State Treasury
Republic of Finland

23

Debt Management Annual Review 2023

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The Debt Management Annual Review summarises the funding and liquidity management operations of Finland's central government in 2023.

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COVER PHOTO: Särkitunturi, Muonio, Valtteri Hirvonen. Särkitunturi stands at 492 meters (1,614 feet) above sea level. It is situated in the municipality of Kittilä, in Finnish Lapland. Of the mountain species, over 35% have been classified as endangered. The most significant factors affecting the condition of mountain habitats are climate change and reindeer grazing, as well as their combined effects.

Contents

1 Inflation rollercoaster

DIRECTOR OF FINANCE **TEPPO KOIVISTO**

Two-folded inflation behaviour was the big theme in the bond market for the year 2023. The world economic growth was still weighed down by energy-driven inflation shock and rising yields. The year was also tinged with geopolitical crises, which added its fair share of uncertainty to the sovereign bond market outlook.

In the fall, a rapid slowdown in inflation started to accelerate expectations of central banks' monetary policy easing causing a turnaround in market interest rates. Despite this, higher interest rate levels will keep governments' financing costs elevated in coming years compared to the zero-interest rate environment of the previous decade. Deteriorating economic growth and higher debt financing costs have also put pressure on government budget deficits and public debt levels in most eurozone countries, not only in Finland.

On this account, the 2024 sovereign bond supply in the eurozone will be close to last year´s historical levels. The expiry of energy-related policy measures will mildly reduce the overall net supply, but central banks' quantitative tightening (QT) can be viewed as additional net supply that has to be digested by new investor demand. These factors sustain a very competitive issuance environment for 2024, where a solid funding strategy, sufficient investor diversification, and stable credit outlook are strengths that will be rewarded.

No economy without nature

In his excellent report in 2021, Professor **Partha Dasgupta** made the world very aware of economies' dependence on nature. Along with climate change, loss of biodiversity has become a key discussion topic wherever financial market participants meet, and for good reason. Investors are increasingly keen to analyze and understand how nature loss simultaneously with global warming affects sovereign credit risks in the medium and longer term.

Governments' actions determine whether the loss of biodiversity can be stopped. Finland has participated in international cooperation on nature conservation for decades and as a member of the EU has committed to end the biodiversity loss by 2030.

“Biodiversity is always a local phenomenon. The means to protect it must always be based on national or local level actions.”

Biodiversity is always a local phenomenon and the means to protect it must always be based on national or local level actions. Professor **Ilari E. Sääksjärvi** gives an up-to-date and very accurate account of Finland’s possibilities to succeed in this work in section three.

A year ago, I wrote about how Finland is undoubtedly one of the global forerunners of the green energy transition. In 2023, 94% of Finland’s electricity production was emission-free, and the price of electricity was the second lowest among EU countries. This supply of clean and affordable electricity gives a boost to industrial investments planned in Finland, of which there are currently more than EUR 200 bn in the pipeline. **Janne Peljo** gives further colour in section five.

NATO membership bolsters credit outlook

The legacy of the year 2023 is a more stringent geopolitical environment associated with the global financial market.

The prolongation of Russia’s war of aggression in Ukraine maintains geopolitical tensions. The conflict in the Middle East that broke out in fall 2023 may have an effect on the sensitive energy market. Therefore, for this year’s edition, a final inescapable theme is geopolitics and security. We have invited an expert, Dr. **Iro Särkkä**, to give her view on Finland´s fresh NATO membership and its impact on the security and economic environment in Northern Europe.

Finland became a member of the NATO on April 4, 2023. In fact, already in May 2022, when submitting its NATO membership application at the same time with Sweden, Finland sent a strong confidence-inspiring message to the financial markets. Finland’s NATO membership increases both Finland’s national security in the new geopolitical environment and the stability and security of the whole Baltic Sea region and Northern Europe. Finland’s strong national defence and comprehensive security capabilities strengthens NATO and the common defence of the alliance.

> “By submitting its application to join NATO, Finland sent a strong message to the financial markets.”

When Sweden becomes a NATO member, all the Nordic countries will belong to NATO (and can together promote issues important to them within the alliance). Finland will also benefit economically from the NATO membership.

Issuance outlook

The key function of the State Treasury is to safeguard the liquidity and funding for the central government. In 2023, the Republic of Finland successfully fulfilled its EUR 42 billion issuance programme with net borrowing of EUR 14 billion.

In 2024, the funding strategy of the Republic of Finland remains the same as in 2023 given the similarity in funding amounts. For 2024, the overall gross borrowing requirement amounts to EUR 43 billion. The net borrowing is expected to be EUR 13 billion.

Keeping our bonds attractive and creditworthy to investors remains our long-term goal. We believe that Finland’s strong credit outlook and commitment to sound governance and sustainability in its many forms will support our bonds and serve all our investors well in the years to come.

Teppo Koivisto is Director of Finance at the State Treasury Finland. He is in charge of the central government debt management function, which includes funding, liquidity management, investor relations, risk and strategy.

PHOTO: Lauri Rotko, 2018. The Baltic Sea is surrounded by nine countries: eight EU member states and Russia. The Baltic Sea is particularly affected by eutrophication, but also overfishing, oil transportation, increasing maritime traffic, and climate change pose threats to the Baltic Sea.

2 Operating environment

Finland's economy drifted into a recession at the end of the year, as investments and household consumption declined. Finland's GDP is expected to have contracted by 0.5% in 2023. With rising interest rates hitting consumption and investments, the economy performed weaker than expected particularly in the latter part of the year. Employment started to fall from its peak in late 2023 but is nevertheless high at 73.3%.

Year 2023 was marked by an economic slowdown both in Finland and internationally. In Finland, a negative turn took place in the third quarter when economic output clearly fell. Construction was hit hardest but services growth stalled too.

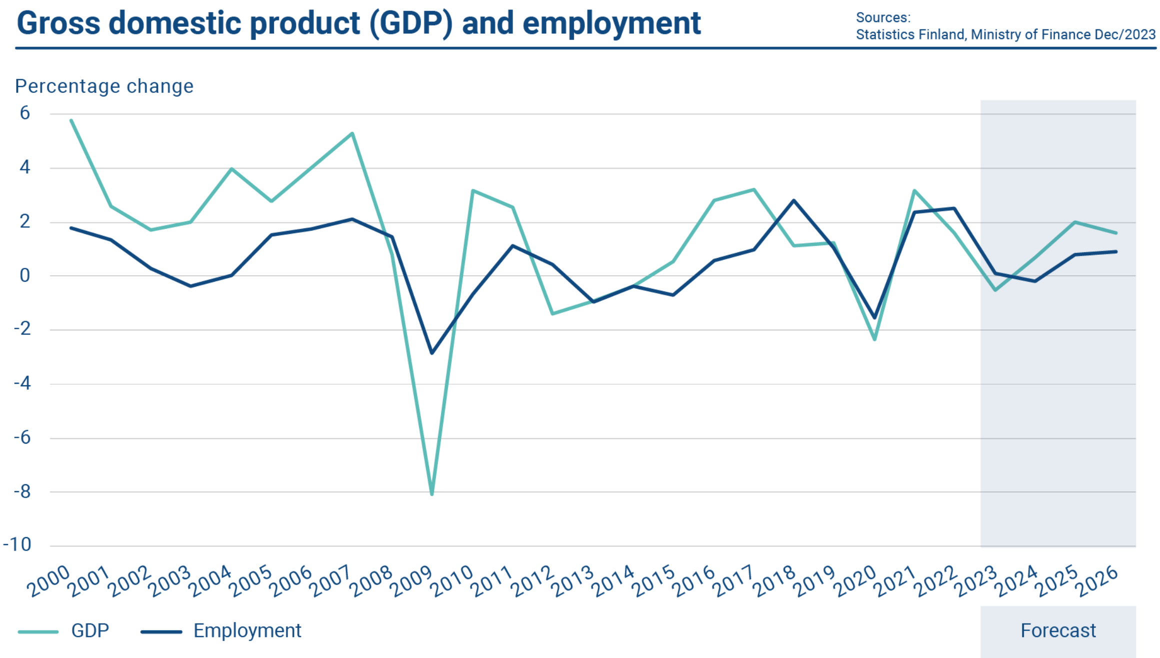
Exports from Finland declined but significantly less than imports. Net exports therefore made a clearly positive contribution to the economy in 2023. Exports are expected to return to growth this year as world trade recovers and Finland's cost-competitiveness is in good shape.

The main reason for the rapid slowdown in inflation in 2023 was the fall in energy prices. In the latter part of the year, the slowdown in prices was more broad-based. In Finland, the average inflation rate was 6.2 per cent in 2023 but at the end of the year, inflation was already significantly lower than this at 3.6 per cent.

The economy is estimated to grow again in 2024 as slowing inflation and expected fall in interest rates, combined with moderately strong household income growth, will increase the purchasing power of Finnish households.

Public finances

General government finances improved in the two previous years as the pandemic abated. However, the improvement was temporary and in 2023 the general government deficit is estimated at 2.5% of GDP. As inflation-driven growth in expenditure has weakened the general government budgetary position and tax revenue growth is sluggish, the deficit is set to deteriorate to above 3% of GDP in 2024 – after which



The annual change in gross domestic product (GDP) and employment in Finland between 2000–2026. In 2023 both GDP rate and employment declined compared to 2022.

it is expected to improve slowly due to the Government's measures and economic growth. General government expenditure is affected by rising interest expenditure and several previously decided measures, including substantial defence investment.

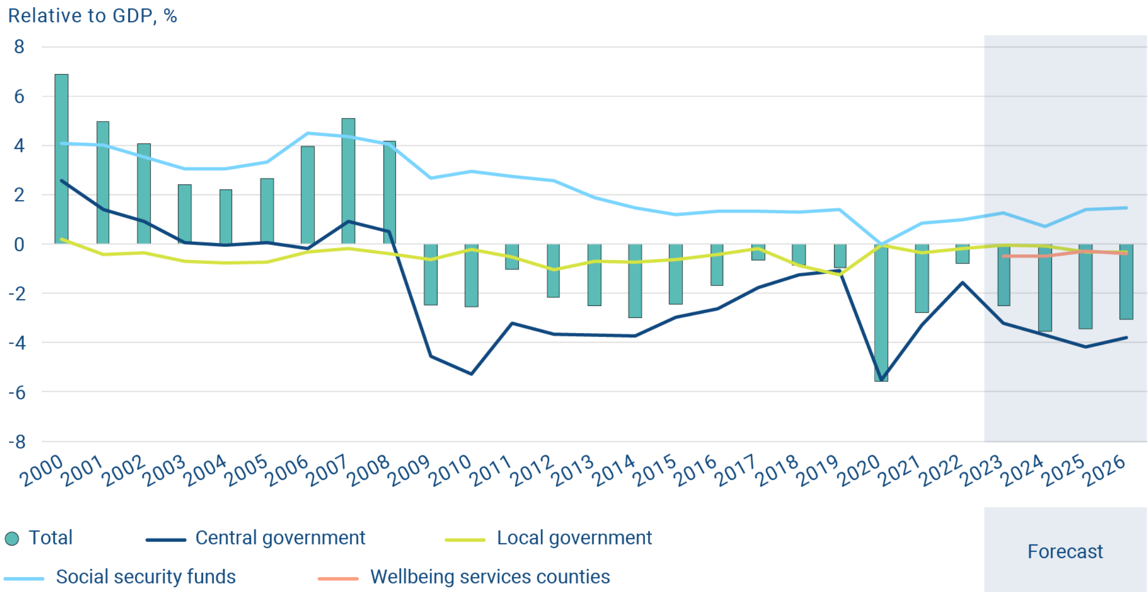
The general government deficit is balanced by the surplus in the social security funds, despite the central government, the local government, and the wellbeing services counties (that became operational on 1 January 2023) all being in deficit.

At the end of 2023, the general government debt stood at 75.5% in relation to GDP. This represented an increase of 2.2 percentage points from the previous year. Despite adjustment measures, the debt ratio is expected to rise. The estimate for the central government debt is 55.4% of GDP – up from 52.7% from the previous year – while the central government deficit is estimated to be 3.2%.[1]

1 All estimates are from the Ministry of Finance's Economic Survey, Winter 2023.

Financial balance of general government

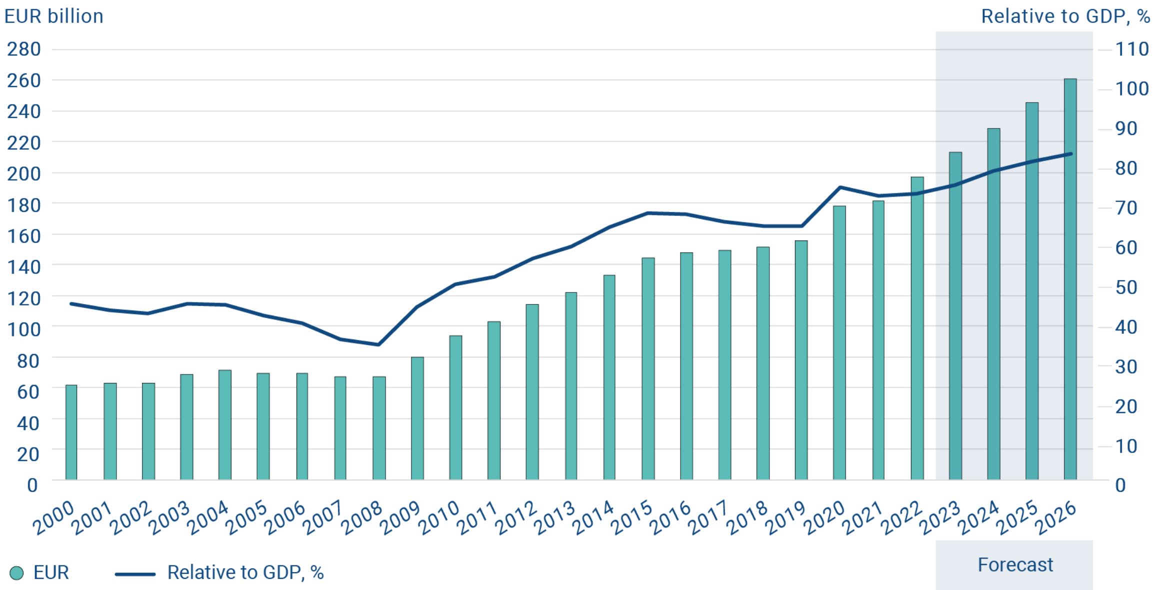
Sources:
Statistics Finland, Ministry of Finance Dec/2023



Social security funds are usually running a surplus while central and local government show deficits.

