GOVERNMENT DEBT

15 DECEMBER 2023

Strategy and borrowing programme for 2024

NORGES BANK

Strategy 2024 – in brief

Government bonds amounting to between NOK 100bn and NOK 110bn will be issued in 2024. At least half will be in maturity segments over seven years.

A new 10-year government bond will be issued in February through syndication. A new 15-year bond will also be issued through syndication in May or June. In addition, one of the existing bonds will be reopened in the second half of 2024 through syndication.

Twenty-six auction days are planned for 2024. On a number of these auction days, simultaneous auctions of two bonds with different maturities will be held.

A new 12-month Treasury bill will be issued on each IMM date. At the end of 2024, the aim is a volume outstanding in the market of NOK 34bn, the same as at the beginning of 2024.

Government Debt Management will consider entering into interest rate swaps if term premiums remain positive over time and if otherwise warranted by circumstances. The minimum requirement for the average time to refixing of the government debt including interest rate swaps is 2½ years.

1 Government debt management

The Ministry of Finance is responsible for managing government debt but has delegated the operational responsibility to Norges Bank. Under the mandate laid down by the Ministry, Norges Bank shall meet the government's requirements and manage government debt outstanding. The overarching objective is to meet the government's borrowing requirement at the lowest possible cost within given risk limits. Government borrowing is also intended to promote well-functioning and efficient financial markets. To shed light on trade-offs and priorities in debt management, specific indicators and targets have been formulated for the year ahead.

For most countries, government borrowing is primarily intended for budget deficit financing. However, in Norway the non-oil budget deficit is financed by transfers from the Government Pension Fund Global. This means that the central government budget is balanced. The non-oil budget deficit does not trigger a borrowing requirement. The government borrows in the market to finance net lending and capital injections to state lending institutions. The government also borrows to cover redemptions of debt outstanding and to ensure that the central government budget is liquidity-neutral (see discussion of the calculation of the borrowing requirement in Section 2).

In accordance with the mandate from the Ministry of Finance, Norges Bank shall issue government debt in the name of the Ministry. The mandate authorises Norges Bank to enter into financial contracts for the account and risk of the Ministry of Finance as part of government debt management. The objective of government debt management is to meet the government's borrowing requirement at the lowest possible cost within given risk limits. Government borrowing is also intended to promote well-functioning and efficient financial markets in Norway. The aim of borrowing is to maintain a yield curve for government securities with maturities of up to 10 years that can serve as a reference for pricing in the bond market. The mandate permits the issuance of bonds with longer maturities.

Government Debt Management works to achieve the mandate's targets by maintaining a transparent and predictable borrowing strategy, and adjusting its operating framework in a way that creates the best possible conditions for ensuring good liquidity for Norwegian government securities. The strategy and borrowing programme is published annually in December of the preceding year. Ahead of a new quarter, information is published regarding planned borrowing volume in the coming quarter.

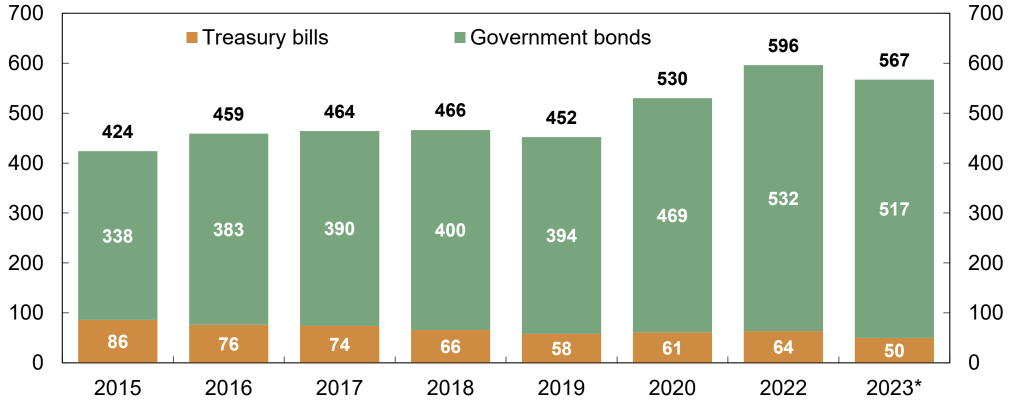
In recent years, Government Debt Management has evaluated its debt management activities and the Norwegian government securities market using specific indicators and associated targets. Government Debt Management sets targets for the implementation of operational debt management. For conditions in the government securities market, indicators are used to assess and understand developments over time without setting specific targets. See description of the target indicators in a box below.

The government's annual borrowing requirement is primarily financed through long-term borrowing (government bonds) with fixed coupons. Some of the borrowing requirement can be met by drawing on the government's cash reserves. The government also borrows in the short term by selling Treasury bills, which are zero-coupon securities with maturities of a year or less. A well-functioning Treasury bill market serves as a contingency arrangement for the government in situations where the borrowing requirement increases sharply in a short period of time. Issuance of both long-term and short-term debt means that government securities are offered in the market at different maturities. The government borrows exclusively in NOK. The debt portfolio comprises Treasury bills, government bonds and interest rate swaps entered into.

At year-end 2023, market-based government debt totalled NOK 567bn, comprising NOK 517bn in government bonds and NOK 50bn in Treasury bills.

