

FOREIGN EXCHANGE RESERVES

Management of the foreign exchange reserves

1 | 2023
MAY 2023

REPORT FOR FIRST
QUARTER 2023

1 MANAGEMENT OF THE FOREIGN EXCHANGE RESERVES

The foreign exchange reserves are to be sufficiently liquid to be available for use in foreign exchange market transactions or as part of the conduct of monetary policy with a view to promoting financial stability and to meet Norges Bank's international commitments. The aim of the management of foreign exchange reserves is the highest possible return within the applicable risk limits. The reserves are divided into an equity portfolio, a fixed income portfolio and a petroleum buffer portfolio. The foreign exchange reserves may be invested in cash deposits, Treasury bills, government bonds and equities listed on a regulated and recognised exchange.

The fixed income portfolio's benchmark index is a market-weighted index of all nominal government bonds with a residual maturity of between one month and 10 years issued by China, France, Germany, Japan, the UK and the US. The equity portfolio's benchmark index is a tax-adjusted global equity index for medium and large-sized companies limited to nine currencies. The strategic equity allocation of the total equity and fixed income portfolio is 20%.

The purpose of the petroleum buffer portfolio is to provide for an appropriate management of the government's need for converting foreign currency and NOK, and to make transfers to and from the Government Pension Fund Global (GPFG). The petroleum buffer portfolio is invested in short-term fixed income instruments. No benchmark index has been set for the petroleum buffer portfolio.

MAIN POINTS FROM 2023 Q1

- The market value of the foreign exchange reserves at the end of 2023 Q1 was NOK 713.4bn, an increase of NOK 99.0bn since 2022 Q4.
- The return on the foreign exchange reserves was 2.9% in international currency terms. The return on equity investments was 8.1%, while the return on fixed income investments was 1.7%. In NOK terms, the return on the foreign exchange reserves was 10.2%.
- The size and liquidity of the foreign exchange reserves are regarded as sufficient for meeting Norges Bank's commitments.

INTERNATIONAL CURRENCY

The foreign exchange reserves are held for the purpose of crisis management. Movements in the krone exchange rate will affect Norges Bank's equity, but not the Bank's ability to meet commitments in foreign currency. The petroleum buffer portfolio, which is not held for the purpose of crisis management, is excluded from the measurement of return.

Foreign exchange reserves

The market value of the foreign exchange reserves was NOK 713.4bn at the end of 2023 Q1. The value increased by NOK 99bn in Q1. The return in international currency terms increased the value by NOK 17.3bn, while a weaker krone increased the value by NOK 47.0bn. Net inflows amounted to NOK 34.7bn, primarily to the petroleum buffer portfolio.

Table 1-1 Market value

	2023 Q1			Foreign exchange reserves
	Fixed income investments	Equity investments	Petroleum buffer portfolio	
<i>In billions of NOK</i>				
Market value (opening)	472.0	110.4	32.0	614.4
Market value (closing)	514.8	127.3	71.3	713.4
Change in market value	42.8	16.9	39.3	99.0
Net transfers	0.6	0.0	34.1	34.7
Return in NOK terms	42.2	16.9	5.2	64.4

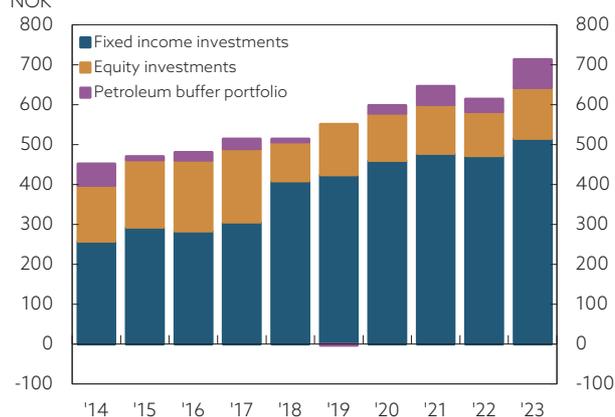
Table 1-2 Details of fixed income and equity investments