General government debt

Sources:
Statistics Finland, Ministry of Finance Dec/2023



In 2023, the general government debt was EUR 213.1 billion. The debt-to-GDP ratio was 75.5%.

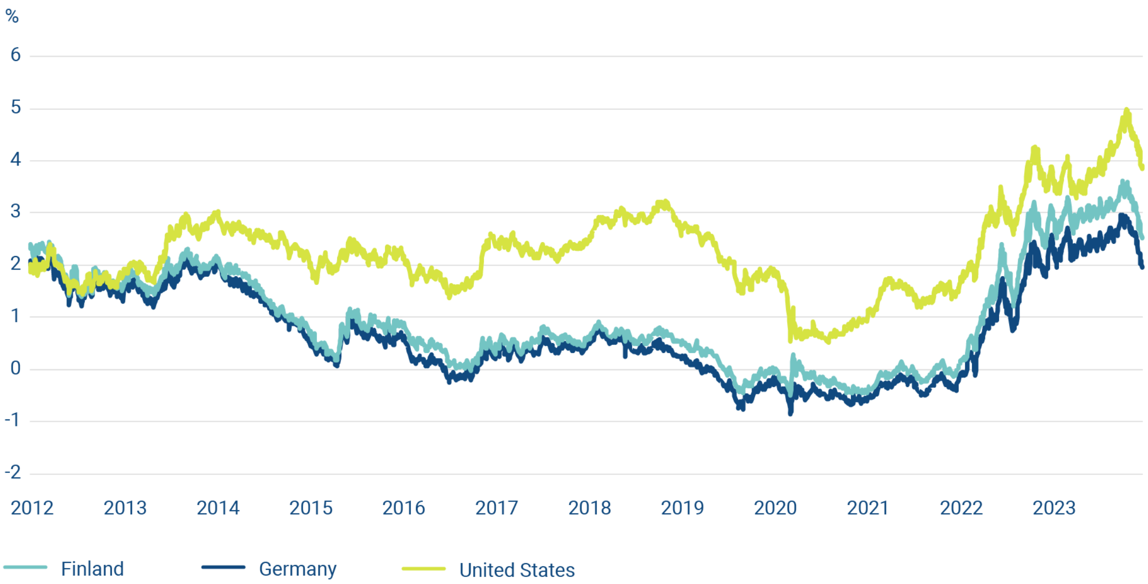
Finland's credit strengths such as relatively strong public finances, competitive economy and stable institutions, among other things, are reflected in Finland's high credit ratings. The central government of Finland has solicited credit ratings from Fitch Ratings and S&P Global Ratings. In 2023, they both affirmed Finland's credit rating at AA+ with stable outlooks.

Interest rate developments

Global central banks continued their fight against inflation and restrictive monetary policies in 2023. Adding to the previous year's rate hikes both the Federal Reserve in the United States and the European Central bank (ECB) raised their main policy rates on several occasions. The ECB's rate hikes in 2023 amounted to 2 percentage points and the last hike took place in September. As the inflationary outlook started to ease in the second half of the year, market expectation on central bank pivots accumulated and resulted in falling government bond yields in the final quarter of the year. With that pivot expectation also equity market performance improved even when a soft landing for the economy could by no means be taken for granted.

10-year government bond yields

Source: Macrobond



The 10-year government bond yields of Germany, Finland and the United States in 2012–2023.

In 2023, the 10-year RFGB benchmark bond yielded on average

3.06%

While hiking rates the ECB has started winding down monetary policy purchasing programmes. The latest signal is the reduction of reinvestments in the Pandemic Emergency Purchasing Programme (PEPP) which is to take effect in the second half of 2024. The Public Sector Purchasing Programme (PSPP) has refrained from reinvestments already since March 2023 thus effectively resulting in quantitative tightening and a reducing bond portfolio, without express sales though. Despite these developments and a continued government bond supply in Europe, many markets witnessed falling rates in late 2023. This applied also to Finnish government bond markets with the 10-year benchmark bond yield, which opened the year at 3.04%, falling to 2.57% at year end. After the historically rapid rise in absolute yields from zero interest levels during 2022, the 10-year RFGB benchmark bond has yielded on average 3.06% in 2023.

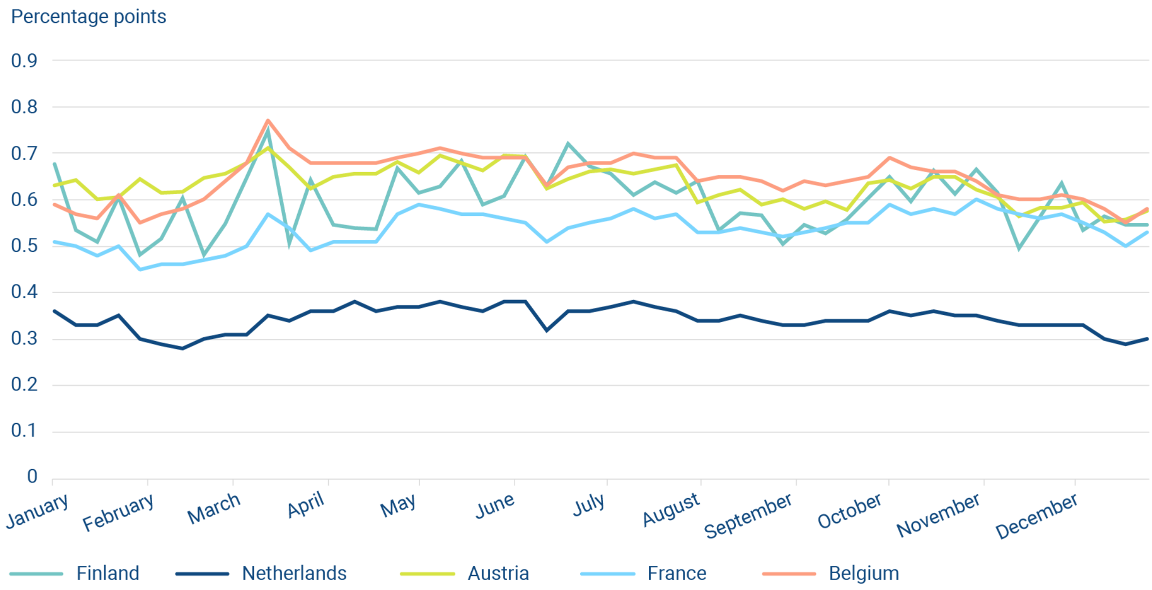
Secondary market developments

Following the central bank monetary policy tightening cycle yields for European government bonds (EGB) were on a rising trend for the first three quarters of 2023. The banking turmoil experienced in the US in March and bank restructuring in Europe added to uncertainty and volatility in the markets, and consequently the asset swap spread levels in EGBs were affected at the time. The Finnish 10-year spread to German government has been broadly stable during 2023, with some widening in the second quarter followed by and equal tightening towards the end of the year. Peer sovereigns, like the Netherlands and Austria, depict a broadly similar pattern.

It is a priority for the State Treasury to work actively with the primary dealers to maintain and further enhance the liquidity of the Finnish government bonds.

10-year spreads to Germany

Source: Macrobond



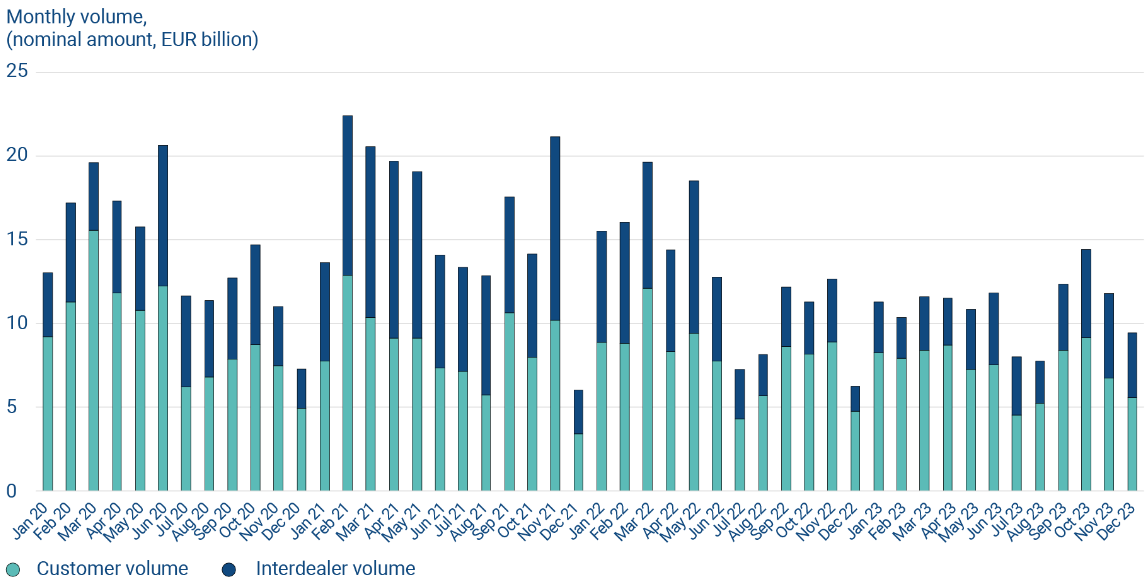
The 10-year bond spreads of Finland, the Netherlands, Austria, France, and Belgium against Germany.

Primary dealers report customer trade volumes to the State Treasury within the Harmonized Reporting Format as agreed by the EFC Sub-Committee on EU Government Bonds and Bills Markets.[2] The reporting takes place on a monthly basis, and the data is consolidated and used for monitoring and analysis. According to the HRF data, the overall secondary market customer turnover volume decreased slightly in comparison to 2022. This falling trend started in 2020. The annual turnover in total was EUR 87.70 billion (95.75 billion in 2022). The average monthly turnover (sales and purchases) was EUR 7.3 billion in 2023 (EUR 8.0 in 2022). In relative terms, the monthly average turnover volume was 6.1% of the total outstanding euro benchmark bond stock (7.2% in 2022).

Finnish government benchmark bonds can be traded on the MTS Finland and ICAP BrokerTec interdealer platforms. The State Treasury does not participate in

2 Using Harmonized Reporting Format, the national data on secondary market turnover from each euro area country is then aggregated into Euro Market Activity Report (EMAR), published by the ESDM on a quarterly basis. Further information here.

Secondary market turnover of Finnish government bonds



In 2023, the nominal interdealer trading volume was on average EUR 3.63 billion per month. The average monthly customer volume was EUR 7.31 billion.

secondary market activity, and the interdealer trading is based on the activity of the primary dealers and other market participants. In 2023, the nominal interdealer trading volume (turnover, i.e., sales plus purchases) was on average EUR 3.6 billion per month (EUR 4.9 billion in 2022). The trend in the interdealer trading volumes has been falling already for three consecutive years. In 2023 the reduction in volume was partially due to a reduction in quoting size requirements for the Primary Dealers.

The State Treasury actively follows the primary dealer quoting activity in the secondary markets. There are guidelines for the Primary Dealers on quoting for different maturities in the interdealer market, where the bid-offer spread of the price quotes is observed and tracked. The average bid-offer spread of all the market makers is calculated and each Primary Dealer benchmarked against the average. On a weekly basis, the State Treasury reports the analysed spread data for the benchmark bond quotes back to the individual Primary Dealer banks. The secondary market liquidity for RFGBs improved in 2023 in terms of tighter bid-offer spreads in comparison to 2022.

Primary dealers in 2023

BofA Securities	Barclays	BNP Paribas
Citi	Crédit Agricole	Danske Bank
Deutsche Bank	Goldman Sachs	HSBC
J.P. Morgan	Nomura	Nordea
	Société Générale	

The Primary dealers of the Republic of Finland in 2023.

