

Governor's Lecture at MIT: Forever Hawkish

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Guest Lecture at MIT Sloan, Cambridge, MA, USA

By invitation of Professor Athanasios Orphanides

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Czech case study 2022–2025: Taming inflation from 18% to 2%

[2026: AI-Based Forecasting of Czech Inflation: Quantile Regression Forests with Dynamic Weights](#)

Main Messages:

(1) Czech National Bank was too dovish in the years before Covid, effectively supporting inflation. Years of ultra-low nominal interest rates and negative real rates, combined with government budget deficits and a cost shock, resulted in the highest inflation in roughly 30 years.

(2) All of this now needs to be offset by a hawkish monetary policy. It is necessary to keep interest rates higher for longer and deliver positive real rates to encourage saving. In other words, forever hawkish.

(3) Czech National Bank must incorporate AI, machine learning, high-frequency indicators, and big data analytics into its toolkit. In our case, the previous generation of DSGE models has proven insufficient. We contribute to this effort with [a new paper \(Blaha, Botka, Michl, Švédá, 2026\)](#). The method is based on quantile regression forests. It not only produces the most probable trajectory of inflation, but also quantifies the risks of a renewed acceleration in inflation.

Story:

I became Governor of the Czech National Bank in July 2022. At that time, inflation stood at 17.5%. Two months later, it peaked at 18%. This was the highest inflation rate in the history of the Czech Republic, with the exception of the price liberalization after the Velvet Revolution in the early 1990s.

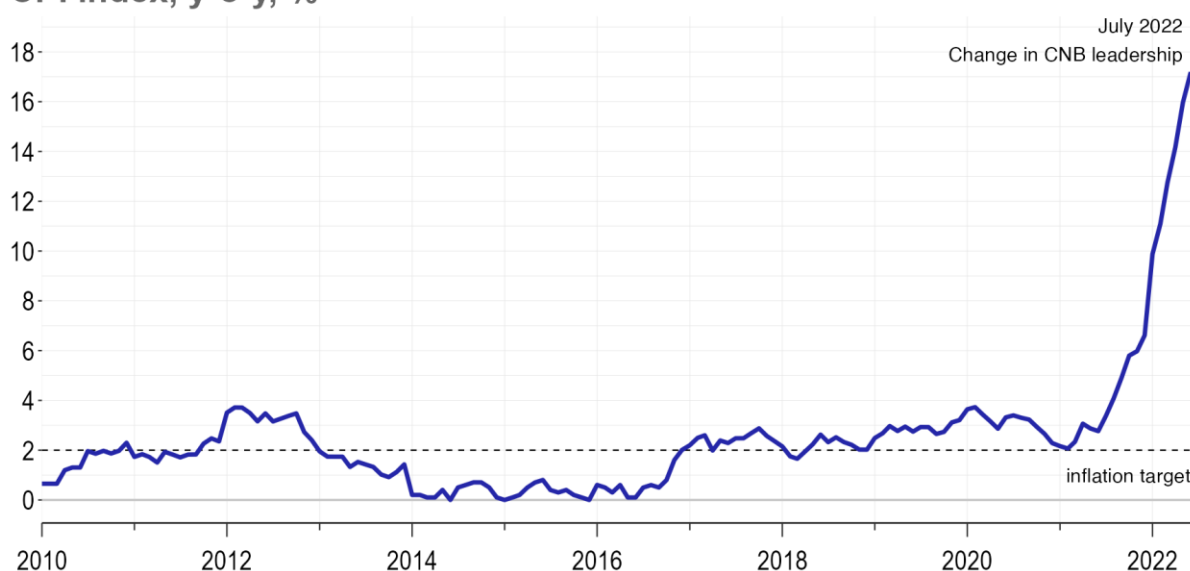
In February 2024, the annual inflation rate reached 2% – precisely our target. We were one of the first central banks in Europe to achieve the target.

Since then, inflation has been close to the target, averaging 2.4% in 2024 and 2.5% in 2025.