	2023 Q1		Total
	Fixed income investments	Equity investments	
<i>In billions of NOK</i>			
Return in NOK terms	42.2	16.9	59.2
Return in international currency	8.2	9.1	17.3
Movements in the NOK exchange rate	34.0	7.8	41.8
<i>In percent</i>			
Return in international currency terms	1.7	8.1	2.9
Return in NOK terms	9.0	15.3	10.2
Relative return in NOK terms	0.02	-0.03	-
Expected relative volatility in NOK terms (annualised)	0.02	0.06	

Chart 1-1 Change in market value. In billions of NOK



Chart 1-2 Composition of the foreign exchange reserves. In billions of NOK



Fixed income investments

The market value of the fixed income portfolio was NOK 514.8bn at the end of 2023 Q1, an increase of NOK 42.8bn from the previous quarter. A weaker krone increased the value by NOK 34.0bn, while the return in international currency terms increased the value by NOK 8.2bn, equivalent to 1.7%. Net inflows to the fixed income portfolio amounted to NOK 0.6bn, reflecting transactions with the IMF.

Chart 1-3 Return in international currency terms. Fixed income investments. Percent



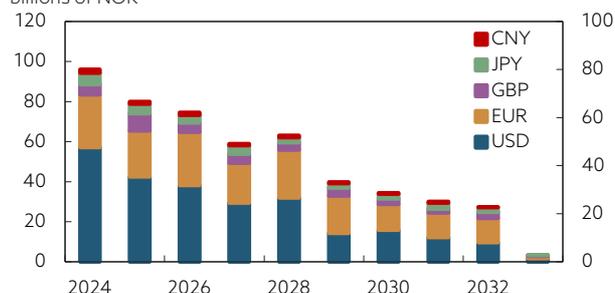
Chart 1-4 Relative return in NOK terms. Fixed income investments. Basis points



Table 1-3 Fixed income investments by currency at the end of 2023 Q1. Market value in billions of NOK

	Market value	Share	Duration	Yield
Total	514.77	100.00	3.61	3.23
CNY	10.28	2.00	3.43	2.48
EUR	174.97	33.99	4.02	2.63
GBP	35.66	6.93	3.97	3.69
JPY	36.09	7.01	3.99	0.05
USD	257.78	50.08	3.23	4.05

Chart 1-5 Principle and coupon due per year at the end of 2023 Q1. In billions of NOK



USA Long-term US government bond yields fell by about 40 basis points through 2023 Q1. The Federal Reserve raised its policy rate by a total of 50 basis points and signalled somewhat further monetary policy tightening. Investments denominated in USD earned a return of just over 2% in Q1.

EUROPE Both short- and long-term European sovereign yields rose in the first half of 2023 Q1 but fell back towards the end. The ECB raised its policy rate by a total of 100 basis points in Q1. Short-term German yields rose marginally, while long-term German yields fell by almost 40 basis points during Q1. Investments denominated in EUR earned a return of 1.4% in Q1.

UK In 2023 Q1, UK government bond yields fluctuated considerably. The Bank of England raised its policy rate by a total of 75 basis points to 4.25% during the quarter, while long-term yields fell somewhat, which contributed to a return on the portfolio of 1.4%.

JAPAN Japanese yields fell through 2023 Q1. The Bank of Japan adjusted its monetary policy stance to limit possibilities for investors to speculate on whether it will adjust or abandon its yield curve control strategy. Investments denominated in JPY earned a return of 0.8% in Q1.

CHINA Chinese government bond yields showed little change through 2023 Q1. Two-year and 10-year yields rose marginally, by 2.4% and 2.9%, respectively. Investments denominated in CNY earned a return of 0.6% in Q1.

Equity investments

The market value of the equity portfolio was NOK 127.3bn at the end of 2023 Q1, a rise of NOK 16.9bn since the end of 2022 Q4. The return in international currency terms increased the market value by NOK 9.1bn. A weaker krone increased the value of the portfolio by NOK 7.8bn.

