

FOREIGN EXCHANGE RESERVES

Management of Norges Bank's foreign exchange reserves

2 | 2018
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REPORT FOR
SECOND QUARTER 2018



NORGES BANK

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Management of the foreign exchange reserves

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MANAGEMENT OF
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EXCHANGE RESERVES

The foreign exchange reserves shall be available for transactions in the foreign exchange market as part of the conduct of monetary policy or with a view to promoting financial stability and to meet Norges Bank's international commitments. 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 and sovereign bonds, and equities listed on a regulated and recognised exchange. The fixed income portfolio's benchmark index is a market value-weighted index of all nominal government bonds with a residual maturity of between one month and 10 years issued by 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 35%.

The petroleum buffer portfolio is intended to receive the government's cash flow from petroleum activities in foreign currency and any transfers from the Government Pension Fund Global (GPF). The purpose of the portfolio is to provide for an appropriate management of the government's need for converting foreign currency and NOK. 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 2018 Q2

- The market value of the foreign exchange reserves was NOK 502.2bn at the end of 2018 Q2, an increase of NOK 3.2bn over the quarter.
- The return on the foreign exchange reserves was 1.6%, 4.0% on equity investments and 0.3% on fixed income investments.
- The size and liquidity of the foreign exchange reserves are regarded as sufficient for meeting Norges Bank's commitments.

Table 1 Key figures from 2018 Q2

	Fixed income investments	Equity investments	Petroleum buffer portfolio	Foreign exchange reserves
<i>In billions of NOK</i>				
Market value (opening)	298.2	174.3	26.5	499.0
Market value (closing)	301.3	184.7	16.2	502.2
Change in market value	3.1	10.3	-10.3	3.2
Net transfers	-1.3	0.0	-10.9	-12.1
Return in NOK terms	4.4	10.3	0.5	15.3

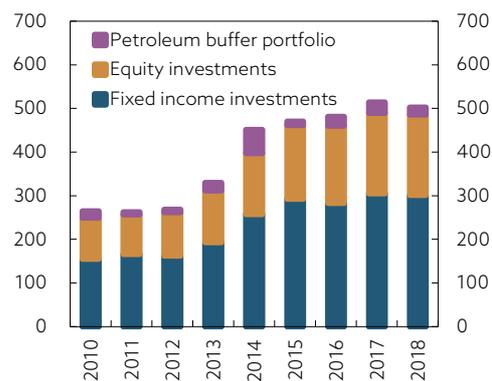
Table 2 Details of fixed income and equity investments for 2018 Q2

	Fixed income investments	Equity investments	Total
<i>In billions of NOK</i>			
Return in NOK terms	4.4	10.3	14.7
Return in international currency terms	0.8	6.9	7.8
Movements in the krone exchange rate	3.6	3.4	6.9
<i>In percent</i>			
Return in NOK terms	1.47	5.93	3.12
Return in international currency terms	0.28	3.95	1.63
Relative return in international currency terms	-0.03	-0.02	-
Expected relative volatility in NOK terms (annualised)	0.14	0.10	-

Foreign exchange reserves

The market value of the foreign exchange reserves was NOK 502.2bn at the end of 2018 Q2. In all, the value increased by NOK 3.2bn during the quarter. A rising equity market, falling interest rates and current interest income generated a return on the equity and fixed income portfolio equivalent to NOK 7.8bn. A weaker krone resulted in a NOK 6.9bn increase. During the quarter, a net outflow reduced the foreign exchange reserves by the equivalent of NOK 12.1bn.

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



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. Therefore, unless stated otherwise, return will henceforth be measured in international currency. The petroleum buffer portfolio, which is not held for the purpose of crisis management, is excluded from the measurement of return.

Fixed income investments

The market value of the fixed income investments at the end of 2018 Q2 was NOK 301.3bn, an increase of NOK 3.2bn since the end of Q1. The rise reflects in part a weaker krone, which accounted for an increase in value of approximately NOK 3.6bn. In Q2, the investments were reduced by net outflow equivalent to NOK 1.3bn. The return in international currency terms was NOK 0.8bn, around 0.3 percent, underperforming the benchmark by 3 basis points.

