CNB CZECH NATIONAL BANK

TWENTY YEARS OF INFLATION TARGETING 1998–2018

The start of 2018 marked the twentieth anniversary of inflation targeting in the Czech Republic. This monetary policy regime has changed considerably over time. Forecasting tools have improved, as has the way the Bank Board applies them in its deliberations. The Czech National Bank has also become more open in its communications. The biggest challenge to inflation targeting was the global financial and economic crisis, which hit the Czech economy hard and ultimately led to the introduction of an exchange rate commitment. This publication reviews the Czech National Bank's monetary policy over the last 20 years and its effect on the domestic economy.

The early years of inflation targeting (1998–2005)

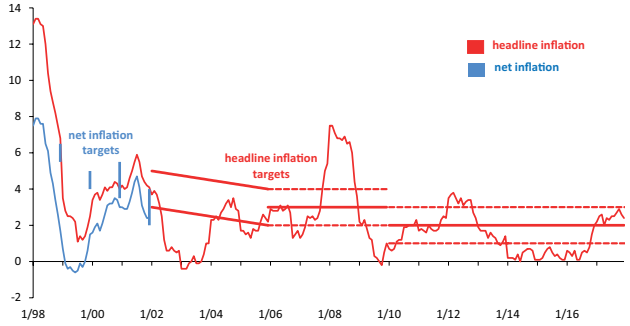
The Czech National Bank (CNB) opted for inflation targeting as its monetary policy regime after it had been forced to abandon the fixed exchange rate in May 1997 and money targeting – the system it had been using up to then – had proved incapable of anchoring inflation expectations, which had been badly shaken by currency turbulence. At the time, inflation targeting was being applied by just a few advanced central banks, and even they had not been using it very long. The Czech Republic was the first transition economy to adopt this regime with a view to reducing inflation and stabilising it at the low levels usual in advanced countries.

The new monetary policy framework gave the economy a nominal anchor in the form of a clearly set target for inflation – or, more precisely, for the pace of disinflation – and thus helped anchor inflation expectations. Inflation targeting is characterised by forward-looking monetary policy decisions. This means that setting of monetary policy instruments is derived from a forecast of the future path of inflation. The fact that the macroeconomic forecast is built on a solid and internally consistent framework greatly increases the credibility, transparency and predictability of monetary policy.

The CNB's first inflation targets were set in terms of net inflation, defined as headline consumer inflation excluding administrative effects, i.e. administered prices and the first-round effects of changes to indirect taxes. Net inflation was targeted mainly because of uncertainty about the rate and scale of price deregulation and changes to indirect taxes, i.e. items not affected by monetary policy. Net inflation covered the prices of more than 80% of the consumer basket and was thus considered to be sufficiently representative at the time. The CNB aimed to hit the targets within a set range in the last month of the year.

The format of inflation targeting changed significantly at the start of 2002, when net inflation targets were replaced by targets for headline consumer inflation. Since headline inflation is easier for the public to understand, headline inflation targets have greater potential to anchor inflation expectations. Another change was that the inflation targets were set as a gradually declining band. The very moderate slope of this band (from 3%–5% in 2002 to 2%–4% in 2005) indicated a preference for only gradual disinflation.

Figure 1: Inflation targets and their fulfilment



Right from the outset, the CNB treated inflation targeting as "flexible". This means that in certain circumstances the inflation target may temporarily not be fulfilled. This may be due to selected economic shocks, as attempting to return inflation to the target too quickly would result in undesirable volatility in GDP and employment. Such situations were covered by pre-announced exemptions, or escape clauses. If an economic shock subject to an escape clause deflected inflation from the target, the CNB did not respond to its first-round effects and tolerated a temporary deviation of the forecast and, subsequently, future inflation from the target. Theoretically, a whole range of shocks create room for applying such escape clauses. Over the last 20 years, however, the CNB has applied them mostly in connection with changes to indirect taxes and in some cases also in connection with sharp swings in global oil prices.