The return on the equity portfolio was 8.1% in 2023 Q1, in international currency terms. European equities posted a return of 10.9%, North American equities, 7.8% and Asian equities, 5.7%. The technology sector posted the strongest return in Q1, 24.6%. The sector also made the largest contribution to the return on the portfolio. Financial sector equities posted the weakest return in Q1, at -2.1%.

Chart 1-6 Return in international currency terms. Equity investments. Percent



Chart 1-7 Relative return in NOK terms. Equity investments. Basis points



Table 1-4 Equity investments by sector. At the end of 2023 Q1. In billions of NOK

	Market value	Share
Materials	4	3 %
Durable goods	19	15 %
Consumer goods	8	6 %
Energy	5	4 %
Financials	17	13 %
Health care	18	14 %
Industrials	17	13 %
Real estate	3	3 %
Technology	30	23 %
Telecommunications	4	3 %
Utilities	3	3 %

Table 1-5 Equity investments by currency. At the end of 2023 Q1. In billions of NOK

	Market value	Share
AUD	3	2 %
CAD	3	2 %
CHF	4	3 %
DKK	1	1 %
EUR	13	10 %
GBP	5	4 %
JPY	10	7 %
SEK	1	1 %
USD	87	69 %

Petroleum buffer portfolio

The market value of the petroleum buffer portfolio was NOK 71.3bn at the end of 2023 Q1, an increase of NOK 39.3bn for the quarter. During Q1, NOK 141.2bn worth of foreign exchange was purchased from the State's Direct Financial Interest (SDFI), and NOK 217.3bn worth of foreign exchange was transferred to the GPF from the petroleum buffer portfolio. At the same time, Norges Bank purchased NOK 110.1bn worth of foreign exchange in the market. The return on the portfolio came to NOK 5.2bn, primarily owing to a stronger krone.

Financial risk

The foreign exchange reserves are invested in foreign currency, while Norges Bank's liabilities are mainly denominated in NOK. This means that movements in the krone exchange rate will have a considerable impact on Norges Bank's earnings in NOK terms. A stronger krone will reduce the krone value of the foreign exchange reserves, while a weaker krone will increase the krone value. For the purpose of crisis management, however, the krone value of the foreign exchange reserves will be of secondary importance. Excluding changes in the krone value, the financial risk associated with the foreign exchange reserves comprises market, credit and counterparty risk.

The foreign exchange reserves' market risk is determined by the composition of investments and movements in equity prices, interest rates and credit spreads. For equity and fixed income investments, expected absolute volatility at the end of 2023 Q1, excluding exchange rate movements, was 17.5% and 3.0%, respectively. Both equity and fixed income portfolios are managed to track the benchmark fairly closely. At the end of Q1, expected relative volatility for equity and fixed income investments was 0.06 and 0.02 percentage point, respectively.

EXPECTED RELATIVE VOLATILITY

Under the Executive Board's principles for the foreign exchange reserves, maximum expected relative volatility is set at 50 basis points for both fixed income and equity portfolios. This means that the return on the portfolio relative to the benchmark index is expected to be within ± 50 basis points in two out of three years.

Credit and counterparty risk is defined as the risk of losses if issuers or counterparties default on payment obligations. The credit risk on bond and Treasury bill investments in the foreign exchange reserves is low. The lowest credit ratings from the three largest rating agencies Fitch, Moody's and Standard & Poor's, are equivalent to AAA for the German government, AA+ for the US government, AA for the French government, AA- for the UK government, A+ for the Chinese government and A for the Japanese government.

