Central Bank Monitoring

II/2021

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In this issue

Economic growth in most of the countries we monitor is gradually resuming thanks to ongoing easing of anti-epidemic measures. However, it remains true that the pandemic and economic situation will be fundamentally shaped in the period ahead by the success with vaccination. Uncertainty regarding future economic developments is still high, but central banks are now registering rising inflation and a positive surprise in the form of stronger-than-expected economic growth. Monetary and fiscal policies are continuing to have an expansionary effect in individual countries. None of the central banks we regularly monitor changed its interest rates in the last three months. However, the Central Bank of Iceland has already raised rates, and the central banks of Norway and the Czech Republic have indicated rate increases in their forecasts. Some of the central banks we monitor can therefore also be expected to tighten monetary policy in the second half of this year.

The current *Spotlight* focuses on central banks' inflation targets – their legal definition, their numerical values and their formulation in terms of point values or ranges – and on the inflation indices they monitor. In our *Selected Speech*, Deputy Governor of the Norwegian central bank Ida Wolden Bache discusses the effect of new technology and cryptocurrencies on the future shape of the financial system.

This publication aims to provide economists and other specialists with information on the latest monetary policy developments, strategies and communications at selected central banks.

Current and past issues can be downloaded free from the Monetary Policy section of the CNB website: https://www.cnb.cz/en/monetary-policy/monitoring/, where you can also download a file containing a list of all the thematic articles and speeches.

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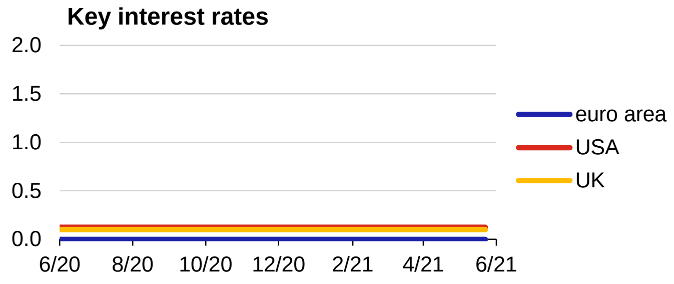
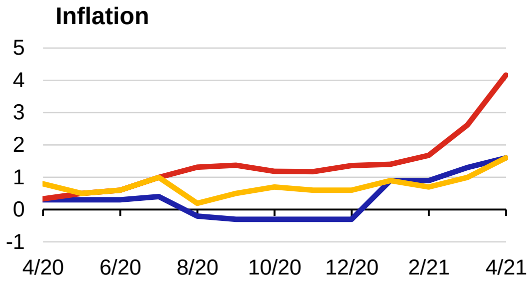
I. LATEST MONETARY POLICY DEVELOPMENTS AT SELECTED CENTRAL BANKS

I.1 KEY CENTRAL BANKS OF THE EURO-ATLANTIC AREA

	Euro area (ECB)	USA (Fed)	United Kingdom (BoE)
Inflation target	<2%[1]	2%[2]	2%
MP meetings (rate changes)	22 Apr (0.0);(0.0)[3] 10 Jun (0.0);(0.0)[3]	16–17 Mar (0.00) 27–28 Apr (0.00)	18 Mar (0.00) 6 May (0.00)
Current basic rate	0.00%; -0.50%[3]	0–0.25%[4]	0.1%
Latest inflation	2% (May 2021)[5]	4.2% (Apr 2021)[8]	1.5% (Apr 2021)
Expected MP meetings	22 Jul 9 Sep	15–16 Jun[6] 27–28 Jul	24 Jun 5 Aug
Other expected events	9 Sep: publication of forecast	14 Jul: publication of Beige Book	5 Aug: publication of Monetary Policy Report
Expected rate movements[7]	→	→	→

Note: [1] ECB definition of price stability "below but close to 2%"; [2] long-term average, according to August 2020 definition; [3] deposit rate; [4] chart shows centre of band; [5] flash estimate; [6] meeting associated with summary of FOMC economic forecasts; [7] direction of expected change in rates in next three months taken from Consensus Forecasts; [8] Consumer Price Index for All Urban Consumers (CPI-U).





The **ECB** left interest rates unchanged and will keep them at the present level or lower until it has seen inflation robustly converge to a level sufficiently close, but below, 2%, and such convergence has been reflected in underlying inflation. The ECB left the envelope of the PEPP at EUR 1,850 billion and will conduct net asset purchases until at least March 2022. It still expects to buy assets at a higher pace in the next quarter than in the first months of this year. Net asset purchases under the APP will continue at a monthly pace of EUR 20 billion; the ECB will end them shortly before it starts to increase interest rates. The principal is reinvested under both programmes. TLTRO III remains in force. The ECB may further adjust all of its instruments to ensure that inflation moves towards its aim in a sustained manner, in line with its commitment to symmetry. GDP fell by 0.3% in 2021 Q1. The ECB has raised its GDP growth forecast to 4.6% this year (as against 4.0% in the March forecast), 4.7% in 2022 (as against 4.1%) and 2.1% in 2023. It has also slightly increased its inflation forecast, with 1.9% expected in 2021 (as against 1.5%), 1.5% in 2022 (as against 1.2%) and 1.4% in 2023.