Chart 1.1 Government debt outstanding

In billions of NOK. At year-end*



* Assuming that NOK 10bn will be issued in a Treasury bill auction on 18 December 2023

Source: Norges Bank

Each year, the Ministry sets an upper limit for the gross borrowing volume and a minimum requirement for the average time to refixing of the debt portfolio. For 2024, the upper limit for long-term borrowing is set at NOK 150bn, and the maximum volume of Treasury bills outstanding is NOK 100bn. The average time to refixing shall be longer than 2½ years. The amount on deposit in the government's account in Norges Bank shall at all times be at least NOK 35bn.

To promote demand for Norwegian government debt in the primary market and trading in the secondary market, Norges Bank enters into agreements with primary dealers in Norwegian government bonds and Treasury bills. Primary dealers have the sole right and obligation to bid at auctions. They must continually quote firm bid and offer prices in the interdealer[1] market for a given minimum volume for each government security. Primary dealers can borrow government securities from the government's own stock with a simultaneous agreement to sell them back. Primary dealers receive differentiated remuneration based on their efforts in the primary and secondary markets for Treasury bills and bonds.

[1] The interdealer market refers here to the market for trade in Norwegian government securities between primary dealers. They provide prices and trade with each other in an electronic marketplace, which is currently the Bloomberg E-Bond System.

Indicators and targets for government debt management in 2024

Indicators for the implementation of debt management

Government Debt Management shall meet the government's borrowing requirement within the limits set by the Ministry of Finance.[1] The government's borrowing requirement is primarily financed by long-term borrowing. The first indicator is therefore specified as the deviation between actual and planned borrowing in bonds as stated in the strategy and borrowing programme and subsequent updates. The objective is to borrow the amount that has been communicated to the market.

The second indicator is defined as the number of breaches of risk limits in the mandate and annual letters from the Ministry[2]. The target is to uphold the risk limits as specified by the Ministry at all times.

The government shall be a reliable and predictable issuer. The third indicator is therefore formulated as the number of times Norges Bank does not conduct auctions and/or publish information as expected. The target is to always fully carry out what has been planned. Government Debt Management will evaluate timely conduct of auctions against the auction calendar that is published in quarterly information.

Government Debt Management aims to maintain a yield curve for Norwegian government securities up to 10 years. The choice of bond for a particular auction may depend on market demand and what is favourable for the government to issue. Government Debt Management will build up the volume outstanding of new bonds to ensure good liquidity. At the same time, it is important for the year as a whole that borrowing is well distributed across the different maturities. The fourth and final indicator shall reflect these trade-offs and is defined as the share of the issuance in different maturity segments. The target is to cover a minimum of 10% of borrowing by short-term bonds (up to four years), a minimum of 10% by medium-term bonds (four to seven years) and a minimum of 50% by long-term bonds (over seven years).

Indicators for the Norwegian government securities market

Government Debt Management has highlighted two indicators that provide some indication about market conditions for Norwegian government securities. These indicators are assessed against developments over time. The evaluation can be used to improve the conduct of government debt management going forward.

The first indicator measures the cost of issuing government bonds. This is the spread between the issue yield at each auction and the interdealer market yields at the time of the auction. In a well-functioning market, the issue yield at auctions should not be much higher than the market yields. Government Debt Management therefore examines the spread between the issue yield and the mid-yield[3] at the time of auction.

Government Debt Management is focused on promoting the best possible liquidity in the Norwegian government securities market. This increases the attractiveness of government securities and thereby draws more investors. In a liquid market, investors can carry out transactions within a short period of time without markedly affecting prices. A broader investor base may contribute to increased participation in the primary market and higher turnover in the secondary market. This will in turn improve liquidity. Government Debt Management therefore monitors developments in a composite index that measures liquidity in the secondary market for government bonds[4] and evaluates ongoing developments as the second indicator.

	Indicators for the implementation of debt management	Target
1	Deviation between planned and actual borrowing as specified in the borrowing programme and subsequent updates	Zero
2	Breaches of risk limits	None
3	Delays with auctions/publications	None
4	Issuance in maturity segment	- Up to 4 years: >10% - 4-7 years: >10% - Over 7 years >50%
	Indicators for the Norwegian government securities market	
	Auction yield relative to mid-yield in the interdealer market	
	Liquidity index	

[1] Following the Storting's (Norwegian parliament) consideration of the budget, Norges Bank receives a letter from the Ministry of Finance specifying the annual limits for gross issuance of government bonds and the maximum volume outstanding of Treasury bills.
[2] Each year, the Ministry of Finance sets the minimum for the average time to refixing of the debt portfolio (Section 3-1 of the mandate). In the mandate, Section 3-3 on refinancing risk states that the borrowing strategy shall be formulated so that no more than 25% of government bonds outstanding will mature each year. Section 3-4 on interest rate swap contracts contains a limit whereby the outstanding volume of interest rate swap contracts shall not exceed the volume of government bonds outstanding.
[3] The mid-yield in the interdealer market is the yield midway between the bid and ask yields.
[4]The index is composed of four price-based liquidity indicators. See Opheim. V.Ø., "Liquidity indicators for the Norwegian government bond market", *Staff Memo* 8/2019, Norges Bank, for a further description of the liquidity index.