The State Treasury introduced Optional Reverse Inquiry auctions for off-the-run benchmark bonds in March 2023. This facilitated a reduction or disappearance of repo specialness for all RFGBs. Furthermore, there is a repo lending facility offered for the primary dealers. The existence of these liquidity support facilities has received positive feedback from dealers and supports the overall market making capacity for banks. ORI auctions are described in more detail in section four.

Anu Sammallahti is Deputy Director of Funding and Investor Relations at the State Treasury Finland.

3 Will Finland succeed in halting the loss of biodiversity?

PROFESSOR **ILARI E. SÄÄKSJÄRVI**

Finland's indisputable strength in halting the loss of biodiversity is our comprehensive understanding of nature, which provides us with a precise picture of the causes of biodiversity loss and the tools needed to solve it. In other words, Finland has what it takes to lead the way in the recovery of biodiversity – but this will require more determined action, says Ilari E. Sääksjärvi, Professor of Biodiversity Research.

Finland is internationally known for its ruggedly enchanting landscapes. Finland's relationship with nature is also reflected in Prime Minister **Petteri Orpo**'s Government Programme, which aims to halt the loss of biodiversity and transform Finland into a nature-positive society that will be able to restore its original level of biodiversity.

Stopping the loss of biodiversity and creating a nature-positive society are also the main objectives of Finland's soon-to-be-finalised national biodiversity strategy. While it is evident that the level of ambition is high, both domestically and internationally, the question remains: Can these targets truly be achieved in practice?

Biodiversity refers to life in all its many shapes and forms. In recent years, the decline in biodiversity due to human activity has become a key point of discussion alongside climate change. This trend has been fuelled by a rapidly growing awareness that a healthy level of biodiversity is crucial for safeguarding the health, safety, and economic wealth of humanity. The benefits of biodiversity are also key for ensuring Finland's emergency supplies and resilience to change in times of global uncertainty. The World Economic Forum has highlighted climate change and the loss of biodiversity as the most serious threats facing humanity in the next decade.

The unfortunate fact is that humanity has not been able to halt the pace at which biodiversity loss continues to spread across the world. This is the result of a multitude of factors, and in particular a lack of country-specific binding obligations, systematic monitoring, and adequate funding. Finland, too, has allowed its level of biodiversity to deteriorate for decades without enacting sufficient measures to restore what has been lost.

“Of the 48,000 species living in Finland, less than half have been studied thoroughly enough to assess their endangerment status in accordance with international criteria.”

Of the 48,000 species living in Finland, less than half have been studied thoroughly enough to assess their endangerment status in accordance with international criteria. According to a report published in 2019, 11.9% of these species are at risk. At the same time, 48% of the 414 Finnish habitat types, which are characterised by their typical features and species, have become endangered.

The greatest causes of biodiversity loss in Finland and around the world are land and water use, the unsustainable exploitation of species, climate change, environmental pollution, and invasive alien species introduced to new areas as a result of human activity. The driving force behind these root causes is overconsumption. In Finland, the greatest cause of biodiversity loss is forest management, which is the primary force behind the endangerment of 733 species as well as a threat to a further 1,420 species.

48,000
species

11.9%
at risk

414
habitat types

48%
endangered

“There is a significant gap between Finland’s nature-related objectives and the current measures implemented to achieve them.”

The situational picture painted by endangerment reports is in line with the extensive nature survey published by the Finnish Nature Panel in December 2023. *The State and Future of Finnish Nature* report focused on the development of the state of Finnish nature between 2000 and 2018 and used a variety of scenarios to assess the impacts of nature-improvement measures between 2020 and 2035. The goal was to identify policy measures that would allow Finland to achieve the main objectives of its Government Programme, international commitments (EU Biodiversity Strategy, COP15 Biodiversity Framework), and the draft national biodiversity strategy. According to the report, there is a significant gap between Finland’s nature-related objectives and the current measures implemented to achieve them.

As it stands, Finland’s current situation warrants concern, as not enough efforts have been made to halt the loss of biodiversity. Bridging this gap requires a more long-term biodiversity policy. If Finland wishes to achieve the goals of its Government Programme and international commitments, it must focus on the measures that have been found effective. Furthermore, to resource them adequately, increase the size of protected areas in accordance with international commitments, and improve the state of Finnish nature outside these protected areas. We must remember that even if more areas are protected, most of Finland’s surface area will still be used for commercial purposes. How these areas are used will play an important role in the recovery of Finland’s biodiversity.

Finland’s undeniable strength in halting the loss of biodiversity is its knowledge of nature that it has accumulated systematically over a lengthy period of time. Compared to many other countries, Finland’s knowledge of the state of its natural habitats and the changes in them is exceptionally thorough. This knowledge has allowed Finland to create a detailed picture of the causes of its biodiversity loss and the tools needed to solve the situation. In other words, Finland has an opportunity to lead the way in the worldwide recovery of biodiversity, should it be up to the challenge.

In addition to governments, other parties must bring their efforts to the table. From my perspective as a biodiversity researcher, it has been particularly gratifying to see how corporations and investors have taken determined measures to reduce the harm that they inflict on nature. We can also see the rise in nature-related themes in the biodiversity roadmaps that have been created in different fields, and these are important for leading the way towards more nature-friendly approaches. At this point in time, there is plenty of room for new, pioneering activities that aim to stop biodiversity loss, and it is worthwhile for different fields and sectors to strive for these roles.

We have not lost the fight yet, and the Finnish Nature Panel's latest report also contains a message of hope. With significant additional measures and investments, we can still alter our course so that biodiversity will begin to recover by 2035. However, there is no time to waste, because the longer we allow the loss of biodiversity to continue, the greater the price tag for stopping it will be.

Halting the loss of biodiversity is the protection of life, and I can scarcely imagine a more important goal.

Professor of Biodiversity Research **Ilari E. Sääksjärvi** is Director of the STN BIODIFUL Consortium (biodiful.fi) at the University of Turku and the Vice Chair of the Finnish Nature Panel (luontopaneeli.fi). The statutory task of the Finnish Nature Panel is to produce and compile scientific data for the planning, implementation, and decision-making concerning biodiversity policy measures. Professor Sääksjärvi's research focuses particularly on the biodiversity in the Amazonian region and the interface between biodiversity and leadership.

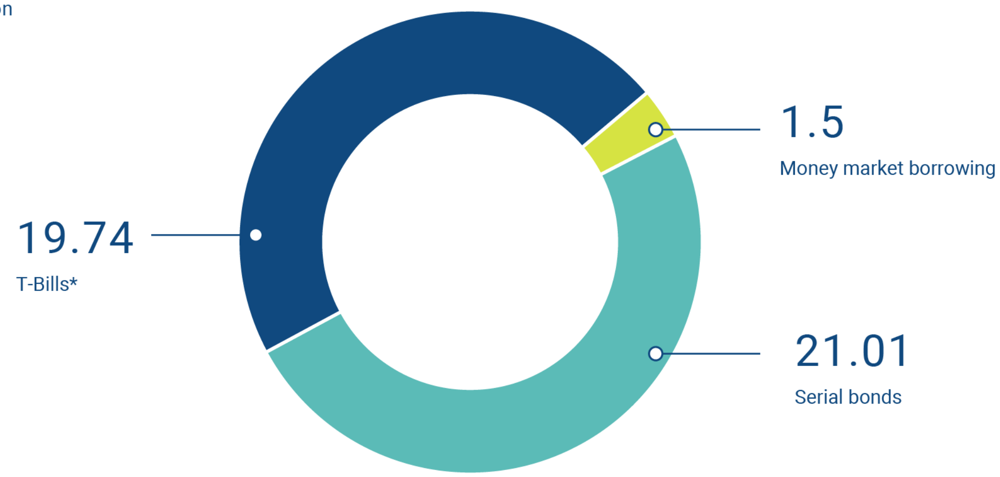
PHOTO: Bladderwrack (Fucus vesiculosus), 06/2013, Utö, Tuomas Heinonen. Bladderwrack, also known as rockweed, is classified as a species to be monitored. The seaweed is used in cooking and contains numerous minerals. Bladderwrack forests have a significant ecological importance as they form an important habitat for many Baltic Sea organisms.

4
Funding

In 2023, the realised gross borrowing totaled EUR 42.251 billion. Of this amount, long-term issuance accounted for EUR 21.014 billion. The rest, EUR 21.237 billion, was short-term borrowing. In the coming years, the gross borrowing requirement is estimated to follow this year's pattern and to remain around EUR 40–45 billion annually.

Central government borrowing in 2023

Issuance by instrument type, EUR billion

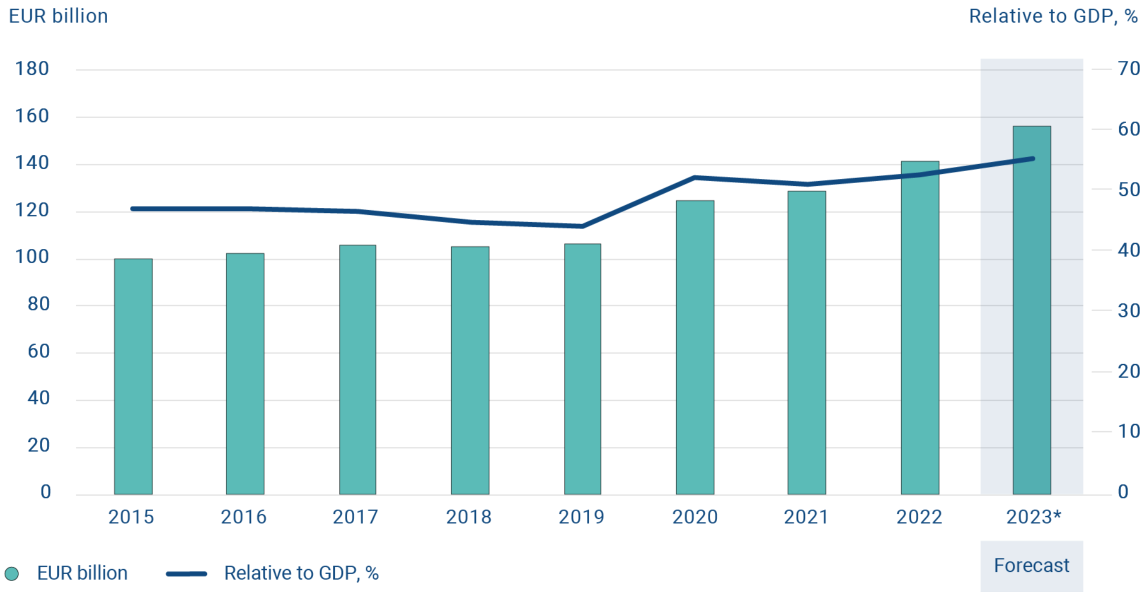


* Excluding funding for intra-government funds, unincorporated state enterprises and intra-year T-bill issuance.

The realised gross borrowing amount in 2023 was EUR 42.25 billion. Of this amount, long-term issuance accounted for EUR 21.01 billion and short-term borrowing for EUR 21.24 billion.

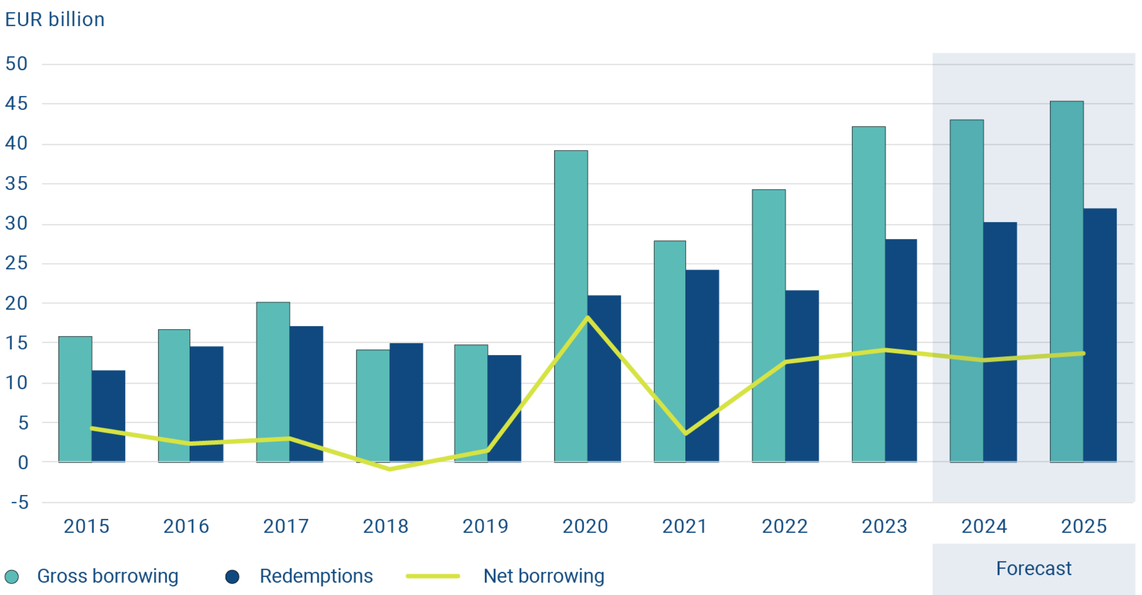
The budgeted gross borrowing in 2023 was EUR 39.259 billion, including EUR 11.221 of net borrowing., the including EUR 11.221 of net borrowing. Due to a significant amount of central government expenditure falling due on 2 January 2024, a liquidity buffer was built already before year end, which resulted in larger realised borrowing in comparison to budgeted amounts. Thus, the realised gross borrowing in 2023 was EUR 42.251 billion, and the realised net borrowing amounted to EUR 14.214 billion. At the end of the year, the central government debt stock reached approximately EUR 156 billion.