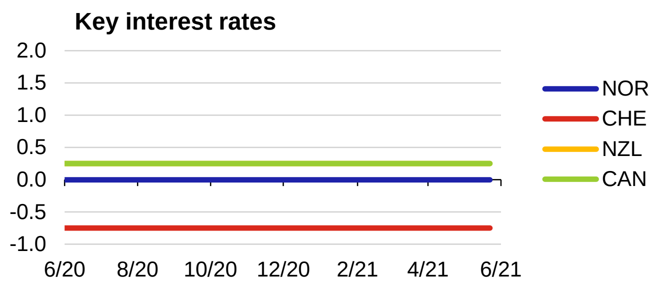
The **Fed** left US monetary policy unchanged at its April meeting as expected. The key federal funds rate remained in the 0–0.25% range and the pace of bond purchases was kept at USD 120 billion/month. In line with its mandate, the FOMC seeks to achieve maximum employment and keep inflation at 2% over the longer run. Following the review of its monetary policy framework, however, it is aiming to achieve inflation moderately above 2% for some time to offset previously lower inflation. In its accompanying statement, the Fed said that while the economy was recovering, risks to the economic outlook remained. According to Jerome Powell, the increase in the Fed's balance sheet since March 2020 has eased financial conditions and is providing substantial support to the economy. At the subsequent press conference, Powell also signalled that monetary policy would not be changed until the Fed saw more convincing data on a labour market improvement. According to Powell, the time is not ripe to open a debate on curbing financial support. Real GDP growth accelerated in 2021 Q1 compared with 2020 Q4 but remains below the pre-pandemic level. The labour market situation improved significantly in March, although employment remained well below the early 2020 levels.

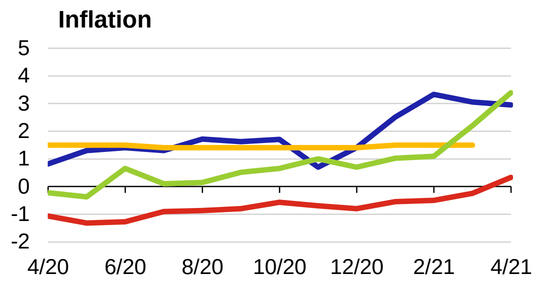
The **BoE** kept its key rate at 0.1% and maintained the target for the stock of asset purchases at GBP 895 billion. Government and corporate bonds totalling GBP 815 billion had been purchased by May 2021. The BoE will continue to purchase assets until the end of this year. The May forecast expects faster GDP growth of about 7% this year, compared with the 5% expected in February (annualised average growth). This is due to higher fiscal support (higher government investment and tax relief) and stronger expected household consumption. The unemployment rate has been falling gradually since the end of last year and stood at 4.9% in 2021 Q1.

I.2 SELECTED INFLATION-TARGETING NON-EU COUNTRIES

	Norway (NB)	Switzerland (SNB)	New Zealand (RBNZ)	Canada (BoC)
Inflation target	2%	0–2%	2%	2%
MP meetings (rate changes)	18 Mar (0.00) 6 May (0.00)	25 Mar (0.00)	14 Apr (0.00) 26 May (0.00)	21 Apr (0.00) 9 Jun (0.00)
Current basic rate	0%	-0.75%	0.25%	0.25%
Latest inflation	3% (Apr 2021)	0.3% (Apr 2021)	1.5% (2021 Q1)	3.4% (Apr 2021)
Expected MP meetings	17 Jun 19 Aug	17 Jun	14 Jul 18 Aug	14 Jul 8 Sep
Other expected events	17 Jun: publication of Monetary Policy Report	17 Jun: publication of Quarterly Bulletin	18 Aug: publication of Monetary Policy Statement	14 Jul: publication of Monetary Policy Report
Expected rate movements[1]	↑	→	→	→

Note: [1] direction of expected change in rates in next three months is taken from Consensus Forecasts or, in the case of New Zealand, from RBNZ survey, and, in the case of Norges Bank, from forecast.





The **NB** left its policy rate at zero and its forecast indicates a gradual rise in interest rates from the second half of this year. According to Governor Olsen, in the current assessment of the outlook and balance of risks, the policy rate will most likely be raised in the latter half of 2021. The December 2020 forecast had implied stable rates at the current (zero) level one year ahead. Inflation is still above the target, but according to the NB, appreciation of the Norwegian krone and prospects for moderate wage growth suggest that inflation will moderate ahead. In its decision, the Board also placed weight on the marked rise in house prices since spring 2020 and pointed out that a long period of low interest rates increases the risk of a build-up of financial imbalances.