2 The government's borrowing requirement in 2024

The government borrows to finance government lending schemes, cover redemptions of existing debt and ensure that the government has sufficient cash reserves to meet current obligations. Transfers of profits and interest from Norges Bank will also affect the borrowing requirement. The non-oil budget deficit is financed by transfers from the Government Pension Fund Global and therefore does not trigger any borrowing requirement.

Planned borrowing is based on the government's estimated borrowing requirement in the central government budget for 2024. The composition of the borrowing requirement is shown in Table 2.1.

Table 2.1 Estimated borrowing requirement from the central government budget
2023 and 2024. In billions of NOK

		2023	2024
	Net new lending by government agencies etc:		
	Norwegian State Educational Loan Fund	16.1	16.6
	Norwegian State Housing Bank	6.9	8.3
	Norwegian Public Service Pension Fund residential mortgage programme	6.3	10.0
	Innovation Norway	1.9	1.4
	Export credit schemes	-2.8	-1.7
	Other	1.8	1.2
1	**Total net new lending by government agencies etc**	**30.1**	**35.7**
2	**Maturing bond debt outstanding[1]**	**51.0**	**52.0**
	Other adjustments:		
3	**Borrowing to ensure the budgeted transfer from Norges Bank to the government is liquidity-neutral**	**14.5**	**33.6**
4	**Borrowing requirement after redemptions and other adjustments (1+2+3)**	**95.6**	**121.4**

[1] For 2023, this was the second part of the refinancing of NGB 05/2023, and part of the refinancing of NGB 03/2024. For 2024, this is the remaining refinancing of NGB 03/2024.

Source: Ministry of Finance

Net new lending by government agencies and lending schemes in 2024 is estimated at NOK 35.7bn.

The government also borrows to cover redemptions of debt outstanding. NGB 03/2024 matures in March 2024. The refinancing of this bond is spread across 2023 and 2024. In 2024, remaining refinancing volume is NOK 52bn.

To prevent the central government budget from affecting the long-term level of structural liquidity in the banking system, the government borrows an amount equivalent to profits and interest income from Norges Bank. In 2024, the borrowing requirement will increase by NOK 33.6bn as a result of the estimated transfers. See discussion in separate box.

As a whole, this results in an estimated borrowing requirement of NOK 121.4bn, which is an increase of approximately NOK 26bn from 2023. To promote a balanced government securities market, the government seeks to smooth out long-term borrowing over several years. Some of the borrowing requirement in 2024 will therefore be met by drawing on the government's cash reserves.

Table 2.2 Coverage of the government's estimated borrowing requirement
In billions of NOK

		2023	2024
1	Borrowing requirement after redemptions and adjustments	95.6	121.4
2	Amount drawn on the government's cash reserves	15.6-20.6	11.4-21.4
3	**Borrowing in the market (1-2)**	**75-80**	**100-110**

Normally, no changes are made to the borrowing programme through the year, even if the actual borrowing requirement diverges from the estimate. If the actual borrowing requirement over time is higher (lower) than the issuance of government bonds, a drawdown (build-up) of the government's cash reserves is implied. Thus, bond issuance will be gradually changed, ensuring smooth developments in bond issuance while the government's actual borrowing requirement is met over time.

Transfers from Norges Bank and the effect on liquidity in the banking system

The total annual transfers from Norges Bank to the government comprises interest income on the government's deposits with Norges Bank and Norges Bank's profit.[1]

The government keeps its cash holdings in Norges Bank, where it earns interest. The interest terms are set in a special agreement between Norges Bank and the Ministry of Finance. The interest rate is calculated on the basis of yields on foreign short-term government securities, weighted by the investments in the foreign exchange reserves. In the central government budget for 2024, the government's interest income on cash holdings is estimated at NOK 9.0bn.

Norges Bank's profit is transferred to the government in accordance with rules issued by the Government. Norges Bank's equity comprises an Adjustment Fund and a Transfer Fund. The Adjustment Fund comprises the Bank's restricted equity, and the Transfer Fund comprises the basis for transfers to the Treasury. Total comprehensive income is transferred to the Adjustment Fund until it accounts for 40% of net foreign exchange reserves. The remaining amount is allocated to the Transfer Fund. Each year, one third of the Transfer Fund is transferred to the Treasury. For 2023, this is estimated at NOK 24.6bn. The profit will be transferred to the government's account in Norges Bank in early 2024.

The government aims to prevent government transactions from affecting banking system liquidity *over time*. Total transfers from Norges Bank are recognised as revenue in the central government budget. The transfers between Norges Bank and the government's account will themselves not affect liquidity in the banking system, but spending the funds will supply liquidity. Withdrawal of liquidity is therefore necessary for overall government transactions to not affect liquidity in the banking system. The government does this by borrowing an amount equivalent to the transfers through the issuance of government bonds.

[1] See also "Statens finansieringsbehov og opplåning i statsobligasjoner" *Government Debt Management Memo*, Norges Bank (2023) (in Norwegian only).

3 Borrowing programme for 2024

In 2024, borrowing in government bonds will amount to between NOK 100bn and NOK 110bn. As usual, a new 10-year bond will be issued through syndication. A new 15-year bond will also be issued through syndication in May or June. In addition, one of the existing bonds will be reopened in the second half of 2024 through syndication. The use of simultaneous auctions will be increased. Treasury bill issuances will follow the same structure as in 2023.