Central government debt



The central government debt was EUR 156.17 billion at the end of 2023. The debt-to-GDP ratio was 55.4%.

Redemptions and net borrowing



Redemptions of EUR 28.04 billion took place in 2023 while net borrowing amounted to EUR 14.21 billion.

According to the forecast by the Ministry of Finance, the estimated net borrowing requirement for the year 2024 is EUR 12.879 billion. With EUR 30.252 billion of redemptions, the gross borrowing requirements totals EUR 43.131 billion.

Funding Strategy

The funding strategy of the Republic of Finland is based on euro benchmark bond issuance. New benchmark bonds are issued in syndicated form. Syndications are complemented with bond tap auctions, which enable increases in the outstanding volumes of the existing bond lines. There is also a foreign currency bond issue programme, called the Euro Medium Term Note (EMTN) programme. The Republic of Finland is committed to issuing in other currencies than the euro to complement its euro-denominated borrowing and to serve a broader base of investors. However, issuance in foreign currencies is subject to market conditions and a reasonable funding cost in comparison to euro issuance.

The current funding volume supports three new euro benchmark bond syndications per year, tap auctions on benchmark bonds, and one benchmark-sized USD bond issue. The short-term funding is carried out by issuing Treasury bills. In terms of bond maturities, the yearly issuance pattern of 5- and 10- year maturities is regularly complemented with a new long-term bond to maintain and secure a liquid benchmark bond curve up to 30 years.

This year, subject to market conditions, the State Treasury aims to issue a new 30-year benchmark bond, in addition to a new current coupon 10-year maturity. Due to the debt redemption profile, the third bond maturity in 2024 is likely to be either a 5-7-year or 15-year long tenor. Market conditions permitting, issuance in currencies other than the euro, potentially a USD benchmark bond, may complement the long-term funding. The share of short-term funding, i.e. Treasury bills, is estimated to account for about 50% of the gross annual borrowing amount.

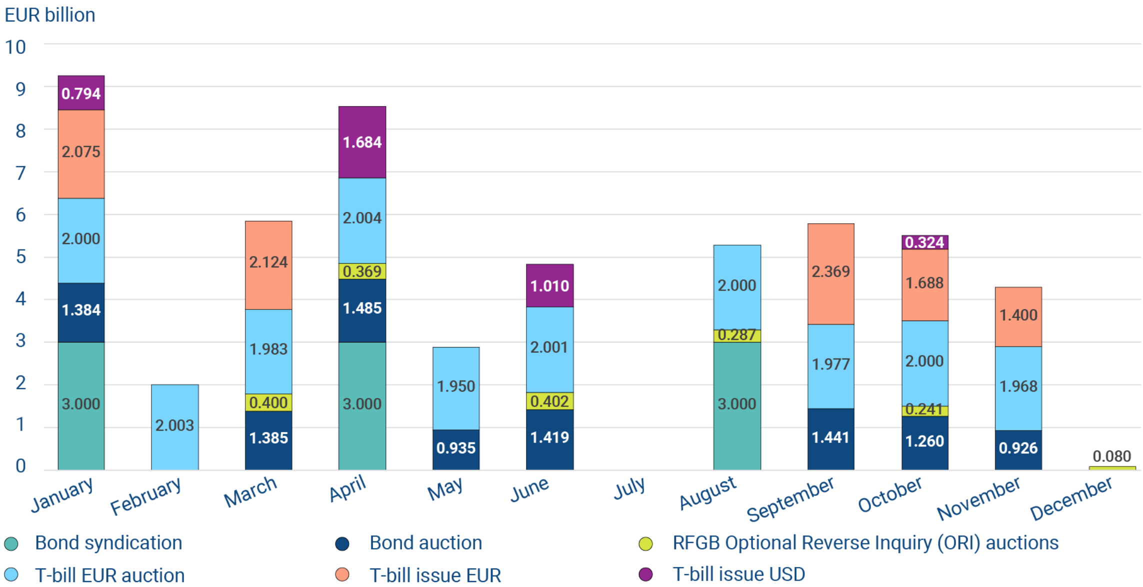
The State Treasury is motivated to preserve Finland’s place in the global markets as one of the reliable and acknowledged bond issuers and thus maintain attractive debt instruments and bond issuance in the future.

Funding operations

In 2023, the Republic of Finland issued three new euro-denominated benchmark bonds and conducted 14 benchmark bond auctions. In addition, six Optional Reverse Inquiry (ORI) auctions were conducted to support secondary market liquidity in off-the-run bonds. ORI auctions are described in more detail on page 31. Short-term funding was carried out in Treasury bill auctions and issuance of bills in ECP format.

The syndicated issues had EUR 3 billion initial issue size for each bond. The first bond was a 15-year maturity due 15 April 2038, and it was issued in January. It carries of coupon of 2.75%. As customary, five primary dealer banks were appointed as lead managers for the issue, and the other primary dealers were included as co-leads. The order book of the issue reached over EUR 11 billion and over 90 investors participated in the transaction. The investors included banks, funds and asset managers, pension funds, public institutions, and hedge funds.

Operations in 2023



In 2023 Finland issued three new euro-denominated benchmark bonds and arranged eight regular bond auctions. The short-term funding was carried out by issuing Treasury bills.

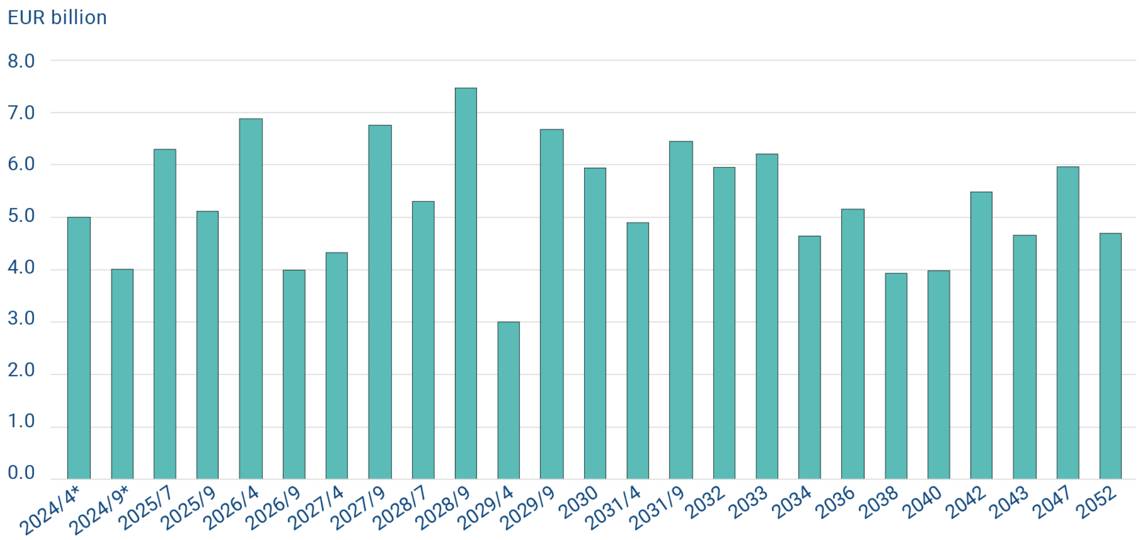
The second bond issue was priced in late April at 1 basis point below the euro swap curve to yield 3.032%. The maturity was 10-years and the due date 15 September 2033. The order book in the syndicated issue grew quickly and attracted participation especially from banks, central banks, asset managers and pension funds. The order book was over EUR 10 billion and 90 investors participated.

The third bond issue in 2023 was a new 5-year maturity due 15 April 2029. The bond was issued in the latter part of August and reached an order book of over EUR 11 billion from over 80 investors. 38% of the issue was allocated to central banks and official institutions – this reflects a strong interest from this investors segment and is potentially a function of the yield spread to peer countries, but also perhaps on the higher absolute yield levels this year.

Tap Auctions

In addition to syndicated bond issues, the State Treasury conducts tap auctions on existing euro benchmark bonds in the primary market. An auction calendar is published quarterly at the State Treasury website. In 2023, eight regular bond

Benchmark bonds



* Serial bond, no benchmark status

The majority of all outstanding serial bonds issued by the State Treasury are benchmark bonds.

Serial bond auctions

Auction date	Maturity year	Issued amount MEUR	Issue yield	Bid-to-cover
17 Jan 2023	2027	632	2.547%	1.51
17 Jan 2023	2032	752	2.675%	2.01
9 Mar 2023	2025	50	3.263%	6.3
9 Mar 2023	2028	350	3.206%	3.33
21 Mar 2023	2028	1,000	2.688%	2.12
21 Mar 2023	2036	385	2.972%	1.79
18 Apr 2023	2028	500	2.836%	2.06
18 Apr 2023	2047	985	3.064%	1.24
27 Apr 2023	2025	160	2.779%	1.47
27 Apr 2023	2029	209	2.865%	4.23
16 May 2023	2038	935	3.175%	1.68
13 Jun 2023	2033	921	2.980%	1.31
13 Jun 2023	2036	498	3.133%	2.26
15 Jun 2023	2026	201	2.995%	1.78
15 Jun 2023	2029	201	2.949%	2.86
17 Aug 2023	2034	95	3.286%	2.32
17 Aug 2023	2052	192	3.224%	2.82
19 Sep 2023	2030	500	3.138%	1.93
19 Sep 2023	2033	941	3.264%	1.26
17 Oct 2023	2028	575	3.204%	1.54
17 Oct 2023	2033	685	3.422%	1.22
26 Oct 2023	2025	202	3.383%	2.85
26 Oct 2023	2027	39	3.177%	10.49
21 Nov 2023	2033	656	3.138%	1.45
21 Nov 2023	2036	270	3.285%	2.19
7 Dec 2023	2031	80	2.600%	2.44

auctions and six ORI auctions were conducted in total. All auctions of serial bonds are tap auctions of existing lines. Five auctions were arranged in the first half of the year, and three auctions in the latter half of the year. The total auctioned funding volume via serial bond auctions was EUR 12.014 billion, of which EUR 1.779 billion was ORI issuance. All but one of the auctions were dual line auctions, including two bonds with different maturities auctioned in the same auction. The bid-to-cover ratios for the auctioned securities (excluding ORI auctions) varied between 1.22 and 2.86. The issued amounts were between EUR 270 million and EUR 1,000 million per bond per auction.

Optional Reverse Inquiry Auctions

The State Treasury introduced an Optional Reverse Inquiry (ORI) facility in March 2023, when the inaugural ORI auction was conducted. The purpose of the facility is to support the RFGB secondary market liquidity, by providing an opportunity for market makers to source off-the-run bonds in the primary market regularly. This improves the market making capacity of the PD banks with end investors and thus bond secondary market liquidity.

An ORI auction is conducted only when one or more Primary Dealers express interest for a particular bond or bonds prior to a scheduled auction date.

In 2023, six ORI auctions were conducted, in line with the quarterly published auction calendar. The total issued amount via ORIs was EUR 1,779 million. The issued amounts were between EUR 80 million and EUR 350 million per bond per ORI auction.

ORI auctions in brief:

- The ORI auctions may take place every second month on the 2nd or 4th Thursday at 11.30 – 12 CET in Bloomberg Auction System.
- The number of potential auctioned lines is limited to two, and the maximum total amount to be issued is EUR 400 million.
- The auction format is a multi-price, meaning that each accepted bid is allocated at the price it was bid, contrary to the regular RFGB auctions, which follow a uniform price format (all accepted bids allocated at the lowest accepted price).

Short-term funding

The State Treasury issues Treasury bills in euros and US dollars through banks included in the Treasury Bill Dealer Group, according to the financing needs of the central government and in line with guidelines set by the Ministry of Finance.

Euro-denominated Republic of Finland Treasury bills (RFTBs) are issued via auctions. In auctions, the counterparties in the Treasury Bill Dealer Group can submit bids, and the price of the auctioned security is determined based on the received bids.

In 2023 the State Treasury issued euro-denominated Republic of Finland Treasury bills (RFTB) in 10 auctions. The total amount issued in Treasury bill auctions was EUR 19.737 billion.

The State Treasury may also issue Treasury bills on other occasions, depending on the demand and financing needs, in which case the State Treasury defines the reference price for the issue. This issuance method resembles that of Euro Commercial Paper programmes (ECP). Treasury bills in ECP format may be issued in two currencies: in euros and in US dollars.