During Q2, both long- and short-term US yields rose. Short government bond yields rose more than yields on the long end, which reflects a solid US economy and a perception that the Federal Reserve will continue its gradual normalisation of monetary policy. Heightened geopolitical uncertainty related to the trade conflict between the US and China led to a reversal of some of the rise in long yields towards the end of Q2. USD-denominated investments accounted for around 50% of the fixed income portfolio. Despite the rise in yields over the quarter, current interest income ensured a return on the US dollar portfolio in Q2 of 0.2% in USD terms.

Long European government bond yields fell during Q2. Increased political uncertainty in Italy and the intensifying trade conflict between the US and China ensured high demand for safe German government bonds. This, in combination with communication from the ECB that the first interest rate rise will take place after summer 2019 at the earliest, helps to explain the approximately 15-20 basis point fall in safe government bond yields in Q2. EUR-denominated investments, which account for around 34% of the fixed income portfolio, earned a return of just under 0.5% in EUR terms.

UK government bond yields fell by around 10 basis points in Q2. This decline reflects weaker-than-expected developments in the UK economy and signals from the Bank of England that the normalisation of monetary policy would proceed at a very gradual pace. Falling yields and current interest income contributed to a return on the sterling portfolio of 0.5% in GBP terms in Q2. Investments in JPY earned a return of close to zero, and like sterling investments, accounted for around 8% of the fixed income portfolio at the end of Q2.

Tabell 3 Fixed income investments by currency at the end of Q2. Market value in billions of NOK

	Market value	Share	Duration	Yield
Total	301.3	100.00	3.57	1.28
EUR	103.1	34.22	3.61	-0.24
GBP	24.1	8.00	3.85	0.92
JPY	24.1	7.99	3.84	-0.12
USD	150.0	49.79	3.44	2.61

Chart 2 Principal and coupon due per year at the end of Q2. In billions of NOK

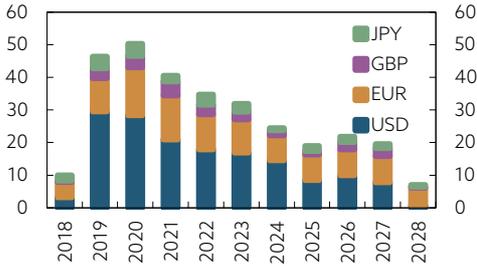


Table 4 Return on fixed income investments

	2018 Q2	YTD
<i>In international currency terms</i>		
Return (percent)	0.28	-0.08
Return (in millions of NOK)	844	-262
<i>In NOK terms</i>		
Return (percent)	1.47	-1.39
Return (in millions of NOK)	4 396	-4 199

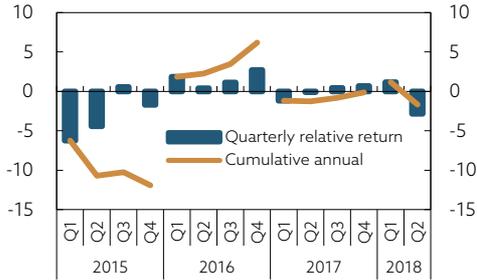
Chart 3 Return in international currency terms. Fixed income investments. Percent



Table 5 Relative return on fixed income investments

	2018 Q2	YTD
<i>In international currency terms</i>		
Relative return (percentage points)	-0.03	-0.02
Relative return (in millions of NOK)	-86	-50

Chart 4 Relative return in international currency terms. Fixed income investments. Basis points



BENCHMARK INDEX

The benchmark index for fixed income investments is provided by Bloomberg and is a market value-weighted index of all nominal government bonds with a residual maturity of between one month and 10 years issued by France, Germany, Japan, the UK and the US. The currency weighting in the fixed income index is 50% USD, 34% EUR, 8% GBP and 8% JPY.

Equity investments

The market value of the equity investments was NOK 184.7bn at the end of 2018 Q2, an increase of NOK 10.3bn from Q1. The rise reflects in part a weaker krone, which accounted for an increase in value of approximately NOK 3.4bn. The return in international currency terms was NOK 6.9bn, around 4.0%, underperforming the benchmark by 2 basis points.

quarter, equity markets posted positive returns, reversing the weak start of the year. In the second half, the prospect of higher trade barriers combined with a weaker growth outlook for Europe, China and emerging economies had a negative impact. Political uncertainty in Italy had an adverse effect on the European financial market.