Chart 1-8 Absolute volatility, excluding exchange rate movements. Foreign exchange reserves. Percent

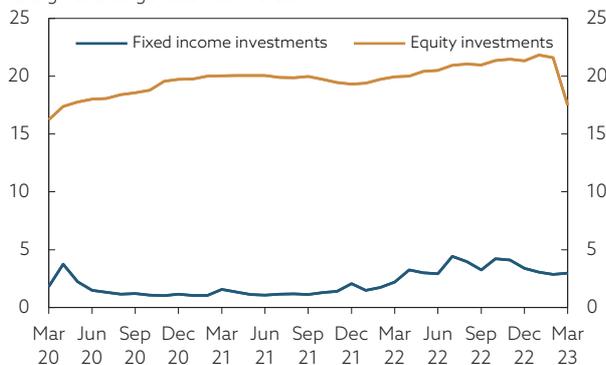


Chart 1-9 Relative volatility, including exchange rate movements. Foreign exchange reserves. Basis points



2 COMMITMENTS TO THE IMF

Pursuant to the Central Bank Act, Norges Bank shall meet the commitments ensuing from membership of the International Monetary Fund (IMF). This membership entails a standing commitment to furnish foreign exchange for IMF loans to member countries.

Loan resource commitments under the quota, the New Arrangements to Borrow (NAB), bilateral agreements and the Poverty Reduction and Growth Trust (PRGT)¹ totalled SDR 10 823m² on 31 March 2023. At the end of the quarter, the IMF had drawn SDR 1 525m. The total remaining amount that can be drawn under these arrangements is SDR 9 613m. The quota subscription, which determines a country's standing in the IMF, applies to all member countries, but participation in the funding of the IMF's borrowing arrangements is voluntary. The size and liquidity of the foreign exchange reserves are assessed to be sufficient to meet Norges Bank's international commitments.

Table 2-1 Details of lending programmes. Amounts in thousands of SDRs

	Agreed amount	Amount drawn	Amount remaining	Change in amount drawn	
				2023 Q4	2023
Total	10 823 080	1 524 643	9 613 113	81 900	81 900
Quota	3 754 700	1 092 881	2 661 819	0	0
NAB	3 933 380	18 762	3 914 618	0	0
Bilateral agreements	2 585 000	0	2 585 000	0	0
PRGT ¹	550 000	413 001	451 675	81 900	81 900

Table 2-2 Details of SDR holdings. Amounts in thousands

	SDR allocations	SDR holdings	Remaining voluntary purchases	Change in SDR holdings	
				2023 Q1	2023
SDR holdings	5 161 781	5 368 259	2 374 412	-105 538	-105 538

INTEREST RATE ON THE ARRANGEMENTS

Norges Bank receives SDR interest payments on the reserve position³, the NAB, PRGT and SDR holdings, and pays the SDR interest rate on SDR allocations. The SDR interest rate is a weighted average of the yields on three-month government securities in the countries/currency areas included in the SDR basket. The floor for the SDR interest rate is 0.05%. For the reserve position, an interest deduction is applied for any burden sharing⁴. Under the burden sharing mechanism, member debtors and lenders share the cost of settling overdue obligations on outstanding credit to the IMF through an interest rate adjustment.

¹ The commitments include the 2020 and 2022 arrangements under PRGT, but not the 2010 and 2016 agreements, as they can no longer be drawn on. The same applies for the total remaining amount that can be drawn. Amount drawn includes all arrangements.

² Special Drawing Rights. The SDR is an instrument the IMF use to allocate international liquidity. The value of the SDR is based on a basket of five currencies: USD, EUR, JPY GBP and CNY. At 31 March 2023, SDR 1 = NOK 14.09.

³ The reserve position is equal to the amount drawn on Norway's quota and corresponds to the difference between the quota and the IMF's krone deposit with Norges Bank.

⁴ The basis for the calculation is the reserve position less SDR 60m. The reason for the deduction is that, prior to 1978, only 75% of the quota was included in the calculation.