Treasury bill auctions

Auction date	Maturity date	Issued amount MEUR	Issue yield	Bid-to-cover
10 Jan 2023	14 Aug 2023	1,000	2.740%	1.47
10 Jan 2023	13 Nov 2023	1,000	2.950%	1.13
14 Feb 2023	14 Aug 2023	1,002	2.930%	1.7
14 Feb 2023	13 Nov 2023	1,001	3.080%	1.86
14 Mar 2023	13 Nov 2023	998	3.100%	1.5
14 Mar 2023	13Feb 2024	985	3.170%	1.57
11 Apr 2023	13 Nov 2023	1,003	3.200%	1.36
11 Apr 2023	13 Feb 2024	1,001	3.250%	1.81
9 May 2023	13 Nov 2023	975	3.260%	1.72
9 May 2023	13 Feb 2024	975	3.300%	1.82
6 Jun 2023	13 Feb 2024	1,000	3.485%	1.45
6 Jun 2023	14 May 2024	1,001	3.480%	1.71
15 Aug 2023	13 Feb 2024	1,000	3.730%	1.62
15 Aug 2023	14 May 2024	1,000	3.760%	1.51
12 Sep 2023	14 May 2024	975	3.750%	1.23
12 Sep 2023	13 Aug 2024	1,002	3.710%	1.47
10 Oct 2023	14 May 2024	1,000	3.860%	1.73
10 Oct 2023	13 Aug 2024	1,000	3.830%	1.6
14 Nov 2023	14 May 2024	965	3.900%	1.03
14 Nov 2023	13 Aug 2024	1,003	3.770%	1.47

In 2023, ECP format Treasury bill issuance was conducted both in USD and EUR based on pricing and demand during the year. The gross ECP issuance in USD was 4.3 billion, and in EUR 9.7 billion.

The average maturity in USD ECP issuance was 6.5 months and EUR ECP issuance 5.3 months. The outstanding stocks of USD- and EUR-denominated Treasury bills at year end were USD 1,800 million and EUR 19,062 million (USD 4,116 million and EUR 13,501 million in 2022).

2023 outstanding stocks of Treasury bills

1,800

USD million

—

19,062

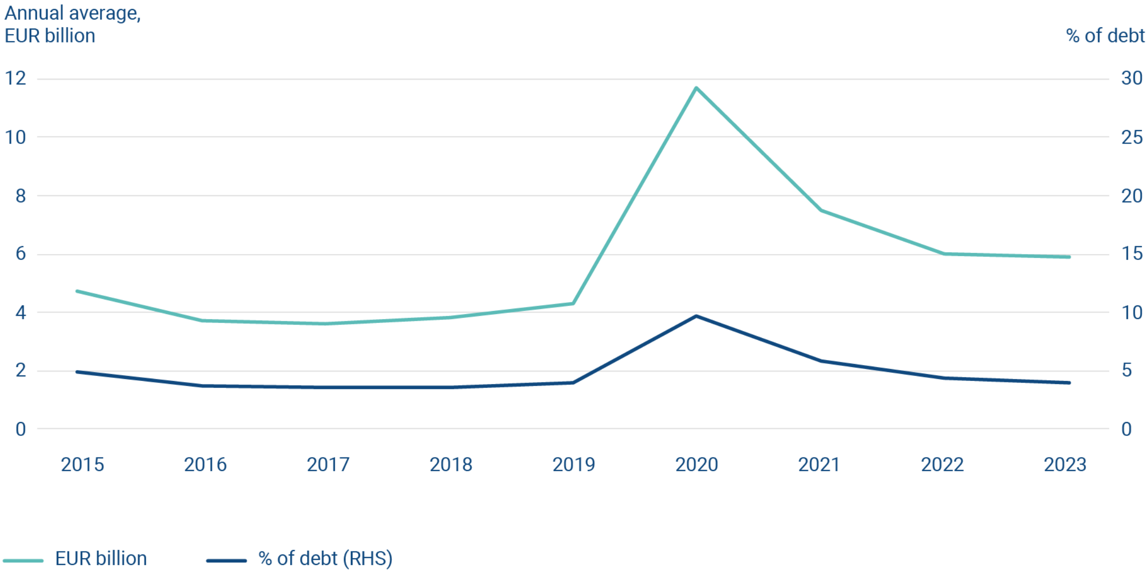
EUR million

Liquidity management

The amount of central government cash reserves varies daily depending on income and expenditure flows. The size of the cash buffer is based on an assessment of sufficient liquidity and a limit on uncovered net cash flows. Cash flows follow both intra-month and annual seasonal patterns due to timing mismatches in income and expenditure. Changes in the budget deficit during the fiscal year also affect liquidity management via changes in funding requirements.

As the primary focus is sufficient liquidity, actual borrowing may deviate from that budgeted for the fiscal year for various reasons, e.g., deferrable allowances which are budgeted in a specific year but used over a number of years. At the end of 2023, a large expenditure (over EUR 4 billion) was due on the first banking day of 2024, and the cash reserves were subsequently boosted before year end to secure suffi-

Liquid cash funds



The annual average of liquid cash funds was EUR 5.9 billion or 3.9% of debt in 2023.

cient liquidity. This resulted in realised borrowing exceeding the budgeted amount, despite the fall in the posted Credit Support cash collateral during the year, which reduced the funding need.

The cash reserves are invested in very short-term maturities using primarily bank and central bank deposits and triparty repos. The latter means depositing funds with eligible counterparties while receiving a bond or bill as a collateral for the term of the deposit. The collateral is managed by a third party, e.g., central securities depository.

In 2023, the ECB changed the remuneration of government deposits at the national central banks to a lower level from a previously used rate, starting in May 2023. The aim was to provide incentives for a gradual and orderly reduction of such deposits held with the Eurosystem. From May to the year end, the State Treasury was subsequently more active in the triparty repo market with low-risk counterparties using a collateral basket with high-quality collateral.

Liquidity management relies on the central government cash flow forecast system. All government accounting entities forecast their income and expenditures for the next 12-month period into the system. The State Treasury uses this data as a basis for liquidity management decisions.

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Mika Tasa is Senior Manager in charge of Funding and Liquidity Management at the State Treasury Finland.

5

Finland is well positioned for green investments

CHIEF POLICY ADVISER **JANNE PELJO**

Finland is in the vanguard of climate action, boasting over €220 billion worth of investment plans in the green transition. Not all plans will materialize, but the current project pipeline and Finland's strong fundamentals in advancing the green transition justifies genuine optimism, writes Janne Peljo.

The United Nations climate summit COP28 in Dubai in December 2023 ended with a historical agreement, with countries agreeing to "transition away from fossil fuels in energy systems" to keep the pursuit of global net zero emissions by mid-century within reach. This gives a further push to investments in clean technologies across the world.

Transitioning away from fossil fuels requires significant investments, especially in clean electricity. A core component of future competitiveness is the availability of emission-free and affordable electricity. Finland is exceptionally well-positioned in this regard, attracting green investments into the country.

The Confederation of Finnish Industries (EK) has compiled a list of publicly announced investment plans in the green transition. In the end of 2023, the investment plans announced totaled over €220 billion – more than 70% of Finland's GDP.

Wind power dominates the investment pipeline in Finland, with onshore and offshore wind projects covering almost 75% of the planned investments – and for a good reason. Finland's favourable wind conditions, vast land areas and shallow waters provide Finland with excellent potential to further increase wind power production on- and offshore. Finland's power transmission grids are also in a good condition to accommodate further variable power generation.

In 2023, Finland produced 94% of its electricity from emission-free sources while enjoying the second cheapest power prices in Europe, second only to neighboring Sweden. The availability of clean and affordable electricity gives rise to a boom in industrial investments planned in Finland.

"Core component of future competitiveness is the availability of emission-free and affordable electricity. In this regard, Finland is exceptionally well-positioned."

Finland's government has set the target of producing at least 10% of the green hydrogen in the EU by 2030. Hydrogen investments in the project pipeline currently exceed 7 gigawatts, translating to over €14 billion worth of investments.

As a forest rich country, Finland also has a tradition of expertise in biomass feedstocks, and positions as a world-leader in sustainable biofuels for land, maritime and air transport. Put together, Finland is well-suited to become a European leader in producing green hydrogen and its derivatives where bio-based CO_2 is a key component. Further, heat generated in hydrogen production can be utilized in Finland in district heating, improving the overall efficiency of these processes.

Finland also has significant mineral resources and is the only country in Europe with access to all minerals needed for batteries. This makes Finland attractive for investments throughout the battery value chain. Large investments are also underway in the production of fossil-free steel as well as numerous data center projects. For all these projects, affordable clean electricity is a major competitive advantage: the demand for electricity they create helps to attract further investments in power generation, creating a self-reinforcing spiral for new green investments.

However, there is a long way to go from making investment plans to having industrial facilities up and running. The currently high inflation and interest rates, prevailing in the European economy are presenting challenges to many of these projects – most of which face high upfront investments and risks related to scaling up novel technologies on an industrial scale. Permitting processes take their time, and while the Government has initiated a reform to speed up the investment permitting processes, the impacts will not be achieved immediately. Estimates are that the green transition could mean over 100,000 to 200,000 new jobs in Finland over the next two decades. This potentially presents a bottleneck in Finland with its aging population, if attracting foreign labour across industries is not successful.

All in all, energy transition is already well underway in Finland. Building on clean electricity and a tradition of excellence in industrial engineering and digital know-how makes Finland extremely well positioned to be in the vanguard of climate action. Not all the investment plans will materialize, but the current project pipeline and Finland's strong fundamentals in advancing the green transition justifies optimism that Finland will not only meet the national target of reaching net zero emissions by 2035, but also turns green industries to an engine of growth for Finland.

Janne Peljo is Chief Policy Adviser, Climate and Biodiversity, of the Confederation of Finnish Industries.

PHOTO: Wind turbines, 08/2012, Hailuoto, Tuomas Heinonen. Approximately 37% of all wind turbines in Finland are located in Northern Ostrobothnia. In 2023, wind power covered 18.2% of the electricity consumed in Finland. Thus, wind power is the third-largest source of electricity in Finland, slightly behind hydropower (18.8%).

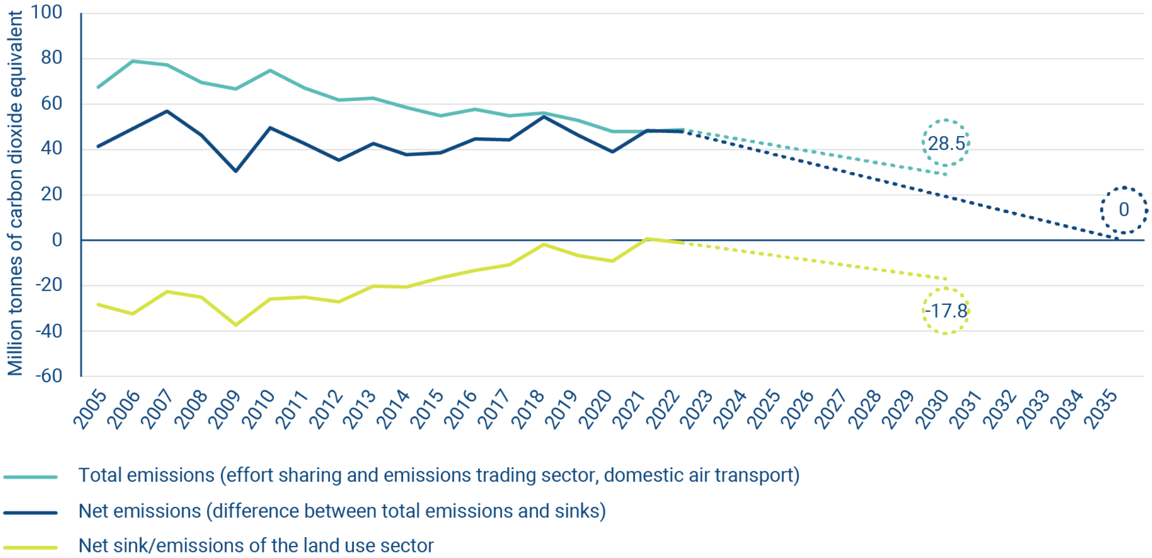
6 Progress towards sustainability goals

Climate targets

Finland's greenhouse gas emissions are steadily decreasing, but Finland's goal of becoming carbon neutral by 2035 will require additional measures, especially to strengthen its carbon sinks.

Finland's climate targets are set by the EU legislation and the national Climate Change Act. Finland's EU level obligation is to reduce emissions from the effort sharing sector – for example in transport and agriculture – by 50% by 2030[3]. In the EU, the target for the net sink of the land use sector is set by the LULUCF regulation. Under this regulation, the land use sector should cause no net emissions in the period 2021–2025. Furthermore, the minimum net removal level set for Finland's carbon sink is -17.8 million tonnes of CO_2 equivalent by 2030.

Finland's greenhouse gas emissions trends



Under the national Climate Change Act, Finland's net emissions should be zero or negative by 2035. By 2030, the total emissions must be reduced by 60% compared to the 1990 level. At the EU level, it has been agreed that the carbon sink of the Finnish land use sector must be -17.8 million tonnes of CO_2 equivalent by 2030. Source: Annual Climate Report 2023.

3 Compared to the 2005 level

Finland's own target under its Climate Change Act is to reduce emissions by 60% by 2030[4] and achieve carbon neutrality by 2035. Carbon neutrality means balancing Finland's emissions with its carbon sinks.

As it stands, achieving these goals remains uncertain. Finland's greenhouse gas emissions are decreasing steadily particularly in energy production and energy-intensive industry due to the EU wide emissions trading system. In the emissions trading sector, it is possible that emission reductions can be achieved even faster than anticipated. However, the carbon sink of the land use sector is far from the target level. The achievement of the Finnish effort sharing sector's obligation set at the EU level is also uncertain.