Chart 1 shows data from the Czech Republic, starting in 2010 and ending when I became Governor.

Chart 1: Inflation in the Czech Republic

CPI index, y-o-y, %



Source: Czech Statistical Office

When I was appointed, the CNB's key interest rate stood at 7% – a very high level. In the ten years before the Covid pandemic, the average interest rate had been just 0.6%. When inflation started to accelerate in the Czech Republic, the CNB switched from extremely low to very high interest rates. Yet even with a key rate of 7%, it was not able to bring inflation down quickly.

The Bank Board in our country consists of seven members, including the Governor. The Board was almost completely replaced by the President within a short period of time because the terms of office of the previous members had expired (denoted as “change in CNB leadership” in the chart). We formed a new team. In my very first speech when I was appointed, I promised the public that we would bring inflation down from 18% to the inflation target of 2% within two years (Michl, 2022a).

How we thought about inflation in mid and late 2022:

We made two key assumptions about the causes of inflation:

(1) First, we assumed that most of the inflation was driven by the rising cost of imported energy and goods. In a small open economy like ours, higher interest rates can neither lower European energy prices nor resolve problems in global supply chains (Dědek and Michl, 2021). According to our DSGE model, we should have raised interest rates from 7% to 8%, 9%, 10% or even higher to lower inflation expectations and inflation. But we assumed the DSGE projections could be wrong. For example, they didn't take into account that companies had started to borrow in euros instead of korunas due to the wide interest rate differential. This weakened our transmission mechanism.

We introduced our new strategy:

- i) Interest rates would remain at 7% until we were confident that inflation was on track to return to our target.
- ii) Our guidance was that we wanted to keep interest rates higher for longer.
- iii) And we started to fight inflation by stressing the need for a strong exchange rate. This would quickly make all imports, especially commodities, cheaper. I presented the strategy in November 2022 in the “Policy for a Strong Koruna” speech (Michl, 2022b).

Initially, several local economists publicly claimed that our approach was wrong. At the same time, our DSGE model was indicating that the Czech koruna would only appreciate if we continued to raise interest rates. We went against the mainstream opinion.

Despite the claims of our opponents, we earned the trust of investors. The koruna started to appreciate against the euro. Within a few months, in spring 2023, it reached its strongest level in history. This appreciation was driven by the market; we were not active on the foreign exchange market.

Chart 2: Czech koruna exchange rate until spring 2023
CZK / EUR exchange rate



Source: CNB ARAD

An interest rate of 7% and the strongest koruna in history together resulted in the tightest monetary conditions in 20 years. That was when monetary policy had its full effect.

I delivered three additional major public speeches in 2023. I called them “The Road to the Target I, II and III” to show that we had a plan to lower inflation (Michl, 2023a, 2023b, 2023c). I explained how the plan would work. I gave several television interviews and wrote articles explaining our policy. For example, I gave interviews to both Bloomberg and the

largest Czech tabloid to explain our approach. We wanted to reach both market participants and the general public – that’s why we used all channels. By “all channels” I mean that we also used Instagram, Facebook, and X. My fellow Board members were also actively involved in communicating with the public.

Over time, the data began to confirm that the strong exchange rate had helped lower inflation. We calculated inflation momentum indicators to capture the current trend in prices. These dynamics were not influenced by prices from a year ago (base effects). We defined them as the three-month moving average of monthly changes in the price index. We communicated that while year-on-year inflation remained high, the underlying momentum was already slowing. Our policy was beginning to take effect.

Then the extremely high global prices of commodities and goods began to ease. That was crucial to our “Road to the Target.” I made a video comparing the situation to a ketchup bottle and shared it on the social network X. That’s not typical of a conservative banker, but neither was the overall economic situation. The video explained the bottleneck effect: During the Covid lockdown, part of production was stopped. After the end of the lockdown, demand jumped, but the goods were not yet ready. It was like turning over a new ketchup bottle and waiting for something to come out – only to have it stuck. This shortage of goods led to rising prices. When the problems in the supply chain were solved and demand normalized, there was a surplus of goods. Similar to when the ketchup finally flows out of the bottle, but much more than you wanted. We then observed an easing of the bottlenecks and disinflation in tradable goods.