At the end of Q2, approximately 63.9% of the equity portfolio was invested in North America, 23.6% in Europe and 12.4% in Asia. In the first half of the

North American equities posted the highest return in Q2, 5.9%. Investments in Europe posted a 0.9% return, while Asian equities posted a negative return, negative 0.1%. The oil and gas sector

posted the highest return in Q2, 15.5%. The technology sector also made a positive contribution, posting a total

Table 6 Equity investments excluding cash funds by industry at the end of 2018 Q2. In billions of NOK

	Market value	Share
Total	184.8	100.0
Oil and gas	12.8	6.9
Basic materials	8.0	4.3
Industrials	22.6	12.2
Consumer goods	20.9	11.3
Health care	21.9	11.8
Consumer services	21.2	11.5
Telecommunications	4.8	2.6
Utilities	4.6	2.5
Financials	39.4	21.3
Technology	28.6	15.5

Table 8 Return on equity investments

	2018 Q2	YTD
<i>In international currency terms</i>		
Return (percent)	3.95	1.67
Return (in millions of NOK)	6 937	3 320
<i>In NOK terms</i>		
Return (percent)	5.93	0.51
Return (in millions of NOK)	10 334	937

Table 9 Relative return on equity investments

	2018 Q2	YTD
<i>In international currency terms</i>		
Relative return (percentage points)	-0.02	-0.05
Relative return (in millions of NOK)	-42	-96

BENCHMARK INDEX

The benchmark index for equity investments is a tax-adjusted version of the FTSE All-World Developed Market Index, limited to euro area countries, the US, Japan, the UK, Canada, Australia, Switzerland, Sweden and Denmark.

Petroleum buffer portfolio

At the end of 2018 Q2, the market value of the petroleum buffer portfolio was NOK 16.2bn. During the quarter, approximately NOK 34.5bn worth of foreign exchange was purchased from the State's Direct Financial Interest (SDFI). At the same time, Norges Bank

return of 7.9%, while the financial sector posted the lowest return, negative 0.9%.

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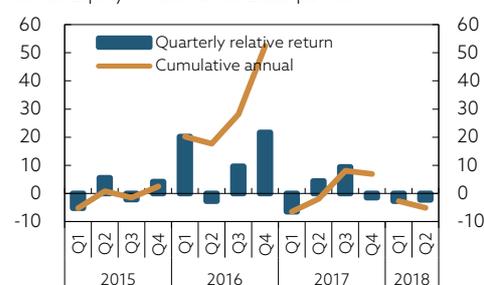
Table 7 Equity investments excluding cash funds by currency at the end of 2018 Q2. In billions of NOK

	Market value	Share
Total	184.8	100.0
AUD	4.8	2.6
CAD	5.8	3.1
CHF	5.5	3.0
DKK	1.2	0.6
EUR	22.4	12.1
GBP	12.3	6.7
JPY	18.5	10.0
SEK	1.8	1.0
USD	112.4	60.9

Chart 5 Return in international currency terms. Equity investments. Percent



Chart 6 Relative return in international currency terms. Equity investments. Basis points



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 major 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 2018 Q2 excluding exchange rate movements against the krone was 12.1% and 1.8%, respectively. This corresponds to an expected annual

fluctuation in value, excluding exchange rate movements against the krone, of approximately NOK 22bn and NOK 5bn, respectively.

While absolute volatility provides an indication of how much the foreign exchange reserves are expected to fluctuate in value, relative volatility provides an indication of how much the portfolios are expected to fluctuate in value compared with the portfolio's benchmark index. At the end of Q2, expected relative volatility was 0.10 and 0.14 percentage point for equity and fixed income investments, respectively.

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. According to credit ratings assigned by Fitch, the US and German governments are rated AAA, the UK and French governments are rated AA, and the Japanese government is rated A.