As regards the forecasts for inflation and other economic variables, in the initial years of inflation targeting the CNB – like

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most central banks at the time – applied a forecasting framework that assumed constant interest rates. Rather than indicating the most likely future path of inflation, these "conditional" forecasts described the hypothetical situation that would arise if interest rates and the exchange rate stayed unchanged throughout the forecast period. In the event of a forecasted deviation of inflation from the target, the forecast thus signalled the direction but not the desired magnitude of the necessary change in interest rates. Another weakness of the forecasting system was that it lacked a well-defined medium-term deliberation framework (linking up all key variables, giving a good idea of their equilibrium values, providing a clearly identified monetary policy transmission mechanism and containing an active role of the central bank), as the forecasts were based on analyses of the available – and at the time very short – time series combined with expert judgement.

The CNB eliminated this shortcoming in summer 2002, when it started to use a more sophisticated and internally consistent macroeconomic model called the Quarterly Projection Model (QPM). The QPM abandoned the assumption of constant interest rates and a constant exchange rate and forecasted the future paths of these key variables together with the other variables. The forward-lookingness of the model, together with an assumption of the central bank playing an active role, meant that the inflation forecast was usually close to the inflation target in the medium term. The interest rate rule contained in the model provided a forecast-consistent future interest rate path intended to ensure fulfilment of the inflation target at the monetary policy horizon (the future time period – 12–18 months ahead – in which current monetary policy measures will have the strongest effect and on which policymakers therefore focus when setting interest rates). This modelling framework indicated not only the desirable direction, but also the magnitude, of interest rate changes. Simultaneously with the switch to this new structural model, the Bank Board became more involved in the forecasting process by holding discussions with economic experts at the Czech National Bank on the initial conditions, assumptions, message and risks of the forecast.

Open communication by the central bank plays a crucial role in inflation targeting, so the CNB has worked hard to raise its game in this area and has become gradually more open over time. In addition to the publications issued ever since inflation targeting was introduced (the Inflation Report, which contains the CNB's current forecast, and minutes of Bank Board meetings, which summarise the main monetary policy arguments and deliberations of the board members), in mid-2000 it started disclosing in the minutes the ratio of the board members' votes on interest rates. Press conferences have been held after each Bank Board meeting since 2002 and regular seminars with economic analysts from the private sector have taken place since late 2004.

The switch to inflation targeting was also reflected in the legislation setting forth the CNB's mandate. In 2002, price stability replaced stability of the Czech currency as the bank's primary objective. In pursuing this objective, the CNB – like most inflation-targeting central banks with the same mandate – focuses on stability of consumer prices. In line with theoretical findings and with the practice in advanced countries, price stability means moderate and stable growth in prices, not constant prices. Since 2001, the law has also provided that the CNB shall, without prejudice to its primary objective, support the general economic policies of the Government leading to sustainable economic growth.

The inflation targets were mostly "undershot" in the first years of the new regime (see Figure 1). This was due to a combination of unexpected external anti-inflationary shocks (low prices of food, oil and other commodities, unexpectedly rapid appreciation of the koruna, smaller-than-expected changes in indirect taxes and price deregulation) and imperfections in the forecasting system. Most of the forecasts were higher than the actual outcomes. The Bank Board's slightly anti-inflationary assessments of the forecast risks and its corresponding interest rate decisions were not sufficient to fully offset the deviation of actual inflation from the forecasts. As a result, inflation tended to be below the CNB's inflation targets. The undershooting of the inflation targets was particularly pronounced in 1999 and 2003, when the koruna appreciated unexpectedly and sharply against the euro in several waves. The koruna strengthened by more than 20% overall in this period, despite occasional interventions by the CNB. This appreciation was due in part to privatisation-related inflows of foreign capital. Detailed reasons for any non-fulfilment of the inflation target or previous inflation forecasts have been publicly communicated in the quarterly Inflation Report since July 2003.