To keep an eye on the risk of demand-driven inflation, we tracked the development of demand in the economy practically in real time by creating an index of high-frequency indicators. My colleagues and I wrote a working paper on its construction and performance (Adam et al., 2021). The index – called Rushin – aggregated high-frequency data such as electricity consumption, toll revenue collected on motorways, and Google searches for unemployment benefits. Based on this measure, we concluded that demand in the economy remained subdued throughout 2023.

We also stressed how important it was to avoid a wage-price spiral so that cost inflation did not turn into demand inflation. Our aim was to lower inflation expectations. I warned against a wage-price spiral in every speech, in every conversation. And we mentioned it in every statement after the monetary policy meetings. I called for wage restraint everywhere, and in order to gain the public’s trust, we had to show that the CNB itself was operating properly and responsibly.

The salaries of the Board members and all Board–1 managers were frozen in 2023. The salaries of other employees increased by an average of 4.5%, although the inflation rate for the year as a whole was 10.7%. Overall, we focused on the bank’s income statement and started with operations, as it could be tackled immediately. In 2023, we reduced the number of Board–1 managers from seventeen to fourteen and achieved cost savings in all departments. The number of jobs at the CNB fell by 5.1% in 2023, representing the first major job cuts at the central bank in ten years.

Table 1 – Cost cutting at the CNB 2022–2025

	2022	2023	2024	2025	Change compared to 2022
Number of positions	1,516	1,439	1,439	1,439	-5.1%
Number of Board–1 executives	17	14	14	14	-17.6%

Source: CNB

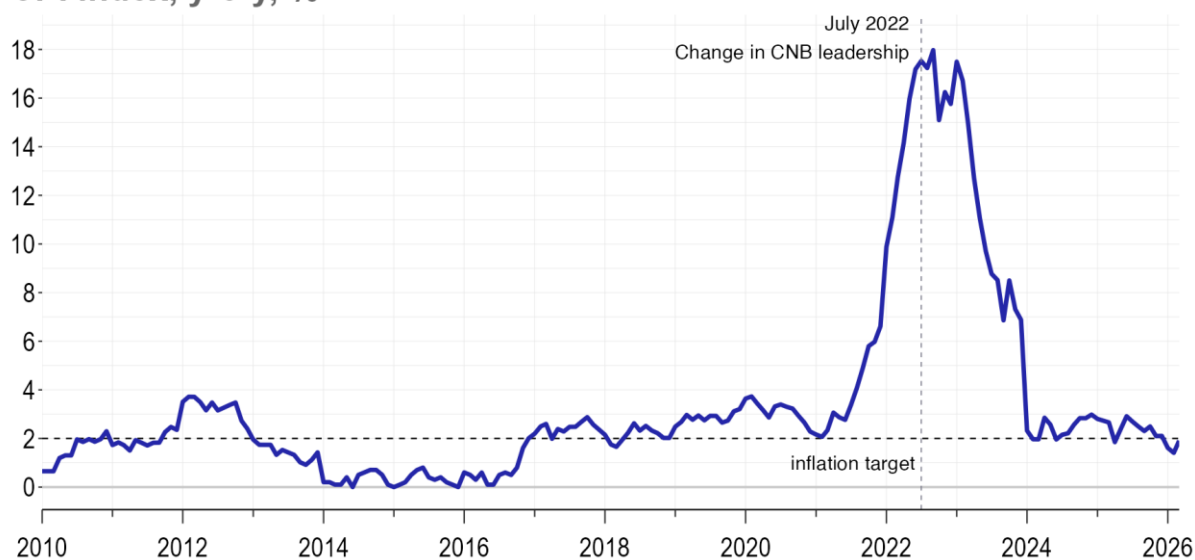
Table 2 – Wage restraint at the CNB during the high-inflation period in 2023 (year-on-year change)

Inflation	10.7%
Wage growth of Board members	0%
Wage growth of Board–1 level executives	0%
Average wage growth	4.5%

Source: CNB

In the end, our efforts paid off: inflation expectations began to fall towards our target. And inflation started to decline even in year-on-year terms. By the end of 2023, we were able to lower interest rates slightly because we were confident that inflation was heading towards our target in 2024.