3.1 Issuance of government bonds

The borrowing programme for government bonds has been prepared on the basis of estimates of the government's borrowing requirement in the central government budget for 2024, and the limits set by the Ministry of Finance. The aim is to borrow between NOK 100bn and NOK 110bn. At least half of the borrowing will be in the maturity segment over seven years. More than half of the borrowing is planned for the first half of 2024.

If market conditions permit, a new 10-year bond will be launched in February through syndication. Planned issuance volume to the market is up to NOK 20bn. In addition, NOK 4bn will be issued to the government's own stock. The new bond will be reopened at auctions.

A new 15-year bond is planned for issuance through syndication in 2024. If market conditions permit, the bond will be issued in May or June through syndication. The aim is an issuance volume to the market of between NOK 10bn and NOK 15bn. In addition, NOK 4bn will be issued to the Government's own stock. The new 15-year bond may be reopened at auctions after the introduction.

The issuance of the 15-year bond is intended to establish a more comprehensive Norwegian yield curve extending beyond 10 years. A 15-year bond may be attractive for a number of different investor categories with long-term investment horizons and contribute to market development. This underpins the objectives of Government Debt Management. With refinancing requirements set to be persistently high in the years ahead, a higher number of bonds with longer maturities is desirable in order to reduce refinancing risk without eroding the liquidity of government securities with maturities up to 10 years. See box below.

One of the existing bonds will be reopened through syndication in the second half of 2024, market conditions permitting. The aim is an issuance volume of around NOK 10bn for this syndication.

Other bond reopenings will be conducted through uniform price auctions. Twenty-six auction days are planned for 2024, which is an increase from 24 in 2023. In connection with the syndication of the 15-year bond, one of the announced auctions will be cancelled. The same applies to the reopening of one of the existing bonds in the second half of the year through syndication.

Owing to unpredictable and at times turbulent market conditions, it is more appropriate to schedule frequent auctions with relatively small volumes rather than fewer auctions with larger volumes. The increased borrowing requirement means that the volume per auction day will be between NOK 2bn and NOK 4bn in 2024.

Starting in 2023, auctions of two different bonds were carried out simultaneously. This selling method will continue in 2024 and will be used regularly when conditions permit.

With this strategy, Government Debt Management seeks to meet the government's borrowing requirement at the lowest possible cost and contribute to establishing a yield curve that can serve as a basis for the pricing of other debt securities. In this way, the issuance of government securities helps make the financial market in Norway more efficient.

Issuance of longer dated government bonds and the refinancing requirement

Since 2014, the borrowing strategy has been to issue a new 10-year bond each year. This means that a bond will mature each year until 2033. In addition, a bond that will mature in 2042 was issued in 2022. Apportioning borrowing across more and longer maturities will help reduce the annual refinancing requirement, which is one of the reasons why a new 15-year bond will be introduced in 2024.

In 2024, a bond will mature with volume outstanding in the market of slightly less than NOK 59bn. The bond maturing in 2025 has a volume outstanding in the market of almost NOK 58bn. Average volume outstanding in the market of the bonds maturing in the period between 2026 and 2033 is around NOK 42.5bn. Current volume outstanding in the market provides only indication of the refinancing requirement each year ahead because all of these bonds will most likely be reopened further out until the year of maturity.

If the volume of each bond were to increase, it would result in an increase in the annual borrowing requirement owing to a higher refinancing requirement. This would mean a greater refinancing risk for the government. Moreover, large redemptions lead to volatility in structural liquidity and the government's cash reserves.

To illustrate the effect of two bonds with maturities longer than 10 years on the annual refinancing requirement, the refinancing requirement in the years ahead is simulated. The analysis uses simplified assumptions that do not necessarily represent how the borrowing programme will be structured ahead.

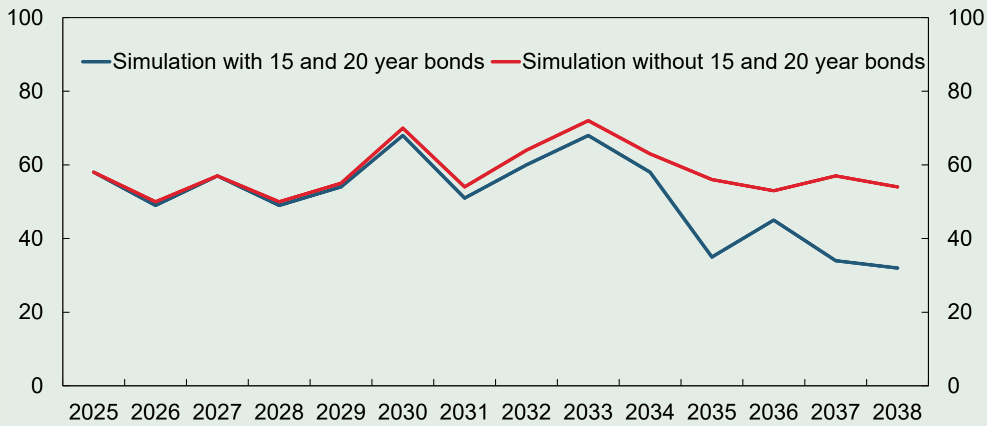
In the simulation omitting the 15- and 20- year bonds in the period between 2025 and 2038, half of the annual refinancing requirement is covered by issuing a new 10-year bond, while the rest of the refinancing requirement is evenly distributed across the already outstanding bonds in the market.