Chart 7 Absolute volatility, excluding exchange rate movements. Foreign exchange reserves. Percent

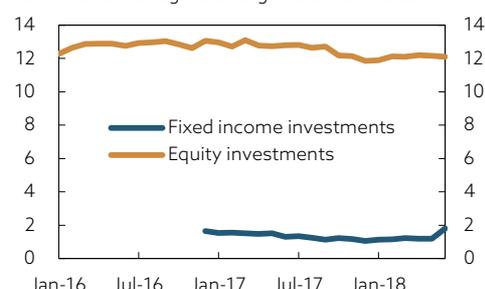
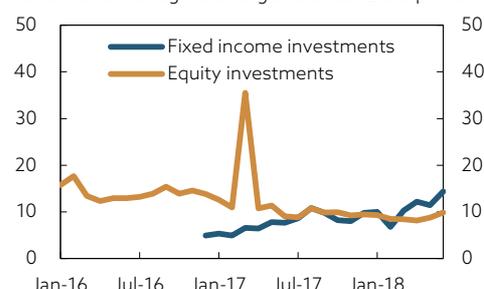


Chart 8 Relative volatility, including exchange rate movements. Foreign exchange reserves. Basis points



EXPECTED RELATIVE VOLATILITY

Under the Executive Board's principles for the foreign exchange reserves, maximum expected relative volatility is set at 0.5 percentage point for both fixed income and equity portfolios. Relative volatility of 50 basis points means that the excess return on the portfolio is expected to be within the interval ± 0.5 percentage point in two out of three years.

International commitments

Pursuant to the Norges Bank Act, Norges Bank shall meet the commitments ensuing from membership of the IMF. This membership entails a standing commitment to furnish foreign exchange for IMF loans to other member countries. See page 8 for an

overview of Norges Bank's commitments to the IMF. The size and liquidity of the foreign exchange reserves are assessed to be sufficient to meet Norges Bank's international commitments.

OVERVIEW OF NORGES BANK'S COMMITMENTS TO THE IMF

QUOTA SUBSCRIPTIONS are the IMF's primary source of funding and reflect the member country's relative size in the global economy. In 2010, the IMF approved the 14th General Review of Quotas, under which IMF quota subscriptions doubled with effect from 2016. Norway's quota subscription increased to SDR 3 755m¹. At the end of Q2, the amount drawn² totalled SDR 341m (Chart 9).

The **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. At the same time as the quota increase, Norway's resource commitments under the NAB were reduced by approximately the same amount. Norges Bank's commitments under the NAB now amount to SDR 1 967m (Chart 10). Total outstanding drawings were SDR 208m at the end of Q2.

BILATERAL AGREEMENTS serve as the IMF's third line of defence, after quota subscriptions and the NAB. In 2012, Norges Bank provided the IMF with a borrowing facility under a bilateral borrowing agreement of SDR 6 000m, to be drawn on only in very special circumstances. This agreement expired in November 2016 and was never drawn on. On 21 April 2017, on behalf of the Ministry of Finance, Norges Bank signed a new bilateral agreement with the IMF for the same amount. The agreement is in effect until end-2019, with the possibility of a one-year extension. At the end of 2018 Q2, no amounts had been drawn on the new borrowing agreement.

The **PRGT** (Poverty Reduction and Growth Trust), signed in 2010 by the Ministry of Finance and the IMF, is an agreement under which Norway will furnish SDR 300m in loan resources to the IMF's programme for low income countries. Norges Bank is the agent for the loan and administers the commitments. This facility is now fully drawn, and under the agreement from 2010, only repayments will be made (Chart 11). In November 2016, a new borrowing agreement was signed under which Norway will provide the PRGT with an additional SDR 300m. At the end of 2018 Q2, no amounts had been drawn on the new borrowing agreement.

Loan resource commitments under the quota, NAB, bilateral agreements and the PGRT total SDR 12 021m, of which the IMF had drawn SDR 549m at the end of 2018 Q2. A further SDR 11 472m may thus be drawn under these arrangements. Unlike the quota subscription, where the entire amount is recognised in the balance sheet, only amounts drawn are recognised for the other borrowing arrangements (See Table 14 under Key figures for further details).

