payments and accrued income		437,758	240,994
Pension asset	XXII	11,116	6,207
Property, plant and equipment	XXVII	202,812	163,896
Goodwill and intangible assets	XXVIII	1,481,448	1,501,351
Investments in subsidiaries and joint ventures	I	7,369	18,781
Non-current assets and assets of disposal groups classified as held for sale	I	-	5,012
Total assets		165,815,848	127,638,985
Liabilities			
Deposits from central banks	IV	115,913,293	82,121,932
Deposits from banks and customers	IV	33,564,933	32,350,931
Debt securities issued and funds borrowed	XX	5,367,695	6,242,965
Financial liabilities held for trading	XIV	55,001	316,708
Derivatives used for hedging	XV	72,061	112,615
Lease liabilities		158,091	129,564
Other liabilities	XIX	457,506	574,367
Accruals and deferred income		603,869	286,722
Current income tax liabilities		63,032	11,445
Deferred income tax liabilities	XII	6,747	6,704
Provisions for liabilities and charges	XXI	18,993	22,724
Pension deficit	XXII	62,637	61,570
Non-current liabilities and liabilities of disposal groups classified as held for sale	I	-	3,166
Total liabilities		156,343,858	122,241,493
Shareholders' equity			
Called up share capital	XXIV	3,147	3,147
Share premium account	XXIV	943,441	943,441
Treasury shares	XXV	(11,744)	(12,267)
Other reserves	XXVI	192,661	16,327
Retained earnings		8,344,485	4,446,844
Total shareholders' equity		9,471,990	5,397,492
Total liabilities and shareholders' equity		165,815,848	127,638,985

The accompanying Notes form an integral part of these financial statements.

These financial statements were authorised for issue by the Board of Directors on 28 March 2024 and signed on its behalf by

Francesco Vanni d'Archirafi, Chairman of the Board

Consolidated statement of cash flows

For the year ended 31 December 2023

(€'000)	Notes	2023	2022
Profit/(loss) before taxation		5,678,216	1,605,172
Adjustments for:			
- Depreciation and amortisation	XVII, XVIII	81,218	80,872
- Impairment	X	124,575	12,173
- Provisions for liabilities and charges	XXI	(4,712)	8,679
- Dividends received		(9,068)	(7,948)
- (Gains)/losses on disposal of property, plant and equipment		(227)	(2,035)
- (Gains)/losses on disposal of subsidiaries	I	(2,536)	-
- Share of the (profit)/loss of investments accounted for using equity method	I	2,602	1,905
- Interest on financing activities	VI	153,707	75,724
- Interest on leases	VI	1,176	356
Other non-cash movements		(932,159)	357,381
- of which effect of exchange rate changes		(748,892)	362,451
Cash flows from operating profit/loss before changes in operating assets/liabilities		5,092,792	2,132,279
Net increase/(decrease) in deposits and short term funds borrowed		35,747,459	96,772,420
Net (increase)/decrease in monetary reserve	IV	(1,482,031)	-
Net (increase)/decrease in loans and advances (including central banks)	IV	(4,086,508)	(3,410,880)
Net (increase)/decrease in other assets		479,071	(534,721)
Net increase/(decrease) in other liabilities		(123,593)	78,617
Net cash inflow/(outflow) from operating activities		35,627,190	95,037,715
Tax paid		(1,423,275)	(430,096)
Net cash from operating activities		34,203,915	94,607,619
Cash flows from investing activities			
Investments in subsidiaries and joint ventures	I	(11,484)	(20,686)
Acquisition of new subsidiaries	I	(38,226)	-
Purchase of financial instruments at FVOCI	XIII	(35,689,494)	(26,848,910)
Redemption and disposals of financial instruments at FVOCI	XIII	38,442,189	18,704,646
Purchase of property, plant and equipment	XVII	(48,936)	(18,994)
Purchase of intangible assets	XVIII	(58,545)	(60,509)
Sale of property, plant and equipment		230	2,033
Proceeds from disposal groups classified as held for sale		4,382	-
Dividends received		9,068	7,948
Loans/(reimbursement of loans)	XXX	(6,620)	(16,532)
Net cash from/(used in) investing activities		2,602,564	(8,251,004)
Cash flows from financing activities			
Reimbursement of financing activities	XX	(7,276,958)	(12,278,281)
Proceeds from financing activities	XX	6,447,476	12,169,565
Interest paid on financing activities	XX	(59,842)	(43,268)
Movements in shares acquired for share-based payments		-	(12,267)
Equity dividends paid	XXVII	(363,070)	(278,183)
Payment of lease liabilities		(23,592)	(23,441)
Net cash from/(used in) financing activities		(1,275,986)	(465,873)
Net increase/(decrease) in cash and cash equivalents		35,530,493	85,890,742
Cash and cash equivalents at beginning of year		102,449,667	16,224,860
Effects of exchange rate changes on cash and cash equivalents		(314,247)	334,065
Cash and cash equivalents at end of year		137,665,913	102,449,667
Cash and balances with central banks	IV	108,683,767	83,543,419
Excluding monetary reserve		(1,482,031)	-
Loans and advances	IV	39,379,452	23,834,459
Excluding loans and advances with initial maturity above three months		(8,915,275)	(4,928,211)
Cash and cash equivalents at end of year		137,665,913	102,449,667

Reconciliation of liabilities arising from financing activities

(€'000)	Notes	2022	Cash flows	Non-cash changes	2023
Long term senior debts		1,654,988	(26,563)	28,097	1,656,522
Medium term notes		2,458,533	(533,323)	23,281	1,948,491
Certificates of deposits		1,978,105	(329,438)	89,919	1,738,636
Total debt securities issued and funds borrowed	XX	6,091,676	(889,324)	141,297	5,343,649
Lease liabilities		129,564	(23,592)	52,119	158,091
Total liabilities arising from financing activities		6,221,240	(912,916)	193,416	5,501,740

(€'000)	Notes	2021	Cash flows	Non-cash changes	2022
Long term senior debts		1,653,492	(26,563)	28,059	1,654,988
Medium term notes		2,443,264	(19,044)	34,313	2,458,533
Certificates of deposits		2,061,451	(106,375)	23,079	1,978,155
Total debt securities issued and funds borrowed	XX	6,158,207	(151,982)	85,451	6,091,676
Lease liabilities		134,532	(23,441)	18,473	129,564
Total liabilities arising from financing activities		6,292,739	(175,423)	103,924	6,221,240

Notes to the consolidated financial statements

I. Interests in other entities

I.1. General Information

Euroclear Holding SA/NV (the 'Company') and its subsidiaries (together, the 'group') arrange for the provision of settlement and related services, including banking services in the case of Euroclear Bank, for domestic and international securities transactions, covering bonds, equities, investment funds and derivatives.

Euroclear Holding SA/NV is incorporated and domiciled in Belgium. The address of its registered office is:

Euroclear Holding SA/NV
1 Boulevard du Roi Albert II
1210 Brussels
Belgium

Copies of the Euroclear Holding SA/NV consolidated financial statements can be obtained at the same address or checked on www.euroclear.com

I.2. Subsidiaries

At 31 December 2023, the Company's subsidiaries are as follows:

	Country of incorporation	Nature of business	Proportions of voting rights and ordinary shares held
Consolidated subsidiaries			
Caisse interprofessionnelle de dépôts et de virements de titres SA ¹	Belgium	Central Securities Depository for Belgium	100%
EMX Company Limited ¹	United Kingdom	Dormant ¹	100%
Euroclear AG	Switzerland	Investment holding	100%
Euroclear Bank SA/NV ¹	Belgium	Banking, securities settlement and custody services	100%
Euroclear Finland Oy ¹	Finland	Central Securities Depository for Finland	100%
Euroclear France SA ¹	France	Central Securities Depository for France	100%
Euroclear Global Collateral Services Limited ¹	United Kingdom	Collateral Services	100%
Euroclear Investments SA ²	Luxembourg	Investment holding	100%
Euroclear Properties France SAS ²	France	Property Investment	100%
Euroclear Re SA ²	Luxembourg	Reinsurance	100%
Euroclear SA/NV ²	Belgium	(I)CSD holding company, ownership of share processing pl	100%
Euroclear Sweden AB ¹	Sweden	Central Securities Depository for Sweden	100%
Euroclear UK & International Limited ¹	United Kingdom	Central Securities Depository for the United Kingdom and I	100%
Global Fund Watch GFW AB ¹	Sweden	Fund trading and distribution services	100%
Greenomy SRL ¹	Belgium	Sustainability reporting services	52%
MFEX France ¹	France	Fund trading and distribution services	100%
MFEX Hong Kong Limited ¹	Hong Kong	Fund trading and distribution services	100%
MFEX Luxembourg SA ¹	Luxembourg	Fund trading and distribution services	100%
MFEX Malaysia SDN. BHD. ¹	Malaysia	Fund trading and distribution services	100%
MFEX Mutual Funds Exchange AB ¹	Sweden	Holding company and Fund trading and distribution service	100%
MFEX Singapore Pte Ltd ¹	Singapore	Fund trading and distribution services	100%
MFEX Suisse SA ¹	Switzerland	Fund trading and distribution services	100%
Nederlands Centraal Instituut voor Giraal Effectenverkeer BV (Necigef) ¹	The Netherlands	Central Securities Depository for the Netherlands	100%
STAK Euroclear ¹	Belgium	Foundation	100%
Taskize Limited ¹	United Kingdom	Proprietary services	100%
CREST International Nominees Limited ⁴	United Kingdom	Nominee company	100%
Goji holding Limited ¹	United Kingdom	Private market technology and services	90%
Number of wholly owned subsidiaries			25
Number of non-wholly owned subsidiary			2
Total subsidiaries			27
¹ Held through Euroclear SA/NV			
² Held through Euroclear Investments SA			
³ Held through Euroclear AG			
⁴ Held through CREST Depository Limited			

	Country of incorporation	Nature of business	Proportions of voting rights and ordinary shares held
Non-consolidated subsidiaries			
Nominees			
CIN(Belgium) Limited ¹	United Kingdom	Nominee company	100%
CREST Client Tax Nominee(No.1) Limited ¹	United Kingdom	Nominee company	100%
CREST USD Nominee Limited ²	United Kingdom	Nominee company	100%
CREST Depository Limited ²	United Kingdom	Nominee company	100%
CREST EURO nominee Limited ²	United Kingdom	Nominee company	100%
CREST Stamp Nominee(No.1) Limited ²	United Kingdom	Nominee company	100%
CREST Stamp Nominee(No.2) Limited ²	United Kingdom	Nominee company	100%
CRESTCo Limited ²	United Kingdom	Nominee company	100%
EC Nominees Limited ³	United Kingdom	Nominee company	100%
ENL Nominee Limited ⁴	United Kingdom	Nominee company	100%
EOC Equity Limited ³	United Kingdom	Nominee company	100%
Euroclear Nominees Limited ³	United Kingdom	Nominee company	100%
Euroclear Treasury Nominee Limited ³	United Kingdom	Nominee company	100%
Fundsettle EOC Nominees Limited ³	United Kingdom	Nominee company	100%
Trinity Nominees Limited ²	United Kingdom	Nominee company	100%
Non material subsidiaries			
Quantessence Limited ⁵	United Kingdom	Proprietary services	92%
¹ Held through CREST Depository Limited			
² Held through Euroclear UK & International Limited			
³ Held through Euroclear Bank SA/NV			
⁴ Held through Nederlands Centraal Instituut voor Giraal Effectenverkeer BV (Necigef)			
⁵ Held through Euroclear SA/NV			

In 2023, Euroclear SA/NV has acquired shares in Quantessence Limited for a total value of GBP 922,000, and injected capital for a total amount of GBP 8,500,000, increasing its shareholding by 42,476 shares i.e from 71.0% to 91.7% (GBP 16,444,000). Quantessence Limited is a UK-based company that is developing innovative fund services. The aggregate amount of Quantessence capital and reserves was GBP 3,135,000 as at the end of 2023 (2022: GBP -2,397,000), made mainly of capital and share premium of GBP 14,693,000 (2022: GBP 6,193,000) and accumulated losses of GBP 11,558,000 (2022: GBP 8,590,000). The participation in Quantessence Limited is recognised at its acquisition value, less impairment, in the statement of financial position. The provision of €2,430,000, recorded in financial year 2022 to recognise the losses accumulated, has been reversed after the capital injection (see note XXI) and an impairment of €5,617,000 has been recognised during the year (2022: GBP 6,975,000) (see note X).

On 17 July 2023, Euroclear SA/NV acquired 412,774 shares of Goji Holding Limited for a total consideration of €48,922,000 representing 89.86% of the total shareholding. Goji is a leading provider of digital access and technology-enabled solutions to private markets. The acquisition of Goji aligns with Euroclear's strategy of expanding its reach and capabilities in private markets. The entity has been consolidated and the entire value of the participation has been recognised under goodwill, pending completion of the purchase price allocation exercise later in 2024. The net asset value of the Goji group on acquisition date (after Euroclear cash injection of GBP 12,800,000) amounted GBP 4,564,000, made of assets (GBP 14,288,000 of which GBP 13,893,000 cash) offset against liabilities (GBP 9,724,000 of which GBP 8,591,000 borrowings). The goodwill comprises the future profitability resulting from the integration of Euroclear's extensive cross-border fund network with Goji's technology and experience in the private markets industry.

Euroclear SA/NV holds a 51.84% shareholding in Greenomy SRL recorded for a net asset value of €2,013,000 at year-end. The company is a provider in sustainability reporting software-as-a-service, helping companies in measuring and improving their sustainability scoring according to the various standards and taxonomies. The company is consolidated using the equity method.

Fondab was a subsidiary of the MFEX Group in Sweden which offered a fund platform and related services for fund distribution. The sale was completed in April 2023 and generated a net gain €2,536,000 recorded under other operating income. In accordance with IFRS 5, the assets and liabilities of Fondab were recognised in separate lines of the Statement of Financial Position as at 31 December 2022 (at the lower of carrying value or the fair value less cost to sell). Fondab has contributed €427,000 of pre-tax profit in 2023 (2022: €844,000).

II. Accounting policies

II.1. Basis of preparation

These financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union (EU) and the IFRS Interpretations Committee (IFRIC) Interpretations applicable to companies reporting under IFRS.

The consolidated financial statements have been prepared under the historical cost convention, as modified by the revaluation of certain financial instruments and are prepared on a going concern basis.

The preparation of financial statements in conformity with IFRS requires the use of certain critical accounting estimates. It also requires management to exercise its judgement in the process of applying the company'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 in Note III.

II.1.1. Adoption of interpretation, new standards and amendments to standards effective on 1 January 2023

The following standard and amendments to standards became effective on 1 January 2023:

- IFRS 17 Insurance Contracts (issued on 18 May 2017); including Amendments to IFRS 17 (issued on 25 June 2020)
- Amendments to IAS 1 Presentation of Financial Statements and IFRS Practice Statement 2: Disclosure of Accounting policies (issued on 12 February 2021)
- Amendments to IAS 8 Accounting policies, Changes in Accounting Estimates and Errors: Definition of Accounting Estimates (issued on 12 February 2021)
- Amendments to IAS 12 Income Taxes: Deferred Tax related to Assets and Liabilities arising from a Single Transaction (issued on 7 May 2021)
- Amendments to IAS 12 Income taxes: International Tax Reform - Pillar Two Model Rules (issued 23 May 2023)

The amendments to IAS 1 change the requirements in IAS 1 with regard to disclosure of accounting policies. The amendments replace all instances of the term 'significant accounting policies' with 'material accounting policy information'.

The amendments to IAS 12 clarify that the Standard applies to income taxes arising from tax law enacted or substantively enacted to implement the Pillar Two model rules published by the OECD, including tax law that implements qualified domestic minimum top-up taxes described in those rules. The amendments introduce a temporary exception to the accounting requirements for deferred taxes in IAS 12, so that an entity would neither recognise nor disclose information about deferred tax assets and liabilities related to Pillar Two income taxes. Following the amendments, the group has applied the exception and discloses separately its current tax expense (income) related to Pillar Two income taxes in note Tax.

The application of the other amendments to standards had no impact on the group's financial statements.

II.1.2. Standards, amended standards and interpretations endorsed by the EU, but not yet effective in 2023

The following amendments to standards become effective on 1 January 2024:

- Amendments to IAS 1 Presentation of Financial Statements (Classification of Liabilities as Current or Non-current Date (issued on 23 January 2020); Classification of Liabilities as Current or Non-current -Deferral of Effective Date (issued on 15 July 2020); and Non-current Liabilities with Covenants (issued on 31 October 2022)
- Amendments to IFRS 16 Leases: Lease Liability in a Sale and Leaseback (issued on 22 September 2022)

The application of the above amendments to standards had no impact on the group's financial statements.

II.2. Summary of significant accounting policies

The principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the years presented.

II.2.1. Consolidation

Subsidiaries are all entities over which the group has control. The group controls an entity when the group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power to direct the activities of the entity. Subsidiaries are fully consolidated from the date on which control is transferred to the group. They are deconsolidated from the date that control ceases.

The excess of the cost of acquisition over the fair value of the group's share of the identifiable net assets is recognised as goodwill.

Inter-company transactions, balances and unrealised gains on transactions between group companies are eliminated. Where permitted under local legislation, the accounting policies of subsidiaries have been changed to ensure consistency with the policies of the group.

Joint ventures are accounted for using the equity method of accounting. The group's share of the joint venture's profit or loss is recognised in its income statement. The group's interest in a joint venture or associate is carried in the statement of financial position at its share in the

net assets of the joint venture, less any impairment loss. The accounting policies of the joint venture are changed where necessary to ensure consistency with the policies adopted by the group.

II.2.2. Segment reporting

An operating segment is a component of an entity that engages in business activities from which it may earn revenues and incur expenses.

Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision-maker. The chief operating decision maker, who is responsible for allocating resources and assessing performance of the operating segments, has been identified as the Euroclear SA/NV Management Committee.

II.2.3. Foreign currency translation

II.2.3.1. Functional and presentation currency

Items included in the financial statements of each of the group's entities are measured using the currency of the primary economic environment in which the entity operates (the functional currency). The consolidated financial statements are presented in euro, which is the company's functional and presentation currency.

II.2.3.2. Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the income statement, except when deferred in equity as qualifying cash flow hedges and qualifying net investment hedges. Translation differences on non-monetary items measured at fair value through profit or loss are reported as part of the fair value gain or loss. Non-monetary items that are measured in terms of historical cost in a foreign currency are not translated. Translation differences on other non-monetary items are included in the profit or loss account.

II.2.3.3. Group companies

The results and financial position of all the group's entities that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

- assets and liabilities for each balance sheet presented are translated at the closing exchange rate at the balance sheet date;
- income and expenses for each income statement are translated at average exchange rates for the year; and
- the resulting exchange differences are recognised in the foreign currency translation reserve.

On consolidation, exchange differences arising from the translation of the net investment in foreign entities, and of borrowings and other currency instruments designated as hedges of such investments, are taken to other comprehensive income, in the foreign currency translation reserve and the hedge of net investments in foreign operations reserve. When a foreign operation is sold, such exchange differences are recognised in the income statement as part of the gain or loss on the sale.

None of the group companies have used the currency of a hyperinflationary economy as its functional currency.

Goodwill and fair value adjustments arising on the acquisition of a foreign entity are treated as assets and liabilities of the foreign entity and translated at the closing exchange rate.

II.2.4. Revenue recognition

II.2.4.1 Interest income and expense

Interest income and expense are recognised in the income statement using the effective interest rate method.

The calculation of the effective interest rate includes transaction costs and fees and points paid or received that are an integral part of the effective interest rate. Transaction costs include incremental costs that are directly attributable to the acquisition or issue of a financial asset or financial liability.

Interest income and expense presented in the income statement include:

- interest of financial assets and liabilities presented at amortised cost;
- interest on debt instruments measured at FVOCI;
- interest on non SPPI-compliant loans classified as non-trading financial assets mandatorily at FVPL.

Group loans to, and deposits from, banks and customers are principally related to Euroclear Bank clients' cash accounts operated in connection with their securities settlement activity, with balances generally changing on a daily basis. Time deposits and the re-deposits of surplus funds rarely have maturities of more than three months.

II.2.4.2. Fee and commission income and expense

Fee and commission income and expense which respectively represent a return and cost for services rendered (such as safekeeping, settlement and custody) are recognised in the income statement point in time when the related service is performed and resulting the performance obligation is met.

Settlement and Clearing includes the settlement service, but also the securities and borrowing service and other collateral management services directly linked to settlement business. Settlement fees are charged at an average fee rate multiplied by the number of settled transactions during the month. Fees are aggregated by market and instrument type. Fees are calculated applying a sliding scale tariff to the

number of instructions. Fee and commission income and expense, which represent a return for credit risk borne or which are in the nature of interest (securities borrowing), are recognised in the income statement over the period of the loan, or on a systematic basis over the expected life of the transaction to which they relate, net of rebates granted.

The safekeeping service ensures that a record of title to the customer's securities is maintained on the books of a higher-tier entity, and that the number of securities owned by the customer as recorded in the custodian books can always be delivered to the customer's order. Safekeeping fees are computed on the monthly average depot value of securities held in custody.

Other fee and commission income mainly relates to communication fees, custody operations, the recovery of out-of-pocket expenses incurred on behalf of clients, issuer services fees earned by Euroclear Finland and Euroclear Sweden, and revenue earned by Euroclear UK & International for collecting Stamp Duty Reserve Tax on behalf of Her Majesty's Revenue & Customs in the United Kingdom and Stamp Duty on behalf of the Irish Revenue Commissioners. The fees are monthly charged at an average fee rate multiplied by the number of transactions.

II.2.4.3. Dividends

Dividends on equity instruments are recognised in the income statement when the group's right to receive payment is established.

II.2.5. Financial assets

II.2.5.1. Classification and measurement

On initial recognition, a financial asset is classified as measured at amortised cost, Fair Value through Other Comprehensive Income ('FVOCI') or Fair value through profit and loss ('FVPL'). The classification results from a two-step approach: The "cash flow characteristics" test will check whether the cash flows can be considered as Solely Payments of Principal and Interest ('SPPI'), and the business model for managing the asset.

Regular way purchases and sales of financial assets are accounted for at settlement date.

A financial asset is classified and measured at amortised cost if it is not designated as FVPL, and if it meets both of the following conditions: it is held for collection of contractual cash flows (Held to Collect) and its contractual terms give rise to cash flows that represent solely payments of principal and interest ('SPPI'). A financial asset classified and measured at amortised cost is recognised in the balance sheet on settlement date at fair value plus any directly related transaction costs. It is subsequently measured at amortised cost using the effective interest method less any loss allowances.

A financial asset is classified and measured at FVOCI if it is not designated as FVPL, and if it meets both of the following conditions: it is held for collection of contractual cash flows and for selling the assets, and its cash flows represent solely payments of principal and interest. A financial asset classified and measured at FVOCI is recognised in the balance sheet on settlement date at fair value less any directly related transaction costs. Gains or losses arising from changes in the fair value are recognised directly in equity, until the asset is either sold or matures, at which time the cumulative gain or loss previously recognised in equity is released to the income statement. Interest revenues are recognised using the effective interest method.

The group may irrevocably elect to designate an equity instrument at FVOCI, if it not held for trading. This election is made on an investment by investment basis. In this case, dividends that qualify as a return on investment are recognised in profit and loss, but gains and losses are not recycled to profit and loss on derecognition and no impairment is recognised. The revaluation gains/losses accumulated in other comprehensive income are transferred to distributable reserves in case of sale of the investment.

All other financial assets are measured at FVPL. These assets are initially recognised and subsequently measured at fair value. The movements in fair value are recognised in the income statement.

Because of the international financial sanctions imposed on Russia, various Russian countermeasures were issued in 2022, introducing special procedures regarding the repayment of debt by the Russian state and Russian debtors to non-Russian creditors. In application of these measures, National Settlement Depository (NSD), the Russian CSD, opened new types of restricted accounts (C- and I-accounts) in the name of Euroclear Bank where all amounts received from Russian issuers are blocked. For the clients of Euroclear Bank, the main consequence is that the funds are paid on these accounts in RUB and blocked in accordance with the countermeasures. These accounts do not meet the definition of financial assets, and are accordingly not recorded on balance sheet.

II.2.6. Financial liabilities

Financial liabilities are classified and subsequently measured at amortised cost except for derivatives (see section 2.7.).

Borrowings and debt securities issued are recognised initially at fair value, being the issue proceeds (fair value of consideration received) net of transaction costs incurred. They are subsequently stated at amortised cost; any difference between proceeds net of transaction costs and the redemption value is recognised in the income statement over the period of the borrowings or issues using the effective interest rate method.

Financial liabilities are derecognised when they are extinguished (when the obligation specified in the contract is discharged, cancelled or expires).

II.2.7. Derivative financial instruments and hedge accounting

The group applies the IFRS 9 hedge accounting requirements in full as issued by the IASB.

All derivative financial instruments are recognised, and subsequently re-measured at fair value. Derivative fair values are determined from quoted prices in active markets where available. Where there is no active market for an instrument, fair value is derived from prices for the derivative's components using appropriate pricing or valuation models.

Gains and losses arising from changes in fair value of a derivative are recognised as they arise in profit and loss, unless the derivative is part of a qualifying cash flow hedge.

At the inception of the hedge relationship, the group documents the relationship between the hedging instrument and the hedged item, along with its risk management objectives and its strategy for undertaking various hedge transactions.

Under IFRS 9, if a hedging relationship ceases to meet the hedge effectiveness requirement relating to the hedge ratio but the risk management objective for that designated hedging relationship remains the same, the group adjusts the hedge ratio of the hedging relationship (i.e. rebalances the hedge) so that it meets the qualifying criteria again. The ineffective portion of the gain or loss on the hedging instrument is recognised immediately in the profit and loss account.

The group designates the full change in the fair value of a forward contract (i.e. including the forward elements).

The group currently designates certain derivatives as hedging instruments in respect of foreign currency and interest rate risk in cash flow hedges.

In the case of a cash flow hedge, the portion of the gain or loss on the hedging instrument that is determined to be an effective hedge should be recognised directly in other comprehensive income and released to profit and loss when the hedged item (for instance the forecasted transaction) affects profit and loss.

II.2.8. Impairment of financial assets

The group recognises loss allowances on financial assets measured at amortised cost, on debt instruments at fair value through other comprehensive income, loan commitments and financial guarantees. No impairment loss is recognised on equity instruments.

The expected credit loss (ECL) is estimated as the difference between all contractual cash flows that are due to the group in accordance with the contract and all the cash flows that the group expects to receive, discounted at the original effective interest rate.

The measurement of expected credit losses is a function of the probability of default, loss given default (i.e. the magnitude of the loss if there is a default) and the exposure at default. Expected credit losses on financial assets are individually assessed (except for trade receivables with no significant financing component).

IFRS 9 does not give explicit definition of default, but clearly states that it must be consistent with the one used for internal credit risk management purposes, with the rebuttable presumption that 90 days past due is a default criterion. This definition must be used when assessing whether the credit risk on a financial instrument has increased significantly. Euroclear uses the default definition as stated in the Financial Risk Policy Handbook and used for regulatory capital purposes, to ensure consistency with Basel Committee guidelines.

The impairment requirements are complex and require management judgements, estimates and assumptions that are detailed in section III Critical accounting estimates and judgements.

A financial asset is credit impaired when one or more events that have a detrimental impact on the estimated future cash flows of that financial asset have occurred. Evidence that a financial asset is credit-impaired includes observable data about the following events:

- significant financial difficulty of the issuer or the borrower;
- a breach of contract, such as a default or past due event;
- it is becoming probable that the borrower will enter bankruptcy or other financial reorganisation; or
- the disappearance of an active market for that financial asset because of financial difficulties.