Chart 3: Inflation in the Czech Republic
CPI index, y-o-y, %



Source: Czech Statistical Office

Chart 3 illustrates the outcome: inflation was back near the target in January 2024. When the low inflation was announced, I made a public statement on our website and sent a letter to CNB staff telling them that they should be proud of working together for the good of the country. However, I pointed out that there would be no celebrations or press conferences because we would be judged by our long-term results, not short-term ones.

Over time, it became clear that most of the inflation was actually imported or due to external cost pressures. Our DSGE model did not predict this situation. A working paper written by staff at the Bank for International Settlements (Auer et al., 2024) analyzed inflation in 56 countries between 2000 and 2023. They found that 85% of inflation fluctuations in the Czech Republic were due to global factors. This was because we are a small open economy, closely integrated into global value chains and strongly linked to the German economy. This confirmed the first of the two key assumptions we had made early on about the causes of inflation.

(2) The second assumption was that another part of the inflation had been caused by too much money in the economy and by high government deficits. This type of inflation was more difficult to fight. All countries were facing rising costs, especially energy prices. However, the Czech Republic had the highest inflation in the European Union at the time, even adjusted for this cost shock. From November 2021 to October 2022, we had the highest core inflation in the EU, which suggested that some monetary mistakes had been made in our country in the past.

Since 2017, headline inflation had remained above the target most of the time. The CNB's key policy rate had been below inflation for more than ten years. In other words, real interest rates had been negative for more than ten years (Table 3). This was not a forward-looking anti-inflationary policy. In effect, it was a forward-looking inflationary policy.

Table 3: Real interest rates before the Great Inflation

Period	Real ex ante interest rate (%)
2009–2019	-1.4
2000–2019	-0.8

Note: Real rate = repo rate – inflation expectations of financial markets (1-year horizon), %.

Source: CNB ARAD

A specific problem in the Czech Republic was the central bank's exchange rate depreciation policy. Between 2013 and 2017, the CNB had intentionally depreciated the Czech koruna to trigger inflation. This appears paradoxical in retrospect. In late 2016 and early 2017, speculation on the koruna had forced the central bank to buy euros and massively sell koruna. This led to excessive growth in the banking sector's money supply in korunas. Free liquidity in the banking sector doubled during this short period (Table 4).

Table 4: Excess liquidity in the banking sector

	IX/2016	XII/2016	I/2017	II/2017	III/2017	IV/2017
Excess liquidity (CZK billion)	1,196	1,331	1,591	1,854	2,138	2,395
Increase compared to September 2016 (%)		11.3	33.1	55.1	78.8	100.3

Note: Excess liquidity is defined as the total volume of liquidity absorbed through repo operations and other overnight sterilization instruments. The percentage increase is calculated relative to the baseline level in September 2016.

Source: CNB ARAD

Such an increase in base money or liquidity, together with the central bank's zero interest rate, had no immediate impact on the consumer basket used to calculate the CPI. Instead, the increased money supply and the rising wealth of the middle and upper classes mainly drove up asset prices such as property, company valuations, and other investments. For example, property prices in the Czech Republic rose by 110% between 2016 and 2022, the second largest increase in the EU (after Hungary). Inflation was underestimated by the CPI measurement. Interest rates should have been higher than inflation at that time.