In the simulation with new long-term bonds, new 15- and 20-year bonds are issued every third year although not in the same year. New 10-year bonds are issued annually. In this simulation, new bonds always cover half of the annual borrowing requirement. The remainder of the refinancing requirement is evenly distributed across the already outstanding bonds in the market.

Chart 3.A shows the effect of a number of long-term bond issuances on the refinancing requirement. For the period between 2025 and 2038, issuing both 15- and 20-year bonds reduces, on average, the refinancing requirement by slightly more than NOK 7bn per year.

The simulation is merely meant to illustrate the interplay between the maturity of government bonds, refinancing and the effect of changing the maturity distribution of the issuances and does not provide an accurate projection of the refinancing requirement ahead. Nor does the simulation take account of other factors affecting the borrowing requirement, such as net lending by government agencies and transfers from Norges Bank to the government.

Chart 3.A Annual refinancing requirement
Simulated. In billions of NOK. 2025-2038



Source: Norges Bank

3.2 Buybacks

Government Debt Management offers to buy back bonds with less than one year to maturity, regarding it as proper market-making to enable investors to sell back to the government bonds nearing maturity. This allows investors to adjust their portfolios more gradually. In addition, buybacks may contribute to higher demand for other government securities that are issued.

In 2024, Government Debt Management will offer to buy back two bonds: NGB 03/2024 and NGB 03/2025. In the auction calendar, the number of announced buyback auctions has been reduced somewhat relative to previous years. In addition, it will be assessed whether to offer buybacks through ad hoc auctions on request from primary dealers if market conditions permit.

Buyback auctions are held as multiple price auctions. Government Debt Management uses internal pricing models to evaluate all incoming tenders. The announced buyback auctions may be cancelled if the observed market prices of the bonds to be bought back deviate substantially from the pricing models.

Government bond NGB 03/2024 matures on 14 March 2024. At year-end 2023, the outstanding volume in the market for this bond is NOK 58.8bn. Government Debt Management will offer two buyback auctions of this bond during 2024 Q1.

Government bond NGB 03/2025 matures on 13 March 2025. At year-end 2023, the outstanding volume in the market of this bond is NOK 57.8bn. Government Debt Management will offer three buyback auctions of NGB 03/2025 during 2024. The first auction is planned for 21 August, when the bond has approximately seven months residual maturity.

Primary dealers can notify interest for ad hoc auctions when bonds have less than 12 months to maturity. In such instances, Government Debt Management may announce and hold buyback auctions at short notice, even on the same day. The same pricing models and evaluations apply for ad hoc auctions as with announced auctions.

Buybacks will not be undertaken during the eight banking days prior to an announced Norges Bank monetary policy meeting and until the interest rate decision is announced.

3.3 Issuance of Treasury bills

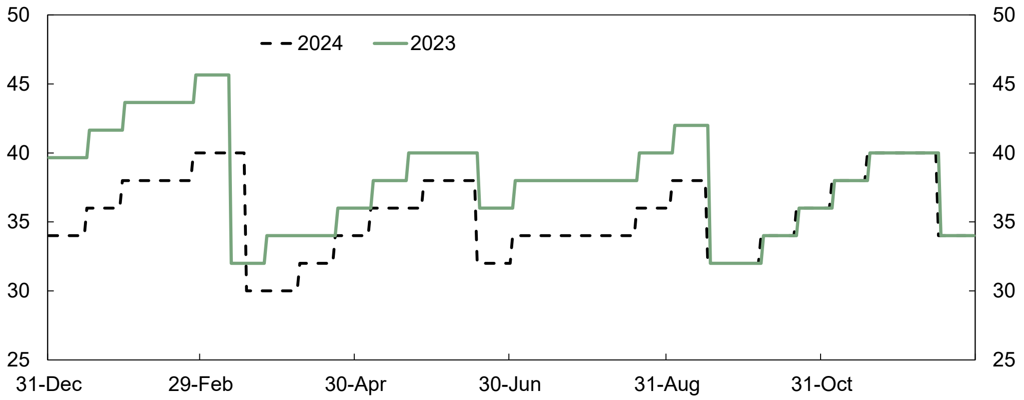
Government Debt Management will issue a new 12-month bill with settlement on the third Wednesday in March, June, September and December (IMM dates). For all first-time issuances, the planned issuance volume to the market is NOK 6bn. NOK 4bn will be issued to the government's own stock.

The auction calendar for Treasury bills for 2024 contains information on which bills will be issued and the issuance volume. Eighteen bill auctions are planned. Apart from the issuances of new 12-month bills (four auctions), bills with an average residual maturity of approximately five months will be issued at the remaining auctions. Market issuance volume at reopenings will be NOK 2bn, but a higher volume may be considered if market demand is very high. Both the announced bills and the auction volume may be subject to change through the year.

During 2023, the outstanding volume of bills in the market varied between NOK 32bn and NOK 46bn (Chart 3.1). In 2024, the aim is to maintain the volume outstanding in the market between NOK 30bn and NOK 40bn. At the end of 2024, the aim is for the volume outstanding in the market to be NOK 34bn, which is same as at the beginning of the year.

Chart 3.1 Movements in volumes of Treasury bills outstanding in the market

In billions of NOK. Actual for 2023* and planned issuance for 2024



*Under the assumption that NOK 6bn is issued to the market at the bill auction on 18 December 2023.