For trade receivables with no significant financing component, a simplified approach requiring the recognition of lifetime ECLs at all times applies. The expected credit losses on these assets are collectively assessed and estimated using a provision matrix based on the group's historical credit loss experience and macro-economic factors. If no significant statistical relationship is observed between impairment losses and macro-economic factors, macro-economic factors are not considered. Expected credit losses are based on the age of the receivables. If all or part of a client's receivable is confirmed as being irrecoverable, the value of that receivable will be reduced accordingly.

The group writes off financial assets including trade receivables, in whole or in part, when it has exhausted all practical recovery efforts and has concluded there is no reasonable expectation of recovery, e.g. when the counterparty has been placed under liquidation or has entered into bankruptcy proceedings.

The aggregate of provisions made (less amounts released and recoveries of bad debts previously written off) is charged against operating profit in the profit and loss account.

II.2.9. Purchase and resale agreements

Securities purchased under agreements to resell ('reverse repos') are recorded as loans and advances to other banks or customers, as appropriate. The difference between the sale and repurchase price is treated as interest and accrued over the life of the agreements using the effective interest method.

II.2.10. Goodwill and intangible assets**II.2.10.a. Goodwill**

Goodwill represents the excess of the cost of an acquisition over the fair value of the group's share of the identifiable net tangible and intangible assets of an acquired entity at the date of acquisition. Goodwill is carried at cost less accumulated impairment losses and tested for impairment annually or more frequently where events or changes in circumstances indicate that it might be impaired. For the purpose of impairment testing, goodwill is allocated to cash-generating units, the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets. If impairment is identified, the carrying value of goodwill is written down to its net recoverable amount. Impairment losses are immediately recognised in profit and loss and are not subsequently reversed.

II.2.10.b. Computer software

Computer software licences are capitalised on the basis of the costs incurred to acquire and bring to use the specific software.

Costs associated with the development phase of computer software being developed by, and for use of, the group are capitalised only when the following can be demonstrated:

- technical feasibility;
- intention to complete;
- ability to use or sell the asset;
- generation of probable future economic benefits;
- availability of technical, financial and other resources; and
- reliable measurement of attributable expenditure.

Borrowing costs that are directly attributable to the acquisition or development of software are considered as part of the cost of the software.

The cost of computer software is amortised using the straight-line method over its estimated useful life, normally estimated to be between three and five years.

Impairment tests are performed annually or more frequently if events or circumstances indicate that the asset might be impaired.

Costs associated with maintaining or upgrading computer software programmes are recognised as an expense as incurred.

II.2.10.c. Other intangible assets

At the time of a business combination, part of the cost might be attributed to one or more intangible assets when these are separable or arise from contractual or other legal rights (such as contractual customer relationships), provided a fair value can be measured reliably.

For each asset, the expected useful life is also assessed. Where this is a finite period, the cost of the asset will be amortised using the straight-line method over that period. The estimated useful life is assessed to be indefinite when, following an analysis of all the relevant factors, there is no foreseeable limit to the period over which the asset is expected to generate net cash inflows. In such circumstances, the cost will not be amortised.

After initial recognition, the amortisation period and amortisation method for assets with a finite life are reviewed at least at each financial year-end, and changed when necessary.

For assets with an indefinite life, impairment tests are performed annually or more frequently if events or circumstances indicate that the asset might be impaired.

II.2.11. Property, plant and equipment

Property, plant and equipment are stated at cost less accumulated depreciation. Where an item of property, plant and equipment comprises major components having different useful lives, these components are accounted for separately.

Borrowing costs that are directly attributable to the acquisition of an asset are considered as part of the cost of the asset.

Subsequent costs are included in the asset's carrying amount or are recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the group and the cost can be measured reliably. All other costs are charged to the income statement during the financial year in which they are incurred.

Depreciation on property, plant and equipment is determined using the straight-line method to allocate the depreciable amount (difference between the cost and the residual value) over its estimated useful life.

The estimated useful life of property, plant and equipment is as follows:

- buildings (including enhancements): 20 to 40 years;
- leasehold improvements: shorter of economic life and period of lease;
- furniture and fixtures: seven years; and
- IT equipment (data processing and communications): between two and five years.

Land is not depreciated.

II.2.12. Leases

Leases where the group is a lessee are recognised as a right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the group. Assets and liabilities arising from a lease are initially measured on a present value basis.

Lease liabilities include the net present value of the following lease payments:

- fixed payments, less any lease incentives receivable;
- variable lease payments that depend on an index or a rate;
- amounts expected to be payable by the lessee under residual value guarantees;
- the exercise price of a purchase option if the group is reasonably certain to exercise that option; and
- payments of penalties for terminating the lease if the lease term reflects the lessee exercising the option.

Lease payments to be made under reasonably certain extension options are also included in the measurement of the liability.

The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be readily determined, which is generally the case for leases in the group, the lessee's incremental borrowing rate is used, being the rate that the individual lessee would have to pay to borrow the funds necessary to obtain an asset of similar value to the right-of-use asset in a similar economic environment with similar terms, security and conditions.

Lease payments are allocated between principal and finance cost.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of lease liability;
- any lease payments made at or before the commencement date less any lease incentives received;
- any initial direct costs; and
- end of lease obligations.

Right-of-use assets are depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis. If the group is reasonably certain to exercise a purchase option, the right-of-use asset is depreciated over the underlying asset's useful life.

Payments associated with short-term leases of property, plant and equipment and leases of low-value assets are recognised on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less. Low-value assets comprise IT equipment and small items of office furniture.

Leases of vehicles are recognised as a right-of-use asset and a corresponding liability, and associated payments are recognised on a straight-line basis as an expense in profit or loss.

Lease income from operating leases where the group is a lessor is recognised in income on a straight-line basis over the lease term. The respective leased assets are included in the balance sheet based on their nature.

II.2.13. Cash and cash equivalents

For the purposes of the statement of cash flows, cash and cash equivalents comprise balances with an original maturity of not more than three months, including cash and non-restricted balances with central banks, and loans and advances to banks and other customers.

II.2.14. Provisions

Provisions are recognised where:

- there is a present obligation arising from a past event;
- there is a probable outflow of resources; and
- the outflow can be estimated reliably.

Provisions are recognised in respect of onerous contracts where the unavoidable costs of the future obligations under the contract exceed the economic benefits expected to be received.

Contingent liabilities are possible obligations whose existence depends on the outcome of one or more uncertain future events not wholly under the control of the group. For those present obligations where the outflows of resources are uncertain, or in the rare cases where these outflows cannot be measured reliably, this will give rise to a contingent liability. Contingent liabilities are not recognised in the financial statements but are disclosed, unless they are remote.

II.2.15. Employee benefits

II.2.15.a. Pension obligations

The group operates a number of post-retirement benefit schemes for its employees, including both defined contribution and defined benefit pension plans.

A defined contribution plan is a pension plan under which the group pays fixed contributions into a separate entity and has no legal or constructive obligation to pay further contributions.

A defined benefit plan is a post-employment benefit plan other than a defined contribution plan.

The liability recognised in the balance sheet in respect of defined benefit plans is the present value of the defined benefit obligation at the balance sheet date less the fair value of plan assets. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating to the terms of the related pension liability.

Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions are recognised in equity in the period in which they occur.

Past service costs are recognised immediately in the profit and loss account.

The costs of defined contribution plans are charged to the income statement in the year in which they fall due.

II.2.15.b. Other post-retirement benefits

Some group companies provide post-retirement healthcare benefits to their retirees. The expected costs of these benefits are accrued over the period of employment using an accounting methodology similar to that for defined benefit pension plans. Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions are charged or credited to equity. These obligations are valued annually by independent qualified actuaries.

II.2.15.c. Share-based payments

The group offers share-based payments to Euroclear senior executives. The payments are either part of fixed compensation or variable compensation. Share-based payments as part of fixed remuneration are unconditional, recurring, irrevocable amounts which are earned on a monthly basis and converted into certificates of shares (hereafter called units) every quarter. Upon grant, the units are unavailable for sale during a period of 3 years. After this lock-up period the beneficiary can, but should not, sell the certificates back to Euroclear SA/NV. The remuneration is recorded as an expense against a liability. The liability is reduced when the units are released and transferred to the beneficiaries, followed by a corresponding derecognition in treasury shares at the level of Euroclear Holding SA/NV. There are no vesting conditions attached to the scheme.

Variable remuneration on behalf of Euroclear's senior executives is governed by the remuneration guidelines set by the European Banking Authorities (EBA Guidelines) and the Belgian Banking Act. As a result of these regulations 50% of all variable remuneration should be paid in non-cash equivalent instruments and at least 40% of all variable remuneration (in cash or in non-cash equivalent instruments) should be deferred over a period no less than 4 years (5 years for the members of the management committee). This period is prolonged with another year for non-cash equivalent instruments.

Where variable remuneration matures for release, the award of non-cash equivalent instruments will occur in the form of units at that moment in time. The beneficiaries, since all restriction on the disposal of these amounts have lapsed, are free to dispose of the units at that moment and can either decide to keep, partially keep/sell or sell the totality of the award back to Euroclear SA/NV. The fair value of services rendered by employees in consideration for the granting of share-based payments is recorded as an expense. This expense is recognised in profit and loss when services are rendered. At each reporting date and until the liability settlement date, the group remeasures the fair value of the liability based on the fair value of Euroclear Holding SA/NV's shares and adjusted to reflect the performance vesting conditions. Changes in the fair value of the liability are recognised in profit or loss. When the units are released and transferred to the beneficiaries, the liability is reduced and the treasury shares derecognised.

II.2.16. Treasury shares

Treasury shares are purchased for the purpose of the share-based payment program offered to Euroclear senior executives. Treasury shares are deducted from equity. Upon the vesting of the shares or their repurchase from the beneficiaries, the shares are respectively derecognised or recognised. Shares issued to employees are recognised on a first-in-first-out basis.

II.2.17. Current and deferred income taxes

Current tax payable on profits, based on the applicable tax law in each jurisdiction, is recognised as an expense in the year in which profits arise.

Deferred income tax is provided in full, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. Deferred income tax is determined using tax rates (and laws) that have been enacted or substantially enacted in each relevant country by the balance sheet date and are expected to apply when the related deferred income tax asset is realised or the deferred income tax liability is settled.

The principal temporary differences arise from:

- depreciation of tangible fixed assets and amortisation of intangible assets;
- revaluation of certain financial assets and liabilities, including derivative contracts;
- provisions for pensions and other post-retirement benefits;
- tax losses carried forward; and
- in relation to acquisitions, the difference between the fair values of the net assets acquired and their tax base.

Temporary differences on the initial recognition of assets and liabilities other than those acquired in a business combination are not recognised unless the transaction affects accounting or taxable profit.

Deferred tax assets, including those related to income tax losses available for carry forward, are recognised when it is probable that future taxable profit will be available against which the temporary differences can be used.

Deferred income tax is provided on temporary differences arising from investments in subsidiaries and associates, except where:

- the timing of the reversal of the temporary difference is controlled by the group; and
- it is probable that the difference will not reverse in the foreseeable future.

Current tax assets and liabilities are offset when they arise in the same entity and where there is both a legal right of offset and the intention to settle on a net basis or to realise the asset and settle the liability simultaneously.

Deferred tax related to a transaction or event which is charged or credited directly to equity (e.g. fair value re-measurement of available-for-sale investments and cash flow hedges) is also credited or charged directly to equity and is subsequently recognised in the income statement together with the deferred gain or loss.

Deferred tax assets and liabilities are not discounted.

II.2.18. Dividends

Dividends on ordinary shares are recognised in equity and as a liability in the year in which they are approved by the Company's shareholders.

Dividends for the year that are declared after the balance sheet date are not recognised as a liability and are instead disclosed as subsequent events.

III. Critical accounting estimates and judgements

The Euroclear group makes estimates and assumptions that affect the reported amounts of assets and liabilities. These estimates are considered to be important to understand the group's financial condition, since they require management to make complex and subjective judgements, some of which may relate to matters that are inherently uncertain. Estimates and judgements are continually evaluated and based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

As a financial market infrastructure, Euroclear is closely monitoring the effects of the Russian sanctions on the estimates it is using and the new sources of uncertainty it creates.

III.1. Impairment of goodwill and contractual customers' relationships with an indefinite useful life

The group tests goodwill and contractual customers' relationships for impairment annually (during the fourth quarter), irrespective of whether there is an indication of impairment. Furthermore, the group remains alert for indicators of impairment throughout the year and conducts a high-level impairment review at each quarter end.

Such impairment reviews are deemed to detect:

- overpayment;
- under-performance compared with expectations; and
- significant changes with an adverse effect on the acquired business. Such changes can stem from, for example, new business parameters (e.g. volatility of stock markets, changes in the volume of securities safekept on behalf of customers, ...) or from changes in market data used to determine the cost of capital of the acquired businesses.

An impairment loss is recognised whenever the recoverable amount of the goodwill is less than its carrying amount (book value). The recoverable amount of an asset is the higher of its net selling price and its value in use, both based on present value calculations.

- Net selling price is the amount obtainable from the sale of an asset in an arm's length transaction between knowledgeable willing parties, less the cost of disposal.
- Value in use is the amount obtainable from the use of an asset until the end of its useful life and from its subsequent disposal. Value in use is calculated as the present value of estimated future cash flows. The value in use calculation may take into account not only the post-acquisition performance of the acquired entity itself, but also the changes in cash flows in other entities in the group that are positively or negatively affected by the acquisition.

An impairment charge of €100,000,000 was recorded at the end of 2023 (2022: €0). See Note XVIII.

Contractual customers' relationships with an indefinite useful life relate to the acquisition of Euroclear Belgium.

III.2. Impairment of other intangible assets

The group tests internally developed software for impairment annually (during the fourth quarter), irrespective of whether there is an indication of impairment. Furthermore, the group remains alert for indicators of impairment throughout the year and conducts a high-level impairment review at mid-year.

In assessing whether there is any indication that an asset is impaired, the group considers significant adverse changes that have taken place or are expected in the near future in the extent to which, or in the way that, an asset is used or expected to be used. This includes the asset becoming idle, plans to discontinue or restructure the operation to which the asset belongs, or the asset's disposal.

Indications of impairment exist if:

- there are plans to discontinue the development;
- inefficiencies are noted (i.e. costs higher than expected);
- there is material delay in the delivery of the project;
- there is an adverse event in the market;
- technology becomes obsolete;
- resources needed are not available anymore;
- under-performance is noted compared with expectations;
- economic performance is lower than expected.

III.3. Russian sanctions

Russia's invasion of Ukraine resulted in market-wide application of international sanctions. A consequence of the sanctions is that assets owned by sanctioned parties are blocked or immobilised in the respective financial market infrastructures, including Euroclear Bank. As the sanctioned assets mature through their lifecycle, cashflows (e.g. coupons and redemptions) that are normally transferred to the underlying parties accumulate on the Euroclear Bank's balance sheet for as long as the sanctions remain in place.

Russian countermeasures were issued, introducing special procedures regarding the repayment of debt by the Russian state and Russian debtors to non-Russian creditors. In application of these measures, National Settlement Depository (NSD), the Russian CSD, opened new types of restricted accounts (C- and I- type of accounts) in 2022 in the name of Euroclear Bank where all amounts received from Russian issuers are blocked. In light of the loss of control of Euroclear Bank on the blocked accounts (C- and I- accounts) and in accordance with the risk transfer measures foreseen in Euroclear Bank's Terms and Conditions governing use of Euroclear, Euroclear Bank does no longer have a debt obligation towards its clients for the amounts that are held in these new types of accounts in case of insolvency of NSD. The client money is no longer under the control of Euroclear Bank and no economic benefits associated with the client money flow to Euroclear Bank. Euroclear Bank does not bear the credit risk associated with these sanctioned accounts according to Euroclear Bank's Terms and Conditions governing use of Euroclear. Furthermore, in case of bankruptcy, the amounts in these accounts represent amounts paid by the issuer for the benefit of the owners of the securities and would not fall within the bankrupt estate of Euroclear Bank. As long as the Russian countermeasures are maintained, the amounts on these accounts do not meet the definition of a financial asset (and an associated liability).

Various Russian clients have challenged the consequences of the application of international sanctions on Russia. Euroclear Bank is now facing litigations in front of the Russian courts. Russian asset holders are litigating against Euroclear Bank for notional blocked amounts, but also lost income and other damages. The potential impact of these claims is currently unknown. A best estimate of the costs claimed that Euroclear Bank may need to support is recorded in Comprehensive Income as soon as a claim is accepted by a Russian court (€38,700,000 as of end of 2023).

III.4. Provisions

A provision is a liability of uncertain timing or amount. At each reporting year, the necessity to record or adjust provisions is considered based on the latest information available.

Onerous lease provisions can result from a decision to vacate premises leased by the group and when the space is expected to remain empty or to be sub-let at terms and/or conditions below those in the Euroclear lease. The provision represents the lower of the cost to breach the contract and the cost of fulfilling it, taking into account the expected benefits that might be received under a sub-lease, providing the entity is actively seeking to sub-let the property.

The onerous contract provision represents the best estimate of the unavoidable costs of the obligations under the contract over the economic benefits expected to be received under it.

Human resources-related provisions are recognised when a decision has been made, a formal plan exists and the main features are known by those affected. The provision represents the best estimate of the full cost of implementing the plan.

Provisions for dilapidation, or end-of-lease obligations, are recorded when the group is contractually bound to incur such costs and a reliable estimate can be made.

Provisions for litigation are recorded if and when there are strong indications that costs will be incurred to settle any possible legal cases concerned and a reliable estimate can be made.

III.5. Defined benefit plans

The present value of the defined benefit plan obligations depends on a number of factors that are determined on an actuarial basis using a number of assumptions. Any changes in these assumptions will impact the carrying amount of the obligations.

The assumptions used in determining the net cost/(income) for the plans include the discount rate at the end of each year. This is the interest rate that should be used to determine the present value of estimated future cash outflows expected to be required to settle the plan obligations. In determining the appropriate discount rate, the group considers the interest rates of high-quality corporate bonds (or mortgage-backed bonds in Sweden) that are denominated in the currency in which the benefits will be paid and that have terms to maturity approximating the terms of the related plan liability.

Other key assumptions for plan obligations are based in part on current market conditions.

The major assumptions used are shown in Note XXII.

III.6. Deferred tax assets

Deferred tax assets are recognised to reflect the future tax benefit from unused tax losses or tax credits and other temporary differences. If there is a concern about the relevant entities' capacity to utilise the tax assets within a reasonable (10-year) period, the assets are impaired, even when there remains a possibility to benefit longer term if sufficient taxable profits arise. The 10-year period is considered reasonable in view of the activities of the Euroclear group entities and the sector in which they operate.

IV. Risk management and the financial risk management environment

IV.1. Main risks affecting the group

As a systemically important FMI Euroclear faces many risks in its day-to-day operations which it considers are the following definitions.

Risk Category	Definition Risk Library
Conduct and Culture risk	The risk arising from corporate and risk culture, governance arrangements, conduct and dealings with stakeholders and shareholders, and corporate responsibility as an international financial market infrastructure. Stakeholders might include clients, participant, suppliers, regulators, competitors and other counterparts (e.g. treasury counterparts, depository, etc.)
Operational risk	The risk of loss arising from inadequate or failed internal processes, people and systems, or from external events. This definition excludes legal and compliance risk.
Legal Risk	The risk arising from: a) the inadequate identification, applicability assessment and interpretation of relevant new or amended legal and regulatory requirements, including the identification of conflict of laws; b) unenforceable, non-compliant, inadequate legal documentation; c) failure to protect the group's rights or prevent the breach of third party's rights, including intellectual property rights; d) failure to act in accordance with competition law requirements; and e) adverse litigation environment or failure to adequately manage actual or threatened litigation, regulatory and enforcement actions.
Compliance Risk	The risk of failure to comply with laws, regulations and regulatory standards falling within the scope of: a) Euroclear companies' Competent Authorities; and b) other foreign authorities where relevant.
Credit Risk	The risk to Euroclear's earnings or capital arising from Euroclear's obligor's failure to perform due to inability or unwillingness on its financial obligations to Euroclear on time and in full. In the scope of its activities Euroclear's obligors are defined as borrowing clients, cash correspondents and settlement banks, treasury counterparts and issuers of securities in the investment and treasury securities portfolio.
Liquidity Risk	The risks arising from being unable to settle a cash or securities obligation when due resulting from inappropriate and/or insufficient liquidity sources.
Market Risk	The risk of uncertainty on the value of assets and liabilities (on- or off-balance sheet) and on the future earnings (linked to foreign exchange or interest rate movements).
Strategic & Business Risk	Strategic Risk: The risk that Euroclear's strategy and supporting business model are not fit for purpose, including poor decision making and ineffective strategy implementation. Business Risk: The risk that the company is not achieving its aimed predicted financial results or risk to its solvency or ability to meet capital requirements- Pension Risk: the risk that Euroclear has an underfunded defined benefits pension scheme exposure.
Change and Project Risk	Change Risk: The risk of failure with respect to the change management process including the tools and techniques to manage the people side of change to achieve the required business outcome. Project Risk is defined as an uncertain event or condition that, if it occurs, has a negative effect on a project's objectives (including scope (value to stakeholders), budget and time to market).
Systemic Risk	The risk of disruption to financial services organisations that has the potential to have serious consequences for the financial system and/or the real economy. Systemic risk events can originate in, propagate through, or remain outside of Euroclear.

In line with best practices shared by regulators, and in the direction the market is heading, Euroclear does not treat ESG risk as a new standalone risk category but rather as a driver of existing risk types. As a result, ESG risk is handled as a transversal risk which drives existing risk types (i.e. operational risks, financial risks, business risks) and ESG considerations were added to existing risk type definitions over the course of 2023. As well as that, group ESG Risk Appetite Statements and Key Risk Indicators (KRIs) were approved by the Board during 2023 and are now included in the Corporate Risk Report. For more details on all these topics, please refer to the group's 2023 sustainability report 'Our Responsibility', set out in accordance with the Global Reporting Initiative Standards, which will be published in May 2024.

To manage and mitigate the above-mentioned risks in the most efficient way the Euroclear group employs a comprehensive Enterprise Risk Management (ERM) Framework.

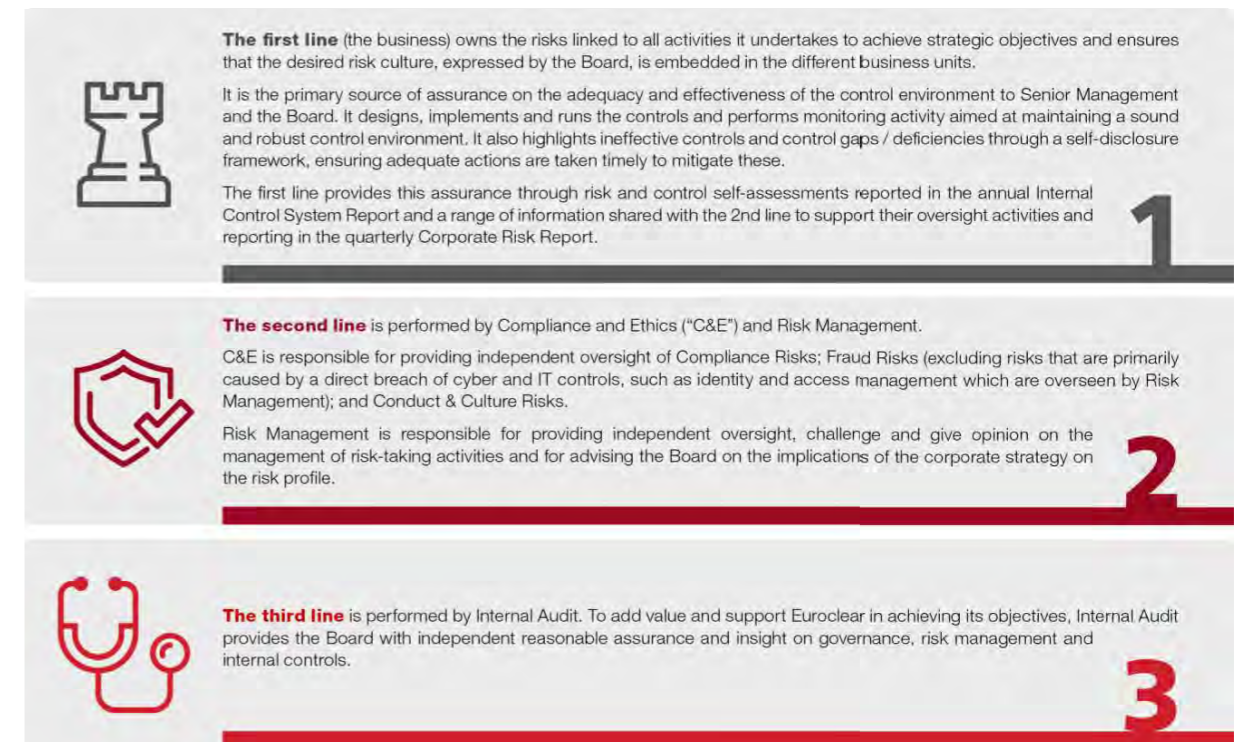
IV.2. Enterprise Risk management framework and governance

Governance

Full details on Euroclear Governance can be found in the Directors Report.

Three lines model

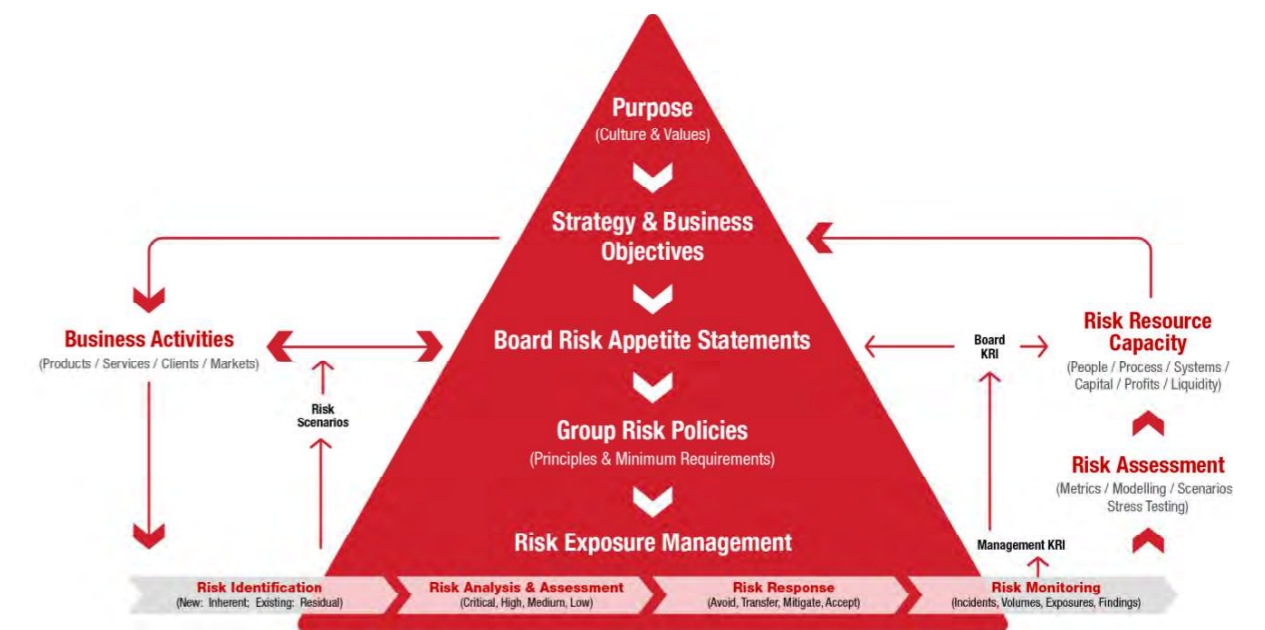
Euroclear operates a three lines model that facilitates the effective functioning of our Enterprise Risk Management Framework (ERM Framework). Each line plays a distinct role providing Senior Management and the Board with confidence that the group is likely to achieve its key goals through the effective management of risks.