In 2022, Finland's greenhouse gas emissions decreased by 3% compared to the previous year. According to current estimates, Finland's emissions reduction trend is in line with the target for 2030. Emissions have decreased by 35% compared to 1990, and by 46% compared to 2003, when emissions were at their highest during the 1990–2022 period. Over the past five years, Finland's total emissions have decreased by an average of 4% annually.

Finland's greatest challenge is the carbon sink of its land use sector (LULUCF). According to preliminary data published in December 2023, the land use sector was a net source of emissions in 2022, when its emissions exceeded removals by 4.5 million tonnes of CO_2-equivalent. The size of the forest carbon sink varies substantially from one year to the next, but the sink has declined significantly over the past few years. The weak development of the net sink of the Finnish land use sector is attributable to increased forest harvesting, the slowing of forest growth and the increased soil emissions from peatlands.

Finland's first climate plan for the land use sector was completed in 2022. It includes various measures for reducing emissions from the land-use sector and strengthening its carbon sinks and stocks.

Emissions from the emissions trading sector decreased by 6% in 2022 compared to the previous year. The share of natural gas in Finland's energy supply is small and its consumption halved as a result of price increases and the end of Russian imports. In

4 Compared to the 1990 level

addition to the EU ETS, the reduction of emissions in this sector has been influenced by energy taxation, subsidies for renewable energy, measures to improve energy efficiency, and a law banning the use of coal in Finnish energy production at the start of 2029.

Emissions from the effort-sharing sector decreased in Finland by 3% in 2022. However, emissions from the largest emitters in the effort-sharing sector – transport and agriculture – remained almost unchanged. Emissions from Finnish agriculture have remained at almost the same level since 2005. Transport emissions have decreased by 22% since 2005, and Finland's goal is to halve them by 2030. One of the most important measures for reducing transport emissions is the distribution obligation for renewable transport fuels. This obligation mandates that fuel distributors must include a certain proportion of renewable fuels in their fuel mixtures. Though the obligation has been temporarily reduced by the recent and current government, it delivers significant emission reductions in the transport sector yearly. The obligation will increase gradually to 34% by 2030 according to the present legislation.

Under the Climate Change Act, the Government submits an Annual Climate Report to the Parliament each year. The Annual Climate Report examines the general development of greenhouse gas emission trends and the sufficiency of the planned measures in relation to the national climate targets and Finland's EU obligations.

UN Sustainable Development Goals

Finland is a global frontrunner in sustainable development when measured by performance on the Sustainable Development Goals. In 2023, Finland topped the global as well as European SDG Index rankings for the third year running. Yet even Finland faces challenges in achieving all of its goals by 2030.

Finland, along with the other Nordic states, regularly tops international comparisons of sustainable development indicators. This was also the case in 2023, when Finland achieved its third successive #1 ranking among the

Finland’s progress on Sustainable Development Goals

Source:
Sustainable Development Report 2023

Dashboards:
● SDG achieved ● Challenges remain ● Significant challenges remain ● Major challenges remain

Trends:
↑ On track or maintaining SDG achievement ↗ Moderately improving → Stagnating ↓ Decreasing

The dashboards and trends show Finland’s progress towards the UN Sustainable Development Goals.

166 countries included in the SDG Index comparison, carried out by the UN and the Bertelsmann Foundation. The comparison is an annual assessment of how the countries promote the 2030 Agenda for Sustainable Development and the related Sustainable Development Goals.[5]

There are 17 Sustainable Development Goals in all. At the moment, Finland has achieved or is close to achieving approximately 60% of these goals, and according to current estimates, it will achieve the majority of the goals set for 2030. Finland has met its goals for poverty reduction, clean and affordable energy, and good education. Finland has also done well in its social sustainability goal and is close to achieving the goals related to gender equality, decent work and economic growth, and peace and the rule of law.

5 The comparison was made using 97 global indicators, as well as 27 indicators that were only applied to OECD countries. There are a total of 247 SDG indicators, so the comparison does not take into account all aspects of sustainable development.

However, even Finland faces challenges in achieving all of its goals by 2030. These challenges are particularly related to ecological sustainability, global responsibility, and adverse impacts across different borders. Of the main goals, *SDG 13: Climate Action*, *SDG 14: Life Below Water,* and *SDG 15: Life on Land* will require the most additional measures from Finland before they can be realised.

In addition to the main goals, Finland's performance with respect to many of the 169 targets varies. According to Statistics Finland, the most pressing issues for Finland include economic inequality, unemployment and social exclusion, high greenhouse gas emissions per capita, and biodiversity loss. Success in international indicator comparisons correlates with high GDP per capita, as many of the indicators are intertwined with high levels of consumption. In other words, comparisons between countries can, at will, be criticised for the fact that while high GDP per capita guarantees a high level of investment, it can also obscure real and legitimate issues.

According to **Jukka Hoffrén**, environmental economist and statistician at Statistics Finland, another deficiency in the indicators is that the environmental well-being is not yet monitored in a balanced manner when compared to economic and social well-being. The set of SDG indicators lack important environmental factors: for example, Finland's two main objectives – achieving carbon neutrality by 2035 and the EU biodiversity strategy's 30% nature conservation target for 2030 – are not included in the monitored indicators. Achieving these objectives will require systemic changes over a long period of time, and they must be solved locally using efficient local policy measures, such as national legislation in the case of Finland's carbon-neutrality target.

Global progress on the SDGs has bogged down in the 2020s. The foreboding message of the interim review of the targets set in 2016 was that the signatories had strayed dramatically from the intended path for sustainable development. In addition to the prolonged impacts of COVID-19 pandemic, the climate crisis, the Russian invasion on Ukraine, and the generally weak growth of the global economy have halted global developments to the level measured in 2019. According to current development trends, only 15% of the 2030 Agenda will be achieved globally.

Finland and ESG

- The State Treasury's approach to sustainability is holistic, focusing on government level targets and performance and recognising the social nature of budget spending.
- The focus of our funding strategy is on the liquidity of the benchmark bond curve, and thematic bonds are currently not part of the strategy.
- Finland is by many metrics a global forerunner in sustainability. For more information on the Finnish government's sustainability targets, please visit the ESG section on the State Treasury website.

Sources:

- Annual Climate Report 2023, Ministry of the Environment
- Statistics Finland: Greenhouse gas emissions fell in 2022 – the land use sector was a net emission source https://stat.fi/en/publication/cl8a4c4tivtd00bvy-vo6fy0sv (14 December 2023)
- Sustainable Development Report 2023: https://dashboards.sdgindex.org/chapters
- Sustainable Development Goals: Progress Chart 2023: 2023 SDG Progress Chart 0910 (un.org)
- Biodiversity: How the EU protects nature Biodiversity: how the EU protects nature - Consilium (europa.eu)

Tiina Heinilä works in communications within the State Treasury's Funding and Investor Relations team.

PHOTO: Blue-wing, 07/2021, Laitila, Elmeri Juuti. The Lycaenidae, also known as the blue-winged butterflies, are the second-largest family of butterflies in the world, with over 5000 species, covering just over 30% of the world's known butterfly species. In Finland, there are 17 species belonging to this family.

7

What direction will Finland take in NATO?

SENIOR RESEARCH FELLOW **DR. IRO SÄRKKÄ**

For Finland, NATO's new-found appreciation of national defence is a much-welcomed development. Many NATO members are now looking in our direction, hoping to learn more from Finland's example, writes Dr. Iro Särkkä

Since the end of the Cold War, Finland's foreign and security policy has experienced two major upheavals: the first was when Finland joined the EU, and the second when Russia attacked Ukraine in February 2022 and Finland applied for NATO membership. It was not Finland, however, that chose the right moment but the moment that chose Finland. And for us, this was indeed both the best and worst moment for joining the alliance: the worst in the sense that war was raging on European soil, leading to a highly unpredictable security situation – but also the best due to the fact that common defence and deterrence were once again at the centre of NATO's activities.

For Finland, the NATO of today is a much more suitable partner than its predecessor. Before the war in Ukraine, NATO's focus for the past two decades had been on crisis management and the development of large-scale partnerships. After Russia invaded Crimea in 2014 the situation changed, but the true wake-up call for most NATO members took place in February 2022, when Russia attacked Ukraine.

> "The cornerstones of Finland's self-defence – our national general conscription service, the extensive crisis resilience of society, and high will to defend the nation – are factors that many of our NATO allies can only dream of."

From Finland's perspective, NATO's new-found appreciation of national defence is a much-welcomed development. Many NATO members are now looking in our direction, hoping to learn more from Finland's example. The cornerstones of Finland's self-defence – our national general conscription service, the extensive crisis resilience of society, and high will to defend the nation – are factors that many of our NATO allies can only dream of. According to numerous polls, as many as 80% of Finns are prepared to defend Finland with their lives or participate in national defence tasks, which makes Finland a special case within the Western world.

Maintaining and developing a credible defence force will demand significant economic investments from Finland both now and in the future. As part of NATO's common line of defence, Finland will be required to meet NATO's 2% GDP target for defence expenditure permanently to be able to respond to the demands of today's exacting security environment.

As a member of NATO, Finland's primary focus will be on defending Finland and the Nordic region. However, we must also be prepared to make some cultural changes in our national mindset. We may be required to move beyond our comfort zone and explore new operating environments and foster partnerships with countries that we do not typically collaborate with.

Finland must be prepared to participate in various NATO operations near and far from its borders, both in times of peace and war. In order to honour our commitments, the key principles of our defence system, such as our general conscription service, may need to be reformed. And, as a member of NATO, we will need to fly our flag even in those parts of the alliance that we believe to be less vital to Finland's security.

Similarly, we must be prepared to accept external assistance, as this will bolster our role in the alliance's joint defence activities. As not only a Northern but also a NATO border country, we must be able to rely on the support of our key partners. Above all, we are not just a line of defence, but an integral part of the common and necessary deterrence created by our NATO allies.

Finland's rapid accession into NATO was made possible by our nearly three-decade-strong partnership for peace, participation in NATO-led crisis management operations, and excellent relations with our key allies. Now, nearly one year into its membership, Finland can begin refining its profile within NATO. Finland will have to decide on many new and delicate security policy issues – and our role in NATO's nuclear deterrence policy is one of them.

Finland's NATO integration process will take time, but we possess the necessary skills – and will – to reach our goals. As part of our security policy, we must consider how we want to develop the alliance's common defence. And, as a member of NATO, we must identify the special areas of expertise that we can bring to the table, for the benefit of everyone involved.

While Finland's NATO membership will not alter our entire security policy, which we have honed over many decades, it has brought us much closer to our Western peers. It's the Nordic countries, however, that remain our closest group of allies, as we are Arctic states that share a common operating environment and particularly cold climate; our societies are strong liberal democracies that believe in the rule of law; and we have a common history of extensive collaboration. In addition to our Nordic neighbours, our relationship with the United States was strengthened significantly with the signing of the bilateral Defence Cooperation Agreement.

"We are a nation of reliable and conscientious people who have their feet on the ground and an acute understanding of our limits. Above all, we value persistence in both words and action."

What will Finland's role in NATO be? Instead of acting as a healer or bridge builder, a more suitable alternative might be that of a networker or mediator in a changing world order. We are a nation of reliable and conscientious people who have their feet on the ground and an acute understanding of our limits. Above all, we value persistence in both words and action. What we need now is strong political leadership and a sense of direction – where we want to take Finland in NATO and how we can get there, without ignoring the geographical realities that we must contend with.

Finland and NATO

- Finland joined NATO on 4 April 2023.
- In 2023, Finland's defence spending was 2.5% of GDP.
- In 2024, defence spending is estimated to be 2.3% of GDP.
- Nine out of ten Finns are in favour of Finland's NATO membership, according to a government survey published in January 2024.

Dr. Iro Särkkä is Senior Research Fellow at the Finnish Institute of International Affairs, in research programme for *Finnish Foreign Policy, Northern European Security and NATO*. Her areas of expertise include Finnish, Nordic, French and European foreign policy, multilateral security frameworks, NATO and the EU, as well as questions of political behaviour. Recently, her research interests have included studying and conceptualising national identity change in small states, securitisation theories and Nordic security.

PHOTO: Short-eared owl (Asio flammeus), 07/2022, Liminka, Elmeri Juuti. In Finland, this species is found throughout the country. As the Finnish name suggests (swamp owl), it prefers marshes, meadows, and other open areas. The nest of the short-eared owl is a depression in the ground, sheltered by grass or reeds. The species is considered viable.