Advanced inflation targeting (2006–2013)

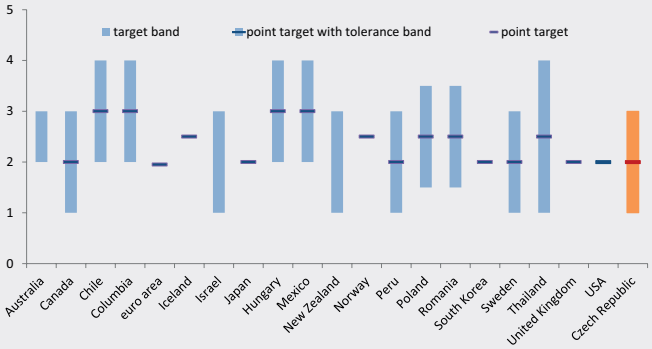
The contribution of administrative factors to inflation diminished as prices were deregulated and the tax system converged towards the norm in advanced countries. Inflation stabilised and no further disinflation was necessary. In 2006, therefore, the CNB started to target stable inflation in the form of 3% annual consumer price inflation. The advantage of a point target over a target band is that it provides a better anchor of inflation expectations for all economic agents. The central bank uses its instruments to steer future inflation close to the target at the monetary policy horizon (unless the situation necessitates the application of a temporary escape clause). For economic agents, a point inflation target is thus a good estimate of inflation in the medium term.

This does not mean, however, that inflation is very close to the target for most of the time. Frequent unexpected events cause inflation to deviate to a greater or lesser extent from the point target. Although monetary policy responds to these shocks and tries to hit the point inflation target in the future, it is not capable of returning inflation to the target immediately. In addition to the new point target, the CNB therefore defined a tolerance band of one percentage point in either direction to reflect this uncertainty in hitting the inflation target.

The point inflation target was lowered to 2% in 2010, again with a tolerance band of ±1 percentage point. This brought the CNB's inflation target into line with the usual level in advanced countries (see the box).

The forecasting system was further enhanced as the target was lowered. In 2008, the CNB became one of the first central banks to introduce a "core", dynamic stochastic general equilibrium model into regular forecasting practice. CNB economists' expertise, which plays an important role in the preparation of the CNB's forecasts, also improved. The forecast preparation process, including the discussions with the Bank Board about the assumptions, message and risks of the forecast, became standardised over time. This strengthened the key role played by the forecasting process in supporting the Bank Board's monetary policy decision-making.

Box: Inflation targets in advanced countries



Most advanced countries interpret price stability as moderate and stable price growth. Inflation targets vary between 2% and 3%. Some central banks set their target purely as a point value, some have a band around this value, and others have a band only.

The openness of the CNB's monetary policy also increased further. The CNB started to publish audio recordings on its website about an hour after each press conference in May 2007 and video recordings of the press conference in December 2009. The CNB has been publishing the votes cast by the Bank Board members and fan charts of the forecast-consistent interest rate path since 2008. The CNB also started to publish the forecasted path of the koruna-euro exchange rate in 2009. These changes made the CNB one of the most open inflation-targeting central banks and further enhanced the credibility, transparency and predictability of its monetary policy.