HOLDINGS OF SDRs The IMF has allocated SDRs to member countries. Member countries may change their SDR holdings by purchasing from or selling to members who have voluntarily agreed to be a counterparty in SDR transactions. In 2009, Norges Bank entered into an agreement with the IMF on the voluntary purchase and sale of SDRs, as long as holdings remain within 50%-150% of SDR allocations. In 2009, SDR allocations increased from SDR 168m to SDR 1 563m. Thus, if other countries wish to sell SDRs, Norges Bank may have to increase holdings of SDRs to SDR 2 345m. Purchases of SDRs are charged to the foreign exchange reserves. The agreement also gives Norges Bank the right to sell SDRs. At the end of 2018 Q2, holdings of SDRs were SDR 1 520m (Chart 12).

Chart 9 IMF quota. In billions of SDRs

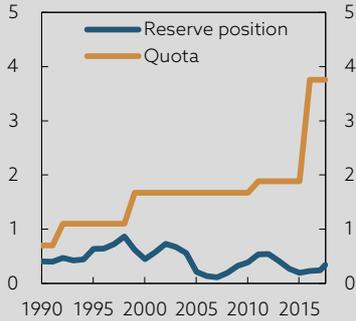


Chart 10 NAB. In billions of SDRs

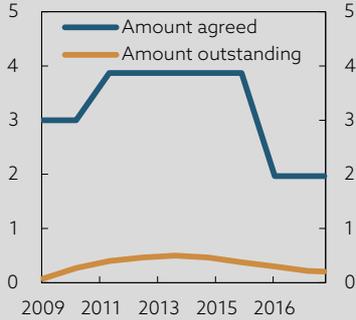
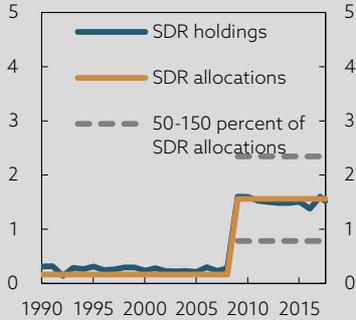


Chart 11 PRGT. In hundreds of millions of SDRs



Chart 12 Holdings of SDRs. In billions of SDRs



¹ Special Drawing Right (SDR). The SDR is an instrument the IMF can use to allocate international liquidity. The value of the SDR is based on a basket of five currencies: USD (42%), EUR (31%), JPY (8%), GBP (8%) and CNY (11%). At 29 June 2018, SDR 1 = NOK 11.48.

² The amount drawn is equal to Norway's reserve position in the IMF.

Key figures

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Table 10 Market value. In billions of NOK

	2018 Q2	2018 Q1	2017 Q4	2017 Q3	2017 Q2
Market value of fixed income and equity investments	486.0	472.5	489.0	466.4	476.1
Change in market value	13.5	-16.5	22.6	-9.7	2.8
Net transfers	-1.3	1.5	-1.5	0.4	-0.6
Return in NOK	14.7	-18.0	24.0	-10.1	3.4
<i>Return in international currency</i>	7.8	-4.7	8.8	7.8	5.6
<i>Change due to movements in krone exchange rate</i>	6.9	-13.3	15.2	-17.9	-2.2
Market value of the petroleum buffer portfolio	16.2	26.5	25.3	12.9	25.2
Change in market value	-10.3	1.2	12.4	-12.3	3.4
Net transfer	-10.9	1.7	12.2	-11.3	3.6
<i>Foreign exchange purchases from the SDFI</i>	34.5	44.0	36.3	29.4	35.8
<i>Foreign exchange purchases in the market</i>	-47.0	-53.0	-38.5	-51.0	-48.5
<i>Transfers from the GPFG</i>	1.6	10.7	14.4	10.4	16.3
Return in NOK	0.5	-0.5	0.2	-1.0	-0.2
Market value of the foreign exchange reserves	502.2	499.0	514.3	479.3	501.3

Table 11 Return in international currency terms. Percent

	2018 Q2	2018 Q1	2017 Q4	2017 Q3	2017 Q2
Return on fixed income investments	0.28	-0.36	-0.10	0.28	0.26
Return on equity investments	3.95	-2.20	5.34	4.27	2.85
Return on the foreign exchange reserves¹	1.63	-1.04	1.87	1.69	1.17
Return on benchmark index for fixed income investments	0.30	-0.37	-0.11	0.27	0.26
Return on benchmark index for equity investments	3.97	-2.17	5.35	4.17	2.81
Relative return on fixed income investments	-0.03	0.01	0.01	0.00	0.00
Relative return on equity investments	-0.02	-0.03	-0.01	0.09	0.04

¹Excluding the petroleum buffer portfolio.