The **SNB** kept its policy rate unchanged at -0.75%. It is continuing to supply liquidity to the banking system via the SNB COVID-19 refinancing facility (CRF) and has expressed its willingness to intervene in the foreign exchange market. The SNB March forecast expects slightly higher inflation this year and the next (0.2% in 2021, 0.4% in 2022 and 0.5% in 2023) compared with the December forecast. This is due mainly to higher oil prices and a weaker franc. GDP shrank by 2.6% in 2021 Q1, due mostly to a sizeable drop in value added in services following a tightening of anti-pandemic measures and to a marked decline in private consumption. The GDP growth forecast is unchanged for this year at 2.5–3%.

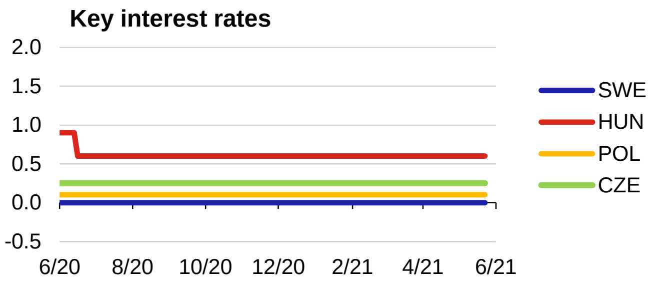
The **RBNZ** left its key interest rate unchanged at 0.25%. The size of the LSAP asset purchase programme remained the same (a maximum of NZD 100 billion by June 2022) and part of it may remain unused. The Funding for Lending programme, which lowers banks' funding costs, was also left unchanged. The two programmes are significantly helping to ease monetary conditions. Consumer price inflation currently remains slightly below the target. A range of domestic and international factors (including higher international transport costs, disruptions to global raw material supplies and resulting higher prices for many commodities) will lift inflation for a period.

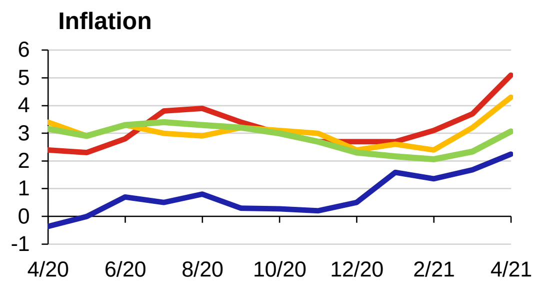
The **BoC** left its key interest rate unchanged at 0.25% and will maintain it at the effective lower bound until the 2% inflation target is sustainably achieved (the second half of 2022). The BoC is continuing to buy government bonds. In late April, however, it reduced the pace of the purchases from CAD 4 billion to CAD 3 billion per week. This reflects the ongoing economic recovery. The bank will continue to monitor the potential risks associated with the rapid rise in property prices, as it is aware that housing construction and resales are at historical highs. Strong growth in foreign demand and higher commodity prices are expected to drive a robust recovery in exports and business investment. Additional federal and provincial fiscal stimuli will contribute importantly to growth. The BoC forecasts real GDP growth of 6.5% this year, moderating to around 3% in the subsequent two years.

I.3 SELECTED CENTRAL BANKS OF INFLATION-TARGETING EU COUNTRIES

	Sweden (Riksbank)	Hungary (MNB)	Poland (NBP)	Czech Republic (CNB)
Inflation target	2%[1]	3%	2.5%	2%
MP meetings (rate changes)	26 Apr (0.00)	23 Mar (0.00) 27 Apr (0.00) 25 May (0.00)	7 Apr (0.00) 5 May (0.00) 9 Jun (0.00)	24 Mar (0.00) 6 May (0.00)
Current basic rate	0%; -0.1%[2]	0.6%; -0.05%[2]	0.10%	0.25%
Latest inflation	3% (Apr 2021)	5.1% (Apr 2021)	4.8% (May 2021)[5]	2.9% (May 2021)
Expected MP meetings	30 Jun	22 Jun[3] 27 Jul 24 Aug	8 Jul 8 Sep	23 Jun 5 Aug[3]
Other expected events	21 Sep: publication of Monetary Policy Report	24 Jun: publication of Inflation Report	15 Jul: publication of Inflation Report	13 Aug: publication of Monetary Policy Report
Expected rate movements[4]	→	→	→	↑

Note: [1] CPIF – consumer price index including fixed interest rate; [2] deposit rate; [3] publication of new forecast; [4] direction of expected change in rates in next three months taken from Consensus Forecasts or, in the case of the CNB, from central bank's forecast, [5] flash estimate.





The **Riksbank** left its key rate at 0% and expects it to remain unchanged over the entire forecast period (i.e. until 2024 Q2). The deposit rate also remains the same, at a slightly negative level (-0.1%). The envelope for bond purchases is still SEK 700 billion (SEK 507 billion bought) and will be reached by the end of this year. The assets will be kept on the Riksbank's balance sheet at least until the end of 2022. The April GDP forecast expects growth of 3.7% this year (as against 3.0% in February), 3.6% next year (as against 3.9%) and 2.0% in 2023 (as against 2.4%). The inflation outlook (CPIF) is unchanged at 1.5% for this year, 1.4% for 2022 (as against 1.3%) and 1.7% for 2023. Inflation is thus slightly below the target over the entire forecast.