Figure 2: Bank Board meeting

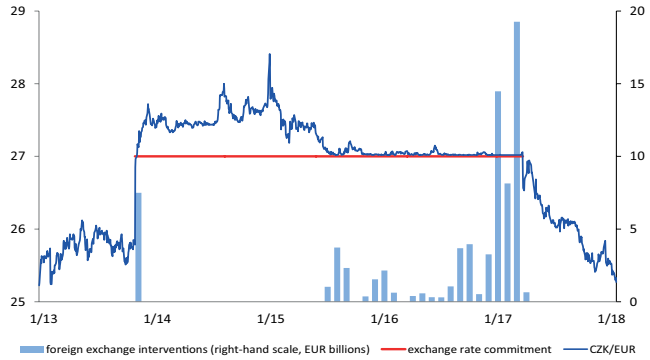
Inflation remained very volatile in 2006–2013. This was due to both domestic and external factors. These included the impacts of the global financial and economic crisis from 2008 onwards and the consequent euro area debt crisis from 2010 onwards. Despite this, the CNB was not forced to intervene in the foreign exchange market, as the movements of the koruna's exchange rate tended to have a stabilising effect on inflation. The significant short-term overshooting of the inflation target in 2008 was exacerbated by substantial price deregulation, a rise in indirect taxes and high growth in food prices in an environment of a slightly overheating economy and labour market. On average, however, inflation was close to the target in this period. The CNB was one of the first banks in the world to respond to the deep recession caused by the global financial and economic crisis, starting to lower interest rates as early as summer 2008. Owing to a renewed lengthy recession, rates started to near the zero lower bound in 2012.

The use of the exchange rate as an additional monetary policy instrument (2013–2017)

The limited room to ease monetary policy further ran out in early November 2012, when the CNB Bank Board lowered its policy rate to 0.05%, or "technical zero". At the same time, the CNB pledged to leave interest rates at this level for as long as needed. Unable to loosen monetary policy further by means of interest rates, the CNB started to communicate in autumn 2012 that it was ready to use additional instruments should further easing become necessary. After careful consideration, it opted for the exchange rate, which it had previously communicated its preparedness to use. For the Czech Republic, which is a small open economy, the exchange rate is a more suitable additional instrument for easing monetary policy than, say, government bond purchases.

The autumn 2013 forecast was signalling that the recession and the labour market downturn were subsiding only very slowly and their anti-inflationary effects, coupled with falling prices of commodities and energy, were leading to a further decrease in inflation to negative levels. According to analyses, monetary policy inaction would lead to appreciation of the koruna. Firms and households would further postpone consumption and investment, and so the incipient recovery would slow or halt completely. The Czech economy might get into a vicious circle known as a deflation-recession spiral, which would be very hard to break. According to the forecast, monetary policy needed to be eased significantly to avert this risk. In November 2013, the CNB decided to use the exchange rate as an additional instrument for easing monetary policy as necessary and made a commitment to keep the exchange rate of the koruna close to CZK 27 to the euro.

Figure 3: The CNB's exchange rate commitment



After the exchange rate commitment was announced, the koruna weakened above the floor with the aid of foreign exchange interventions by the CNB (see Figure 3). The CNB clearly declared that it stood ready to intervene without any time or volume limits. Owing to this, the exchange rate commitment quickly earned high credibility. Until the summer of 2015, the koruna was above the floor of CZK 27 to the euro without the need for CNB interventions. In summer 2015, however, quantitative easing by the ECB and continued favourable developments in the domestic economy pushed the koruna to the commitment level. From July 2015 onwards, when needed, the CNB therefore intervened to avoid appreciation below the floor.

The weakened exchange rate contributed significantly to the economic recovery that occurred in 2014. Besides easy monetary policy, the turnaround in the domestic economy was fostered by a recovery in external demand and the discontinuation of restrictive domestic fiscal policy. Household consumption and investment

started to rise, the unemployment rate went down and the economic sentiment of consumers and businesses improved. The renewed economic growth and the improvement in the labour market led to a rise in core inflation to more than 1% as from late 2014. Core inflation had last reached this level before the global financial and economic crisis. However, headline inflation remained close to zero almost until the end of 2016 due to escalating deflationary tendencies in the euro area and falling world prices of oil and other commodities. Nevertheless, the CNB looked past the first-round anti-inflationary effects of the favourable supply-side shock linked with the drop in world oil prices, and the exchange rate commitment was thus not moved to a weaker level. However, its minimum duration had to be prolonged several times beyond the originally expected beginning of 2015.