The Group Control Functions (2nd and 3rd Lines) have direct reporting lines to the Chairs of their respective Board Committees (e.g. Group Chief Risk Officer (CRO) has a direct reporting line to the Chair of the Risk Committee), in addition to direct reporting lines to the Group Chief Executive Officer (CEO). Where required, they have unmediated access to the Board Chair, the Board itself, and its members. They may also contact the statutory auditor or the supervisory authority directly where deemed necessary.

Framework

The ERM Framework defines the overall approach on how risks are managed at Euroclear. They detail the roles and responsibilities of the Board, Management and the Three Lines (Governance). They also define the minimum requirements for Culture; Risk Capacity; Strategy and Business Objective Setting; Risk Appetite Framework; Risk Policies; Risk Exposure Management; Information, Communication and Reporting and Review and Revision. The framework is supported by a number of supplementary policies, policy handbooks, guidelines and internal control systems, all of which are regularly reviewed and updated to maintain their relevance.



The group's Purpose, Culture and Values, provide the perimeter for its Strategy and Business Objectives and these in turn shape its risk appetite, which is expressed through Risk Appetite Statements and Group Policies that contain guiding risk management principles and minimum requirements.

1st Line management is expected to establish and maintain controls and business processes that ensure that risks taken through business activities in pursuit of business objectives are compliant with the Group's Risk Policies and Risk Appetite Statements. They do this by:

- identifying inherent risks in new activities and managing residual risks in existing activities;
- assessing whether these risks pose a threat to the group and classifying that threat according to the impact and likelihood of the risks;
- responding to the threat the risks pose by either avoiding, transferring, mitigating or accepting the risks to ensure the group's risk profile remains consistent with its risk appetite; and then
- monitoring the risks to ensure the risk response remains effective.

2nd Line management, as well as establishing and proposing Risk Appetite Statements and Risk Policies for Board approval, perform risk monitoring and risk assessments processes typically on a quarterly and/or annual cycle. These consist of (but are not limited to):

- identification of new threats that external (e.g. macro-economic or geo-political) or internal developments might pose to the group through a quarterly assessment of threat scenarios, ranking them in terms of impact and certainty of occurrence in order to facilitate preparedness assessments and planning as appropriate;
- reporting quarterly against risk appetite expectations, facilitated by reporting on Key Risk Indicators that are representative (non-exhaustive) indicators of the group's risk profile designed to provide an objective view of the effectiveness of the ERM framework; and
- capacity assessments on an annual basis to analyse (consistent with regulatory expectations) whether the current resources (capital, profits, liquidity, people, processes and systems) are sufficient to support the risk taking activities of the group in pursuit of its Strategy and Business Objectives, these assessments include the Internal Capital and Liquidity Adequacy Assessment Process (ICLAAP) and Recovery and Resolution Plans (RRP), as well as the Internal Control System Report (ICS).

Framework Components

Risk Culture enables all individuals at Euroclear to make sound and informed decisions consistent with risk appetite, strategy and business objectives. It forms an integral part of the overall corporate culture that the Board and Senior Management seek to promote and embed in Euroclear.

The Euroclear Conduct & Culture Risk Group Policy provides the primary means by which the Board sets out the minimum requirements for the effective management and independent oversight of Conduct & Culture risk.

Risk Capacity is the maximum level of risk Euroclear is able to assume given its capital base, its risk management and control capabilities, and its regulatory constraints. To be a resilient business, able to weather storms from both internal and external factors, it is important to have sufficient risk capacity in financial (capital, profits and liquidity) and operational (people, processes and systems) areas. Risk capacity is also considered on a qualitative basis; events that would lead Euroclear to reconsider its capacity include a significant credit agency downgrade (for Euroclear Bank only), a material regulatory incident or a qualified audit opinion from its external auditor.

Risk Appetite represents the maximum amount of risk the Board is willing to take and the latitude and independence it gives to management to pursue the company's Corporate and business strategy and objectives, including preservation of the long-term strength of the company and the trust of all key stakeholders. It is set below capacity. Group's risk appetite is designed to ensure there are appropriate and effective representative early warning indicators to avoid Euroclear going beyond risk appetite, into its capacity and resulting in the activation of its recovery plans.

Risk Policies: Euroclear's Risk Appetite is articulated in a suite of policies and guidelines. The Euroclear Corporate Risk Management Group Policy provides the primary means by which the Board sets its expectations and requirements of Euroclear's risk management arrangements, including risk appetite. This Group Policy is complemented by a number of other Risk Management Group Policies that equally express the Board's risk appetite and expectations in their respective areas. These policies are specifically: Financial Risk Group Policy; Operational Risk Group Policy; IT Risk Group Policy; and Systemic Risk Group Policy.

Each CSD has similar policy documents tailored to the local requirements and proportionate to the complexity of their activities.

Risk Exposure Management: The four key stages of the Risk Assessment Process is detailed below.

- **Identification:** Proper and timely identification of risks ensures effectiveness of management's decision-making to achieve business objectives. Euroclear does not see risk identification as a separate process detached from day-to-day management of activities. Ongoing risk identification combined with more structured processes such as new product & services risk assessments, project risk assessments and the risk and control self-assessment process ensures the group maintains a comprehensive understanding of the risks it faces.
- **Analysis and Assessment:** Once identified, each risk is analysed, assessed and documented considering its key elements, including main root causes, potential impacts and the controls in place to mitigate, prevent or detect the risk. The assessment of the risk includes

both the inherent risk level and the residual risk exposure after taking into consideration the performance of the overall control environment. Each mitigating control is assessed from a design and operating effectiveness perspective. Inherent Risk is assessed using two parameters: risk likelihood and risk impact on Euroclear and / or the wider ecosystem. Both financial and non-financial impacts are considered. Residual Risk is assessed taking into consideration the control attestations.

- **Response:** Once a risk is assessed, Euroclear defines how to best respond to it. The four main risk response strategies are:
 - Mitigate the risk by introducing controls that reduce risk likelihood, impact or both;
 - Accept the risk is tolerable (temporarily or longer);
 - Transfer the risk to a third party, for example through insurance;
 - Avoid the risk (e.g. by stopping an activity that leads to the risk).

Based on the chosen response strategies and prioritisation, management prepares action plans for the design and implementation of appropriate controls to bring the risk to the target level over a defined period.

- **Monitoring:** Euroclear has implemented a risk monitoring and reporting process to ensure that the right level of risk information is shared with the relevant management or governance body at the right time. This includes measuring adherence to risk appetite statements, the effectiveness of the control environment, reviewing progress on risk mitigating actions and review of material incidents. Risk indicators are available to provide a view on how the risk exposure is evolving.

Risk Reporting: serving different purposes:

- First line assurance to management and the Board is provided by operational and financial risk dashboards that report on key risk indicators linked to the risk appetite;
- First line reports the outcome of its risk and control self-assessment via Positive Assurance Reports (PAR)/Risk and Control Self-Assessment (RCSA) maintained at the level of group Entities and Divisions. This process supports a yearly review of the inherent and residual risk level, based on the assessment of the controls' design and operational effectiveness;
- The conclusions from the PAR/RCSA process are used to feed the Internal Control System (ICS) report with a link to the risk appetite, reflecting material risks and control issues along with remedial actions for the Management and the Board. The Internal Control System reports includes independent Compliance and Ethics, Risk Management and Internal Audit opinions. This reporting by the three lines provides effective and comprehensive monitoring of the risk and control environment and is submitted to the Euroclear SA/NV Board;
- Risk Management reports the conclusions of its continuous risk monitoring activities via a quarterly Corporate Risk Report (CRR) submitted to the Euroclear SA/NV Board with entity specific reports submitted to the Boards of each CSD respectively. The CRR reports outline the group and the entities' key risks and their current risk profiles versus the risk appetite;
- Risk Scenarios are used to assess and understand the risk the group faces as its business and the external context evolve to take a forward-looking view;
- Risk Management maintains the Internal Capital and Liquidity Adequacy Assessment Process (ICLAAP) and Recovery and Resolution Plans (RRP). The ICLAAP assessment draws on the ICS and other risk monitoring processes, as well as scenario and stress testing to assess the adequacy of the group's financial resources (capital and liquidity) and provide feedback on whether the risk appetite can be maintained or needs to be adjusted given the level of financial resources available. The ICLAAP and RRP are designed to ensure that Euroclear maintains the financial resources necessary to carry out its business strategy and fulfil its role as an FMI even under severe periods of stress. The ICLAAP and RRP are ongoing processes supported by a series of monitoring metrics and limits which are periodically reported to management and the Board and are subject to a thorough review and validation on a yearly basis. The outcome of the yearly ICLAAP exercise, along the updated recovery plans, are submitted to the relevant authorities as part of the Supervisory Review and Evaluation Process (SREP);
- Risk Management reports annually on the overall effectiveness assessment of the ERM framework to the ESA Risk Committee.

IV.3. Operational risk management

All Euroclear entities are inherently exposed to operational risk in their daily activities. Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, due to failings of people and systems, or stemming from external events, leading to the actual outcome of a process to differ from the intended outcome. Moreover, it can affect the smooth provisioning of services.

Euroclear has identified the following operational risk categories:

- Execution, delivery and process management
- Fraud Risk
- Information and Communications Technology (ICT) & Data Risks
- ICT Security Risks
- Business disruption
- Custody risk
- Clients, products and business practices
- Supplier and outsourcing risk

- Employment practices and workplace safety
- Damage to or loss of physical assets
- Model risk

Euroclear uses key risk indicators, key performance indicators and regular risk and control (self)-assessments to identify and monitor operational risk effectively. Risk Management has also established an incident management framework to ensure that all incidents are consistently and timely identified, documented, analysed, escalated and followed up, regardless of their type (e.g. operational, compliance, IT).

Euroclear (anonymously) shares its internal loss data with the Operational Risk data Exchange Association (ORX) in order to access their database of high-quality operational risk loss data. Euroclear uses such data for its capital modelling, and to understand and manage operational risk appropriately.

IV.3.1. Information Security and Business Resilience

The CSDs of the Euroclear group are designated as critical national infrastructure in seven countries. Therefore, security and resilience are key components of the group approach to operational risk and are fully integrated in the group's ERM framework and aligned with recognised international standards.

Euroclear maintains and tests comprehensively processes in all entities to ensure the security and continuous availability of business-critical services, including effective management response to incidents and crises. All locations have appropriate security and contingency arrangements for recovery from workplace disruptions; supplemented by three geographically separate data centres to sustain operations in the event of a local and regional-scale disaster. Euroclear also regularly runs exercises and tests of its operational and management response and provides adequate training at all levels of the organisation.

Euroclear continues to invest significantly in its resilience and cyber security capabilities including improvements to the cyber security risk culture. This investment in the IT risk and control environment resulted in improved security arrangements in a constantly evolving cyber threat landscape. Further investment will continue in 2024 and beyond to further reduce the residual risks and ensure sustainability and resilience.

IV.3.2. Russian sanctions impact

The number of sanctions and countersanctions that have been introduced since February 2022 are unprecedented. Their speed of issuance and level of complexity have a significant impact on the daily operations of Euroclear Bank. This complexity is compounded by international financial institutions stepping out of their capital market roles, and the changing requirements of the Russian CSD resulting in changing counterparties and the appearance of new process flows. These events have led to:

- An increased 'Execution, Delivery and Process Management (EDPM) Risk due to (I) the breaking of some internal automated processes linked to the Russian Market such as payment processes or reconciliation, (II) ad-hoc design of new manual operational flows, (III) increased volumes that manually need to be processed,
- Increased Client, product and Business practices risk arising from (I) litigations against Euroclear Bank in Russia by underlying Russian clients attempting to retrieve back or being compensated for the blocked assets in Euroclear due to international sanctions (II), conflicts between Russian countersanctions or new Russian regulations trying to mitigate the effects of international sanctions issued by European and International bodies.

The existing operational control framework has been and continues to be adapted. Efforts are made to restore as much as possible Straight-Through Processing (STP), there is increased hiring staff to handle the increased manual volumes and a dedicated transversal team of experts are monitoring and managing cases and processes related to Russia. These actions are mitigating significantly the operational risk caused by the Russian sanctions, demonstrated by the low number of operational incidents and minor financial impact.

IV.4. Financial risk management

IV.4.1. Credit risk

Euroclear defines credit risk as the risk to earnings or capital arising from the obligors' failure to perform, due to inability or unwillingness, on its financial obligations to Euroclear on time and in full. Given the scope of its activities, Euroclear takes credit risk primarily on its (borrowing) participants, cash correspondents, settlement banks, treasury counterparties and in some cases issuers of securities¹.

To manage the credit risk efficiently and in line with the risk appetite, Euroclear Bank has a robust and comprehensive Credit Risk Framework in place. This framework sets credit risk limits addressing among others the size and conditions of credit facilities for borrowing participants and market facilities to support treasury activity, including concentrations and collateral quality. Furthermore, operational processes are designed and reassessed on a regular basis to actively monitor and minimise credit risks.

Euroclear Bank business as usual credit risks (excluding Russian impacts)

The ongoing war in Ukraine and the associated sanctions on Russia and Russian countermeasures have fundamentally affected the Balance Sheet of Euroclear Bank with the accumulation of massive long sanctioned cash balances that need to be reinvested. Putting aside the recent developments resulting from the implementation of international sanctions on Russia, Euroclear Bank's credit exposures are

¹ Issuers of securities in the investment, treasury and liquidity book portfolios.

predominantly towards its borrowing participants from the extension of intraday credit to support their settlement activity. Most of these exposures have very short (intra-day) duration, as clients may only need credit for a few milliseconds, to allow the transactions to settle. Only in unforeseen circumstances (primarily as the result of settlement failures or delayed credits) part of the exposure can become an end-of-day overdraft retained in the books of Euroclear Bank until the next day. To prevent participant' intra-day credit exposures turning into an overnight exposure, Euroclear Bank uses penalising rates as a deterrent.

All credit granted to borrowing participants is uncommitted and must be secured by proprietary collateral, for which strict collateralisation rules apply. Unsecured exposure on borrowing participants is only permitted when allowed under CSDR² (e.g. exempted entities as per Article 23(2) of Regulation (EU) 390/2017). In the event of default of a borrowing participant, Euroclear Bank can contractually and operationally appropriate and monetise the collateral pledged. To date Euroclear Bank has not experienced any credit losses, not even during periods of market turmoil. This is largely due to the controls in place ensuring compliance with low credit risk appetite.

Additionally, Euroclear Bank has credit exposures to other counterparties. These are treasury exposures arising from performing day-to-day balance sheet management, in particular re-depositing or investing participant's end-of-day long cash balances and the proceeds of own debt issuances and capital. Treasury credit exposures are either with central banks, or with high-quality market counterparties for a short duration. For the latter, preference is given to reverse repurchase agreements (reverse repos) or to very high-quality securities with relatively short-term maturities. Unsecured treasury credit exposure is allowed but kept limited.

While there is some credit risk linked to reverse repos, it is rather limited given the short-term and fully collateralised nature of these instruments. This is because in the event of default of the counterparty, Euroclear Bank can appropriate and monetise the collateral pledged to cover the losses from the default. Furthermore, Euroclear has a strict framework in place in order to eliminate or drastically reduce the (counterparty) credit risk linked to reverse repos:

- Counterparties must have high internal credit rating (i.e. BBB+ or more), and all collateral posted must be of high quality (i.e. investment grade).
- Collateral acceptance criteria and collateral haircuts are defined internally by Euroclear Bank's Credit department.
- Repos are subject to daily margining requirements to mitigate the potential exposure should the value of the collateral fall during the life of the deal.

In 2023, Euroclear Bank's reverse repos capacity has further increased in USD as Euroclear Bank has established access to DTCC's Fixed Income Clearing Corporation (FICC).

Other credit exposures that can go beyond the short-term (intra-day and overnight) are related to Euroclear Bank's client Securities Lending and Borrowing (SLB) and General Collateral Access (GCA) activity. These exposures arise from securities lending between different participants for which Euroclear Bank guarantees the return of the original securities back to the lender (or alternative equivalent securities) or to compensate the equivalent in cash. Like the majority of other credit risk at Euroclear, these exposures are highly-collateralised.

Russian sanctions and countermeasures credit risk impacts

The war in Ukraine, the associated sanctions on Russia and Russian countermeasures continue driving Euroclear Bank's (treasury) credit risk exposure in 2023. Currently, the large majority of Euroclear Bank's overnight credit risk exposure arises from the reinvestment of the Russian frozen balances, as Euroclear Bank's balance sheet has grown more than six-fold in a span of two years.

The international sanctions applicable to Russian entities and individuals mandate financial institutions and market infrastructures (incl. Euroclear) to block or immobilise any assets owned by the sanctioned parties. As the assets mature through their lifecycle, cashflows (i.e. income payments and redemptions) that are normally transferred to the underlying parties remain blocked on the accounts. While restricting the access to blocked or immobilised assets, financial institutions and market infrastructures also have an obligation to maintain and service the said assets. This essentially means that as long as the sanctions remain in place cash balances accumulate on Euroclear Bank's balance sheet and should be reinvested. The reinvestment of sanctioned balances carries a risk that Euroclear Bank's treasury counterparties could default during the term of the deal, potentially leading to a credit loss.

Despite the significant increase in assets, it does not result in material change in credit risk profile, as the frozen or immobilised balances are reinvested in line with a strict investment policy designed to maintain a low risk profile. Where possible, cash is principally redeposited with Central Banks in its own currency, reinvested in short-term reverse repos with highly rated counterparties or in government bonds through outright purchase. As these exposures are predominantly secured or against highly rated central banks or governments in their currency of issuance, the risk of default is marginal and credit risk is considered immaterial or risk-free in practice. Currently, Euroclear Bank relies on Belgian National Bank and Bank of England for redeposits and US government for Treasuries. Work is ongoing to put in place additional access to other central banks.

For frozen or immobilised balances denominated in foreign currencies it may be difficult to find a suitable reinvestment option. In these cases, Euroclear Bank typically uses foreign exchange (FX) swaps to convert these balances mainly into EUR. As these swaps are currently done on a bilateral basis (i.e., they are not centrally cleared) they give rise to counterparty credit risk. Similarly to reverse repo strategy, Euroclear Bank engages in FX swaps only with highly rated counterparties:

- Euroclear Bank manages counterparty credit risk via global and counterparty family limits (applicable for all types of exposures). These limits depend on both the counterparty credit rating and the maturity of the deal.

² Regulation EU 909/2014 on settlement and central securities depositories

- During the life of the deal, the credit exposure linked to the FX swap portfolio is minimal as the exposure at default is only equivalent to the positive market value of the swap (instead of the full notional amount). Furthermore, there are strict margin requirements that limit the exposure to the size of the margin call.
- On the settlement date of the transaction, Euroclear Bank may be exposed for a limited time to intraday settlement risk - risk of not receiving the currency bought from the counterparty despite delivering the currency sold - for the full notional amount. This risk was mitigated in late 2023 as Euroclear Bank gained indirect access to CLS - a specialist US financial institution that provides payment-vs-payment settlement services (via the Continuous Linked Settlement (CLS) platform) to its members in the foreign exchange market. CLS mitigates settlement risk by netting the cash in- and outflows in a currency.

Other Entities credit risks

Euroclear CSDs settle in central bank money and cannot extend loans or credit facilities to their clients. Euroclear CSDs can potentially face a certain level of credit risk arising from unpaid fees by their clients. The impact of these is rather limited given the high frequency of the billing and their relatively broad customer base.

Euroclear CSDs, Euroclear SA/NV and Euroclear Investments SA/NV are also exposed to credit risk related to the reinvestment of their cash surplus with their bank counterparties. Since 2018, some Euroclear CSDs, as well as Euroclear SA/NV and Euroclear Investments SA/NV, reinvest in a dedicated common investment fund and a longer term investment portfolio. Credit risk is, however, mitigated through a strict investment policy limiting, among others, the allowed counterparties, issuers, type of instruments, currencies and maturity.

In addition to credit risk related to its reinvestments, Euroclear Investments SA/NV faces very limited credit risk. As an intermediary group holding entity it mainly provides financial assistance to Euroclear group entities. The company has no direct business relationships with third party clients, and very limited funding relationships with third parties. In this context, Euroclear Investments SA/NV faces credit risk mainly from the non-payment of interests and principal on the various funding arrangements with its subsidiaries.

IV.4.1.a. Credit exposure

The table below represents the maximum exposure to credit risk (i.e. end-of-day carrying amount as reported in the financial statements), without taking into account any collateral held or other credit enhancement attached.

Large majority of Euroclear Bank's credit risk stems from cash and balances with central banks, driven by the redepositing of the frozen balances. This exposure is largely unsecured given the nature of the instrument. The second largest credit exposure stems from loans and advances, driven by the reinvestment of long (incl. frozen) clients balances, cash on current accounts and clients that remain unexpectedly in overdraft at the end of the day. Nearly all of this exposure is collateralised in line with the extensive use of reverse repo for the reinvestments and the Euroclear Credit Risk Framework and applicable legislation (see IV.4.1.b Credit risk mitigation). As well as that some credit exposure stems from financial assets at FVOCI – predominately listed debt securities – which are also driven by the reinvestment of long clients balances. Remaining items make up a minority of total financial assets of Euroclear Bank.

Euroclear Bank also has off-balance sheet credit exposure – contingent exposure that may materialise in the future under certain conditions. Euroclear Bank's off-balance sheet credit exposure consists of loan commitments and financial guarantees. The latter makes up the large majority of total off-balance sheet credit exposure as it relates to guarantees issued in favour to securities lenders in the context of the SLB and GCA programs (see note XXVIII).

(€'000)	Notes	2023		2022	
		Total exposure	Of which secured:	Total exposure	Of which secured:
At 31 December					
Financial assets					
- Cash and balances with central banks		108,683,767	2,878,044	83,543,419	2,389,995
- Loans and advances at amortised cost		39,379,452	35,148,409	23,834,459	21,350,464
- Financial assets at FVOCI	XIII	14,822,118	-	17,104,911	-
- Non-trading financial assets mandatorily at FVPL		33,329	-	33,301	-
- Financial assets held for trading	XIV	85,161	-	61,088	-
- Derivatives used for hedging	XV	93,648	-	46,243	-
Total financial assets		163,097,475	38,026,453	124,623,421	23,740,459
Loan commitments	XXVIII	7,864	-	2,088	-
Financial guarantees	XXVIII	6,137,715	4,339,976	11,507,515	9,378,199
Total		169,243,054	42,366,429	136,133,024	33,116,658

The table below presents an analysis of the loans and advances at amortised cost (incl. cash and balances with central banks) using the group's internal ratings. The internal ratings are those of Euroclear's borrowers at legal entity level. In line with the Euroclear's low credit risk appetite nearly all of the Euroclear's borrowing participants and other counterparties are of high credit quality (internal rating Ea and above)

for which limited credit loss allowances are recorded under IFRS9. Credit exposure on lower credit quality entities is essentially due to cash balances left with network of cash correspondents established in low rated countries.

Since the closing of the Euroclear's cash correspondent bank account with ING Moscow and withdrawal of RUB as settlement currency in February 2023, the only IFRS9 stage 2 exposure (i.e. exposure for which the credit risk has increased significantly since initial recognition) Euroclear had was cash in RUB deposited with Russian National Settlement Depository (NSD) prior to the sanctions (27 million €-equivalent as of end-May 2023). Following the NSD's unilateral conversion of Euroclear Bank's RUB cash (B/S account) into EUR in June 2023, Euroclear Bank has converted the corresponding liabilities from RUB to EUR based on its Terms and Conditions, which mitigated the on-balance sheet exposure to NSD. As of year-end 2023, Euroclear Bank only has off-balance sheet (see Notes II and III) exposure in RUB - restricted accounts (C- and I-accounts) that were opened unilaterally by NSD in the name of Euroclear Bank as countermeasure to the international financial sanctions imposed. The amounts held on the restricted C- and I-accounts amount to respectively RUB 262 billion (2.6 billion €-equivalent) and RUB 19 billion (0.2 billion €-equivalent) at year end.

Management remains comfortable with the creditworthiness of the other group's exposures (i.e. all exposures remain in stage 1).

(€'000)	2023	2022
At 31 December		
Loans and advances at amortised cost (incl. cash and balances with central banks)		
Eaaa	95,379,127	70,964,536
Eaa	28,635,027	22,634,036
Ea	24,586,047	12,578,412
Ebbb+ and Ebbb	1,257,718	946,329
Ebbb- and below	206,310	256,110
Total gross carrying amount	148,064,229	107,379,423
Expected credit loss allowance	(1,010)	(1,545)
Carrying amount	148,063,219	107,377,878

The table below presents an analysis of Euroclear's financial assets at FVOCI using the second-best approach on Long-term Issuer Default Rating (LT IDR) assigned by the three major rating agencies. Euroclear Bank's FVOCI financial assets are short-term debt instruments of high credit quality. The Euroclear CSD's FVOCI financial assets are longer term above investment grade debt instruments. All Euroclear's FVOCI financial assets are considered as Stage 1 (i.e. low credit risk) assets under IFRS9. Compared to 2022, the composition of Euroclear's FVOCI portfolio has shifted toward better-rated instruments as frozen or immobilised assets held in Euroclear need to be reinvested. In 2023 more than half of Euroclear's FVOCI financial assets were AAA rated, the highest possible rating.

(€'000)	Notes	2023	2022
At 31 December			
Debt instruments at FVOCI			
AAA		8,536,182	4,242,056
AA+		2,049,902	922,594
AA		309,566	826,725
AA-		1,097,907	384,887
A+ to A-		1,659,433	9,525,084
BBB+		-	18,267
BBB		22,836	-
Carrying amount	XIII	13,675,826	15,919,613
Including expected credit loss allowance		(664)	(877)

The table below presents an analysis of the loan commitments and financial guarantees, using the group's internal ratings. The internal ratings are those of the Euroclear's clients or counterparties for which loan commitments and financial guarantees are given. Credit exposure arising from loan commitment and financial guarantees has decreased in 2023 compared to the previous year. Moreover, as large majority of these exposures are towards highly rated clients and counterparties (internal rating of Ea and above) this further limits the credit risk. Small minority of these credit exposures are towards clients and counterparties with acceptable low investment grade rating (Between Ebbb+ and Ebbb). The share of loan commitments and financial guarantees provided to entities with low internal credit rating (Ebbb- and below) is immaterial. Additionally, these exposures are off-balance sheet meaning they are likely to be incurred only under certain circumstances.

(€'000)	Notes	2023	2022
At 31 December			
Loan commitments and financial guarantees			
Eaaa		308,908	308,344
Eaa		796,486	3,375,995
Ea		-4,697,713	5,687,995
Ebbb+ and Ebbb		333,416	2,131,915
Ebbb- and below		9,056	5,354
Carrying amount	XXVIII	6,145,579	11,509,603
Including expected credit loss allowance		(19)	(55)

IV.4.1.b. Credit risk mitigation

Euroclear Bank uses different recourses (e.g. collateral, guarantees or letter of credit) to mitigate potential losses it may incur due to a credit event (i.e. default) of participants, treasury counterparties or Clearstream Banking Luxembourg (CBL). The most frequent recourse to secure the credit exposure is a pledge of proprietary collateral (cash and/or securities), supported by standard credit documentation (Collateral Agreement).