Source: Norges Bank

3.4 Average time to refixing and use of interest rate swaps

For 2024, the minimum average time to refixing of the debt portfolio has been set by the Ministry of Finance at 2½ years. This minimum requirement has remained unchanged since Norges Bank assumed operational responsibility for the management of government debt in 2015.

The average time to refixing expresses the interest rate exposure of government debt and summarises the entire maturity profile of the debt portfolio in a single number. Very different portfolios may have the same average time to refixing.

Norwegian government bonds have a fixed interest rate and pay no principal until maturity, so the average time to refixing is approximately equal to the average term to maturity. The average time to refixing of government debt is primarily determined by the average time to refixing of government bonds and the relationship between the volume of bills and bonds outstanding. In addition, the government can enter into interest rate swaps to change the average time to refixing from what actual borrowing would directly imply.

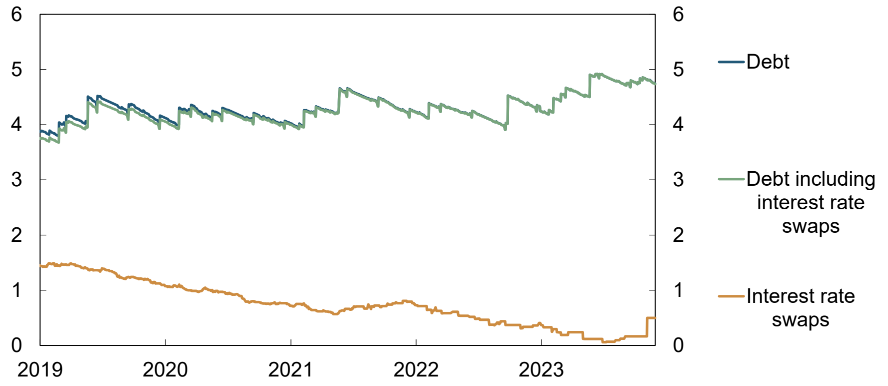
Historical data show that interest expenses have normally been higher for long-term bonds than for short-term bonds. Over time, the government could probably achieve lower borrowing costs by reducing the average time to refixing. On the other hand, interest expenses would then fluctuate more. Moreover, more short-term borrowing will increase refinancing risk because the debt will have to be rolled over more frequently.

An expression of the additional cost of borrowing long-term rather than short-term is known as term premiums (see box). If term premiums are positive over time, cost savings could be made by using interest rate swaps to reduce the average time to refixing. As calculations indicated that term premiums in Norway and other markets were low and negative in periods, Government Debt Management has not entered into any interest rate swaps since November 2014. At end-2023, there is one outstanding interest rate swap with a total volume of NOK 250m. As existing interest rate swaps have matured, the average time to refixing with and without interest rate swaps has gradually converged.

At end-November 2023, the average time to refixing of government debt with and without interest rate swaps was about 4.8 years (Chart 3.2).

Chart 3.2 Average time to refixing

Years. 2 January 2019 – 30 November 2023



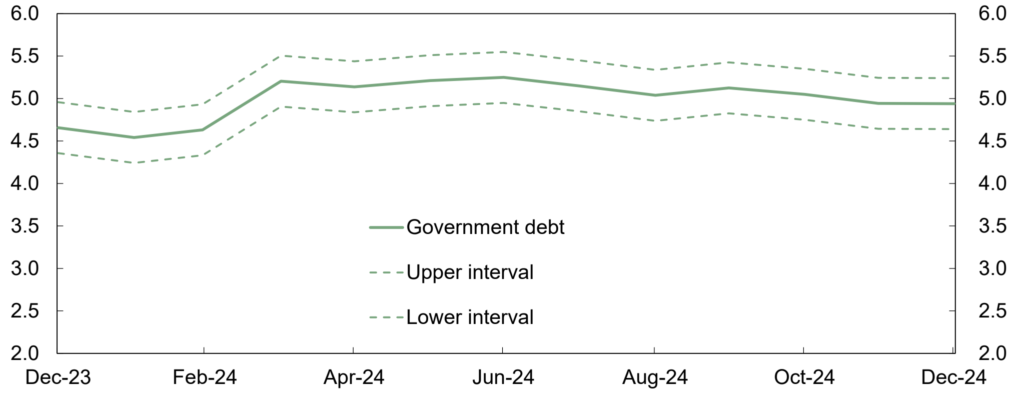
Source: Norges Bank

Chart 3.3 shows projections for the average time to refixing of government debt through 2024 based on assumptions for the distribution of borrowing across different maturities. It is assumed that around 60% of the volume will be issued in bonds with maturities over seven years, including issuance of bonds with maturities of more than 10 years. For maturities up to four years, and between four and seven years, the share is 15% and 25%, respectively.

The actual path will depend on the maturities issued and the buyback volume. The average time to refixing will rise when NGB 03/2024 matures, before falling somewhat towards end-2024. With this strategy, the average time to refixing of the government debt will increase from 4.7 to 4.9 years in the course of 2024. The average time to refixing will be lower if new interest rate swaps are entered into during 2024.

Chart 3.3 Projections of the average time to refixing

Years. December 2023 – December 2024



Source: Norges Bank

Government Debt Management's estimations indicate that term premiums have risen through 2022 and 2023 (see box below). Entering interest rate swaps will be considered if term premiums remain positive over time, conditions otherwise permitting. Information on entering into interest rate swaps will be published in quarterly information if relevant.