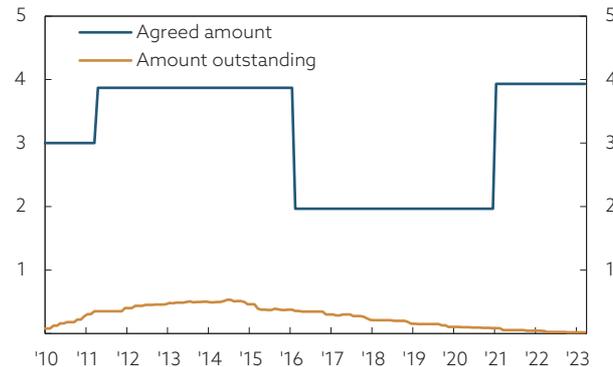
QUOTA SUBSCRIPTIONS are the IMF's primary source of funding and reflect the member country's relative size in the global economy. Norway's quota subscription is SDR 3 755m. The amount drawn remained unchanged in 2023 Q1 (Table 2-1 and Chart 2-1).

NAB (New Arrangements to Borrow) represents the IMF's second line of defence. Under the NAB, a number of member countries and institutions are committed to lending additional resources to the IMF. The IMF Executive Board must specifically decide to activate the NAB to fund new lending by drawing on the NAB. The government, represented by the Ministry of Finance, is the IMF's contractual counterparty. Commitments under the NAB amount to SDR 3 933m. Total outstanding drawings remained unchanged during 2023 Q1 (Table 2-1 and Chart 2-2).

Chart 2-1 Quota. In billions of SDRs



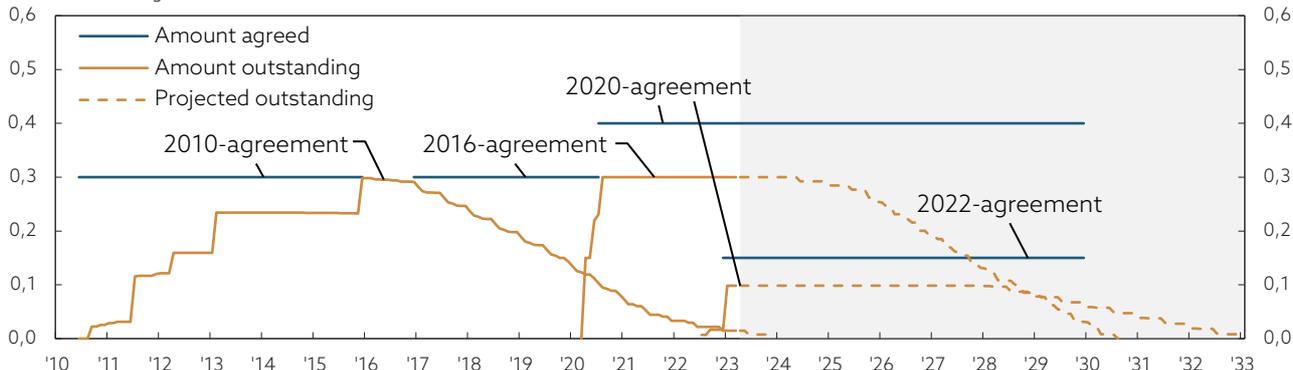
Chart 2-2 NAB. In billions of SDRs



BILATERAL AGREEMENTS serve as the IMF's third line of defence after quota subscriptions and the NAB. The current agreement, which entered into force on 1 January 2021 and applies until 31 December 2023, is for a SDR 2 585m borrowing facility. The agreement can be extended by one year. At the end of 2023 Q1, no amounts had been drawn on this agreement. Norges Bank is the IMF's contractual counterparty under the bilateral borrowing agreement. Norges Bank's borrowing agreements with the IMF are subject to the approval of the Ministry of Finance (cf Section 3-10, Subsection 2, of the Central Bank Act).