All credit granted to borrowing participants must be secured with collateral held and pledged in Euroclear Bank, regardless of the nature of the exposure and the original currency. In line with the applicable regulation³, strict collateralisation rules apply concerning the quality and quantity of securities used as collateral. Euroclear Bank uses a four-category collateral classification system which relies on a number of credit, market and liquidity indicators to allocate collateral in the different categories. Any collateral that cannot be categorised in one of the four categories is not accepted to secure credit exposures. Frequent monitoring shows that more than 99% of the collateral securing the exposures of Euroclear Bank has investment grade quality.

In order to accurately determine the value of the collateral it takes, Euroclear Bank has developed a dynamic internal collateral valuation model taking into account market, credit, country, foreign exchange and liquidity risks. Haircuts are computed at least once a day for each security, reflecting the latest risk factors and conditions. The collateral valuation model is back-tested (daily) and stress tested (yearly). The results show that the collateral valuation model has provided continually adequate valuations for securities securing the credit exposure, even during periods of high volatility in the markets.

In case of a participant default, if the post-liquidation value of collateral does not cover the defaulted credit exposure, Euroclear Bank may end up with a residual credit exposure. Euroclear Bank monitors the potential residual credit exposure after considering all credit mitigations and protective measures in place on a daily basis.

In specific cases Euroclear Bank can also use other mechanisms to mitigate credit risk. For instance, for (reverse) repo activity with treasury counterparties, Euroclear Bank signs Global Master Repurchase Agreements (GMRA), which allow for close-out netting of positions in case of a counterparty default. The GMRA defines the conditions and the rules for the enforceability of the collateral in case of default of the borrowing party but also what happens if the lender is in default. The GMRA also defines the margining process (frequency, Minimum Transferable Amount, nature and currency of collateral). Where Euroclear Bank engages in over-the-counter (OTC) derivatives (FX and Interest Rate Swaps), daily variation margin is used as collateral. Variation margin is cash collateral exchanged on a regular basis to reflect changes to the market value of relevant outstanding contracts.

Euroclear Bank can also resort to other equivalent financial resources such as capital, after deducting CSDR capital requirements. However, this capital can only be used to cover unsecured exposure to central banks, Multilateral Development Banks (MDBs) and international organisations.

Finally, Euroclear Bank also faces credit exposure through its interoperable link (i.e. the Bridge) with CBL. This exposure is secured⁴ by means of a letter of credit issued by a consortium of credit worthy financial institutions in Euroclear Bank's favour. In accordance with Article 16(k) of Regulation (EU) 390/2017, no credit institution at group level has committed to a share of the total outstanding letter of credit above 10%. The guarantee amounted to USD 3 billion at the end of 2023 (2022: USD 3 billion) and is reviewed on a regular basis. Credit exposure to CBL is monitored regularly to ensure it does not surpass the amount of the guarantee. Additionally, Euroclear Bank has a right to set-off which extinguishes the mutual debts owed between the parties in exchange for a new net amount.

IV.4.1.c. Concentration risk

As a provider of post-trade services to global capital markets Euroclear is almost exclusively exposed to the financial sector. To ensure that the group does not take excessive exposures on a limited number of clients or counterparties there are regulatory and internal concentration limits in place. These concentration limits are set per collateral asset type, individual issuers, country (including geographic region), economic sector, type/activity of the issuer, rating, settlement currency, etc.

The origin of the Euroclear's concentration risk is two-fold: firstly, it stems from the credit exposure itself, where excessive exposure to a certain institution may result in large losses should the latter default; secondly, the concentration risk also stems from collateral Euroclear

³ Articles 9-10-11 of Regulation (EU) 390/2017.

⁴ In line with CSDR requirements, the CBL Bridge risk management principles and processes do not allow for unsecured credit exposure over the Bridge.

receives, where excessive exposure secured by the same collateral may result in large losses in case both collateral provider and issuer are unable to meet their obligations.

With regards to the exposure concentration, Euroclear Bank applies the Large Exposure limits, as defined by the European regulation⁵. This limit defines the maximum exposure that Euroclear Bank can have to a single participant's family or group of connected entities after taking into account the effect of the credit risk mitigation⁶ at the end of day as 25% of its Tier 1 capital. Additionally, Euroclear Bank also applies the limits on concentration risk arising from exposures to shadow banking entities⁷ at an aggregated level. The exposure concentration risk is monitored against the above-mentioned limits on a daily basis to anticipate the exposure concentration and take actions on time should the need arise. Depending on the exposure the monitoring is performed at legal entity, family and/or individual currency level.

With regards to the collateral concentration, Euroclear Bank relies on collateral concentration limits to ensure that collateral received to secure its credit exposures is sufficiently diversified to allow its monetisation and liquidation within a specific timeframe. The limits apply to the aggregate exposure on an entity and/or family level and are set in line with Euroclear Bank's risk appetite. Euroclear Bank ensures to have a minimum amount of collateral that can be monetised same day in case of default in line with the Article 10 of Regulation (EU) 390/2017. The collateral concentration risk is monitored against the above-mentioned limits ex-ante, intra-day and post-fact to anticipate the collateral concentration and take actions on time should the need arise.

The table below shows the geographical concentration of financial assets and liabilities and are those in which Euroclear's clients or counterparties are located. Cash is classified under the country of the issuing central bank.

Most of the Euroclear Banks' financial assets are concentrated in countries of the European Union and to a lesser extent in other European countries. This is largely explained by the reinvestment strategy of the long balances, where redeposits in central banks are a preferred reinvestment instrument. Large majority of Euroclear Banks' financial liabilities is concentrated in other European countries, notably Russia. These have further increased compared to the previous year as credited income (coupons, redemptions, dividends, etc.) accumulate on accounts belonging to Russian sanctioned clients.

(€'000)	Notes	European Union	Europe - Other	Americas	Asia	Rest of the world	Total
At 31 December 2023							
Total financial assets		121,338,142	30,177,790	7,357,545	3,870,048	353,950	163,097,475
Total financial liabilities		9,441,691	134,007,746	2,706,255	8,603,920	371,462	155,131,074
At 31 December 2022							
Total financial assets		95,735,161	23,047,490	4,839,784	983,104	17,882	124,623,421
Total financial liabilities		11,909,922	98,201,433	2,503,126	8,197,086	463,146	121,274,713

IV.4.2. Liquidity risk

Euroclear defines liquidity risk as the risk of failure to settle a cash or security obligation on time due to inappropriate and/or insufficient liquidity sources. In addition to liquidity risk, Euroclear also faces funding liquidity risk - risk that over a specific horizon, Euroclear will be unable to repay, refinance or refinance at an economic price its debts when they fall due.

Effective management of liquidity risks is an important component for offering efficient settlement and custody services in a cross-market and multi-currency environment. The main liquidity risks of the group lie with Euroclear Bank when it comes to the management of clients long and short balances and extension of credit to clients to support settlement. This is why Euroclear Bank has a Liquidity Risk Framework in place to identify, assess, control and manage its liquidity risks in line with sound risk management principles. As part of its Liquidity Risk Framework, Euroclear Bank monitors and manages access to a wide range of liquid resources to cope with the daily multi-currency liquidity needs in each currency. Furthermore, it is able to transform such resources, when needed, to cover its liquidity needs in the right currency through highly reliable funding arrangements.

Other entities in the group are also exposed to liquidity risks albeit to a lesser extent. On an annual basis, the group conducts an Internal Liquidity Adequacy Assessment Process (ILAAP) to thoroughly review its liquidity risks, liquidity resources and risk appetite. This review is performed at the Euroclear Holding SA/NV, Euroclear SA/NV consolidated and Euroclear Bank SA/NV levels, with final approval by their respective Boards.

In 2023 Euroclear's liquidity position has further improved driven largely by the continuous accumulation of the Russian frozen or immobilised balances at Euroclear Bank. Although these balances primarily are a source of funding, they also carry inherent liquidity risks linked to their reinvestment. Liquidity risk may arise if frozen or immobilised balances are reinvested via long-term placements and all the relevant authorities lift the sanctions without providing sufficient notice period. Euroclear Bank mitigates this risk by reinvesting cash from these balances essentially via overnight deposit with the central bank and the ongoing dialogue with the relevant EU and international bodies.

⁵ Article 395 of Regulation (EU) 575/2013 amended by Regulation (EU) 2019/876.

⁶ In accordance with Articles 399 to 403 of Regulation (EU) 575/2013 as amended by Regulation (EU) 2019/876.

⁷ As required by Article 395 of Regulation (EU) 575/2013 as amended by Regulation (EU) 2019/876 and using EBA/GL/2015/20.

IV.4.2.a. Liquidity risk at Euroclear Bank

Euroclear Bank's liquidity risk appetite is very low, given the criticality of intra-day liquidity for the efficient delivery of its settlement and custody services and given its systemic importance as an FMI. Euroclear Bank has therefore adopted a strong risk management framework to anticipate, monitor and manage the intra-day liquidity flows to ensure the quality of its services.

Given the scope of its activities, Euroclear Bank liquidity needs are largely intraday and transactional with daily cash outflows and inflows mostly matching. Euroclear Bank provides its borrowing clients with liquidity through intraday credit facilities to support its settlement and custody services. It ensures timely cross-border settlement with domestic markets, supports new issues and custody activities, and enables clients to transfer sales and income proceeds in a timely manner.

Euroclear Bank's clients may end up with residual long and short cash positions at the end of the day. On a day-to-day basis, Euroclear Bank is normally net long cash, which it invests mostly on a very short-term basis to match the volatility of clients' settlement and money transfer activities.

IV.4.2.a.1. Liquidity funding

Euroclear Bank's settlement system allows for an efficient recycling of liquidity. Euroclear Bank uses its liquidity to smoothen or accelerate the payment process and to ensure the timely execution of time critical payments throughout the day. The liquidity is used prudently - out of total settlement turnover of over €2,809 billion each day (2023 average). Euroclear Bank only extends about 1% in secured intra-day cash credit to its clients.

To support its daily payment activity, Euroclear Bank relies on the long cash balances from its clients, on a large network of highly rated cash correspondents, on the reserve accounts with National Bank of Belgium and the Bank of England and on its direct access to the TARGET2 system for euro payments.

Additionally, Euroclear Bank can use its investment book, funded by equity and retained earnings to raise liquidity when needed. The investment book is invested with the objective of capital and liquidity preservation, meaning only in euro-denominated sovereign, supranational or agency ECB-eligible debt instruments rated AA- or above.

Euroclear Bank can also raise liquidity from securities held for regulatory purposes and funded by the debt issued. For instance, Euroclear Bank has issued various recovery capital instruments under a Belgian law registered note format for a total of €800 million. These instruments contribute to structuring Euroclear's loss absorption mechanism that would restore the capital position of the Bank should any of the recovery and resolution scenarios⁸ be triggered:

- a senior non-preferred loan issued in 2018 for €200 million (maturing in 2026);
- a convertible subordinated loan issued in 2018 for €200 million (maturing in 2033), recognised as Tier 2 regulatory capital;
- a senior non-preferred loan issued in 2018 for €300 million (maturing in 2030);
- a convertible subordinated loan issued in 2019 for €100 million (maturing in 2033), recognised as Tier 2 regulatory capital.

The above notes were all subscribed by Euroclear Investments SA and funded with the proceeds of three issuances for a total amount of €1.3 billion (a €300 million unsecured and unsubordinated 12-year fixed rate senior note, a €400 million subordinated resettable 30-years fixed rate hybrid note callable at the option of the issuer after 10 years, and a €600 million note due in 2026).

Besides the above Long Term notes issuances, Euroclear Bank launched a €5 billion Euro Medium Term Note (EMTN) and a €20 billion Certificate of Deposits multi-currency programs in 2018 to increase its Qualifying Liquidity Sources under the European Central Securities Depository Regulation. Out of its EMTN program, Euroclear Bank issued a total outstanding amount equivalent to €1.9 billion in EUR, USD and GBP at the end of 2023 (2022: €2.5 billion). Out of its Certificate of Deposits program, Euroclear Bank has a total outstanding amount of €1.7 billion in EUR, USD and GBP (2022: €2 billion). The amounts have decreased as some securities have matured in 2023 and were not rolled over given that the need to raise liquidity through debt issuance or borrowing has decreased partly due to the accumulation of frozen balances and partly due to growing net interest earnings.

Euroclear Bank may also do repo transactions with a goal to maintain an active relationship with cash givers in case Euroclear Bank would need to generate liquidity in contingency situations. Finally, Euroclear Bank also has broad access to the inter-bank market and has contingency liquidity facilities in place for the major currencies, which are tested regularly.

IV.4.2.a.2. Liquidity stress testing

Euroclear Bank regularly performs idiosyncratic and market-wide liquidity stress tests to assess potential liquidity strains and to ensure efficient access to sufficient liquidity sources to fund any shortfalls. For this purpose, Euroclear Bank first identifies liquidity needs under normal and stressed conditions based on the results of day-to-day and extreme but plausible stress scenarios run on a regular basis. Liquidity needs are then compared to liquidity sources to identify potential liquidity gaps that need to be covered at aggregate and at currency levels. These stress tests are also used as part of the ILAAP.

Examples of liquidity stress tests are:

- default of the top two clients (at family level);
- operational issue affecting a cash correspondent;
- unusual behaviour of participants' deposits.

⁸ In line with the Banking Recovery and Resolution Directive applicable to the Company

In addition, Euroclear Bank has to comply with regulatory liquidity stress test Liquidity Coverage Ratio (LCR) as mandated by the Regulation (EU) 575/2013. The LCR aims to ensure that credit institutions hold sufficient liquid assets to withstand a period of significant liquidity stress lasting 30 calendar days. Euroclear Bank complies with LCR regulatory requirements. Moreover, as part of its Risk Appetite Framework, Euroclear Bank has set a higher internal LCR limit than the 100% limit prescribed by the legislation.

Although Euroclear Bank is not subject to the Net Stable Funding Ratio (NSFR) stress test requirement⁹, the Bank still monitors and complies with the ratio. The NSFR is defined as the amount of available stable funding (Liabilities) relative to the amount of required stable funding (Assets). Similarly to the LCR, Euroclear Bank has set a higher internal NSFR limit than the 100% limit prescribed by the legislation.

Finally, Euroclear Bank also runs two intra-day liquidity stress tests on a daily basis - the 'Cover 1' and 'Cover 2'. The purpose of these stress-tests is to assess whether Euroclear Bank has sufficient qualifying liquidity resources to withstand the default, at group level, of one participant (Cover 1 as per CPMI-IOSCO) and of two participants simultaneously (Cover 2 as per CSDR) to which Euroclear bank has the largest liquidity exposure. These stress test results are reported daily and approved monthly by the Credit and Assets and Liabilities Committee (CALCO) and reported semi-annually to the Euroclear Bank Management Committee. Moreover, the results of these stress-test are used to size participant currency credit facilities on aggregate level and when individual currencies are considered.

IV.4.2.a.3. Liquidity contingency plan

Sound management of liquidity risks includes the establishment and maintenance of an appropriate liquidity contingency plan to ensure the business continuity of its core settlement and custody services. This plan documents the relevant operational procedures and foresees liquidity preservation and generation measures ensuring Euroclear Bank's access to all liquidity sources including contingency sources in the event of an operational or financial crisis.

On top of its own capital and access to regular market funding, Euroclear Bank has negotiated committed liquidity lines and can call upon a total of €0.75 billion syndicated backstop facility, a total of €1.0 bilateral standby facility, approximately €11.3 billion committed forex swap facilities and a total of €0.3 billion committed repo facilities. The contingency plan and the availability of contingency liquidity are regularly tested.

Finally, to cover the short-term liquidity needs that could result from the default of a client, Euroclear Bank has agreements in place allowing Euroclear Bank to appropriate the client pledged collateral (immediate transfer of ownership). In order to generate liquidity, this appropriated collateral can be re-used with liquidity providers or pledged with the National Bank of Belgium or the Bank of England, pending full liquidation. The Euroclear Bank Terms and Conditions (T&Cs) also foresee exceptional measures should Euroclear Bank experience an unexpected liquidity shortfall.

IV.4.2.b. Liquidity risks in Euroclear SA/NV and the CSDs and Euroclear Investments SA/NV

Although most of liquidity risks in the group lie with Euroclear Bank, other CSDs and Euroclear SA/NV and Euroclear Investments SA/NV are also exposed to liquidity risks to some extent. Unlike for the Euroclear Bank where most liquidity risks are linked to its credit-granting activities, for other entities within the Euroclear group, liquidity risks arise when available liquidity is insufficient to meet working cash needs and/or the regulatory minimum qualifying liquid resources requirements.

To minimize these liquidity risks, cash belonging to these entities is invested in the following way:

- stable cash positions linked to regulatory liquidity requirements, for entities where such requirements apply, are invested on a rollover basis; and
- surplus cash investments are always cash flow driven, which means that the amount and period of the investments takes into account the evolution of working cash needs and capital expenditure.

Liquidity stress tests are performed on a regular basis for the group CSDs and Euroclear SA/NV to ensure adequate funding and, where applicable, compliance with local regulatory liquidity obligations. While for group CSDs most regulatory liquidity obligations are specified by the CSDR, Euroclear SA/NV as well as Euroclear Holding SA/NV for their consolidated perimeter are subject to and comply with regulatory requirements on LCR and NSFR. Moreover, as part of the Risk Appetite Framework, Euroclear SA/NV and Euroclear Holding SA/NV have set higher internal LCR and NSFR limits than the 100% limit prescribed by the legislation.

To comply with regulatory liquidity obligations CSDs and Euroclear SA/NV can only use following types of investments in line with the applicable regulatory framework of each entity: cash, overnight or term deposits, or High-Quality Liquid Assets (HQLA). The latter include level 1 plain vanilla debt securities issued or guaranteed by (i) a government; (ii) a central bank; (iii) a multilateral development bank¹⁰; or (iv) the European Financial Stability Facility or the European Stability Mechanism.

Maturity limits for securities investments are set at three years when representing investments of the regulatory own funds of Euroclear SA/NV and group CSDs, where applicable, up to eight years when representing investment of their respective additional recovery capital to mitigate market risks. For Euroclear Investments SA/NV and Euroclear SA/NV, available surplus cash (i.e. cash in excess of regulatory liquidity obligations) can also be invested in plain vanilla corporate fixed income securities with maturities up to five years and not exceeding three years on average following strict and conservative investment policy principles in line with the group risk and credit rating profiles.

Similarly to Euroclear Bank, Euroclear SA/NV can also raise liquidity from securities held for regulatory purposes and funded by the debt issued for that purpose. For instance, in 2018 Euroclear SA/NV issued convertible subordinated liabilities for a total amount of €100 million (maturing in 2033) under a Belgian law registered note format. This note contributed to structuring a loss absorption mechanism that would

⁹ In line with the Article 6 of Regulation (EU) 575/2013 as amended by the Regulation (EU) 2019/876

¹⁰ As listed under Article 117 of Regulation (EU) No 575/2013 of the European Parliament and of the Council

be used to restore Euroclear SA/NV capital position should recovery and resolution scenarios¹¹ realise. In December 2019 this note was recognised as Tier 2 regulatory capital. Similarly as for Euroclear Bank, the note was subscribed by Euroclear Investments SA/NV.

In addition to that, Euroclear SA/NV can also raise liquidity from debt issued by the Euroclear Investments SA/NV - group investment arm. For instance, on 16 June 2021, Euroclear Investments SA/NV issued a 30-year non-callable - 10-year hybrid - subordinated Eurobond on the Irish stock exchange for an amount of €350 million. The proceeds of this long-term debt were down streamed to Euroclear SA/NV under the form of a capital increase (€225 million) and the subscription to an Additional Tier 1 instrument of €125 million (maturing in 2031). The purpose was to fund the acquisition of the MFEX group and mitigate the impact of the acquisition on Euroclear SA/NV's regulatory capital adequacy. The residual balance of approximately €300 million between Euroclear Investments SA/NV's issuance and subscriptions is held as a liquidity reserve invested in the Common Investment Fund.

IV.4.2.c. Overview of financial liabilities by remaining maturity

The table below shows the consolidated financial liabilities analysed by remaining contractual maturity at the balance sheet date. The amounts disclosed in the table are the contractual undiscounted cash flows at spot rate and the book value of the derivatives.

Expectedly, the large majority of Euroclear's financial liabilities are repayable on demand or within one week as these are deposits from central banks, banks and customers. Large proportion of these deposits are frozen as they belong to Russian sanctioned clients. These have grown in 2023 compared to the previous year as credited income accumulates on the blocked accounts. Overnight deposits from non-sanctioned clients are moderate as leaving cash overnight on the account is discouraged through penalising interest rates.

Debt securities issued and funds borrowed make a small minority of Euroclear's financial liabilities. These are predominately short- (3 months) or medium-term (between 1 and 5 years). As Euroclear's liquidity position grows stronger partly due to the accumulation of frozen balances and partly due to growing net interest earnings, the need to raise liquidity through debt issuance or borrowing has decreased. This is also the reason why the EUR 500 million security issued by the Euroclear Bank which matured in July 2023 was not rolled over. This is reflected in the table below.

Remaining financial liabilities make up a negligible share of the total book value.

(€'000)	Notes	Repayable on demand or within one week	Other amounts maturing within 3 months	Maturity between 3 and 6 months	Maturity between 6 months and 1 year	Maturity within 1 to 5 years	Maturity after 5 years	Undiscounted contractual cash flows - Total	Book value
At 31 December 2023									
Financial liabilities									
- Deposits from central banks		115,913,293	-	-	-	-	-	115,913,293	115,913,293
- Deposits from banks and customers		33,442,955	114,453	7,882	-	-	-	33,565,290	33,564,933
- Debt securities issued and funds borrowed	XX	24,046	1,281,399	480,473	436,700	2,704,431	673,438	5,600,487	5,367,695
- Financial liabilities held for trading	XIV	55,001	-	-	-	-	-	55,001	55,001
- Derivatives used for hedging	XV	197	4,625	1,121	548	65,570	-	72,061	72,061
- Lease liabilities		-	6,217	6,163	12,419	85,307	47,985	158,091	158,091
Total financial liabilities		149,435,492	1,406,694	495,639	449,667	2,855,308	721,423	155,364,223	155,131,074

(€'000)	Notes	Repayable on demand or within one week	Other amounts maturing within 3 months	Maturity between 3 and 6 months	Maturity between 6 months and 1 year	Maturity between 1 and 5 years	Maturity after 5 years	Undiscounted contractual cash flows - Total	Book value
At 31 December 2022									
Financial liabilities									
- Deposits from central banks		82,121,932	-	-	-	-	-	82,121,932	82,121,932
- Deposits from banks and customers		32,218,372	124,897	7,869	-	-	-	32,351,138	32,350,931
- Debt securities issued and funds borrowed	XX	151,285	1,933,459	72,813	536,766	2,757,679	1,102,250	6,554,252	6,242,965
- Financial liabilities held for trading	XIV	315,237	1,471	-	-	-	-	316,708	316,708
- Derivatives used for hedging	XV	1,273	2,635	1,935	470	106,302	-	112,615	112,615
- Lease liabilities		-	6,920	6,427	10,752	62,388	43,077	129,564	129,564
Total financial liabilities		114,808,099	2,069,382	89,044	547,988	2,926,369	1,145,327	121,586,209	121,274,715

¹¹ In line with the Banking Recovery and Resolution Directive applicable to the Company

IV.4.2.d. Fair value of financial instruments

The group uses fair value to obtain the objective, market-based price of financial instruments at a given measurement day. In order to measure fair values, the group is using the following fair value hierarchy, which reflects the significance of the inputs used in making the measurements:

- Level 1: Inputs that are quoted market prices in active markets for the same instruments. A market is regarded as active if quoted prices are readily and regularly available (exchange, dealer, broker, pricing service or regulatory agency) and if these prices represent actual and regularly occurring market transactions on an arm's length basis.
- Level 2: The fair value of these instruments is determined by using quoted prices included within level 1 that are observable either directly (i.e. as prices) or indirectly (i.e. derived from prices). This category includes instruments valued using: quoted prices in active markets for similar instruments, quoted prices for similar instruments in markets that are less active, or other valuation techniques. The valuation techniques maximise the use of observable market data where it is available. If all significant inputs that are required to fair value an instrument are observable, the instrument is included in level 2.
- Level 3: If one or more of the significant inputs is not based on observable market data, the instrument is included in level 3. Specific valuation techniques used to value financial instruments include:
 - quoted market prices or dealer quotes for similar instruments;
 - the present value of the estimated future cash flows based on observable yield curves, for the fair value of interest rate swaps;
 - the forward exchange rates at the balance sheet date, with the resulting value discounted back to present value, for the fair value of forward foreign exchange contracts;
 - other techniques, such as discounted cash flow analysis, used to determine the fair value of remaining financial instruments.

IV.4.2.d.1 Financial instruments measured at fair value

The table below shows the three-level hierarchy of the financial instruments measured at fair value. Overall, Euroclear has a very good visibility on the fair value of its financial instruments as large majority of financial instruments are classified in level 1 or level 2.

Only a minority of financial instruments is classified in level 3. These relate to minority long-term participating interests of Euroclear Bank (SWIFT and Monte Titoli) and Euroclear SA/NV (amongst which Impact Cubed, Fnality and DSB Limited).

(€'000)	Notes	Level 1	Level 2	Level 3	Total
At 31 December 2023					
Financial assets					
Financial assets at FVOCI					
- Equity instruments	XIII	366,347	755,765	24,180	1,146,292
- Debt instruments		13,675,826	-	-	13,675,826
Non-trading financial assets mandatorily at FVPL					
- Debt instruments		-	-	19,346	19,346
- Loans		-	-	13,983	13,983
Financial assets held for trading					
- Forward foreign exchange	XIV	-	85,161	-	85,161
Derivatives used for hedging					
- Forward foreign exchange	XV	-	14,401	-	14,401
- Interest rate swaps		-	79,247	-	79,247
Total financial assets		14,042,173	934,574	57,509	15,034,256
Financial liabilities					
Financial liabilities held for trading					
- Forward foreign exchange	XIV	-	55,001	-	55,001
Derivatives used for hedging					
- Forward foreign exchange	XV	-	5,782	-	5,782
- Interest rate swaps		-	66,279	-	66,279
Total financial liabilities		-	127,062	-	127,062

(€'000)	Notes	Level 1	Level 2	Level 3	Total
At 31 December 2022					
Financial assets					
Financial assets at FVOCI					
- Equity instruments	XIII	322,143	810,409	52,746	1,185,298
- Debt instruments		15,919,613	-	-	15,919,613
Non-trading financial assets mandatorily at FVPL					
- Debt instruments		-	-	14,711	14,711
- Loans		-	-	18,590	18,590
Financial assets held for trading					
- Forward foreign exchange	XIV	-	61,088	-	61,088
Derivatives used for hedging					
- Interest rate swaps	XV	-	30,837	-	30,837
Total financial assets		16,241,756	902,334	86,047	17,230,137
Financial liabilities					
Financial liabilities held for trading					
- Forward foreign exchange	XIV	-	15,406	-	15,406
Derivatives used for hedging					
- Forward foreign exchange	XV	-	6,313	-	6,313
- Interest rate swaps		-	106,302	-	106,302
Total financial liabilities		-	128,021	-	128,021

The table below shows the reconciliation of the level 3 fair value measurements.