The **MNB** kept its base rate at 0.6%. The deposit rate is negative at -0.05%. The MNB is maintaining a presence in the government bond market, adjusting its weekly purchases as needed. According to the MNB, the FGS GO! scheme to support SMEs is contributing to an economic recovery. According to the May statement, the MNB is ready to tighten monetary conditions to the extent necessary in order to ensure price stability and to mitigate inflation risks. Inflation accelerated to 5.1% in April, while core inflation slowed to 3.1%. According to a revised estimate, Hungary's GDP fell by 1.6% year on year in Q1 but grew by 2.0% quarter on quarter, and the MNB expects buoyant economic growth. This is also indicated by a slightly increased end-April projection, which predicts GDP growth of 4–6% this year and 5–6% in 2022. Inflation will be 3.8–3.9% this year and decrease towards the 3% inflation target in 2022.

The **NBP** kept its interest rate at 0.1% and is buying government bonds and government-guaranteed debt securities on the secondary market. The timing and scale of the measures will depend on market conditions. A programme to refinance loans granted to firms is also in place. Poland's GDP fell by 0.9% in 2021 Q1. According to the March forecast, GDP will grow by 4.1% this year and by 5.4% in the next two years. The forecast also projects inflation at 3.1% this year, 2.8% next year and 3.2% in 2023.

The **CNB** left its key rate at 0.25%. Its forecast expects interest rate stability initially, followed by a rise in rates from roughly the middle of this year onwards. GDP fell by 2.1% year on year in 2021 Q1. Following a drop last year, the domestic economy will return to modest growth in 2021 and pick up more strongly in 2022. The Czech economy will grow by 1.2% this year and 4.3% next year. The forecast expects inflation of 2.7% this year and 2.4% next year. Inflation will return to the 2% target from above over the monetary policy horizon.

II. NEWS OVER THE LAST THREE MONTHS

Fed decides to unify rates on bank reserves

In June, the Fed decided to replace its existing interest on required reserves (IORR) rate and interest on excess reserves (IOER) rate with a single interest on reserve balances (IORB) rate with effect from the end of July 2021.

Central banks are phasing out some supportive pandemic programmes…

With financial market conditions improving, central banks are ending some supportive pandemic programs. By the end of March, the Fed had shut down most programmes as planned, except for the Paycheck Protection Program Liquidity Facility (PPPLF) aimed at supporting funding of small businesses. The PPPLF has been extended by three months to 30 June. New Zealand's RBNZ also discontinued some support facilities in March, namely the Term Auction Facility (TAF) and the Corporate Open Market Operation (COMO).

In April, the ECB, the BoE, the BoJ and the SNB in consultation with the Fed jointly decided to discontinue offering US dollar liquidity at the 84-day maturity. The auctions will stop on 1 July. In their statements, the banks say that they are ending the supply of liquidity in view of the sustained improvements in US dollar funding conditions and low demand. However, they stand ready to restart the 84-day operation as warranted by market conditions. Weekly USD auctions with a 7-day maturity will continue from July 1 onwards.

…but other programmes are being extended

In contrast, given the ongoing elevated economic uncertainty, the RBNZ decided in April to continue to stimulate the economy through asset purchases (LSAP) and the Funding for Lending programme. In May, the Riksbank decided to continue to provide US dollar liquidity to banks (up to USD 60 billion), to continue the Funding for Lending programme (up to SEK 500 billion) and to penalise banks that do not increase lending to non-financial corporations sufficiently. The Australian RBA also surprised markets in February when it decided to extend its asset purchase programme (originally due to end in April) by six months and to increase the programme by AUD 100 billion despite the improving outlook for the economy. In its decision, the RBA stated that the economic recovery was still fragile and the outlook for inflation was below the target range (2–3%).

BoJ adds incentives to banks and flexibility to its monetary policy following its review

The Bank of Japan has completed the review of its monetary policy announced in December 2020 (see the March CBM). Based on the outcome of the review, the BoJ has increased the flexibility in yield curve control (YCC) and will allow for greater fluctuations in 10-year bond yields (±0.25 pp around zero, instead of the previous 0.2 pp). It has also changed the limit on ETF purchases by withdrawing its initial commitment to buy an average of JPY 6 trillion a year in equities (total purchases remain limited by a maximum of JPY 12 trillion). The BoJ also announced new credit incentives for banks (the Interest Scheme to Promote Lending). The measures are the result of the BoJ perceiving a growing danger of financial market distortions.

Central Bank of Iceland raises interest rates

In May, the Central Bank of Iceland decided to raise interest rates by 0.25 pp to 1% on the back of rising inflation, which reached 4.6% in April (the central bank's inflation target is 2.5% with a tolerance band of ±1.5 pp). This made it the first advanced country central bank to tighten monetary policy after a period of easing to support the pandemic-hit economy.