Term premiums on Norwegian government bond yields

The relationship between interest rates or bond yields with different terms or maturities is referred to as the term structure. The expectations hypothesis states that the yield on an investment with a long maturity will be determined by expected developments in short-term yields over the same period.

Normally investors will require a positive premium on investments with a long maturity so that there is a deviation from the expectations hypothesis. This premium arises because the price of a bond with a long residual maturity is more sensitive to interest rate movements than the price of a bond with short residual maturity. The compensation market participants require beyond the yield according to the expectations hypothesis is generally called the term premium.

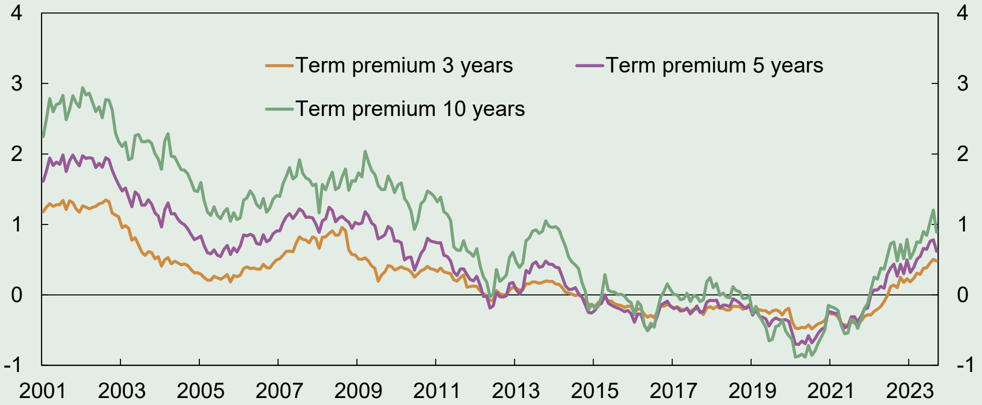
Neither expectations of short-term interest rates nor term premiums can be observed directly. Various methods have therefore been developed to decompose long-term interest rates into an interest rate expectations component and a term premium component. The level of term premiums derived from these models should be interpreted with caution, but the models can provide a reliable indication of developments in the term premiums.

Government Debt Management uses a method developed by Adrian, Crump and Moench (2013)[1], referred to as the ACM model. This model estimates the term structure of interest rates based on factors that represent the yield curve's principal components. See Benum, Opheim and Wasberg (2023) for a detailed description of the model used by Government Debt Management and robustness checks of this model.[2]

The estimated term premiums on Norwegian government bond yields calculated using this model have risen through the past year, as shown in Chart 3.B. The term premium on the 10-year government bond yield at the end of November 2023 is estimated to be about 0.9%, which is somewhat higher than the estimates of term premiums for three-year and five-year government bond yields.

Chart 3.B Estimated term premiums on Norwegian government bond yields

Percentage points. January 2001 – November 2023

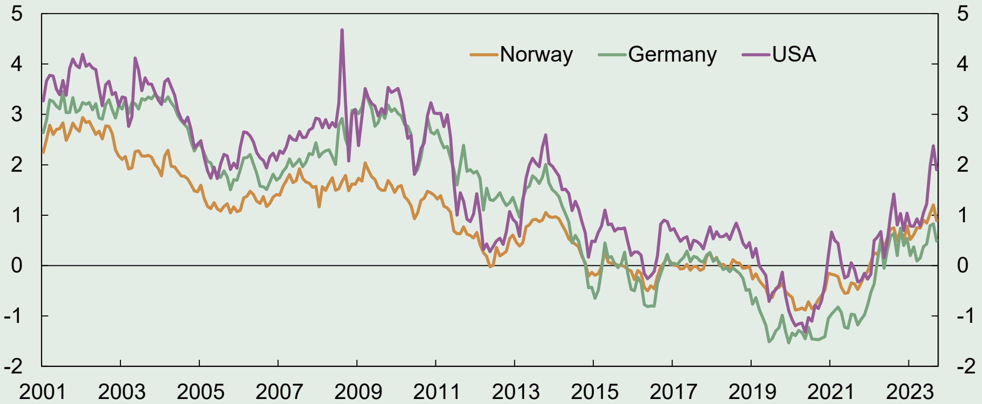


Source: Norges Bank

Rising term premiums is not unique to Norway. Estimations made for several countries show that government bond term premiums have risen and are positive. Chart 3.C shows term premiums on 10-year government bond yields for Norway, Germany and the US, estimated using the ACM model.

Chart 3.C Estimated term premiums in German, US and Norwegian government bond yields

Percentage points: January 2001 – November 2023



Source: Norges Bank

[1] Adrian, T., Richard K. Crump and Emanuel Moench, "Pricing the term structure with linear regressions", *Journal of Financial Economics* 110 (2013), 110–138.

[2] Benum, A., Opheim, V.Ø., Wasberg, E.S., Estimations of the term premium on Norwegian government bonds. *Government Debt Memo*. Norges Bank (2023).