(€'000)	Notes	At 31 December 2022	(Disposals)/ acquisitions	Fair value adjustment released in profit or loss	Fair value adjustment recognised in equity	Accrued interest	At 31 December 2023
Financial assets							
Financial assets at FVOCI							
- Equity shares	XIII	52,746	10,224	-	(38,790)	-	24,180
Non-trading financial assets mandatorily at FVPL							
- Debt instruments		14,711	-	-	4,635	-	19,346
- Loans		18,590	(4,984)	-	-	377	13,983
Financial assets held for trading							
Total financial assets		86,047	5,240	-	(34,155)	377	57,509

(€'000)	Notes	At 31 December 2021	(Disposals)/ acquisitions	Fair value adjustment released in profit or loss	Fair value adjustment recognised in equity	Accrued interest	At 31 December 2022
Financial assets							
Financial assets at FVOCI							
- Equity shares	XIII	16,714	32	-	36,000	-	52,746
Non-trading financial assets mandatorily at FVPL							
- Debt instruments		14,711	-	-	-	-	14,711
- Loans		4,847	13,327	-	-	416	18,590
Total financial assets		36,272	13,359	-	36,000	416	86,047

IV.4.2.d.2 Financial instruments not measured at fair value

The table below shows the three-level hierarchy of the financial instruments not measured at fair value. These are predominately frozen balances held by Russian sanctioned clients (liabilities-side) and their reinvestment (asset side). Cash and balances with central banks almost exclusively reflect redeposited long (frozen) balances. Loans and advances include reverse repos and long balances deposited with financial institutions other than central banks, and to a lesser extent overdrafts and fixed term advances to clients. Loans and advances at amortised cost and deposits are short-term (less than 12 months), hence their carrying amount is a reasonable approximation of their fair value.

(€'000)	Notes	Level 1	Level 2	Level 3	Total	Carrying amount
At 31 December 2023						
Financial assets						
- Cash and balances with central banks		105,806,274	2,877,493	-	108,683,767	108,683,767
- Loans and advances at amortised cost		6,909,385	32,470,067	-	39,379,452	39,379,452
Total financial assets		112,715,659	35,347,560	-	148,063,219	148,063,219
Financial liabilities						
- Deposits from central banks		115,913,293	-	-	115,913,293	115,913,293
- Deposits from banks and customers		33,442,955	121,978	-	33,564,933	33,564,933
- Debt securities issued and funds borrowed	XX	5,112,829	24,046	-	5,136,875	5,367,695
- Lease liabilities		-	168,091	-	168,091	168,091
Total financial liabilities		154,469,077	304,115	-	154,773,192	155,004,012

(€'000)	Notes	Level 1	Level 2	Level 3	Total	Carrying amount
At 31 December 2022						
Financial assets						
- Cash and balances with central banks		81,153,424	2,389,995	-	83,543,419	83,543,419
- Loans and advances at amortised cost		2,404,849	21,429,610	-	23,834,459	23,834,459
Total financial assets		83,558,273	23,819,605	-	107,377,878	107,377,878
Financial liabilities						
- Deposits from central banks		82,121,932	-	-	82,121,932	82,121,932
- Deposits from banks and customers		32,218,372	132,559	-	32,350,931	32,350,931
- Debt securities issued and funds borrowed	XX	5,738,850	151,289	-	5,890,139	6,242,965
- Lease liabilities		-	129,564	-	129,564	129,564
Total financial liabilities		120,079,154	413,412	-	120,492,566	120,845,392

IV.4.3. Market risk

Euroclear defines market risk as the uncertainty on the value of assets and liabilities (on- or off-balance sheet) and on the future earnings (linked to foreign exchange or interest rate movements) due to changes in the market rates or prices.

Euroclear has a Market Risk Framework in place to effectively manage and minimise market risks to ensure stability of earnings and capital protection. In line with the group's risk appetite, the market risk tolerance is very low for all group entities and is a by-product of its business operations and strategy. As an FMI, Euroclear undertakes very few market transactions, does not trade in terms of taking market related positions for short-term profits and keeps its equity investments prudent and strategic in nature. All in all, Euroclear's strategy is to minimise market risk in all parts of the business, via strict hedging and investment policies and use of tight limits.

Market risk at Euroclear arises mostly from fluctuations in interest rates (IR) and foreign exchange rates (FX), as well as maturity mismatches between Assets and Liabilities in banking activities. However, in the event of a participant default, collateral received in different currencies from borrowing participants, also contributes to market risk by exposing Euroclear Bank to both foreign exchange rates evolution and market prices evolution, which is why stringent haircuts are applied (see IV.2.1.b. Credit risk mitigation).

Euroclear employs a number of tools to measure and closely monitor the market risk:

- Interest rate risk: sensitivities of economic value of equity (EVE) and net interest income (NII) to interest rate shocks under the Interest Rate Risk in the Banking Book (IRRBB) and to credit spread shocks under the Credit Spread Risk in the Banking Book (CSRBB). The latter only started to apply as from year-end 2023;
- Foreign exchange risk: future earnings not in EUR, end-of-day FX exposure and daily FX VaR at a 99% confidence level.

In 2023 Euroclear had limited market risk exposures well within regulatory and internal risk appetite limits. The interest rate hikes had a negative impact on Euroclear's economic value of equity, but it was offset by their positive impact on the net interest income.

IV.4.3.a. Market risk at Euroclear Bank

Similarly to other financial risk types, the majority of market risk in the group is concentrated at Euroclear Bank. As Euroclear Bank does not engage in any activity that is not consistent with its role of FMI or is a consequence of its clients' activity (i.e. trading 12) the main sources of market risk are uncertainties related to its future earnings and core equity.

In order to preserve its core equity Euroclear Bank applies a prudent investment strategy in line with a group-wide very low appetite for market risk. Euroclear Bank invests its core equity (shareholders' equity plus retained earnings) in euro-denominated highly rated and liquid debt instruments rated AA- or higher. These assets have a maximum maturity of 5 years and an average maturity target of 2.5 years.

To protect future earnings against adverse market conditions Euroclear applies an appropriate hedging strategy. Euroclear Bank engages in a series of market derivatives in order to hedge the forex risk exposure resulting from future non-EUR income streams, with the aim of ensuring that the financial results are not adversely affected by market evolutions ('predictability of future revenues'). Such transactions are classified as cash flow hedges. The Foreign Exchange Manageable Amount owned by Finance Division forecasts the future income by currency, based on the plan figures. The outcome of this exercise is used by the Treasury Department to carry out the Foreign Exchange hedging activity, with the whole process overseen by the Euroclear Bank Credit Assets & Liabilities Committee (CALCO).

To hedge the interest rates exposures and manage the Net Interest Income (NII) volatility through the interest rate cycle, Euroclear Bank uses interest rate swap hedges. On a monthly basis, the CALCO reviews the evolution of the investment and hedging strategy and associated hedge effectiveness. Controls are in place to ensure that the hedging item and instruments remain aligned to minimise market risk.

The activities and instruments in which Euroclear Bank can engage must be in line with its low-risk profile. Therefore, Euroclear Bank is not significantly exposed to equity risk.

Russian sanctions and counter-measures market risk impact

The impact of Russian sanctions on Euroclear Bank's FX risk was limited as well since frozen or immobilised balances are either reinvested in the same currency as the underlying balance or are hedged through the FX markets where the reinvestment is in a different currency to the underlying balance. There were, however, several material market exposures linked to Russian sanctions and countermeasures throughout 2023. These were timely mitigated.

Since the closure of its cash correspondent account in Russia and the withdrawal of ruble as a settlement currency in early 2023 the only on-balance market exposure to Russia was ruble-denominated cash held locally on the standard account of the Russian CSD - National Settlement Depository (NSD). The amount held on the account amounted to RUB 2.3 billion or approximately EUR 27 million eq. in rubles as of end-May 2023. In June 2023, NSD unilaterally without consulting Euroclear Bank, converted cash on this account from rubles into euros. This gave rise to a material (short) FX risk given the currency mismatch between ruble liabilities towards clients and euro assets from reinvestment. After consulting with the competent sanctions authority, Euroclear Bank converted the corresponding ruble liabilities into euros as per its Terms and Conditions governing the use of Euroclear Bank, which fully mitigated the on-balance sheet FX risk.

Additionally, Euroclear Bank faced some (short) FX risk as a result of the NSD's debit of Euroclear Bank's 'C'-Account (off-balance sheet) as a result of the lost court case against Bank of St-Petersburg in Russia (see IV.1.2. Russian sanctions impact).). To mitigate this exposure, Euroclear has leveraged its Terms and Conditions and debited the corresponding amount of rubles from the concerned participants accounts which were compensated in a different currency at a later stage. This fully mitigated the off-balance sheet FX risk. It cannot be excluded that similar seizures in execution of Russian courts decisions will happen again in the future. Euroclear Bank takes all the necessary measures to defend itself and thereby to minimise the impacts of these proceedings in Russia on its client community.

IV.4.3.b. Market risk at Euroclear SA/NV and the CSDs and Euroclear Investments SA/NV

Euroclear Holding SA/NV, Euroclear SA/NV, Euroclear Investments SA/NV and other group CSDs face market risk only to a limited extent. Predominately, they are exposed to interest rate risk as these entities do not operate commercial cash accounts but invest their cash positions, where applicable, in accordance with regulatory liquidity requirements. This is particularly the case for group CSDs. They reinvest their cash positions in four ways:

- straight overnight or term deposits;
- regulatory cash is invested in a Common Investment Fund (CIF) with mandates with a maturity of maximum three years, or is left on cash accounts where appropriate;
- excess of cash is invested in a CIF with a maturity of maximum five years;

¹² Please note that under IFRS certain transactions in derivatives carried out by Euroclear Bank do not qualify as hedges and are therefore may be recognised under trading activities. These, however, do not constitute trading in its traditional finance understanding.

- a loan for recovery purposes (in line with the Minimum Requirement Eligible Liabilities - MREL) from Euroclear Investments SA/NV is invested in a CIF with a maturity of maximum eight years.

Foreign exchange risk is not significant in Euroclear Holding SA/NV, Euroclear SA/NV, Euroclear Investments SA/NV and the CSDs. FX risk for these entities could primarily arise when reinvesting their surplus cash position in a non-local currency. To avoid the potential foreign exchange risk, group entities can only make these investments in their local currency, meaning in EUR for entities whose functional currency is EUR, in GBP for the entities located in the United Kingdom, and in SEK for the Swedish entity. From a consolidated group perspective, the only source of foreign exchange risk stems from the potential change in net asset values of Euroclear SA/NV's non-euro shareholdings (for example, Euroclear UK & International and Euroclear Sweden).

Starting in April 2018, Euroclear launched its Euroclear Treasury Funds and Treasury Investment mandates in France and the UK (Common Investment Funds) to manage regulatory and excess treasury positions of the group (excluding Euroclear Bank). The aim is to better mitigate risks (credit, market and liquidity) arising from treasury investments in EUR and GBP for Euroclear SA/NV, Euroclear Investments SA/NV and the CSDs, including capital erosion risks in the previous negative interest rate environment.

The Euroclear Treasury Fund and Treasury Investment Mandate structures (recorded as financial assets designated at FVOCI) rely on two common investment funds and two investment mandates, which are all managed by two custodians domiciled in Belgium and Luxembourg. The assets under management are totaling approximately €1.03 billion (2022: €1.05 billion) as of end 2023 for Euroclear SA/NV, Euroclear Investments SA/NV and the CSDs.

Such structures enable eligible Euroclear entities to invest their regulatory cash and to some extent their surplus cash positions under strict rules such as to invest into EUR and GBP government or supra-national ECB eligible securities with rating, maturities, duration and concentration limitations. They also enable group subsidiaries to invest their respective excess cash positions to allow for optimised treasury returns and risk mitigation on cash in excess of regulatory obligations. Applicable investment rules also include rating, maturity, and concentration limitations. For Euroclear Investments SA/NV and Euroclear SA/NV in particular, market risks on treasury investments into the CIFs are further mitigated by allowing the usage of listed EUR Fixed income futures to limit the duration of the related treasury portfolios.

Unlike Euroclear Bank, Euroclear SA/NV is exposed to equity risk to some extent. The group's equity risk principally relates to its long-term participating interest in Euronext held by Euroclear SA/NV (classified as level 1).

Additionally, the value of Euroclear's participation in Euronext was subject to large swings in pricing in line with other equity assets in the market. During 2023, the Euronext stock traded at a high of EUR 79.45 and a low of EUR 60.65. This fluctuation increased the volatility of our equity and credit risk weighted assets in a proportional manner to the change in price.

IV.4.3.c. Interest rate risk

Majority of interest rate risk in the group lies with the Euroclear Bank and is a by-product of its business operations and is linked to the management of its balance sheet (i.e. reinvestment of capital and proceeds from debt issuance). As a result, Euroclear Bank's balance sheet structure is sensitive to changes in interest rates.

Interest rate-sensitive financial instruments held off-balance sheet include interest rate swaps and foreign exchange swaps and forwards. These are included in the scope of the IRRBB model.

To measure and closely monitor the interest rate sensitivity of the equity value (EVE) and future profitability (NII), the group uses Interest Rate Risk in the Banking Book (IRRBB) for Euroclear Bank stand-alone, Euroclear SA/NV consolidated and Euroclear Holding SA/NV consolidated. The IRRBB looks at the EVE and NII sensitivities under the baseline scenario and additional six stressed scenarios (EVE) or two stressed scenarios (NII). The assessment takes into account the interest rate sensitive elements on- and off- balance sheet as well as interest rate sensitive income/expenses.

The table below shows the IRRBB at the level of Euroclear SA/NV and Euroclear Holding SA/NV have set. More specifically, the table shows the economic values of the interest rate sensitive positions in the banking book portfolio¹³ under the base and the two parallel interest rate shock scenarios. The column with effective 2023 result represents the actual interest earned over the reporting year while 2024 is a projection for the next year.

Assets and liabilities held in the Banking book are predominantly denominated in euro, and they are expressed at market value for the purpose of this disclosure. The economic value of the Banking book is computed by discounting the future cash flows for assets and liabilities.

¹³ Banking book contains assets and liabilities which are not held for trading or for hedging instruments within the trading book. This book includes the Bank's on-balance sheet interest bearing assets and liabilities, including off-balance sheet positions with a fixed interest rate and short-term treasury positions outside the trading book.

(€'000)	Income sensitivity		
	Economic value of banking book	Interest result	Interest result
		Effective 2023	Expected 2024
Interest scenario's			
Parallel increase in interest rates with 200 basis points	7,807,557	-	6,163,125
No movement	8,035,875	5,360,783	6,152,953
Parallel decrease in interest rates with 200 basis points	8,156,142	-	6,049,821

(€'000)	Income sensitivity		
	Economic value of banking book	Interest result	Interest result
		Effective 2022	Expected 2023
Interest scenario's			
Parallel increase in interest rates with 200 basis points	3,563,286	-	4,283,807
No movement	3,743,237	908,625	2,868,005
Parallel decrease in interest rates with 200 basis points	3,931,735	-	1,584,480

The tables below reflect the interest rate risk profile of assets and liabilities at 31 December 2023 for Euroclear, based on the earlier of maturity date and interest rate resetting date. Amounts are net of any impairment loss.

(€'000)	Repayable on demand or within one week	Other amounts maturing within 3 months	Maturity between 3 months and 6 months	Maturity between 6 months and 1 year	Maturity between 1 and 5 years	Maturity after 5 years	Non-interest bearing	Total
At 31 December 2023								
Assets								
- Cash and balances with central banks	108,616,557	-	-	-	-	-	67,210	108,683,767
- Loans and advances at amortised cost	11,405,833	27,780,922	3,966	4,520	33,665	32	160,514	39,379,452
- Financial assets at FVOCI	-	9,996,684	547,199	64,557	2,726,206	317,146	1,170,326	14,822,118
- Non-trading financial assets mandatorily at FVPL	-	-	-	690	11,597	1,151	19,891	33,329
- Financial assets held for trading	-	-	-	-	-	-	85,161	85,161
- Derivatives used for hedging	-	6,997	1,711	5,692	30,231	-	49,017	93,648
- Other assets	-	-	-	-	-	-	2,718,373	2,718,373
Total assets	120,022,390	37,784,603	552,876	75,459	2,801,699	318,329	4,260,492	165,815,848
Liabilities								
- Deposits from central banks	115,913,293	-	-	-	-	-	-	115,913,293
- Deposits from banks and customers	33,442,516	113,393	7,715	-	-	-	1,309	33,564,933
- Debt securities issued and funds borrowed	23,705	1,277,975	460,660	402,354	2,534,291	646,066	22,644	5,367,695
- Financial liabilities held for trading	-	-	-	-	-	-	55,001	55,001
- Derivatives used for hedging	-	4,753	668	548	46,707	-	19,385	72,061
- Lease liabilities	-	6,217	6,163	12,419	85,307	47,985	-	158,091
- Other liabilities	-	-	-	-	-	-	1,212,784	1,212,784
Shareholders' equity	-	-	-	-	-	-	9,471,990	9,471,990
Total liabilities and shareholders' equity	149,379,514	1,402,338	475,206	415,321	2,666,305	694,051	10,783,113	165,815,848
Total interest sensitivity gap	(29,357,124)	36,382,265	77,670	(339,862)	135,394	(375,722)	(6,522,621)	-
Cumulative gap	(29,357,124)	7,025,141	7,102,811	6,762,949	6,898,343	6,522,621	-	-

(€'000)	Repayable on demand or within one week	Other amounts maturing within 3 months	Maturity between 3 months and 6 months	Maturity between 6 months and 1 year	Maturity between 1 and 5 years	Maturity after 5 years	Non-interest bearing	Total
At 31 December 2022								
Assets								
- Cash and balances with central banks	83,513,392	-	-	-	-	-	30,027	83,543,419
- Loans and advances	11,957,656	11,766,521	6,818	3,856	27,863	-	69,725	23,834,459
- Financial assets at FVOCI	74,997	11,800,005	393,333	762,309	2,482,063	379,469	1,212,735	17,104,911
- Non-trading financial assets mandatorily at FVPL	-	-	-	11,275	4,581	2,255	15,190	33,301
- Financial assets held for trading	-	-	-	-	-	-	61,088	61,088
- Derivatives used for hedging	-	12,969	9,536	8,332	3,956	-	11,450	46,243
- Other assets	-	-	-	-	-	-	3,015,564	3,015,564
Total assets	95,546,045	23,581,495	409,687	785,772	2,518,483	381,724	4,415,779	127,638,985
Liabilities								
- Deposits from central banks	82,121,932	-	-	-	-	-	-	82,121,932
- Deposits from banks and customers	32,217,754	124,218	7,813	-	-	-	1,146	32,350,931
- Debt securities issued and funds borrowed	150,801	1,925,442	52,712	499,621	2,546,657	1,043,546	24,185	6,242,964
- Financial liabilities held for trading	-	-	-	-	-	-	316,708	316,708
- Derivatives used for hedging	-	3,908	1,935	470	100,451	-	5,851	112,615
- Lease liabilities	-	6,920	6,427	10,752	62,388	43,078	-	129,565
- Other liabilities	-	-	-	-	-	-	966,778	966,778
Shareholders' equity	-	-	-	-	-	-	5,397,492	5,397,492
Total liabilities and shareholders' equity	114,490,487	2,060,488	68,887	510,843	2,709,496	1,086,624	6,712,160	127,638,985
Total interest sensitivity gap	(18,944,442)	21,521,007	340,800	274,929	(191,013)	(704,900)	(2,296,381)	-
Cumulative gap	(18,944,442)	2,576,565	2,917,365	3,192,294	3,001,281	2,296,381	-	-

IV.4.3.d. Foreign exchange risk

While the majority of the group's Foreign Exchange (FX) risk lies with the Euroclear Bank, the Bank's FX exposures remain relatively limited given its low market risk appetite as an FMI, the focus on the preservation of its capital and prohibition of any trading activities.

To ensure FX risks remains limited, Euroclear Bank has set tight market risk limits that are controlled via strict hedging and investment policies and daily monitoring. In particular, Euroclear Bank uses Value-at-Risk (VaR) methodology to measure the FX market risk sensitivity relative to the management of its portfolio. The VaR model measures the maximum loss for a portfolio over a determined time horizon at a given confidence level (99%). The model assumes a holding period, until positions can be closed, of one day. The market parameters are derived from the volatility and correlation observed from historical daily changes. The VaR models are back tested on an annual basis or in case of material changes.

The FX-VaR is shown on an aggregated basis. The significant decrease in the average and maximum FX-VaR in 2023 is explained by the new calibration of the FX-VaR model implemented in July 2023. The new calibration separated FX risk stemming from positions in roubles and other currencies to improve the visibility of FX risk. This action resulted in an updated FX-VaR limits. Additionally, a separate management risk appetite limit for RUB exposures was defined to directly monitor and take action to limit potential rouble exposure. Given the recalibration, the average FX-VaR almost halved in 2023 compared to previous year.

(€'000)	2023 average	2023 min	2023 max	2022 average	2022 min	2022 max
Aggregate - FX	147	30	3,638	253	9	5,753

At the group level, most FX risk stems from the potential change in net asset values of Euroclear SA/NV's non-euro shareholdings. With the exception of subsidiaries, principally located in the United Kingdom and Sweden, the group's entities have the euro as their functional currency.

The table below reflects the group's principal structural currency exposures (foreign exchange translation risk) as of 31 December 2023 for Euroclear Holding SA/NV. The large majority of the group's structural currency exposure stems from the consolidation of operations in Pound sterling and Swedish krona. The currency exposure in Polish zloty stems from the Euroclear Bank's branch located in Poland.

(€'000)	Net investments in non-euro operations	Currency hedges other than borrowings	Remaining structural currency exposures
Functional currency of the operation involved			
At 31 December 2023			
- US dollar	1,666	-	1,666
- Pound sterling	216,441	-	216,441
- Swedish krona	73,729	-	73,729
- Polish zloti	18,884	-	18,884
- Hong Kong dollar	8,060	-	8,060
- Singapore dollar	2,992	-	2,992
At 31 December 2022			
- US dollar	2,287	-	2,287
- Pound sterling	204,421	-	204,421
- Swedish krona	78,406	-	78,406
- Polish zloti	20,391	-	20,391
- Hong Kong dollar	8,435	-	8,435
- Singapore dollar	3,047	-	3,047

The table below summarises the group's exposure to foreign currency exchange rate risk. Included in the table are the group's assets and liabilities at carrying amounts, categorised by currency. The large majority of group's assets and liabilities are Euro-denominated. The net non-euro balance sheet positions mainly reflect the net assets of subsidiaries and branches located in the United Kingdom and Sweden, and other transactional positions, being almost fully offset by currency swaps.

Concentration of assets and liabilities per currency

(€'000)	Euro	US Dollar	Canadian Dollar	Pound Sterling	Other	Total
At 31 December 2023						
Total assets	109,361,270	22,061,862	3,867,220	24,021,427	6,504,069	165,815,848
Total liabilities and shareholders' equity	101,086,468	21,087,071	12,196,686	23,629,281	7,816,342	165,815,848
Net balance sheet position	8,274,802	974,791	(8,329,466)	392,146	(1,312,273)	-

Concentration of assets and liabilities per currency

(€'000)	Euro	US Dollar	Canadian Dollar	Pound Sterling	Other	Total
At 31 December 2022						
Assets						
Total assets	89,624,867	18,445,804	23,327	14,940,623	4,604,364	127,638,985
Total liabilities and shareholders' equity	76,899,491	20,332,661	7,785,087	14,921,560	7,700,186	127,638,985
Net balance sheet position	12,725,376	(1,886,857)	(7,761,760)	19,063	(3,095,822)	-

IV.5. Capital management

IV.5.1. Capital measurement and allocation

Euroclear has in place sound, effective and comprehensive capital measurement methodologies integrated within its overall internal capital adequacy assessment process (ICAAP). The ICAAP relies on two complimentary views on capital adequacy:

- Economic view – corresponds to the internal assessment of the level of capital necessary to sustain group's business and risk profile given its strategy and risk appetite.

- Normative view – corresponds to all applicable regulatory capital requirements Euroclear must comply with under baseline and stressed conditions for a planned period of at least three years. These requirements stem from two major regulations that Euroclear is subject to: Capital Requirement Regulation (CRR and CRD IV as transposed into Belgian Banking law) and CSD Regulation.

The normative view on Euroclear's capital needs is based on the CRR requirements which mandate Euroclear Bank, Euroclear SA/NV consolidated and Euroclear Holding SA/NV consolidated, to maintain at all times:

- a ratio of total capital to risk-weighted assets at or above 8%;
- a ratio of Tier 1 capital to risk-weighted assets at or above 6%;
- a ratio of common equity Tier1 capital (CET1) at or above 4.5%;
- Pillar 2 requirement (P2R) as defined through the yearly supervisory review and evaluation process (SREP);
- a Combined Buffer Requirement (CBR) comprising countercyclical buffer (CCyB), capital conservation buffer (CCB) and other systemic institution buffer¹⁴.

To compute credit risk-weighted assets Euroclear uses the Foundation Internal Ratings Based Approach (FIRBA). Under this approach, credit risk-weighted assets take into consideration balance sheet assets and off-balance sheet exposures that may give rise to credit risk. Collateral and other eligible guarantees are taken into account appropriately. Credit risk-weighted assets are calculated for both Euroclear Bank and the group on a consolidated basis.

For the calculation of operational risk-weighted assets, Euroclear combines the Advance Measurement Approach (AMA) for Euroclear Bank, Euroclear SA/NV (stand-alone) and Euroclear Holding SA/NV (stand-alone) with the Basic Indicator Approach for the other group's entities depending on the level of consolidation. The Advance Measurement Approach (AMA) was developed internally and approved by the NBB for regulatory purposes.

For the calculation of market risk-weighted assets, Euroclear uses the Standardised Approach to cover the foreign exchange risk. As Euroclear Bank is a limited purpose bank and does not have a trading book, the market risk that Euroclear Bank incurs is very limited.

In addition to the capital ratios, Euroclear also complies with the leverage ratio at all consolidation levels. As part of its Risk Appetite Framework, Euroclear has set a higher internal leverage ratio limit than the 3% limit prescribed by the legislation.

Euroclear's current levels of the leverage ratio are already well above this regulatory requirement and are disclosed in the Pillar 3 report.

IV.5.2. Regulatory capital position

The table below sets out the Euroclear Holding SA/NV Consolidated CET1, Tier 1 and total capital levels against the total risk-weighted assets. The latter continued to grow in 2023 largely driven by the growing balance sheet. Operational risk remains the largest driver behind Euroclear's risk-weighted assets mostly stemming from implementation of the Russian sanctions and related countermeasures.

Despite the increase in total risk-weighted assets, the group is well-capitalised and remains comfortably above the regulatory requirements. Euroclear's capital has further increased in 2023 following the decision to retain 100% of the net profit stemming from Russian frozen balances.

(€'000)	2023	2022
Risk-weighted assets⁽¹⁾	10,954,030	10,383,065
Capital requirement	876,322	830,644
Credit risk	302,664	341,157
- Market risk	13,140	18,186
- Operational risk	560,518	471,301
Capital base⁽²⁾	7,960,465	3,903,098
- CET1	7,951,093	3,900,097
- Tier 2	9,372	3,001
Solvency ratio		
- CET1	72.8%	37.6%
- Tier 1	72.6%	37.6%
- Total	72.7%	37.6%

¹ Risk-weighted assets represent the total capital requirement multiplied by a factor of 12.5. This means that the risk-weighted assets do not only relate to credit and market risk, but also comprise the gross-up of the capital requirements related to operational risks. For Euroclear, the latter are the main source of capital consumption.

² Capital base is highly comparable to the shareholders' equity presented in the Statement of financial positions. Differences are due to deductions required by CRR regulation, mainly goodwill and intangible assets, defined benefit pension fund assets, current year proposed dividend, limits on investments in financial sector entities and deferred tax assets, cash-flow hedging reserve, prudent valuation and provision shortfall for expected losses.