Expiry date set for LIBOR

The UK's Financial Conduct Authority (FCA), whose powers include overseeing global benchmark rates, decided in March that the reputationally damaged LIBOR reference rate denominated in GBP, EUR, CHF and JPY will cease to be published by 31 December 2021 (the publication of LIBOR in USD with 1W and 2M tenors will also cease on the same date). Many countries have already switched from monitoring financial market conditions by this rate to a reference rate administered by a central bank or other authority. Examples include the SONIA (Sterling Overnight Index Average) rate administered by the UK central bank, the €STR (euro short-term rate) administered by the ECB, the SOFR (Secured Overnight Financing Rate) rate administered by the NY Fed, the CORRA (Canadian Overnight Repo Rate Average) rate administered by the BoC, and the SARON rate administered by the Swiss stock exchange (SIX).

Turkey's central bank takes (another) hit

The Turkish president sacked Central Bank of Turkey (CBRT) governor Naci Agbal after only four months at the helm, soon after Agbal had embarked on an interest-rate hike path against rising inflation and a weakening Turkish lira (the most recent increase was in March 2021 by a whopping 200 bp to 19%). Sahap Kavcioglu, a former member of the governing party, was appointed to this position and immediately tried to reassure markets by issuing a statement saying that CBRT policy remained unchanged. The Turkish lira weakened by more than 10% in response to yet another change of governor. The Turkish president subsequently replaced two CBRT deputy governors. Under Kavcioglu, the CBRT held its rates at 19% at its next meetings in April and May. According to its statements, the bank will keep rates at the current level until the inflationary pressures recede. For more information on developments at the CBRT, see, for example, the December 2020, September 2019 and September 2018 issues of CBM.

Fed named "Central Bank of the Year 2020"

Central Banking has announced its 2020 awards. The US Fed has been named "central bank of the year" for its massive interventions, which, in the publication's view, prevented a global financial crisis. Bank of Mexico Governor Alejandro Díaz de León is governor of the year for his efforts to uphold the authority, integrity and independence of the Bank of Mexico against significant external and internal pressures triggered by the pandemic.

III. SPOTLIGHT: INFLATION TARGETS OF SELECTED CENTRAL BANKS

Most advanced country central banks operate under inflation targeting (IT). IT is used by 35 of the 36 OECD countries and by 17 G20 countries.[1] Its specific formal status and evolution depend on each country's economic conditions and historical experience. Although its formal configuration differs from country to country, the practical implementation of IT – and also its communication – is similar across most central banks.

The current *Spotlight* describes the inflation targets of major central banks. In addition to the banks regularly followed in CBM, these include the central banks of Japan, Israel, Australia and Iceland.[2] This article looks in turn at the formal status of inflation targets, their definition in legal documents, their numerical expression and formulation as points and ranges and the existence of tolerance bands, and, last but not least, the inflation indices monitored.

Primary and other monetary policy objectives

The primary monetary policy objective of all the central banks we monitor is to maintain price stability, a key condition for long-term economic growth and employment. Price stability is the primary and only monetary policy objective for most banks. Other objectives, such as supporting the economy and employment, supporting the economic policies of the government and maintaining financial stability, are mentioned as secondary objectives which must not run counter to the primary objective of price stability. Only a few central banks have multiple primary objectives. They include the US Fed and New Zealand's RBNZ, which both have a dual objective of price stability and maximum employment. In Australia, the Reserve Bank Act defines three equal monetary policy objectives for the central bank: price stability, full employment and the economic prosperity and welfare of the people of Australia.

The documents establishing central banks (their statutes or, for example, agreements with the government) often mention other economic variables that the central bank should take into account when making monetary policy decisions. As stated, for example, in Wood and Reddell (2014), specific variables are often mentioned because of the historical experience of the countries concerned. Moreover, following the 2008–2009 financial crisis, central banks' regular reports have increasingly mentioned the need to take risks to financial stability into account in monetary policy-making. Financial stability is often quoted separately in legal documents, if it falls within the central bank's powers at all.

In practice, however, all central banks take care to ensure that their monetary policy decisions do not give rise to excessive swings in economic activity, employment and, in some cases, other variables. They thus pursue monetary policy under "flexible" inflation targeting.

Table 1: Primary and other monetary policy objectives of central banks

	Primary objective	**Secondary objectives and other aspects**
ECB	Price stability	Without prejudice to the objective of price stability, the ESCB supports the general economic policies in the EU with a view to contributing to the achievement of the objectives of the Community, i.e. full employment and balanced economic growth (*Treaty on the Functioning of the EU, 2016*)
Fed	Full employment, price stability, moderate long-term interest rates	Dual mandate[3] (*Federal Reserve Act, 1977, 2000*)
Bank of England	Price stability	Subject to the objective to maintain price stability, to support the economic policy of the government, including its objectives for growth and employment and (since March 2021) to support the government's economic strategy for transitioning to an environmentally sustainable and net zero economy (*Bank of England Act, 1998, MPC Remit, March 2021*)
Norges Bank	Price stability	To contribute to high and stable output and employment (*Central Bank Act, 2020, Regulation on Monetary Policy, 2018*)
SNB	Price stability	To ensure price stability and, in doing so, to take due account of economic developments (*National Bank Act, 2004, 2020*)

[1] Ehrmann (2021)

[2] The Japanese central bank is included as a major inflation-targeting bank, the central banks of Australia and Israel as central banks whose inflation targets are expressed in terms of a range, and the Central Bank of Iceland as an example of an institution with a numerically unusually expressed inflation target and tolerance band.