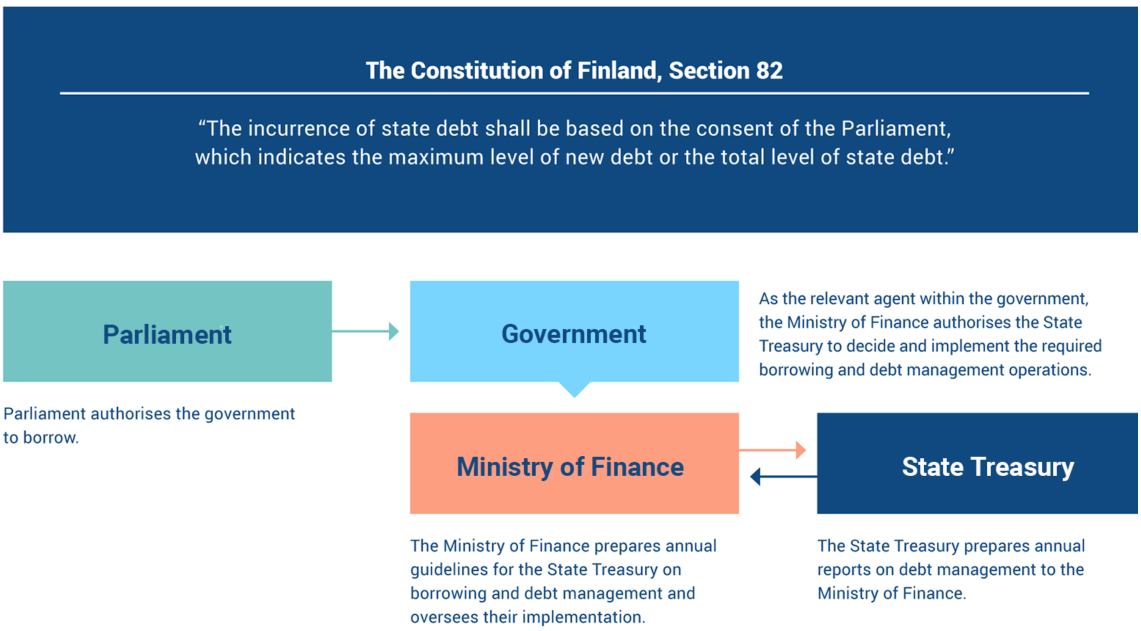
8 Principles of risk management

The strategic objective of central government debt management is to carry out its funding requirements and minimise the financing cost over the long term – while taking account of risk.

The strategy for central government debt management is set by the Ministry of Finance. The State Treasury carries out its debt management tasks in accordance with the guidelines issued by the Ministry of Finance.

The Ministry's guidelines set out the general principles and objectives debt management, instruments used in debt management, and risk limits as well as any other applicable restrictions. The State Treasury is authorised to raise funds, provided that the nominal value of the central government debt does not exceed EUR 170 billion. Of this amount, up to EUR 29 billion may be short-term debt.

The State Treasury is authorised to take out short-term loans when necessary to safeguard the central government's liquidity and, as part of its risk management,



The legal framework of debt management in Finland.

to enter into derivative agreements that comply with the terms and instructions issued by the Ministry of Finance.

The State Treasury reports regularly to the Ministry of Finance on debt management. Key information on the central government's debt management is also published annually in the central government's financial statements and the Government's annual report. The final central government accounts are published every year in March and the Government's annual report in May.

Risk management: an essential part of sound debt management

The objective of risk management is to avoid unexpected losses and safeguard the continuation of operations. The aim of central government is to manage all risks in a systematic manner. The risk management process consists of identification of risks, quantification and evaluation of risks, risk monitoring and reporting, and active management of risk positions.

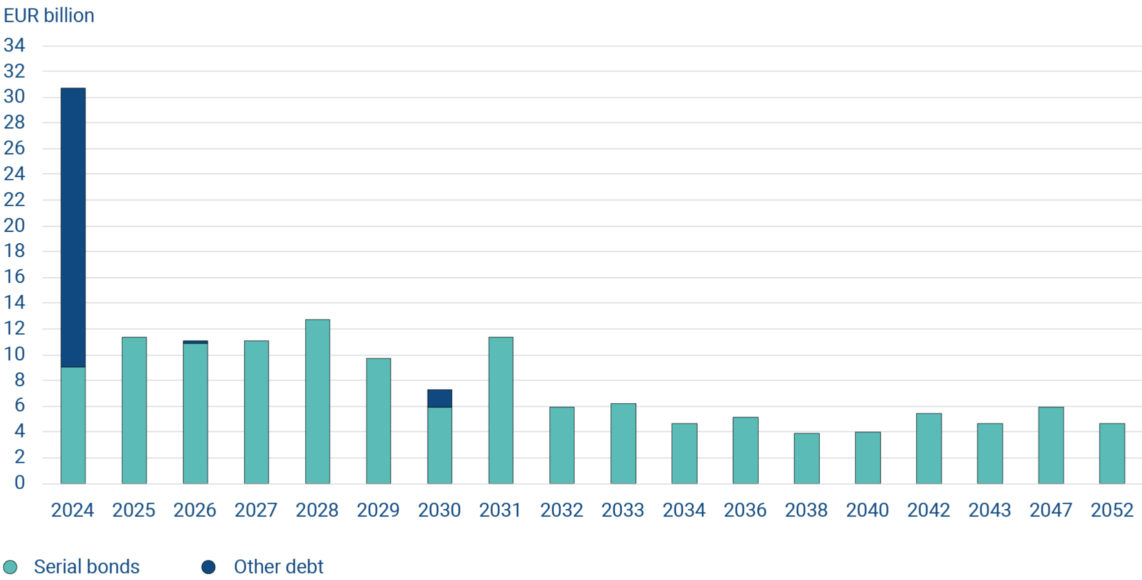
The main risks are **financing risk** (long-term refinancing risk and short-term liquidity risk), **market risk** (interest and exchange rate risk), **credit risk**, **operational risk**, and **legal risk**.

Financing risk

Financing risk can be divided into refinancing risk and liquidity risk. The former is generally measured by the amount of required refinancing, for example, during a year. However, financing risks are also affected by other factors, especially the need to ensure adequate and diverse sources of funding. The latter refers to the risk associated the central government short-term financing needs compared to its liquid cash funds and funding capability.

The State Treasury manages refinancing risk first and foremost by avoiding large maturity concentrations of debt subject to limits by Ministry of Finance. Refinancing risk can also be alleviated by diversifying funding in different instruments, investor types and geographic areas. This reduces the risk associated with an individual source of funding and improves the liquidity and attractiveness of government bonds to investors.

Repayment profile of central government debt



The State Treasury manages liquidity risks by keeping a sufficient cash buffer. This buffer will be larger if uncertainty related to the availability of funding is perceived to rise. For example, during the Covid-19 outbreak, the size of the cash buffer grew considerably. Liquidity can typically be added quickly with short-term funding. Liquidity risk management is based on the central government cash flow forecast system. In practise, the cash reserves are invested in collateralised or low-risk short-term maturities using primarily bank and central bank deposits. For the time being, the State Treasury can also make short-term deposits in the Bank of Finland.

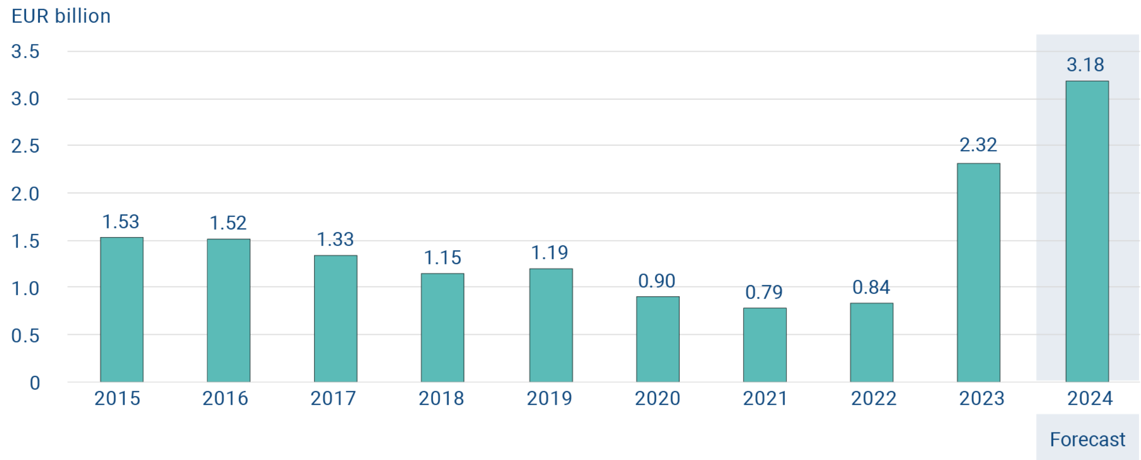
Market risk

Market risk includes interest rate risk and exchange rate risk. The key indicator of the interest rate sensitivity of central government debt is average fixing. This indicator represents the average time (in years) after which the debt will be repriced. The shorter the period, the faster any changes in interest rates are reflected in the government's debt expenditure.

The State Treasury manages the central government's interest rate risk position primarily with interest rate swaps. These were used to maintain the interest rate risk position within its target with no significant changes occurring in market exposure during the year. At the end of 2023, the average fixing for central government debt was 4.44 years.

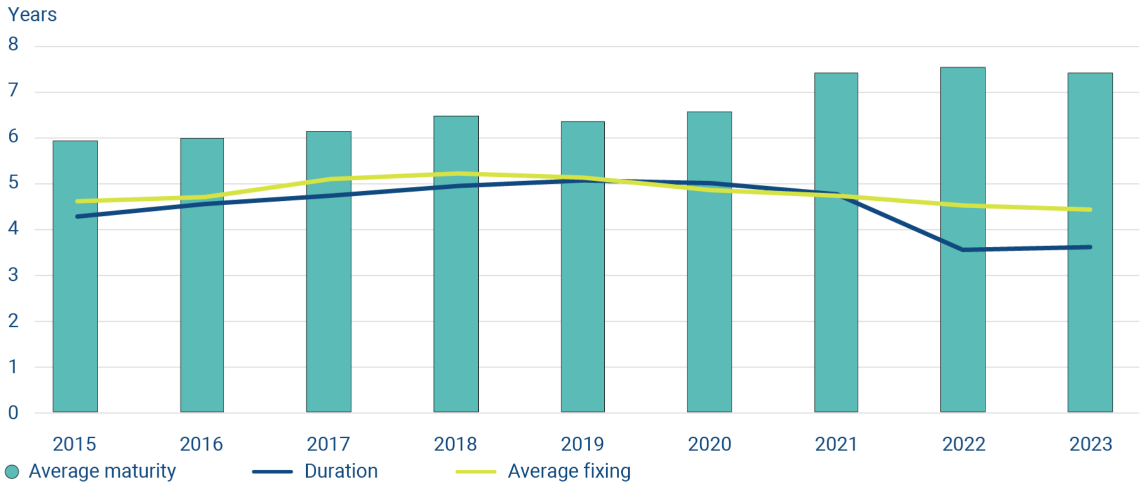
In Finland, the average fixing of debt is shorter than the average maturity, which is due to a policy choice of shortening the interest rate risk position with interest rate swaps. This choice arises from the typical term structure of interest rates.

Interest expenses of budgetary debt



In 2023 the interest expenses were EUR 2.32 billion. The forecast for 2024 is EUR 3.18 billion.

Interest rate sensitivity of central government debt



At the end of 2023, the average fixing of the central government debt was 4.44 years and duration 3.61 years. The average maturity was 7.38 years.

The interest rate curve, or yield curve, is generally upward sloping, i.e., short-term interest rates are lower than long-term interest rates. This leads to conclusion that a relatively short interest rate strategy generates less interest expenditure than a longer one. On the other hand, a shorter interest rate risk position can produce greater variation in interest expenditure relative to a longer rate strategy. Chapter 9 provides more on this topic.

The central government takes no exchange rate risk in debt management operations. There was no exchange rate risk relating to the outstanding debt at the end of 2023.

Credit risk

Credit risk arises from cash fund investments and market values of derivative positions. Credit risk is managed with limits and collateral with respect to both cash investments and market values of derivatives. The government requires high counterparty credit ratings and the guidelines set by the Ministry of Finance define minimum credit ratings. Investing cash with triparty repo contracts is a means to reduce credit risk associated with cash investments.

The State Treasury uses cash collateral to reduce the credit risks arising from the market values of derivatives. Like many other sovereign borrowers, Finland uses collateral agreements under the ISDA agreements (CSA, Credit Support Annex). These are two-way collateral agreements where both parties are obliged to provide collateral against the market values of derivative positions.

Operational risk

Operational risk means a risk arising from external factors, technology, or the deficient functioning of personnel, organisation or processes. A field requiring special attention is data security including securing both documents and IT systems. Equal focus is given to developing and continuously testing operative business continuity plans. Periodic audits by external cybersecurity experts have also spurred improvements in operative processes.

The principles of operational risk management are implemented in daily operations. Incidence of risk events and close calls are compiled and reported to management. The State Treasury monitors risk factors and events regularly and makes risk assessments.

Legal risk

Legal risk is the risk resulting from failure to comply with laws and regulations or established market practices as well as invalidity, nullity, voidability, discontinuation or the lack of documentation of contracts, agreements and decisions.

The State Treasury has prepared a set of internal guidelines for the management of legal risks. The State Treasury actively monitors its legal operating environment and reacts to significant changes quickly when necessary.

The objectives of legal risk management are to ensure compliance with applicable laws, rules and regulations and to minimize legal risk by utilising standard agreements and the government's own templates. In addition, steps are taken to ensure that employees are familiar with legislation, regulations and market practices concerning their activities.

Internal control

Internal control is an integral part of management of the State Treasury. Internal control ensures that operative functions are effective and efficient, internal and external reporting is reliable and laws and regulations are complied with. A sound system of internal control helps all parts of the organisation to reach their targets.