¹⁴ NBB identifies Euroclear Bank, Euroclear SA/NV and Euroclear Holding as domestic systemically important banks (referred to in EU legislation as 'other systemically important institutions', or O-SIIs) under Belgian banking law and CRD IV. Subsequently, the NBB applies a common equity Tier 1 capital ratio surcharge of 0.75% to Euroclear Bank standalone, Euroclear SA/NV consolidated and Euroclear Holding consolidated.

IV.5.3. Minimum required eligible liabilities (MREL)

Consistent with the requirements of Bank Recovery and Resolution Directive (BRRD), as transposed by Belgian law and interpreted by the Belgian National Bank as the National Resolution Authority (NRA), Euroclear SA/NV and Euroclear Bank are required and maintain a minimum level of MREL to facilitate the orderly resolution of the group should this ever be deemed appropriate by the NRA.

V. Segment analysis

The Euroclear SA/NV Management Committee receives internal reports for Euroclear Bank, Euroclear SA/NV, Euroclear UK & International, the ESES CSDs, Euroclear Sweden, Euroclear Finland, as well as for the MFEX group.

The business segments are reported per entity as follows:

- Euroclear Bank (including its Hong Kong, Polish and Japanese branches) is a Central Securities Depository with a Banking License. The market-wide application of international sanctions has had a material impact on Euroclear. As such, Euroclear considers it necessary to separate the estimated Russian sanctions-related earnings from the underlying financial results when assessing the Company's performance and resources. Euroclear has defined procedures and management reporting rules to segregate the sanction-related earnings from the underlying performance, as to isolate the impact from the proceeds and the costs linked to the management of sanctioned assets from the regular conduct of business.
- Euroclear SA/NV (including its branches in Amsterdam, London, Paris and Krakow) is the provider of software development and non-operational support services to the CSDs
- Euroclear UK & International is the Central Securities Depository (CSD) subsidiary located in the United Kingdom. This entity also runs an investment fund order routing business
- the ESES segment includes the group's CSDs located in Belgium, France and the Netherlands
- Euroclear Sweden (CSD in Sweden)
- Euroclear Finland (CSD in Finland)
- MFEX (Funds platform).

Information reported within 'Other' relates to the parent companies, Euroclear AG, Euroclear Re SA, Euroclear Global Collateral Services Ltd, Taskize Ltd, Euroclear Properties France SA, Goji Holding Limited and Quantessence Limited. None of these qualified as a reportable segment in 2023 or 2022.

A matrix structure exists that allows management to view the business by legal entity but also by product line. MFEX funds platform together with Euroclear Bank's Fundsettle business represent a separate Cash Generating Unit (CGU).

No single client generated 10% or more of the group's revenues.

Transactions between the companies are on normal commercial terms and conditions. Recharges of software development costs and support services are based on formal agreements between the entities concerned.

Segment assets and liabilities comprise all third-party assets and liabilities.

(€'000)	Notes	2023										Group	
		Euroclear Bank (excluding Russian Impacts)	Euroclear Bank - Russian Impacts	Euroclear SA/NV	Euroclear UK & International	ESES CSDs	Euroclear Sweden	Euroclear Finland	MFEX	Other	Eliminations		
Interest income	VI	1,269,934	4,466,439	3,808	4,899	1,813	3,142	376	4,169	38,077	(35,022)		5,755,635
Interest expense	VI	(324,250)	(64,778)	(12,722)	(12)	1,182	(83)	-	(585)	(28,588)	34,994		(394,852)
Net fee and commission income	VII	1,109,733	(23,960)	(64)	134,526	223,004	59,885	54,478	51,866	1,530	29		1,611,027
Intra-group recharges		3,495	-	853,394	61	39	62	318	6,360	43	(893,772)		-
Other income		160,051	6,892	436,046	431	381	(22)	166	3,271	402,825	(627,452)		162,401
Operating income		2,218,963	4,383,593	1,311,262	139,905	226,429	62,984	55,340	65,071	411,887	(1,721,223)		7,154,211
Staff costs	IX	(156,472)	(8,252)	(411,632)	(20,408)	(23,950)	(17,325)	(13,981)	(35,133)	(7,875)	-		(694,628)
Other direct costs	IX	(15,811)	(18,389)	(448,240)	(19,873)	(5,464)	(17,852)	(16,882)	(21,294)	(16,280)	6,893		(572,972)
Depreciation and amortisation	XVII, XVIII	(6,655)	-	(64,806)	(88)	(700)	(3,141)	(6,517)	(4,251)	6,940	-		(61,218)
Royalty fees		(28,297)	-	-	(954)	(675)	(249)	(147)	-	-	29,922		-
Group non-operational and administrative support services		(601,711)	(34,922)	(1,149)	(92,557)	(127,157)	(19,359)	(8,746)	(5,933)	893,784	-		-
Share of result in joint venture		-	-	(2,602)	-	-	-	-	-	-	-		(2,602)
Operating profit(loss) before impairment and taxation		1,408,017	4,322,030	382,833	6,425	68,863	5,258	9,087	(1,540)	392,422	(790,624)		5,802,791
Impairment	X	506	-	(19,606)	80	(199)	(105,250)	(44)	473	(5,307)	-		(124,575)
Operating profit(loss) before taxation		1,408,525	4,322,030	363,027	6,515	68,664	(94,972)	9,043	(1,067)	387,055	(790,624)		5,678,216
Taxation	XI	(352,077)	(1,080,508)	(537)	(819)	(18,440)	(1,204)	(1,802)	1,915	(855)	-		(1,454,358)
Profit(loss) for the year		1,056,448	3,241,522	362,490	5,696	50,244	(96,176)	7,241	848	386,169	(790,624)		4,223,858
External revenues		3,018,311	4,472,300	14,220	198,022	227,005	66,577	47,883	61,192	4,427	-		8,079,937
Revenues from other segments		27,482	-	915,322	1,795	34,675	(80)	8,905	1,661	40,678	(1,030,438)		-
Total revenues		3,045,793	4,472,300	929,542	160,817	261,680	66,497	56,788	62,853	45,105	(1,030,438)		8,079,937
Segment assets		27,312,525	134,253,508	2,035,144	231,455	334,063	157,981	124,397	873,839	492,936	-		165,815,848
of which non-current assets		2,990,353	19,000	1,062,121	120,119	128,271	85,393	57,919	489,564	47,195	-		4,979,935
Segment liabilities and shareholders' equity		25,971,062	134,253,508	2,569,574	195,121	312,888	(48,509)	(153,859)	333,865	2,382,218	-		165,815,848

(€'000)	2023					
	Belgium	France	Sweden	United Kingdom	Other	Group
Revenue	7,520,230	174,689	127,769	159,022	89,227	8,070,937
Profit And Loss before Tax	5,706,015	58,735	(96,039)	6,514	2,991	5,678,216
Tax on Profit and Loss	(1,437,722)	-	-	711	(740)	(1,454,358)
Total Assets	164,090,741	220,916	1,031,820	231,455	240,916	165,815,848
o.w Non Current Assets	4,130,504	92,916	554,957	120,119	81,439	4,979,935
Total Liabilities	164,807,566	241,461	285,356	195,121	260,342	165,815,848
Number of employees on Full Time Equivalent basis	4,595	88	512	216	162	5,573

(€'000)	Notes	2022										Group	
		Euroclear Bank (excluding Russian Impacts)	Euroclear Bank - Russian Impacts	Euroclear SA/NV	Euroclear UK & International	ESES CSDs	Euroclear Sweden	Euroclear Finland	MFEX	Other	Eliminations		
Interest income	VI	305,698	815,457	2,117	1,230	363	305	-	876	32,515	(32,387)		1,126,171
Interest expense	VI	(200,377)	(8,457)	(10,253)	(113)	(1,028)	(257)	(152)	(565)	(28,770)	32,426		(217,546)
Net fee and commission income	VII	1,040,658	(6,948)	32	141,582	219,740	68,754	55,514	56,797	2,435	(30)		1,574,036
Intra-group recharges		3,237	-	774,843	56	35	67	318	2,220	1,613	(782,289)		-
Other income		263,339	14,453	322,542	358	147	(82)	213	(343)	319,901	(633,753)		286,776
Operating income		1,412,552	814,507	1,089,281	142,614	215,257	68,787	55,893	58,985	327,594	(1,416,033)		2,769,437
Staff costs	IX	(137,195)	(3,626)	(345,569)	(20,579)	(21,735)	(16,572)	(11,755)	(28,894)	(5,885)	-		(591,808)
Other direct costs	IX	(11,689)	(2,405)	(370,598)	(19,356)	(3,587)	(19,273)	(19,927)	(27,561)	(5,801)	370		(477,507)
Depreciation and amortisation	XVII, XVIII	(9,308)	-	(61,112)	(89)	(16)	(3,221)	(6,232)	(4,276)	(4,683)	8,045		(80,872)
Royalty fees		(5,774)	-	-	(630)	(844)	(347)	(205)	-	-	7,800		-
Group non-operational and administrative support services		(527,204)	(13,491)	(5,153)	(84,496)	(122,885)	(15,864)	(8,585)	(2,701)	(1,723)	762,082		-
Share of result in joint venture		-	-	(1,905)	-	-	-	-	-	-	-		(1,905)
Operating profit(loss) before impairment and taxation		721,362	794,989	304,544	17,464	96,230	13,910	15,191	(4,147)	305,922	(617,736)		1,611,345
Impairment	X	(5,338)	(517)	(9,972)	(9)	(466)	(120)	(32)	1,158	116	-		(12,173)
Operating profit(loss) before taxation		716,044	794,488	297,572	17,455	95,764	13,384	15,159	(2,978)	306,806	(617,736)		1,605,172
Taxation	XI	(180,516)	(197,135)	2,916	(2,744)	(16,214)	(2,710)	(2,938)	(2,687)	(5,128)	-		(405,171)
Profit(loss) for the year		535,528	597,353	300,482	14,711	79,550	10,674	12,220	(5,675)	302,912	(617,736)		1,200,001
External revenues		2,157,281	829,900	9,634	159,842	319,894	71,798	47,681	58,303	4,032	-		3,558,086
Revenues from other segments		25,945	-	1,089,766	1,482	34,578	582	6,441	2,220	-	(1,163,046)		-
Total revenues		2,183,226	829,900	1,099,422	161,324	354,472	72,380	54,122	60,525	4,092	(1,163,046)		3,558,086
Segment assets		30,066,474	93,414,507	1,969,065	222,017	306,811	255,452	131,478	821,739	451,642	-		127,638,985
of which non-current assets		2,910,837	-	1,243,512	73,314	83,448	156,896	85,779	494,975	256,003	-		5,284,762
Segment liabilities and shareholders' equity		29,732,543	93,414,507	2,487,913	100,499	280,520	52,079	(147,014)	270,072	2,351,266	-		127,638,985

(€'000)	2022					
	Belgium	France	Sweden	United Kingdom	Other	Group
Revenue	3,010,865	169,224	88,053	130,102	159,842	3,558,086
Profit And Loss before Tax	1,505,526	53,901	17,884	10,405	17,456	1,605,172
Tax on Profit and Loss	(375,789)	(13,279)	(7,951)	(5,408)	(2,744)	(405,171)
Total Assets	125,508,383	197,033	1,077,191	222,017	634,361	127,638,985
o.w Non Current Assets	4,183,272	45,503	881,584	12,979	161,424	5,284,762
Total Liabilities	124,666,189	219,679	330,951	180,499	2,241,667	127,638,985
Number of employees on Full Time Equivalent basis	3,905	85	492	154	196	4,832

The €790,624,000 remaining in the Eliminations column relates to dividends received from companies within the group (2022: €617,736,000).

The country reporting is disclosed in compliance with article 89 of the European Capital Regulatory Directive IV and IFRS 8. The country information reflects the country of residence of the entities.

VI. Net interest income

(€'000)	Notes	2023	2022
Interest income on financial instruments			
- Cash and balances with central banks		3,637,240	426,550
- Loans and advances at amortised cost		1,656,914	434,818
- Debt instruments measured at FVOCI		350,785	63,553
- Non-trading financial assets mandatorily at FVPL		1,214	459
- Derivatives used for hedging (only interest flows)		82,609	12,933
- Negative interest on financial liabilities		5,569	182,442
- Other		20,810	5,409
Interest income on defined benefit plans	XXII	494	7
Total interest income		5,755,635	1,126,171
Interest expense on financial instruments			
- Deposits from central banks		-	(272)
- Deposits from banks and customers		(23,751)	(8,012)
- Debt securities issued and funds borrowed		(167,395)	(85,121)
- Derivatives used for hedging (only interest flows)		(121,942)	(9,933)
- Negative interest on financial assets at amortised cost		(329)	(80,321)
- Negative interest on financial assets at FVOCI		(3,716)	(20,621)
- Other		(74,664)	(11,104)
Interest expense on lease liabilities		(1,176)	(356)
Interest expense on defined benefit plans	XXII	(1,879)	(1,808)
Total interest expense		(394,852)	(217,548)
Net interest income		5,360,783	908,623

The level of interest revenues has significantly increased due to the increase of interest rates and the growth of cash balances arising from sanctions on Russia.

VII. Net fee and commission income

(€'000)	2023	2022
Fee and commission income		
Clearing and settlement	677,690	654,981
Safekeeping	988,696	959,232
Other	472,278	551,184
Total fee and commission income	2,138,672	2,165,397
Fee and commission expense		
Clearing and settlement	(168,808)	(153,048)
Safekeeping	(236,779)	(233,614)
Other	(122,056)	(204,499)
Total fee and commission expense	(527,645)	(591,361)
Net fee and commission income	1,611,027	1,574,036

Other fee and commission income principally include communication fees amounting to €201,000,000 (2022: €201,000,000), custody servicing fees amounting to €47,000,000 (2022: €49,000,000), issuer and securities services amounting to €38,000,000 (2022: €41,000,000), distribution fees (MFEX) amounting to €34,000,000 (2022: €32,000,000) and the recovery of out-of-pocket expenses.

VIII. Net gains/(losses) on financial assets and liabilities held for trading

(€'000)	2023	2022
Foreign exchange derivatives	153,235	275,228

Treasury swaps are derivatives that are not designated as hedging instruments. The net gains on foreign exchange trading mainly relate to treasury swaps initiated by Euroclear Bank in order to convert balances in non-core currencies into euro or US dollars for re-investment purposes. Under IFRS, these results may not be included within net interest income.

The number of deals was exceptionally high in 2022, as a result of the incoming sanctioned cash in rouble swapped into euro. In order to contain risks for its participants, Euroclear Bank informed them early February 2023 of the closure of its cash correspondent account in Russia and the withdrawal of rouble as a settlement currency. This means that money transfer instructions in rouble or any in coming rouble payments, including income and redemption events, are no longer processed.

IX. Administrative expenses

(€'000)	Notes	2023	2022
Staff costs			
- Wages and salaries		507,197	426,534
- Social security costs		110,115	91,526
- Defined benefit plans	XXII	27,939	30,331
- Defined contribution plans		11,483	10,825
- Other staff costs		37,893	32,592
Auditors' remuneration		4,116	3,946
Consultants fees		388,361	321,310
Occupancy		27,593	27,363
Maintenance and repairs		53,395	49,402
Travel and training		20,342	12,854
Communications		9,194	8,631
Other rent and non capitalised expenses		36,830	27,704
Other taxes		26,844	21,626
Depreciation and amortisation	XVII, XVIII	81,218	80,872
Other administrative expenses		60,472	45,675
Provisions for liabilities and charges	XXI	(4,712)	8,679
Capitalised expenses		(49,936)	(49,683)
Contingent consideration adjustment		474	0
Total		1,348,818	1,150,187

The average number of persons employed by the group during the year was 5,576 (2022: 4,901).

The auditors' remuneration for Euroclear Holding SA/NV and its subsidiary undertakings was as follows:

(€'000)	2023	2022
Fees payable to the Company's auditor for the audit of the Company's financial statements	193	182
Fees payable to the Company's auditor and its associates for other services:		
- The audit of the Company's subsidiaries, pursuant to legislation	2,911	2,811
- Other attest and assurance services	1,012	940
- Other services	-	13
Total	4,116	3,946

Euroclear ensures that the independence of the external auditor is preserved through a specific policy adopted by the Board and agreed by the auditor. This policy adheres to the highest standards of independence. The engagement of the external auditor for non-core services is subject to specific controls, monitored by the Board's Audit Committee.

X. Impairment

(€'000)	Notes	2023	2022
Impairment charges			
Goodwill and intangible assets	XVIII	105,402	5,017
Financial assets		(762)	706
Other assets		152	(525)
Group participations and associates		19,783	6,975
Total		124,575	12,173

(€'000)	Notes	2023	2022
Other assets impaired			
At 1 January		7,633	2,582
Charge to the income statement		152	(525)
Amounts used		(352)	5,938
Exchange differences		(30)	(362)
At 31 December		7,403	7,633

For other assets, impairment mainly relates to the lifetime expected credit loss computed on fees receivable from clients in several group's (I)CSD subsidiaries.

Impairment on Participations include Quantessence accumulated losses (€5,617,000) and an impairment recorded on Greenomy (€14,166,000) reflecting a slower growth than initially expected.

The amounts recognised under Goodwill and internally developed software include €5,402,000 impairment recorded on internally developed software due to the uncertainty as to the future revenues of the new services recently developed or under development, and €100,000,000 impairment recorded on ESW goodwill (see note XVIII).

The movements of expected credit losses on financial assets during the year are as follows:

(€'000)	Cash and balances with central banks	Loans and advances at amortised cost	Debt instruments at FVOCI	Loan commitments & financial guarantees	Total
At 1 January 2023	274	1,271	877	55	2,477
Financial instruments originated/acquired during the period	293	483	242	9	1,027
Financial instruments derecognised during the period	(274)	(1,085)	(335)	(55)	(1,749)
Change due to change in credit risk	-	48	(120)	-	(72)
At 31 December 2023	293	717	664	9	1,683

For details on the expected credit loss (ECL) per internal rating, please refer to note IV.

The rates used by the group entities to determine the expected credit losses for trade receivables (simplified method) are as follows:

Expected loss rate	2023	2022
Current	0.88%	0.89%
Less than 30 days	0.76%	0.76%
30 to 60 days	3.16%	3.48%
60 to 90 days	3.85%	4.11%
90 to 360 days	15%-90%	15%-90%
Over 360 days	20%-100%	20%-100%

XI. Taxation

(€'000)	2023	2022
Current income tax expense	1,480,783	405,467
Adjustments to tax charge in respect of previous years	(2,364)	(2,374)
Total current income tax	1,478,419	403,093
Deferred tax charge/(income) relating to the origination and reversal of temporary differences	(23,916)	2,108
Deferred tax charge/(income) resulting from change in tax rate	(145)	(30)
Tax expense for the year	1,454,358	405,171

Further information on deferred tax is presented in Note XII.

The tax on the group's profit before tax differs from the theoretical amount that would arise from using the standard rate as follows:

(€'000)	2023	2022
Operating profit/(loss) before tax	5,678,216	1,605,172
At standard rate of tax ⁽¹⁾	1,419,554	401,293
Effects of:		
- Expenses not deductible for tax purposes	12,821	12,979
- Net tax effect of intercompany dividend elimination and dividend received	(2,222)	(1,578)
- Net tax effect of change in consolidation perimeter	-	(3,034)
- Disposal of subsidiaries	443	-
- Impairment of subsidiaries	25,546	1,744
- Net tax effect of intercompany dividend elimination and dividend received	651	476
- Net tax effect of change in consolidation perimeter	(2,398)	(748)
- Different rates in the companies in the group	2,472	(3,657)
- Change of tax rate on deferred taxation	(145)	(30)
- Adjustments to tax charge in respect of previous period	(2,364)	(2,374)
Tax expense for the year	1,454,358	405,171

(1) A rate of 25.00% (2022: 25.00%) has been used as the standard rate.

The current income tax asset of €26,074,000 at 31 December 2023 (2022: €27,123,000) represents the total of amounts recoverable from the tax authorities relating to over-payments of income tax pre-payments, prior year adjustments and research and development (R&D) tax credit.

The net tax effect linked to the intercompany dividends eliminated for consolidation purposes have been considered separately in order to adequately reflect the impact of this item of reconciliation on the tax expense.

The expenses not deductible for tax purposes include the other tax effects of consolidation adjustments not subject to deferred tax. The net movement comprises also the effect of changes in facts and circumstances that affect the judgement and estimates of the acceptability of certain tax treatments.

The year-to-year variation of the effect of the different rates applicable to the companies within the group is explained by a combination of factors: decrease of the above group's effective tax rate and changes in the taxable basis of certain sizeable entities.

XII. Deferred taxation

The details of deferred taxation are as follows:

(€'000)	Total	Maturity on or before 31 December 2024	Maturity after 31 December 2024
At 31 December 2023			
Assets			
Defined benefit plans	16,040	-	16,040
Financial assets at FVOCI	27,909	-	27,909
Financial assets (FCl)	785	785	-
Cash flow hedging reserve	2,011	-	2,011
Software development	2,357	2,357	-
Property, plant and equipment	2,064	710	1,354
Tax loss carried forward	79,083	-	79,083
Other temporary differences	27,432	27,319	113
Total	157,161	30,651	126,510
Liabilities			
Defined benefit plans	2,576	-	2,577
Financial assets at FVOCI	(4)	-	(4)
Property, plant and equipment	313	313	-
Other temporary differences	609	609	-
Insurance reserve of Euroclear Re SA	3,252	-	3,252
Total	6,747	922	5,825

(€'000)	Total	Maturity on or before 31 December 2023	Maturity after 31 December 2023
At 31 December 2022			
Assets			
Defined benefit plans	14,333	-	14,333
Financial assets at FVOCI	58,756	5,885	52,871
Financial assets (ECL)	442	442	-
Cash flow hedging reserve	17,993	(6,131)	24,124
Software development	591	591	-
Property, plant and equipment	1,802	448	1,354
Tax loss carried forward	72,553	-	72,553
Other temporary differences	11,902	11,785	117
Total	178,372	13,020	165,352
Liabilities			
Defined benefit plans	(32)	-	(31)
Financial assets at FVOCI	(333)	-	(333)
Cash flow hedging reserve	(1)	(1)	-
Software development	1,326	1,326	-
Other temporary differences	2,619	191	2,428
Insurance reserve of Euroclear Re SA	3,204	-	3,204
Total	6,784	1,516	5,268

Deferred taxes are classified as assets or liabilities depending on the total net deferred tax asset or liability across all types of deferred tax at year-end for each entity.

Deferred taxation for tax losses carried forward mainly relates to Euroclear SA/NV.

Analysis of the movements of the net deferred tax asset and liability balances is as follows:

(€'000)	Notes	2023	2022
At 1 January		171,588	106,190
Acquisition of subsidiaries		-	7,690
Income statement	XI	24,061	(2,078)
Deferred tax relating to items (charged) or credited to equity			
- Defined benefit plans	XXII	763	(19,322)
- Financial assets at FVOCI		(31,122)	63,505
- Cash flow hedging reserve	XXVI	(15,982)	16,213
Exchange differences		1,106	(610)
At 31 December		150,414	171,588

The deferred tax income/(charge) in the income statement comprises the following temporary differences:

(€'000)	Notes	2023	2022
Defined benefit plans	XXII	(1,645)	(8,583)
Impairment of financial assets		(232)	234
Software development		1,971	(7,261)
Property, plant and equipment		(61)	(205)
Tax losses carried forward		4,738	10,610
Insurance reserve		(49)	(88)
Other temporary differences		19,339	3,235
Total		24,061	(2,078)

There were no unrecognised deferred taxes as of year-end.

The Euroclear group has applied the temporary exception issued by the IASB in May 2023 from the accounting requirements for deferred taxes in IAS 12. Accordingly, the group neither recognises nor discloses information about deferred tax assets and liabilities related to Pillar Two income taxes..

In 2023, the government of Belgium where the parent company is incorporated, enacted the Pillar Two income taxes legislation effective from 1 January 2024.

Based on a performance assessment performed over financial years 2021 and 2022 figures, the group came to the conclusion that transitional safe harbours can be applied. The Company can reasonably expect to use safe harbours rules in 2024, 2025 and 2026, therefore the related top-up tax up until year 2026 is expected to be zero. The group will continue to assess the impact of the Pillar Two income taxes legislation on its future financial performance.

XIII. Financial assets at FVOCI

(€'000)	2023	2022
At 31 December		
Financial assets at FVOCI		
Equity shares		
- Listed	366,348	322,144
- Unlisted but fair value determinable	21,380	52,746
Equity funds	758,566	810,408
Listed debt instruments	13,675,826	15,919,613
Total	14,822,120	17,104,911

All debt securities have fixed coupons.

For unlisted securities, the valuation is based on the prices at which the securities could probably be sold to willing and knowledgeable parties. These prices are determined using generally accepted valuation techniques, including discounted cash flow models and relevant market multiples.

The maturity profile of the financial assets at FVOCI can be found in Note IV.

The movement in financial assets at FVOCI can be summarised as follows:

(€'000)	Notes	Equity shares	Fund units	Debt instruments	Total
At 1 January 2023		374,890	810,408	15,919,613	17,104,911
Additions		13,367	45,590	35,638,592	35,697,549
Redemptions and disposals		(5,943)	(124,223)	(38,272,595)	(38,402,761)
FVOCI revaluation reserve					
- (Gains)/losses on redeemed or sold financial assets		40,835	(1,408)	-	39,427
- Gains/(losses) on held financial assets		(35,421)	28,199	110,517	103,295
Amortisation of discounts and (premiums)		-	-	288,801	288,801
Net change in accrued interest		-	-	(3,403)	(3,403)
Expected credit loss allowance		-	-	213	213
Exchange difference		-	-	(5,912)	(5,912)
At 31 December 2023		387,728	758,566	13,675,826	14,822,120

(€'000)	Equity shares	Fund units	Debt instruments	Total
At 1 January 2022	441,752	858,198	7,979,354	9,279,304
Additions	33	112,510	26,736,369	26,848,912
Redemptions and disposals	-	(132,515)	(18,575,109)	(18,707,624)
FVOCI revaluation reserve				
- Gains/(losses) on held financial assets	(66,895)	(27,785)	(240,904)	(335,584)
Amortisation of discounts and (premiums)	-	-	3,085	3,085
Net change in accrued interest	-	-	9,648	9,648
Expected credit loss allowance	-	-	(87)	(87)
Exchange difference	-	-	7,257	7,257
At 31 December 2022	374,890	810,408	15,919,613	17,104,911

XIV. Financial instruments held for trading

The fair value and notional amounts of the group's trading derivatives were as follows:

(€'000)	Notional amount	Fair value	
		Assets	Liabilities
At 31 December 2023			
Foreign exchange derivatives			
- Forward foreign exchange	13,155,870	85,161	55,001
At 31 December 2022			
Foreign exchange derivatives			
- Forward foreign exchange	15,767,141	61,088	316,708

The notional amount related to forward foreign exchange contracts at 31 December 2023 and 31 December 2022 principally reflects to outstanding currency swaps.

XV. Derivatives used for hedging

XV.1. Cash flow hedges

Foreign exchange hedges

Euroclear Bank uses the euro as functional currency and is exposed to foreign exchange exposure (changes in the relevant spot exchange rate) that could adversely influence fee and interest income streams.

The group applies hedge accounting for these highly probable forecasted revenue streams influenced by changes in foreign exchange rates for certain currencies. The policy foresees to hedge a minimum 75% threshold of the total operating profit exposures in foreign currencies, 65% of the net interest earnings in foreign currencies for Business as Usual and 60% of the net interest earnings on Russian frozen or immobilised assets.