[3] According to the Fed website, even though the act lists three distinct goals of monetary policy, the Fed's mandate is commonly known as the dual mandate. The reason is that an economy in which people who want to work either have a job or are likely to find one fairly quickly and in which the price level is stable creates the conditions needed for interest rates to settle at moderate levels.

RBNZ	Price stability and full employment	Dual mandate; The RBNZ's monetary policy decisions must take into account the government's policy to support more sustainable house prices (*MPC Remit, February 2021)*
Bank of Canada	Price stability	To control and protect the external value of the national monetary unit and to mitigate by its influence fluctuations in the general level of production, trade, prices and employment, so far as may be possible within the scope of monetary action (*Bank of Canada Act, 1985, 2020*)
Riksbank	Price stability	The act only sets out the objective to maintain price stability (*Sveriges Riksbank Act, 1988, 2016*). According to the Riksbank website, monetary policy also supports general economic policy objectives with a view to achieving sustainable growth and high employment (*Riksbank website*)
MNB	Price stability	Without prejudice to its primary objective…the MNB shall support the economic policy of the government using the instruments at its disposal (*MNB Act, 2020*)
NBP	Price stability	To maintain price stability, while supporting the economic policy of the Government, insofar as this does not constrain the pursuit of the basic objective of NBP (*Act on Narodowy Bank Polski*, 1997)
CNB	Price stability	Without prejudice to its primary objective, the Czech National Bank supports the general economic policies of the Government (*Act on the CNB, 1993, 2020*)
BoJ	Price stability	To achieve price stability, thereby contributing to the sound development of the national economy (*Bank of Japan Act, 1997*)
RBA	Price stability, full employment and economic prosperity of Australians	These [statutory] objectives allow the Reserve Bank Board to focus on price (currency) stability, which is a crucial precondition for long-term economic growth and employment, while taking account of the implications of monetary policy for activity and levels of employment in the short term (*Statement on the Conduct of Monetary Policy, 2016, Reserve Bank Act, 1959, 2020*)
Central Bank of Iceland	Price stability	To promote the implementation of the Government's economic policy as long as it does not consider this inconsistent with its objectives (*Act on the Central Bank of Iceland, 2019*)
Bank of Israel	Price stability	To support other objectives of the Government's economic policy, especially growth, employment and reducing social gaps, provided that, in the Committee's opinion, this support shall not prejudice the attainment of Price Stability over the Course of Time (*Bank of Israel Law, 2010*)

Source: central banks' websites, IMF AREARR, BIS.

Level and formulation of the target – point, range, tolerance band

Most inflation-targeting central banks in advanced countries use a headline inflation target of 2%. Inflation at 2% is consistent with the primary objective of price stability, i.e. low and stable inflation.

The inflation target is usually expressed formally as a point target, as a point target with a tolerance band, or as a range. A debate has been going on about the suitability of specific formulations of the inflation target virtually since IT was introduced, especially with regard to the anchoring of inflation expectations. A summary of these discussions can be found, for example, in Apel and Claussen (2017) and, most recently, in Ehrmann (2021).

The tolerance band around the point target can be characterised as a communication tool designed to express publicly the fact that, owing to many external factors beyond the central bank's control, inflation cannot be maintained at a fixed point level at all times and in all circumstances. The tolerance band around the target thus indicates the dispersion of inflation around the target which the central bank considers to be an acceptable result of its monetary policy when assessed ex post. The tolerance band does not mean that the central bank targets any level of inflation within this band. In all circumstances, the target for inflation remains the point target that should be achieved over the forecasting horizon.

By contrast, a target range means that any level of inflation inside that range is consistent with the central bank's objective. Compared with a point target, a range theoretically gives the central bank more flexibility to target different levels of inflation in different economic situations. In practice, however, even central banks with an inflation target defined as a range say that they aim to achieve inflation "near the mid-point" (RBNZ)[4] or at the "thick point" (RBA)[5].

Discussions in the literature indicate that targeting an inflation range entails a risk of weaker anchoring of inflation expectations, as a specific inflation figure set in terms of a point target, with or without a tolerance band, constitutes a much

[4] See the RBNZ's latest MPC remit of February 2021, for example on the website of the New Zealand government.
[5] Debelle (2018)

firmer nominal anchor – it is easier to communicate, easier to remember, and forms a more precise benchmark for price and wage formation.[6] However, the anchoring of inflation expectations also depends strongly on the economic context and the central bank's credibility.[7] In some countries with a historical tradition of an inflation range, where, moreover, the central bank has long targeted the approximate midpoint of that range (such as the aforementioned New Zealand and Australia), inflation expectations are successfully anchored at that midpoint.