In late 2016, inflation rose quickly towards the 2% inflation target as the anti-inflationary effect of import prices faded out and the price pressures caused by robust domestic economic growth continued to mount. Annual consumer price inflation continued to rise in the first few months of 2017, exceeding the CNB's target of 2%. In these conditions, it was no longer necessary to maintain significantly expansionary monetary conditions. This allowed the CNB to discontinue the commitment at the start of April 2017. On exiting the commitment, the Bank Board stated that the conditions for sustainable fulfilment of the 2% inflation target in the future had been met. This step ended a period of more than three years during which the CNB had for the first time in its history used unconventional instruments amid zero interest rates to fulfil its statutory mandate. Overall, the CNB purchased almost EUR 76 billion into its foreign exchange reserves while the exchange rate commitment was in place.

The successful course of, and exit from, the exchange rate commitment was aided by the CNB's open communication of why it had adopted the exchange rate commitment, how long it would last and what the conditions for ending it were. The CNB Bank Board publicly disclosed both the minimum duration of the commitment and the probable timing of the exit. In response to the initial critical reaction from the media, the CNB stepped up its transparency and communication in explaining monetary policy, targeting the general public as well as its traditional professional audience. Specifically, during the existence of the exchange rate commitment the CNB introduced Bank Board statements presented by the Governor at the press conference after each monetary policy meeting. It also started to publish the summary of the Inflation Report sooner after monetary policy meetings and brought forward its meeting with financial market analysts. In addition, the CNB launched a blog (and later also a vlog), where posts by Bank Board members and CNB experts are published.

The financial crisis showed that successful monetary policy is no guarantee of simultaneous fulfilment of another central bank mandate – maintaining financial stability. The CNB therefore joined the club of central banks which started to actively pursue macroprudential policy in reaction to the financial crisis and which intensively discuss the complex ties between monetary and macroprudential policy and take them into account in their deliberations.

The return to conventional monetary policy (2017 and beyond)

The exit from the exchange rate commitment was the first step towards returning the overall monetary conditions to normal. This was followed by the lifting of interest rates from their zero lower bound. This happened in August 2017, when the Bank Board increased the key policy rate to 0.25%. Rates were raised further in November 2017 and February 2018. The CNB was the first EU central bank to increase interest rates in this phase of the business cycle. This occurred in an environment of buoyant economic growth, manifesting itself in rising tightness in the labour market and related fast wage growth. Inflation remained in the upper half of the tolerance band around the 2% inflation target. External developments also indicated growing optimism. Making monetary conditions less accommodative was thus a necessary condition for hitting the inflation target in the future and also represented a welcome return to normal, non-zero interest rate levels.

As regards the exchange rate, the exit from the exchange rate commitment went smoothly, despite widespread – though not shared by the CNB – expectations that the koruna would appreciate sharply. The exchange rate strengthened only relatively modestly and gradually from April 2017 to early 2018. No interventions by the CNB were necessary. This was probably due in part to the large amount of capital that flowed into the Czech economy before the exit in search of exchange rate profits. The closing of koruna positions by these financial investors after the exit – coupled with exchange rate hedging by domestic exporters before the exit – stopped the koruna appreciating more strongly.

The achievements of inflation targeting

The CNB's experience with inflation targeting is to some extent unique. The Czech Republic was the first Central and Eastern European country to adopt inflation targeting in a transition economy with a view to reducing inflation from high levels and then stabilising it.

The successful conduct of monetary policy under inflation targeting brought inflation down from high values to the level usual in advanced countries. Subsequently, this regime was able to cope with the very real threat of harmful deflation during a lengthy domestic recession thanks to the use of the exchange rate as an additional monetary policy instrument.

Over the years, the CNB has developed and improved its forecasting system, refined its decision-making mechanisms and increased the openness of its monetary policy communication. It is now one of the most advanced and transparent central banks in the world and sets an example to other central banks in this regard.

The Czech National Bank is convinced that its monetary policy – focused on fulfilling its main statutory mandate of achieving and maintaining price stability – has fostered stability of the Czech economy and growth in the living standards of the Czech citizens over the last 20 years.