Euroclear Bank enters into currency forward foreign exchange contracts whereby it sells the relevant currencies on a future date at a predetermined price. One contract is done per month, per currency and per nature of exposures (fees and interests) to offset the net currency stream (usually an income) of the same month. These contracts are done on a rolling 12-month basis (or 3-month basis for less liquid currencies) for total operating profit, a rolling 12-month basis for the business as usual part of net interest earnings in USD and 6-month basis for the other currencies, and a rolling 3-month basis for net interest earnings on Russian frozen or immobilised assets. Such transactions are classified as cash flow hedges.

Hedge effectiveness is assessed based on the critical terms of the contracts. The economic relationship is verified at inception of the deal confirming that the characteristics of the hedging instrument are aligned to those of the hedged item (forward contract with the same maturity and currency as expected revenues, notional of the derivatives matching the hedged positions). The hedged items create an exposure to buy euros and sell foreign currencies at the payment date. The forward contract to sell euros for forex currencies on the payment date creates an offset for these two transactions. Values will thus generally move in the opposite direction.

The hedge ratio is determined by comparing the notional of the derivative with the quantity of hedged items. The following sources of ineffectiveness are identified and monitored:

- change in timing and / or level of the incoming flows of any of the two items constituting the hedged item. To mitigate this risk, Euroclear Bank ensures that no material changes are observed in the timing and/or level of the incoming flows of the hedged item
- change in the credit risk of Euroclear Bank or the counterparty of the forward contract. The credit risk of both the counterparties and Euroclear Bank is monitored for adverse changes by Treasury. As all contracts must be entered with counterparties with a credit rating of A or higher, the credit risk is minimal and does not dominated the value change
- impact of foreign currency basis spreads (materialised through the forward points included in the hedging relationship). The hedging horizon is adapted to limit the impact of currency basis spread (3-month, 6-month or 12-month basis, depending on the interest rate level associated to the hedged currency).

As 31 December 2023, Euroclear Bank monthly secures an average of €-equivalent 233,369,000 currency stream (2022: €-equivalent 130,594,000). The increase of the volumes hedged results from the rising interest rates and higher balances.

Interest rate hedges

Euroclear Bank also enters into interest rate derivatives aiming to reduce the income volatility linked to the reinvestment of the stable part of its client deposits in EUR, USD and GBP, and the repricing of short-term assets financed by its core equity. The hedged items are the highly probable variable cash flows stemming from the reinvestment of client deposits and core equity.

The total hedging position are built-up gradually over time.

In assessing Euroclear Bank's exposure to interest rate risk, the following assumptions are taken to assign:

- a maximum term of 5 years for the core equity;
- a maximum maturity of 5 years for the stable operational balances.

The following sources of ineffectiveness are identified and monitored:

- Change in timing and/or level of the incoming flows of the hedged item and the outgoing flows of the hedging instruments. To mitigate this risk, Euroclear Bank ensures that the timing and level of the incoming flows of the hedged item and the outgoing flows of the hedging instrument will be closely matched.
- Significant discrepancy between the stable operational client deposits and the notional amount of interest rate derivatives. In accordance with the evolution of the stable operational client deposits, Euroclear will adjust the notional amounts.

The fair value and notional amounts of the group's derivatives used for cash flow hedges were as follows:

(€'000)	Notional amount	Fair value	
		Assets	Liabilities
At 31 December 2023			
Foreign exchange derivatives			
- Forward foreign exchange	1,269,300	14,401	5,782
Interest rate derivatives			
- Interest rate swaps	3,720,928	79,247	66,270
Total	4,990,228	93,648	72,061
At 31 December 2022			
Foreign exchange derivatives			
- Forward foreign exchange	1,092,495	30,837	6,313
Interest rate derivatives			
- Interest rate swaps	2,766,899	15,406	106,302
Total	3,859,394	46,243	112,615

No ineffectiveness arose from cash flow hedging in 2023 and 2022. At the reporting date, the group has considered the most recent forecasts, and no new ineffectiveness was observed.

The amounts recognised in the cash flow hedging reserve at year-end are gradually released to the income statement (net gains/losses on foreign exchange and net interest income) in the following year, when the related cash flows materialise.

The movements in the cash flow hedging reserve can be detailed as follows:

('000)	Notes	Foreign exchange derivatives			Interest rate derivatives			Total derivatives		
		Gross amount	Deferred tax	Net amount	Gross amount	Deferred tax	Net amount	Gross amount	Deferred tax	Net amount
At 1 January 2023		24,524	(6,131)	18,393	(96,495)	24,124	(72,371)	(71,971)	17,993	(53,978)
Change of fair value directly recognised in other comprehensive income		3,087	(772)	2,315	40,500	(19,958)	20,542	43,587	(20,730)	22,857
Amount released from other comprehensive income to profit or loss		-	-	-	-	-	-	-	-	-
- Amount reclassified to profit and loss because hedged future cash flows are no longer expected to incur		-	-	-	-	-	-	-	-	-
- Amount reclassified to profit and loss because hedged item has affected profit or loss		(18,993)	4,748	(14,245)	39,333	-	39,333	20,340	4,748	25,089
Total change to cash flow hedging reserve	XXVI	(15,906)	3,976	(11,930)	79,833	(19,958)	59,875	63,927	(15,982)	47,946
At 31 December 2023		8,618	(2,155)	6,463	(16,662)	4,166	(12,496)	(8,044)	2,011	(6,032)
At 1 January 2022		(8,320)	2,080	(6,240)	1,199	(300)	899	(7,121)	1,780	(5,341)
Change of fair value directly recognised in other comprehensive income		8,623	(2,156)	6,467	(94,694)	24,424	(70,270)	(86,071)	22,268	(63,803)
Amount released from other comprehensive income to profit or loss		-	-	-	-	-	-	-	-	-
- Amount reclassified to profit and loss because hedged future cash flows are no longer expected to incur		-	-	-	-	-	-	-	-	-
- Amount reclassified to profit and loss because hedged item has affected profit or loss		24,221	(6,055)	18,166	(3,000)	-	(3,000)	21,221	(6,055)	15,166
Total change to cash flow hedging reserve	XXVI	32,844	(8,211)	24,633	(97,694)	24,424	(73,270)	(64,850)	16,213	(48,637)
At 31 December 2022		24,524	(6,131)	18,393	(96,495)	24,124	(72,371)	(71,971)	17,993	(53,978)

XV.2. Hedges of net investments in foreign operations

The group has hedged, until July 2011, part of the currency translation risk of net investments in foreign operations (EMXCo, Euroclear UK & International, the UK branch of Euroclear SA/NV and Euroclear Sweden).

The balance of the hedge of net investments in foreign operations reserve can be detailed as follows:

('000)	Notes	2023	2022
At 1 January and 31 December	XXVI	(18,238)	(18,238)

XVI. Other assets

('000)	2023	2022
Items in process of collection	53,627	82,671
Other taxation and social security	28,857	32,146
Other assets (after impairment)	312,151	759,011
At 31 December	394,635	873,828

Items in the process of collection principally relate to coupon and redemption proceeds for participants of Euroclear Bank.

The MFEX group contributes to €46,278,000 in Other assets (2022: €205,925,000) mainly related to the delivery of services, and funds commissions to be collected and redistributed. The decrease is principally explained by a change of presentation (accruals moved from Other assets to Accrued Income).

Other assets also include €199,936,000 related to variation margins (2022: €454,369,000).

XVII. Property, plant and equipment

('000)	Notes	Land and buildings	Leasehold improvements	Furniture and fixtures	IT equipment	Other equipment	Total	of which Right-of-use assets:		Total
								Land and buildings	and other equipment	
Cost										
At 1 January 2023		203,815	58,989	16,955	176,536	12,361	468,656	157,843	9,420	167,263
Additions		38,903	6,701	3,112	38,699	12,464	99,879	38,517	12,426	50,943
Capitalisation of dilapidation provisions	XXI	-	1,123	-	-	-	1,123	-	-	-
Transfers		-	104	14	-	(118)	-	-	-	-
Sales and disposals		(1,771)	(8,806)	(3,081)	(13,181)	(85)	(26,924)	(1,771)	(85)	(1,856)
Exchange differences		(15,487)	(139)	(3)	(1,719)	(7,020)	(24,368)	(15,486)	(5,210)	(20,696)
At 31 December 2023		225,460	57,972	16,997	200,335	17,602	518,366	179,101	16,551	195,652
Accumulated depreciation										
At 1 January 2023		(102,621)	(45,328)	(12,819)	(143,032)	(959)	(304,759)	(70,526)	-	(70,526)
Depreciation charge		(23,254)	(4,013)	(1,154)	(15,853)	(462)	(44,746)	(22,058)	-	(22,058)
Transfers		-	29	(14)	(76)	82	1	-	-	-
Sales and disposals		8,621	7,851	2,835	11,693	-	31,000	8,621	-	8,621
Exchange differences		1,412	12	(174)	701	999	2,950	1,413	-	1,413
At 31 December 2023		(115,842)	(41,449)	(11,336)	(146,567)	(360)	(315,554)	(82,550)	-	(82,550)
Net book value at 31 December 2023		109,618	16,523	5,661	53,768	17,242	202,812	96,551	16,551	113,102

('000)	Notes	Land and buildings	Leasehold improvements	Furniture and fixtures	IT equipment	Other equipment	Total	of which Right-of-use assets:		Total
								Land and buildings	and other equipment	
Cost										
At 1 January 2022		186,008	55,425	16,870	171,247	12,843	442,393	140,344	9,437	149,781
Acquisition of subsidiaries		6,482	-	-	-	-	6,482	6,482	-	6,482
Additions		13,177	1,916	2,112	13,688	955	31,848	12,969	(15)	12,854
Capitalisation of dilapidation provisions	XXI	-	1,496	-	-	-	1,496	-	-	-
Transfer to Non-current assets and assets of disposal groups classified as held for sale		63	-	-	89	(94)	68	63	-	63
Transfers		-	906	-	1,112	(1,113)	905	-	-	-
Sales and disposals		(208)	(339)	(1,852)	(9,366)	(229)	(11,994)	(208)	-	(209)
Exchange differences		(1,707)	(415)	(175)	(244)	(1)	(2,542)	(1,707)	(2)	(1,709)
At 31 December 2022		203,815	58,989	16,955	176,536	12,361	468,656	157,843	9,420	167,263
Accumulated depreciation										
At 1 January 2022		(82,893)	(42,169)	(13,859)	(136,732)	(966)	(276,620)	(51,817)	-	(51,817)
Acquisition of subsidiaries		(3,001)	-	-	-	-	(3,001)	(3,001)	-	(3,001)
Depreciation charge		(21,370)	(3,784)	(936)	(15,375)	(519)	(41,984)	(20,351)	-	(20,351)
Transfer to Non-current assets and assets of disposal groups classified as held for sale		2	-	-	6	1	9	2	-	2
Transfers		-	97	(2)	(388)	288	(5)	-	-	-
Sales and disposals		208	337	1,813	9,367	241	11,966	208	-	208
Exchange differences		4,433	191	165	90	(4)	4,875	4,433	-	4,433
At 31 December 2022		(102,621)	(45,328)	(12,819)	(143,032)	(959)	(304,759)	(70,526)	-	(70,526)
Net book value at 31 December 2022		101,194	13,661	4,136	33,504	11,402	163,897	87,317	9,420	96,737

The figures above include cost of property, plant and equipment under construction for an amount of €28,000 (2022: €505,000).

There was no modification made during the year to any of the lease contracts that would have resulted in the recognition of a new contract.

VIII. Goodwill and intangible assets

(€'000)	Notes	Internally		Know-how	Goodwill	Contractual		Total
		developed software	Purchased software			customer relationship	Unpatented technology	
Cost								
At 1 January 2023		222,745	134,416	45,779	1,855,061	27,162	59,725	2,344,888
Acquisition of subsidiaries					48,922			48,922
Additions		37,602	20,943					58,545
Transfers		86	(86)					
Sales and disposals		(877)	(188)					(1,065)
Exchange differences		802	7	2	710			1,521
At 31 December 2023		260,358	155,092	45,781	1,904,693	27,162	59,725	2,452,811
Accumulated amortisation and impairment								
At 1 January 2023		(107,774)	(89,485)	(45,779)	(540,195)	(579)	(59,725)	(843,537)
Acquisition of subsidiaries								
Amortisation charges		(22,168)	(13,193)			(1,111)		(36,472)
Impairment		(5,402)			(100,000)			(105,402)
Transfers		(89)	89					
Sales and disposals		224	12					236
Exchange differences		1,335	1,786	(2)	10,693			13,812
At 31 December 2023		(133,874)	(100,791)	(45,781)	(629,502)	(1,690)	(59,725)	(971,363)
Net book value at 31 December 2023		126,484	54,301	-	1,275,191	25,472	-	1,481,448

(€'000)	Notes	Internally		Know-how	Goodwill	Contractual		Total
		developed software	Purchased software			customer relationship	Unpatented technology	
Cost								
At 1 January 2022		203,510	144,777	45,869	1,842,835	23,224	59,725	2,319,940
Acquisition of subsidiaries		(15,563)	(13,768)		24,063	(1,259)		(6,527)
Additions		42,321	12,396			5,792		60,509
Transfer to Non-current assets and assets of disposal groups classified as held for sale		57	(29)					28
Transfer and disposals			(19,807)		2,667	(595)		(17,735)
Sales and disposals		(21,903)	(2,860)			(1,259)		(26,022)
Exchange differences		14,323	13,707	(90)	(14,504)	1,259		14,695
At 31 December 2022		222,745	134,416	45,779	1,855,061	27,162	59,725	2,344,888
Accumulated amortisation and impairment								
At 1 January 2022		(94,664)	(78,584)	(45,869)	(538,664)	(430)	(59,725)	(817,936)
Acquisition of subsidiaries		8,026	250			2,295		10,571
Amortisation charges		(23,525)	(14,784)			(579)		(38,888)
Impairment		(5,017)						(5,017)
Transfer to Non-current assets and assets of disposal groups classified as held for sale		130	29					159
Transfer and disposals			2,015		(2,667)			(652)
Sales and disposals		16,884	2,302			1,259		20,445
Exchange differences		(9,608)	(713)	90	1,136	(3,124)		(12,219)
At 31 December 2022		(107,774)	(89,485)	(45,779)	(540,195)	(579)	(59,725)	(843,537)
Net book value at 31 December 2022		114,971	44,931	-	1,314,866	26,582	-	1,501,351

Goodwill and the contractual customer relationship relate to the acquisition of EMXCo, Euroclear Belgium, Euroclear Finland, Euroclear France, Euroclear Nederland, Euroclear Sweden, Euroclear UK & International, MFEX group and Goji Holding Limited.

The unpatented technology relates to the infrastructure of Euroclear Finland and Euroclear Sweden is fully amortised.

VIII.1. Determination of the cash-generating units

Goodwill impairment reviews are based on the cash-generating units (CGUs) for the group relevant operating segments: the ESES CSDs (Euroclear Belgium, Euroclear France and Euroclear Nederland), EUI (Euroclear UK & International), Euroclear Finland, Euroclear Sweden, Goji and MFEX group.

The MFEX CGU has been created in 2022 and combines the MFEX group acquired in 2021 and Euroclear Bank's Fundsettle business. MFEX and Fundsettle are highly integrated with clients already being transferred from one to the other and leveraging a combined commercial approach, with expected joint synergies.

Except for Euroclear Sweden, goodwill and contractual customer relationship are expressed and tested for impairment purposes in euros. At the time of the acquisition of Euroclear UK & International, the related goodwill was considered as a non-monetary asset of the acquirer and therefore expressed in euros. At the time of migration to IFRS, which considers goodwill to be a monetary asset of the acquired entity, Euroclear decided not to restate prior years' business combinations.

VIII.2. Basis on which recoverable amounts have been determined

The recoverable amounts are based on the 'value in use' using the discounted cash flow methodology for each segment. The 2023 valuation of all the entities concerned is based on a five-year free cash flow forecast with projections for periods beyond this assuming a perpetual annuity of 2.5% similar to last year.

The net book values of the goodwill, and Euroclear Belgium's contractual customer relationships, are set out in the table below:

(€'000)	2023	2022
Euroclear UK & International	203,817	203,480
ESES	484,626	484,626
Euroclear Finland	37,689	37,689
Euroclear Sweden	58,032	146,966
MFEX	464,070	464,070
Goji	48,922	-
	1,297,156	1,336,831

In 2023, Euroclear SA/NV acquired Goji Holding Limited for a total consideration of €48,922,000. The entire value of the participation has been recognised under goodwill, pending completion of the purchase price allocation exercise in 2024.

These are intangible assets considered to have indefinite useful lives.

VIII.3. Key assumptions related to discount factors

The appropriate discount rates are determined by applying the Capital Asset Pricing Model (CAPM). The discount rates and perpetual growth rates used for each CGU in the 2023 and 2022 impairment reviews were as follows:

	2023		2022	
	Discount rate	Perpetual growth rate	Discount rate	Perpetual growth rate
Euroclear UK & International	7.96%	2.50%	8.16%	2.50%
ESES	7.44%	2.50%	7.63%	2.50%
Euroclear Finland	7.60%	2.50%	8.18%	2.50%
Euroclear Sweden	7.15%	2.50%	7.50%	2.50%
MFEX	10.38%	2.50%	10.48%	2.50%

VIII.4. The 2023 impairment review

The key assumptions for the valuation exercise are based on both external sources of information and on internal expectations (assets held in custody, transaction volumes, interest rates, etc.). Forecasts are taken from Board approved plans which translate into resilient profitability trends

throughout 2024 and over the next four years. For all operating segments, their valuation indicated that the current values of goodwill and related intangibles are fair and justified.

All other factors being equal, an increase of the discount rate by 1%, or a decrease of the total business income by 5%, which are assessed as reasonable sensitivity, would result in an impairment in Euroclear Sweden and Euroclear UK & International.

The changes in the parameters used for the sensitivity analysis set out above are based on management's estimates of what level of change is reasonably possible.

An impairment of €100,000,000 was recorded on Euroclear Sweden goodwill in 2023. The harsher economic conditions and reduced volumes growth combined with an increase in costs are expected to persist, leading to reduced long-term projections.

Goji has not been submitted to an impairment test considering the recent acquisition.

XIX. Other liabilities

(€'000)	2023	2022
Funds to be assigned	217,662	156,513
Taxation and social security	32,651	36,330
Creditors	104,881	298,852
Other	102,512	82,672
At 31 December	457,506	574,367

'Funds to be assigned' principally represent funds received and other items in the process of reconciliation.

The MFEX group contributes to €111,746,000 in Other liabilities (2022: €268,224,000), mainly related to the delivery of services, and including funds commissions to be redistributed. The decrease is principally explained by a change of presentation (accruals moved from Creditors to Accruals and deferred income).

XX. Debt securities issued and funds borrowed

(€'000)	Maturity date	2023	2022
At 31 December			
Certificates of Deposits issued in EUR	2023	-	489,196
Certificates of Deposits issued in GBP	2023	-	731,363
Certificates of Deposits issued in USD	2023	-	747,586
Certificates of Deposits issued in EUR	2024	238,785	-
Certificates of Deposits issued in GBP	2024	761,984	-
Certificates of Deposits issued in USD	2024	737,887	-
Total certificate of deposits		1,738,636	1,978,155
Medium Term Notes issued in EUR	2023	-	500,837
Medium Term Notes issued in GBP	2024	403,637	395,063
Medium Term Notes issued in EUR	2025	499,001	498,144
Medium Term Notes issued in USD	2026	544,080	562,999
Medium Term Notes issued in EUR	2027	501,773	501,490
Total medium term notes		1,948,491	2,458,533
EUR 600,000,000 10 year Fixed rate senior debt	2026	598,627	597,929
EUR 300,000,000 12 year Fixed rate senior debt	2030	301,855	301,655
EUR 400,000,000 30 year Fixed rate Corporate Hybrid Debt	2028	405,955	405,624
EUR 350,000,000 30 year Fixed rate Corporate Hybrid Debt	2031	350,085	349,780
Total long term debt issued		1,656,522	1,654,988
Total debt securities issued		5,343,649	6,091,676
Overdrafts		24,046	741
Overnight borrowings		-	103,641
Fixed term borrowings		-	18
Repos		-	46,889
Total funds borrowed		24,046	151,289
Total debt securities issued and funds borrowed		5,367,695	6,242,965

In December 2016, Euroclear Investments SA issued a senior, unsecured and unsubordinated Eurobond on the Euronext Amsterdam stock exchange for an amount up to €600,000,000 (10 year maturity - fixed coupon).

In April 2018, Euroclear Investments also issued a €300,000,000 of unsecured and unsubordinated 12-year-fixed rate senior note and a €400,000,000 of subordinated resettable 30-years fixed-rate hybrid note callable at the option of the issuer after 10 years. These notes were listed on the Irish Stock Exchange.

The 2016 issuance was deemed to enhance the group funding flexibility, while the proceeds of the dual tranche issuance realised in 2018 were transferred downstream by Euroclear Investments to Euroclear Bank for €600,000,000 and to Euroclear SA/NV for €100,000,000 in order to structure relevant loss absorption mechanisms to restore the capital position of these group entities in recovery and resolution scenarios in accordance with the Banking Recovery and Resolution Directive.

On 16 June 2021, Euroclear Investments SA issued a 30-year non-callable 10-year hybrid, subordinated Eurobond on the Irish Stock Exchange for an amount up to €350,000,000. The proceeds of this long term debt were transferred downstream by the Company to Euroclear SA/NV in order to fund the acquisition of the MFEX Group and mitigate the impact that such acquisition the Euroclear SA/NV's regulatory capital adequacy.

XXI. Provisions for liabilities and charges

(€'000)	Notes	HR-related	Dilapidation	Litigation	Commitments and guarantees given	Other provisions	Total
At 1 January 2023		7,396	8,693	1,311	55	5,269	22,724
Capitalisation of dilapidation provision	XVII	-	1,123	-	-	-	1,123
Additions		97	-	263	9	3,358	3,727
Unused amounts reversed during the period		(1,799)	(730)	(108)	(55)	(5,220)	(7,912)
Amounts used		(97)	(583)	-	-	-	(680)
Exchange differences		-	(3)	-	-	14	11
At 31 December 2023		5,597	8,500	1,466	9	3,421	18,993

Provisions for dilapidation costs are recorded to reflect end-of-lease obligations in several countries. The provisions have been adjusted upwards following the high inflation.

The provision for restructuring recorded under HR in 2022 has been reviewed downwards from €5,689,000 to €3,891,000. HR provisions also include other smaller amounts for redundancy.

The decrease in Other provisions is mainly explained by the reversal of the provision of €2,430,000 related to Quantessence (see Note I).

The current portion of the provisions for liabilities and charges is estimated at €4,448,000 (2022: €5,153,000).

XXII. Defined benefit plans

The group operates various post-employment schemes, including defined benefit (DB) and defined contribution (DC) pension plans, and post-employment medical plans.

The group has several DB pension plans covering employees in Belgium, France, Japan, the Netherlands and Sweden under broadly similar regulatory frameworks. The plans exclusively provide retirement and death benefits to the eligible participants. All of the DB pension plans are final or average salary pension plans, which provide benefits to members in the form of a lump sum payment or a guaranteed level of pension payable for life. The level of benefits provided generally depends on members' length of service and their salary in the final years leading up to retirement. The plans face broadly similar risks, as described below. The majority of benefit payments are from the administered funds; however, there are also a limited number of unfunded plans where the company meets the benefit payment obligation as it falls due (Japan). Plan assets are governed by local regulations and practice in each country, as is the nature of the relationship between the group and the pension funds' Board of Directors. Responsibility for governance of the plans - including investment decisions and contribution schedules - lies jointly with the sponsoring companies and the Board of Directors. The Board of Directors must be composed of representatives of the company and plan participants in accordance with the plan's regulations.

The group also operates a number of post-employment medical benefit schemes, in Belgium and France. These plans are unfunded. The method of accounting, significant assumptions and the frequency of valuations are similar to those used for DB pension schemes with the addition of actuarial assumptions relating to the long-term increase in healthcare costs.

Finally, the group operates certain DC schemes in Belgium which present particular features usually associated with DB plans. These plans indeed foresee a legally guaranteed rate of return. As a result of the persisting low interest rate environment, this legally guaranteed return may not be matched by the return provided by the insurance companies. This means that the financial market risk related to these plans is partially borne by the employer, who therefore might face a net liability. The latter does however not materially impact the group's net DB liability as the insurance company has continued so far to guarantee the legal minimum guaranteed interest rate.

All employees joining on or after 1 January 2019 are affiliated to a Belgian DC scheme, while all other employees made the choice between staying in the existing DB plan, which turned from an annuity into a lump sum plan as of 1 January 2019, or joining to the new DC plan. The DC scheme presents features of a DB plan because of the Belgian legal guaranteed return of currently 1.75%. The DC plan is a regular pension plan, with premiums paid by the employer. The premium is a fixed percentage per bracket of the base salary. Neither the DC plan nor the DB lump sum plan affect the benefits accrued for past service, which continue to be revalued with salary increases (so called dynamic management). The end date for both plans is age 67. Both plans are managed by the Euroclear Pension Fund OFP.

A full actuarial valuation of the plans, under IFRS, was made by independent qualified professional actuaries as of 31 December 2023 and showed a deficit of €62,637,000 (2022: €61,570,000) (55% in Belgium, 37% in France, 5% in Sweden, 3% in Japan), offset by a pension surplus of €11,116,000 (2022: €6,207,000) in the Netherlands. The valuation covered all the DB plans and DC plans with DB-like features.

The pension charge recognised in profit and loss in 2023 amounts to €29,324,000 (2022: €32,198,000). The contribution, reflecting employer's contributions for funded plans and benefit disbursements for unfunded plans, amounted to €36,183,000 (2022: €66,166,000).

The major assumptions used by the actuaries in their valuations were:

	2023	2022
Discount rate	3.20%	3.70%
Expected inflation rate	2.09%	2.32%
Future salary increases	3.22%	3.35%
Expected medical cost trend rate	2.30%	2.63%

The above percentages are weighted averages of the assumptions used for the individual plans.

Assumptions regarding future mortality experience are set based on advice and published statistics in each territory (IABE prospective tables in Belgium for retirement benefits, TGHF 05 table in France, AG Prognosetafel 2022 with 2019 experienced mortality in the Netherlands, EPF 2020 rates in Japan and PRI 2011 in Sweden).

The amounts recognised in the balance sheet are as follows:

(€'000)	2023	2022
Present value of funded obligations	(460,034)	(412,592)
Fair value of plan assets	452,635	396,325
	(7,399)	(16,267)
Present value of unfunded obligations (principally made of medical plans)	(44,122)	(39,096)
Net pension deficit	(51,521)	(55,363)

The value of assets in all plans were:

(€'000)	2023			2022		
	Quoted	Unquoted	Total	Quoted	Unquoted	Total
Equity instruments						
- European equities	740	-	740	552	-	552
- Global equities	199,366	-	199,366	168,819	-	168,819
- Emerging markets equities	18,576	-	18,576	16,329	-	16,329
- European real estate equities	14,389	-	14,389	12,932	-	12,932
Debt instruments						
- EMU government bonds	86,433	-	86,433	74,757	-	74,757
- EMU corporate bonds	78,368	-	78,368	67,073	-	67,073
- Euro inflation-linked bonds	20	-	20	15	-	15
Property	3,214	-	3,214	3,013	-	3,013
Cash and cash equivalents	1,241	-	1,241	644	-	644
Qualifying insurance policies	-	857	857	-	845	845
Other	49,431	-	49,431	51,346	-	51,346
Total market value of assets	451,778	857	452,635	395,480	845	396,325

The assets of the funded plans are held separately from those of the group. The group ensures that the investment positions are managed within an asset-liability matching (ALM) framework that has been developed to achieve long-term investments that are in line with the obligations under the pension schemes. Within this framework, the group's ALM objective is to match assets to the pension obligations by investing in long-term fixed interest securities with maturities that match the benefit payments as they fall due and in the appropriate currency. The company actively monitors how the duration and the expected yield of the investments are matching the expected cash outflows arising from the pension obligations. A large proportion of assets consists of equities and bonds, although the group also invests in property, cash and holds some insurance assets. The group believes that equities offer the best returns over the long term with an acceptable level of risk.