Table 2: Central banks' inflation targets

	Point	Range	Tolerance band	Note
ECB		<2%		Inflation below, but close to 2% over the medium term
Fed	2%			Seeks to achieve inflation that averages 2% over time (since August 2020)
Bank of England	2%		(±1 pp)*	If inflation moves away from the target by more than 1 pp in either direction, the BoE Governor is obliged to send an open letter to the Chancellor of the Exchequer
Norges Bank	2%			Inflation close to 2% over time
SNB		<2%		CPI rise less than 2%
RBNZ	2%	1–3%		To keep inflation between 1% and 3% on average over the medium term, with a focus on keeping future average inflation near the 2% target midpoint
Bank of Canada	2%	1-3 %		Inflation target: 2%, mean of medium-term target range: 1–3%
Riksbank	2%		1–3%	
MNB	3%		±1 pp	
NBP	2.5%		±1 pp	
CNB	2%		±1 pp	
BoJ	2%			
RBA		2–3%		The inflation target is defined as a medium-term average rather than as a rate (or band of rates) that must be held at all times
Central Bank of Iceland	2.5%		(±1.5 pp)*	Inflation as close as possible to the inflation target; if the deviation is larger than ±1.5 pp, the Central Bank of Iceland must submit an open explanatory report to the government
Bank of Israel		1–3%		

* The BoE and the Central Bank of Iceland formally give a point target only. However, a deviation from the inflation target exceeding a pre-set figure has specific consequences for both banks: the central bank must explain the deviation to the government in an open letter. In both these central banks, the inflation target therefore has the form of a point target with a specific tolerance band.
Source: central banks' websites, IMF AREARR, BIS.

Inflation indices monitored – headline inflation and other measures

Most central banks specify their inflation target as a headline inflation figure expressed in terms of the consumer price index (CPI).[8] The advantage of using headline inflation is that it is generally easy to understand and essentially reflects changes in the price level as perceived by the public. However, its disadvantage is that it is potentially significantly affected by factors that the central bank cannot influence and is subject to fluctuations caused by volatility in prices of a small number of goods and services. (It should be noted, however, that the details of the methodology for determining headline inflation, such as the incorporation of owner-occupied housing, may differ from country to country,)

[6] Apel and Claussen (2017)

[7] Ehrmann (2021)

[8] Among the central banks we monitor, only the Swedish Riksbank targets inflation as an index excluding certain items. This price index assumes a fixed interest rate on mortgages (the CPIF, the CPI with fixed interest rates). The Riksbank started to target inflation measured by this index in 2017, as it believed it was getting increasingly difficult to use the CPI as a guide for setting monetary policy because it is directly affected by changes in interest rates.

All central banks also observe other inflation measures when making monetary policy decisions. These measures of core or underlying inflation provide the central bank with important information about fundamental price pressures. The most frequently used measures are those that exclude items with volatile price movements from the price index, typically energy and food, or effects beyond the central bank's control, such as administered prices.

According to Fay and Hess (2016), core inflation measures are more often mentioned in the regular monetary policy reports of the central banks of small open economies (e.g. Canada, Sweden, Norway and New Zealand). The authors believe this may be because such economies are more exposed to foreign shocks which affect headline inflation.

Table: Inflation indices targeted by central banks

	Targeted index	Selected other measures monitored[9]
ECB	HICP	HICPX (HICP excluding food and energy)
Fed	PCE	Core PCEPI (inflation excluding selected items, trimmed mean, weighted median, model measures)
Bank of England	CPI	Core CPI, Core Services CPI (inflation excluding selected items), DGI (domestically generated inflation)
Norges Bank	CPI	CPI-ATE (CPI excluding tax changes and energy), CPIXE (CPI excluding tax changes and temporary changes in energy prices), trimmed mean 20% (calculated from CPI-AT, i.e. CPI excluding tax changes), weighted median (also calculated from CPI-AT)
SNB	CPI	inflation excluding selected items, trimmed mean
RBNZ	CPI	model measures, trimmed mean, weighted median
Bank of Canada	CPI	CPI-common (common factor) identifying common price changes in individual consumer basket items, CPI-median (weighted median) and CPI-trim (trimmed mean), CPIX until 2016 (CPI excluding eight of the most volatile items and indirect taxes)
Riksbank	CPIF	CPIF excluding energy and food prices, Trim85, Trim1, UND24, KPIFPV, KPIFPC
MNB	CPI	(not known)
NBP	CPI	(not known)
CNB	CPI	MP inflation (excluding first-round effects of changes to indirect taxes), CPIH (experimental consumer price incorporating prices of older properties), median inflation, trimmed-mean
BoJ	CPI	CPI excluding fresh food, trimmed mean
RBA	CPI	inflation excluding selected items, trimmed mean, weighted median
Central Bank of Iceland	CPI	(not known)
Bank of Israel	CPI	(not known)

Note: All the central banks under review monitor annual inflation.
Source: central banks' websites, Wadsworth (2017), Fay and Hess (2016).

The IT regimes described in this article are those as of June 2021. Changes can be expected in some central banks in the foreseeable future. A review of the ECB's monetary policy should be completed this year, and the regular five-year review of the Bank of Canada's monetary policy should also produce some conclusions. Monetary policy reviews (or ongoing assessments of the functioning of monetary policy) are generally a common feature of inflation-targeting central banks. Effective and open communication by these banks, which helps anchor inflation expectations and fosters proper monetary policy transmission, simultaneously means that banks need to check constantly whether their monetary policy is in line with the economic situation around them and to explore how to improve it further.