Calendars for 2024

Publication of information for the coming quarter

Q1: Friday, 15 December 2023, 8:30 am

Q2: Friday, 22 March 2024, 8:30 am

Q3: Thursday, 27 June 2024, 8:30 am

Q4: Friday, 27 September 2024, 8:30 am

Auction calendar for Treasury bills

Treasury bill issues will be announced at 12:00 noon two banking days prior to the auction. Treasury bill auctions will be held at 10:15-11:00 am on the auction date.

Auction calendar for Treasury bills

Auction date	Bill	Maturity	Planned sale volume to market (NOK bn)
Monday 15 January	NTB 03/2024	20 Mar 2024	2
Monday 29 January	NTB 06/2024	19 Jun 2024	2
Monday 26 February	NTB 09/2024	18 Sep 2024	2
Monday 18 March[1]	NTB 03/2025	19 Mar 2025	6
Monday 8 April	NTB 06/2024	19 Jun 2024	2
Monday 22 April	NTB 12/2024	18 Dec 2024	2
Monday 6 May	NTB 09/2024	18 Sep 2024	2
Monday 27 May	NTB 12/2024	18 Dec 2024	2
Monday 17 June[1]	NTB 06/2025	18 Jun 2025	6
Monday 1 July	NTB 09/2024	18 Sep 2024	2
Monday 19 August	NTB 03/2025	19 Mar 2025	2
Monday 2 September	NTB 03/2025	19 Mar 2025	2
Monday 16 September[1]	NTB 09/2025	17 Sep 2025	6
Monday 7 October	NTB 12/2024	18 Dec 2024	2
Monday 21 October	NTB 03/2025	19 Mar 2025	2
Monday 4 November	NTB 06/2025	18 Jun 2025	2
Monday 18 November	NTB 03/2025	19 Mar 2025	2
Monday 16 December[1]	NTB 12/2025	17 Dec 2025	6

[1] New 12-month bill, where an additional NOK 4bn will be issued to the government's own stock.

The announced auctions may be cancelled or supplemented with ad hoc issues.

Auction calendar for government bonds and buybacks

Bond issues will be announced at 12:00 noon two banking days prior to the auction. Bond auctions will be held at 10:15-11:00 am on the auction date. Buyback auctions will be held at 9:15-10:00 am on the auction date.

Auction calendar for government bonds

Government bonds	Buyback NGB 03/2024	Buyback NGB 03/2025
Wednesday 10 January	Wednesday 10 January	
Wednesday 17 January		
Wednesday 31 January	Wednesday 31 January	
Wednesday 28 February		
Wednesday 6 March		
Wednesday 13 March		
Wednesday 10 April		
Wednesday 17 April		
Wednesday 24 April		
Wednesday 15 May		
Wednesday 29 May		
Wednesday 5 June		
Wednesday 12 June		
Wednesday 26 June		
Wednesday 3 July		
Wednesday 7 August		
Wednesday 21 August		Wednesday 21 August
Wednesday 4 September		
Wednesday 11 September		
Wednesday 25 September		Wednesday 25 September
Wednesday 9 October		
Wednesday 16 October		
Wednesday 30 October		
Wednesday 13 November		
Wednesday 27 November		Wednesday 27 November
Wednesday 4 December		

In addition to these auctions, Government Debt Management is planning to issue a new 10-year bond in February through syndication. When a syndication of the new 15-year bond takes place in May or June, one of the announced bond auctions will be cancelled. Government Debt Management plans to reopen one of the existing bonds in 2024 H2. This will entail that one of the announced bond auctions in H2 will be cancelled.

The announced auctions may be cancelled or supplemented with ad hoc issues.

Mandate

The Ministry of Finance has laid down a mandate for the management of government debt. Under the mandate, Norges Bank shall issue government debt and enter into financial contracts as part of its management of government debt in the name of the Ministry of Finance. The objective of management is to meet the government's borrowing requirement at the lowest possible cost, taking into account the government's interest rate risk and that there should be a liquid yield curve for government securities with a maturity of up to ten years. Each year, the Ministry shall set an upper limit for gross borrowing and a minimum average time to refixing. Within these limits, Norges Bank shall set an annual borrowing programme broken down into bills and bonds with a calendar for issuances. The Bank shall lay down principles for measuring and managing counterparty exposure and operational risk. Norges Bank shall regularly submit to the Ministry of Finance analyses of profitability and risk relating to government debt management and assessments of the attainment of objectives. Both the analyses and the assessment shall be published.

Limits for government debt management laid down by the Ministry of Finance in 2024

	Description	Limit	Mandate
Long-term borrowing	Maximum issue volume for new long-term borrowing (government bonds)	NOK 150bn[1]	Section 3-1
Short-term borrowing	Volume for maximum short-term market debt outstanding (Treasury bills)	NOK 100bn	Section 3-1
Average time to refixing	Minimum average time to refixing for government debt including interest rate swaps	> 2.5 years	Section 3-1
Government's cash reserves	Minimum level of the government's account at Norges Bank	NOK 35bn	Section 2-2 (3)

[1] Issue volume of new long-term borrowing includes borrowing for the government's own stock.

Mandate for government debt management

	Description	Limit	Mandate
Refinancing risk	The borrowing strategy shall be formulated so that no more than 25% of government bonds outstanding will mature each year.	< 25%	Section 3-3
Interest rate swaps	The outstanding volume of interest rate swaps shall not exceed the outstanding volume of government bonds, including the government's own stock.	< 100%	Section 3-4 (3)

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