The vast majority of the group's pension assets are quoted and highly liquid.

The changes in the net deficit are as follows:

(€'000)	Notes	Medical plans			Pension plans			All plans	
		value of obligations	Fair value of plan assets	Total	value of obligations	Fair value of plan assets	Total	Asset Ceiling	Net pension deficit
At 1 January 2023		37,452	-	37,452	414,236	(396,325)	17,911	-	55,363
Current service cost	IX	1,293	-	1,293	26,628	-	26,628	-	27,921
Past service cost	IX	(364)	-	(364)	382	-	382	-	18
Net interest expense/(income)	VI	1,371	-	1,371	14,998	(14,984)	14	-	1,385
Income statement		2,300	-	2,300	42,008	(14,984)	27,024	-	29,324
Remeasurements									
Return on plan assets (excluding interest)		-	-	-	-	(27,397)	(27,397)	-	(27,397)
Experience (gains)/losses		(106)	-	(106)	(1,451)	-	(1,451)	-	(1,557)
(Gains)/losses due to change in demographic assumptions		-	-	-	6,272	-	6,272	-	6,272
(Gains)/losses due to change in financial assumptions		3,397	-	3,397	22,769	-	22,769	-	26,166
Exchange differences		-	-	-	(146)	-	(146)	-	(146)
Statement of other comprehensive income		3,291	-	3,291	27,444	(27,397)	47	-	3,338
Employer's contributions		-	(565)	(565)	-	(35,618)	(35,618)	-	(36,183)
Exchange differences		-	-	-	(229)	(92)	(321)	-	(321)
Benefit payments		(565)	565	-	(21,781)	21,781	-	-	-
At 31 December 2023		42,478	-	42,478	461,678	(452,635)	9,043	-	51,521

(€'000)	Notes	Medical plans			Pension plans			All plans	
		value of obligations	Fair value of plan assets	Total	value of obligations	Fair value of plan assets	Total	Asset Ceiling	Net pension deficit
At 1 January 2022		62,096	-	62,096	524,384	(417,981)	106,403	-	168,499
Current service cost	IX	2,476	-	2,476	27,921	-	27,921	-	30,397
Net interest expense/(income)	VI	679	-	679	5,472	(4,350)	1,122	-	1,801
Income statement		3,155	-	3,155	33,393	(4,350)	29,043	-	32,198
Remeasurements									
Return on plan assets (excluding interest)		-	-	-	-	70,233	70,233	-	70,233
Experience (gains)/losses		(2,090)	-	(2,090)	25,812	-	25,812	-	23,722
(Gains)/losses due to change in demographic assumptions		-	-	-	717	-	717	-	717
(Gains)/losses due to change in financial assumptions		(25,166)	-	(25,166)	(147,995)	-	(147,995)	-	(173,161)
Exchange differences		-	-	-	(29)	-	(29)	-	(29)
Statement of other comprehensive income		(27,256)	-	(27,256)	(121,495)	70,233	(51,262)	-	(78,518)
Employer's contributions		-	(543)	(543)	-	(65,623)	(65,623)	-	(66,166)
Exchange differences		-	-	-	(2,571)	1,921	(650)	-	(650)
Benefit payments		(543)	543	-	(19,475)	19,475	-	-	-
At 31 December 2022		37,452	-	37,452	414,236	(396,325)	17,911	-	55,363

The weighted average duration of the defined benefit obligations is 12.2 years (2022: 12.6 years).

Funding levels are monitored on an annual basis and contributions are made to comply with minimum requirements as determined by local regulations and, if applicable, internal funding policy. The group considers that the contribution rates set at the last valuation date are sufficient to eliminate the deficit over the agreed period.

Expected contributions to post-employment benefit plans for the year ending 31 December 2024 are €16,763,000.

The cumulative actuarial loss recognised in other comprehensive income as at 31 December 2023 was €16,426,000 (2022: €13,089,000).

The sensitivity of the defined benefit obligations to a 1% movement in the weighted principal assumptions is:

	Increase in assumption	Decrease in assumption
Discount rate	(10.9%)	12.6%
Salary increase rate	9.4%	(9.4%)
Inflation rate	6.4%	(6.4%)
Medical trend rate	1.8%	(1.5%)

The above sensitivity analysis is based on a change in an assumption while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. When calculating the sensitivity of the defined benefit obligations to significant actuarial assumptions, the same method (present value of the defined benefit obligation calculated with the projected unit credit method at the end of the reporting period) has been applied as when calculating the pension liability recognised within the statement of financial position. As the majority of the liabilities are not affected by the life expectancy risk (because of lump sum payments), no life expectancy sensitivity is considered.

Through its defined benefit pension plans and post-employment medical plans, the group is exposed to a number of risks, the most significant of which are detailed below:

- Asset volatility: the risk is kept under control thanks to proper risk management procedures and strategic asset allocation driven by the financial characteristics of the plans, in particular the plans liabilities and the risk tolerance of the Board and the group. The plan liabilities are calculated using a discount rate set with reference to corporate bond yields; if plan assets underperform this yield, this will create a deficit. Belgian plans hold 60% of equities, which are expected to outperform corporate bonds in the long-term while providing volatility and risk in the short-term. The group believes that due to the long-term nature of the plan liabilities and the strength of the supporting group, a level of continuing equity investment is an appropriate element of the group's long term strategy to manage the plans efficiently. See above for more details on the group's asset-liability matching strategy.
- Changes in bond yields: a decrease in corporate bond yields will increase plan liabilities, although this will be partially offset by an increase in the value of the plans' bond holdings.
- Inflation risk: the plans' benefit obligations are linked to inflation (see sensitivity impact), and higher inflation will lead to higher liabilities. The impact is however limited and the assumptions are cautiously monitored annually.
- Life expectancy: as mentioned, longevity risk is limited as the majority of the benefit payments are lump sums.
- Medical trend rate risk: as the liabilities of the Belgian and French medical plans are very sensitive to the used medical trend rate, the evolution of this trend rate is monitored regularly to make sure that this trend rate properly reflects the long term expected evolution of the medical cost.
- Salary increase: as the pension liabilities are quite sensitive to salary increase, the used assumptions are monitored closely and historic salary evolution is compared against the used assumptions.

The group has not changed the processes used to manage its risks from previous periods.

The movement in the deferred tax asset relating to the pension deficit is as follows:

(€'000)	Notes	2023	2022
Amount credited/(charged) through equity	XII	763	19,322
Amount credited/(charged) through the income statement	XII	(1,645)	8,583
Exchange differences		(19)	176
Increase/(decrease) in deferred tax asset		(901)	28,081

XXIII. Share-based payments

The plan grants certain eligible senior executive management members of Euroclear certificates (which represent shares of Euroclear Holding SA/NV) as part of their remuneration. The purpose of the plan is to align the interests of the beneficiaries with the long-term interests of the shareholders of Euroclear Holding SA/NV.

In the year 2022, Euroclear SA/NV has acquired Euroclear Holding SA/NV shares which have been transferred to STAK Euroclear, a foundation established as an administration office under application of the Certification law. In exchange for the transferred Euroclear Holding SA/NV Shares, STAK Euroclear has issued certificates, each certificate representing one Euroclear Holding S.A. share.

Fixed remuneration

On top of the fixed cash remuneration, Euroclear may grant additional fixed remuneration in the form of certificates, which are earned and awarded on a quarterly basis. Since the share-based payment plan has no vesting conditions, each award vests immediately after each quarter-end. Each award happens at the actual fair value of the certificates at the end of each respective quarter.

Where fixed cash is actually paid every month, fixed certificates earned on a quarterly basis are blocked for a period of 3 years as from the quarter in which they were earned. After the 3-year restriction period, beneficiaries can either sell the vested certificates, either retain them for future sale.

The plan rules foresee a liquidity mechanism whereby it is agreed that the beneficiaries can only sell to Euroclear SA/NV which is committed to buy back the certificates from the beneficiaries according to a transparent pricing mechanism, once such certificates are mature to sell or at any later moment upon the discretion of the beneficiary within the limits of the plan.

The sale price of certificates shall correspond to their actual fair market value. Upon acquisition of the certificates, Euroclear SA/NV will retain them for future share-based remuneration.

Any dividend paid by Euroclear Holding SA/NV in relation to Euroclear Holding SA/NV shares represented by certificates are paid to STAK Euroclear and transferred to the certificate holders within a pre-determined period. The dividends are locked up for a period of equal to the (remaining) lock-up period of the underlying certificates held by the beneficiaries

Variable remuneration

In line with the EBA Guidelines on sound remuneration, variable remuneration is paid in cash or instruments and subject to deferral rules as per regulation. The deferral period is at least 4 years (5 years for MC members) and the deferred portion is at least 40% (60% if bonuses exceed €200,000).

The actual payment of any deferred compensation, no matter whether it qualifies as upfront instruments or deferred cash/instruments, is subject to the malus & claw-back provisions included in the deferred compensation plan. The value of outstanding variable remuneration can be adjusted either discretionarily upon decision of the Board of Directors within a 20% limit in plus or in minus, either on the basis of the evolution of the underlying share price over the reference period. For ESA MC members, as from performance year 2021, the instruments related portion of variable compensation will be settled in certificates upon the award date at the fair market value of the underlying share at the end of the performance year which precedes the award date.

As at 31 December 2023, the expense recognised for employee services received during the year amounts to €660,000 for fixed remuneration (2022: €480,000) and €3,550,000 for variable remuneration (2022: €923,750). 185 shares have been released for fixed remuneration and 151 shares for variable remuneration for a total amount of €928,000.

Share Based Payment Expenses

(€'000)	2023	2022
Fixed remuneration	660	480
Variable remuneration	3,550	924
Total Expense for the year	4,210	1,404

Granted Shares movement

	2023			2022		
	Fixed	Variable	Total	Fixed	Variable	Total
Opening Balance	84	-	84	-	-	-
Granted during the year	101	151	252	84	-	84
Bought back during the year	-	-	-	-	-	-
Closing Balance	185	151	336	84	-	84

Granted shares situation (Locked/Non-Locked)

	2023			2022		
	Fixed	Variable	Total	Fixed	Variable	Total
Locked up shares	185	-	185	84	-	84
Non-Locked up shares	-	151	151	-	-	-
Total	185	151	336	84	-	84

XXIV. Share capital and share premium

Issued, allotted and fully paid share capital	Number of shares	Share Capital	(€'000)		Total
			Share Premium		
At 1 January 2023	3,147,463	3,147	943,441		946,588
Movements	-	-	-	-	-
At 31 December 2023	3,147,463	3,147	943,441		946,588

Issued, allotted and fully paid share capital	ordinary shares	Share Capital	(€'000)		Total
			Share Premium		
At 1 January 2022	3,147,463	3,147	943,441		946,588
Movements	-	-	-	-	-
At 31 December 2022	3,147,463	3,147	943,441		946,588

XXV. Treasury shares

€'000	Number of shares		Total
At 1 January 2023	5,916		12,267
Acquisition of shares	-	-	-
Employee share scheme issue	(252)		(523)
At 31 December 2023	5,664		11,744
At 1 January 2022	-		-
Acquisition of shares	6,000		12,441
Employee share scheme issue	(84)		(174)
At 31 December 2022	5,916		12,267

Treasury shares are own equity instruments that have been purchased by Euroclear SA/NV from shareholders in April 2022 (6,000 shares acquired for a total amount of €12,441,000). These shares are held by STAK Euroclear who has issued units in exchange of the shares. The units will be used for a share-based payment program for the benefit of senior management of Euroclear SA/NV (see note XXIII).

XXVI. Other reserves

(€'000)	Notes	Equity instruments at FVOCI	Debt instruments at FVOCI	Cash flow hedging reserve	Hedge of net inv. in foreign operations reserve	Foreign currency translation reserve	Legal reserve	Total
At 1 January 2023		159,453	(170,656)	(53,979)	18,238	(60,267)	123,538	16,327
Fair value adjustments	XIII, XV	32,204	110,517	63,927	-	-	-	206,648
Deferred tax on fair value adjustments	XII, XV	(4,079)	(27,043)	(15,982)	-	-	-	(47,104)
Foreign currency translation differences		-	-	-	-	16,790	-	16,790
At 31 December 2023		187,578	(87,182)	(6,034)	18,238	(43,477)	123,538	192,661

(€'000)	Notes	Equity instruments at FVOCI	Debt instruments at FVOCI	Cash flow hedging reserve	Hedge of net inv. in foreign operations reserve	Foreign currency translation reserve	Legal reserve	Total
At 1 January 2022		250,359	10,517	(5,341)	18,238	(30,409)	115,869	359,233
Fair value adjustments	XIII, XV	(94,680)	(240,904)	(64,851)	-	-	-	(400,435)
Deferred tax on fair value adjustments	XII, XV	3,774	59,731	16,213	-	-	-	79,718
Foreign currency translation differences		-	-	-	-	(29,858)	-	(29,858)
Transfer to legal reserve		-	-	-	-	-	7,669	7,669
At 31 December 2022		159,453	(170,656)	(53,979)	18,238	(60,267)	123,538	16,327

The hedge of net investment in foreign operations reserve and the foreign currency translation reserve relate to the group's subsidiaries in Sweden and the United Kingdom.

In addition to the translation of structural currency exposures relating to the group's subsidiaries and joint venture with a functional currency other than EUR, the foreign currency translation reserve includes the translation impact of goodwill and intangible assets expressed in Swedish krona (SEK) and GBP that were recognised at the time of acquisition of subsidiaries in Sweden, and EMXCo in the United Kingdom.

The legal reserve represents non-distributable amounts required to be established as separate reserves in compliance with local laws in certain countries where the group operates.

XXVII. Dividends paid

	2023	2022
Dividend per share (€)	115.50	88.50
Dividend paid (€'000)	363,532	278,550

Euroclear Holding SA/NV paid an interim dividend of €363,532,000 (€115.50 per share) in July 2023 (2022: €278,550,000), of which €462,000 related to treasury shares (2022: €367,000).

XXVIII. Contingent liabilities and commitments

(€'000)	2023	2022
At 31 December		
Collateral pledged, of which:	4,184,334	3,855,119
- Own assets	635,226	279,077
- Re-use of collateral received	3,549,108	3,576,042
Financial guarantees	6,137,715	11,507,515
Loan commitments	7,864	2,088

The collateral pledged mainly relates to:

- securities deposited with the National Bank of Belgium as potential collateral, principally for Target2-related exposures. It includes investment securities with a market value of €605,953,000 (2022: €249,803,000) and the reuse of securities received as collateral for reverse repurchase agreements from participants with a market value of €3,549,108,000 (2022: €3,576,042,000); There was no exposure at 31 December 2023 (2022: €0);
- a bank deposit of €4,074,000 pledged by Euroclear SA/NV to a landlord (2022: €4,074,000); and
- Other operational pledged deposits for a total amount of €25,200,000 (2022: €25,200,000).

Financial guarantees principally relate to guarantees under the Securities Lending and Borrowing (SLB) and GCA (Global Collateral Access) programmes. Under the terms of the Euroclear SLB Programme, Euroclear Bank provides a guarantee to securities lenders whereby if a securities borrower is unable to return the securities, Euroclear Bank guarantees the lender to receive replacement securities or their cash equivalent. The guarantee is valued at market value of the loan securities plus accrued interest. Euroclear Bank's policy is that all securities borrowings are covered by collateral pledged by the borrowing banks and clients. Euroclear Bank also provides a guarantee to the GCA lenders, should the GCA borrowers fail to return lent Securities. This guarantee is provided on a net basis (difference between the market value of the unreturned Loan Securities and the market value of the Collateral Securities relating to the unreturned Loan Securities).

XXIX. Lease commitments

(€'000)	2023			2022		
	Software	Property	Vehicles and other equipment	Software	Property	Vehicles and other equipment
Group company as lessee						
Future aggregate minimum lease payments under non-cancellable leases:	46,159	-	-	53,244	134	228
- up to one year	15,318	-	-	15,506	134	228
- later than one year and not later than five years	30,730	-	-	37,738	-	-
- over five years	111	-	-	-	-	-

The lease expenses/revenues in the income statement are as follows:

(€'000)	Notes	2023	2022
Net interest income			
Interest expenses on lease liabilities	VII	1,176	356
Administrative expenses			
Depreciation expenses		22,058	20,352
Expenses from low-value assets		289	1,074
Expenses from software leases		34,694	24,278
Expenses from car leases (including non-lease components)		12,065	10,533

XXX. Related party disclosures

Euroclear Holding SA/NV, incorporated in Belgium, is the ultimate parent and controlling party of the group.

Euroclear Holding SA/NV's investments in its subsidiaries are set out in Note I.

Transactions with related parties, other than those between companies of the group eliminated on consolidation, principally relate to investments in subsidiaries and joint ventures and to key management compensation.

Besides this, the group considers its Belgian pension fund as a related party as it has the ability to exercise significant influence over it in taking financial or operational decisions. Disclosures related to the pension funds are presented in Note XXII.

(€'000)	2023			2022		
	Other group companies	Joint ventures and Associates	Total	Other group companies	Joint ventures and Associates	Total
Assets						
Loans and advances at amortised cost	3,421	-	3,421	3,382	-	3,382
Non-trading financial assets mandatorily at FVPL	6,347	2,782	9,129	5,039	-	5,039
Other assets	5	-	5	20	-	20
Investments in subsidiaries and joint ventures	5,356	2,013	7,369	-	18,781	18,781
Total assets	15,129	4,795	19,924	8,441	18,781	27,222
Other liabilities	7,740	2,889	10,629	-	3,821	3,821
Total liabilities	7,740	2,889	10,629	-	3,821	3,821
Income statement						
Interest income	736	82	818	303	26	329
Other operating income/expense	86	-	86	235	-	235
Impairment	(5,630)	(14,166)	(19,805)	(6,994)	-	(6,994)
Total income statement	(4,817)	(14,084)	(18,901)	(6,456)	26	(6,430)
Off-balance sheet						
Liquidity facility given	(1,726)	-	(1,726)	(1,127)	-	(1,127)
Total off-balance sheet	(1,726)	-	(1,726)	(1,127)	-	(1,127)

XXX.1. Transactions with other companies of the Euroclear group

XXX.1.a. Administrative support

Certain administrative support costs are periodically recharged to and by other companies within the Euroclear group.

XXX.1.b. Loans and liquidity facilities provided

In 2023, Euroclear SA/NV has granted additional loans of GBP 1,000,000 to Quantessence Ltd, bringing the total amount of loans with Quantessence Ltd to GBP 8,350,000, of which GBP 5,400,000 are convertible. At year-end 2023, Euroclear SA/NV has an outstanding loan to Greenomy with convertible features of €2.700,000.

XXX.2. Key management compensation

The compensation of key management (members of the Management Committees of Euroclear SA/NV and its (I)CSD subsidiaries, group division heads and the Euroclear Holding SA/NV General Manager) and non-executive directors was as follows:

(€'000)	2023	2022
Short-term employee benefits	31,064	30,908
Share-based payments	690	375
Post-employment benefits	3,240	3,259
Other long-term benefits	4,066	3,860
Termination benefits	5,774	-
Total compensation of key management	44,834	38,402
Emoluments of non-executive directors	5,176	5,078
Total compensation of key management and directors	50,010	43,481

The NBB has been informed of the compensation principles for the members of the Management Committees of Euroclear SA/NV and Euroclear Bank and of certain other Senior Management, taking into account the applicable regulations. The amounts - as approved by the respective Remuneration Committees/Boards - reflect these principles and more specifically the allocation between short-term and long-term benefits.

No loans or similar transactions occurred with directors, key management or their close family members.

The companies employing the Euroclear SA/NV non-executive directors are subject to the same terms, conditions and tariffs as other companies.

Directors' emoluments are in the form of fees with the exception of life insurance benefits amounting to €64,397 (2022: €59,350).

XXXI. Events after the balance sheet date

Euroclear continues to closely monitor the invasion of Ukraine by Russia, and to implement the various sanctions. In line with its role of financial market infrastructure (FMI), Euroclear is carefully managing the various aspects resulting from this situation in cooperation with the competent authorities. Future earnings linked to the sanctions will continue to depend on the prevailing interest rate environment and the evolution of the sanctions.

Various parties in Russia contest the consequences of the application of sanctions, with a significant number of legal proceedings ongoing, almost exclusively in Russian courts. The impact of the lawsuits on Euroclear is uncertain. Euroclear is defending against all relevant legal claims and intends to continue to do so against any further claims.

Effective 15 February 2024, the EU Council adopted a Regulation (Council Regulation (EU) 2024/576 of 12 February 2024 amending Regulation (EU) No 833/2014) providing for an obligation for Central Securities Depositories holding reserves and assets of the Central Bank of Russia - or of any legal person, entity or body acting on behalf of, or at the direction of, the Central Bank of Russia - to apply specific rules in relation to the cash balances accumulating exclusively due to restrictive measures. In parallel the Board notes that various options to use profits generated by sanctioned amounts held by financial institutions, including Euroclear, for the financing of Ukraine are being considered at EU and international level. Euroclear is focused on minimising potential legal, technical, financial and operational risks that may arise for itself and its clients from the implementation of any proposals made or measures taken, while complying with its obligations.

Statutory auditor's report to the shareholders' meeting of Euroclear Holding SA for the year ended 31 December 2023 - Consolidated financial statements

In the context of the statutory audit of the consolidated financial statements of Euroclear Holding SA ("the company") and its subsidiaries (jointly "the group"), we hereby submit our statutory audit report. This report includes our report on the consolidated financial statements and the other legal and regulatory requirements. These parts should be considered as integral to the report.

We were appointed in our capacity as statutory auditor by the shareholders' meeting of 3 May 2021, in accordance with the proposal of the board of directors ("bestuursorgaan" / "organe d'administration"). Our mandate will expire on the date of the shareholders' meeting deliberating on the financial statements for the year ending 31 December 2023. We have performed the statutory audit of the consolidated financial statements of Euroclear Holding SA for 6 consecutive periods.

Report on the consolidated financial statements

Unqualified opinion

We have audited the consolidated financial statements of the group, which comprise the consolidated statement of financial position as at 31 December 2023, the consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flow for the year then ended, as well as the summary of significant accounting policies and other explanatory notes. The consolidated statement of financial position shows total assets of 165 815 848 (000) EUR and the consolidated statement of comprehensive income shows a profit for the year then ended of 4 223 858 (000) EUR.

In our opinion, the consolidated financial statements give a true and fair view of the group's net equity and financial position as of 31 December 2023 and of its consolidated results and its consolidated cash flow for the year then ended, in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union and with the legal and regulatory requirements applicable in Belgium.

Basis for the unqualified opinion

We conducted our audit in accordance with International Standards on Auditing (ISA), as applicable in Belgium. In addition, we have applied the International Standards on Auditing approved by the IAASB applicable to the current financial year, but not yet approved at national level. Our responsibilities under those standards are further described in the "Responsibilities of the statutory auditor for the audit of the consolidated financial statements" section of our report. We have complied with all ethical requirements relevant to the statutory audit of consolidated financial statements in Belgium, including those regarding independence.

We have obtained from the board of directors and the company's officials the explanations and information necessary for performing our audit.

We believe that the audit evidence obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of the board of directors for the preparation of the consolidated financial statements

The board of directors is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union and with the legal and regulatory requirements applicable in Belgium and for such internal control as the board of directors determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the board of directors is responsible for assessing the group's ability to continue as a going concern, disclosing, as applicable, matters to be considered for going concern and using the going concern basis of accounting unless the board of directors either intends to liquidate the group or to cease operations, or has no other realistic alternative but to do so.

Responsibilities of the statutory auditor for the audit of the consolidated financial statements

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

During the performance of our audit, we comply with the legal, regulatory and normative framework as applicable to the audit of consolidated financial statements in Belgium. The scope of the audit does not comprise any assurance regarding the future viability of the company nor regarding the efficiency or effectiveness demonstrated by the board of directors in the way that the company's business has been conducted or will be conducted.

As part of an audit in accordance with ISA, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures 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 for one resulting from an error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override 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 the purpose of expressing an opinion on the effectiveness of the group's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the board of directors;
- conclude on the appropriateness of the use of the going concern basis of accounting by the board of directors and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our

statutory auditor's report to the related disclosures in the consolidated 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 statutory auditor's report. However, future events or conditions may cause the group to cease to continue as a going concern;

- evaluate the overall presentation, structure and content of the consolidated financial statements, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- obtain sufficient appropriate audit evidence regarding the financial information of the entities and business activities within the group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, amongst 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.

Other legal and regulatory requirements

Responsibilities of the board of directors

The board of directors is responsible for the preparation and the content of the directors' report on the consolidated financial statements.

Responsibilities of the statutory auditor

As part of our mandate and in accordance with the Belgian standard complementary to the International Standards on Auditing (ISA) as applicable in Belgium, our responsibility is to verify, in all material respects, the director's report on the consolidated financial statements, as well as to report on this matter.

Aspects regarding the directors' report on the consolidated financial statements

In our opinion, after performing the specific procedures on the directors' report on the consolidated financial statements, this report is consistent with the consolidated financial statements for that same year and has been established in accordance with the requirements of article 3:32 of the Code of companies and associations.

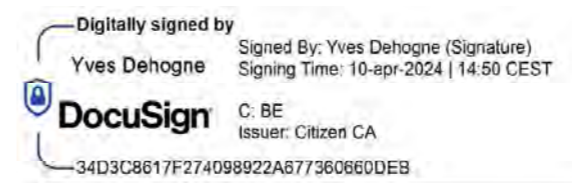
In the context of our statutory audit of the consolidated financial statements we are also responsible to consider, in particular based on information that we became aware of during the audit, if the directors' report on the consolidated financial statements is free of material misstatement, either by information that is incorrectly stated or otherwise misleading. In the context of the procedures performed, we are not aware of such material misstatement.

Statements regarding independence

- Our audit firm and our network have not performed any prohibited services and our audit firm has remained independent from the group during the performance of our mandate.
- The fees for the additional non-audit services compatible with the statutory audit, as defined in article 3:65 of the Code of companies and associations, have been properly disclosed and disaggregated in the notes to the consolidated financial statements.

Signed at Zaventem.

The statutory auditor



Deloitte Bedrijfsrevisoren/Réviseurs d'Entreprises BV/SRL
Represented by Yves Dehogne

Deloitte.

Deloitte Bedrijfsrevisoren/Réviseurs d'Entreprises BV/SRL
Registered Office: Gateway building, Luchthaven Brussel Nationaal 1 J, B-1930 Zaventem
VAT BE 0429.053.863 - RPR Brussel/RPM Bruxelles - IBAN BE86 5523 2431 0050 - BIC GKCCBEBB

Member of Deloitte Touche Tohmatsu Limited



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1 Boulevard du Roi Albert II, 1210 Brussels, Belgium • Tel: +32 (0)2 326 1211 • RPM Brussels number 0700 808 073

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Euroclear's net-zero target has been approved by the Science based targets initiative (SBTi)

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