[9] The trimmed mean is a measure of core inflation which excludes those consumer basket items which show the largest price changes in either direction in the given month. The weighted median is the price change corresponding to a particular percentile in the weighted distribution of the price changes of the individual items in the given month, where the weights are those in the consumer basket.

Conclusion

Inflation targeting, which was first introduced by New Zealand's RBNZ in 1989, is the most widely used monetary policy regime today, applied by advanced central banks. Although the formal IT design differs from country to country, depending mainly on their historical experience, its practical implementation is similar in most central banks. However, central banks and economic experts are still debating the best possible configuration of the individual parameters of IT. This article has described the various approaches to setting one of these parameters – the inflation target.

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IV. SELECTED SPEECH: Ida Wolden Bache: FinTech, BigTech and Cryptos – will new technology render banks obsolete?

Ida Wolden Bache, Deputy Governor of the Norges Bank (NB), in her May speech addressed the question of whether we are headed towards a financial system that is fundamentally different from the current one, and whether tech giants and cryptocurrencies will outcompete banks and national currencies soon.

No state can endure without a well functioning monetary system. In the current one, cash is declining and the currency is predominantly a number on a screen. Tomorrow's financial system thus may not be made up of banks, central banks and national currencies. Although Deputy Governor Bache does not expect banks and the Norwegian krone to become obsolete anytime soon, she expects the financial system to change, as new technology is paving the way not only for improved financial services, but also for increasing competition among their providers. In addition, in a digital world, location and national borders become less important.

The banking system in Norway is at the forefront of technology. Even though Norwegian banks are well prepared for competition in financial services, they are not sheltered, nor should they be. Combined with digitalisation, competition engenders cheaper and more accessible services. However, it can also disrupt the key role of banks in the financial system.

One of the main roles of banks is to provide loans. They can lend money they did not accept as deposits, thereby creating new money. No other financial firm can do that. Another main activity of banks is payment services, enabled by infrastructure provided by the central bank. When providing financial services, banks are subject to regulation and control by state authorities, which is stricter than in most other sectors. With the right to create money comes obligations.

Still, many of the services banks offer can be provided by others. The competition comes from both specialised FinTech companies and global tech giants (BigTech), especially in the field of payment services. There is increased competition not only for the way we pay, but also for the means of payment. An example is e-money (such as PayPal), which forms a closed system linked to the official currency. However, these new means of payment may make banks' deposit funding less stable. Small deposits will end up in accounts held by the e-money platforms, which will become banks' major depositors. Such large depositors may behave differently from numerous small depositors in the aggregate.

Non-bank service providers cannot create money, so their financing costs may be somewhat higher than for banks. New technology companies solve this problem by obtaining a banking licence, by collaborating with existing banks, or by establishing their own banks. They can thus take market shares from established banks and change the financial market.

According to Ms Bache, a more radical scenario is that cryptocurrencies not pegged to the official currency gain a larger role in the monetary system. Still, the Norwegian krone cannot be eradicated as long as the government uses it for paying salaries and benefits and accepts it as payment for taxes. However, the government could use the krone while the private sector could prefer some cryptocurrency, although in doing so it would incur an exchange rate risk. So, credibility and user friendliness are not enough for cryptocurrencies to gain ground; it is crucial for them to be stable. Cryptocurrencies may be attractive for some types of transactions, but they are unlikely to change the financial system soon.

If the currency was replaced by a cryptocurrency whose quantity increases through "mining", credit may become more expensive, as no credit institution would be able to create money and assume liquidity risk. If banks were replaced with new institutions offering long-term loans on the basis of short-term cryptocurrency resources, they would be left standing without the backing of a central bank. It also raises questions about licensing and regulation, especially if the system operates independently of national borders. This poses a risk of increased instability.

The central bank plays a key role in the current Norwegian financial system. It is responsible for price stability, financial stability and an efficient and secure payment system. Its role as the bankers' bank gives it a channel to implement monetary policy. The Norges Bank closely monitors developments in the banking industry and the financial system and wants to be a driver behind changes that enhance its efficiency and safety. A key issue is whether the NB should launch a central bank digital currency (CBDC). If the NB introduces one at some point in the future, the purpose will be to safeguard confidence in the financial system and to promote its efficiency and security. The NB is also aware that CBDC could cause disruption, as it will compete with today's deposit money. So, a basic premise is that a CBDC must not jeopardise other operators' ability to provide credit. The purpose must be payment, not store of value.

The extent to which new solutions are adopted depends not only on their features, but also on their alternatives. In Norway, banks have made great headway in digitalisation. Ms Bache does not believe we are facing a fundamental transformation of the financial system in the near future. Monetary policy will still have a channel into the wider economy. But the central bank cannot sit still. The NB will continue to strive to make the Norwegian krone an attractive and safe alternative.

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