Reducing the government budget deficit also played an important role. Milton Friedman (Friedman and Schwartz, 1963) stated that a restrictive monetary policy does not require the support of fiscal policy. But this claim was formulated for a situation with limited bank liquidity. Our situation was different – we were operating in an environment of excess liquidity. It was easy for banks to finance government debt. It was easy for governments to issue new bonds. This could easily have led to further inflation.

That was why I stated at the press conferences after all our monetary policy meetings that reducing government deficits was another important precondition for reducing inflation in the long term (see also Cochrane, 2023, for example). As a board, we also communicated that if budget deficits remained high, we would need to maintain higher interest rates to keep inflation at 2%.

Lessons and current strategy

That was the story and development of the second assumption we made at the beginning about the causes of inflation. This type of demand- or money-induced inflation proved to be more persistent.

(1) The Czech National Bank was too dovish in the years before Covid, effectively supporting inflation. Years of ultra-low nominal interest rates and negative real rates, combined with government budget deficits and a cost shock, resulted in the highest inflation in roughly 30 years. In our case, it had been a mistake to keep real interest rates negative for so long and to believe that when inflation arrived, it could be quickly reversed by raising rates. More focused, less interventionist Czech National Bank would likely deliver better outcomes.

The key lesson from history is that the CNB overreacted to moderate shortfalls from inflation targets, driven by an exaggerated fear of deflation – the so-called “deflation bogeyman.” This mindset can lead to policies, like the CNB’s 2013–2017 exchange rate depreciation, that fuel asset price inflation and excess liquidity. Such interventions may reduce the room for future policy maneuver – a risk we clearly experienced when real interest rates in the Czech Republic remained negative for more than a decade. Monetary policy should not be relied upon as the only engine of growth. It is innovation and productivity that fuel growth, not negative real interest rates. More focused, less interventionist Czech National Bank is better equipped to deliver long-term price and financial stability.

(2) All of this now needs to be offset by a hawkish monetary policy. It is necessary to keep interest rates higher for longer and deliver positive real rates to encourage saving. For central banks, less is more. We therefore communicated as a part of our strategy that we expected interest rates to remain higher than we had been used to over the last decade or more. The economy needs to be based on savings, not debt. If we remain strict (Table 5), we can ultimately prevent major inflation.

Table 5: Real interest rates in the disinflation period

Period	Real ex ante interest rate (%)
2022 H2 – 2025 H1	2.5

Note: Real rate = repo rate – inflation expectations of financial markets (1-year horizon), %.

Source: CNB ARAD

(3) The Czech National Bank must incorporate AI, machine learning, high-frequency indicators, and big data analytics into their toolkit. We learned our lessons. The CNB must admit its past mistakes.

In January 2024, we chose three independent teams to review our monetary policy framework. No one had ever done this in the CNB’s history. We did it because we want to be open – and better.

[We published the results in 2025](#)

The main conclusion was that we should not rely on one main model only, but take advantage of a variety of models.

In our experience, the previous generation of DSGE models failed. We are therefore exploring alternatives. On the data-driven front, today we are releasing [a new paper \(Blaha, Botka, Michl, Švéda, 2026\)](#) which forecasts inflation using a quantile regression forests technique. The method not only produces the most probable inflation trajectory, but also shows the whole range of possible inflation outcomes and the risks around them. It therefore quantifies the risks of a renewed acceleration in inflation. We must understand the risks and the entire distribution of possible inflation outcomes. Applied on Czech data, the method

beats standard versions of the model (based on the mean and the median) and also traditional linear models.

And it is not a black box. The model tells us where the risks come from. Recently, the main risks have stemmed from food, fuel, and foreign prices. This is typical for a small open economy.

At the same time, the model shows when domestic pressures – such as activity, producer prices, and expectations – are rising. This is key for policy. It helps us see what we can influence and what we cannot.

Our mandate is price stability. We want to keep inflation close to 2%. All our actions will lead to this goal, including not repeating the mistakes of the past, learning from them, and thinking about the future of our country.

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