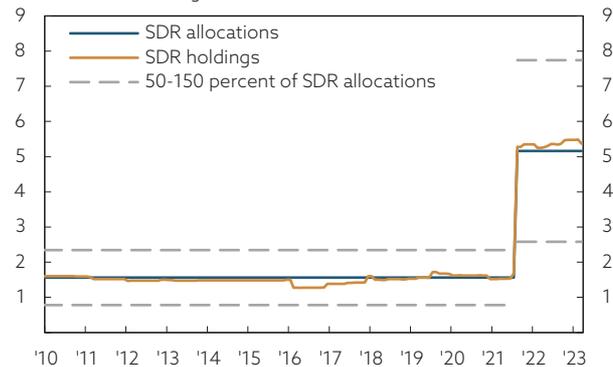
PRGT The Ministry of Finance has signed loan agreements with the IMF under the PRGT, which contribute to the IMF's borrowing arrangements for low-income member countries. Norges Bank signed borrowing agreements in both 2010 and 2016, and under each, Norway provided SDR 300m. These facilities are now fully drawn and under the agreements, only repayments will be made (Table 2-1 and Chart 2-3). In 2020, a borrowing agreement for SDR 400m was entered into. A total of SDR 82m was drawn under this agreement in 2023 Q1. In December 2022, an additional borrowing agreement for SDR 150m was entered into. This agreement had not been drawn on at the end of Q1. Norges Bank is the agent for PRGT loans and administers the commitments.

Chart 2-3 PRGT agreements. In billions of SDRs



SDR HOLDINGS are allocated by the IMF to member countries. Member countries, the IMF and prescribed holders⁵ may change their SDR holdings by purchasing from or selling to each other. Individual member countries and prescribed holders have entered agreements with the IMF on participating in SDR trading arrangements intended to support SDR liquidity. In 2009, Norges Bank entered into such an agreement with the IMF on the voluntary purchase and sale of SDRs, as long as holdings remain within 50%-150% of SDR allocations. Thus, Norges Bank's holdings shall be between SDR 2 581m and SDR 7 743m. Purchases of SDRs are charged to the foreign exchange reserves. The agreement also gives Norges Bank the right to sell SDRs. In 2023 Q1, SDR holdings was reduced by SDR 105.5m. At the end of Q1, Norway's holdings amounted to SDR 5 368m (Table 2-2 and Chart 2-4).

Chart 2-4 SDR holdings. In billions of SDRs



⁵ Prescribed holders of SDRs are 15 official entities authorised by the IMF Executive Board to hold SDRs, although they do not receive SDR allocations. Prescribed holders consist of four currency union central banks (European Central Bank, Bank of Central African States, Central Bank of West African States, and Eastern Caribbean Central Bank), eight development institutions (African Development Bank, African Development Fund, Asian Development Bank, International Bank for Reconstruction and Development and the International Development Association, Islamic Development Bank, Nordic Investment Bank, and International Fund for Agricultural Development), and three intergovernmental monetary institutions (Bank for International settlements, Arab Monetary Fund and Latin American Reserve Fund).

ANNEX KEY FIGURES

Table 1 Key figures at quarter-end. Annualised values in international currency terms. Percent

	Past year	Past three years	Past five years	Past 10 years
Return on the foreign exchange reserves	-3.36	1.71	2.06	3.53
<i>Fixed income investments</i>				
Return on fixed income investments	-2.96	-2.33	-0.09	0.60
Return on the benchmark index	-3.02	-2.37	-0.09	0.61
Relative return	0.06	0.04	0.00	-0.01
<i>Equity investments</i>				
Return on equity investments	-5.08	17.18	9.56	10.55
Return on the benchmark index	-5.14	17.06	9.51	10.40
Relative return	0.06	0.13	0.05	0.16

Table 2 Duration of and yield on fixed income investments. Past five quarters

	2023 Q1	2022 Q4	2022 Q3	2022 Q2	2022 Q1
Duration	3.61	3.59	3.64	3.69	3.78
CNY	3.43	3.47	3.50	3.40	3.42
EUR	4.02	3.96	4.04	4.14	4.22
GBP	3.97	3.94	3.97	4.26	4.13
JPY	3.99	4.19	4.18	3.72	4.10
USD	3.23	3.21	3.26	3.32	3.40
Yield	3.23	3.33	3.06	1.95	1.31
CNY	2.48	2.49	2.25	2.36	2.40
EUR	2.63	2.61	1.89	0.94	0.21
GBP	3.69	3.52	4.06	1.95	1.38
JPY	0.05	0.19	0.04	0.01	0.02
USD	4.05	4.27	4.18	2.90	2.20