Tabell 12 Return in NOK terms. Percent

	2018 Q2	2018 Q1	2017 Q4	2017 Q3	2017 Q2
Return on fixed income investments	1.47	-2.82	3.26	-3.28	0.20
Return on equity investments	5.93	-5.11	8.47	-0.03	1.67
Return on the foreign exchange reserves¹	3.12	-3.68	5.15	-2.13	0.72
Return on benchmark index for fixed income investment	1.50	-2.83	3.25	-3.29	0.20
Return on benchmark index for equity investments	5.95	-5.09	8.49	-0.12	1.62
Relative return on fixed income investments	-0.03	0.01	0.01	0.00	0.00
Relative return on equity investments	-0.02	-0.03	-0.02	0.09	0.04

¹Excluding the petroleum buffer portfolio.

Table 13 Key figures at the end of 2018 Q2. Annualised data in international currency terms. Percent

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	Past year	Past 3 years	Past 5 years	Past 10 years
Return on the foreign exchange reserves	4.19	3.90	5.38	5.58
<i>Fixed income investments</i>				
Return on fixed income investments	0.09	0.71	1.58	3.44
Return on benchmark index	0.10	0.70	1.62	2.97
Relative return	-0.01	0.01	-0.04	0.47
Realised absolute volatility ¹	1.34	1.55	1.83	3.19
Realised relative volatility ¹	0.07	0.05	0.08	1.49
Information rate (IR) ²	-0.08	0.23	-0.49	0.31
<i>Equity investments</i>				
Return on equity investments	11.66	9.48	12.12	8.81
Return on benchmark index	11.63	9.29	11.91	8.54
Relative return	0.03	0.18	0.21	0.27
Realised absolute volatility ¹	7.07	9.95	9.23	13.99
Realised relative volatility ¹	0.09	0.15	0.15	0.30
Information rate (IR) ²	0.32	1.18	1.40	0.90

¹ Realised volatility is a measure of the fluctuation in monthly return values, expressed here by the annualised empirical standard deviation. Absolute/relative volatility expresses risk related to absolute/relative return.

² IR is a risk-adjusted return measure. IR is the ratio between excess return and the portfolio's realised relative market risk (measured by relative volatility).

Table 14 Claims on and liabilities to the International Monetary Fund (IMF) at the end of 2018 Q2. In millions of NOK

	Loan resource commitments ²	Recognised in the balance sheet			Total amount
		Drawn on commitments	Subscription ³	SDRs	
<i>Financial assets</i>					
IMF subscription (quota) ¹	-	-	43 165	-	43 165
Holdings of SDRs	-	-	-	17 469	17 469
Loans to the IMF - NAB	22 575	2 396	-	-	2 396
Loans to the IMF - Bilateral agreement	68 872	-	-	-	-
Loans to the IMF - PRGT	6 887	2 561	-	-	2 561
Claims on the IMF	-	4 957	43 165	17 649	65 591
<i>Financial liabilities</i>					
Krone liability to the IMF	-	-	39 249	-	39 249
Equivalent value of SDR allocations	-	-	-	17 970	17 970
Liabilities to the IMF	-	-	39 249	17 970	57 219
Net positions with the IMF	-	4 957	3 916	-501	8 371

¹ The IMF allocates quotas to member countries which primarily reflect member countries' relative size in the world economy. The quota provides the basis for determining the member country's voting power in the IMF, the member's financial contribution to the IMF, the amount of financing the member can access in the event of balance of payments problems and the amount of SDRs the member is allocated.

² Commitments giving the IMF a borrowing facility with Norges Bank up to an agreed amount. Only the portion drawn is recognised in the balance sheet. Norges Bank's commitments to the IMF are in SDRs; amounts have been translated into NOK.

³ The net subscription is referred to as the reserve tranche position (RTP) comprising Norway's IMF quota less Norway's krone liability to the IMF, ie the net amount at the bottom of the column.