As part of internal control all main debt management processes are evaluated on an annual basis. The assessment pays special attention to the clarity of objectives, risks and control procedures.

PHOTO: Vallisaari, Helsinki, 2016, Jaakko Vähämäki. Vallisaari was allowed to develop for decades in a wild natural state until it was opened to the public in 2016. The abundant plant species, a thousand butterfly species, and many bat species speak of the island's excellent living conditions. Over the years, Vallisaari has served as a base for pilots and a storage area for the Finnish army.

9
Debt management in a world of higher interest rates

Finland has typically favoured a shorter interest rate risk strategy compared to other eurozone countries. This is not the only reason, however, for the rapid increase in the Finnish government's interest-related expenditures as interest rates have risen. In the next few years, Finland's financing costs will rise from a low baseline to near the average level of other eurozone countries.

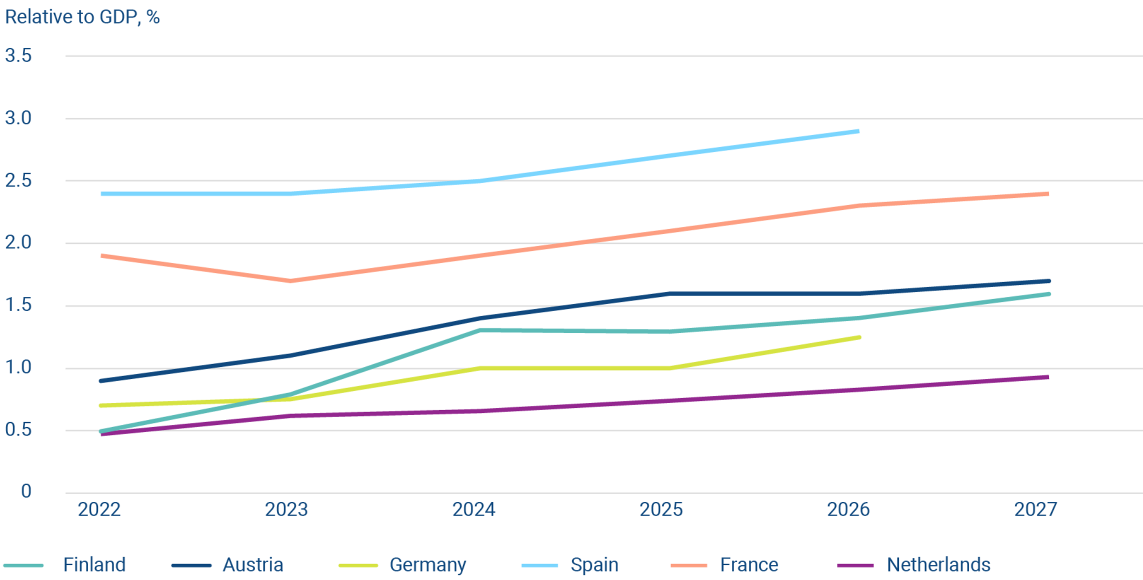
The European Central Bank has raised its interest rates for the last two years, leading to an increase in market interest rates as well as the Finnish government's interest expenditures on debt. The amount of debt is estimated to increase while Finland's long-term growth prospects are anticipated to weaken. The changes in Finland's operating environment and rising interest rates provide grounds for reviewing Finland's debt management strategy.

The primary objective of the central government's debt management is to safeguard Finland's financing and liquidity in all situations. In reality, the Finnish government funding has not significantly deviated from the funding carried out by other euro-area countries. By using interest rate swaps Finland has been able to simultaneously achieve its desired interest rate risk position while funding in maturities where investor demand has been the highest.

As a result of Finland's shorter interest rate risk position, the country's interest expenditures have grown faster than in other eurozone countries as interest rates have risen. Another reason for Finland's higher level of interest expenditure is that the central government's deficits are larger than in other eurozone countries. These deficits contribute to the increase in interest expenditures, as they are financed with new debt whose cost is determined by the interest rate prevailing at the time of financing. On the other hand, by choosing a shorter interest rate risk strategy Finland's central government has been able to benefit from low interest rates over a longer period of time when comparing interest expenditure to other eurozone countries, also to those with a higher credit rating. In the coming years, Finland's interest expenditure is expected to rise from a low baseline to roughly the eurozone's average level.

General government interest rate expenditure

Source:
Network of EU IFIs (2023), European Fiscal Monitor July 2023



General government interest rate expenditure, relative to GDP, in Finland and five peer countries from 2022 to 2027.

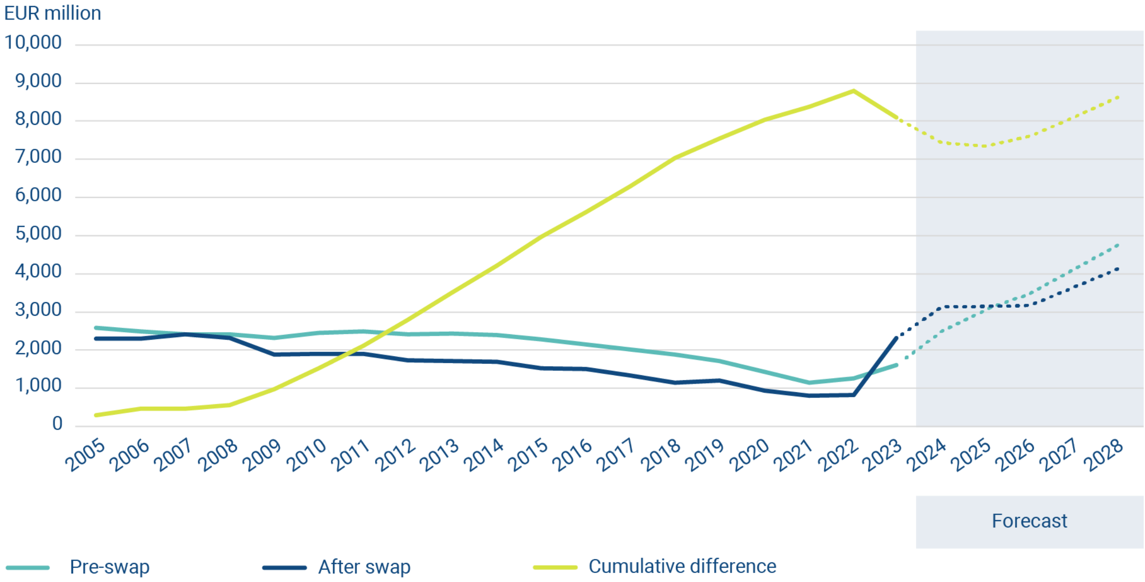
While a shorter interest rate risk strategy typically results in lower interest expenditure on average, it also entails more variation in the interest expenditure. However, the cost difference between different interest rate strategies is so significant that a shorter strategy is practically always cheaper when examined over a period spanning several years. In 2021, a working group established by the Ministry of Finance to assess the central government's debt management model concluded that the cost of central government debt should be examined over the long term.

An often overlooked aspect of a long interest rate risk strategy is that it also entails financial risks. However, in order to understand these risks, a broader perspective taking debt sustainability into account is required. It is essential to see that a higher volatility of interest expenditure does not necessarily mean a higher volatility in deficits.

When interest rates rise continue to rise, opting for a longer interest rate risk strategy means fixing debt interest to a higher level over a longer period of time. Interest rates tend to fall in a recession, which is precisely when the central government's

Central government debt interest rate expenditure

Source:
State Treasury



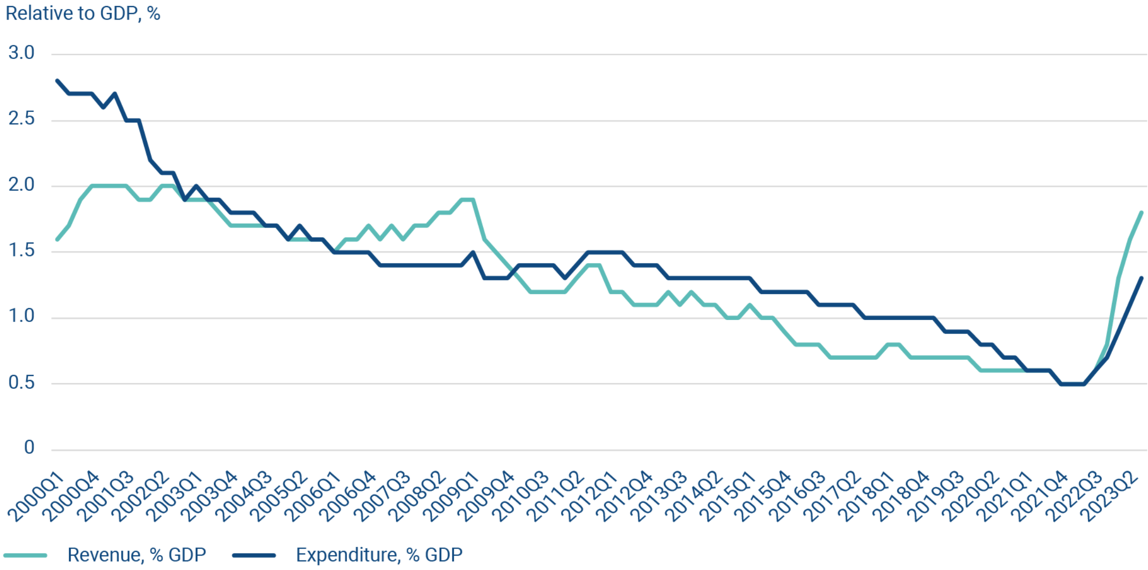
Finland's central government debt interest rate expenditure from 2005 til 2028.

deficits would otherwise typically increase. In such scenarios, a shorter interest rate risk strategy supports the government's ability to engage in a countercyclical economic policy. Finland's interest rate strategy boosted its central government finances especially during and after the financial crisis of 2008.

A broader perspective is useful given the significant amount of interest-bearing assets of the general government. As interest rates have risen, the Finnish general government's interest revenue has increased at a faster pace than its interest expenditure, resulting in a positive net impact for Finland's public finances. On the other hand, if the central government were to choose a longer interest rate risk strategy, a fall in interest rates could lead to negative net interest revenues and a blow to public finances. From this perspective, a shorter interest rate strategy may stabilize the development of net interest revenues and thus reduce the risks to general government finances. Special attention should be paid to this prospect, especially when the economic outlook is expected to deteriorate.

General government interest expenditure and revenue, 2000–2023

Source:
Statistics Finland



Finland's debt stock has grown and is expected to continue to grow in the near future. For this reason, the choice of the interest rate risk strategy has more economic significance than ever before. In this scenario, strategic debt management decisions should be made in a prudent fashion to ensure the long-term sustainability of the central government's debt.

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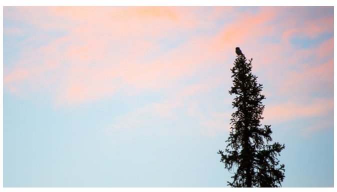

PHOTO: Northern Hawk-Owl, 06/2015, Kuusamo, Tuomas Heinonen. The English name of the Northern Hawk-Owl (Surnia ulula), describes the owl well. Like hawks, the Northern Hawk-Owl is diurnal and its appearance even resembles a small hawk. The species is viable.

10
Key figures

Economy	2021	2022	2023	2024	2025	2026
GDP at market prices, change in volume, %	3.2	1.6	-0.5	0.7	2.0	1.6
Imports, change in volume, %	6.0	8.5	-6.1	2.4	4.0	3.0
Exports, change in volume, %	5.8	3.7	-1.3	2.0	3.8	3.0
Consumer price index, change %	2.2	7.1	6.3	2.0	1.4	1.7
Unemployment rate, %	7.7	6.8	7.2	7.5	7.1	6.6
Current account, relative to GDP, %	0.4	-2.5	-0.8	-0.8	-0.9	-0.9
Tax ratio, relative to GDP, %	43.1	42.9	41.5	40.5	40.5	40.3

Forecast, Ministry of Finance

Government finances	2021	2022	2023	2024	2025	2026
General government net lending, relative to GDP, %	-2.8	-0.8	-2.5	-3.5	-3.4	-3.0
Central government net lending, relative to GDP, %	-3.3	-1.6	-3.2	-3.7	-4.2	-3.8
General government gross debt (EMU), relative to GDP, %	72.5	73.3	75.5	79.1	81.4	83.3
Central government debt, relative to GDP, %	51.3	52.7	55.4	58.5	60.6	62.2

Forecast, Ministry of Finance

Central government debt and borrowing*	2021	2022	2023
Central government debt, EUR billion	128.7	141.6	156.2
Serial bonds, EUR billion	115.2	122.6	132.8
Treasury bills, EUR billion	11.8	17.4	20.2
Other debt, EUR billion	1.6	1.6	3.1
Gross issuance, EUR billion	27.8	34.3	42.3
Net borrowing, EUR billion	3.7	12.7	14.2

*Central government debt administered by the State Treasury

Risk management	2021	2022	2023
Interest on budgetary debt, EUR billion	0.8	0.8	2.3
Effective interest rate on debt portfolio, %	0.4	1.1	2.1
Average maturity, years	7.4	7.5	7.4
Duration, years	4.8	3.6	3.6
Average fixing, years	4.7	4.5	4.4

State Treasury
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